Does competition from China raise the probability of becoming unemployed? An analysis using Spanish workers' micro-data

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Abstract

In the period 1997-2007 import competition from China has multiplied by more than three in the Spanish manufacturing sector. In this paper we analyze whether this severe increase in competitive pressure is associated with a higher probability of becoming unemployed in the Spanish manufacturing sector. Based on the working histories of almost 600.000 workers, that allow us to control for heterogeneity across firms and workers, we show that import competition from China is positively associated with the probability of becoming unemployed. Moreover, we show that the association is positive and statistically significant for low-skilled and medium-skilled workers, but statistically not significant for high-skilled workers.

Keywords: imports, China, Spain, unemployment, skills, manufacturing

JEL Classification: F16, J23

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1. Introduction

One of the salient features of the world economy in the last decades is the emergence of China as a major manufacturing exporter. This emergence has raised concerns regarding the negative effect that Chinese competition might have on the production of unskilled labor intensive manufactures, and the decline in demand for unskilled labor in the manufacturing sector in rich countries.

The first generation of studies that analyzed the impact of Chinese import competition on rich countries labor markets used aggregated data at the industry level, and differentiated among few categories of skills. However, the access to more finely disaggregated databases, both at the firm and the worker level, has shown that the labor market outcome of Chinese competition might vary across firms within an industry, and across workers within skill categories. Regarding heterogeneity across firms, Bernard et al. (2006) show that in the same industry more capital-intensive, and skill-intensive plants have higher employment growth than labor-intensive firms. Regarding heterogeneity across workers, studies show that within a skill category, worker-specific characteristics, such as experience in the firm, age or sex also determine the probability of becoming unemployed (*Include reference)*. Hence, in order to identify accurately the impact of Chinese import competition on labor market outcomes it is necessary to control for heterogeneity both at the firm and the worker level.

In this paper, we use a dataset that comprises the working histories of almost 600.000 manufacturing workers in Spain to assess whether a higher exposure to import competition from China is associated with a higher probability of becoming unemployed. The database identifies the worker and the firm in which the worker is employed, which allows to control for observed and non-observed heterogeneity both at the firm, and the worker level. We show that during the 1997-2007 period, a higher exposure to Chinese import competition is positively associated with a higher probability of becoming unemployed. Moreover, we show that the positive association is statistically significant for low-skilled and medium-skilled workers, and statistically not significant for skilled workers.

This paper is related to a large literature that has analyzed the impact of developing countries' import competition on rich countries' labor markets. During the 1990s, different studies using aggregate data at the industry level, and distinguishing broad skill categories (unskilled and skilled workers), analyzed the impact of import competition from low-wage countries on rich countries' labor markets (Krugman and

Lawrence, 1994; Wood, 1995; Leamer, 1998). Some papers analyzed the effect of a particular type of trade, the offshoring of production stages from developed to developing countries, on the rich countries' labor market (Feenstra and Hanson, 1996 and 1999).

In the next decade, the access to detailed firm-level and worker level data has allowed a finer analysis on the impact of low-wage countries' import competition on rich countries' labor market outcomes. As mentioned before, Bernard et al. (2006) find that U.S. manufacturing plant survival and growth are negatively associated with exposure to low-wage countries' imports, although the impact differed across firms. Harrison and McMillan (2011) find that, in general, offshoring to low-wage countries substitute for domestic employment in U.S. manufacturing firms. Papers that match firm and workers data show that offshoring tends to increase the high-skilled wage and decrease the low-skilled wage. Moreover, low-skilled workers suffer more from the displacement effects of offshoring (Hummels et al, 2011).

[To be completed]

This paper is also related to the literature which uses working histories to analyze the factors that determine the transition from employment to unemployment

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The rest of the paper is organized as follows. Section 2 presents the database and some descriptive statistics. Section 3 presents the results of the econometric estimations. Section 4 concludes.

