

Appendix

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Table 1: Summary statistics on CIP and merged sample - additional information

	1995		2005	
	PPI	CIP	PPI	CIP
Sales in current 1,000 EUR				
25th percentile	1955	340	2827	555
50th percentile	5424	998	8199	1417
75th percentile	20763	3747	25732	5338
Share of sales exported				
25th percentile	19	8	10	7
50th percentile	64	33	50	33
75th percentile	96	88	97	86
Share of sales exported to the UK				
25th percentile	4	2	2	2
50th percentile	14	9	9	8
75th percentile	35	25	24	21
% of imported materials in cost (materials+wages+fuel)				
25th percentile	19	11	15	8
50th percentile	36	27	35	23
75th percentile	55	48	56	46
% of imported materials from the UK in cost (materials+wages+fuel)				
25th percentile	5	2	2	2
50th percentile	14	10	9	8
75th percentile	27	23	21	19

Note: PPI refers to the sample of CIP plants that participate in the PPI sample. CIP refers to the full sample of plants. Information on imports is based on the roughly 90% of the population of plants for which comparable information is available over the entire time period.

Table 2: Sectoral shares (# plants, share in sales)

NACE	Description	Share of plants				Share of sales			
		1995		2005		1995		2005	
		PPI	CIP	PPI	CIP	PPI	CIP	PPI	CIP
10-14	Mining	2	2	3	4	2	2	1	2
15-16	Food, Bev., Tobac.	22	18	19	14	45	34	25	23
17-19	Textile, App., Leath.	10	9	7	5	2	3	1	1
20	Wood Products	5	5	6	6	2	1	1	1
21-22	Paper, Printing	5	12	7	13	5	7	6	8
24	Chemicals	7	5	7	5	14	15	19	27
25	Rubber, Plastics	5	5	6	6	3	2	2	2
26	Non-metallic min.	7	6	7	8	3	2	3	3
27-28	Metal, Metal prod.	11	12	12	14	3	3	3	3
29	Machinery	6	7	8	6	5	3	4	2
30-33	Electr. machinery	12	9	11	8	14	24	34	26
34-35	Transport equip.	3	3	2	2	2	2	1	1
36	Other manuf.	6	8	6	10	2	2	1	1
	Total	100	100	100	100	100	100	100	100
		# plants				Total sales (Million Euro)			
		666	4643	835	4603	14390	39762	39339	79557

Note: NACE23 excluded to maintain confidentiality.

Table 3: Mean adjustment frequency by export status and currency

	Obs	Invoice Currency					Home Currency	
		unw	wgt	wgt, adj. for exit	wgt inc	wgt dec	unw	wgt
total	545676	0.11	0.16	0.18	0.09	0.07	0.27	0.44
Destination market								
home	354363	0.11	0.19	0.20	0.12	0.06	0.11	0.19
export	191313	0.11	0.15	0.17	0.08	0.07	0.56	0.62
Invoice currency for exports								
IEP/EUR	86665	0.11	0.11	0.13	0.06	0.05	0.11	0.11
STG	60362	0.10	0.16	0.17	0.08	0.08	0.99	1.00
US\$	21387	0.11	0.20	0.23	0.10	0.10	1.00	1.00
pre-EUR EU	10917	0.12	0.14	0.16	0.07	0.07	1.00	1.00
post-EUR EU	7988	0.05	0.07	0.09	0.04	0.04	0.11	0.15
other	3994	0.13	0.16	0.18	0.09	0.07	1.00	1.00

Note: The period covered is January 1995 - December 2005. The weighted mean frequency of price adjustment is calculated as $\sum_{t=1}^T \sum_i \omega_t^i I_t^i / \sum_{t=1}^T \sum_i \omega_t^i N_t^i$ where I_t^i is an indicator variable, equal to 1 if i 's price changed at t , and N_t^i equals 1 if i was present in the sample at t , whether or not its price was changed. Observations are weighted by the relevant plant's sales in the relevant market (home or export) expressed as a share of total within-sample sales in the year corresponding to date t . This implies that each month is given equal weight in calculating frequencies. Exit adjustment treats quote-line exit like a price change, i.e. I_t^i is set equal to 1 if the quote-line is no longer present in the sample at date $t + 1$.

Table 4: Mean adjustment frequency by month

	Obs	Invoice Currency					Home Currency	
		unw	wgt	wgt, adj. for exit	wgt inc	wgt dec	unw	wgt
January	44194	0.15	0.20	0.22	0.12	0.08	0.31	0.47
February	44525	0.13	0.18	0.19	0.11	0.08	0.30	0.47
March	44573	0.11	0.17	0.18	0.11	0.07	0.27	0.46
April	44741	0.12	0.17	0.18	0.11	0.06	0.28	0.46
May	44831	0.12	0.15	0.16	0.09	0.06	0.28	0.44
June	45148	0.10	0.15	0.17	0.08	0.07	0.26	0.43
July	45808	0.09	0.15	0.15	0.08	0.07	0.26	0.43
August	46158	0.09	0.15	0.17	0.08	0.07	0.25	0.43
September	46079	0.10	0.15	0.15	0.08	0.07	0.25	0.42
October	46601	0.10	0.16	0.17	0.09	0.07	0.27	0.44
November	46570	0.09	0.14	0.16	0.08	0.06	0.26	0.42
December	46448	0.09	0.17	0.29	0.11	0.07	0.25	0.45
total	545676	0.11	0.16	0.18	0.09	0.07	0.27	0.44

