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Trade Reforms and Industry Wage Premium: Evidence from Argentina

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ABSTRACT

This paper studies the impact of Argentina trade liberalization during the nineties on the industry wage premium structure. We find that accounting for unobserved time-invariant industry characteristics is crucial. When we do not control for industry fixed effects, we find that workers in protected sectors receive lower wages. However, introducing industry fixed effects reverses the results; tariff protection creates sector specific rents that are in part translated to workers in terms of greater wages. Since Argentina's tariff structure during this period protected relatively more sectors employing higher proportions of skilled workers, nineties trade policy may have had an adverse effect on Argentina's income distribution.

RESUMEN

Este trabajo estudia el impacto de la liberalización comercial argentina en los noventa sobre la estructura de las primas salariales sectoriales. Encontramos que resulta crucial controlar por características sectoriales inobservables e invariantes en el tiempo. Cuando no incluimos efectos fijos por industrias, encontramos que los trabajadores en sectores protegidos reciben menores salarios. Al incluirlos se revierten los resultados; la protección crea rentas sectoriales que se trasladan a los trabajadores vía mayores salarios. Como la estructura tarifaria argentina durante este período protegió relativamente más a sectores calificados, la política comercial podría haber tenido un efecto adverso en la distribución del ingreso.

Key words: skill premium; industry premium; trade liberalization; Argentina

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1 Introduction

Trade economists have long investigated the relationship between trade liberalization and wage premium paid to skilled workers. The natural question to be answered is whether globalization and deepening of international trade could be responsible for the growth in relative earnings of skilled workers during the 1980s and 1990s in developed and developing countries respectively. Maybe the most immediate way of thinking why trade could be associated with movements in skill premium is to reason in a Heckscher-Ohlin framework. Countries have different proportions of skilled and unskilled workers, and so do the goods that each country produces and exports. If this is true, then opening to trade is analogous to a skill transfer between economies. A country with relative scarcity of skilled workers would export unskilled-labor-intensive products and import skilled-labor-intensive products, and then opening the economy would be equivalent to an increase in its relative supply of skilled workers and a decline in its relative supply of unskilled workers. In this framework, opening the economy to trade would have an overall impact over the premium of skilled workers. We call this, an impact in the skill premium.

So if we rely in the Heckscher-Ohlin model for explaining the rise in the skill premium in developing countries (and in Latin America in particular) in late 1980s and early 1990s, we find a priori a contradiction. As long as these countries are unskilled-labor abundant, one would expect that their opening to trade should lead to a decline in their skill premium and inequality during the nineties. But, at least in Argentina, the effect we observe is the opposite. Should we conclude that Heckscher-Ohlin is not working? Galiani and Porto (2010) provide an example on how to study the relationship between trade and wages in a Stolper-Samuelson framework with bargaining power of unions.

However, extra assumptions are not necessary to reconcile facts with the classical model. Since tariff reductions in Latin American countries were disproportionately larger in unskilled-labor intensive sectors (Attanasio, Goldberg and Pavcnik, 2004; Hanson and Harrison, 1999; Pavcnik, Blom, Goldberg and Schady, 2004), the classic model could still be working. Given that tariff cuts were larger in unskilled-labor intensive sectors, the economy-wide return to unskilled workers should have decreased. Nevertheless, the evidence shown on those studies is not sufficient to conclude that the mechanism through which trade affect wages is the one described by Stolper-Samuelson years ago (Goldberg and Pavcnik, 2004).

More recent models of trade point out the relevant role that industry affiliation plays in determining how trade affects wages (Goldberg and Pavcnik, 2005). In these models, at least in the short run, labor is not perfectly mobile across sectors as was in Stolper-Samuelson (Heckman and Pagés, 2000). This assumption is important for the generation of sector specific rents that do not evaporate in the short run due to labor stickiness. Workers with similar levels of education or skills (even more, with similar levels of all observable characteristics such as gender, age, formality, etc.), could be affected differently by international trade just because of their sector or industry affiliation. When two workers that are equal in all observable characteristics receive different wages because they participate in different industries, we will say that there exists an industry wage premium. In this type of models, since workers are not completely mobile across sectors, tariff cuts translate into proportional industry wage premiums reductions.

Also, classical models of trade suppose perfect competition in product and labor markets. However, trade policy can affect industry wage premiums in frameworks of imperfect competition. An example of that comes from Levinsohn (1993), who use Turkish drastic manufacturing trade liberalization in 1984 for testing the hypothesis of import as market discipline in an oligopoly model. He finds that sectors with higher import penetration reduced markups in a larger proportion. In this context, trade liberalization of the more unskilled-labor-intensive sectors in Latin America should have also played a role in reducing industry wage premium in sectors with a low fraction of skilled workers.