2. Database and descriptive analyses

The labor data set used for our empirical analysis comes from the 2007 Continuous Sample of Working Lives (*Muestra Continua de Vidas Laborales*, hereinafter MCVL), provided by the Spanish Ministry of Labor and Social Security. MCVL is a micro-level dataset built upon Spanish administrative records. By means of a simple random sampling system, it consists of a representative sample (4%) of the population registered with the Social Security administration, both workers and recipients of pensions or unemployment benefits, over the sampling year. It also contains the work histories of all individuals in the sample back to 1967.

For our purpose, the MCVL includes several information on individuals in the sample about their personal (age, gender, nationality and level of education), job (worker's occupation, type of employment contract, full or part-time job, length of contract, and the cause for the termination of contract), and employee characteristics (economic activity, firm size, and province of location). We select individuals with at least one record as employees with a permanent or open-ended contract along the period 1997-2007, and enrolled in the general regime of the social security administration. Also, we select only those workers in the manufacturing sector aged 16-65. We exclude self-employed workers, and salaried workers with a temporary contract due to the difficulty in determining the real cause behind the termination of their job records. In any case, employees with permanent contracts represent almost 70% of total employment in the manufacturing sector.

The selection of the 1997-2007 as our sample period is determined by various reasons. First, trade and production data to measure the competitive pressure of Chinese imports is only available from the early 1990s onwards. Second, a major drawback of the MCVL is that, as noted above, it is only representative of the population registered with the Social Security administration for the sampling year.

Moreover, it only has a proper longitudinal design since the first year in which the MCVL was published, 2004, to the present; before 2004 the information is retrospective. In order to reduce potential bias in using information prior to 2004, we selected 1997 as the initial sample period year to ensure a large enough number of observations, and to minimize the changes in workers' characteristics before 2004. Finally, we selected 2007 as the final sample period year to avoid the effects of the international financial crisis on the Spanish labor market.

For each year in the selected sample, we classify individuals into two distinct categories based on the labor situation: individuals becoming unemployed, and individuals that remain employed. The first one includes individuals who have become unemployed along the year, for causes other than voluntary, retirement, sick leave or maternity leave. In those cases where the same individual becomes unemployed more than once in a year, we only select the first record. We exclude from this category those individuals who have become unemployed, but are employed by the same firm in a period no longer than 15 days. The second category consists of individuals, not included in the first category, that remain as salaried workers at the end of the year.

After applying all the above mentioned filters, and deleting records with missing data, our sample consists of a total of 598,821 observations from 103,940 individuals. The number of observations by year and the distribution of individuals by personal characteristics are presented in Table 1. It shows that most individuals in the sample are males (74-81%), have an age between 30 and 44 years, and around two thirds are low skilled workers.

Table 2 shows the unconditional probabilities of getting unemployed. As average, the probability of getting unemployed for a salaried worker with a permanent contract in the manufacturing sector is around 4.4 percent. This probability is larger for females, and for young workers (aged 16-29). Surprisingly, we do not appreciate a clear negative relationship between the probability of getting unemployed and the skill level, a fact that we will further discuss when presenting the econometric results.

The competitive pressure of Chinese import is proxied by the share of Chinese imports in apparent consumption (Bernard et al., 2006). Analytically,

$$CP_{China,k} = \frac{M_{China,k}}{P_k - X_k + M_k} \quad (1)$$

where $M_{China,k}$ are Chinese imports in industry k, P_k is the Spanish production in industry k, X_k are Spanish exports in industry k, and M_k are total Spanish imports in industry k.[1] Spanish exports and imports data come from the Agencia Tributaria trade data-base, and production data come from Spanish Statistical Institute Industrial Survey database. The latter database distinguishes 90 different manufacturing industries.

[1] Results are robust to calculating import competition erasing exports from the denominator as in Mion and Zhu (2013).

