Chinese imports and emerging markets' manufacturing labour demand: Evidence from Brazil and Turkey

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Abstract

The present paper assesses and compares the response of the domestic labour demand in Brazil and Turkey to imports from China after the country's entry in the World Trade Organisation (WTO). We estimate a linear panel data model at the three digit industry level and dissect the role of sector imports of intermediate, capital and final goods on the level of employment and skill upgrading of the labour force. Results suggest that imports from China are negatively related to the conditional labour demand of Low skill intensive sectors in Brazil. This effect is mainly driven by capital and final good imports. The latter equally affect white and blue collars in these sectors, whereas, regardless the sector of activity, white collars appear as the most hit by imports from China. Labour demand in Turkey, instead, shows a positive correlation with imports from China which seems to be driven by imports of intermediates. However, even if the latter seem to complement domestic workers in Labour intensive sectors, they also seem to substitute for labour in the Capital intensive ones.

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1. Introduction and background

The international economic order has recently experienced a deep change in the world labor market division, with Asian and other developing countries representing the most dynamic manufacturing areas of the planet. Just a few years ago, these countries were in a "developing condition", while nowadays, they are referred to as the ones experiencing the highest economic growth rates worldwide. Within the heterogeneous group of the so-called emerging economies, China, the largest country in the world in terms of population, plays a relevant role in the global economy, due to the deep penetration of its exports, in particular in the manufacturing sector. The striking feature is that Chinese outstanding growth rate led to a different world scenario, somehow challenged by the tough competition coming from this country. Since the early 1990s, imports from China dramatically increased at comparable rates in both the United States and the European Union, and slightly more slowly in Japan. This phenomenon is mainly a consequence of the increasing use of offshore procurement of manufacturing goods by industrialized countries' firms (Feenstra, 1998). Thus the academic debate has rather focused on the consequences for advanced economies of Chinese exports (Auer and Fischer, 2010; Auer, 2011; Bugamelli et al., 2010), neglecting the study of the impact of the country international activities in the developing world.

The aim of this paper is, then, to contribute to the scant although growing literature dealing with the implications of South-South trade by evaluating the effect of imports coming from China on the manufacturing labor demand in Brazil and Turkey after the Asian country's entry into the World Trade Organisation (WTO) in 2001. This empirical question naturally arises from the fact that Brazil, Turkey and China display similar comparative advantages. Nevertheless, by inspecting in more detail their production and trade structure, it emerges that whereas Turkey is a resource poor country mostly specialised in exports of manufacturing goods (e.g. textile and clothing), Brazil is rather resource abundant and mainly exports primary products, with manufacturing exports being mainly directed to the Latin American trading partners. The two emergent economies, in addition, do not perform their trading activity on the same markets, while both countries' manufacturing sectors increasingly import from China. In this respect the Asian trading partner appears as a country with an intermediate production structure based both on manufacturing and natural resources (e.g. coal), however less resource abundant than Brazil and less manufacturing intensive than Turkey. From this picture, hinging on the theory sketched by Davis' on "local" comparative advantages and the cones of diversification in the global economy

Davis (1996), one could expect that manufacturing imports from China rather differently affect the two emergent economies labour markets, with Turkey being less affected than Brazil by the Chinese competition in the final good markets, due to its relatively longer experience as manufacturing exporter to several high income destination markets. However, the ongoing international fragmentation of production process suggests that, alongside trade in final goods, imports of intermediates may well play a role in shaping the domestic labour market. The two emerging countries, indeed, are deeply involved in the international supply network. As a consequence, the firm technology choices may lead to the complementarity or the substitutability between imported inputs and domestic labour and it is an empirical question to ascertain whether the former or the latter effect prevails.

Our work is close to the wide literature on the impact of imports[1] on the manufacturing labour demand in developing countries.[2] Most of the empirical contributions focus on the nexus between trade and the demand for skills, motivated by the theoretical possibility that foreign inputs and exported products may actually cause the skill upgrading of the firm labour force. As a matter of fact, trade may favour technology diffusion from the North to the South (Pissarides, 1997). Also, the growth of new intermediate imports and the insourcing of higher skill intensive production stages may drive an increase of the skill intensity in the developing country manufacturing sector (Feenstra and Hanson, 1997). In both cases, a larger share of skilled workers is required in order to cope with the new tasks and the new technologies. However, the existing evidence is not conclusive. Pavcnik (2003) finds that imports do not significantly affect the relative demand

[1] A stream of the existing literature also investigates the labour market consequences of trade liberalisation episodes (Revenga, 1997; Currie and Harrison, 1997; Pagés-Serra and Márquez, 1998; De Ferranti et al., 2003), however differently from these works we are not attempting to answer to the question about which trade policies may be implemented and if they should be implemented, but rather we focus on the issue of understanding whether trade with China can explain shifts in the labor demand of two emerging markets represented by Brazil and Turkey.

[2] Several papers also have dealt with the consequences of trade on the labour demand in advanced economies. The findings usually point at a negative effect of imports on the conditional labour demand (OECD, 2007; Görg and Hanley, 2005) with the major role played by imports of intermediates from cheap labour countries (Harrison and McMillan, 2007; Cadarso et al., 2008; Falk and Wolfmayr, 2008; LoTurco and Maggioni, 2012). The cross-country sector level evidence also shows a negative offshoring impact on the unconditional labour demand (OECD, 2007). The latter detrimental effect is confirmed at plant level on German data, but only when offshoring practices are concomitant to a plant restructuring process consisting in spin-off, shutdown, selling-off of parts of the plant (Moser et al., 2009).

for skilled workers in Chilean plants, once controlled for plant heterogeneity. For the case of Ghana, instead, Görg and Strobl (2002) analyse a small panel of manufacturing firms over the 1990s and reveal that the purchase of foreign machinery for technological purposes significantly raised the relative demand for skilled labour. Although technology transfers may also occur through exports, this work finds no such effect on the skill upgrading of the Ghanaian firms labour force. For the case of Mexico, Harrison and Hanson (1999) highlight that both exporting and importing are associated to an increase in the relative demand for skilled workers. Interestingly enough for our study, Fajnzylber and Fernandes (2009) analyse the labour market response of China and Brazil to trade and confirm the existence of some heterogeneity between the two: increased involvement in imports, exports and foreign direct investment is associated with an increased demand for skilled labor in Brazil, but the opposite effect is detected for China. Finally, for the case of Turkey, recently Meschi et al. (2011) detect a positive effect of the firm export activity on the skill demand. Concerning imports, firms belonging to the sectors enjoying higher growth in the share of foreign inputs from advanced countries also increase the share of skilled workers. However, they do not test for the firm specific import activity and do not focus on the total employment level. Even if skill upgrading may enhance economic growth, the absorptive capacity of manufacturing sector in terms of overall employment is also important to assess the country welfare prospects.

It follows, even if a positive association may exist between the relative demand for the skilled and trading at the firm level in developing and emergent markets, yet none of the existing studies investigates the impact of trade on the overall firm employment level. Then, our focus on the impact of imports on manufacturing employment in two emergent economies can be considered a first original contribution of our work. Also, to the best of our knowledge, it is the first contribution aimed at analysing whether manufacturing employment of two emerging countries is affected by Chinese imported goods. Finally, by splitting overall sector imports into final, intermediate and capital goods we try to dissect the channels -competition in the market for final goods *versus* complementarity/substitutability in the production technology - through which Chinese imports may actually affect the domestic labour demand.

This work is structured as follows: the following section shows the source of the data used in the econometric regressions, the methods used in the import penetration variable construction and the main descriptive evidence of the phenomenon of imports from China for both Brazil and Turkey; section 3 illustrates the empirical strategy performed and addresses the estimation issues. Finally,

section 4 and section 5 highlight, respectively, the main results and conclusions reached by the present paper.