Our purpose in this paper is to estimate industry wage premiums in Argentina during the 1990s and relate them to trade policy in each sector following a two-step methodology estimation used by Goldberg and Pavcnik (2005). We find that, once we control for unobserved time-invariant industry characteristics, tariff reductions that took place in the 1990s reduced industry wage premiums in the manufacturing sectors under analysis. Since tariff reductions were larger for sectors who used a high proportion of unskilled workers, that trade liberalization in Argentina may have contributed to raise inequality in the last decade of 20th century. It is worth mentioning that our results do not refer to changes in the skill premium per se, but to the premium that industries pay to workers with the same level of skills. In this sense, if trade liberalization also had a positive effect on the overall skill premium of the economy, low-skill workers could have been hit twice.

The remainder of the paper is organized as follows. In Section 2, we motivate the work by describing trade reforms made by Argentina in the nineties. Section 3 is a brief description of the data used in the paper. In Section 4, we present our regression model and explain the empirical methodology we follow. In Section 5, we show our results, and Section 6 is left for conclusions.

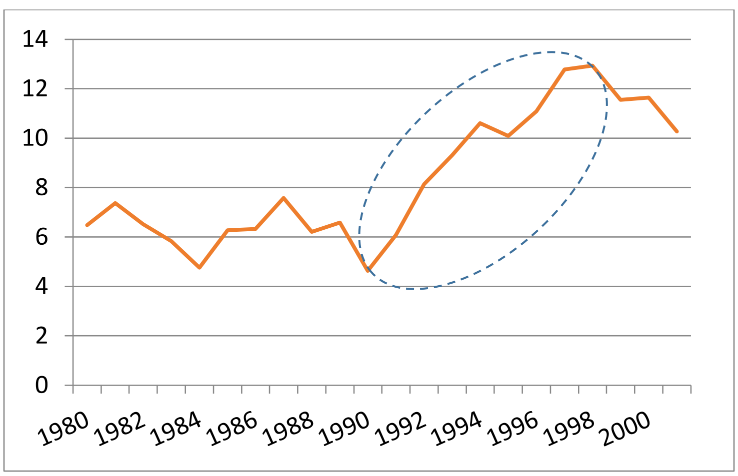
2 Argentina's Background

Argentina's economic performance during the 1980s was quite poor, and by the end of the decade the economy was broken down. Growth of real output was stagnated, financial markets were collapsed and prices were rising largely due to currency depreciation. The hyperinflation of 1989 finally provided the impetus for the economic reforms applied in the early nineties. Trade liberalization policy was one of the basic instruments included in the stabilization program which meant a new way of introducing the country in international trade.

Trade liberalization started gradually as a unilateral policy in 1988 but made a strong impact only after 1990. The program included both a reduction in nominal protection and a significant reduction of tariff position that were subject to quantitative restrictions. By the end of 1991, nominal tariffs had been lowered to an average level of 12 percent and all import licenses had been eliminated (Galiani and Sanguinetti, 2003).

Trade liberalization significantly impacted trade flows. As can be seen in Figure I, between 1990 and 1998 the share of imports on GDP almost triplicated, going from 4.63% to 12.93%.

Figure I. Evolution of imports (% of GDP)



Source: own elaboration based on WDI, World Bank.

Also, Table I reports import penetration defined as imports to value-added disaggregated at industry level from 1993 to 1999. Import penetration increased in all sectors during this period, with the exception of beverages and footwear. On average, this index more than duplicated.