Note: The period covered is January 1995 - December 2005. The weighted mean frequency of price adjustment is calculated as $\frac{\sum_{t=1}^T \sum_i \omega_i^i I_t^i}{\sum_{t=1}^T \sum_i \omega_i^i N_t^i}$ where I_t^i is an indicator variable, equal to 1 if i 's price changed at t , and N_t^i equals 1 if i was present in the sample at t , whether or not its price was changed. Observations are weighted by the relevant plant's sales in the relevant market (home or export) expressed as a share of total within-sample sales in the year corresponding to date t . This implies that each month is given equal weight in calculating frequencies. Exit adjustment treats quote-line exit like a price change, i.e. I_t^i is set equal to 1 if the quote-line is no longer present in the sample at date $t + 1$.

Table 5: Mean adjustment frequency by type of good, size class, ownership, labour share and quartiles of the producer price index

	Obs	Invoice Currency					Home Currency	
		unw	wgt	wgt, adj. for exit	wgt inc	wgt dec	unw	wgt
Type of product (Vermeulen et al., 2007)								
cons food prod	95320	0.14	0.14	0.16	0.10	0.05	0.25	0.25
cons non-food non durab	48524	0.05	0.06	0.08	0.03	0.03	0.25	0.58
cons durables	57303	0.04	0.06	0.07	0.04	0.02	0.29	0.41
intermediates	252650	0.13	0.17	0.19	0.09	0.08	0.25	0.44
energy	2716	0.48	0.77	0.79	0.47	0.30	0.75	0.85
capital goods	89163	0.07	0.17	0.20	0.08	0.09	0.32	0.67
Type of product (Rauch 1999)								
homogenous	28605	0.29	0.55	0.57	0.32	0.23	0.40	0.66
reference priced	80768	0.12	0.13	0.15	0.09	0.04	0.20	0.30
differentiated	242228	0.10	0.18	0.20	0.10	0.08	0.28	0.50
unclassified	194075	0.08	0.10	0.13	0.05	0.05	0.26	0.51
Plant size								
<20	76117	0.08	0.26	0.27	0.16	0.10	0.14	0.33
20-49	142967	0.11	0.20	0.21	0.11	0.09	0.23	0.31
50-249	250391	0.10	0.19	0.21	0.12	0.07	0.28	0.35
250-500	48391	0.20	0.11	0.13	0.06	0.05	0.44	0.46
500+	27810	0.09	0.16	0.19	0.09	0.08	0.39	0.59
Ownership								
domestic	366071	0.11	0.21	0.23	0.12	0.10	0.24	0.32
foreign	179605	0.10	0.14	0.16	0.08	0.06	0.33	0.51
Quartiles of the labour share in variable cost								
Q1	143913	0.17	0.18	0.21	0.10	0.08	0.31	0.53
Q2	143300	0.10	0.13	0.14	0.07	0.06	0.27	0.44
Q3	134670	0.08	0.12	0.13	0.08	0.03	0.27	0.31
Q4	123793	0.07	0.20	0.21	0.12	0.08	0.22	0.37
Quartiles of the annual producer price index over the period								
Q	130466	0.11	0.15	0.17	0.09	0.06	0.30	0.50
Q2	154196	0.09	0.16	0.18	0.08	0.08	0.28	0.48
Q3	150792	0.11	0.18	0.19	0.11	0.07	0.26	0.38
Q4	110222	0.12	0.17	0.20	0.10	0.06	0.23	0.38

Note: The period covered is January 1995 - December 2005. The weighted mean frequency of price adjustment is calculated as $\sum_{t=1}^T \sum_i \omega_t^i I_t^i / \sum_{t=1}^T \sum_i \omega_t^i N_t^i$ where I_t^i is an indicator variable, equal to 1 if i 's price changed at t , and N_t^i equals 1 if i was present in the sample at t , whether or not its price was changed. Observations are weighted by the relevant plant's sales in the relevant market (home or export) expressed as a share of total within-sample sales in the year corresponding to date t . This implies that each month is given equal weight in calculating frequencies. Exit adjustment treats quote-line exit like a price change, i.e. I_t^i is set equal to 1 if the quote-line is no longer present in the sample at date $t + 1$.