2. Data and descriptive statistics

The Data Sources and the Sample. This paper uses two main categories of data: trade and industry data. As far as Brazil is concerned, the latter have been collected from the Instituto Brasileiro de Geografia e Estatistica (IBGE), span from 1996 to 2007 and consider 3 digit manufacturing sectors included in the Classificação Nacional de Atividades Econômicas (CNAE). It is worth to highlight that although industry data are available from 1996 we analyse the 2002-2007 time span to capture the impact of China entry in the WTO at the end of 2001. These data include the number of people employed and the split in production and non production workers - in the following referred to as blue and white collars, respectively -, the wages earned, the value of production and that of the capital stock. As far as Turkey is concerned, industry data were collected from the Turkish Statistical Institute (TurkStat), span from 2003 to 2008 and include the NACE Rev 1.1 3 digit manufacturing. These data include the number of people employed, the wages earned, the value of production, the total value of gross investment in tangible goods that we use as a proxy for the capital stock, the producer price index across all manufacturing sectors according to the time window taken into account. Whereas Turkish trade and industry data are collected according to the same classification, Brazilian sector level information on the main industry variables is only available in the Classificação Nacional de Atividades Econômicas V.1 (CNAE). Although it is mostly similar to the NACE, we had to build up a correspondence - available in Table A.1 in the Appendix - between the two classification systems in order to match industry and trade data for Brazil. Finally, Brazilian and Turkish yearly industry are expressed in local currency and have, thus, been converted in U.S. dollars using the 31st December's exchange rate for every year considered in the database. Data on Brazilian and Turkish export and import flows in U.S. dollars are from the UN-COMTRADE through the World Integrated Trade Solution (WITS), the software developed by the World Bank for the access to the trade data sources. From this source we gather imports from China and the rest of the world and overall country exports at 3-digit NACE. In order to assess whether different import typologies may have a different impact on the sector level labour demand in our two emergent economies, we also retrieved import data at 5 digit from the Standard International Trade Classification Rev.

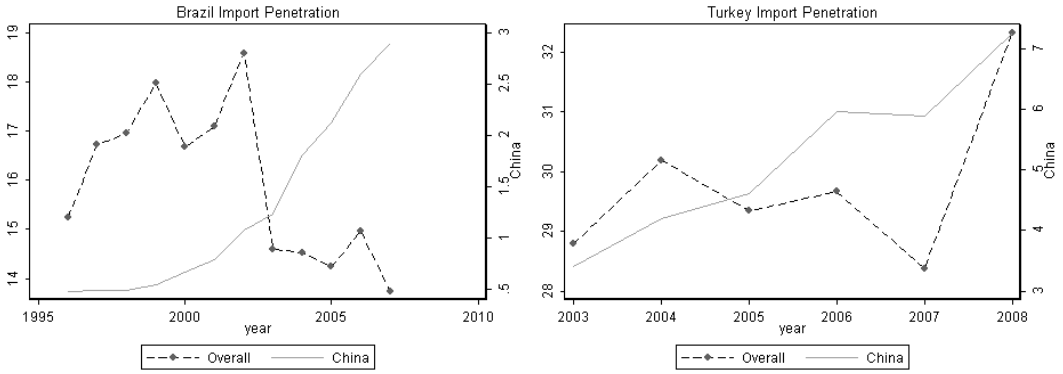
3. Then, exploiting the correspondence between the SITC and the NACE[3] and the correspondence Table between the SITC and the Broad Economic Category (BEC) classification, we split imported goods in each three digit NACE sector into final (FIN), intermediate (INT), capital (CAP). A detailed description of the definition of final, intermediate and capital goods in terms of the BEC classification is available in Table A.2 in the Appendix.

Descriptive evidence. Within the countries composing the BRICS, Brazil is the one which has experienced the highest growth rates in the last decade, as far as foreign trade is concerned (+30% from 2000 to 2008). Also in 2009, despite the international financial crisis, the Brazilian economy experienced only a 24% reduction in foreign trade with respect to 2008, whereas in 2010 (GDP +7,5%) Brazil underwent a strong recovery (+36,6% y/y), leading foreign trade to the highest absolute values in the Brazilian history. The main trade partners of Brazil are China (15%), the United States (12%) and Argentina (9%), relying on the data stemming from year 2010 and taken from UN Comtrade database. In Brazil, the main industries are the ones linked with food transformation, the production of bio-carburant, vehicles, crude oil extraction and refinement, the crafting of metals and minerals. Brazilian imports are mainly represented by capital goods, energetic minerals and chemical products, while exports are mainly composed of agricultural products (aimed at feeding and producing biologic carburant), followed by energetic and non-energetic minerals, machineries, transport means and metals. Among the European countries which have experienced the highest economic growth rates, Turkey plays an important role, even if it was negatively affected, as well as Brazil, by the international trade slump in 2009; this led to a decrease of 37% in foreign trade, which in 2010 (GDP +8,9%), underwent a strong recovery, experiencing an increase of 40% with respect to the previous year. The main trade partners of Turkey in Europe is Germany both on the import and the export side, whereas outside the European boundaries the main partners are represented by Russia (mainly energetic minerals imported), China (main suppliers of energetic raw materials, manufactures and electronic and mechanical machineries) and other middle Asian countries (Iraq - energetic minerals, Iran, United Arab Emirates and Saudi Arabia). In Turkey, the main industries are the ones linked with metal crafting, food transformation, transport means, chemicals, crude oil refinement and machineries, with manufacturing accounting for

[3]Through the correspondence between the Classification of Products by Activity (CPA) and the Harmonized System 2002.

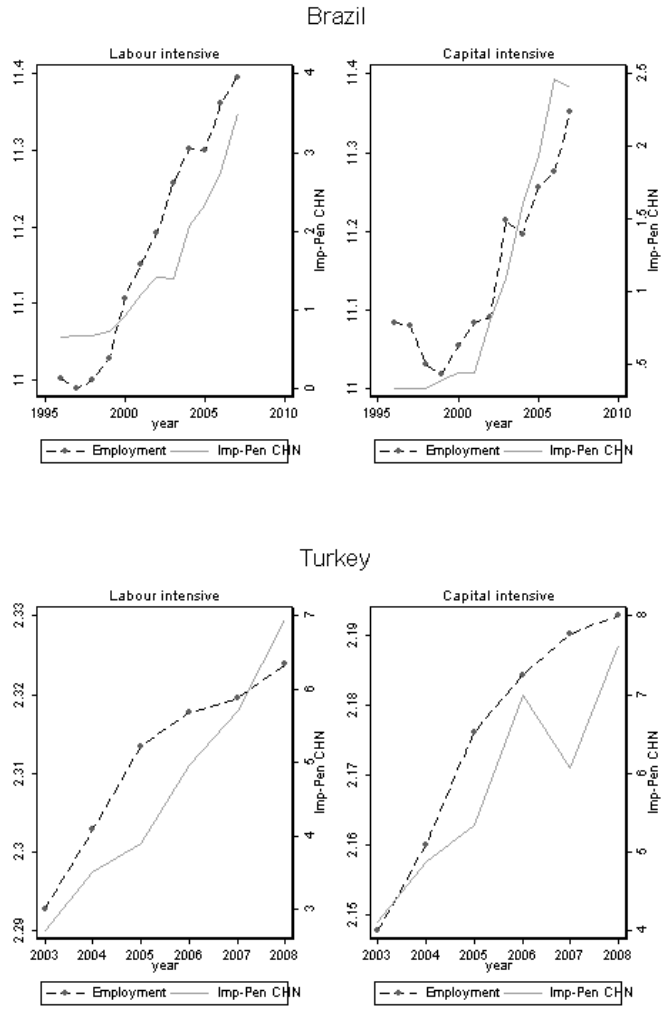
26%, agriculture for 9% and services for 65% of GDP. Turkish imports are mainly represented by minerals (22%), machineries (21%), metals (14%) and oil derivatives and fuels (6%), while exports are mainly composed of textiles and apparel (20%), metals (15%), machineries (15%), transport means (13%) and agri- food products (11%). The below-shown Figure 1 depicts the average degree of import penetration from China and from all over the world across all manufacturing sectors. The picture shows that imports from China in the initial year represent only a small fraction of total imports in both countries, nevertheless the dramatic increase of the weight of imports from China in all manufacturing sectors for both Brazil and Turkey is out of question. In particular, it is interesting to notice that, after China entry in the WTO in 2001, Brazilian imports from this country grew steadily, while overall imports declined at the same pace. By the same token, the picture for Turkey shows that the slump in imports occurred in 2007 was much less dramatic for imports originating from the Asian country. More in detail, Figure 2 shows the evolution of import penetration from China by labour and capital-intensive sectors, together with the manufacturing average employment in logs. For Brazil, the weight of imports from China is higher in Labour intensive sectors, but it sharply increases more in capital intensive sectors during the period of analysis. On the contrary, for Turkey imports from China seem to matter slightly more for Capital intensive sectors - that also drive the mentioned import drop in 2007 - and their overall growth between the initial and final year is comparable across the two country groupings. In both countries employment increases in both countries over the period, nevertheless the overall growth is smaller when compared to the dramatic growth in imports from China. Finally, as for Brazil we also have information on white and blue collar workers, Figure 3 shows the evolution of the white to blue collar ratio, skill ratio, by sector groupings. It is interesting to notice that as imports from China increase the share of white to blue collar decreases. Summing up, this overall evidence on the dramatic increase in the importance of China as a source for imports in both of our emergent economies goes hand in hand with a more limited growth of manufacturing employment, which, in Brazil, is more and more characterized by reduced average skill intensity. Nevertheless the content of this section is merely descriptive and in order to establish whether an actual relationship exists between Chinese exports into Turkey and Brazil and manufacturing employment in the two countries, in the next section we present the empirical model within which to test our hypothesis.