Table I. Import Penetration by Manufacturing Sector

Manufacturing sector	1993	1994	1995	1996	1997	1998	1999
Food products	12.9	14.6	13.3	14.6	13.7	17.0	14.4
Beverages	4.7	4.1	3.8	3.3	4.4	4.7	4.1
Tobacco	0.1	0.1	0.1	0.2	-	-	-
Textiles	36.5	36.2	41.3	52.5	51.2	56.8	49.7
Apparel (except fur apparel)	28.4	30.0	26.8	26.7	-	-	-
Dressing and dyeing of fur; articles of fur	12.6	15.5	11.5	18.7	26.8	50.5	44.3
Footwear	44.9	38.3	32.8	34.6	22.3	28.4	36.1
Wood production (non furniture)	28.6	40.4	55.4	63.1	61.5	67.0	62.4
Paper and paper products	79.7	86.5	98.4	119.2	82.2	80.2	83.4
Printing and related activities	7.5	9.3	11.6	11.2	-	-	-
Refine petroleum products	9.9	18.0	22.6	21.5	30.2	45.8	26.0
Basic chemicals	262.9	217.6	238.0	285.0	-	-	-
Other chemical products	32.5	38.7	39.2	44.5	-	-	-
Rubber products	64.8	66.5	70.5	88.4	109.4	107.6	153.7
Plastics products	23.2	29.5	30.9	29.5	40.3	37.9	31.9
Glass and glass products	26.4	31.6	30.9	32.9	39.9	51.7	47.2
Non-metallic mineral products n.e.c.	11.7	14.3	15.7	15.9	-	-	-
Basic iron and steel	51.1	48.8	45.7	44.6	59.6	63.6	74.7
Basic precious and non-ferrous metals	75.6	81.2	84.2	107.5	131.4	246.8	155.9
Other metal products	33.2	44.9	53.5	52.9	67.6	69.5	67.1
General purpose machinery	184.9	264.8	299.2	291.2	351.8	356.2	403.2
Domestic appliances n.e.c.	218.2	268.7	296.2	307.5	369.0	411.8	359.0
Medical appliances and instruments of precision	208.5	297.7	247.3	359.9	393.5	351.8	378.8
Motor vehicles	113.8	137.9	141.4	164.3	222.3	278.2	322.6
Furniture	18.2	17.5	13.3	19.9	47.2	46.3	52.7
Other manufacturing	171.6	188.5	217.5	234.0	448.0	422.6	415.1
Average	**67.8**	**78.5**	**82.3**	**94.0**	**128.6**	**139.7**	**139.1**

Source: own elaboration based on Nicita and Olarreaga database (2007).

Industry is well known to be a low-skill-labor sector relative to the average skill level of the economy. This can be seen in Table II, which shows the share of employment by skill group for the wide economy and for the manufacturing sector. Thus, given that manufacturing as a whole is a low-skill-labor intensive sector, if tariff reductions are larger for manufactures that employ high proportions of unskilled workers, the impact of trade liberalization on income distribution would be twice negative.

Table II. Share of skilled workers by sector

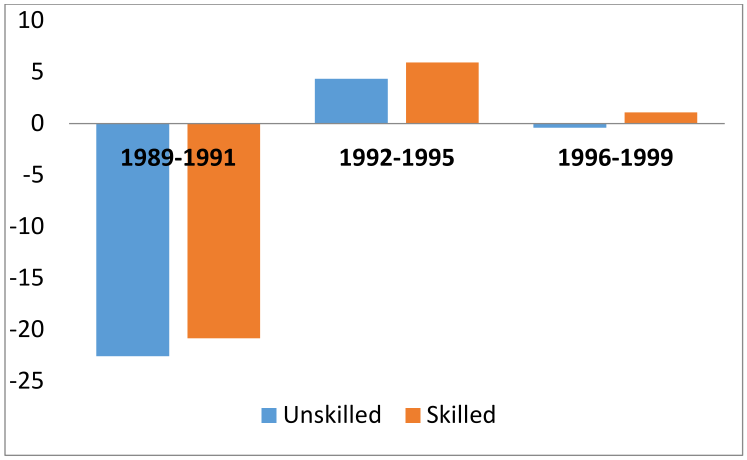
	Share of skilled workers (%)		
	1991	**1995**	**1999**
Manufacturing	9.99	12.01	14.96
Services	22.86	21.49	23.60
Total economy except manufacturing	22.87	21.56	21.12
Total economy	19.65	19.78	19.78

Source: own elaboration based on EPH (INDEC).

In Figure II we show the evolution of mean tariff for skilled and unskilled industries. We define as unskilled workers those with [0-8] years of education, and as skilled workers those with 9 or more. For each year, we classify a sector as skilled if the share of skilled workers is greater than the share of unskilled workers, and vice versa. In most cases we find that the sector classification is stable along time. However, since we are working with household surveys disaggregated at the 3 digit level, in some years we have sectors with few observations, and therefore it could happen that an industry that seems to be skilled abundant, in one year it has a larger share of unskilled workers than usual. We decide to dismiss these cases and classify a sector in each group for all years according to the category that predominates all over the panel. As a result, a sector will be considered either skilled or unskilled for every year in our data.

It can be seen that in the nineties tariffs reductions were relatively larger for unskilled sectors, so Argentina's trade policy during the nineties favored skilled industries relatively more.