Figure 1 presents the competitive pressure of Chinese imports for the whole Spanish manufacturing sector during the period 1997-2007. As shown in the figure, there has been a very large increase in competitive pressure from Chinese imports. In the year 1997 the share of Chinese imports only represented 0.96% of Spanish apparent consumption; in only ten years this share had multiplied by almost four, reaching the 3.46% of Spanish manufacturing apparent consumption. If we only consider those industries where the Chinese imports represented at least 1% of apparent consumption in 1997, Figure 2 shows that the competitive pressure of Chinese imports has increased in all industries except one: coke and oven products (NACE 231). However, the increase in the competitive pressure of Chinese imports has been very different across industries. For example, in luggage, handbags and the like (NACE 192) competitive pressure has increased by 28 percentage points; in electronic valves, tubes and other electronic components (NACE 321) in 21 percentage points; and in textile weaving (NACE 172) by 18 percentage points. In contrast, in electric motors (NACE 311), and basic chemicals (NACE 241), the competitive pressure has only increased in 1 percentage point. Our expectation is that workers occupied in industries that have experienced a larger increase in the competitive pressure of Chinese imports have a larger probability of becoming unemployed than workers occupied in industries where the increase of competitive pressure from Chinese imports has been lower. The next section will test the validity of this expectation.

3. Econometric analysis

As our benchmark analysis we estimate the following econometric equation to determine the influence of Chinese import competition on the probability of transitioning to unemployment:

$$U_{it} = \beta_m China_{kt} + \beta' X + \beta_t + \beta_k + \beta_p \quad (1)$$

where U_{nit} takes the value of 1 if the worker gets unemployed at year *t*, and $China_{kt}$ is the share of Chinese imports in the apparent demand for industry *k* at year *t*. *X* is a vector of control variables that influence the probability of becoming unemployed. First, we control for workers' age, creating three age categories: age1, which includes workers between 16 and 29 years; age2, which includes workers between 30 and 44 years; and

age3 which includes workers between 45 and 65 years. The excluded category in the regression is age1. Second, we control for the sex of the worker; we add a dummy variable that takes the value of 1 if the worker is male, and zero if the worker is female. Third, we add a dummy variable to control for the nationality of the worker; the dummy variable takes the value of 1 if the worker does not have the Spanish nationality, and zero otherwise. Fourth, we control for workers' skill-level. We use workers' occupation to proxy their skill-level Workers with a university degree, high-level managers, and administrative and workshop bosses are included in the high-skills group; support staff without university degree, administrative officials and auxiliaries, subordinates and 1st level officials are included in the medium-skill group; the rest of occupations are included in the low skill group. This last skill group is the category excluded in the regression. Fifth, we control for the length of the working day; the dummy variable takes the value of 1 is the worker is employed the whole working day, and zero otherwise. Sixth, we add a dummy variable to control whether the permanent (open-ended) contract has any type of discount in terms of social security costs. The dummy variable takes the value of 1 if the permanent (open-ended) contract has a discount, and zero otherwise. Seventh, we control for the size of the firm, proxied by the number of employees. We create three size categories: small firms (1-49 employees), medium-sized firms (50-499), and large firms (500 or more employees). The excluded category in the regression is small firms. Finally, we control for the experience of the worker on the firm, measured by number of days since her contract begun. In addition to the control variables that are included in vector X, in the benchmark estimation we also include dummies for each 3-digit industry, year and Spanish province in which the firm is located. In all regressions standard errors are clustered at 3-digit industries, the level at which we observe competition from China.

The econometric estimation is carried out using data for the period 1997-2007. We estimate the equation with a linear probability model (OLS), with a probit model, and with a logit model. The advantage of the linear probability model is that the estimated coefficients are easy to interpret, as they show how the probability of the event (in our case, transitioning to unemployment) changes when the independent variable increases by one unit. However, the limitation of the linear probability model is that the effect of independent variables on the dependent variable is constant. In addition to that, the linear probability model can yield predicted probabilities below

zero, and above one. In order to overcome these limitations, we also estimate the model using the probability and logistic functions.