Figure 1: Evolution of Import Penetration by Origin - Manufacturing Sectors



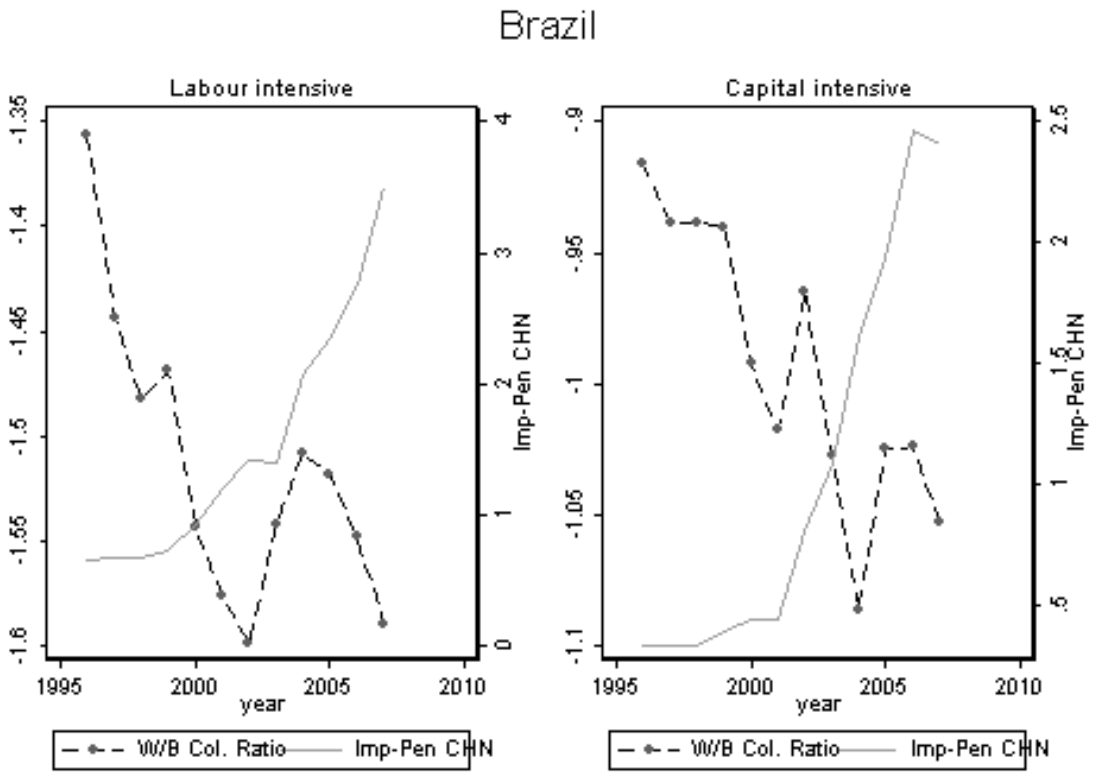
Notes: Source: Own elaborations on TurkStat, IBGE and COMTRADE data.

Figure 2: Evolution of Employment and Import Penetration from China by Sector Groupings



Notes: Source: Own elaborations on TurkStat, IBGE and COMTRADE data.

Figure 3: Evolution of Skill ratio and Import Penetration from China by Sector Groupings



Notes: Source: Own elaborations on IBGE and COMTRADE data.

3. Empirical Strategy

In order to analyse the impact of import penetration from China on manufacturing employment, we use of the below-shown equation, which represents a conditional sector level labour demand where our main variable of interest is included as demand shifter (Hamermesh, 1993):

$$l_{s,t} = \alpha_0+\alpha_1 w_{s,t}+\alpha_2 y_{s,t}+\alpha_3 k_{s,t}+\alpha_4 Xsh_{s,t}+\beta_0 M_{row\ s,t}+\beta_1 M_{chn\ s,t}+\lambda D_t+\mu_s+\epsilon_{s,t} \quad (1)$$

In the above equation, l is the log of total employment in sector s at time t and is our dependent variable. As independent variables, we include the log of unitary wages and salaries (w), the log of the value of production (y), the log of the amount of capital stock (k) , the value of export share of Brazil and Turkey to all countries in total output (Xsh) and our variables of interest, i.e. the value of import penetration from China (M_{chn}), the value of import penetration from the rest of the world (M_{row}) . The model, also, includes a set of time dummies, D_t, which not only capture the effect of the time trend, but also any general trade reforms that may have occurred, any movement in the exchange rate or, more generally, any macroeconomic shock occurred in the time frame considered. Finally, μ_s is the sector level unobserved time-invariant heterogeneity and $\epsilon_{s,t}$ is an idiosyncratic shock. Besides this baseline model, denoted as Specification (1) in the Tables shown in section 4, we test a further one, denoted as Specification (2) in the Tables, which is as follows:

$$\begin{aligned} l_{s,t} \quad = \quad & \alpha_0 + \alpha_1 w_{s,t} + \alpha_2 y_{s,t} + \alpha_3 k_{s,t} + \alpha_4 Xsh_{s,t} + \beta_0 M_{row\ s,t} + \beta_1 M^{int}_{chn\ s,t} + \beta_2 M^{cap}_{chn\ s,t} \\ & + \beta_3 M^{fin}_{chn\ s,t} + \lambda D_t + \mu_s + \epsilon_{s,t} \end{aligned} \quad (2)$$

Here, import penetration from China is split into import penetration in intermediate (M^{int}_{chn}), capital (M^{cap}_{chn}) and final (M^{fin}_{chn}) goods. The aim is to adopt a general-to-specific approach and to isolate the impact of imports from China on manufacturing employment by identifying the possible channel.

In the estimations we proceed with Within Group (WG) estimator to remove any source of endogeneity driven by the correlation of our right hand side variables and the unobserved sector level time-invariant. To check the consistency of our estimates we also performed the strict exogeneity test suggested by Wooldridge (2002) including the first lead of our right hand side variables and we failed to reject the null of strict exogeneity both for Turkey and for Brazil, even if for the

latter the test was still significant at the 10%. This hints at the possible endogeneity of our right hand side main regressor, especially, and in the lack of valid instruments we will interpret the following results in terms of correlations more than causality[4].

4. Results

In Tables 1 and 2, we show our main results. In the former we display for both Brazil and Turkey the estimates for specification 1 and 2 on total employment respectively for all sectors, for the high and low skill intensive ones and the labour and capital intensive ones. It is worth to recall that Specification 1 displays the impact on labor demand stemming from the degree of import penetration from China and from the rest of the world at time t; Specification 2 considers a further distinction among the different typologies of imported goods from China, splitting total goods into intermediate, capital and final ones and analyzing their effect on the level of employment and, for Brazil only, on the demand for white and blue collars and on the skill ratio. From the Tables, it is possible to affirm that the degree of import penetration from China has a relevant relationship with the level of labor intensity in the two countries considered. Focusing on Turkey (left side of Table 1), it deserves attention the positive and significant coefficients of import penetration from China in all sectors, driven by the labour intensive ones, together with a negative and statistically significant effect stemming from the degree of import penetration from the rest of the world. When deepening this analysis by splitting imported goods by their typology of use, it is relevant to notice that this effect is mainly driven by intermediate goods. It is interesting to notice that they are positively related to labour demand in labour intensive sectors, and negatively in the capital intensive ones. The effect in all Specifications is overall positive and significant and this may suggests that the degree of intermediate and capital import penetration from China could complement the domestic manufacturing employment in labour intensive productions. Also, im-

[4]We tried an instrumental variable approach in the spirit of Auer and Fischer (2010) using th evolution of low income economies production and the evolution of chinese world exports as instruments, but these proved rather poor instruments. As an alternative we tried a gmm-style set of instruments (Arellano and Bond, 1991; Bond, 2002): we used past lags of the right hand side variables as instruments for the model in first differences and also this strategy did not prove succesful, possibly due to the small size of our data set. As a consequance, we postpone the analysis of the causal relationship to a future study when more suitable data and instruments are at hand.

ports of labour intensive final goods possibly allow for complementarity in consumption with respect to domestic products thus positively affecting the conditional labour demand in these sectors. Focusing on Brazil (right side of Table 1), it deserves attention the negative and statistically significant coefficient of M_{chn} in low skill sectors of production, while Specification 2 shows that this effect is mainly driven by the import penetration of capital and final goods, reporting negative and statistically significant coefficients. This suggest a strong competition effect of Chinese final goods imports and a strong imported capital-labour substitution process in these sectors. Capital and skill intensive sectors, instead, appear not to be significantly related to trade with China.