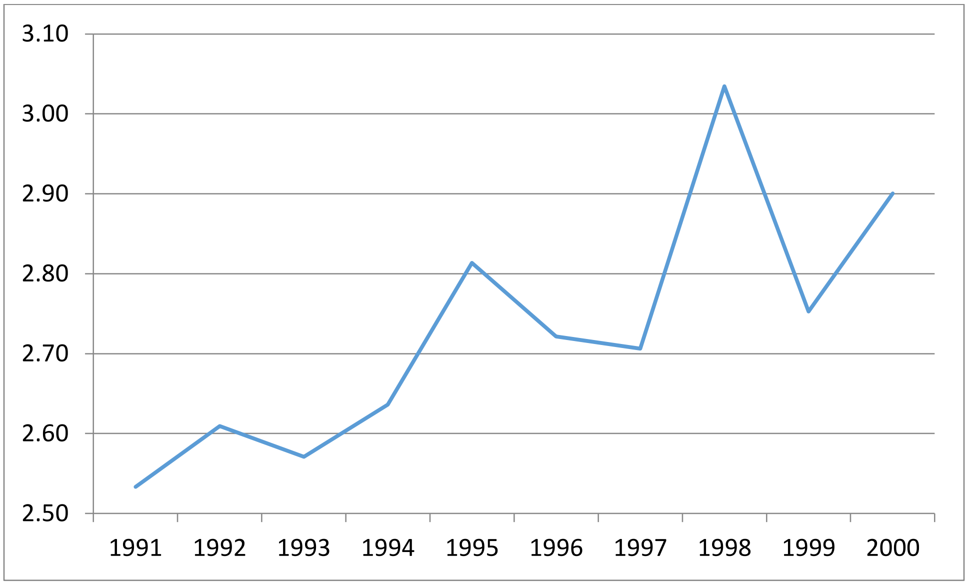
Figure II. Evolution of tariffs by skill group



Source: own elaboration based on Galiani and Porto (2010) and EPH (INDEC).

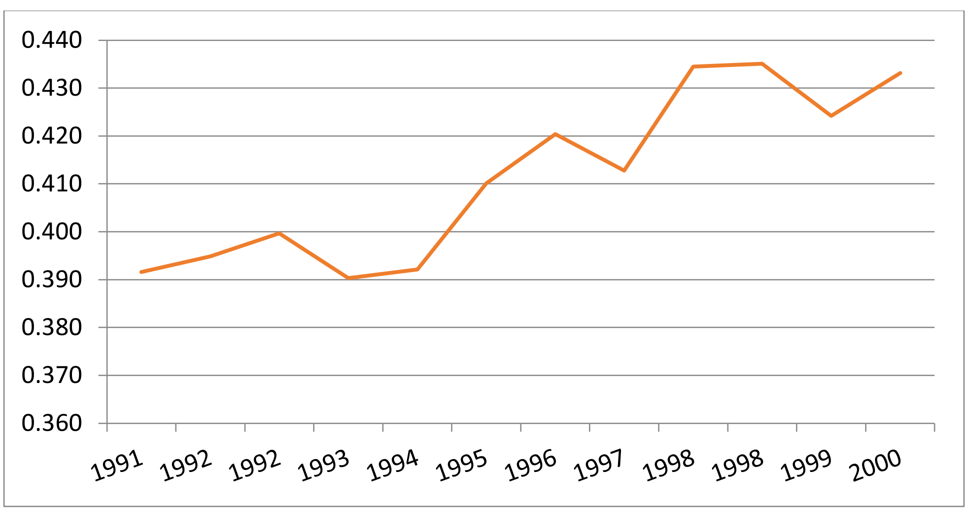
At the same time, inequality rose considerably, a common trend in Latin American countries during this decade. Alvaredo and Gasparini (2015) document that income inequality rose sharply in the region in the late 1980s and in the 1990s, probably as the result of recurrent macroeconomic crisis and some structural transformations. Figure III and IV show the wage gap between high skilled (14 or more years of education) and low skilled workers (8 or less) and the Gini coefficient on hourly wage in main job, respectively, for Argentina between 1991 and 2000.

Figure III. Wage gap



Source: own elaboration based on EPH (INDEC).

Figure IV. Gini coefficient on hourly wages



Source: own elaboration based on EPH (INDEC).

Given these two stylized facts, in the rest of this paper we investigate if trade liberalization could have been one of the factors behind the sharp increase in inequality.

3 Data

We use four different types of data: household-level data from the Permanent National Household Survey (EPH) carried out by the Argentinian national statistical office (INDEC) and standardized following the procedure used in SEDLAC (CEDLAS-Universidad Nacional de La Plata and World Bank); industry-level data from the trade and production database compiled by Nicita and Olarreaga (2007); import tariff data used by Galiani and Porto (2010); and multilateral real exchange rate series for Argentina published by the Central Bank of Argentina.