Table 3 presents the results of the econometric estimations. In order to compare our results with those obtained by previous studies, first we estimate the probability of transitioning to unemployment for all workers that are included in the Continuous Sample of Working Lives database. In this first estimation, we do not include the import competition from China variable, which is only available for manufacturing. Column (1) presents the results for the OLS estimation, column (2) presents the results of the probit estimation, and Column (3) presents the results of the logit estimation. Most of the estimated coefficients have the expected sign, and are highly statistically significant. We can see that males, and workers with the Spanish nationality have a lower probability to become unemployed; however, in the logit estimation (Column 3), having a foreign nationality is not statistically significant. Workers occupied in skilled occupations have also a lower probability of becoming unemployed. Contrary to expectations, workers occupied in medium-skill activities have the same probability of becoming unemployed as workers occupied in low-skill activities. Workers' experience in the firm is negatively correlated with the probability of transitioning to unemployment. Workers employed part-time have a higher probability of becoming unemployed; this is also the case for workers that have been hired using an open-ended contract with lower social security costs. The probability of becoming unemployed reduces with firm-size. Finally, workers between 30-44 years have a lower probability of becoming unemployed; however, older workers have a higher probability of becoming unemployed. These results, with few exceptions, are in line with previous studies that have analyzed the probability of transitioning to unemployment in Spain (Medina et al., 2010; Díez-Catalán and Villanueva, 2012; Montero and Regil, 2012)

Column 4-6 present the results of the estimation when we restrict the sample to the manufacturing sector, and introduce import competition from China as an additional explanatory variable. As in the previous set of estimations, we find that having the Spanish nationality, between 30 and 44 years, working in a large firm, and commanding a large experience are negatively correlated with becoming unemployed in the manufacturing sector; on its hand, having more than 44 years, and having an open-ended contract but with social security cost reductions are positively associated with becoming unemployed. However, in contrast with the previous set of results, we get that

a higher skill level is positively associated with the probability of becoming unemployed in manufacturing. As will be explained later, this strange result disappears once we control for unobserved firm, and worker level heterogeneity.

As mentioned before, in columns 4 to 6 we also introduce the share of Chinese imports in apparent consumption. We find that import competition from China is positively associated with the probability of becoming unemployed. However, the coefficient is statistically significant only in the linear probability model. To assess the contribution of import competition from China, we multiply the coefficient reported in column 4 (0.001) by a one standard deviation increase in the share of Chinese import competition (5.8 percentage points). The probability of becoming unemployed only rises in 0.058 percentage points. The increase in import competition from China would only raise the unconditional probability of becoming unemployed by 0.13%.

The previous econometric estimations control for observed worker level heterogeneity (such as sex or experience), and observed firm-level heterogeneity (such as size). However, there might be other unobserved worker level characteristics (such as talent), or unobserved firm-level characteristics (such an innovative capacity) that might also affect the probability of becoming unemployed. In order to identify more precisely the contribution of Chinese import competition on the probability of becoming unemployed, in the third set of estimations we control for unobserved firm-level heterogeneity, worker-level heterogeneity, and worker+firm-level heterogeneity. We estimate these regressions using Stata's areg command, which provides a routine to handle the large number of dummy variables needed to control for heterogeneity across firms, and workers. The shortcoming of this command is that only estimates OLS models. Table 4 presents the results of the regressions. In column 1 we estimate the model controlling for firm-level heterogeneity. Now, the fixed effects also absorb the variables that do not vary at the firm-level, such as size-category, province of location, and industry code. As shown in column (1), the coefficient Imports China is positive and highly statistically significant. Moreover, the size of the coefficient doubles with respect the coefficient reported in Table 1- Column 4. According to this coefficient, a one standard deviation in Chinese import competition raises the probability of becoming unemployed in 0.01 percentage points; this probability only represents a 0.3% increase in the unconditional probability of becoming unemployed. We can observe that now, having more skills is negatively associated with transitioning to unemployment;

however, only the medium skills coefficients is statistically significant. In column 2 we present the results controlling for heterogeneity across workers. In this case, the worker-specific variables that do not change during the period of analysis, such as sex and nationality, are absorbed by the fixed effects. We can observe that the coefficient for Chinese import competition remains positive and statistically significant, and similar in size to that presented in column 1. Both skill-level coefficients are negative and statistically significant. Finally, we estimate the equation controlling for heterogeneity across firms and workers. Import competition from China remains positive and highly statistically significant.

