

Margins of Multinational Labor Substitution

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This empirical supplement to Muendler and Becker (2009) presents complementary statistics and compares results across specifications in Muendler and Becker (2009) and beyond. The empirical analysis is based on the program package *version 6* (*fdiselect-stata-v6-2009-10-29.zip*, downloadable at <http://econ.ucsd.edu/muendler/research>).

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1 Identifying Assumptions

The selection equation for location ℓ (FDI presence at ℓ) is

$$d_{jt}^\ell = \mathbf{1} \left(H(\mathbf{z}_{j,t-\tau}) + \eta_{j,t-\tau}^k > 0 \right)$$

and, conditional on MNE j 's selection of location ℓ , expectations of the outcome (employment at ℓ) are

$$\mathbb{E} \left[y_{jt}^\ell \mid \mathbf{x}_{jt}^\ell, \mathbf{d}_{jt}, \mathbf{z}_{j,t-\tau} \right] = \mathbf{x}_{jt}^\ell \beta^\ell + \mathbb{E} \left[\epsilon_{jt}^\ell \mid d_{jt}^1, \dots, d_{jt}^\ell = 1, \dots, d_{jt}^L; \mathbf{z}_{j,t-\tau} \right],$$

where disturbances ϵ_{jt}^ℓ and $\eta_{j,t-\tau}^k$ are uncorrelated across observations (of MNEs i and j , and between periods t and $t+1$).

Univariate normal selectivity correction Heckman (1979) is justified for multiple locations under the following assumption.

Assumption 1 *The disturbances ($\epsilon_{jt}^k, \eta_{j,t-\tau}^k$) are multivariate normally distributed (with variance $\mathbb{V}ar(\eta_{j,t-\tau}^k) = 1$) and independent of \mathbf{x}_{jt}^m and $\mathbf{z}_{j,t-\tau}$ for all k, ℓ, m . In addition, either*

- (a) *the part of the selection shock that correlates with labor demand shocks is an MNE-specific disturbance and does not vary by location (ϵ_{jt}^k and $\eta_{j,t-\tau}^k$ correlate across locations $k \neq \ell$ but in the same way as ϵ_{jt}^ℓ and $\eta_{j,t-\tau}^k$), or*
- (b) *the labor-demand related part of the selection shock varies by location but is independent of labor demand shocks in other locations (ϵ_{jt}^k and $\eta_{j,t-\tau}^k$ are independent for $k \neq \ell$),*

for $\ell, k = 1, \dots, L$.

Define the *propensity score* (the expected probability of selection conditional on $\mathbf{z}_{j,t-\tau}$) as $p_{jt}^\ell \equiv \mathbb{E}[d_{jt}^\ell \mid \mathbf{z}_{j,t-\tau}] = 1 - G(-H(\mathbf{z}_{j,t-\tau}))$, where $G(\cdot)$ is the cumulative distribution function of $\eta_{j,t-\tau}^k$. Consider the labor demand disturbance, conditional on selection, to be a smooth function of propensity scores or of the realized multinational location pattern or of both. Nonparametric estimation is based on the following assumptions similar to Das, Newey and Vella (2003).

Assumption 2

- (i) $\mathbb{E}[\epsilon_{jt}^\ell \mid d_{jt}^\ell = 1, \mathbf{d}_{jt}^{k \neq \ell}, \mathbf{z}_{j,t-\tau}] = m^\ell(p_{jt}^\ell, \mathbf{d}_{jt}^{k \neq \ell})$,
- (ii) $\Pr(\Delta \xi^\ell(\mathbf{x}_{jt}^\ell) + \Delta m^\ell(p_{jt}^\ell, \mathbf{d}_{jt}^{k \neq \ell}) = 0 \mid d_{jt}^\ell = 1) = 1$ implies that $\Delta \xi^\ell(\mathbf{x}_{jt}^\ell)$ is constant,
- (iii) $\nabla_{\mathbf{z}_{j,t-\tau}} p_{jt}^\ell \neq \mathbf{0}$ with probability one,

for $\ell = 1, \dots, L$.

Assumption 3

- (i) $\mathbb{E}[\epsilon_{jt}^\ell | d_{jt}^\ell = 1, \mathbf{z}_{j,t-\tau}] = m^\ell(\mathbf{p}_{jt})$ and $\text{Cov}(\epsilon_{jt}^\ell, \eta_{jt}^k) = 0$ for $k \neq \ell$,
- (ii) $\Pr(\Delta \xi^\ell(\mathbf{x}_{jt}^\ell) + \Delta m^\ell(p_{jt}^\ell, \mathbf{d}_{jt}^{k \neq \ell}) = 0 | d_{jt}^\ell = 1) = 1$ implies that $\Delta \xi^\ell(\mathbf{x}_{jt}^\ell)$ is constant,
- (iii) $\nabla_{\mathbf{z}_{j,t-\tau}} p_{jt}^\ell \neq \mathbf{0}$ with probability one,

for $\ell = 1, \dots, L$.

We speak of semiparametric estimation under Assumption 3 when we use probit-estimates of propensity scores (instead of nonparametric estimates).

Unless otherwise specified in table notes, we use third-order polynomials in wages, the log count of host countries, and competitors' host-country log market access (and linear terms for the remaining covariates in $\mathbf{z}_{j,t-\tau}$) to estimate the propensity score $p_{jt}^\ell = \mathbb{E}[d_{jt}^\ell | \mathbf{z}_{j,t-\tau}]$. Similarly, unless otherwise specified, we use third-order polynomials in the propensity score(s) to estimate $m^\ell(p_{jt}^\ell, \mathbf{d}_{jt}^{k \neq \ell})$ ($m^\ell(\mathbf{p}_{jt})$). We cross-validate the goodness of fit to determine appropriate polynomial order in key regressions.

2 Sample Characteristics

Table 1: MARKET SHARES OF GERMAN MNEs ABROAD

	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Individual German Affiliates Abroad				
Employment share	.0003 (.00003)	.0002 (.00002)	.00007 (.00002)	.0002 (.00003)
Obs. (affiliates)	922	728	516	1,666
Share in FDI stock	.001 (.0002)	.001 (.0001)	.0001 (.00003)	.0007 (.0001)
Obs. (affiliates)	829	546	487	1,479
All German MNEs Abroad				
Employment share	.014 (.005)	.002 (.0006)	.006 (.003)	.021 (.006)
Obs. (countries)	18	50	6	18
Share in FDI stock	.064 (.020)	.011 (.003)	.008 (.005)	.056 (.020)
Obs. (countries)	18	50	6	18

Sources: MIDI manufacturing parents and their majority-owned manufacturing affiliates in 2000, OECD and UNCTAD FDI stocks in 2000, ILO paid manufacturing employment in 2000.

Notes: Shares are location-wide averages over country-specific shares. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 2: AFFILIATE EMPLOYMENT BY PARENT AND AFFILIATE SECTOR

Affiliate sector	Parent Sector			<i>Total</i>
	Food & Textiles	Mach. & Eqpmt.	Other Manuf.	
Agriculture & Mining		6	22	28
Food & Textiles	316	3	18	337
Mach. & Eqpmt.	3	1,852	83	1,938
Other Manuf.	6	163	2,141	2,310
Commerce	427	2,540	1,836	4,803
Fin. & Bus. Services	68	642	487	1,197
Other Services	5	27	56	88
<i>Total</i>	825	5,233	4,643	10,701

Source: MIDI manufacturing parents and their majority-owned affiliates in any sector worldwide in 2000.

Note: Employment in thousands.

Table 3: CEE AFFILIATE EMPLOYMENT BY PARENT AND AFFILIATE SECTOR

Affiliate sector	Parent Sector			<i>Total</i>
	Food & Textiles	Mach. & Eqpmt.	Other Manuf.	
Agriculture & Mining			8	8
Food & Textiles	138		4	142
Mach. & Eqpmt.		327	15	342
Other Manuf.	1	34	424	459
Commerce	50	197	195	442
Fin. & Bus. Services	4	31	30	65
Other Services	2	1	8	11
<i>Total</i>	195	590	684	1,469

Source: MIDI manufacturing parents and their majority-owned CEE (Central and Eastern Europe) affiliates in any sector in 2000.

Note: Employment in thousands.

Table 4: COUNTRY QUANTILES BY MANUFACTURING WAGE

Country	Wage	Country	Wage
Fourth quartile		Second quartile	
United States of America	33,747	Tunisia	6,862
<i>Germany</i>	<i>31,498</i>	Mexico	5,396
Denmark	30,275	Panama	5,173
Luxembourg	30,001	Peru	4,913
Netherlands	29,793	Turkey	4,639
Belgium	28,975	Ecuador	4,319
Norway	28,734	Morocco	4,244
Austria	27,846	Malaysia	4,183
Japan	26,447	Colombia	4,099
United Kingdom	26,099	Costa Rica	3,788
France	25,388	Poland	3,514
Canada	25,172	Hungary	3,260
Finland	23,815	El Salvador	3,250
Sweden	22,711	Croatia	3,182
Italy	19,715	Iran, Islamic Republic of	2,783
Ireland	19,172	Venezuela	2,606
Third quartile		First quartile	
Spain	19,108	Macedonia	2,583
Australia	18,829	Philippines	2,397
Hong Kong	18,026	Bolivia	2,137
Singapore	17,899	Egypt	2,050
New Zealand	16,024	Lithuania	1,999
Argentina	13,994	Pakistan	1,588
Korea, Republic of	13,986	Bulgaria	1,562
Greece	13,416	India	1,201
Taiwan	12,355	Indonesia	997
Malta	10,586	Romania	979
Chile	9,364	Sri Lanka	961
Brazil	8,655	Russian Federation	758
Portugal	8,491	Bangladesh	609
South Africa	7,983	Guatemala	382
Slovenia	7,775	Tanzania	333
Uruguay	7,537	Kenya	79

Sources: UNIDO manufacturing wages in 1996 (ratios of wage bills by number of workers and employees).

Notes: Annual figures in 1998 EUR equivalents, deflated with country-level CPIs (re-based to unity in 1998) and transformed from foreign-currency values to EUR at December 1998 exchange rate to remove fluctuations. By 2001, Germany ranks sixth after the Netherlands, Norway, Luxembourg, the United States, and Denmark in UNIDO manufacturing wages.

Table 5: LOG WAGE PREMIA AT SWEDISH MNEs

Country	Wage ratio	Quartile	Country	Wage ratio	Quartile
Kenya	48.98	1	Japan	1.61	4
Russian Federation	9.77	1	Czech Republic	1.60	2
Portugal	4.50	3	Korea, Republic of	1.55	3
Peru	4.17	2	Indonesia	1.53	1
India	3.84	1	Italy	1.50	4
Philippines	3.44	2	France	1.47	4
Turkey	2.83	2	Sweden	1.43	4
Columbia	2.67	2	Hungary	1.42	2
Latvia	2.26	1	Mexico	1.41	3
Croatia	2.23	3	Germany	1.38	4
Brazil	2.18	3	Singapore	1.37	3
Sri Lanka	2.08	1	Canada	1.36	4
Malaysia	2.03	2	Australia	1.29	4
Poland	1.97	2	Netherlands	1.28	4
Ireland	1.88	3	Spain	1.27	4
Greece	1.79	3	Finland	1.26	4
Argentina	1.77	3	United Kingdom	1.16	4
Austria	1.70	4	Taiwan	.98	3
Slovak Republic	1.70	2	Denmark	.96	4
South Africa	1.64	3	Zimbabwe	.94	1
Norway	1.61	4	United States of America	.94	4

Sources: UNIDO manufacturing wages in 1996 and 1998, and IUI paid wages at Swedish MNEs in 1998 (paid wages are wage bills divided by employment).

Notes: Annual wage figures in 1998 EUR equivalents, transformed from foreign-currency values to EUR at December 1998 exchange rate. Wage premia are the log of the ratio of paid wages at Swedish MNEs over UNIDO manufacturing wages in 1998. Quartiles according to UNIDO manufacturing wage ranking in 1996 (see Table 4). IUI data courtesy of Karolina Ekholm.

