

Imports, (Exports,) Employment, and  
Wages: Facts and the Role of Unions  
*France 1986-1992*

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Table 8

## Employment growth and trade

	Employment growth							
	All origins	EC	Non-EC OECD	Low wage	All origins	EC	Non-EC OECD	Low wage
$\Delta$ (FG imports/sales)	-0.445** (0.041)	-0.432** (0.046)	-0.352* (0.149)	-0.517** (0.080)	-0.579** (0.012)	-0.523** (0.015)	-0.904** (0.033)	-0.589** (0.025)
$\Delta$ (II imports/sales)	-0.224** (0.039)	-0.239** (0.044)	-0.210 (0.132)	-0.161 (0.087)	-0.352** (0.013)	-0.337** (0.015)	-0.305** (0.040)	-0.445** (0.032)
$\Delta$ (exports/sales)	0.103** (0.034)	0.135** (0.040)	-0.027 (0.099)	0.054 (0.072)	0.126** (0.009)	0.137** (0.011)	0.070* (0.029)	0.102** (0.021)
$\Delta$ (local purchases/sales)	-0.482** (0.014)		-0.482** (0.014)		-0.634** (0.009)		-0.635** (0.009)	
Growth of sales	0.745** (0.003)		0.745** (0.003)		0.716** (0.002)		0.717** (0.002)	
Weighted by employment	No		No		Yes		Yes	
$R^2$	0.575		0.576		0.676		0.676	

Sources: Customs Files, BAL 1986–1987 and 1991–1992; 116,426 continuing firms in the manufacturing industry (with non-zero average employment across the period); FG = Final Goods (same 3 digit imported product as importing firm industry); II = Intermediary Inputs (other imported products).

\*\* and \* Denote coefficients significant at less than 1% and less than 5%. Standard errors are between parentheses. The regression includes indicators for initial firm size, initial import status, NAP 600 affiliation, and for being part of a French or foreign group. The coefficients are not reported.

Table 13  
Skill structure changes and trade (production workers)

	Change in the fraction of production workers in total employment							
	All origins	EC	Non-EC OECD	Low wage	All origins	EC	Non-EC OECD	Low wage
$\Delta$ (FG imports/sales)	-0.077** (0.012)	-0.076** (0.013)	-0.126** (0.041)	-0.068** (0.024)	-0.070** (0.010)	-0.062** (0.012)	-0.143** (0.024)	-0.050* (0.020)
$\Delta$ (II imports/sales)	-0.033** (0.011)	-0.037** (0.012)	-0.040 (0.039)	-0.011 (0.027)	-0.017 (0.010)	-0.013 (0.011)	-0.049 (0.030)	-0.018 (0.026)
$\Delta$ (exports/sales)	0.027** (0.009)	0.024* (0.010)	0.030 (0.024)	0.036 (0.019)	0.035** (0.007)	0.025** (0.008)	0.097** (0.020)	0.039* (0.015)
$\Delta$ (local purchases/sales)	-0.062** (0.007)		-0.062** (0.007)		-0.074** (0.007)		-0.075** (0.007)	
Growth of sales	0.008** (0.002)		0.008** (0.002)		0.007** (0.002)		0.007** (0.002)	
Weighted by employment	No		No		Yes		Yes	
$R^2$	0.043		0.043		0.184		0.186	

Sources: Customs Files, BAL-ESE 1986–1987 & 1991–1992; 17,190 continuing firms in the manufacturing industry; FG=Final Goods (same 3 digit imported product as importing firm industry); II=Intermediary Inputs (other imported products).

\*\* and \* Denote coefficients significant at less than 1% and less than 5%. Standard errors are between parentheses. The regression includes indicators for initial firm size, initial import status, NAP 600 affiliation, and for being part of a French or foreign group. The coefficients are not reported.