Finally from Table 1, it is possible to notice that in both Brazil and Turkey the export share to all countries is significantly negatively correlated to the level of labor demand. This result can be interpreted in a way that suggests us that, when the degree of exports increases, producers tend to move away from labor as the primary input, in search for alternative means in the production process, especially in high skill and labour intensive sectors, consistent with our expectations. In capital-intensive sectors of Turkey, on the contrary, the degree of correlation between the export share and the level of employment is generally not significant, or it is slightly negative and significant when regressing on both white collar workers and the labour ratio WC/BC for Brazilian capital intensive sectors and this result is again consistent with our expectations regarding exports. It is interesting to notice from the Tables, that the level of employment is significantly and negatively affected by the degree of import penetration from the rest of the world; this suggests us that the more the Brazilian and Turkish economies are open to new markets (excluding the Chinese one), the more the level of employment is likely to fall due to a domestic labour substitution effect. Moreover, it is possible to notice that all the other independent variables considered in the linear panel data appear to have a statistically significant impact on the level of labor demand and on the labour ratio, highlighting a statistically significant and positive correlation between employment and the log of the value of production (y) and the log of the value of capital (k) and between the labour ratio and the log of the value of capital (k). According to our expectations, a statistically significant and negative correlation is always found between the level of unitary wage and the conditional labor demand for both countries.

Once explored the relationship between of import penetration and the manufacturing labour demand in the two countries, results in Table 2 display the consequences of purchases abroad for the white and blue collar workers and for the white to blue collar ratio in Brazilian manufacturing. As already mentioned in

section 2, the information on the number of production (blue collars) and non production (white collars) workers was available for this country only, so we were not able to analyse the issue for Turkey too. For brevity in the Table we only show the results for specification 2 and for our variables of interest, nevertheless complete results are available from the authors upon request. When deepening the analysis by regressing our variables on white collar workers (upper panel of Table 2), the displayed negative emlpoyment effect of import penetration of capital and final goods from China especially concerns the white collars, but in Low Skill intensive sector both the white and blue collars are affected. However, whereas both worker categories are equally hit by competition in final goods, blue collars are affected relatively more by capital imports. As a matter of fact the white to blue collar ratio increases as capital imports from China increase, while imports of final goods are not significantly related to such ratio. Labour intensive sectors, instead, are characterised by a reduction in the white to blue collar ratio from capital imports, due to their negative association with the demand for white collars.

Robustness Checks. In the Appendix Tables A.3 and A.4 show the results of the estimation of specifications 1 and 2 by means of the First Difference estimator. From the Tables it emerges that our main insights are confirmed. Imports of intermediates and capital seem to complement domestic labour in the Turkish labour intensive manufacturing sectors, while intermediates from China seem to substitute employment in capital intensive sectors in the same country. Also for Brazil, the FD estimator confirms the negative relationship between manufacturing employment and capital and final imports from China in Low skill intensive sectors. The negative employment effect of final goods is confirmed to be focused on the white collars regardless the type of sector, while an increase in the imports of capital from the Asian country goes hand in hand with an increase in the white to blue collar ratio.Finally, to further check the robustness of our findings we included the first lag of our import measures to attenuate the issue of reverse causality that could affect our estimates and the results from the FE estimator displayed in table A.5 show that our main insights are unchanged. The latter are robust also when we include our variables of interest both at time t and t-*1*, as displayed in Table A.6.

Table 1: Results I - Dependent variable: log of Employment

	Turkey			Brazil				
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	All	Lab. Int.	Cap. Int.	All	Low Sk.	High Sk.	Lab. Int.	Cap. Int.
Specification 1								
w	-0.567***	-0.610***	-0.505***	-0.592***	-0.819***	-0.499***	-0.563***	-0.690***
	[0.053]	[0.075]	[0.034]	[0.126]	[0.098]	[0.150]	[0.162]	[0.209]
y	0.020***	0.016**	0.030***	0.512***	0.571***	0.460***	0.453***	0.560***
	[0.006]	[0.008]	[0.005]	[0.062]	[0.085]	[0.075]	[0.067]	[0.092]
k	0.003**	0.002	0.004**	0.051***	0.031	0.061***	0.062***	0.029
	[0.001]	[0.002]	[0.002]	[0.016]	[0.031]	[0.019]	[0.020]	[0.023]
M_{chn}	0.031***	0.038***	0.004	-0.459	-1.126**	-0.414	-0.376	-0.902
	[0.010]	[0.014]	[0.014]	[0.479]	[0.538]	[0.652]	[0.816]	[0.644]
M_{row}	-0.029**	-0.041*	-0.017*	-0.12	-0.439*	0.155	-0.118	-0.108
	[0.015]	[0.022]	[0.009]	[0.143]	[0.245]	[0.165]	[0.175]	[0.259]
Xsh	-0.016***	-0.016***	-0.001	-0.150*	-0.092	-0.491**	-0.456	-0.095
	[0.003]	[0.003]	[0.011]	[0.087]	[0.073]	[0.238]	[0.358]	[0.078]
R-squared	0.884	0.873	0.923	0.693	0.785	0.68	0.705	0.703
Specification 2								
w	-0.569***	-0.614***	-0.509***	-0.590***	-0.830***	-0.496***	-0.574***	-0.684***
	[0.053]	[0.077]	[0.032]	[0.126]	[0.093]	[0.150]	[0.165]	[0.209]
y	0.020***	0.015*	0.030***	0.513***	0.569***	0.459***	0.453***	0.559***
	[0.006]	[0.008]	[0.004]	[0.062]	[0.084]	[0.075]	[0.069]	[0.092]
k	0.003**	0.001	0.004**	0.050***	0.03	0.061***	0.063***	0.03
	[0.001]	[0.002]	[0.002]	[0.015]	[0.031]	[0.019]	[0.019]	[0.024]
M_{chn}^{int}	0.016	0.039**	-0.160***	-0.194	0.266	-0.652	-0.044	-0.671
	[0.025]	[0.020]	[0.055]	[0.542]	[0.346]	[0.920]	[0.858]	[0.701]
M_{chn}^{cap}	0.021	0.032*	0.006	-0.647	-3.005***	-0.679	-2.741	-0.683
	[0.015]	[0.017]	[0.027]	[0.488]	[0.547]	[0.480]	[1.757]	[0.533]
M_{chn}^{fin}	0.029***	0.031*	0.015	-1.470**	-1.596***	-1.102	-2.827*	-1.246
	[0.010]	[0.017]	[0.013]	[0.677]	[0.269]	[1.951]	[1.588]	[1.010]
M_{row}	-0.032**	-0.045*	-0.015	-0.11	-0.521**	0.16	-0.192	-0.101
	[0.016]	[0.024]	[0.009]	[0.148]	[0.233]	[0.185]	[0.201]	[0.259]
Xsh	-0.015***	-0.015***	0.002	-0.156*	-0.107	-0.491**	-0.455	-0.097
	[0.003]	[0.003]	[0.011]	[0.087]	[0.075]	[0.235]	[0.356]	[0.077]
R-squared	0.883	0.872	0.928	0.695	0.792	0.683	0.71	0.703
Observations	496	250	246	413	198	215	228	185
Number of Sectors	88	44	44	69	33	36	38	31

Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 2: Results II - Brazil: White, Blue Collars and the White to Blue collars ratio

