Exports and Wage Premia: Evidence from Mexican Employer-Employee Data*

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Online Appendix

A Data Appendix

A.1 IMSS individual-level data

All private Mexican employers are legally required to report wages for their employees to the Mexican social security agency, *Instituto Mexicano del Seguro Social (IMSS)*. Not all employers comply; those that do not are commonly considered to be in the informal sector. The raw IMSS data can thus be considered a census of private, formal-sector establishments and their workforces for 1985-2005.[1,2]

The IMSS data contain information on the daily wage of individuals. The wages are a measure of total compensation, called the *salario base de cotización*, which includes both earnings and benefits, including payments made in cash, bonuses, commissions, room and board, overtime payments, and in-kind benefits. The data are reported as a sequence of spells for each worker, with beginning and end dates. In principle it is possible to recover a wage for every individual for every day of every year. We extracted data for September 30 for each year. At the level of individuals, the data also contain information on age, sex, and state and year of the individual's first registration with IMSS. At the establishment level, the data contain information only on location and industry (using the IMSS's own 4-digit industrial categories, of which there are 276.)

An important practical issue is that the bottom- and top-codes in the IMSS data have changed over time. Prior to 1991, IMSS allowed establishments to report wages below the corresponding regional minimum wage;[3] beginning in 1991, this practice was disallowed (even if actual wages presumably continued to be below the legal minimum in some cases). The changes in the top-code are illustrated in Appendix Figure B.1, which also displays several wage quantiles from the IMSS data.[4] To reduce biases due to changes in top- and bottom-codes, we "winsorize" the wage data, by replacing wages below the 10th percentile by the wage at the 10th percentile, and wages above the 90th percentile by the wage at the 90th percentile. This process also reduces the influence of outliers due to misreporting and other forms of measurement error.[5] Another potentially important measurement issue is that employers' payroll tax burdens depend on the wages they report to IMSS and hence they have an incentive to under-report wages. Kumler et al. (2015, 2020) document such under-reporting. But they also show that that the under-reporting appears to be minimal for the set of larger manufacturing plants that can be linked to the EIA plant panel; see Figure 10 of Kumler et al. (2015) and the corresponding discussion in the text. Moreover, as long as any under-reporting is constant over time within plant, it will be differenced out in our estimation procedure. A final point to notice in Appendix Figure B.1 is that average real wages dropped significantly following the peso devaluation in late 1994. (Nominal wages, perhaps surprisingly, remained nearly constant on average through the crisis; prices rose, driven by the increase in the peso price of imports, generating the fall in real wages.) The wage gains among exporters relative to non-exporters we report below should be understood in this context: real wages in exporting plants fell by less than in non-exporting plants.

We impose the following criteria in cleaning the data. (1) In its internal records, IMSS classifies wage records by types referred to as *modalidades*. We use only *modalidades* corresponding to permanent workers and for which consistent, reliable wage figures are available.[6] (2) We require that an individual have a positive wage. (3) We require that municipality and industry are reported for establishment. (4) We

[1] Most public-sector workers and employees of the state-run petroleum company are covered by separate systems.

[2] Previous papers using these data include Castellanos et al. (2004) and Kaplan et al. (2004, 2005).

[3] There are three minimum-wage regions in Mexico, with the minimum wage in Mexico City and other urban areas generally 10-20% higher than in poorer rural areas.

[4] Prior to 1993, the top-code was 10 times the minimum wage in Mexico City; in 1994, it was 18 times; and since 1995 it has been 25 times the minimum wage in Mexico City.

[5] Our procedure for dealing with the top- and bottom-coding differs from that of CHK, who impute wages above the top-codes in their data using a series of Tobit models. Given the large changes in the top-codes over time, we worry that such an imputation would risk introducing significant errors in our setting. Given that our aim is not to characterize firms' contributions to overall wage inequality, the advantages of such imputation seem small relative to the risk of errors they might introduce.

[6] In the IMSS internal classification system, we use *modalidades* 10, 13 and 17. This excludes rural casual laborers, self-employed individuals who are insured through IMSS, employees of rural agricultural cooperatives and credit unions, freelance workers, taxi drivers, domestic workers, miscellaneous public-sector workers insured through

winsorize wages within year, assigning wages above the 90th percentile to the 90th percentile and wages below the 10th percentile to the 10th percentile, for the reasons discussed above. (5) If wages for more than one establishment are observed simultaneously for a given individual, we keep only the highest-wage observation. (6) We require that individuals be 14 years or older and 64 years or younger. (7) We require that workers be employed in an establishment in the largest connected set of establishments, as described in Section 2 above.

The total number of workers with wage data in the "raw" IMSS files (i.e. the sample size after step 3 of the cleaning procedure described in the previous paragraph) ranges from approximately 4 million in 1985 to approximately 10 million in 2005. The numbers of individuals in the cleaned data, after step (6) above but before limiting to the largest connected sets, are in Appendix Table B.2. The numbers after limiting to the largest connected sets are in Table 1. Additional details on the IMSS data are available in Castellanos et al. (2004) and Kaplan et al. (2005, 2007).