3 Entry and Exit Statistics

Table 6: LOCATION COUNTS BY MNE

<i>L</i> in 1996	<i>L</i> in 2000					<i>Total</i> (100%)	
	1	2	3	4	5		
1	0.0%	83.5%	12.2%	2.6%	1.6%	794	
2	34.7%	83.7%	12.5%	3.2%	0.6%	687	
3	28.0%	54.7%	8.2%	2.1%	0.4%	1,052	
4	24.2%	23.7%	55.8%	15.8%	4.7%	190	
5	35.7%	17.1%	40.2%	11.4%	3.4%	264	
		11.1%	25.0%	45.8%	18.1%	72	
		8.4%	19.0%	34.7%	13.7%	95	
		7.4%	3.7%	22.2%	66.7%	27	
		4.8%	2.4%	14.3%	42.9%	42	
<i>Total</i>		630	211	91	44	976	
		477	1,293	308	112	57	2,247

Source: MIDI universe 1996 and 2000 (not matched to USTAN), manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: MNEs with foreign presence in 1996 and 2000 (large entries), and MNEs with foreign presence in one or both years (small entries). Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 7: MNE COUNTS OF CHANGING AFFILIATE NUMBERS

$N_{2000} - N_{1996}$	CEE (1)	DEV (2)	OIN (3)	WEU (4)	<i>MNE Total</i> (5)
≤ -3	2	3	2	15	22
-2	3	11	3	14	31
-1	6	17	11	64	98
0	186	131	145	397	859
+1	25	32	20	72	149
+2	11	11	4	16	42
+3	2	6	4	10	22
$\geq +4$	7	11	4	14	36
<i>MNE Total</i>	242	222	193	602	1,259
\bar{N}_{2000}	1.49	2.38	1.56	1.96	
\bar{N}_{1996}	1.41	2.28	1.50	2.01	

Sources: MIDI universe 1996 and 2000 (not matched to USTAN). MNEs with regional presence of at least one affiliate in 1996; manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe). Median number of affiliates by MNE, location and year: 1.

Table 8: MNE COUNTS OF EXCESS AFFILIATE ID ADDITIONS

$N_{2000} - N_{1996}$	CEE (1)	DEV (2)	OIN (3)	WEU (4)	<i>MNE Total</i> (5)
	Relative changes: $EN_{2000,1996}/N_{2000}$				
0	.085	.106	.050	.082	
	Absolute changes: $EN_{2000,1996}$				
0	.097	.191	.076	.139	6,600
+1	1.014	1.029	1.042	1.061	1,106
+2	2.036	2.021	2.000	2.061	199
+3	3.143	3.381	3.167	3.189	78
+4	4.167	4.200	4.500	4.067	28
<i>other</i> (-, +)					976
<i>MNE Total</i>	2,247	2,247	2,247	2,247	8,988

Sources: MIDI universe 1996 and 2000 (not matched to USTAN). MNEs with regional presence in at least one country in 1996; manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Excess affiliate ID changes are defined as: $EN_{j,t,t-\tau}^k \equiv N_{jt}^k - \sum_{i(jk)} \mathbf{1}(i \in \mathcal{I}(jk,t) \wedge i \in \mathcal{I}(jk,t-\tau))$, where N_{jt}^k is the total number of affiliates of MNE j in location k and year t , and $\mathcal{I}(jk,t)$ is the set of MNE j 's affiliates in location k at time t . MNEs are grouped by counts of their added affiliates in location k between $t-\tau$ and t . Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 9: MNE COUNTS OF CHANGING HOST COUNTRY NUMBERS

$C_{2000} - C_{1996}$	CEE (1)	DEV (2)	OIN (3)	WEU (4)	<i>MNE Total</i> (5)
≤ -3	1	3		4	8
-2	1	3	1	10	15
-1	4	19	9	59	91
0	202	136	170	439	947
+1	25	38	12	59	134
+2	6	12	1	21	40
+3		3		7	10
$\geq +4$	3	8		3	14
<i>MNE Total</i>	242	222	193	602	1,259
\bar{C}_{2000}	1.25	1.93	1.18	1.61	
\bar{C}_{1996}	1.22	1.91	1.18	1.63	

Sources: MIDI universe 1996 and 2000 (not matched to USTAN). MNEs with regional presence in at least one country in 1996; manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe). Median number of countries by MNE, location and year: 1.

Table 10: MNE COUNTS OF EXCESS COUNTRY ADDITIONS

$C_{2000} - C_{1996}$	CEE (1)	DEV (2)	OIN (3)	WEU (4)	<i>MNE Total</i> (5)
	Relative changes: $EC_{2000,1996}/N_{2000}$				
0	.042	.072	.000	.042	
	Absolute changes: $EC_{2000,1996}$				
0	.059	.132	.000	.064	6,688
+1	1.000	1.049	1.000	1.026	1,146
+2	2.000	2.048	2.000	2.000	173
+3	3.000	3.000	3.000	3.000	51
+4	4.000	4.143	4.000	4.000	18
<i>other</i> (-, +)					912
<i>MNE Total</i>	2,247	2,247	2,247	2,247	8,988

Sources: MIDI universe 1996 and 2000 (not matched to USTAN). MNEs with regional presence in at least one country in 1996; manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Excess country changes are defined as: $EC_{j,t,t-\tau}^k \equiv C_{jt}^k - \sum_{c(jk)} \mathbf{1}(c \in \mathcal{C}(jk,t) \wedge c \in \mathcal{C}(jk,t-\tau))$, where C_{jt}^k is the total number of countries of MNE j in location k and year t , and $\mathcal{C}(jk,t)$ is the set of MNE j 's chosen countries in location k at time t . MNEs are grouped by counts of additional countries in location k between $t-\tau$ and t . Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 11: PRESENCE PREDICTIONS IN CROSS-SECTIONAL PROBIT REGRESSIONS

Current presence ($t = 2000$)	CEE	DEV	OIN	WEU
Past presence ($t - \tau = 1996$)	(1)	(2)	(3)	(4)
Indic.: FDI in CEE (1996)	1.427 (.116)***	-.058 (.127)	-.035 (.137)	-.265 (.114)**
Indic.: FDI in DEV (1996)	-.326 (.134)**	1.481 (.120)***	.058 (.138)	-.290 (.120)**
Indic.: FDI in OIN (1996)	-.102 (.128)	.294 (.125)**	1.714 (.124)***	-.013 (.119)
Indic.: FDI in WEU (1996)	-.524 (.100)***	-.148 (.105)	-.313 (.114)***	1.109 (.092)***
Const.	-.525 (.072)***	-1.069 (.081)***	-1.156 (.084)***	-.441 (.071)***
Obs.	867	867	867	867
Pseudo R^2	.180	.193	.249	.133

Sources: MIDI 1996 and 2000, manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. Foreign locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 12: SUNK ENTRY AND EXIT COSTS AT FOUR-YEAR HORIZON

Current presence (2000)	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Sunk entry cost: γ_N (1996)	.525***	1.069***	1.156***	.441***
Sunk exit cost: γ_X (1996)	.902***	.412***	.558***	.668***
Hysteresis band: $\gamma_N + \gamma_X$ (1996)	1.427***	1.481***	1.714***	1.109***
Marginal effect of hysteresis band (1996)	.518***	.512***	.561***	.421***

Sources: MIDI 1996 and 2000, 867 manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Estimates are probit coefficients from Table 11. Significance levels from χ^2 tests: * significance at ten, ** five, *** one percent. Foreign locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 13: PRESENCE PREDICTIONS IN PAST-PRESENCE PROBIT REGRESSION

Current presence (t)	CEE	DEV	OIN	WEU
Past presence ($t - 2$)	(1)	(2)	(3)	(4)
FDI in CEE ($t - 2$)	2.112 (.060)***	-.181 (.067)***	-.131 (.071)*	-.290 (.058)***
FDI in DEV ($t - 2$)	-.169 (.069)**	2.200 (.063)***	.124 (.070)*	-.156 (.061)**
FDI in OIN ($t - 2$)	-.149 (.071)**	.146 (.069)**	2.274 (.066)***	-.140 (.063)**
FDI in WEU ($t - 2$)	-.461 (.056)***	-.220 (.059)***	-.310 (.062)***	1.760 (.051)***
Const.	-.872 (.044)***	-1.241 (.049)***	-1.319 (.050)***	-.707 (.042)***
Obs.	3,392	3,392	3,392	3,392

Sources: MIDI 1996 to 2001, pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 14: SUNK ENTRY AND EXIT COSTS AT TWO-YEAR HORIZON

Current presence (t)	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Sunk entry cost: $\gamma_N (t-2)$	.872*** (.044)	1.241*** (.049)	1.319*** (.050)	.707*** (.042)
Sunk exit cost: $\gamma_X (t-2)$	1.240*** (.291)	.959*** (.225)	.954*** (.224)	1.053*** (.247)
Hysteresis band: $\gamma_N + \gamma_X (t-2)$	2.112*** (.060)	2.200*** (.063)	2.274*** (.066)	1.760*** (.051)
Marginal effect of hysteresis band ($t-2$)	.704*** (.015)	.710*** (.016)	.714*** (.017)	.621*** (.014)

Sources: MIDI 1996 to 2001, 3,392 pooled observations of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Estimates are probit coefficients from Table 13. Significance levels from χ^2 tests. Standard errors in parentheses: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

4 UNIDO Wages

4.1 MNE Panel 1998-2001 with 2-year Prior Location Selection (1996-1999)

Table 15: SAMPLE MEANS OF VARIABLES

<i>(t</i> : 1998-2001, <i>t</i> − τ : 1996-99)	HOM	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)	(5)
Indic.: Presence in <i>t</i>	1	.378	.323	.300	.702
Indic.: Presence in <i>t</i> − τ	1	.351	.298	.283	.706
Propensity score for <i>t</i>		.334	.288	.261	.612
Selectivity hazard for <i>t</i>		1.445	1.550	1.690	.807
MNE-wide regressors (Labor demand estimation)					
Wage bill share (<i>t</i>)	.791	.067	.050	.171	.192
ln Fixed assets (<i>t</i>)	17.267	14.893	15.112	15.804	15.281
ln Turnover (<i>t</i>)	18.449	15.936	16.511	17.281	17.071
ln Wage (<i>t</i>)	10.360	8.286	8.654	10.317	10.098
Competitor-average regressors (Selection estimation)					
ln sample-mean Wage (<i>t</i> − τ)	10.428	8.278	8.708	10.348	10.076
Comp.s' hosts' ln Market access (<i>t</i> − τ)	11.211	10.501	12.595	12.758	11.526
Comp.s' hosts' skill share < Home (<i>t</i> − τ)	20.121	18.918	22.301	22.455	20.677
Comp.s' hosts' skill share \geq Home (<i>t</i> − τ)	41.988	38.962	47.854	49.371	43.271
Comp.s' hosts' distance (<i>t</i> − τ)	31.606	29.445	35.811	36.369	32.548
Comp.s' hosts' ln Cons. p.c. (<i>t</i> − τ)	30.389	28.559	33.904	34.373	31.183
Parent-firm regressors (Selection estimation)					
Indic.: Headquarters West Germany (<i>t</i> − τ)	.973	.964	.974	.970	.975
ln Count of host countries (<i>t</i> − τ)	1.138	1.331	1.637	1.475	1.263
Employment (<i>t</i> − τ)	2,101	3,492	4,942	3,691	2,204
Fixed assets (<i>t</i> − τ) [million]	239.3	451.6	637.1	499.7	273.1
Turnover (<i>t</i> − τ) [million]	500.8	876.8	1,176.8	842.9	504.9
Intm. inputs (<i>t</i> − τ) [million]	287.3	527.8	678.4	460.7	270.2
Liability (<i>t</i> − τ) [million]	280.0	504.8	701.0	522.0	297.1
MNE-wide interaction terms (Selection estimation)					
FDI in CEE (<i>t</i> − τ) \times Comp.s' wages CEE	1.371	3.487	1.311	1.214	1.057
FDI in DEV (<i>t</i> − τ) \times Comp.s' wages DEV	1.826	1.991	5.395	2.674	1.924
FDI in OIN (<i>t</i> − τ) \times Comp.s' wages OIN	8.825	7.680	13.026	27.112	8.072
FDI in WEU (<i>t</i> − τ) \times Comp.s' wages WEU	16.799	13.284	17.580	15.589	22.949
Parent observations	1,654	616	463	496	1,104

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), censored (second-stage) estimation sample of 1,640 MNEs.