Table 14  
Skill structure changes and trade (unskilled production workers)

	Change in the fraction of unskilled workers within production workers							
	All origins	EC	Non-EC OECD	Low wage	All origins	EC	Non-EC OECD	Low wage
$\Delta$ (FG imports/sales)	-0.025 (0.023)	-0.034 (0.026)	0.102 (0.082)	-0.032 (0.046)	-0.054** (0.019)	-0.028 (0.022)	-0.177** (0.047)	-0.072 (0.040)
$\Delta$ (II imports/sales)	0.001 (0.022)	-0.015 (0.024)	-0.005 (0.075)	0.106* (0.053)	-0.071** (0.019)	-0.070** (0.021)	-0.197** (0.059)	0.023 (0.049)
$\Delta$ (exports/sales)	-0.027 (0.017)	-0.044* (0.019)	0.025 (0.047)	0.013 (0.036)	-0.054** (0.013)	-0.042** (0.015)	-0.094* (0.039)	-0.090** (0.030)
$\Delta$ (local purchases/ sales)	-0.028* (0.014)		-0.029* (0.014)		-0.034* (0.014)		-0.034* (0.014)	
Growth of sales	0.013** (0.003)		0.013** (0.003)		0.019** (0.003)		0.019** (0.003)	
Weighted by employment	No		No		Yes		Yes	
$R^2$	0.030		0.031		0.179		0.180	

Notes: Same as Table 13.

Table 15

## Employment growth and skill structure changes: trade and (or) innovation

	Employment growth		Change in fraction of production workers		Change in fraction of unskilled production workers	
$\Delta$ (FG imports/sales)	-0.635**	-0.644**	-0.087**	-0.091**	-0.066**	-0.069**
	(0.026)	(0.026)	(0.012)	(0.012)	(0.023)	(0.023)
$\Delta$ (II imports/sales)	-0.416**	-0.417**	-0.020	-0.023	-0.086**	-0.085**
	(0.029)	(0.029)	(0.012)	(0.012)	(0.023)	(0.023)
$\Delta$ (exports/sales)	0.071**	0.062**	0.036**	0.036**	-0.048**	-0.050**
	(0.018)	(0.019)	(0.008)	(0.008)	(0.016)	(0.016)
$\Delta$ (local purchases/sales)	-0.704**	-0.705**	-0.079**	-0.084**	-0.025	-0.024
	(0.021)	(0.021)	(0.009)	(0.009)	(0.017)	(0.017)
Growth of sales	0.729**	0.727**	0.006	0.007*	0.019**	0.018**
	(0.005)	(0.005)	(0.002)	(0.002)	(0.004)	(0.004)
Substantial improvement of existing products		-0.027**		-0.005*		-0.004
		(0.005)		(0.002)		(0.004)
New product at the market level		0.018**		0.002		0.009**
		(0.004)		(0.002)		(0.003)
New product for the firm, but preexisting on the market		0.012**		-0.007**		0.006
		(0.004)		(0.002)		(0.003)
New technological process		-0.014**		-0.009**		-0.001
		(0.004)		(0.002)		(0.003)
Substantial improvement of existing technological process		0.009*		0.007**		-0.004
		(0.005)		(0.002)		(0.003)
Organisational innovation		0.001		-0.006**		0.004
		(0.004)		(0.002)		(0.003)
Commercial innovation		0.016**		0.005*		0.003
		(0.005)		(0.002)		(0.004)
R&D, internal to the firm		0.027**		0.000		0.001
		(0.006)		(0.002)		(0.005)
R&D, internal to the group		-0.013**		0.003		-0.002
		(0.004)		(0.002)		(0.003)
Number of firms	14,537	14,537	11,188	11,188	11,086	11,086
$R^2$	0.743	0.745	0.222	0.230	0.219	0.221

# A Causal Role for Unions

- Theory shows (in Kramarz, 2009) that facing strong unions, firms should offshore
- Discontinuities in union-setting institutions (at 50 employees) correspond to discontinuities in the structure of rents per employee (computed appropriately using matched employer-employee data sources) in relation to the role of offshoring