Household level data from EPH (INDEC) contains information on earnings, worker characteristics and industry affiliation. Information is homogenized to be consistent across time. We restrict the sample to individuals in working age (15 to 65 years old) who report positive labor earnings. We use surveys for the period 1991-1999.

The variables that we use from the household surveys in our analysis are labor earnings, age, gender, education, sector of employment, geographic location and formality status. These variables are used in our Mincer regressions in which we relate labor earnings with worker characteristics and include dummies for sector affiliation. The coefficients accompanying these dummies reflect industry wage premium, that is, differences in wages between workers that are exactly the same, except for their industry affiliation. The definition of sector of employment is expressed at the 3-digit level of the ISIC Revision 3 classification, so we match survey information to this classification using United Nations Statistics Division concordance tables.

Trade and production database from Nicita and Olarreaga (2007) collects sector data at the 3-digit level of ISIC Revision 2 classification sector. We use concordance tables again to translate them to Revision 3. This data contains information about imports, exports, value-added, output, number of employees and other variables, all at the sector level. With this data we construct two variables of relevance: i) productivity, defined as the ratio of output (or value added) to number of employees; and ii) trade openness, defined as the ratio of imports to output (or value-added). Both productivity and trade openness are interesting variables for explaining industry wage premiums. We have this information for the years 1993-1999.

Import tariff data is the same used by Galiani and Porto (2010). It consists on historical data collected by the authors from the *Guía Práctica del Exportador e Importador*, a monthly publication that provides current tariffs at the most disaggregated level of the National Import Tariff Classification (NADI). We have this information for the period 1991-1999.

Finally, we use multilateral real exchange rate data series published by the Central Bank of Argentina.

4 Empirical Strategy

We follow Goldberg and Pavcnik (2005) in investigating the effects of trade policy on wage inequality, who suggest a two-stage estimation methodology. In the first stage, the log of worker *i*'s wage is regressed on a vector of worker *i*'s characteristics, including age, gender, level of education, dummies for formality status and region of residence. Besides, we incorporate dummies for industry affiliation. The coefficients on the industry dummies are interpreted as industry wage premiums, and represent the part of the variation in wages that is explained solely by workers' industry affiliation, and not by workers' individual characteristics. In other words, they represent the difference in wages between workers that are exactly the same, except from the industry where they work. In this stage eq. (1) is regressed separately for each year on our sample:

$$\ln(w_{ijt}) = C_{ijt}\beta_C + I_{ijt}\, p_{jt} + \varepsilon_{ijt} \qquad (1)$$

where $\ln(w_{ijt})$ is the log of worker i's wage in sector j and time t; C_{ijt} is the vector of worker i's characteristics in sector j and time t and I_{ijt} are dummies for industry affiliation of worker i in sector j and time t.

The use of individual characteristics allows us to control for compositional differences across sectors. Average industry wages may vary across industries because of the different types of workers that each sector usually employs, and consequently sectors with a large share of skilled workers are likely to have higher average wages. If these industries have low tariffs, one would wrongly predict that protecting industries in the form of higher tariffs would lead to a decrease in their worker's wages. Note that this problem would not exist if industry composition were constant over time, since industry fixed effects could capture differences in composition between sectors.

Once we obtain the industry wage premium coefficients (p_{jt}), we compute a normalized industry wage premium variable, expressing each p_{jt} coefficient as deviation from the employment-weighted average industry wage premium (w_t), which is given by:

$$w_t = \sum_j p_{jt} * s_{jt}$$

where s_{jt} is the share of employment of sector j in year t. So, the normalized industry wage premium (φ_{jt}) is given by:

$$\varphi_{jt} = p_{jt} - w_t$$

This new variable is interpreted as the proportional difference in wages for a worker in a given industry relative to an average worker in all industries with the same observable characteristics.

Then we pool these normalized industry wage premiums over time and regress them on trade industry characteristics (included in the vector T_{jt}), namely tariffs, value of imports, degree of openness, productivity, multilateral real exchange rate and some interactions. Additionally, we include year and sector fixed effects (D_t and D_j, respectively).

Eq. (2) estimates the response of relative wages to trade policy changes, controlling for other observables.

$$\varphi_{jt} = T_{jt}\beta_T + D_t + D_j + u_{jt} \qquad (2)$$

Although there probably are other variables affecting industry wage premiums, data constraints prevent us from including them in the analysis. For instance, if omitted variables are correlated with tariff changes, the OLS estimated coefficients would be biased. However, if these variables affecting industry wage premiums are not correlated with trade policy changes, or if they are time invariant, our estimated trade policy effects would be correct.