Results presented in Tables 3 and 4 confirm that import competition from China is positively associated with a higher probability of becoming unemployed, even when we control for heterogeneity both at the firm, and at the worker level. Despite this association, the contribution of import competition from China to raising the probability of becoming unemployed is very small.

Due to the China's comparative advantage in manufactures that make an intensive use of unskilled workers, or in stages of the production process that make intensive use of unskilled workers, we expect the effect of import competition to be different across skills categories. In particular, we expect import competition from China to raise the probability of becoming unemployed for low-skilled and medium-skilled workers, and have a negligible effect for skilled workers. To test this hypothesis, we estimate separate regression equations for high-skilled workers, medium-skilled workers and low-skilled workers. We estimate the equation using worker and firm-specific fixed effects. As expected, the coefficient for import competition from China is statistically not significant for high-skilled workers, and positive and statistically significant for medium-skilled workers, and low-skilled workers. The effect of Chinese import competition from China is larger for low-skilled workers than for medium-skilled workers.

4. Conclusions

During the period 1997-2007 import competition from China in the Spanish manufacturing sector has multiplied by more than three. In this paper we analyzed whether this severe increase in import competition from Chinas has increased the

probability of becoming unemployed among Spanish manufacturing workers. To test this hypothesis we use a dataset that comprises the working lives of almost 600,000 manufacturing workers. This dataset allows us to control for heterogeneity across workers, and heterogeneity across firms, leading to a better identification of the effect of Chinese import competition on the probability of becoming unemployed.

Our estimations show that there is a positive association between a higher import competition from China and the probability of becoming unemployed. We also confirm that the probability of becoming unemployed is larger among unskilled and medium-skilled workers, and statistically not significant among skilled workers. This result is in line with China's comparative advantage in unskilled-labor intensive products.

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Table 1. Number of observations and distribution by personal characteristics.

Year	Number of observations	Male (%)	Age (%)			Skill (%)		
			16-29	30-44	45-65	High	Medium	Low
1997	31,156	81.3	20.1	45.0	35.0	12.7	20.2	67.0
1998	36,130	81.1	21.2	43.7	35.2	12.8	20.0	67.2
1999	42,391	80.1	23.2	42.8	34.0	12.8	20.2	67.1
2000	48,567	79.0	24.8	42.1	33.1	12.5	20.1	67.3
2001	53,010	78.0	24.7	42.4	32.9	12.7	20.3	67.0
2002	56,637	77.3	24.6	43.0	32.4	13.0	20.4	66.6
2003	59,829	76.7	23.6	43.6	32.8	12.9	20.6	66.5
2004	62,966	76.1	22.3	44.4	33.3	12.9	20.6	66.6
2005	66,420	75.4	21.1	45.3	33.6	12.7	20.5	66.7
2006	70,248	74.7	19.7	46.0	34.2	12.9	20.5	66.7
2007	71,467	74.3	17.3	47.1	35.6	13.3	20.7	66.0
Total	598,821	77.1	21.9	44.3	33.8	12.9	20.4	66.7

Source: authors' calculations based on MCVL.

Table 2. Unconditional probabilities of getting unemployed.