	[1] All	[2] Low Sk.	[3] High Sk.	[4] Lab. Int.	[5] Cp. Int.
White Collars					
M_{chn}^{int}	-0.304	0.13	-0.526	-0.297	-0.251
	[0.740]	[0.796]	[0.936]	[1.050]	[0.785]
M_{chn}^{cap}	-1.161***	-0.843*	-1.479***	-3.641**	-0.938***
	[0.212]	[0.474]	[0.309]	[1.770]	[0.154]
M_{chn}^{fin}	-2.788***	-2.234***	-4.342**	-5.288***	-2.018***
	[0.655]	[0.390]	[1.968]	[1.930]	[0.330]
R-squared	0.853	0.889	0.84	0.84	0.896
Blue Collars					
M_{chn}^{int}	-0.123	0.641	-0.587	0.028	-0.225
	[0.423]	[0.513]	[0.634]	[0.556]	[0.681]
M_{chn}^{cap}	-0.181	-2.215***	-0.01	-1.227	-0.269
	[0.344]	[0.146]	[0.215]	[1.518]	[0.350]
M_{chn}^{fin}	-0.259	-0.441**	0.888	-0.212	-0.306
	[0.439]	[0.190]	[1.162]	[0.750]	[0.557]
R-squared	0.89	0.938	0.873	0.874	0.919
White to Blue Collars Ratio					
M_{chn}^{int}	-0.349	-0.956	-0.046	0.406	-0.687
	[1.029]	[1.317]	[1.478]	[1.669]	[1.238]
M_{chn}^{cap}	-0.73	2.650***	-1.063	-8.135***	-0.294
	[0.573]	[0.666]	[0.788]	[2.983]	[0.666]
M_{chn}^{fin}	0.132	-0.042	-0.067	-0.432	0.652
	[0.877]	[0.487]	[2.726]	[2.614]	[0.717]
R-squared	0.094	0.204	0.106	0.168	0.198
Observations	414	198	216	228	186
Number of Sectors	69	33	36	38	31

Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1

5. Summary and conclusion

In the recent literature, within the strands dealing with analyzing the impact of openness to trade on the level of employment and skill upgrading, this paper provides evidence of the effects of the degree of import penetration from China on the manufacturing sector conditional labor demand in two emerging countries, Brazil and Turkey, taken as representative of two developing economies of Latin America and Europe, respectively, and experiencing outstanding economic growth rates in the last decade. This paper proceeds by estimating this import penetration competition effect by performing several econometric FE and FD regressions. Imports penetration from China is positively related to manufacturing employment in Turkey, while it displays a negative relationship with the manufacturing labour demand in Brazil. When inspecting these results in more detail it turns out that whereas intermediates from China act as a complement for domestic labour in labour intensive Turkish sectors, they appear to be substitutes for capital intensive sectors workers in this economy. Imports of final Chinese goods do not seem to play a relevant role for this emergent economy. Turning to Brazil, the picture is quite different, as final and capital goods are the major drivers of the negative relationship between imports from China and the labour demand in Low skill intensive sectors. Here competition in the final goods markets equally hits white and blue collars and capital imports from the Asian giant substitute for blue more than white collar, as the ratio of white to blue collar increases when capital imports from China rise. Finally, out of Low Skill Intensive sectors, most of the overall negative association between employment and final and capital good imports mainly concerns the white collar workers. On one hand, this may hint at the fact that imports of high skill intensive final goods from China pushes local firms to downgrade the human capital content of such goods in order to cope with increased competitive pressure. Our measure of skill, however, is rather raw, as it only measures non production workers, regardless of their actual human capital endowment. On the other hand, imports of capital goods tend to decrease high-skilled employment suggesting a production process-automation orientation, with a reduction of non-production labour force. Although a strong causal nexus could not be established from our estimates, our results seem in line with the political worries recently emerged in the two economies on their excessive exposition to Chinese imports, compared to the difficult market access of the two countries' exports into the Asian market. In particular, the recent worries of "de-industrialisation" in Brazil (The-Economist, 2012) from Chinese import competition are supported by our findings. From this, some policy implications can be drawn from our work: policy makers in

emerging markets should be more concerned with the consequences of import competition on the domestic labour market. However, more than implementing difficult and welfare reducing protectionist measures, they should look for the most effective tools at their disposal necessary to boost the competitiveness of their manufacturing sector in order to let the domestic market cope with the tough Chinese competition now and in the future.

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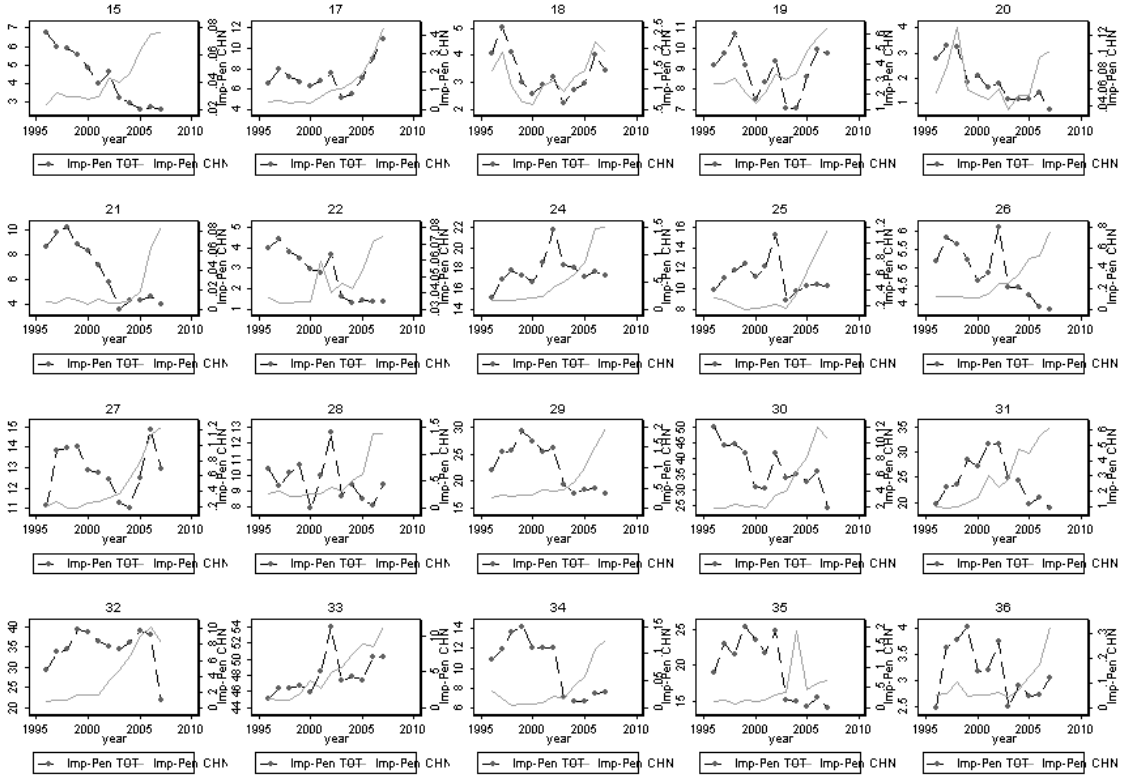
Appendix