A.2 EIA plant-level data

The variables in the *Encuesta Industrial Anual (EIA)*[7] are standard for plant surveys: employment, total wage bill, total hours worked, investment, capital stock, domestic and export sales, among others. The sampling design is less standard. INEGI has periodically drawn a deterministic sample of plants from a subset of manufacturing industries and followed those plants over time, with no refreshing of the sample. Plants with more than 100 workers are included with certainty in the initial year of each panel. INEGI has created separate panels for 1984-1994, 1993-2003, 2003-2009, and 2009-present.[8] Although it is possible to link some plants across panels, the number that can be linked both across panels and to the IMSS data is too small for our purposes. We therefore focus on the 1993-2003 panel. During this period, the EIA does not include information on *maquiladoras*, which are covered by a different dataset. Our cleaning procedure follows Appendix II of Verhoogen (2008). We first do imputations for missing information. We then require plants to have complete information at the plant level on employment (hours and number employed), hourly wage, total sales, export share, capital-labor ratio and foreign ownership.[9] After cleaning, there are 3,518 plants in a balanced panel with complete EIA information in every year over the 1993-2003 period. We refer to this sample as the "EIA panel." The sample was drawn in 1993, to include the largest plants in 205 of the 309 6-digit industries (*clases*) in the Mexican industrial classification system, covering 85% of the value of production in each industry. These plants were followed over time, with minimal refreshing of the sample. Further details are reported in Appendix II of Verhoogen (2008).

Capital stock was constructed using the perpetual-inventory method. Capital was classified into three types: machinery and equipment, land and buildings, and transportation equipment and other fixed assets. Following Olley and Pakes (1996), each type of capital was assumed to evolve according to $K_{jt} = (1 - \delta_j)K_{jt-1} + i_{jt-1}$, where j indexes the three types of capital. Following Levinsohn and Petrin (2003), the depreciation rates, δ_j for machinery and equipment, land and buildings, and transportation equipment were assumed to be 10%, 5% and 20% respectively. Total capital stock is the sum of the three types of capital. The book value of capital stock in 1993 was taken as the initial value.

The following cleaning procedures were implemented. (1) Plants in multi-plant firms for which complete information was not reported separately by plant were dropped. (2) Plants owned in whole or in part by government entities were dropped. (3) Establishments that appeared to be *maquiladoras*, because they derived more than 95% of their income from exports or subcontracting, were dropped. (4) Variables that changed within a plant by more than a factor of 10 from one year to the next were set to missing. (5) Missing values of variables were imputed following the procedure described in Appendix II of Verhoogen

IMSS, and a number of smaller categories.

[7]The name of INEGI's main plant panel has changed over time; in recent years, it is referred to as the *Encuesta Anual de la Industria Manufacturera (EAIM)* [Annual Survey of Manufacturing Industry].

[8]INEGI has also conducted a monthly version of the survey, formerly called the *Encuesta Industrial Mensual (EIM)* [Monthly Industrial Survey] and now called the *Encuesta Mensual de la Industria Manufacturera (EMIM)* [Monthly Survey of Manufacturing Industry], with slightly different periodization. Wage bill and hours for two occupational categories, white-collar (*empleados*) and blue-collar (*obreros*), are available from this companion survey.

[9]Foreign ownership is available only in the 1994 EIA; for a given plant, we impute the same value in other years.

(2008). (6) After imputation, plants with incomplete information on any key variable (employment, hours, wage bill, total costs, domestic sales, total sales, capital stock) were dropped. (7) The key variables listed in the previous point were "winsorized" at the 1st and 99th percentiles, following a suggestion Angrist and Krueger (1999).

We then selected a balanced panel of plants with complete data in all years 1993-2003, which we refer to as the EIA panel. 3,529 plants are included in this balanced panel. We then linked the EIA panel to the IMSS data and collapsed to the period level (period 1 is 1992-1994, period 2 is 1996-1998, period 3 is 2000-2002; see Section 3 for justification), averaging variables within period.[10] We then selected plants with estimated plant and average person components for all three periods. 2,621 plants satisfied this requirement. We refer to this balanced plant-period-level panel as the EIA-IMSS panel.

B Additional Results

For purposes of comparison to previous work, in this section we report results using plant size and TFP as proxies for plant capability. As measures of plant size, we consider log employment, log domestic sales, and log total sales.[11] To construct TFP, we use a version of the Levinsohn and Petrin (2003) methodology, with value-added as the outcome, employment (white collar and blue collar separately) and log capital as covariates, and log materials and log electricity as proxies for productivity, separately by 2-digit sector. The production-function estimates are reported in Appendix Table B.8. Appendix Tables B.9 and B.10 report estimates of equation (4) using plant size and TFP as proxies, in a format is similar to Table 5. The reduced-form relationships are qualitatively similar to our baseline results in Table 4: initially larger, higher-TFP plants saw a larger increase in plant-average wages and wage premia than smaller, lower-TFP plants over the years of the peso crisis relative to the later period without a devaluation. Again, essentially all of the differential increase in wages due to the peso devaluation can be attributed to changes in the plant component (i.e. wage premia), rather than sorting on skill. The first-stage results in Column 1, however, indicate that initial size and TFP are weaker predictors of the change in export share in response to the devaluation than initial export propensity. The first-stage F-statistics in both cases are below the Staiger and Stock (1997) rule-of-thumb level of 10, indicating that weakness of the instruments is a concern. It is worth noting that (unlike our baseline estimates) these specifications do not allow for differences across sectors in the relationship between underlying plant capability and export status, which may explain the weaker explanatory power in the first stage. The IV estimates in Panels A.2 and B.2 are larger than in our baseline specifications. The standard errors are also larger, and the differences are not statistically significant. Qualitatively, the basic story remains the same when using plant size or TFP as proxies, but because it is well known that weak instruments can lead to unreliable estimates, we have more confidence in the results using predicted export status or share in the instrument.