**Table 4: Workers' Wages: Workers' Bargaining Power and Firm-Level Imports, Controlling for Competitors' Imports**

**The Role of Negotiations**

*(Firms' Quasi-Rent and Workers' Seniority Instrumented)*

		Wage Level
Quasi-Rent	(neg. on employment)	0.5387 (0.0533) [0.0660]
Quasi-Rent	(neg. on wages, not emp.)	0.0570 (0.0455) [0.0528]
Quasi-Rent	(no neg. on emp. or wages)	-0.1241 (0.0702) [0.0848]
(Imports of goods)/production	(neg. on employment)	23.3080 (17.5078) [31.5429]
(Imports of goods)/production	(neg. on wages, not emp.)	30.5606 (7.0047) [16.9916]
(Imports of goods)/production	(no neg. on emp. or wages)	15.2063 (5.3680) [17.9875]
(Imports of IC)/(Local purchases)	(neg. on employment)	-55.2317 (16.2249) [42.3125]
(Imports of IC)/(Local purchases)	(neg. on wages, not emp.)	4.3660 (5.3503) [13.9650]
(Imports of IC)/(Local purchases)	(no neg. on emp. or wages)	4.9110 (6.1353) [13.7938]

Competitors imports of goods (99th perc.,sh. of production)	(neg. on employment)	-46.1815 (7.7865) [11.9360]
Competitors imports of goods (99th perc.,sh. of production)	(neg. on wages, not emp.)	-8.9339 (2.5897) [4.5533]
Competitors imports of goods (99th perc.,sh. of production)	(no neg. on emp. or wages)	7.1101 (3.2461) [4.9006]
Competitors imports of IC (99th perc., sh. of local purchases)	(neg. on employment)	-20.6279 (5.0507) [17.7138]
Competitors imports of IC (99th perc., sh. of local purchases)	(neg. on wages, not emp.)	3.0865 (1.7133) [3.0757]
Competitors imports of IC (99th perc., sh. of local purchases)	(no neg. on emp. or wages)	9.5122 (2.9748) [5.4238]
Chi-square (df=37)		40.5432
Over-identification test (p-value)		0.3169

Notes: 37,698 person-year observations. The sample period is 1986-1992. The regression uses a measure of quasi-rent that discounts assets. The regression includes the following variables (coefficients unreported): Competitors imports of goods (99th perc., in level), Competitors imports of IC (99th perc., in level) both interacted with 3 negotiations levels, Imports of goods from the trade ind. (sh. of total purchases), Imports of goods from the trade ind. (total purchases), seniority and seniority-squared, experience(quartic), marital status, indicators for having children below 3, children between 3 and 6, for living in Ile de France, for working part-time, year dummies, experience in France (for the immigrants), the local unemployment rate, 3-digit industry indicators, the estimated person-effect, and a full interaction of the person-effect with all previous variables (except seniority and industry indicators).

The Quasi-rent, Seniority and Seniority-squared are instrumented by lagged export price indices of US firms to 4 destinations in US \$ of the same industry as the employing firm. The chi-square tests the validity of the instruments. Robust standard errors are between parentheses. Robust standard errors allowing for clustering at the industry-level are between brackets. Sources: BAL-SUSE for firm-level variables, DADS-EDP for individual variables, Customs file for import measures, OECD for the export prices. ESS for bargaining outcomes.



**Table 5: Negotiation in 1992 and Firm-Level Changes in the Preceding Period (1986-92)**

	No Negotiation, either on Wages or Employment		Negotiation on Employment and Wages	
	Coef.	Std. Err.	Coef.	Std. Err.
Change in Labor Costs (per person, in logs)	1.2803	0.3207	2.9370	0.3430
Change in Employment (in logs)	0.5041	0.1351	-0.7447	0.1556
Change in Imports of Goods (as a fraction of production)	-1.4728	0.3077	1.7646	0.3230
Change in Imports of IC (as a fraction of local purchases)	0.1312	0.1183	-0.6472	0.1273
Change in the Quasi-rent (per person)	0.0007	0.0005	0.0023	0.0004
Change in the Competitors Imports of IC (99th perc., sh. of local purchases)	0.4842	0.1093	-0.4260	0.1209
Change in the Competitors Imports of Goods (99th perc., sh. of production)	0.7731	0.1742	0.5312	0.1754
Pseudo-R2	0.1818			
Number of Observations	7,210			

Sources: BAL-SUSE for firm-level variables, DADS-EDP for individual variables, Customs file for import measures, OECD for the export prices. ESS for bargaining outcomes. Estimated by Maximum Likelihood. The reference group comprises firms that only negotiated on wages.