Year	All (%)	Gender (%)		Age (%)			Skill (%)		
		Female	Male	16-29	30-44	45-65	High	Medium	Low
1997	3.8	4.7	3.6	7.2	2.9	3.0	2.7	3.2	4.2
1998	4.2	5.2	4.0	6.6	3.3	4.0	3.1	3.9	4.5
1999	3.5	4.0	3.4	4.3	2.9	3.7	3.3	3.4	3.6
2000	3.0	3.1	3.0	3.1	2.4	3.9	3.3	3.1	3.0
2001	3.8	4.4	3.6	3.7	2.9	4.9	3.7	4.5	3.6
2002	4.1	4.5	4.0	4.5	3.5	4.6	3.8	4.4	4.1
2003	4.2	5.1	4.0	4.2	3.8	4.8	4.5	4.5	4.1
2004	4.3	4.9	4.1	5.2	3.6	4.7	4.6	4.6	4.1
2005	4.8	5.8	4.5	5.3	4.3	5.2	4.8	5.1	4.8
2006	5.0	6.7	4.5	5.9	4.6	5.2	4.6	5.3	5.0
2007	6.0	7.3	5.5	7.4	5.8	5.5	5.6	6.4	5.9
Total	4.4	5.3	4.1	5.1	3.8	4.7	4.2	4.6	4.3

Source: authors' calculations based on MCVL.

Table 3. Benchmark econometric estimations

	Whole sample			Manufacturing		
	(1) OLS	(2) Probit	(3) Logit	(4) OLS	(5) Probit	(6) Logit
Imports China				0.0005*** (0.000)	0.004*** (0.001)	0.009*** (0.003)
Age 30-44	-0.003*** (0.000)	-0.023*** (0.003)	-0.037*** (0.007)	-0.005*** (0.001)	-0.064*** (0.010)	-0.132*** (0.023)
Age 45-65	0.004*** (0.000)	0.049*** (0.004)	0.103*** (0.007)	0.008*** (0.002)	0.091*** (0.023)	0.191*** (0.050)
Male	-0.003*** (0.000)	-0.020*** (0.003)	-0.044*** (0.007)	-0.006*** (0.001)	-0.052*** (0.011)	-0.114*** (0.023)
Foreigner	0.003*** (0.001)	0.003*** (0.006)	-0.021 (0.013)	0.006*** (0.002)	0.044** (0.020)	0.076* (0.043)
High-skilled	-0.003*** (0.000)	-0.029*** (0.004)	-0.070*** (0.010)	0.002* (0.001)	0.027** (0.013)	0.059** (0.030)
Medium skilled	-0.000*** (0.000)	-0.001 (0.003)	-0.001 (0.007)	0.001 (0.001)	0.015 (0.013)	0.031 (0.029)
Whole working day	-0.004*** (0.001)	-0.026*** (0.004)	-0.040*** (0.009)	-0.001 (0.002)	0.001(0.022)	0.023 (0.045)
Discount-contract	0.023*** (0.001)	0.163*** (0.003)	0.310*** (0.007)	0.021*** (0.002)	0.186*** (0.013)	0.378*** (0.029)
Medium firm	-0.014*** (0.000)	-0.132*** (0.003)	-0.281*** (0.007)	-0.014*** (0.001)	-0.150*** (0.014)	-0.330*** (0.032)
Large firm	-0.022*** (0.000)	-0.215*** (0.004)	-0.447*** (0.011)	-0.024*** (0.002)	-0.282*** (0.030)	-0.642*** (0.070)
Experience	-0.006*** (0.000)	-0.073*** (0.001)	-0.183*** (0.003)	-0.004*** (0.000)	-0.042*** (0.006)	-0.102*** (0.015)
Observations	2,533,992	2,533,992	2,533,992	598,821	598,821	598,821
R-squared	0.02	0.04	0.04	0.01	0.03	0.03

Note: All regressions include year-specific, province-specific fixed effects, and 3-digit industry fixed effects. Robust standard errors clustered by 3-digit industries in parentheses. ***, **, * statistically significant at 1%, 5% and 10% respectively.