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[10] For period 1, we averaged EIA variables for 1993-1994, since the EIA variables are not available in 1992.

[11] In Melitz (2003)-type theoretical frameworks, more-capable plants are larger in equilibrium, and hence one can arguably infer plants' underlying capability from their employment or sales. Domestic sales have the attractive theoretical property that they are smoothly related to underlying capability (without discontinuities due to export entry) and were the preferred proxy in Verhoogen (2008) for that reason.

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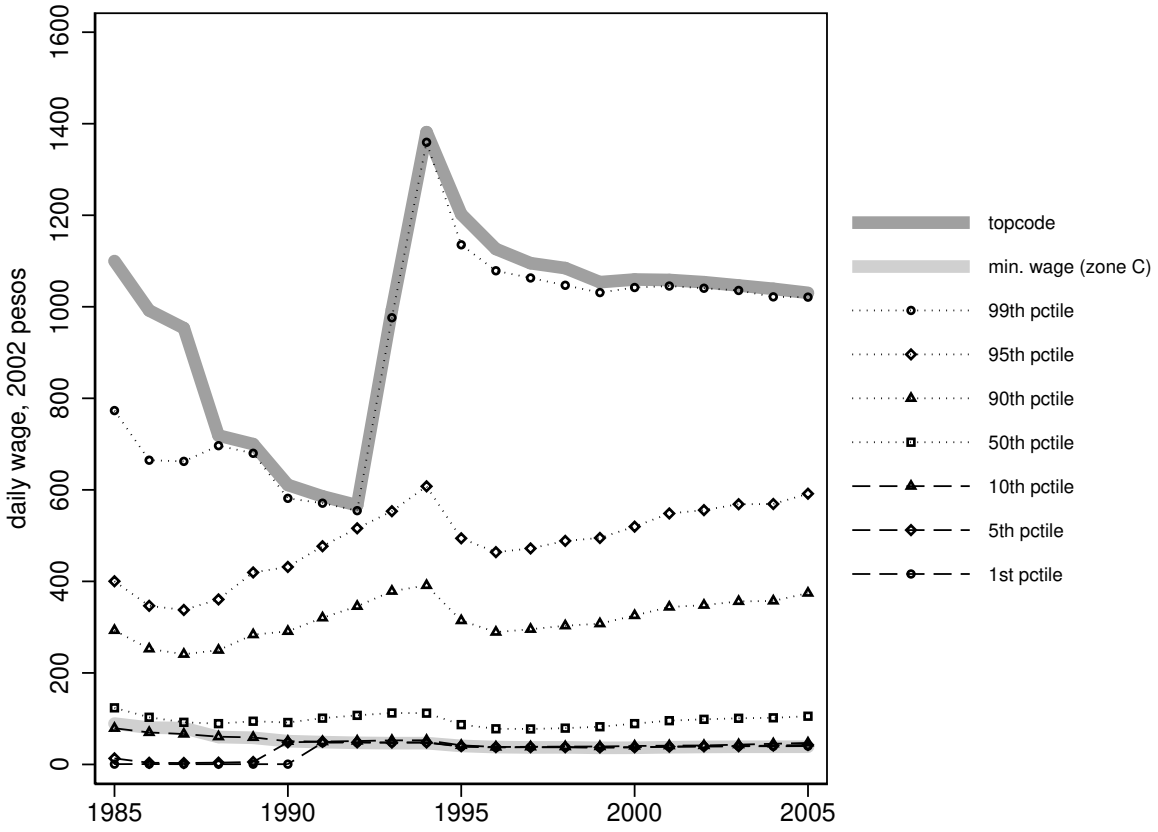
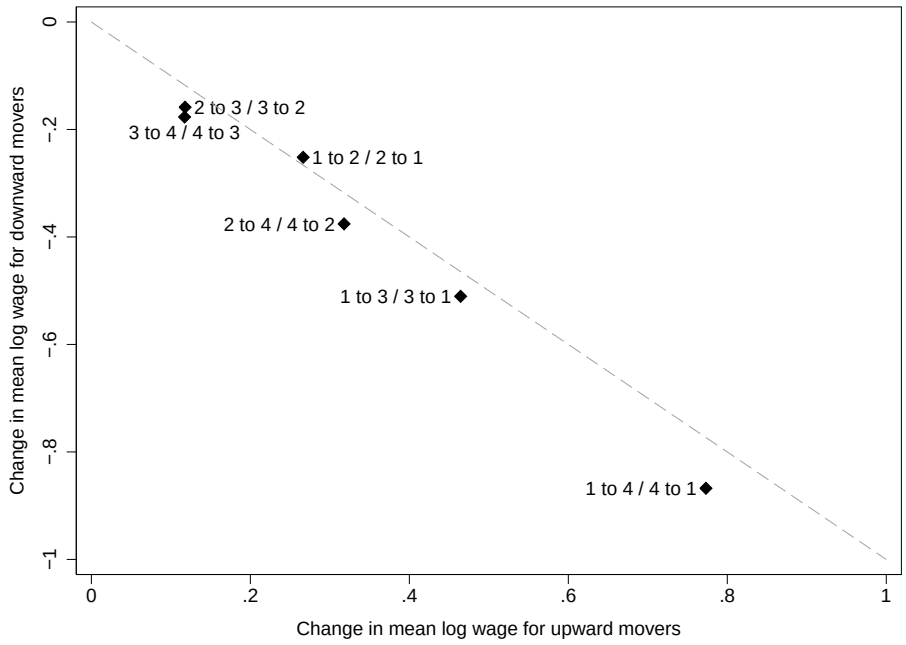
Figure B.1. Wage percentiles, top- and bottom-codes, IMSS data, 1985-2005