Notes: Averages of MNE variables are conditional on presence. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 16: QUASI-LIKELIHOOD INFORMATION CRITERION FOR GEE-PROBIT

Disturbance Correlations (lags)	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
independent	1405.0	1420.8	1260.9	1898.9
AR(1)	1623.6	1678.5	1333.0	2036.5
AR(2)	1565.9	1555.4	1309.4	2061.2
stationary(2)	1567.6	1555.1	1307.2	2068.6

Sources: MIDI 1996 to 2001, pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: GEE with probit link function (regressors as in Tables 18 and 19), quasi-likelihood using Pan's (2001) extension of Akaike's information criterion. Locations: Home (omitted), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 17: QUASI-LIKELIHOOD INFORMATION CRITERION AND CROSS-VALIDATION FOR NONPARAMETRIC SPECIFICATIONS

	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Selection: Cross validation				
2nd-order Polynomials ^a	.0788	.0832	.0725	.1181
3rd-order Polynomials ^a	.0883	.0933	.0849	.1218
Selection: Counts of significant wage effects (10% level, <i>F</i> tests)				
2nd-order Polynomials ^a	1	0	0	0
3rd-order Polynomials ^a	2	2	1	1
Selection: <i>QIC</i> of GEE-Gaussian error correlations (lags)				
independent	1410.4	1451.4	1287.2	1926.0
AR(1)	1576.9	1669.7	1455.9	2075.4
AR(2)	1501.7	1553.7	1347.7	2054.1
stationary(2)	1491.7	1558.1	1354.2	2078.6
Labor demand (translog): Cross validation under Assumption 2				
2nd-order Polynomials ^b	116103.8	229323.0	209829.6	229766.8
3rd-order Polynomials ^b	116423.2	230084.8	210342.5	229966.8
Labor demand (translog): Cross validation under Assumption 3				
2nd-order Polynomials ^c	111926.3	232633.7	204792.9	223185.5
3rd-order Polynomials ^c	113159.1	227814.5	201248.7	223730.4

Sources: MIDI 1996 to 2001, pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Baseline regressors as in Table 20. GEE of second-order polynomial specification with Gaussian link function for tests of error correlation structure, using Pan's (2001) quasi-likelihood extension of Akaike's information criterion (*QIC*). Locations: Home (omitted), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aPolynomials in Wages, ln Count of host countries, Competitors' hosts' ln Market access.

^bPolynomials of location-specific propensity score (Ass. 2).

^cPolynomials of location-specific propensity score (Ass. 3).

Table 18: MARGINAL EFFECTS IN PROBIT REGRESSION

Predictors ($t-2$)	Presence (t)	CEE	DEV	OIN	WEU
		(1)	(2)	(3)	(4)
FDI in CEE ($t-\tau$)		.609 (.234)***	.222 (.275)	.430 (.298)	-.388 (.287)
FDI in DEV ($t-\tau$)		.015 (.110)	.740 (.129)***	-.099 (.072)	-.093 (.150)
FDI in OIN ($t-\tau$)		-.307 (.413)	-.571 (.323)*	-.067 (.478)	-.076 (1.046)
FDI in WEU ($t-\tau$)		.309 (.202)	.133 (.287)	.087 (.252)	.987 (.016)***
Home sector wage		.0008 (.004)	.003 (.004)	.007 (.003)**	.013 (.007)*
Competitors' wages CEE		-.053 (.054)	-.016 (.045)	.002 (.040)	-.094 (.058)
Competitors' wages OIN		-.004 (.014)	5.74e-06 (.016)	-.026 (.015)*	.032 (.020)
FDI ^a in loc. \times Home sector wage		.002 (.005)	-.003 (.004)	-.015 (.004)***	-.015 (.007)**
FDI in CEE ($t-\tau$) \times Comp.s' wages CEE		.035 (.065)	-.068 (.057)	-.087 (.051)*	.099 (.082)
FDI in OIN ($t-\tau$) \times Comp.s' wages OIN		.013 (.027)	.036 (.026)	.035 (.019)*	.001 (.033)
ln Count of host countries		.068 (.039)*	.131 (.035)***	.057 (.028)**	.158 (.054)***
Employment ($t-\tau$) [thsd]		.019 (.009)**	.022 (.008)***	.005 (.006)	-.017 (.017)
Turnover ($t-\tau$) [billion]		-.012 (.064)	.016 (.051)	.057 (.029)*	.933 (.230)***
Intm. inputs ($t-\tau$) [billion]		.016 (.073)	-.064 (.059)	-.085 (.037)**	-1.086 (.272)***
Liability ($t-\tau$) [billion]		-.173 (.073)**	-.073 (.071)	-.006 (.053)	-.362 (.122)***
Obs.		2,459	2,459	2,459	2,459
Pseudo R^2		.551	.519	.546	.452

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. Further regressors (not significantly different from zero at five percent level in any location): Competitors' wages DEV and WEU and their interactions with FDI presence in DEV and WEU, Competitors' hosts ln Market access, Indic. Headquarters West Germany, Fixed assets, Competitors' hosts skill share $<$ Home, Competitors' hosts skill share \geq Home, Competitors' hosts distance, Competitors' hosts ln Cons. per capita. Without wage-presence interactions, past presence has a marginal effect of .779 (standard error .022) in CEE, .671 (.027) in DEV, .713 (.026) in OIN, and .747 (.020) in WEU. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aFDI presence in regression location.

Table 19: MARGINAL EFFECTS IN GEE-PROBIT WITH AR(2) DISTURBANCES

Predictors ($t-2$)	Presence (t)	CEE	DEV	OIN	WEU
		(1)	(2)	(3)	(4)
FDI in CEE ($t-\tau$)		.906 (.094)***	.028 (.242)	.727 (.232)***	-.588 (.224)***
FDI in DEV ($t-\tau$)		-.140 (.121)	.577 (.202)***	-.086 (.103)	-.025 (.160)
FDI in OIN ($t-\tau$)		.812 (.560)	-.073 (.746)	-.186 (.424)	.540 (.387)
FDI in WEU ($t-\tau$)		.193 (.370)	.335 (.258)	-.184 (.494)	.990 (.013)***
Home sector wage		.0004 (.007)	.005 (.004)	.005 (.004)	-.002 (.010)
Competitors' wages CEE		.007 (.053)	.012 (.039)	.069 (.040)*	-.118 (.052)**
Competitors' wages OIN		.056 (.020)***	.002 (.016)	-.015 (.018)	.076 (.023)***
FDI ^a in loc. \times Home sector wage		.003 (.006)	-.004 (.005)	-.015 (.005)***	-.005 (.007)
FDI in CEE ($t-\tau$) \times Comp.s' wages CEE		-.122 (.070)*	-.034 (.059)	-.154 (.058)***	.139 (.071)*
FDI in OIN ($t-\tau$) \times Comp.s' wages OIN		-.029 (.033)	.0005 (.027)	.044 (.023)*	-.028 (.032)
ln Host count ($t-\tau$)		.124 (.051)**	.213 (.045)***	.035 (.039)	.107 (.060)*
Competitors' hosts ln Market access		.137 (.115)	.113 (.084)	-.195 (.091)**	-.088 (.114)
Employment ($t-\tau$) [thsd]		.019 (.015)	.043 (.012)***	.005 (.008)	-.016 (.021)
Turnover ($t-\tau$) [billion]		-.056 (.128)	.045 (.051)	.048 (.036)	.893 (.247)***
Intm. inputs ($t-\tau$) [billion]		.068 (.140)	-.198 (.068)***	-.108 (.050)**	-1.102 (.296)***
Liability ($t-\tau$) [billion]		-.207 (.088)**	.006 (.079)	.083 (.063)	-.199 (.110)*
Obs.		1,891	1,891	1,891	1,891

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: GEE with probit link function and AR(2) disturbances. Standard errors in parentheses: * significance at ten, ** five, *** one percent. Further regressors (not reported): Competitors' wages DEV and WEU and their interactions with FDI presence in DEV and WEU, Competitors' hosts ln Market access, Indic. Headquarters West Germany, Fixed assets, Competitors' hosts skill share < Home, Competitors' hosts skill share \geq Home, Competitors' hosts distance, Competitors' hosts ln Cons. per capita, sector-level Intermediate imports, Final-goods imports and Exports in CEE and WEU. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aFDI presence in regression location.

Table 20: MARGINAL EFFECTS IN NONPARAMETRIC PROBABILITY MODEL

Predictors ($t-2$)	Presence (t)	CEE	DEV	OIN	WEU
		(1)	(2)	(3)	(4)
FDI in CEE ($t-\tau$)		.634 (.144)***	.110 (.148)	.201 (.138)	-.158 (.184)
FDI in DEV ($t-\tau$)		-.047 (.087)	.340 (.115)***	-.079 (.083)	-.010 (.107)
FDI in OIN ($t-\tau$)		.022 (.551)	.042 (.564)	.054 (.551)	.281 (.685)
FDI in WEU ($t-\tau$)		.186 (.221)	-.033 (.215)	-.033 (.203)	1.229 (.259)***
Series terms involving wages: p -values from F tests					
Home sector wage terms			.030	.007	.094
Competitors' CEE wage terms					
Competitors' DEV wage terms					
Competitors' OIN wage terms		.005	.103		
Competitors' WEU wage terms		.056			
Employment ($t-\tau$) [thsd]		.014 (.006)**	.011 (.006)*	-.009 (.006)	-.015 (.008)**
Turnover ($t-\tau$) [billion]		.004 (.061)	.078 (.062)	.251 (.059)***	.415 (.075)***
Intm. inputs ($t-\tau$) [billion]		-.003 (.068)	-.140 (.070)**	-.303 (.066)***	-.444 (.085)***
Liability ($t-\tau$) [billion]		-.137 (.046)***	-.026 (.047)	.004 (.044)	-.179 (.056)***
Competitors' hosts ln Cons. p.c. ($t-\tau$)		.079 (.030)***	.013 (.031)	-.010 (.029)	.023 (.037)
Obs.		2,459	2,459	2,459	2,459
R^2		.662	.617	.630	.553

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. Third-order polynomials in Wages, ln Count of host countries, Competitors' hosts' ln Market access. Further regressors (not significantly different from zero at five percent level in any location): Interactions of competitors' wages with FDI presence, ln Host count, Competitors' hosts ln Market access, Indic. Headquarters West Germany, Competitors' hosts skill share, Competitors' hosts distance. Without wage-presence interactions, past presence has a marginal effect of .759 (standard error .018) in CEE, .668 (.020) in DEV, .711 (.017) in OIN, and .707 (.024) in WEU. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 21: MARGINAL EFFECTS IN NONPARAMETRIC PROBABILITY MODEL WITH SECOND-ORDER POLYNOMIALS

Predictors ($t-2$)	Presence (t)	CEE	DEV	OIN	WEU
		(1)	(2)	(3)	(4)
FDI in CEE ($t-\tau$)		.627 (.141)***	.083 (.143)	.146 (.134)	-.168 (.177)
FDI in DEV ($t-\tau$)		.027 (.075)	.373 (.108)***	-.031 (.072)	.018 (.092)
FDI in OIN ($t-\tau$)		.357 (.503)	-.559 (.515)	.618 (.496)	-.185 (.621)
FDI in WEU ($t-\tau$)		.348 (.207)*	-.119 (.203)	.063 (.190)	1.224 (.243)***
FDI ^a in loc. \times Home sector wage		.003 (.003)	.010 (.003)***	-.012 (.003)***	-.006 (.003)*
FDI in WEU ($t-\tau$) \times Comp.s' wages WEU		-.015 (.009)*	.003 (.009)	-.004 (.008)	-.013 (.011)

Second-order series terms involving wages: p -values from F tests

Home sector wage terms					
Competitors' CEE wage terms					
Competitors' DEV wage terms					
Competitors' OIN wage terms					
Competitors' WEU wage terms		.020			
Employment ($t-\tau$) [thsd]		.014 (.005)***	.012 (.005)**	.004 (.004)	.003 (.006)
Fixed assets ($t-\tau$) [billion]		.049 (.024)**	-.016 (.024)	-.033 (.023)	.012 (.029)
Turnover ($t-\tau$) [billion]		-.0005 (.029)	.007 (.030)	.062 (.028)**	.134 (.036)***
Intm. inputs ($t-\tau$) [billion]		-.010 (.034)	-.034 (.035)	-.091 (.033)***	-.138 (.042)***
Liability ($t-\tau$) [billion]		-.110 (.041)***	-.026 (.042)	.006 (.040)	-.134 (.051)***
Obs.		2,459	2,459	2,459	2,459
R^2		.644	.597	.614	.535

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Second-order polynomials in Wages, ln Count of host countries, Competitors' hosts' ln Market access. Standard errors in parentheses: * significance at ten, ** five, *** one percent. Further regressors (not significantly different from zero at five percent level in any location): Interactions of competitors' wages in CEE/DEV/OIN with FDI presence in CEE/DEV/OIN, ln Host count, Competitors' hosts' ln Market access, Indic. Headquarters West Germany, Fixed assets, Competitors' hosts' skill share, Competitors' hosts' distance. Without wage-presence interactions, past presence has a marginal effect of .759 (standard error .018) in CEE, .668 (.020) in DEV, .711 (.017) in OIN, and .707 (.024) in WEU. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aFDI presence in regression location.