Another problem arises if we think that policymakers take into account industry characteristics when deciding the degree of protection they will apply. This could be captured in the second stage of the estimation through industry fixed effects, if political economy factors that are important do not change much over time. However, if they do, for example responding to other variables that also affect wages, our estimations would be biased. Consequently, we instrument sector tariffs in Argentina with tariffs on the same sectors in Chile. The identification assumption is that Chilean tariffs are not correlated with any variable that affects industry wage premiums in Argentina other than tariffs in Argentina. As is well known, we can check correlation between sector tariffs in both countries looking at the estimator of the first stage of two stage least squares.

Finally, as the dependent variable in eq. (2) is estimated, it is measured with error. Although this does not affect consistency if this measurement error is uncorrelated with the independent variables, additional noise is introduced in eq. (2), which increases the variance of the estimators. To account for the fact that usually the noise in the dependent variable differs across sectors and depends on the variance of the estimated coefficients on industry dummies in eq. (1), we use weighted least squares (WLS) following Krueger and Summers (1988). This methodology consists on approximating the standard errors of the normalized wage premium coefficients by the standard errors of the coefficients of the original regression, and for the omitted base category by the standard error of the constant term.

4.1 Instrumental variables

As is well known, the fixed effects estimation does not control for unobserved time variant industry heterogeneity. Two problems may arise. First, if there are omitted variables in equation (2) that vary over time and are correlated simultaneously with industry wages and tariff protection, our OLS and WLS estimations will be biased. For example, exogenous shocks to world prices. Second, there could be time-varying selection into industries if trade liberalization leads to industries' compositional effects based on unobserved workers' characteristics. This bias could make coefficients be either under or over estimated. If more able workers tend to leave sectors with larger tariff cuts, the sample we get will be less able due to attrition. Therefore, our OLS and WLS estimators will be biased upwards. On the contrary, if we think that industries that experiment larger tariff cuts will dismiss less able workers, the sample will be composed by more able workers and the tariff coefficient will be biased downwards.[3]

In order to solve these potential problems, we instrument sector tariffs in Argentina with tariffs on the same sectors in Chile. The identification assumption is that Chilean tariffs are not correlated with any variable that affects industry wage premiums in Argentina other than Argentinean tariffs. Correlation between sector tariffs in both countries can be examined by looking at the estimator of the first stage of two stage least squares.

5 Results

The results we are interested in are those related to the second equation of the empirical strategy[4]. We want to know if changes in trade policy affect industry wage premiums through different hypothetical channels such as labor stickiness or imperfect competition in labor or product markets.

Although we count on tariff information since 1991, output data is only available since 1993, and that is why our regression sample consists on twenty-six industries with available data for the period 1993-1999. Six industries lack output information for the last three years but we decided to keep them anyway, in order to avoid taking any arbitrary decision with possible endogeneity bias behind.

Our most relevant results are shown in Table III. Columns (1) and (2) show estimations of eq. (2) using OLS method, columns (3) and (4) using WLS and (5) and (6) using IV.

We should remember that OLS has two potential problems. First, as the dependent variable is estimated, it is measured with error. Although this does not affect consistency if this measurement error is uncorrelated with the independent variables, additional noise is introduced in eq. (2), which increases

[3] See Goldberg and Pavcnik (2005).

[4] Estimations of equation (1) are shown in Table A.I. in the Appendix.

the variance of the estimators. To account for the fact that usually the noise in the dependent variable differs across sectors and depends on the variance of the estimated coefficients on industry dummies in eq. (1), we use weighted least squares (WLS). Second, there could be problems arising from omitted variables or selection. If there are omitted variables in equation (2) that vary over time and are correlated simultaneously with industry wages and tariff protection, our OLS and WLS estimations will be biased. Additionally, there could be time-varying selection into industries if trade liberalization leads to industries' compositional effects based on unobserved workers' characteristics. This bias could make coefficients be either under or over estimated. We address these problems using IV.

Specifications (1), (3) and (5) are regressions of the normalized industry premium in tariffs with three controls: openness (imports/value-added), productivity (value-added/number of employees) and MRER, as well as year fixed effects. Specifications (2), (4) and (6) are the same but include industry fixed effects. The inclusion of productivity as a control variable results of importance because otherwise we could be estimating spurious correlation. If more productive industries pay higher wages, and they receive the lowest protection because government thinks that they can survive international competition without it, we could falsely conclude that lower tariffs raise industry wage premiums when the factor behind the higher wages is just higher productivity.