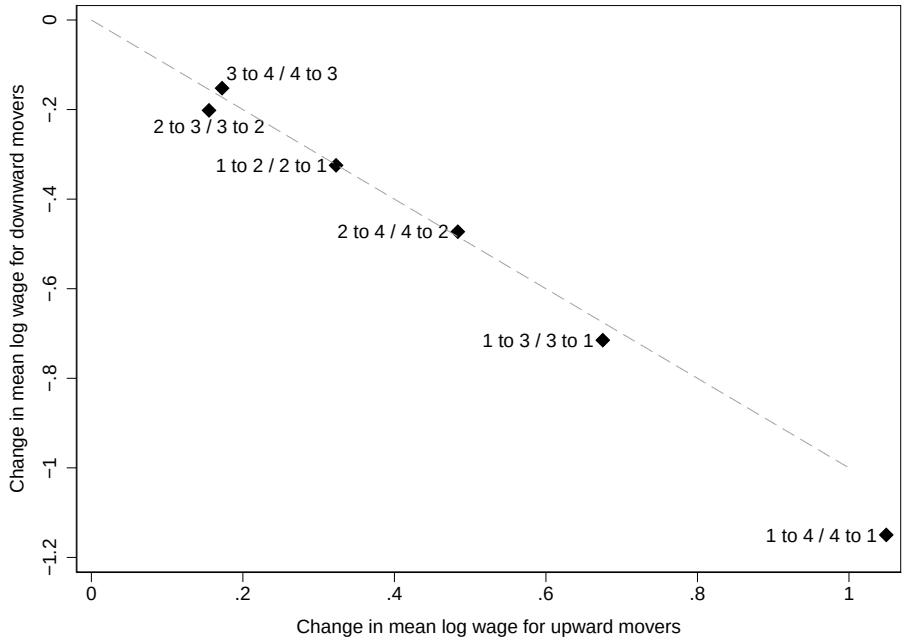
Notes: Wage percentiles calculated from raw IMSS data, after very basic cleaning (steps 1-3 of cleaning procedure described in Appendix A.1). There are three minimum wages in Mexico, corresponding to different geographic regions (zones A, B, C). Displayed is the minimum wage for Zone C, the lowest of the three. The top-code was 10 times the minimum wage in Mexico City (Zone A) from 1985-1993, 18 times in 1994, and 25 times from 1995-2005. Prior to 1991, establishments were allowed to report wages below the corresponding minimum wage to IMSS. Beginning in 1991, this practice was disallowed. Average 2002 exchange rate: 9.60 pesos/US$1.

Figure B.2. Comparing upward and downward moves, IMSS data, 1992-1995



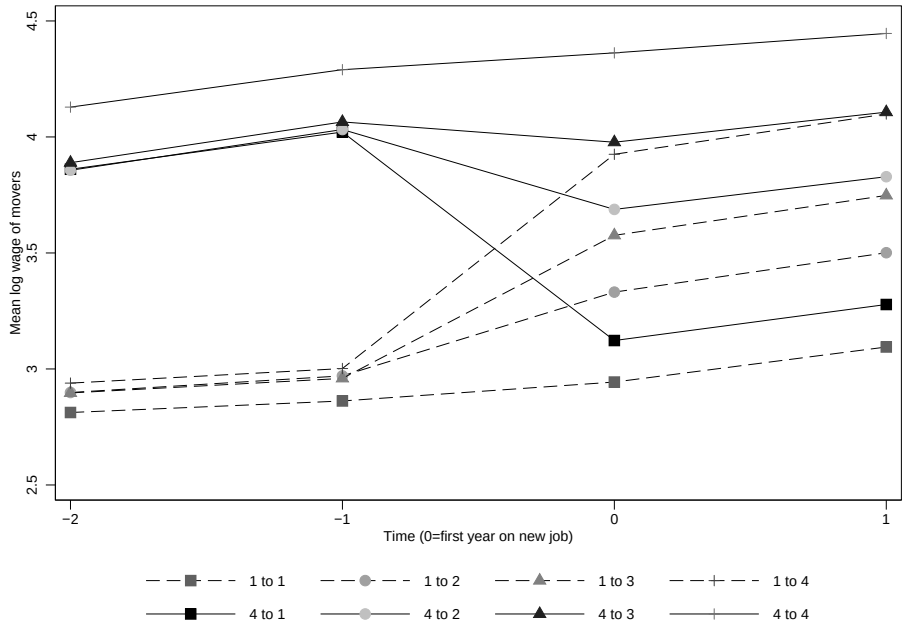
Notes: Sample is all workers observed in 1992-1995 in the IMSS database (after cleaning steps 1-6 described in Appendix A.1) who changed job between 1993 and 1994 and held both the preceding and new job for at least two years. The dashed line is at −45 degrees. Each dot plots upward and downward transitions between two types of firms, classified according to quartiles of average coworkers' wage. Wage changes are changes in log real wage, averaged over workers making same transition, between 1993 and 1994.