Table 22: TRANSLOG COST PARAMETER ESTIMATES

Employment in: ^a	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Parametric Selectivity Correction (Assumption 1)				
ln <i>Wages</i> ^a				
HOM	.001 (.0006)	-.013 (.001)***	.027 (.008)***	.054 (.006)***
CEE	.001 (.0005)**	-.008 (.0001)***	.008 (.00004)***	-.002 (.00006)***
DEV	-.008 (.0003)***	.011 (.001)***	.009 (.0001)***	.0006 (.0001)***
OIN	.008 (.0004)***	.009 (.0008)***	-.086 (.008)***	.043 (.002)***
WEU	-.002 (.0005)***	.0006 (.0006)	.043 (.001)***	-.095 (.006)***
Selectivity hazard	12.058 (11.923)	24.432 (13.443)*	-19.821 (11.606)*	35.824 (14.625)**
R^2	.977	.975	.969	.948
Nonparametric Selectivity Correction (Assumption 3)				
ln <i>Wages</i> ^a				
HOM	.001 (.0006)**	-.008 (.001)***	.023 (.007)***	.059 (.006)***
CEE	-.0008 (.0005)	-.006 (.0003)***	.007 (.0004)***	-.002 (.0005)***
DEV	-.006 (.0003)***	.010 (.001)***	.007 (.0007)***	-.004 (.0007)***
OIN	.007 (.0004)***	.007 (.0007)***	-.079 (.008)***	.042 (.002)***
WEU	-.002 (.0005)***	-.004 (.0007)***	.042 (.002)***	-.096 (.005)***
Series terms				
χ^2 tests (<i>p</i> -value)	495.52 (.000)	246.04 (.000)	151.17 (.000)	244.62 (.000)
R^2	.979	.977	.974	.959

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Stacked observations of 1,654 MNEs. Further regressors: ln Turnover, ln Fixed assets, ln MNE wage residuals, Absence indicators, Transformed constant (in parametric selectivity regression). Standard errors in parentheses: * significance at ten, ** five, *** one percent. Standard errors corrected for first-stage estimation of selectivity hazards (hence not symmetric on restricted coefficients). Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aTransformed wage-bill shares and regressors.

Table 23: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.307**	.026***	-.003	.085	.198***
CEE <i>intensive only</i>	.820***	-.932***	-.288***	.365***	.035
CEE <i>extensive only</i>	.794***	-1.029***	.021	.041	.084
DEV <i>intensive only</i>	-.157	-.514***	-.179	.679***	.171
DEV <i>extensive only</i>	.857***	-.149	-.988***	.362	.437
OIN <i>intensive only</i>	1.303	.179***	.186***	-2.630**	.961***
OIN <i>extensive only</i>	.629***	.169	.009	-.157	.052
WEU <i>intensive only</i>	1.205***	.007	.019	.383***	-1.614***
WEU <i>extensive only</i>	.838***	-.098	.057*	.574	-.880***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1, Tables 18 and 22). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 24: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY AND AR(2) DISTURBANCES

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.300**	.026***	-.003	.084	.194***
CEE <i>intensive only</i>	.797***	-.925***	-.290***	.388***	.030
CEE <i>extensive only</i>	.792***	-1.007***	.017	.441	-.010
DEV <i>intensive only</i>	-.145	-.518***	-.182	.676**	.169
DEV <i>extensive only</i>	.863	.028	-1.012***	.087	.216
OIN <i>intensive only</i>	1.281	.190***	.186**	-2.582**	.925**
OIN <i>extensive only</i>	.748***	-.051	-.002	-.830**	.063
WEU <i>intensive only</i>	1.178***	.006	.018	.368**	-1.570***
WEU <i>extensive only</i>	.635**	-.207	-.016	1.731**	-1.179***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying selection estimation with GEE and probit link function allowing for AR(2) disturbances. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1, Table 19). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 25: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY WITH MNE LOG WAGE PREMIA AS ADDITIONAL CONTROLS

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.278**	.026***	-.001	.121	.132**
CEE <i>intensive only</i>	.798***	-.977***	-.145**	.240**	.085
CEE <i>extensive only</i>	.759***	-.879***	.001	.069	.208
DEV <i>intensive only</i>	-.055	-.258**	-.309	.417*	.206
DEV <i>extensive only</i>	.761***	.072	-.985***	-.033	.045
OIN <i>intensive only</i>	1.841	.117***	.114*	-3.182**	1.110***
OIN <i>extensive only</i>	.726***	.077	.012	-.662	.101
WEU <i>intensive only</i>	.806**	.017	.022	.442***	-1.287***
WEU <i>extensive only</i>	.846***	-.116	.064**	.655**	-.882***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1), including log differences between Swedish MNE wages and UNIDO wages as additional controls. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 26: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY WITH LEAD OUTPUTS AS ADDITIONAL CONTROLS

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.341***	.026***	.002	.097	.216***
CEE <i>intensive only</i>	.805***	-.897***	-.281***	.327***	.046
CEE <i>extensive only</i>	.797***	-1.040***	.023	.039	.075
DEV <i>intensive only</i>	.107	-.502***	-.463	.775***	.083
DEV <i>extensive only</i>	.797***	-.012	-.986***	.117	.194
OIN <i>intensive only</i>	1.481	.160***	.213***	-2.814***	.960***
OIN <i>extensive only</i>	.718***	.085	.012	-.620	.097
WEU <i>intensive only</i>	1.313***	.009	.009	.382***	-1.713***
WEU <i>extensive only</i>	.823***	-.065	.046	.434	-.878***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1), including lead outputs as additional controls. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 27: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY WITH LAGGED EMPLOYMENTS AS ADDITIONAL CONTROLS

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.307***	.027***	-.005	.111	.175***
CEE <i>intensive only</i>	.842***	-.982***	-.226***	.314***	.052
CEE <i>extensive only</i>	.783***	-.983***	.015	.050	.122
DEV <i>intensive only</i>	-.292	-.404***	-.273	.846**	.122
DEV <i>extensive only</i>	.828***	-.082	-.987***	.242	.318
OIN <i>intensive only</i>	1.688	.154***	.232**	-3.199***	1.124***
OIN <i>extensive only</i>	.643***	.156	.009	-.227	.059
WEU <i>intensive only</i>	1.063***	.010	.013	.448***	-1.534***
WEU <i>extensive only</i>	.820***	-.059	.044	.409	-.877***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1), including lagged employments as additional controls. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 28: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY AND OUT-COME ESTIMATION WITH FIRM FIXED-EFFECTS

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.564***	.025***	.011***	.216***	.312***
CEE <i>intensive only</i>	.776***	-1.007***	.017	.031	.183***
CEE <i>extensive only</i>	.782***	-.979***	.015***	.050***	.125***
DEV <i>intensive only</i>	.597***	.030	-1.165***	.222	.316***
DEV <i>extensive only</i>	.785***	.017	-.986***	.066	.143***
OIN <i>intensive only</i>	3.303***	.015	.061*	-4.031***	.652
OIN <i>extensive only</i>	1.041***	-.220	.023	-2.301***	.259
WEU <i>intensive only</i>	1.896***	.036***	.035***	.259	-2.226***
WEU <i>extensive only</i>	.802***	-.021	.030***	.247**	-.875***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1), conditioning on equation-specific firm-fixed effects. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 29: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY FOR MNEs IN HORIZONTAL-FDI INDUSTRIES

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.606***	.036*	.037	.193***	.340***
CEE <i>intensive only</i>	.638*	-.939**	-.249	.454	.097
CEE <i>extensive only</i>	.713***	-.918***	.002	-.051	.151
DEV <i>intensive only</i>	1.701	-.643	.257	-1.277	-.037
DEV <i>extensive only</i>	.758***	.166	-.990***	-.493	.007
OIN <i>intensive only</i>	4.173***	.548	-.598	-2.931*	-1.192
OIN <i>extensive only</i>	.889***	-.098	.026	-1.202***	.274*
WEU <i>intensive only</i>	1.812***	.029	-.004	-.295	-1.542***
WEU <i>extensive only</i>	.734***	.002	.024*	.063	-.828***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), industries with no significant intra-firm trade (horizontal FDI) as in Harrison and McMillan (2006).

Notes: Elasticities at the extensive and intensive margins from 560 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1, Table 22). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 30: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY FOR MNEs IN VERTICAL-FDI INDUSTRIES

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.153	.008	-.004	.007	.142
CEE <i>intensive only</i>	.393	-.612***	-.406***	.466***	.160
CEE <i>extensive only</i>	.796***	-.938***	.006	.074	.118
DEV <i>intensive only</i>	-.230	-.510***	-.136	.806**	.069
DEV <i>extensive only</i>	.784***	-.024	-1.002***	-.190	.259
OIN <i>intensive only</i>	.089	.126***	.174**	-1.342	.953***
OIN <i>extensive only</i>	.810***	.244	-.044	-.142	.010
WEU <i>intensive only</i>	.928	.021	.007	.466***	-1.423**
WEU <i>extensive only</i>	.869***	-.023	-.024	.314	-.848***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), industries with significant intra-firm trade (vertical FDI) as in Harrison and McMillan (2006).

Notes: Elasticities at the extensive and intensive margins from 1,094 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1, Table 22). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 31: MORISHIMA ELASTICITIES UNDER PARAMETRIC SELECTIVITY

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>		1.127*** (.245)	.150 (.489)	1.610 (1.307)	1.512*** (.505)
CEE <i>intensive only</i>	.959***		.418**	1.111***	.939***
CEE <i>extensive only</i>	1.029***		.880***	1.197***	.931***
DEV <i>intensive only</i>	.176	-.109		.366	.198
DEV <i>extensive only</i>	.988***	1.009***		.997***	1.045***
OIN <i>intensive only</i>	2.715**	2.995***	3.309***		3.012***
OIN <i>extensive only</i>	.157	.198	.519		.731
WEU <i>intensive only</i>	1.812***	1.649***	1.785***	2.575***	
WEU <i>extensive only</i>	.880***	.964***	1.317***	.932**	

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Morishima (1967) elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Blackorby and Russell (1981) show that Morishima elasticities preserve Hicks' (1932) notion that the isoquant curvature completely characterizes the elasticity of substitution between two factors. Allen-Uzawa elasticities Allen (1938), Uzawa (1962) fail in this respect when there are more than two inputs. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1, Table 22). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 32: CROSS-WAGE ELASTICITIES UNDER NONPARAMETRIC SELECTIVITY (ASSUMPTION 2)

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.314***	.026***	.004	.081	.203***
CEE <i>intensive only</i>	.811***	-1.003***	-.218***	.336***	.073
CEE <i>extensive only</i>	-14.751	13.678	4.655	17.198	-17.689
DEV <i>intensive only</i>	.200	-.388***	-.179	.517**	-.150
DEV <i>extensive only</i>	-22.711	21.740	4.743	24.818	-25.234
OIN <i>intensive only</i>	1.243	.165***	.142**	-2.541**	.991***
OIN <i>extensive only</i>	9.772	-8.989	-5.623	-10.824	9.871
WEU <i>intensive only</i>	1.234***	.014	-.016	.395***	-1.627***
WEU <i>extensive only</i>	-2.771	3.602	1.328	3.852	-4.688

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying labor demand estimates from nonparametric selectivity-corrected ISUR estimates (Assumption 2). Standard errors inferred from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 33: CROSS-WAGE ELASTICITIES UNDER NONPARAMETRIC SELECTIVITY (ASSUMPTION 3)

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.317***	.027***	.004	.081	.204***
CEE <i>intensive only</i>	.834***	-1.006***	-.208***	.317***	.064
CEE <i>extensive only</i>	-12.840	12.163	3.395	15.654	-16.033
DEV <i>intensive only</i>	.245	-.372***	-.261	.525**	-.138
DEV <i>extensive only</i>	-25.420	25.270	13.151	29.104	-30.947
OIN <i>intensive only</i>	1.240	.155***	.144**	-2.494***	.955***
OIN <i>extensive only</i>	-9.269	9.847	7.786	7.792	-9.904
WEU <i>intensive only</i>	1.244***	.012	-.015	.380***	-1.622***
WEU <i>extensive only</i>	4.401	-3.750	-3.548	-4.183	2.962

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 1,654 stacked MNE observations. Underlying labor demand estimates from nonparametric selectivity-corrected ISUR estimates (Assumption 3, Table 22). Standard errors inferred from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 34: SINGLE- AND MULTIPLE-EQUATION LABOR DEMAND ESTIMATION

HOM Employment at the intensive margin	SINGLE HOM EQUATION				EQUATION SYSTEM	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>ln Wages</i>						
HOM	-.921 (.020)***	-.524 (.042)***	-.520 (.051)***	-.554 (.052)***	-.333 (.071)***	-.307 (.131)**
CEE	-.003 (.003)	-.003 (.005)	.045 (.033)	.038 (.033)	.030 (.004)***	.026 (.005)***
DEV	.009 (.004)**	.003 (.005)	.113 (.025)***	.103 (.025)***	.005 (.006)	-.003 (.008)
OIN	.007 (.003)**	.012 (.004)***	.027 (.029)	.021 (.029)	.093 (.049)*	.085 (.076)
WEU	-.0009 (.003)	.015 (.004)***	.018 (.026)	.028 (.026)	.204 (.035)***	.198 (.063)***
<i>Specification</i>						
ln Turnover HOM	yes	yes	yes	yes	yes	yes
ln Turnover CEE-WEU			yes	yes	yes	yes
ln Capital HOM-WEU			yes	yes	yes	yes
Past pres. indic. CEE-WEU				yes	yes	yes
Extensive-margin control						yes
MNE fixed effect		yes	yes	yes		
Obs.	2,141	2,141	2,141	2,141	2,141	1,654