It is remarkable the importance of accounting for unobserved time-invariant industry characteristics, since doing it reverses the sign of the tariff coefficient independently of the method used, making it positive (and statistically significant in WLS and IV) for explaining industry wage premiums. The reversion of the sign of the tariff coefficient is in line with the results of Goldberg and Pavcnik (2005), who also find that including industry fixed effects turns the coefficient from negative to positive in their study for Colombia's liberalization.

Table III. Estimation results

	OLS		WLS		IV	
	(1)	(2)	(3)	(4)	(5)	(6)
Tariffs	-0.008**	0.008	-0.008***	0.008**	-0.030	0.067*
	(0.003)	(0.006)	(0.002)	(0.004)	(0.038)	(0.039)
Openness	-0.001	0.037	0.018***	0.039	-0.021	-0.017
	(0.012)	(0.035)	(0.007)	(0.025)	(0.024)	(0.051)
Productivity	0.001***	0.000	0.001***	0.001*	0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
MRER	0.009	0.004	0.013*	0.006	0.026	-0.051
	(0.013)	(0.014)	(0.007)	(0.009)	(0.035)	(0.038)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	No	Yes	No	Yes	No	Yes
Observations	158	158	158	158	132	132

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Normalized Industry Wage Premium is the dependent variable. Specifications (5) and (6) have less observations because data of Chilean tariffs is not available for 1996.

As is expected, when we go from OLS to WLS, we gain efficiency, because WLS uses the inverse of the standard deviation of the wage premium coefficients estimated in the first stage as weights in the second regression. On the other hand, going from WLS to IV results in a larger coefficient of tariffs. This is in line with the hypothesis that industries that experimented larger tariff cuts have dismissed less able workers, resulting in a sample composed by more able workers, making the tariff coefficient biased downwards. Another possible reason could be that there are omitted variables that are correlated both with tariffs and industry wage premiums.

Our preferred specification is (6) as it solves the potential problems of endogeneity and selection. The magnitude of the effects is economically significant. For example, a reduction of 50-percentage points in tariffs leads to a 3.35% decline in the wage premium in this industry. This positive correlation between industry wage premiums and tariffs is consistent with the existence of sector rents that are reduced by trade liberalization, or, alternatively, with the predictions of some models of trade in which there exists labor stickiness across sectors.

6 Conclusions

Like many other Latin American countries, Argentina went through a broad liberalization program during the nineties. At the same time, wage inequality rose largely over this period.

Using data from household surveys and tariffs for Argentina, we find that worker affiliation is an important factor for explaining labor earnings, and that trade protection creates specific industry rents. We also find that accounting for unobservable time-invariant industry characteristics is crucial for understanding this relationship. Once we control for industry fixed effects in our regressions, we find that tariff protection has a positive and statistically significant effect on industry wage premiums.

Combining the above results with Argentina's tariff structure during this period, which protected relatively more sectors that employed higher proportions of skilled workers, it could be possible that nineties trade policy has contributed to the rise in inequality documented in the literature.