Figure B.3. Comparing upward and downward moves, IMSS data, 2000-2003



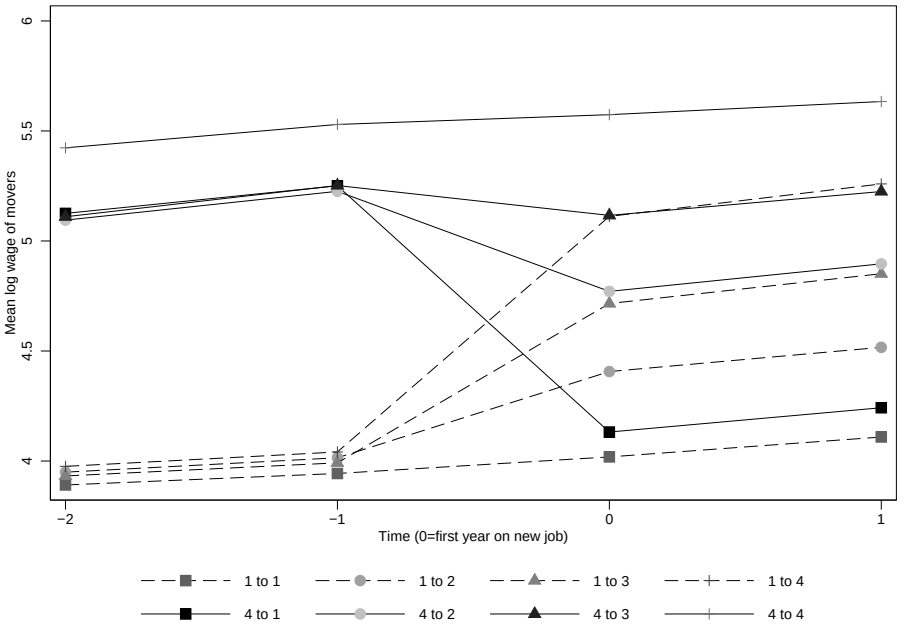
Notes: Sample is all workers observed in 2000-2003 in the IMSS database (after cleaning steps 1-6 described in Appendix A.1) who changed job between 2000 and 2001 and held both the preceding and new job for at least two years. The dashed line is at −45 degrees. Each dot plots upward and downward transitions between two types of firms, classified according to quartiles of average coworkers' wage. Wage changes are changes in log real wage, averaged over workers making same transition, between 2000 and 2001.

Figure B.4. Movers' mean nominal wages, IMSS data, 1992-1995



Notes: Figure is similar to Figure 3 but shows *nominal* wage changes. Sample is all workers observed in 2000-2003 in the IMSS database (after cleaning steps 1-6 described in Appendix A.1) who changed job between 2001 and 2002 and held both the preceding and new job for at least two years. Each line corresponds to a transition between types of firms classified by quartiles of the average coworkers' wage.

Figure B.5. Movers' mean nominal wages, IMSS data, 2000-2003



Notes: Figure is similar to Figure 4 but shows *nominal* wage changes. Sample is all workers observed in 2000-2003 in the IMSS database (after cleaning steps 1-6 described in Appendix A.1) who changed job between 2001 and 2002 and held both the preceding and new job for at least two years. Each line corresponds to a transition between types of firms classified by quartiles of the average coworkers' wage.

Table B.1. Aggregate labor force statistics

	1990	2000
Total population	81.25	97.48
Economically active pop. age > 14	31.23	40.16
Remunerated workers	25.96	32.01
Remunerated workers, private sector	21.27	27.20
Workers registered in IMSS	10.76	15.24
Workers registered in IMSS, permanent	9.53	13.53

Notes: Numbers in millions. Figures drawn from *Anuario Estadístico de los Estados Unidos Mexicanos* [Statistical Yearbook of Mexico], 2005, which draws in turn from the following: decennial population censuses (total population), 1991 *Encuesta Nacional de Empleo* [National Employment Survey] (economically active population age > 14), INEGI Banco de Información Económica (remunerated employees), and IMSS *Memoria Estadística*.