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. FE regressions are firm-fixed effects regressions. Not reported: Turnover, Capital Stocks, Past presence indicators, and Constant. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 35: SINGLE- AND MULTIPLE-EQUATION ESTIMATION OF THE INTENSIVE MARGIN

HOM employment intensive margin	SINGLE HOM EQUATION				SYSTEM (5)
	(1)	(2)	(3)	(4)	
<i>ln Wages</i>					
HOM	-.950 (.018)***	-.993 (.022)***	-1.011 (.022)***	-.991 (.024)***	-.333 (.071)***
CEE	-.021 (.020)	.024 (.033)	.042 (.033)	.043 (.033)	.030 (.004)***
DEV				.072 (.024)***	.005 (.006)
OIN				-.033 (.038)	.093 (.049)*
WEU	-.009 (.007)	.047 (.020)**	.075 (.021)***	.092 (.022)***	.204 (.035)***
<i>ln Turnover</i>					
HOM	yes				
HOM-WEU		yes	yes	yes	yes
<i>ln Capital</i>					
HOM-WEU			yes	yes	yes
Obs.	2,141	2,141	2,141	2,141	2,141

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. All specifications include current presence or absence indicators (referred to as MNE-location FE by Konings and Murphy 2006). Not reported: Turnover, Capital Stocks, Current presence indicators, and Constant. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 36: CROSS-WAGE ELASTICITIES FOR UNCORRECTED INTENSIVE-MARGIN ESTIMATES

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.333***	.030***	.005	.093*	.204***
CEE <i>intensive</i>	.858***	-1.044***	-.125***	.261***	.051
DEV <i>intensive</i>	.274	-.250***	-.659**	.514**	.121
OIN <i>intensive</i>	1.529*	.150***	.149**	-2.962***	1.134***
WEU <i>intensive</i>	1.315***	.012	.014	.444***	-1.785***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 2,141 stacked MNE observations. Underlying labor demand estimates from uncorrected ISUR estimation. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 37: RELATIVE DIFFERENCE BETWEEN UNCORRECTED AND CORRECTED INTENSIVE-MARGIN ESTIMATES

Relative difference in employment effect estimates	Wage change in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	.084 (.730)	.146 (.342)	-2.692 (3.693)	.093 (1.636)	.032 (.937)
CEE <i>intensive</i>	.047 (.295)	.122 (.157)	-.566 (.959)	-.286 (1.648)	.465 (11.089)
DEV <i>intensive</i>	-2.728 (3.775)	-.515 (1.048)	2.777 (28.138)	-.243 (9.451)	-.281 (8.282)
OIN <i>intensive</i>	.175 (1.829)	-.160 (1.872)	-.204 (9.370)	.126 (15.514)	.178 (38.094)
WEU <i>intensive</i>	.092 (.997)	.697 (12.662)	-.255 (8.491)	.160 (36.193)	.107 (14.208)

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: The relative difference between elasticities at the intensive margin from uncorrected ISUR estimation and from parametric selectivity-corrected ISUR estimation (Assumption 1, Table 22) is the difference between the uncorrected and the selectivity-corrected elasticity estimate, divided by the selectivity-corrected estimate. There are 2,141 stacked MNE observations for uncorrected ISUR and 1,654 for selectivity-corrected ISUR estimation. Standard errors from 200 bootstraps over both estimators: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

4.2 MNE Cross-Section 2000 with 1996 Location Selection

Table 38: MEANS OF VARIABLES

$(t: 2000, t-\tau: 1996)$	HOM	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)	(5)
Indic.: Presence in 00	1.000	.396	.365	.316	.736
Indic.: Presence in 96	1.000	.319	.288	.294	.730
Propensity score for 00		.322	.309	.256	.593
Selectivity hazard for 00		1.431	1.480	1.819	.870
MNE-wide regressors (Labor demand estimation)					
Wage bill share 00	.773	.067	.054	.192	.195
ln Fixed assets 00	17.423	15.004	15.278	16.087	15.387
ln Turnover 00	18.576	16.095	16.733	17.552	17.179
ln Wage 00	10.333	8.299	8.680	10.324	10.106
Competitor-average regressors (Selection estimation)					
ln sample-mean Wage 96	10.403	8.246	8.691	10.377	10.069
Comp.s' hosts ln Market access	11.708	11.460	13.362	13.453	12.015
Comp.s' hosts skill share < Home 96	21.953	21.627	24.833	24.950	22.513
Comp.s' hosts skill share \geq Home 96	43.423	41.906	50.505	51.232	44.546
Comp.s' hosts distance 96	33.085	32.332	38.154	38.455	34.007
Comp.s' hosts ln Cons. p.c. 96	31.461	30.765	35.656	35.923	32.227
Parent-firm regressors (Selection estimation)					
Indic.: Headquarters West Germany 96	.975	.969	.970	.980	.978
ln Count of host countries 96	1.146	1.311	1.587	1.416	1.239
Employment $(t-\tau)$	2,392	3,973	5,224	4,145	2,434
Fixed assets $(t-\tau)$ [million]	253.6	469.1	606.2	497.5	275.7
Turnover $(t-\tau)$ [million]	520.7	912.4	1,109.2	895.7	510.8
Intm. inputs $(t-\tau)$ [million]	296.3	532.0	611.6	482.8	274.6
Liability $(t-\tau)$ [million]	290.1	522.6	669.0	517.4	291.1
MNE-wide interaction terms (Selection estimation)					
FDI in CEE 96 \times Comp.s' wages CEE	1.218	2.872	1.351	1.224	1.035
FDI in DEV 96 \times Comp.s' wages DEV	1.799	1.903	4.821	2.394	1.751
FDI in OIN 96 \times Comp.s' wages OIN	9.439	8.550	12.401	25.778	8.521
FDI in WEU 96 \times Comp.s' wages WEU	17.300	14.767	18.064	14.823	22.213
Parent observations	326	128	101	102	226

Sources: MIDI and USTAN 1996 and 2000, censored (second-stage) estimation sample of 322 MNEs.

Notes: Cost function observations in 2000, location selection observations four years prior to production (1996). Locations: Home (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 39: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.537**	.029	.009	.301	.198**
CEE <i>intensive only</i>	.834	-.831*	-.137	-.175	.309
CEE <i>extensive only</i>	.789***	-.781	-.014	.621	.036
DEV <i>intensive only</i>	.400	-.212	-.573	.890	-.505
DEV <i>extensive only</i>	.783***	.190	-.950***	-.008	-.034
OIN <i>intensive only</i>	3.811	-.076	.249	-4.752**	.769
OIN <i>extensive only</i>	.578***	.346	-.086	-.770	.357
WEU <i>intensive only</i>	1.117**	.060	-.063	.342	-1.456***
WEU <i>extensive only</i>	.843***	.167	.040	.205	-.795**

Sources: MIDI and USTAN 1996 and 2000.

Notes: Elasticities at the extensive and intensive margins from 326 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1). Standard errors inferred from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

4.3 Comparisons and Counterfactual Evaluations

Table 40: WAGE DIFFERENTIALS BY FOREIGN LOCATION AND HOME SECTOR

	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Overall differential	.095	.090	.961	.786
Wage differentials by Home sector				
Food products and beverages	.090	.085	.909	.743
Textile and leather products	.131	.124	1.319	1.080
Wood, pulp and paper products	.104	.099	1.054	.863
Chemicals, rubber and plastic	.079	.075	.799	.654
Mineral and metal products	.096	.091	.971	.795
Machinery and equipment	.082	.078	.825	.675
Transport equipment	.072	.068	.726	.594
Other manufacturing	.117	.111	1.184	.969

Source: UNIDO INDSTAT3 2005 (ISIC Rev.2), deflated to 12/31/98 with country CPIs and currency converted.

Notes: Ratios between German sectoral wages and MIDI MNE-employment weighted averages of foreign country medians over 3-digit level sectors (ISIC Rev.2). Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 41: EMPLOYMENT AT GERMAN MNEs IN 2000

	HOM	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)	(5)
Employment	1,423,086 ^a	245,721	332,622	319,221	394,579
Estimation sample employment	962,726	125,199	184,560	139,240	191,854
Mean employment per sample MNE	1,629.0	387.6	407.4	736.7	282.6

Sources: MIDI and USTAN 1996 to 2001, manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aPredicted German employment at in- and out-of-sample MNEs, based on linear employment regressions to account for incomplete MIDI-USTAN matches.

Table 42: COUNTERFACTUAL EMPLOYMENT EFFECTS OF A ONE-PERCENT REDUCTION IN THE HOME-FOREIGN WAGE GAP

Employment effect on margin	Permanent wage gap reduction by one percent between Home and			
	CEE (1)	DEV (2)	OIN (3)	WEU (4)
Home ^a <i>total</i>	374 (75) ^{***}	-40 (116)	1,214 (1077)	2,820 (901) ^{***}
Foreign ^b <i>extensive</i>	-1,951 (107) ^{***}	-2,850 (326) ^{***}	-2,008 (706) ^{***}	-3,306 (284) ^{***}
Foreign ^b <i>total</i>	-2,046 (394) ^{***}	271 (1560)	-3,673 (3794)	-4,979 (1574) ^{***}

Sources: Own calculations based on selectivity corrected translog estimates for 1,654 German manufacturing MNEs and their majority-owned foreign manufacturing affiliates in MIDI and USTAN between 1996 and 2001 (UNIDO wages).

Notes: Point estimates from parametric selectivity correction (Assumption 1, Table 23) multiplied by employment in 2000 (Table 41). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Home (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aGap reducing foreign wage increases (by one percent).

^bGap reducing home wage reduction (by one percent).

4.4 MNE Panel 1998-2001 with 2-year Prior Location Selection (1996-1999), Affiliates in Any Sector

Table 43: SAMPLE MEANS OF VARIABLES

$(t: 1998-2001, t-\tau: 1996-99)$	HOM	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)	(5)
Indic.: Presence in t	1.000	.351	.317	.436	.795
Indic.: Presence in $t-\tau$	1.000	.315	.275	.418	.796
Selectivity hazard for 00		1.477	1.549	1.312	.596
MNE-wide regressors (Labor demand estimation)					
Wage bill share (t)	.809	.051	.042	.120	.158
ln Fixed assets (t)	16.932	14.377	14.238	14.329	14.324
ln Turnover (t)	18.262	15.874	16.350	16.654	16.792
ln Wage (t)	10.361	8.294	8.913	10.302	10.123
Competitor-average regressors (Selection estimation)					
ln sample-mean Wage ($t-\tau$)	10.420	8.274	8.787	10.339	10.092
Comp.s' hosts' ln Market access ($t-\tau$)	18.205	18.247	20.337	19.305	18.258
Comp.s' hosts skill share < Home ($t-\tau$)	34.928	34.453	38.501	37.135	35.100
Comp.s' hosts skill share \geq Home ($t-\tau$)	66.309	68.001	74.882	69.761	66.215
Comp.s' hosts distance ($t-\tau$)	50.712	50.867	57.205	54.035	50.890
Comp.s' hosts ln Cons. p.c. ($t-\tau$)	51.648	51.592	57.159	54.624	51.769
Parent-firm regressors (Selection estimation)					
Indic.: Headquarters West Germany ($t-\tau$)	.976	.959	.982	.979	.981
ln Count of host countries ($t-\tau$)	1.363	1.713	2.034	1.716	1.494
Employment ($t-\tau$)	1,601	2,948	3,961	2,665	1,566
Fixed assets ($t-\tau$) [million]	172.2	366.8	480.6	324.1	174.4
Turnover ($t-\tau$) [million]	390.7	749.2	950.4	615.2	349.1
Intm. inputs ($t-\tau$) [million]	220.2	433.3	557.6	353.2	186.9
Liability ($t-\tau$) [million]	211.4	422.2	553.8	365.8	200.1
MNE-wide interaction terms (Selection estimation)					
FDI in CEE ($t-\tau$) \times Comp.s' wages CEE	1.233	3.389	1.727	1.236	1.065
FDI in DEV ($t-\tau$) \times Comp.s' wages DEV	1.804	2.578	5.559	2.645	1.911
FDI in OIN ($t-\tau$) \times Comp.s' wages OIN	12.889	12.661	19.443	28.208	12.356
FDI in WEU ($t-\tau$) \times Comp.s' wages WEU	19.236	17.427	20.840	18.567	23.587
Parent observations	2,527	871	706	1,055	1,950

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages and foreign affiliates in any sector), censored (second-stage) estimation sample of 2,527 MNEs.