Table 4. Regression results controlling for worker-level and firm-level heterogeneity

	(1) Firm-specific fixed effects	(2) Worker-specific fixed effects	(3) Firm+worker-specific fixed effects
Imports China	0.002*** (0.000)	0.002***(0.001)	0.002*** (0.000)
Age 30-44	0.001 (0.001)	-0.005*** (0.001)	0.000 (0.000)
Age 45-65	0.014*** (0.003)	-0.029*** (0.004)	-0.026*** (0.003)
Male	-0.001 (0.001)		
Foreigner	-0.008** (0.004)		
High-skilled	-0.001 (0.001)	-0.071*** (0.008)	-0.096*** (0.015)
Medium skilled	-0.002 (0.001)	-0.033*** (0.006)	-0.042*** (0.011)
Whole working day	-0.006* (0.004)	-0.019** (0.010)	-0.020 (0.013)
Discount-contract	0.016*** (0.001)	-0.020*** (0.005)	-0.014*** (0.006)
Medium firm		-0.047*** (0.008)	
Large firm		-0.088*** (0.014)	
Experience	-0.002*** (0.000)	0.001 (0.001)	-0.006*** (0.000)
Observations	598,821	598,821	598,821
R-squared	0.10	0.17	0.22

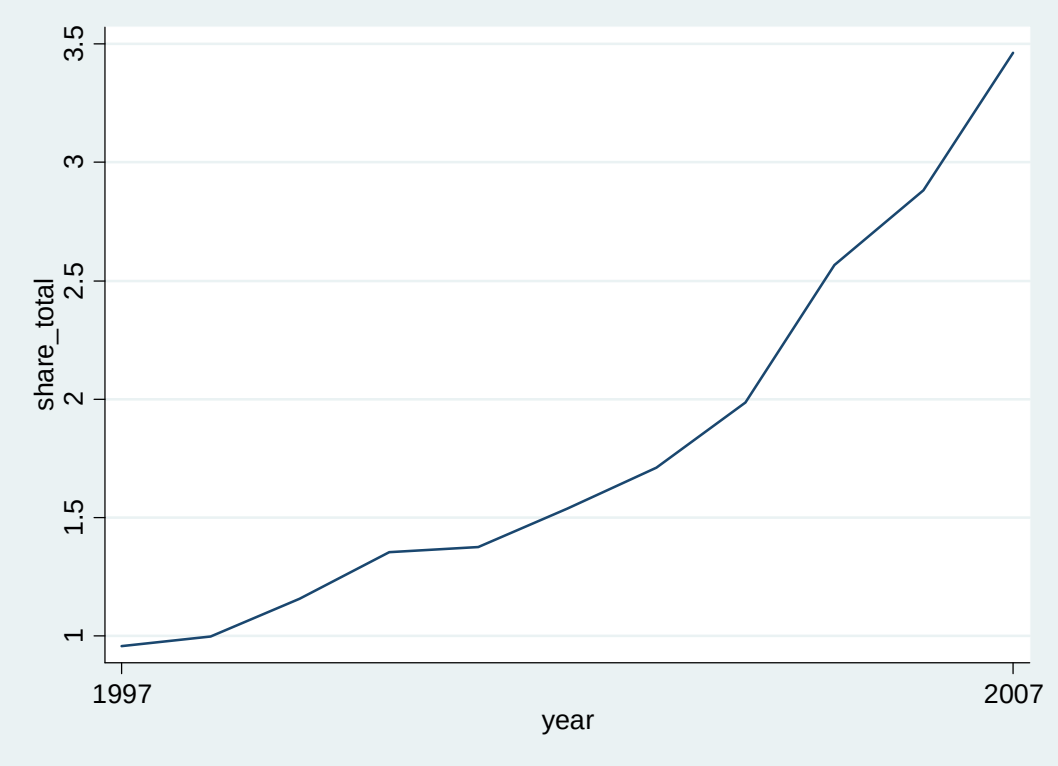
Note: All regressions include year-specific fixed effects. Regression in column (2) also includes 3-digit industry and province fixed effects. Robust standard errors clustered by 3-digit industries in parentheses. ***, **, * statistically significant at 1%, 5% and 10% respectively.