Table B.2. Summary statistics, IMSS individual-level data, before limiting to largest connected sets

					avg. daily wage (raw, 2002 pesos)		avg. daily wage (winsorized, 2002 pesos)	
year	# individuals	# establishments	avg. age	fraction male	mean	std. dev.	mean	std .dev.
1988	5,257,200	426,570	31.76	0.72	146.81	702.83	115.61	62.21
1989	5,993,961	469,018	31.29	0.70	151.86	618.46	125.50	73.70
1990	6,869,806	538,274	31.02	0.69	144.82	417.67	123.23	78.16
1991	7,546,628	596,124	31.01	0.68	153.03	235.67	134.68	86.85
1992	7,756,268	621,246	31.10	0.68	161.18	264.05	142.49	94.67
1993	7,659,363	615,684	31.41	0.68	180.30	249.97	152.09	105.07
1994	7,843,005	619,991	31.58	0.67	190.37	259.41	155.34	109.18
1995	7,413,728	600,015	32.01	0.67	152.28	202.47	122.94	87.77
1996	7,998,174	617,721	31.95	0.67	139.70	187.39	111.67	80.87
1997	8,592,365	640,381	31.92	0.67	140.61	194.91	112.75	83.02
1998	9,001,372	653,151	32.03	0.67	142.99	177.21	115.34	85.46
1999	9,578,857	674,710	32.17	0.66	145.03	176.33	117.56	86.67
2000	10,203,195	711,176	32.32	0.65	153.09	181.65	125.09	91.72
2001	10,103,668	736,849	32.85	0.65	160.87	187.25	132.29	97.03
2002	10,151,601	748,620	33.20	0.65	163.62	189.03	134.94	98.13

Notes: Sample is from IMSS employer-employee records after cleaning steps 1-6 in Appendix A.1 (before restricting to largest connected sets). Winsorization is at 10th and 90th percentiles. Wages are reported both in "raw" (i.e. pre-winsorized) and winsorized form. See Section 3 and Appendix A.1 for further details. Average 2002 exchange rate: 9.60 pesos/US$1.

Table B.3. Summary statistics, EIA panel, 1993

	(1) non-exporters	(2) exporters	(3) all plants
Sales	138.37	295.96	182.72
	(5.61)	(15.15)	(5.99)
Employment (workers)	181.08	330.72	223.19
	(4.73)	(11.90)	(4.90)
Employment (hours)	434.39	776.46	530.65
	(11.49)	(28.24)	(11.75)
White-collar share	0.30	0.34	0.32
	(0.00)	(0.01)	(0.00)
K/L	145.49	194.85	159.38
	(4.78)	(8.98)	(4.28)
Hourly wage	42.92	60.43	47.85
	(0.48)	(1.08)	(0.48)
Foreign ownership indicator	0.08	0.30	0.14
	(0.01)	(0.01)	(0.01)
Export share of sales		0.15	0.04
		(0.01)	(0.00)
Import share of material purchases	0.14	0.30	0.18
	(0.00)	(0.01)	(0.00)
N	2528	990	3518

Notes: Table reports statistics using 1993 data from EIA panel (before linking to IMSS data). Standard errors of means in parentheses. Exporter defined as export sales > 0. Export share is fraction of total sales derived from exports. Sales are measured in millions of 2002 Mexican pesos, capital-labor ratio in thousands of 2002 pesos, and average daily wage in 2002 pesos. Average 2002 exchange rate: 9.60 pesos/US$1. For further details, refer to Section 3 and Appendix A.2.

Table B.4. Number of EIA plants linked to IMSS data, by connected set status

	EIA panel plants	EIA panel plants linked to IMSS			EIA panel plants not linked to IMSS	EIA-IMSS panel plants
		Total	Connected	Not connected		
Period 1 (1992-1994)	3,518	2,765	2,742	23	753	2,621
Period 2 (1996-1998)	3,518	2,898	2,863	35	620	2,621
Period 3 (2000-2002)	3,518	2,867	2,807	60	651	2,621

Notes: Data from IMSS employer-employee records and EIA plant panel as described in Section 3. "Connected" means contained in the largest connected set, as described in Section 2.

Table B.5. Estimation of std. dev. and correlation of fixed effects, per period

	(1) Period 1 1992-1994	(2) Period 2 1996-1998	(3) Period 3 2000-2002
Number of individuals	1,695,842	2,002,150	2,548,604
Number of plants	231,086	236,054	282,437
AKM			
Std. dev. individual effect	0.438	0.434	0.433
Std. dev. plant effect	0.331	0.368	0.395
Corr. individual/plant effects	0.092	0.143	0.132
KSS			
Std. dev. individual effect	0.413	0.406	0.408
Std. dev. plant effect	0.318	0.355	0.386
Corr. individual/plant effects	0.159	0.216	0.185
Additional statistics			
Std dev. of log wages	0.590	0.625	0.641
Number of individuals	1,695,842	2,002,150	2,548,604

Notes: This table reports variance decompositions using the AKM and Kline et al. (2020) "leave-one-out" method on the Kline et al. (2020) "leave-out" connected samples in each period.