Notes: Averages of MNE variables are conditional on presence. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 44: MARGINAL EFFECTS IN LONG PROBIT REGRESSION WITHOUT PRESENCE-WAGE INTERACTIONS

Predictors ($t-2$)	Presence (t)	CEE	DEV	OIN	WEU
		(1)	(2)	(3)	(4)
FDI in CEE ($t-\tau$)		.552 (.227)**	.089 (.236)	-.202 (.211)	-.432 (.256)*
FDI in DEV ($t-\tau$)		-.121 (.075)	.570 (.157)***	-.179 (.093)*	-.142 (.124)
FDI in OIN ($t-\tau$)		.908 (.223)***	-.467 (.357)	.735 (.481)	.276 (.576)
FDI in WEU ($t-\tau$)		-.479 (.523)	.127 (.347)	.380 (.240)	.339 (.649)
Home sector wage		-.005 (.003)	-.001 (.003)	.004 (.004)	.012 (.005)**
Competitors' wages DEV		-.003 (.006)	.0009 (.008)	-.001 (.009)	-.014 (.007)*
Competitors' wages OIN		.004 (.012)	-.016 (.013)	-.010 (.017)	.030 (.014)**
FDI ^a in loc. \times Home sector wage		.004 (.003)	.003 (.003)	-.010 (.004)***	-.010 (.005)**
FDI in DEV ($t-\tau$) \times Comp.s' wages DEV		.014 (.014)	-.003 (.012)	.023 (.018)	.007 (.017)
FDI in OIN ($t-\tau$) \times Comp.s' wages OIN		-.033 (.019)*	.020 (.018)	.012 (.022)	-.011 (.022)
ln Count of host countries		.097 (.024)***	.107 (.022)***	.117 (.027)***	.176 (.030)***
Employment ($t-\tau$) [thsd]		.012 (.006)**	.021 (.007)***	.017 (.008)**	.027 (.008)***
Liability ($t-\tau$) [billion]		-.101 (.064)	-.002 (.078)	-.035 (.087)	-.170 (.090)*
Competitors' hosts ln Cons. p.c. ($t-\tau$)		-.006 (.010)	-.001 (.010)	.005 (.012)	-.019 (.011)*
Obs.		3,683	3,683	3,683	3,683
Pseudo R^2		.543	.528	.558	.416

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), pooled sample of manufacturing MNEs and their majority-owned foreign affiliates in any sector with two-year selection lags ($\tau = 2$).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. Further regressors (not significantly different from zero at five percent level in any location): Competitors' wages CEE/WEU and interactions of competitors' wages in CEE/WEU with FDI presence in CEE/WEU, Competitors' hosts ln Market access, Indic. Headquarters West Germany, Fixed assets, Turnover, Intm. inputs, Competitors' hosts skill share, Competitors' hosts distance. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aFDI presence in regression location.

Table 45: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY FOR FOREIGN AFFILIATES IN ANY SECTOR

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.496***	.022***	.013	.191***	.269***
CEE <i>intensive only</i>	1.018***	-1.053***	-.231**	.280**	-.015
CEE <i>extensive only</i>	.651***	-1.055***	.015	-.329	.159
DEV <i>intensive only</i>	.913	-.344**	.121	-.675	-.016
DEV <i>extensive only</i>	.726***	-.832*	-.988***	-1.093	2.561**
OIN <i>intensive only</i>	3.042***	.097**	-.157	-3.469***	.487**
OIN <i>extensive only</i>	.805***	.131	-.001	-.869**	.016
WEU <i>intensive only</i>	1.767***	-.002	-.002	.201**	-1.965***
WEU <i>extensive only</i>	.847***	.099	-.019	.372	-1.002***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages, foreign affiliates in any sector).

Notes: Elasticities at the extensive and intensive margins from 2,527 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1, Table 44). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 46: CROSS-WAGE ELASTICITIES FOR UNCORRECTED INTENSIVE-MARGIN ESTIMATES FOR FOREIGN AFFILIATES IN ANY SECTOR

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.502***	.022***	.005	.199***	.276***
CEE <i>intensive</i>	.895***	-1.175***	-.098*	.248***	.131
DEV <i>intensive</i>	.349	-.167*	-.037	-.108	-.037
OIN <i>intensive</i>	3.301***	.101***	-.026	-3.926***	.550***
WEU <i>intensive</i>	1.905***	.022	-.004	.228***	-2.152***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 3,183 stacked MNE observations. Underlying labor demand estimates from uncorrected ISUR estimation. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 47: RELATIVE DIFFERENCE BETWEEN UNCORRECTED AND CORRECTED INTENSIVE-MARGIN ESTIMATES FOR FOREIGN AFFILIATES IN ANY SECTOR

Relative difference in employment effect estimates	Wage change in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	.011 (.717)	-.017 (.498)	-.625 (6.913)	.039 (.966)	.024 (3.464)
CEE <i>intensive</i>	-.121 (.445)	.116 (.177)	-.573 (.568)	-.114 (1.063)	-9.933 (18.010)
DEV <i>intensive</i>	-.617 (7.195)	-.513 (.642)	-1.307 (32.773)	-.840 (7.883)	1.493 (27.843)
OIN <i>intensive</i>	.085 (1.035)	.035 (1.281)	-.837 (8.013)	.132 (.415)	.128 (30.273)
WEU <i>intensive</i>	.076 (3.731)	-11.494 (20.989)	1.566 (27.992)	.135 (29.145)	.093 (.704)

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages, foreign affiliates in any sector).

Notes: The relative difference between elasticities at the intensive margin from uncorrected ISUR estimation and from parametric selectivity-corrected ISUR estimation (Assumption 1) is the difference between the uncorrected and the selectivity-corrected elasticity estimate, divided by the selectivity-corrected estimate. There are 3,183 stacked MNE observations for uncorrected ISUR and 2,527 for selectivity-corrected ISUR estimation. Standard errors from 200 bootstraps over both estimators: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

4.5 MNE Panel 1998-2001 with 2-year Prior Location Selection (1996-1999), Locations by Manufacturing Wage Quartile

Table 48: SAMPLE MEANS OF VARIABLES BY COUNTRY QUARTILE

<i>(t</i> : 1998-2001, <i>t</i> − τ : 1996-99)	HOM	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)	(5)
Indic.: Presence in <i>t</i>	1.000	.887	.557	.555	.290
Indic.: Presence in <i>t</i> − τ	1.000	.855	.502	.490	.235
Selectivity hazard for <i>t</i>		.481	1.194	1.201	1.795
MNE-wide regressors (Labor demand estimation)					
Wage bill share (<i>t</i>)	.736	.273	.055	.035	.014
ln Fixed assets (<i>t</i>)	18.257	16.231	15.056	15.270	14.898
ln Turnover (<i>t</i>)	19.153	17.902	16.722	16.507	15.947
ln Wage (<i>t</i>)	10.360	10.203	9.303	8.434	6.970
Competitor-average regressors (Selection estimation)					
ln sample-mean Wage (<i>t</i> − τ)	10.455	10.219	9.354	8.401	7.068
Comp.s' hosts ln Market access	11.459	11.621	12.464	11.536	12.678
Comp.s' hosts skill share < Home (<i>t</i> − τ)	18.719	18.947	20.003	18.631	20.004
Comp.s' hosts skill share \geq Home (<i>t</i> − τ)	59.536	60.446	65.496	61.734	67.233
Comp.s' hosts distance (<i>t</i> − τ)	30.017	30.471	32.711	30.168	33.154
Comp.s' hosts ln Cons. p.c. (<i>t</i> − τ)	34.459	34.920	37.438	34.844	38.222
Parent-firm regressors (Selection estimation)					
Indic.: Headquarters West Germany (<i>t</i> − τ)	.974	.976	.978	.956	.945
ln Count of host countries (<i>t</i> − τ)	1.564	1.624	1.810	1.813	2.079
Employment (<i>t</i> − τ)	3,838	3,533	5,925	5,965	5,804
Fixed assets (<i>t</i> − τ) [million]	497.2	465.7	787.2	817.8	920.3
Turnover (<i>t</i> − τ) [million]	920.0	808.0	1,446.4	1,515.1	1,243.2
Intm. inputs (<i>t</i> − τ) [million]	537.6	446.8	844.5	896.0	621.0
Liability (<i>t</i> − τ) [million]	542.8	490.6	855.5	881.6	930.0
Parent observations	663	575	359	363	183

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), censored (second-stage) estimation sample of 663 MNEs.

Notes: Averages of MNE variables are conditional on presence. Locations: HOM (Germany) and four foreign-country groups by manufacturing-wage quartiles (see Table 4), fourth quartile with top wages.

Table 49: MARGINAL EFFECTS IN LONG PROBIT REGRESSION BY QUARTILE

Predictors ($t-2$)	Presence (t)	Qrtl. 4	Qrtl. 3	Qrtl. 2	Qrtl. 1
		(1)	(2)	(3)	(4)
FDI in Qrtl. 4 ($t-\tau$)		.086 (.826)	-.282 (.852)	.504 (.204)**	.048 (.117)
FDI in Qrtl. 3 ($t-\tau$)		.087 (.121)	.680 (.183)***	.0006 (.106)	.301 (.230)
FDI in Qrtl. 2 ($t-\tau$)		.153 (.279)	.595 (.311)*	.480 (.282)*	-.062 (.063)
FDI in Qrtl. 1 ($t-\tau$)		.111 (.243)	.060 (.225)	-.048 (.174)	-.034 (.034)
Home sector wage		.019 (.006)***	.008 (.003)***	.006 (.004)	-.001 (.001)
Comp.s' wages Qrtl. 4		-.049 (.028)*	-.010 (.021)	.047 (.021)**	-.009 (.009)
Comp.s' wages Qrtl. 3		-.006 (.005)	-.006 (.004)	.0006 (.004)	.0008 (.002)
FDI ^a in loc. \times Home sector wage		-.025 (.006)***	-.008 (.003)**	-.004 (.004)	.0001 (.002)
FDI Qrtl. 4 ($t-\tau$) \times Comp.s' wages Qrtl. 4		.052 (.028)*	.005 (.020)	-.044 (.021)**	-.003 (.009)
FDI Qrtl. 3 ($t-\tau$) \times Comp.s' wages Qrtl. 3		-.013 (.010)	.020 (.006)***	-.011 (.009)	-.013 (.006)**
FDI Qrtl. 2 ($t-\tau$) \times Comp.s' wages Qrtl. 2		-.056 (.069)	-.116 (.051)**	.064 (.051)	.023 (.023)
FDI Qrtl. 1 ($t-\tau$) \times Comp.s' wages Qrtl. 1		-.126 (.233)	-.030 (.156)	.052 (.169)	.209 (.061)***
ln Count of host countries		.123 (.044)***	.102 (.029)***	.143 (.035)***	.022 (.014)
Fixed assets ($t-\tau$) [billion]		.043 (.049)	-.038 (.034)	-.006 (.045)	-.041 (.015)***
Turnover ($t-\tau$) [billion]		.127 (.048)***	.225 (.093)**	.026 (.049)	.026 (.017)
Intm. inputs ($t-\tau$) [billion]		-.169 (.063)***	-.291 (.111)***	-.018 (.069)	-.046 (.021)**
Liability ($t-\tau$) [billion]		-.198 (.087)**	-.017 (.061)	-.075 (.076)	.052 (.025)**
Obs.		2,252	2,252	2,252	2,252
Pseudo R^2		.351	.534	.535	.570

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages), pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. Further regressors (not significantly different from zero at five percent level in any country group): Competitors' wages in Quartiles 2 and 1, Competitors' hosts ln Market access, Indic. Headquarters West Germany, Employment, Competitors' hosts skill share, Competitors' hosts distance, Competitors' hosts ln Cons. per capita. Locations: Four foreign-country groups by manufacturing-wage quartiles (see Table 4), fourth quartile with top wages.

^aFDI presence in regression location.