Table 5. Regression results for different skill categories

	(1) High-skills	(2) Medium-skills	(3) Low-skills
Imports China	0.001 (0.001)	0.002**(0.001)	0.003*** (0.000)
Age 30-44	-0.000 (0.004)	0.011*** (0.004)	-0.002 (0.002)
Age 45-65	-0.021*** (0.005)	-0.019*** (0.006)	-0.030*** (0.004)
Whole working day	-0.072 (0.060)	0.021 (0.027)	-0.032 (0.023)
Discount-contract	0.078*** (0.021)	-0.010 (0.017)	-0.019*** (0.007)
Experience	-0.015*** (0.003)	-0.007*** (0.002)	-0.005*** (0.001)
Observations	77,045	122,238	399,538
R-squared	0.23	0.23	0.22

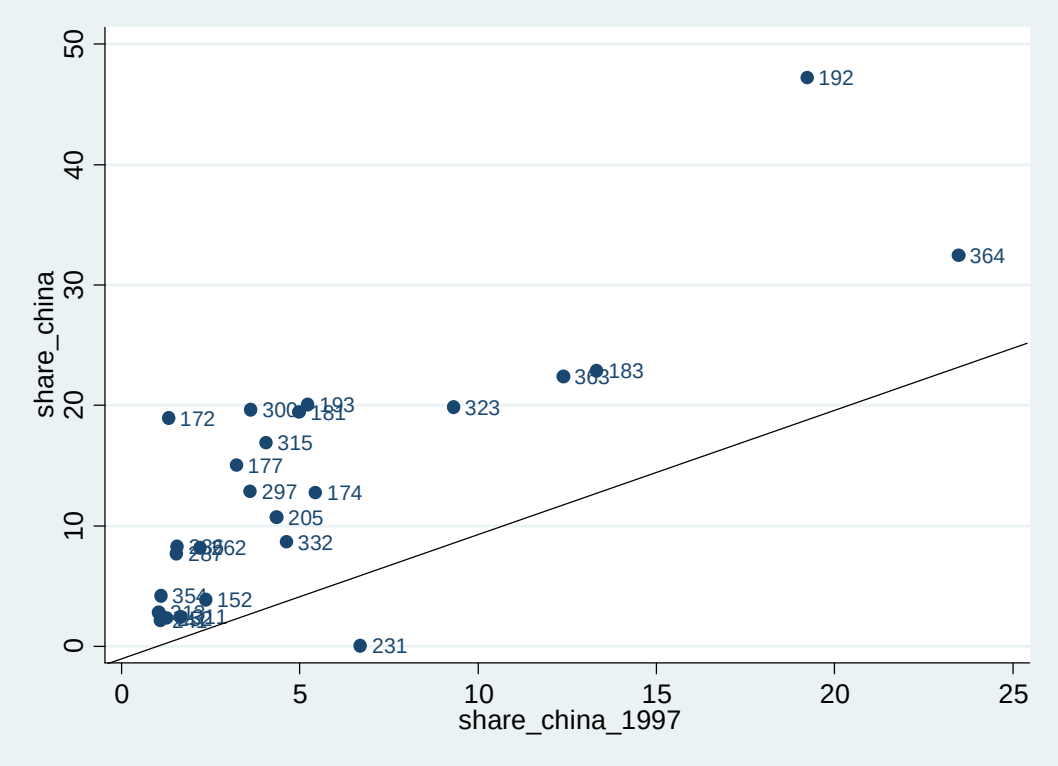
Note: All regressions include year-specific fixed effects. Robust standard errors clustered by 3-digit industries in parentheses. ***, **, * statistically significant at 1%, 5% and 10% respectively.

Figure 1. Evolution of the share of Chinese imports in Spanish manufacturing apparent consumption, 1997-2007



Source: authors calculation based on Agencia Tributaria, and INE Industrial Survey databases.

Figure 2. Share of Chinese imports in apparent consumption by industry: 2007 vs 1997.



Note: only includes industries where Chinese imports represented at least 1% of apparent consumption in 1997.
Source: authors calculation based on Agencia Tributaria, and INE Industrial Survey databases.