Table B.6. Calculation of export propensity

	dep. var.: export status			export share
	(1)	(2)	(3)	(4)
log emp. (hours)	0.179		-0.205	0.271
	(1.438)		(1.144)	(0.477)
log emp. (hours) squared	-0.022		0.051	-0.045
	(0.236)		(0.190)	(0.078)
log emp. (hours) cubed	0.002		-0.003	0.003
	(0.013)		(0.011)	(0.004)
log sales	-0.953	-0.502		-0.123
	(1.876)	(1.466)		(0.622)
log sales squared	0.095	0.066		0.013
	(0.166)	(0.131)		(0.055)
log sales cubed	-0.003	-0.002		-0.000
	(0.005)	(0.004)		(0.002)
log K/L	0.010		0.018	0.008
	(0.017)		(0.016)	(0.006)
log VA/L	0.017		0.032	0.001
	(0.019)		(0.015)	(0.006)
log investment/L	0.012		0.015	0.002
	(0.009)		(0.009)	(0.003)
skill share	0.078	0.036	0.086	-0.023
	(0.103)	(0.094)	(0.099)	(0.034)
foreign	0.059	0.062	0.064	0.018
	(0.032)	(0.030)	(0.030)	(0.011)
state-period effects	Y	Y	Y	Y
6-digit industry-period effects	Y	Y	Y	Y
N (plants)	3518	3518	3518	3518
N (obs)	38698	38698	38698	38698
R-squared	0.35	0.31	0.33	0.35

Notes: Table reports *means* of coefficient estimates and standard errors, averaging across interactions with 4-digit industry indicators, for preliminary stage, equation (7) in text, using EIA panel. Numbers of plants and observations and R-squareds are for overall regression.

Table B.7. Cross-sectional correlations, period 1 (1992-1994)

	(1) log emp. (hours)	(2) log K/L	(3) log avg. hourly wage (EIA)	(4) avg. log daily wage (IMSS)	(5) plant component	(6) avg. person component
pred. export status	2.925***	1.889***	0.888***	0.546***	0.352***	0.190***
	(0.084)	(0.130)	(0.048)	(0.031)	(0.024)	(0.020)
pred. export status, no emp.	3.238***	2.034***	1.135***	0.710***	0.457***	0.250***
	(0.093)	(0.140)	(0.050)	(0.034)	(0.026)	(0.023)
pred. export status, no sales	3.169***	2.026***	0.898***	0.546***	0.352***	0.190***
	(0.083)	(0.132)	(0.050)	(0.032)	(0.025)	(0.021)
pred. export share	6.446***	4.628***	1.619***	0.999***	0.733***	0.254***
	(0.285)	(0.448)	(0.153)	(0.099)	(0.071)	(0.058)
6-digit industry effects	Y	Y	Y	Y	Y	Y
region (state) effects	Y	Y	Y	Y	Y	Y
N	2621	2621	2621	2621	2621	2621

Notes: Each panel reports six regressions, all corresponding to period 1 (1992-1994). See Sections 2 and 5 for details of construction of proxies. Robust standard errors in parentheses. *10% level, **5% level, ***1% level.

Table B.8. Construction of TFP

	Dependent variable: log value added								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	ind. 31	ind. 32	ind. 33	ind. 34	ind. 35	ind. 36	ind. 37	ind. 38	ind. 39
log white-collar empl.	0.187***	0.128***	0.126**	0.364***	0.313***	0.073*	0.223***	0.156***	0.291**
	(0.028)	(0.037)	(0.052)	(0.036)	(0.031)	(0.038)	(0.071)	(0.019)	(0.139)
log blue-collar empl.	0.271***	0.290***	0.531***	-0.037	0.039	0.261***	0.141	0.157***	0.014
	(0.038)	(0.051)	(0.117)	(0.031)	(0.042)	(0.051)	(0.097)	(0.036)	(0.249)
log capital	0.354***	0.052	0.138	0.148***	0.298***	0.539**	0.165	0.128*	0.247
	(0.059)	(0.056)	(0.128)	(0.057)	(0.040)	(0.220)	(0.121)	(0.076)	(0.188)
N (plants)	608	572	122	311	741	225	81	814	40
N (obs)	6486	6085	1306	3353	7981	2396	870	8769	429

Notes: Columns 1-9 report coefficients from Levinsohn and Petrin (2003) TFP estimation, with log value-added as outcome, log employment (white-collar and blue-collar separately) and log capital as covariates, and log materials and log electricity as proxies, separately by 2-digit industry. The industries (indicated at top) are: food, beverages, tobacco (31); textiles, apparel, leather goods (32); wood products, including wood furniture (33); paper, papers, products, publishing (34); chemical products (35); non-metallic mineral products (36); basic metal products (37); metal products, machinery, equipment (38); other manufacturing (39). Observations with negative or zero value-added omitted. If capital or employment variable has value zero, log is set to zero. Standard errors in parentheses. *10% level, **5% level, ***1% level.