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Appendix

Table A.I. first stage estimations

	1993	1994	1995	1996	1997	1998	1999
Formality dummy (=1 if formal)	0.113***	0.114***	0.168***	0.051	0.222***	0.192***	0.314***
	(0.034)	(0.033)	(0.031)	(0.033)	(0.031)	(0.027)	(0.030)
Age	0.057***	0.039***	0.068***	0.060***	0.043***	0.052***	0.040***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)
Age^2	-0.001***	-0.000***	-0.001***	-0.001***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Gender dummy (=1 if men)	0.106***	0.164***	0.117***	0.297***	0.197***	0.255***	0.173***
	(0.036)	(0.034)	(0.033)	(0.035)	(0.036)	(0.031)	(0.033)
Beverages	0.297***	0.312***	0.097	-0.034	-0.055	0.171***	0.066
	(0.070)	(0.068)	(0.068)	(0.082)	(0.077)	(0.062)	(0.067)
Tobacco	0.467	0.472**	0.596***	0.333		0.325	0.485**
	(0.662)	(0.208)	(0.160)	(0.281)		(0.225)	(0.205)
Textiles	-0.025	-0.036	-0.048	-0.240***	-0.100	0.147*	-0.140
	(0.070)	(0.073)	(0.075)	(0.089)	(0.071)	(0.087)	(0.101)
Apparel (except fur apparel)	0.058	0.118**	-0.220***	0.055	-0.152***	0.156***	0.030
	(0.060)	(0.058)	(0.053)	(0.057)	(0.054)	(0.047)	(0.052)
Dressing and dyeing of fur; articles of fur		0.497	0.002	-0.048		-0.382	0.304
		(0.514)	(0.304)	(0.203)		(0.274)	(0.629)
Footwear	0.145**	0.094	-0.033	-0.137**	-0.095	0.066	-0.051
	(0.070)	(0.065)	(0.067)	(0.064)	(0.063)	(0.063)	(0.069)
Wood production (non furniture)	0.188*	0.202	0.071	-0.055	-0.099	0.069	0.099
	(0.103)	(0.130)	(0.156)	(0.144)	(0.123)	(0.109)	(0.093)
Paper and paper products	0.185**	0.210**	0.172**	-0.060	0.121	0.105	-0.058
	(0.078)	(0.082)	(0.079)	(0.094)	(0.081)	(0.073)	(0.090)
Printing and related activities	0.192**	0.314***	0.012	0.073	0.100	0.182***	0.067
	(0.085)	(0.074)	(0.067)	(0.080)	(0.070)	(0.057)	(0.066)
Refine petroleum products	0.570***	0.532***	0.438***	0.513***	0.628***	0.337***	0.275**
	(0.159)	(0.193)	(0.122)	(0.195)	(0.173)	(0.091)	(0.125)
Basic chemicals	0.284***	-0.251	0.232*	0.036	-0.006	0.362***	0.473***
	(0.108)	(0.189)	(0.131)	(0.143)	(0.158)	(0.095)	(0.141)
Other chemical products	0.203***	0.257***	0.336***	0.140**	0.266***	0.337***	0.230***
	(0.062)	(0.059)	(0.053)	(0.055)	(0.056)	(0.048)	(0.054)
Rubber products	0.079	0.067	-0.040	0.215**	0.229**	0.044	0.156
	(0.083)	(0.107)	(0.094)	(0.096)	(0.104)	(0.098)	(0.110)
Plastics products	0.011	0.119*	-0.007	-0.037	-0.039	0.132**	0.078
	(0.073)	(0.064)	(0.064)	(0.063)	(0.066)	(0.055)	(0.061)
Glass and glass products	0.539***	0.326***	0.149	0.302***	0.301**	0.323**	0.321***
	(0.118)	(0.109)	(0.106)	(0.113)	(0.133)	(0.137)	(0.116)
Non-metallic mineral	0.339***	0.330***	-0.120	-0.155*	-0.279***	0.025	0.063

products n.e.c.	(0.085)	(0.089)	(0.086)	(0.086)	(0.079)	(0.065)	(0.075)
Basic iron and steel	0.097	0.104	-0.221*	-0.085	0.093	0.155*	0.287***
	(0.114)	(0.098)	(0.120)	(0.128)	(0.104)	(0.093)	(0.099)
Basic precious and non-ferrous metals	0.114	0.206	0.267	0.164	0.173	0.350*	0.246
	(0.408)	(1.331)	(0.209)	(0.202)	(0.592)	(0.182)	(0.156)
Other metal products	0.132**	0.152***	-0.005	0.014	0.086	0.165***	-0.014
	(0.065)	(0.053)	(0.054)	(0.068)	(0.061)	(0.056)	(0.058)
General purpose machinery	-0.020	0.140*	0.148**	0.207**	0.309***	0.262***	0.177**
	(0.080)	(0.075)	(0.075)	(0.091)	(0.072)	(0.067)	(0.074)
Domestic appliances n.e.c.	0.156	0.010	0.203*	0.197	0.018	0.262***	-0.008
	(0.125)	(0.090)	(0.115)	(0.158)	(0.097)	(0.083)	(0.107)
Medical appliances and instruments of precision	0.127	-0.547**	0.057	0.256**	-0.315***	-0.125	0.230
	(0.154)	(0.214)	(0.115)	(0.113)	(0.111)	(0.155)	(0.149)
Motor vehicles	0.085	0.490***	0.438***	0.405***	0.302***	0.321***	0.351***
	(0.092)	(0.080)	(0.094)	(0.093)	(0.070)	(0.064)	(0.075)
Furniture	0.161**	0.075	0.124*	0.063	0.009	0.157***	0.077
	(0.071)	(0.063)	(0.067)	(0.084)	(0.076)	(0.058)	(0.069)
Other manufacturing	0.214*	0.137	-0.211**	-0.157*	-0.068	-0.115	0.186
	(0.118)	(0.093)	(0.106)	(0.090)	(0.150)	(0.092)	(0.127)
Observations	1,265	1,397	1,395	1,321	1,344	1,885	1,669
R-squared	0.409	0.404	0.538	0.452	0.451	0.469	0.424

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Regressions include region and level of education dummies.