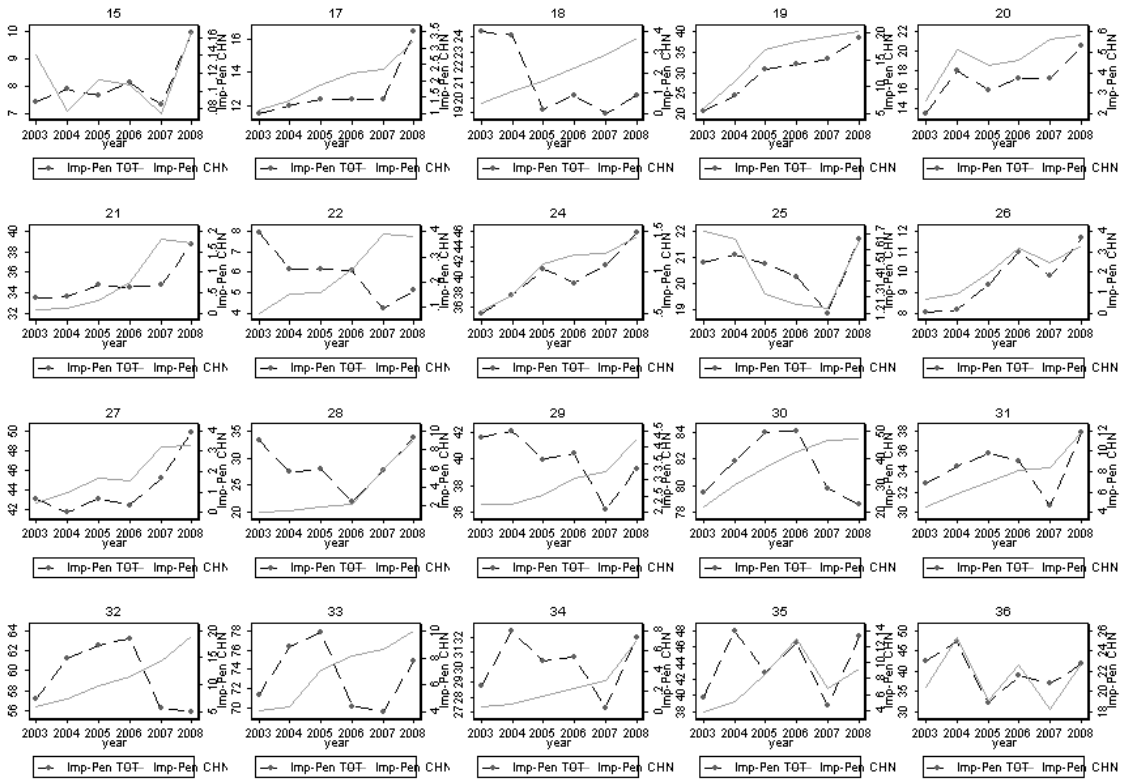
A. Additional Tables and Figures

Figure A.1: Evolution of China Import Share in Brazil by NACE 2-digit Sector of Production



Notes: Source: Own elaborations on IBGE and COMTRADE data.

Figure A.2: Evolution of China Import Share in Turkey by NACE 2-digit Sector of Production



Notes: Source: Own elaborations on Turkstat and COMTRADE data.

Table A.1: Correspondence CNAE-NACE

CNAE	NACE
15.1 Abate e preparação de produtos de carne e de pescado	151-152
15.2 Processamento, preservação e produção de conservas de frutas, legumes e outros vegetais	153
15.3 Produção de óleos e gorduras vegetais e animais	154
15.4 Laticínios	155
15.5 Moagem, fabricação de produtos amiláceos e de rações balanceadas para animais	156-157
15.6 Fabricação e refino de açúcar	158
15.7 Torrefação e moagem de café	158
15.8 Fabricação de outros produtos alimentícios	158
15.9 Fabricação de bebidas	159
16.0 Fabricação de produtos do fumo	160
17.1 Beneficiamento de fibras têxteis naturais	171
17.2 Fiação	171
17.3 Tecelagem - inclusive fiação e tecelagem	172
17.4 Fabricação de artefatos têxteis, incluindo tecelagem	173
17.5 Acabamentos em fios, tecidos e artigos têxteis, por terceiros	174-175
17.6 Fabricação de artefatos têxteis a partir de tecidos - exceto vestuário - e de outros artigos têxteis	174-175
17.7 Fabricação de tecidos e artigos de malha	177
18.1 Confecção de artigos do vestuário	181-182-183
18.2 Fabricação de acessórios do vestuário e de segurança profissional	182
19.1 Curtimento e outras preparações de couro	191
19.2 Fabricação de artigos para viagem e de artefatos diversos de couro	192
19.3 Fabricação de calçados	193
20.1 Desdobramento de madeira	201
20.2 Fabricação de produtos de madeira, cortiça e material trançado - exceto móveis	202-203-204-205
21.1 Fabricação de celulose e outras pastas para a fabricação de papel	211-212
21.2 Fabricação de papel, papelão liso, cartolina e cartão	211-212
21.3 Fabricação de embalagens de papel ou papelão	211-212
21.4 Fabricação de artefatos diversos de papel, papelão, cartolina e cartão	211-212
22.1 Edição e impressão	221-222
22.2 Impressão e serviços conexos para terceiros	221-222
22.3 Reprodução de materiais gravados	223
23.1 Coquerias	231
23.2 Fabricação de produtos derivados do petróleo	232
23.3 Elaboração de combustíveis nucleares	233
23.4 Produção de álcool	241
24.1 Fabricação de produtos químicos inorgânicos	241
24.2 Fabricação de produtos químicos orgânicos	241
24.3 Fabricação de resinas e elastômeros	246
24.4 Fabricação de fibras, fios, cabos e filamentos contínuos artificiais e sintéticos	247
24.5 Fabricação de produtos farmacêuticos	244
24.6 Fabricação de defensivos agrícolas	242
24.7 Fabricação de sabões, detergentes, produtos de limpeza e artigos de perfumaria	245
24.8 Fabricação de tintas, vernizes, esmaltes, lacas e produtos afins	243
24.9 Fabricação de produtos e preparados químicos diversos	246
25.1 Fabricação de artigos de borracha	251
25.2 Fabricação de produtos de plástico	252
26 Fabricação de produtos de minerais não-metálicos	261
26.1 Fabricação de vidro e de produtos do vidro	261
26.2 Fabricação de cimento	265
26.3 Fabricação de artefatos de concreto, cimento, fibrocimento, gesso e estuque	266
26.4 Fabricação de produtos cerâmicos	262-263
26.9 Aparelhamento de pedras e fabricação de cal e de outros produtos de minerais não-metálicos	268
27.1 Produção de ferro-gusa e de ferroligas	271
27.2 Siderurgia	271
27.3 Fabricação de tubos - exceto em siderúrgicas	272
27.4 Metalurgia de metais não-ferrosos	274
27.5 Fundição	275
28.1 Fabricação de estruturas metálicas e obras de caldeiraria pesada	281
28.2 Fabricação de tanques, caldeiras e reservatórios metálicos	282
28.3 Forjaria, estamparia, metalurgia do pó e serviços de tratamento de metais	284
28.4 Fabricação de artigos de cutelaria, de serralheria e ferramentas manuais	286
28.8 Manutenção e reparação de tanques, caldeiras e reservatórios metálicos	
28.9 Fabricação de produtos diversos de metal	287
29.1 Fabricação de motores, bombas, compressores e equipamentos de transmissão	291
29.2 Fabricação de máquinas e equipamentos de uso geral	292
29.3 Fabricação de tratores e de máquinas e equipamentos para a agricultura, avicultura e obtenção de produtos animais	293
29.4 Fabricação de máquinas-ferramenta	294
29.5 Fabricação de máquinas e equipamentos de uso na extração mineral e construção	295
29.6 Fabricação de outras máquinas e equipamentos de uso específico	295
29.7 Fabricação de armas, munições e equipamentos militares	296
29.8 Fabricação de eletrodomésticos	297
29.9 Manutenção e reparação de máquinas e equipamentos industriais	
30.1 Fabricação de máquinas para escritório	300
30.2 Fabricação de máquinas e equipamentos de sistemas eletrônicos para processamento de dados	300
31.1 Fabricação de geradores, transformadores e motores elétricos	311
31.2 Fabricação de equipamentos para distribuição e controle de energia elétrica	312
31.3 Fabricação de fios, cabos e condutores elétricos isolados	313
31.4 Fabricação de pilhas, baterias e acumuladores elétricos	314
31.5 Fabricação de lâmpadas e equipamentos de iluminação	315
31.6 Fabricação de material elétrico para veículos - exceto baterias	316
31.8 Manutenção e reparação de máquinas, aparelhos e materiais elétricos	
31.9 Fabricação de outros equipamentos e aparelhos elétricos	316
32.1 Fabricação de material eletrônico básico	321
32.2 Fabricação de aparelhos e equipamentos de telefonia e radiotelefonia e de transmissores de televisão e rádio	322
32.3 Fabricação de aparelhos receptores de rádio e televisão e de reprodução, gravação ou amplificação de som e vídeo	323
32.9 Manutenção e reparação de aparelhos e equipamentos de telefonia e radiotelefonia e de transmissores de televisão e rádio - exceto telefones	
33.1 Fabricação de aparelhos e instrumentos para usos médicos-hospitalares, odontológicos e de laboratórios e aparelhos ortopédicos	331
33.2 Fabricação de aparelhos e instrumentos de medida, teste e controle - exceto equipamentos para controle de processos industriais	332
33.3 Fabricação de máquinas, aparelhos e equipamentos de sistemas eletrônicos dedicados à automação industrial e controle do processo produtivo	333
33.4 Fabricação de aparelhos, instrumentos e materiais ópticos, fotográficos e cinematográficos	334
33.5 Fabricação de cronômetros e relógios	335
33.9 Manutenção e reparação de equipamentos médico-hospitalares, instrumentos de precisão e ópticos e equipamentos para automação industrial	
34.1 Fabricação de automóveis, caminhonetas e utilitários	341
34.2 Fabricação de caminhões e ônibus	341
34.3 Fabricação de cabines, carrocerias e reboques	342