Table B.9. Alternative proxies: sales and employment

	(1) △ export share	(2) △ avg. log daily wage	(3) △ plant comp.	(4) △ avg. person comp.
A. Log total sales as proxy				
1. First stage and reduced form				
init. log sales × devaluation	0.010***	0.033***	0.032***	0.001
	(0.003)	(0.004)	(0.005)	(0.005)
init. log sales	0.002	0.006***	0.003	0.003
	(0.002)	(0.002)	(0.004)	(0.003)
F-stat	14.494			
2. IV				
△ export share		3.321***	3.260***	0.084
		(0.915)	(0.970)	(0.492)
init. log sales		0.000	-0.003	0.003
		(0.006)	(0.007)	(0.004)
B. Log domestic sales as proxy				
1. First stage and reduced form				
init. log domestic sales × devaluation	0.008***	0.032***	0.030***	0.002
	(0.003)	(0.004)	(0.006)	(0.005)
init. log domestic sales	0.006***	0.006**	0.004	0.002
	(0.002)	(0.002)	(0.004)	(0.004)
F-stat	9.289			
2. IV				
△ export share		3.799***	3.591***	0.239
		(1.278)	(1.283)	(0.586)
init. log domestic sales		-0.016	-0.017	0.001
		(0.012)	(0.013)	(0.006)
C. Log employment (hours) as proxy				
1. First stage and reduced form				
init. log employment (hours) × devaluation	0.009***	0.029***	0.040***	-0.011
	(0.003)	(0.006)	(0.008)	(0.007)
init. log employment (hours)	0.004*	0.012***	0.002	0.010**
	(0.002)	(0.003)	(0.005)	(0.005)
F-stat	7.220			
2. IV				
△ export share		3.237**	4.491**	-1.232
		(1.309)	(1.787)	(0.857)
init. log employment (hours)		0.000	-0.014	0.015**
		(0.010)	(0.015)	(0.007)
6-digit industry × period effects	Y	Y	Y	Y
region (state) × period effects	Y	Y	Y	Y
N (plants)	2621	2621	2621	2621
N (obs)	5242	5242	5242	5242

Notes: Specifications similar to Panels B-C, Columns 1, 4-6, of Table 4. Robust standard errors in parentheses. *10% level, **5% level, ***1% level.

Table B.10. Alternative proxy: Log TFP (Levinsohn-Petrin)

	(1) △ export share	(2) △ avg. log daily wage	(3) △ plant comp.	(4) △ avg. person comp.
A. First stage and reduced form				
init. log TFP (Levinsohn-Petrin) × devaluation	0.009***	0.029***	0.036***	-0.007
	(0.003)	(0.005)	(0.007)	(0.006)
init. log TFP (Levinsohn-Petrin)	0.001	0.009***	-0.001	0.010**
	(0.002)	(0.003)	(0.005)	(0.005)
F-stat	8.710			
B. IV				
△ export share		3.036***	3.799***	-0.738
		(1.092)	(1.407)	(0.684)
init. log TFP (Levinsohn-Petrin)		0.007	-0.003	0.010**
		(0.007)	(0.009)	(0.005)
6-digit industry × period effects	Y	Y	Y	Y
region (state) × period effects	Y	Y	Y	Y
N (plants)	2584	2584	2584	2584
N (obs)	5168	5168	5168	5168

Notes: Specifications are similar to Panels B-C, Columns 1, 4-6, of Table 4. See Section 5 and notes to Table B.8 for construction of log TFP. Observations with negative value-added have been dropped and only plants with TFP estimates in all periods included, resulting in a smaller panel than in Table 4. Robust standard errors in parentheses. *10% level, **5% level, ***1% level.

Table B.11. Estimates using quartiles of predicted export status

	(1) △ exp. share	(2) △ log K/L	(3) △ log avg. hourly wage (EIA)	(4) △ avg. log daily wage (IMSS)	(5) △ plant component	(6) △ person component
A. Reduced form						
init. pred. export status Q2 × devaluation	0.014**	0.070	0.002	0.015	-0.002	0.018
	(0.007)	(0.046)	(0.022)	(0.013)	(0.019)	(0.017)
init. pred. export status Q3 × devaluation	0.031***	0.008	0.006	0.029**	0.017	0.013
	(0.008)	(0.044)	(0.022)	(0.013)	(0.018)	(0.016)
init. pred. export status Q4 × devaluation	0.061***	0.043	0.052**	0.065***	0.058***	0.006
	(0.009)	(0.042)	(0.020)	(0.012)	(0.016)	(0.014)
init. pred. export status Q2	-0.000	0.018	0.026*	0.028***	0.024*	0.004
	(0.005)	(0.029)	(0.014)	(0.009)	(0.013)	(0.012)
init. pred. export status Q3	-0.002	0.043	0.043***	0.022**	0.030**	-0.008
	(0.005)	(0.030)	(0.014)	(0.009)	(0.013)	(0.011)
init. pred. export status Q4	-0.003	0.069**	0.044***	0.026***	0.013	0.013
	(0.005)	(0.029)	(0.013)	(0.008)	(0.012)	(0.010)
F-stat	17.724					
B. IV estimates						
△ export share		0.364	0.869***	1.056***	1.020***	0.039
		(0.625)	(0.324)	(0.236)	(0.273)	(0.212)
init. pred. export status Q2		0.051**	0.021*	0.028***	0.015	0.013
		(0.022)	(0.011)	(0.007)	(0.010)	(0.008)
init. pred. export status Q3		0.042*	0.034***	0.022***	0.024**	-0.002
		(0.022)	(0.011)	(0.008)	(0.010)	(0.008)
init. pred. export status Q4		0.081***	0.046***	0.029***	0.014	0.015*
		(0.026)	(0.012)	(0.009)	(0.011)	(0.009)
6-digit industry × period effects	Y	Y	Y	Y	Y	Y
region (state) × period effects	Y	Y	Y	Y	Y	Y
N (plants)	2621	2621	2621	2621	2621	2621
N (obs)	5242	5242	5242	5242	5242	5242

Notes: Specification is similar to baseline (Table 4 but with indicator variables for quartile of predicted export status distribution in place of a linear term (both interacted with devaluation indicator and entered separately). Robust standard errors in parentheses. *10% level, **5% level, ***1% level.