Table 50: CROSS-WAGE ELASTICITIES BETWEEN WAGE QUARTILE GROUPS

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	Qrtl. 4 (2)	Qrtl. 3 (3)	Qrtl. 2 (4)	Qrtl. 1 (5)
HOM <i>intensive</i>	-.467**	.402**	.043*	.015*	-.001
Qrtl. 4 <i>intensive only</i>	1.193**	-1.339**	.104***	.025*	.009**
<i>extensive only</i>	.703***	-.763***	.030***	.019***	.004**
Qrtl. 3 <i>intensive only</i>	1.026*	.833***	-1.695***	-.190***	.018
<i>extensive only</i>	.703***	.237***	-.970***	.019***	.004**
Qrtl. 2 <i>intensive only</i>	.572*	.317*	-.297***	-.619**	.020
<i>extensive only</i>	.703***	.237***	.030***	-.981***	.004**
Qrtl. 1 <i>intensive only</i>	-.175	.561*	.134	.096	-.624
<i>extensive only</i>	.703***	.237***	.030***	.019***	-.996***

Sources: MIDI and USTAN 1996 to 2001 (UNIDO wages).

Notes: Elasticities at the extensive and intensive margins from 663 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1). Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany) and four foreign-country groups by manufacturing-wage quartiles, fourth quartile with top wages.

4.6 Unrestricted Product Market Changes

Table 51: UNRESTRICTED HOME EMPLOYMENT RESPONSES TO FOREIGN MNE EMPLOYMENT

	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
ln Employment CEE	-.004 (.007)	-.011 (.011)	-.006 (.009)	.126 (.128)
ln Employment DEV	.022 (.009)**	.019 (.012)	-.002 (.010)	-.053 (.168)
ln Employment OIN	.001 (.009)	.004 (.012)	.011 (.009)	-.129 (.184)
ln Employment WEU	-.002 (.008)	.007 (.012)	.021 (.009)**	.236 (.207)
ln Equity	.079 (.017)***	.075 (.018)***	.116 (.022)***	.153 (.073)**
ln Liability	.649 (.023)***	.651 (.024)***	.242 (.032)***	.169 (.125)
Parent profits/equity	.001 (.002)	.001 (.002)	.0002 (.001)	-1.00e-05 (.002)
Indic.: Exporter	.406 (.041)***	.407 (.041)***	.067 (.022)***	.085 (.048)*
Year effects	yes	yes	yes	yes
Sectoral trade controls	yes	yes	yes	yes
Firm-fixed effects			yes	yes
Obs.	2,188	2,188	2,188	2,289
R^2 (within)	.680	.680	.087	

Sources: MIDI and USTAN 1998 to 2001 (UNIDO wages), manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Instruments in columns 2 and 4 are past foreign wages (UNIDO 1996-99) and their interactions with the MNE's past foreign presence (MIDI 1996-99). R^2 within for firm-fixed effects regressions. Standard errors in parentheses: * significance at ten, ** five, *** one percent. Sectoral log home wage dropped due to multi-collinearity. Sectoral trade controls are log exports from Germany, final imports to Germany, and imported intermediate inputs to Germany for four foreign locations. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 52: FIRST-STAGE IV PREDICTIONS OF FOREIGN MNE EMPLOYMENT

	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Competitors' wages CEE	1.00e-05 (.0001)	.0002 (.0001)**	-.0001 (.0001)	-.00005 (.0001)
Competitors' wages DEV	-1.00e-05 (1.00e-05)	-4.17e-06 (1.00e-05)	-1.18e-06 (1.00e-05)	-.00002 (1.00e-05)
Competitors' wages OIN	.0002 (.00006)***	.00004 (.00006)	-.00005 (.00006)	-.00004 (.00006)
Competitors' wages WEU	-.00002 (.00003)	.00004 (.00003)	-.00002 (.00003)	-7.93e-06 (.00003)
FDI in CEE \times Comp.s' wages CEE ($t-\tau$)	.00002 (.00002)	-6.61e-06 (.00002)	-.00002 (.00002)	-.00002 (.00002)
FDI in DEV \times Comp.s' wages DEV ($t-\tau$)	7.39e-06 (.00002)	.00002 (1.00e-05)	9.83e-06 (.00002)	-5.11e-07 (.00002)
FDI in OIN \times Comp.s' wages OIN ($t-\tau$)	-2.07e-06 (3.43e-06)	-7.53e-07 (3.38e-06)	-5.95e-06 (3.49e-06)*	2.37e-06 (3.51e-06)
FDI in WEU \times Comp.s' wages WEU ($t-\tau$)	-3.80e-07 (3.40e-06)	1.16e-06 (3.35e-06)	-6.48e-07 (3.46e-06)	2.33e-06 (3.48e-06)
ln Equity	-.011 (.063)	.239 (.062)***	.218 (.064)***	-.009 (.064)
ln Liability	.199 (.091)**	.376 (.089)***	.092 (.092)	.381 (.093)***
Parent profits/equity	.0007 (.003)	-.003 (.003)	.001 (.003)	.00006 (.003)
Indic.: Exporter	-.006 (.064)	-.140 (.063)**	.037 (.065)	-.133 (.066)**
Year effects	yes	yes	yes	yes
Sectoral trade controls	yes	yes	yes	yes
Firm-fixed effects	yes	yes	yes	yes
Obs.	2,188	2,188	2,188	2,188
R^2 (within)	.051	.065	.033	.030

Sources: MIDI and USTAN 1998 to 2001 (UNIDO wages), manufacturing MNEs and their majority-owned foreign manufacturing affiliates.

Notes: Instruments are past foreign wages (UNIDO 1996-99) and their interactions with the MNE's past foreign presence (MIDI 1996-99). (First-stage estimates for column 4 in Table 51.) Standard errors in parentheses: * significance at ten, ** five, *** one percent. Sectoral log home wage dropped due to multi-collinearity. Sectoral trade controls are log exports from Germany, final imports to Germany, and imported intermediate inputs to Germany for four foreign locations. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

5 OWW Wages

5.1 MNE Panel 1998-2001 with 2-year Prior Location Selection (1996-1999)

Table 53: MEANS OF VARIABLES

$(t: 1998-2001, t-\tau: 1996-99)$	HOM	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)	(5)
Indic.: Presence in t	1.000	.425	.346	.327	.682
Indic.: Presence in $t-\tau$	1.000	.391	.316	.306	.684
Selectivity hazard for (t)		1.379	1.504	1.639	.841
MNE-wide regressors (Labor demand estimation)					
Wage bill share (t)	.835	.066	.030	.158	.154
ln Fixed assets (t)	17.362	14.887	15.217	15.847	15.249
ln Turnover (t)	18.510	15.935	16.327	17.319	16.964
ln Wage (t)	10.189	8.024	7.589	9.937	9.813
Competitor-average regressors (Selection estimation)					
ln sample-mean Wage $(t-\tau)$	10.175	8.046	7.821	9.914	9.801
Comp.s' hosts' ln Market access $(t-\tau)$	11.255	10.493	12.738	12.686	11.660
Comp.s' hosts skill share < Home $(t-\tau)$	20.192	18.903	22.532	22.374	20.852
Comp.s' hosts skill share \geq Home $(t-\tau)$	42.110	38.953	48.478	48.710	44.058
Comp.s' hosts distance $(t-\tau)$	31.744	29.421	36.253	36.141	32.956
Comp.s' hosts ln Cons. p.c. $(t-\tau)$	30.489	28.538	34.256	34.185	31.508
Parent-firm regressors (Selection estimation)					
Indic.: Headquarters West Germany $(t-\tau)$	.971	.963	.972	.967	.977
ln Count of host countries $(t-\tau)$	1.179	1.329	1.683	1.512	1.347
Employment $(t-\tau)$	2,266	3,487	5,040	3,893	2,577
Fixed assets $(t-\tau)$ [million]	263.3	450.9	680.8	530.5	337.0
Turnover $(t-\tau)$ [million]	545.7	875.5	1,195.6	891.7	606.2
Intm. inputs $(t-\tau)$ [million]	313.6	527.0	686.4	486.7	325.1
Liability $(t-\tau)$ [million]	305.8	504.0	727.0	552.3	361.3
MNE-wide interaction terms (Selection estimation)					
FDI in CEE $(t-\tau) \times$ Comp.s' wages CEE	1.208	2.755	1.153	1.010	.872
FDI in DEV $(t-\tau) \times$ Comp.s' wages DEV	.757	.804	2.130	1.104	.865
FDI in OIN $(t-\tau) \times$ Comp.s' wages OIN	6.205	4.975	9.218	17.594	5.779
FDI in WEU $(t-\tau) \times$ Comp.s' wages WEU	12.410	10.190	13.618	12.394	17.494
Parent observations	1,467	617	434	461	838

Sources: MIDI and USTAN 1996 to 2001 (OWW wages), censored (second-stage) estimation sample of 1,467 MNEs.

Notes: Averages of MNE variables are conditional on presence. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 54: MARGINAL EFFECTS IN PROBIT REGRESSION

Predictors ($t-2$)	Presence (t)	CEE	DEV	OIN	WEU
		(1)	(2)	(3)	(4)
FDI in CEE ($t-\tau$)		.158 (.410)	.384 (.363)	.275 (.361)	-.400 (.365)
FDI in DEV ($t-\tau$)		-.025 (.073)	.837 (.210)***	-.090 (.047)*	.048 (.098)
FDI in OIN ($t-\tau$)		-.599 (.298)**	.586 (.869)	1.000 (.0007)***	.723 (.265)***
FDI in WEU ($t-\tau$)		.056 (.193)	.142 (.182)	-.065 (.230)	.996 (.005)***
Home sector wage		-.014 (.012)	.016 (.012)	.026 (.010)**	.072 (.026)***
Competitors' wages DEV		.034 (.014)**	.0001 (.015)	-.027 (.018)	.029 (.019)
Competitors' wages OIN		-.023 (.032)	.002 (.030)	.018 (.029)	-.095 (.039)**
FDI ^a in loc. \times Home sector wage		.023 (.014)	-.007 (.012)	-.038 (.013)***	-.063 (.027)**
FDI in DEV ($t-\tau$) \times Cmp.s' wages DEV		-.009 (.027)	-.007 (.022)	.052 (.023)**	-.040 (.037)
FDI in OIN ($t-\tau$) \times Cmp.s' wages OIN		.058 (.042)	-.023 (.036)	-.018 (.029)	-.061 (.051)
ln Host count		.069 (.039)*	.128 (.035)***	.048 (.029)*	.154 (.054)***
Employment ($t-\tau$) [thsd]		.022 (.009)**	.023 (.008)***	.004 (.006)	-.021 (.017)
Turnover ($t-\tau$) [billion]		-.018 (.066)	.013 (.052)	.063 (.032)**	.959 (.230)***
Intm. inputs ($t-\tau$) [billion]		.018 (.074)	-.065 (.059)	-.091 (.040)**	-1.127 (.273)***
Liability ($t-\tau$) [billion]		-.190 (.075)**	-.070 (.073)	-.008 (.055)	-.340 (.123)***
Obs.		2,460	2,460	2,460	2,460
Pseudo R^2		.555	.518	.543	.455

Sources: MIDI and USTAN 1996 to 2001 (OWW wages), pooled sample of manufacturing MNEs and their majority-owned foreign manufacturing affiliates with two-year selection lags ($\tau = 2$).

Notes: Standard errors in parentheses: * significance at ten, ** five, *** one percent. Further regressors (not significantly different from zero at five percent level in any location): Competitors' wages CEE and WEU and their interactions with FDI presence in CEE and WEU, Competitors' hosts ln Market access, Indic. Headquarters West Germany, Fixed assets, Competitors' hosts skill share, Competitors' hosts distance, Competitors' hosts ln Cons. per capita. Without wage-presence interactions, past presence has a marginal effect of .780 (standard error .022) in CEE, .672 (.027) in DEV, .716 (.026) in OIN, and .745 (.020) in WEU. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aFDI presence in regression location.

Table 55: TRANSLOG COST PARAMETER ESTIMATES

Employment in: ^a	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)
Parametric Selectivity Correction (Assumption 1)				
ln <i>Wages</i> ^a				
HOM	.006 (.0009)***	.001 (.0005)**	.094 (.009)***	.006 (.006)
CEE	-.004 (.0008)***	-.004 (.0002)***	.002 (.00004)***	-.00006 (.00005)
DEV	-.004 (.0002)***	.003 (.0003)***	.00008 (.00003)***	-.00008 (.00004)**
OIN	.002 (.0004)***	.00008 (.0003)	-.114 (.009)***	.019 (.002)***
WEU	-.00006 (.0004)	-.00008 (.0003)	.019 (.001)***	-.024 (.006)***
Selectivity hazard	9.029 (12.581)	-27.972 (12.229)**	10.767 (13.319)	1.841 (12.496)
R^2	.977	.940	.966	.927

Sources: MIDI and USTAN 1996 to 2001 (OWW wages).

Notes: Stacked observations of 1,467 MNEs. Further regressors: ln Turnover, ln Fixed assets, ln MNE wage residuals, Absence indicators, Transformed constant (in parametric selectivity regression). Standard errors in parentheses: * significance at ten, ** five, *** one percent. Standard errors corrected for first-stage estimation of selectivity hazards (hence not symmetric on restricted coefficients). Locations: HOM (omitted), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

^aTransformed wage-bill shares and regressors.