Table A.2: Variable Description

Variable	Construction
$l_{s,t}$	log of employees in the sector *s* at time *t*. Source Turkstat and IBGE.
$w_{s,t}$	log of average sector *s* wage at time *t*, calculated as total wage bill over number of employees. Source Turkstat and IBGE.
$y_{s,t}$	log of sector *s* output at time *t*. Source Turkstat and IBGE.
$k_{s,t}$	log of sector *s* capital stock for Brazil, log of sector *s* investment in machinery and equipment at time *t* for Turkey.
$Xsh_{s,t}$	Share of sector *s* exports at time *t* calculated as total exports over Value of Production expressed in US dollars. Source COMTRADE, Turkstat and IBGE.
$M_{row\ s,t}$	Imports from the rest of the world (excluding China) / (Imports from all countries + Value of Production expressed in US dollars)
$M_{chn\ s,t}$	Imports from China / (Imports from all countries + Value of Production expressed in US dollars)
$M^{int}_{chn\ s,t}$	Imports from China of intermediate goods / (Imports from all countries + Value of Production expressed in US dollars). SITC codes corresponding to the BEC codes 121 (Food and Beverages processed, mainly for industry), 22 (Industrial supplies, processed), 42 (Parts and accessories of capital goods) and 53 (Parts and accessories of transport equipment) are classified as intermediates. . Source COMTRADE, Turkstat and IBGE.
$M^{cap}_{chn\ s,t}$	Imports from China of capital goods / (Imports from all countries + Value of Production expressed in US dollars). SITC codes corresponding to the BEC codes 41 (Capital goods) and 52 (Other Transport Equipment) are classified as capital goods. . Source COMTRADE, Turkstat and IBGE.
$M^{fin}_{chn\ s,t}$	Imports from China of final goods / (Imports from all countries + Value of Production expressed in US dollars)]. SITC codes corresponding to the BEC codes 122(Food and Beverages processed, mainly for consumers), 61, 62 and 63 (Durable, Semi-Durable and Non-Durable consumer goods) are classified as final goods. . Source COMTRADE, Turkstat and IBGE.

Table A.3: First Difference Estimator - Dependent variable: log of Employment

	Turkey			Brazil				
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	All	Lab. Int.	Cap. Int.	All	Low Sk.	High Sk.	Lab. Int.	Cap. Int.
Specification 1								
w	-0.558***	-0.601***	-0.458***	-0.647***	-0.832***	-0.578***	-0.619***	-0.719***
	[0.056]	[0.073]	[0.034]	[0.102]	[0.060]	[0.137]	[0.143]	[0.136]
y	0.016***	0.012*	0.028***	0.548***	0.520***	0.574***	0.583***	0.508***
	[0.005]	[0.007]	[0.005]	[0.043]	[0.049]	[0.072]	[0.073]	[0.052]
k	0.002**	0.001	0.002**	0.034***	0.03	0.033***	0.030**	0.038
	[0.001]	[0.001]	[0.001]	[0.011]	[0.022]	[0.012]	[0.012]	[0.024]
M_{chn}	0.025**	0.033**	-0.001	-0.038	-0.538	-0.032	-0.212	-0.182
	[0.011]	[0.013]	[0.015]	[0.386]	[0.365]	[0.579]	[0.673]	[0.485]
M_{row}	-0.004	-0.006	-0.008	-0.004	-0.044	0.027	0.002	-0.104
	[0.010]	[0.018]	[0.012]	[0.128]	[0.244]	[0.152]	[0.150]	[0.228]
Xsh	-0.012***	-0.013***	0.009	-0.235***	-0.202***	-0.305*	-0.28	-0.203**
	[0.003]	[0.002]	[0.008]	[0.067]	[0.075]	[0.162]	[0.297]	[0.080]
R-squared	0.736	0.745	0.77	0.627	0.725	0.595	0.637	0.636
Specification 2								
w	-0.558***	-0.601***	-0.461***	-0.648***	-0.833***	-0.577***	-0.618***	-0.718***
	[0.056]	[0.072]	[0.032]	[0.103]	[0.059]	[0.137]	[0.146]	[0.136]
y	0.016***	0.012*	0.027***	0.548***	0.522***	0.574***	0.584***	0.511***
	[0.005]	[0.007]	[0.004]	[0.043]	[0.049]	[0.072]	[0.074]	[0.052]
k	0.002**	0.001	0.002**	0.034***	0.026	0.033***	0.030**	0.036
	[0.001]	[0.001]	[0.001]	[0.011]	[0.022]	[0.012]	[0.012]	[0.025]
M_{chn}^{int}	0.045	0.076***	-0.147*	0.244	0.51	-0.131	-0.308	0.71
	[0.029]	[0.023]	[0.080]	[0.661]	[0.340]	[0.932]	[0.767]	[1.121]
M_{chn}^{cap}	0.021***	0.029***	0.04	-0.135	-0.888***	0.023	-0.383	-0.269
	[0.007]	[0.009]	[0.028]	[0.303]	[0.253]	[0.372]	[2.224]	[0.389]
M_{chn}^{fin}	0.006	-0.035	0.016	-1.316	-2.116***	0.555	0.466	-1.509*
	[0.020]	[0.068]	[0.010]	[0.843]	[0.401]	[1.906]	[2.194]	[0.850]
M_{row}	-0.006	-0.01	-0.006	-0.014	-0.038	0.034	0.014	-0.101
	[0.011]	[0.019]	[0.012]	[0.126]	[0.242]	[0.149]	[0.139]	[0.228]
Xsh	-0.012***	-0.012***	0.009	-0.239***	-0.209***	-0.305*	-0.278	-0.208***
	[0.003]	[0.002]	[0.008]	[0.067]	[0.075]	[0.163]	[0.290]	[0.079]
R-squared	0.736	0.746	0.778	0.628	0.731	0.595	0.638	0.64
Observations	395	200	195	344	165	179	190	154
Number of Sectors	86	43	43	69	33	36	38	31

Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A.4: Results II - Brazil: White, Blue Collars and the White to Blue collars ratio

	[1] All	[2] Low Sk.	[3] High Sk.	[4] Lab. Int.	[5] Cp. Int.
White Collars					
M_{chn}^{int}	0.367	-0.576	0.749	1.153	-0.659
	[0.818]	[0.473]	[1.184]	[1.218]	[0.628]
M_{chn}^{cap}	-0.389	0.770***	-0.944***	-2.369	-0.343
	[0.486]	[0.265]	[0.270]	[2.839]	[0.507]
M_{chn}^{fin}	-2.703***	-2.788***	-2.611	-4.313***	-2.347***
	[0.506]	[0.540]	[1.834]	[1.656]	[0.537]
R-squared	0.853	0.889	0.84	0.84	0.896
Blue Collars					
M_{chn}^{int}	-0.357	0.796	-1.029***	-0.878**	0.247
	[0.333]	[0.609]	[0.319]	[0.358]	[0.592]
M_{chn}^{cap}	-0.204	-1.029***	0.178	0.946	-0.38
	[0.339]	[0.189]	[0.189]	[1.915]	[0.378]
M_{chn}^{fin}	-0.007	-0.423	1.642***	1.965**	-0.214
	[0.643]	[0.350]	[0.513]	[0.837]	[0.675]
R-squared	0.773	0.837	0.755	0.737	0.851
White to Blue Collars Ratio					
M_{chn}^{int}	0.187	-1.308	1.07	1.545	-0.403
	[1.197]	[1.254]	[1.731]	[1.761]	[1.044]
M_{chn}^{cap}	0.823	3.260***	-0.325	-4.347	0.992
	[1.152]	[0.463]	[0.577]	[4.190]	[1.239]
M_{chn}^{fin}	-1.291	-1.852***	-0.674	-0.877	-1.163
	[1.225]	[0.532]	[2.076]	[2.543]	[0.972]
R-squared	0.108	0.289	0.091	0.126	0.194
Observations	345	165	180	190	155
Number of Sectors	69	33	36	38	31

Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A.5: Robustness I - Lagged import penetration measures

	Turkey			Brazil				
	[1] All	[2] Lab. Int.	[3] Cp. Int.	[4] All	[5] Low Sk.	[6] High Sk.	[7] Lab. Int.	[8] Cp. Int.
	Employment							
$M^{int}_{chn\,t-1}$	0.052*	0.060**	-0.096	-0.113	0.878	-0.793	0.052	-1.734*
	[0.028]	[0.027]	[0.084]	[0.651]	[0.628]	[0.802]	[0.874]	[1.049]
$M^{cap}_{chn\,t-1}$	0.016	0.012	0.060**	-0.365	-1.927***	-0.138	1.111	-0.661*
	[0.013]	[0.013]	[0.028]	[0.322]	[0.407]	[0.374]	[1.721]	[0.339]
$M^{fin}_{chn\,t-1}$	0.020***	0.021***	0.001	-1.079	-1.019***	1.79	-3.471	-1.053
	[0.007]	[0.006]	[0.008]	[0.801]	[0.246]	[3.638]	[2.804]	[0.761]
R-squared	0.888	0.892	0.916	0.686	0.775	0.69	0.692	0.713
				White Collars				
$M^{int}_{chn\,t-1}$				0.238	-0.092	0.183	1.016	-0.645
				[0.991]	[1.132]	[0.909]	[1.122]	[1.162]
$M^{cap}_{chn\,t-1}$				-0.592***	-0.457	-1.193***	-2.651	-0.472**
				[0.184]	[0.541]	[0.355]	[1.813]	[0.208]
$M^{fin}_{chn\,t-1}$				-3.105***	-1.980***	-6.553**	-10.033***	-1.971***
				[0.735]	[0.403]	[2.545]	[3.490]	[0.300]
R-squared				0.839	0.875	0.848	0.829	0.878
				Blue Collars				
$M^{int}_{chn\,t-1}$				-0.296	0.997**	-0.737**	-0.551	-0.684
				[0.325]	[0.453]	[0.367]	[0.493]	[1.305]
$M^{cap}_{chn\,t-1}$				-0.154	-1.694***	0.064	1.047	-0.317
				[0.291]	[0.321]	[0.180]	[1.465]	[0.347]
$M^{fin}_{chn\,t-1}$				-0.3	-0.441**	0.814	1.629	-0.668*
				[0.348]	[0.192]	[0.988]	[1.382]	[0.352]
R-squared				0.886	0.905	0.891	0.888	0.895
				White to Blue Collars Ratio				
$M^{int}_{chn\,t-1}$				0.092	-2.354	0.165	1.569	-3.194
				[1.287]	[2.679]	[1.351]	[1.045]	[2.689]
$M^{cap}_{chn\,t-1}$				-0.57	2.985***	-1.351*	-5.501**	-0.562
				[0.527]	[0.932]	[0.701]	[2.283]	[0.609]
$M^{fin}_{chn\,t-1}$				-0.345	-0.008	-0.857	-2.073	0.518
				[0.863]	[0.633]	[3.525]	[3.987]	[0.890]
R-squared				0.097	0.279	0.102	0.123	0.223
Observations	409	206	203	344	165	179	190	154
Number of Sectors	86	43	43	69	33	36	38	31

Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A.6: Robustness II - Lagged and contemporaneous import penetration measures

	Turkey			Brazil				
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	All	Lab. Int.	Cp. Int.	All	Low Sk.	High Sk.	Lab. Int.	Cap. Int.
	Employment							
$M^{int}_{chn\,t}$	-0.042	-0.055	-0.161**	-0.008	0.551	-0.018	0.802	0.726
	[0.028]	[0.033]	[0.070]	[0.735]	[0.338]	[1.107]	[0.995]	[0.968]
$M^{int}_{chn\,t-1}$	0.094***	0.107**	0.05	-0.284	-0.137	-1.121	-1.006	-3.365*
	[0.036]	[0.049]	[0.059]	[0.816]	[0.599]	[0.784]	[0.724]	[1.844]
$M^{cap}_{chn\,t}$	0.012	0.01	-0.025	-0.883	-5.792***	0.062	-3.232	-1.203
	[0.017]	[0.019]	[0.089]	[0.930]	[0.796]	[0.983]	[4.121]	[1.211]
$M^{cap}_{chn\,t-1}$	0.013	0.009	0.059	0.051	-3.054***	-0.106	3.417	-0.521
	[0.011]	[0.012]	[0.110]	[0.282]	[0.521]	[0.474]	[2.585]	[0.382]
$M^{fin}_{chn\,t}$	0.01	-0.054	0.048	-1.555**	-2.094***	-0.291	3.752	-2.030**
	[0.023]	[0.036]	[0.034]	[0.754]	[0.608]	[2.089]	[4.872]	[0.892]
$M^{fin}_{chn\,t-1}$	0.019	0.075**	-0.026**	0.415	0.998	2.278	-9.096	0.939
	[0.018]	[0.030]	[0.013]	[0.850]	[0.651]	[3.150]	[9.073]	[1.137]
R-squared	0.9	0.91	0.923	0.689	0.831	0.694	0.704	0.73
				White Collars				
$M^{int}_{chn\,t}$				0.179	0.39	0.907	1.232	-0.302
				[0.706]	[0.896]	[1.207]	[1.357]	[1.139]
$M^{int}_{chn\,t-1}$				-0.462	-0.765	-1.275**	-0.861	-0.781
				[0.439]	[0.841]	[0.562]	[0.783]	[1.199]
$M^{cap}_{chn\,t}$				-1.240***	-2.419***	-2.132***	-1.924	-0.954**
				[0.376]	[0.790]	[0.491]	[2.634]	[0.426]
$M^{cap}_{chn\,t-1}$				0.083	-0.789	-0.127	-1.242	0.032
				[0.232]	[0.600]	[0.186]	[2.183]	[0.365]
$M^{fin}_{chn\,t}$				-1.38	-2.023***	2.055	2.215	-1.387*
				[0.964]	[0.594]	[2.526]	[3.537]	[0.826]
$M^{fin}_{chn\,t-1}$				-2.046*	0.086	-9.625***	-13.539*	-0.807
				[1.183]	[0.429]	[3.279]	[6.923]	[0.856]
R-squared				0.847	0.882	0.863	0.853	0.882
				Blue Collars				
$M^{int}_{chn\,t}$				0.137	0.84	-0.26	0.051	0.54
				[0.354]	[0.522]	[0.512]	[0.599]	[0.328]
$M^{int}_{chn\,t-1}$				-0.334	-0.199	-0.507	-0.592	-1.742
				[0.315]	[0.329]	[0.316]	[0.565]	[1.457]
$M^{cap}_{chn\,t}$				-0.297	-3.836***	0.086	1.598	-0.716
				[0.467]	[0.553]	[0.406]	[2.911]	[0.539]
$M^{cap}_{chn\,t-1}$				-0.014	-2.381***	-0.168	-0.052	-0.119
				[0.192]	[0.342]	[0.168]	[1.469]	[0.223]
$M^{fin}_{chn\,t}$				0.295	-1.217***	4.122**	3.121	0.071
				[1.507]	[0.336]	[1.963]	[3.966]	[1.550]
$M^{fin}_{chn\,t-1}$				-0.616	0.920**	-4.002*	-3.237	-0.779
				[1.535]	[0.409]	[2.331]	[6.654]	[1.700]
R-squared				0.886	0.928	0.894	0.889	0.9
				White to Blue Collars Ratio				
$M^{int}_{chn\,t}$				-0.198	-0.881	1.54	0.985	-0.486
				[1.060]	[1.624]	[1.746]	[1.807]	[1.632]
$M^{int}_{chn\,t-1}$				-0.119	-1.399	-1.575	0.058	-3.027
				[1.396]	[2.864]	[1.733]	[1.272]	[2.785]
$M^{cap}_{chn\,t}$				-0.759	1.265	-1.837**	-3.99	0.017
				[0.723]	[1.181]	[0.905]	[5.686]	[0.768]
$M^{cap}_{chn\,t-1}$				-0.183	2.849**	-0.683*	-2.838	-0.656
				[0.356]	[1.160]	[0.414]	[3.414]	[0.494]
$M^{fin}_{chn\,t}$				-0.452	-1.706**	4.523	-1.178	-2.368**
				[1.468]	[0.755]	[3.478]	[7.164]	[1.018]
$M^{fin}_{chn\,t-1}$				-0.567	1.502	-7.502	-1.28	2.536*
				[1.592]	[1.089]	[5.107]	[13.236]	[1.443]
R-squared				0.113	0.312	0.138	0.157	0.25
Observations	408	206	202	344	165	179	190	154
Number of Sectors	86	43	43	69	33	36	38	31

Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1