Table 56: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.303***	.036***	.010***	.163***	.094**
CEE <i>intensive only</i>	1.058***	-1.109***	-.148***	.113	.086
CEE <i>extensive only</i>	.791***	-1.074***	.026	.016	.094
DEV <i>intensive only</i>	.957***	-.467**	-.627***	.059	.079
DEV <i>extensive only</i>	.432	.350	-.987***	.143	.067
OIN <i>intensive only</i>	2.711***	.064	.010	-3.255***	.470*
OIN <i>extensive only</i>	1.138*	-.290	-.011	-.741	.026
WEU <i>intensive only</i>	.889**	.027	.008	.266*	-1.190***
WEU <i>extensive only</i>	.851***	.038	.010	-.024	-.914***

Sources: MIDI and USTAN 1996 to 2001 (OWW wages).

Notes: Elasticities at the extensive and intensive margins from 1,467 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1), Table 55). Standard errors inferred from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

6 UBS Wages

6.1 MNE Panel 1998-2001 with 2-year Prior Location Selection (1996-1999), using UBS Wage Data

Table 57: MEANS OF VARIABLES

$(t: 1998-2001, t-\tau: 1996-99)$	HOM	CEE	DEV	OIN	WEU
	(1)	(2)	(3)	(4)	(5)
Indic.: Presence in t	1.000	.335	.340	.306	.731
Indic.: Presence in $t-\tau$	1.000	.308	.313	.289	.734
Selectivity hazard for (t)		1.525	1.515	1.666	.767
MNE-wide regressors (Labor demand estimation)					
Wage bill share (t)	.770	.067	.062	.201	.194
ln Fixed assets (t)	17.280	14.863	15.295	15.800	15.245
ln Turnover (t)	18.464	15.993	16.414	17.281	17.033
ln Wage (t)	10.225	8.103	8.749	10.456	10.034
Competitor-average regressors (Selection estimation)					
ln sample-mean Wage $(t-\tau)$	10.176	8.468	9.164	10.577	10.052
Comp.s' hosts skill share < Home $(t-\tau)$	20.437	19.226	22.526	22.450	20.610
Comp.s' hosts skill share \geq Home $(t-\tau)$	42.445	40.916	47.896	49.366	43.278
Comp.s' hosts distance $(t-\tau)$	32.095	30.183	36.134	36.361	32.469
Comp.s' hosts ln Cons. p.c. $(t-\tau)$	30.808	29.209	34.182	34.366	31.125
Parent-firm regressors (Selection estimation)					
Indic.: Headquarters West Germany $(t-\tau)$	.977	.961	.975	.970	.976
ln Count of host countries $(t-\tau)$	1.142	1.416	1.596	1.475	1.245
Employment $(t-\tau)$	2,129	4,831	4,547	3,684	2,123
Fixed assets $(t-\tau)$ [million]	242.8	654.5	579.8	499.2	260.2
Turnover $(t-\tau)$ [million]	506.7	1,281.9	1,061.5	841.2	482.5
Intm. inputs $(t-\tau)$ [million]	290.7	779.0	609.4	459.8	257.6
Liability $(t-\tau)$ [million]	284.6	732.5	634.1	521.5	284.2
MNE-wide interaction terms (Selection estimation)					
FDI in CEE $(t-\tau) \times$ Comp.s' wages CEE	1.429	4.165	1.602	1.426	1.242
FDI in DEV $(t-\tau) \times$ Comp.s' wages DEV	2.876	3.231	7.993	3.886	2.778
FDI in OIN $(t-\tau) \times$ Comp.s' wages OIN	11.384	9.968	16.805	34.240	10.155
FDI in WEU $(t-\tau) \times$ Comp.s' wages WEU	17.044	12.944	16.503	15.027	22.394
Parent observations	1,628	387	528	497	1,179

Sources: MIDI and USTAN 1996 to 2001 (UBS wages), censored (second-stage) estimation sample of 1,628 MNEs.

Notes: Cost function observations 1998-2001 (t), location selection observations two (τ) years prior to production (1996-99). Locations: Home (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 58: CROSS-WAGE ELASTICITIES UNDER PARAMETRIC SELECTIVITY

Employment change (%) in	Wage change (by 1%) in				
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)
HOM <i>intensive</i>	-.261**	.014***	.0009	.063	.183***
CEE <i>intensive only</i>	.682***	-.883***	-.004	.203	.002
CEE <i>extensive only</i>	.720***	-.983***	.024	.041	.188**
DEV <i>intensive only</i>	.033	-.003	-.576	.505*	.040
DEV <i>extensive only</i>	1.058***	.005	-1.106***	.040	.930
OIN <i>intensive only</i>	.779	.053	.164*	-1.867**	.871***
OIN <i>extensive only</i>	.580	.027	.012	-.695	.136
WEU <i>intensive only</i>	.989***	.0002	.006	.379***	-1.375***
WEU <i>extensive only</i>	1.202***	.060	-.014	.225	-.648***

Sources: MIDI and USTAN 1996 to 2001 (UBS wages).

Notes: Elasticities at the extensive and intensive margins from 1,628 stacked MNE observations. Underlying labor demand estimates from parametric selectivity-corrected ISUR estimates (Assumption 1). Standard errors inferred from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

7 Specification Comparisons

Table 59: FOREIGN-WAGE ELASTICITIES OF HOME EMPLOYMENT

Home employment change (%)	Wage change (1%) in					Obs. (6)
	HOM (1)	CEE (2)	DEV (3)	OIN (4)	WEU (5)	
Stacking						
Ass. 1, UNIDO 98-01	-.307 (.131)**	.026 (.005)***	-.003 (.008)	.085 (.076)	.198 (.063)***	1,654
Ass. 1, UNIDO 00	-.537 (.252)**	.029 (.018)	.009 (.017)	.301 (.188)	.198 (.095)**	326
Ass. 1 AR(2), UNIDO 98-01	-.300 (.198)	.026 (.009)***	-.003 (.008)	.084 (.112)	.194 (.091)**	1,654
Ass. 1, UNIDO 98-01, lag y	-.307 (.112)***	.027 (.006)***	-.005 (.008)	.111 (.073)	.175 (.054)***	1,654
Ass. 1, UBS 98-01	-.260 (.125)**	.014 (.004)***	.0009 (.013)	.062 (.081)	.183 (.056)***	1,628
Ass. 1, OWW 98-01	-.303 (.119)**	.036 (.008)***	.010 (.003)***	.163 (.081)**	.094 (.047)**	1,467
Ass. 3, UNIDO 98-01	-.317 (.096)***	.027 (.005)***	.004 (.008)	.081 (.065)	.204 (.041)***	1,654
Omnipresent MNEs						
Ass. 1, UNIDO 98-01	-.152 (.376)	.002 (.028)	.059 (.055)	.090 (.185)	.0003 (.222)	96

Sources: MIDI and USTAN 1996 to 2001 (UNIDO, UBS and OWW wages).

Notes: Elasticities of wage effects on home employment (first row of elasticity matrix) at the intensive margin. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: HOM (Germany), CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 60: HOME-WAGE ELASTICITIES AT THE INTENSIVE MARGIN

Emplmt. chg. (%)	Home wage change (1%), by regression specification							Omnipr. UNIDO 98-01 Ass. 1
	Stacking							
	UNIDO 98-01 Ass. 1 (1)	UNIDO 00 Ass. 1 (2)	UNIDO 98-01 AR(2) Ass. 1 (3)	UNIDO 98-01 lag y Ass. 1 (4)	UBS 98-01 Ass. 1 (5)	OWW 98-01 Ass. 1 (6)	UNIDO 98-01 Ass. 3 (7)	
HOM	-.307 (.131)**	-.537 (.252)**	-.300 (.198)	-.307 (.112)**	-.260 (.125)**	-.303 (.119)**	-.317 (.096)**	-.152 (.376)
CEE	.820 (.157)**	.834 (.528)	.796 (.251)**	.842 (.192)**	.683 (.177)**	1.058 (.218)**	.834 (.158)**	.084 (1.056)
DEV	-.157 (.468)	.400 (.793)	-.146 (.491)	-.295 (.473)	.034 (.489)	.959 (.252)**	.245 (.428)	.978 (.963)
OIN	1.303 (1.183)	3.811 (2.420)	1.280 (1.812)	1.696 (1.080)	.770 (1.002)	2.716 (1.392)*	1.240 (.990)	.320 (.661)
WEU	1.205 (.382)**	1.117 (.529)**	1.178 (.551)**	1.063 (.325)**	.988 (.299)**	.889 (.438)**	1.244 (.241)**	.001 (.826)
Obs.	1,654	326	1,654	1,654	1,628	1,467	1,654	96

Sources: MIDI and USTAN 1996 to 2001 (UNIDO, UBS and OWW wages).

Notes: Elasticities of home wage effects on foreign employment (first column of elasticity matrix) at the intensive margin. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Table 61: HOME-WAGE ELASTICITIES AT THE EXTENSIVE MARGIN

Emplmt. chg. (%)	Home wage change (1%), by regression specification							
	Stacking							Omnipr.
	UNIDO 98-01	UNIDO 00	UNIDO 98-01 AR(2)	UNIDO 98-01 lag y	UBS 98-01	OWW 98-01	UNIDO 98-01	UNIDO 98-01
	Ass. 1	Ass. 1	Ass. 1	Ass. 1	Ass. 1	Ass. 1	Ass. 3	Ass. 1
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
CEE	.794 (.043)***	.789 (.156)***	.791 (.111)***	.784 (.045)***	.720 (.094)***	.792 (.144)***	-12.840 (15.126)	.651 (.127)***
DEV	.857 (.098)***	.783 (.159)***	.866 (.276)***	.827 (.101)***	1.048 (.369)***	.416 (.329)	-25.420 (27.013)	.669 (.210)***
OIN	.629 (.221)***	.578 (.214)***	.750 (.176)***	.643 (.184)***	.582 (.550)	1.140 (.690)*	-9.269 (9.522)	.501 (.157)***
WEU	.838 (.072)***	.843 (.145)***	.636 (.173)***	.820 (.062)***	1.206 (.316)***	.852 (.163)***	4.401 (4.064)	.612 (.113)***
Obs.	1,654	326	1,654	1,654	1,628	1,467	1,654	96

Sources: MIDI and USTAN 1996 to 2001 (UNIDO, UBS and OWW wages).

Notes: Elasticities of home wage effects on foreign employment (first column of elasticity matrix) at the extensive margin. Standard errors from 200 bootstraps: * significance at ten, ** five, *** one percent. Locations: CEE (Central and Eastern Europe), DEV (Developing countries), OIN (Overseas Industrialized countries), WEU (Western Europe).

Appendix

Table 62: AGGREGATE LOCATIONS

Locations	Countries
WEU	Western European countries (EU 15 plus Norway and Switzerland)
OIN	Overseas Industrialized countries including Australia, Canada, Japan, New Zealand, USA as well as Iceland and Greenland
CEE	Central and Eastern European countries including accession countries and candidates for EU membership as well as Balkan countries, Belarus, Turkey, and Ukraine
DEV	Developing countries including Russia and Central Asian economies as well as dominions of Western European countries and of the USA

Table 63: DESCRIPTION OF VARIABLES

Variable	Description
Selection Regressions for Location Choice	
GDP	Host country GDP (EUR 12/31/98)
GDP per capita	Host country GDP per capita (EUR 12/31/98)
Distance	Greater circle distance between Berlin and host country capital
Skill share ^a	Percentage of adults with some high-school attainment 1999 Barro and Lee (2001)
Location count	Number of host countries with MNE presence per location
Employment	Number of employees at parent firm
Fixed assets	Fixed assets at parent firm (EUR 12/31/98)
Turnover	Turnover at parent firm (EUR 12/31/98)
Intm. inputs	Intermediate inputs at parent firm (EUR 12/31/98)
Liability	Liabilities at parent firm (EUR 12/31/98)
Home sector wage	Gross annualized earnings in sector of German parent (skill-group median at two-digit NACE; source: <i>destatis.de</i>)
Foreign wage	Skill-group median annualized wages of workers abroad; based on UNIDO data Freeman and Oostendorp (2001)
Outcome Regressions of Labor Demand	
Wages	Annualized location averages of median UNIDO wages; gross earnings in parent sector for workforce at German parents (see above)
Turnover	Sales by location (EUR 12/31/98)
Fixed assets	Fixed assets by location (EUR 12/31/98)

^aThe variable Competitors' hosts skill share $<$ Home is zero for host countries with larger relative skill endowments than Home, the variable Competitors' hosts skill share \geq Home is zero for host countries with smaller relative skill endowments than Home.

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