Table 6: Size of price changes in invoice currency by export status and currency

	Increases				Decreases			
	Mean	p25	p50	p75	Mean	p25	p50	p75
total	6.13	1.45	3.31	7.41	-5.85	-7.79	-3.85	-1.44
Destination market								
home	5.66	1.73	3.40	7.14	-5.69	-7.74	-3.64	-1.47
export	6.64	1.24	3.22	7.68	-5.94	-7.83	-3.90	-1.43
Invoice currency for exports								
IEP/EUR	6.44	1.64	3.14	6.93	-6.01	-7.39	-3.74	-1.67
STG	4.69	1.12	2.83	5.63	-4.33	-5.56	-2.69	-0.71
US \$	8.07	1.38	4.41	10.24	-6.94	-9.39	-5.28	-2.20
pre-EUR EU	4.95	0.01	1.15	4.76	-3.94	-5.61	-1.67	-0.02
post-EUR EU	5.56	0.48	3.92	7.14	-4.81	-5.41	-2.62	-0.50
other	3.18	0.01	0.83	5.10	-4.18	-5.24	-0.88	-0.01

Note: The period covered is January 1995 - December 2005. Observations are weighted by the relevant plant's sales in the relevant market (home or export) expressed as a share of total within-sample sales in the year in question. This implies that each month in the sample is given equal weight in calculating overall frequencies.

Table 7: Size of price changes in invoice currency by month

	Increases				Decreases			
	Mean	p25	p50	p75	Mean	p25	p50	p75
January	6.18	1.19	3.49	7.14	-7.40	-10.12	-4.49	-1.63
February	5.79	1.85	3.89	6.67	-6.09	-8.33	-3.88	-1.31
March	5.56	1.33	2.78	6.84	-4.64	-5.66	-2.86	-0.94
April	5.71	1.55	3.49	7.53	-5.46	-7.36	-3.31	-1.11
May	5.85	1.45	3.00	7.14	-6.59	-8.51	-4.40	-1.58
June	5.71	1.56	3.13	6.50	-7.13	-10.22	-4.38	-2.21
July	5.25	1.56	2.56	5.78	-4.79	-6.64	-3.23	-1.24
August	5.98	1.70	3.85	8.00	-5.98	-8.23	-4.29	-1.59
September	6.21	1.15	3.22	7.52	-5.21	-6.81	-3.57	-1.40
October	6.38	1.41	3.31	7.99	-5.73	-7.91	-3.77	-1.40
November	7.85	1.12	3.08	8.63	-4.82	-6.74	-3.65	-1.57
December	7.15	1.76	4.07	8.35	-6.27	-9.16	-5.22	-1.96
total	6.13	1.45	3.31	7.41	-5.85	-7.79	-3.85	-1.44

Note: Observations are weighted by the relevant plant's sales in the relevant market (home or export) expressed as a share of total within-sample sales in the year in question.

Table 8: Size of price changes in invoice currency by type of good, size class, ownership, labour share and quartiles of the producer price index

	Increases				Decreases			
	Mean	p25	p50	p75	Mean	p25	p50	p75
total	6.13	1.45	3.31	7.41	-5.85	-7.79	-3.85	-1.44
Type of product (Vermeulen et al., 2007)								
cons food prod	5.03	1.49	2.83	5.40	-5.85	-7.43	-3.85	-1.64
cons non-food non durab	7.78	0.01	2.00	7.99	-5.29	-6.66	-0.26	-0.01
cons durables	8.41	2.02	4.85	8.57	-6.12	-9.92	-3.65	-1.18
intermediates	4.84	1.04	2.78	5.71	-4.20	-5.29	-2.48	-0.85
energy	8.87	3.72	7.10	11.82	-8.28	-10.84	-6.44	-3.49
capital goods	7.69	1.49	3.80	9.91	-7.19	-9.39	-5.83	-2.60
Type of product (Rauch, 1999)								
organized exchange	8.65	3.27	6.31	11.25	-7.97	-10.72	-5.94	-2.92
reference priced	4.73	1.35	2.57	4.98	-4.62	-5.65	-3.29	-1.46
differentiated	5.84	1.14	3.02	7.55	-5.69	-8.23	-3.48	-1.19
unclassified	5.94	1.07	2.90	6.11	-5.21	-6.50	-2.86	-0.84
Plant size								
<20	3.19	1.01	2.04	3.88	-3.22	-4.54	-1.99	-0.87
20-49	4.73	1.31	2.86	5.40	-3.93	-4.66	-2.34	-1.07
50-249	6.50	1.76	3.99	8.33	-6.44	-8.88	-4.33	-1.76
250-500	5.54	1.00	2.58	6.15	-4.60	-6.17	-2.38	-0.63
500+	6.41	1.42	3.21	7.27	-6.40	-8.31	-4.38	-2.04
Ownership								
domestic	6.25	1.82	3.78	7.69	-5.44	-7.01	-3.51	-1.48
foreign	6.04	1.32	2.99	7.09	-6.21	-8.34	-4.11	-1.36
Quartiles of the labour share in variable cost (materials+wages+fuel)								
Q1	6.64	1.71	3.69	7.96	-5.98	-8.09	-3.99	-1.73
Q2	4.99	1.25	3.06	6.01	-4.76	-5.81	-2.67	-0.86
Q3	4.58	1.03	2.14	4.96	-5.13	-6.06	-2.01	-0.37
Q4	6.78	1.75	3.99	9.65	-6.68	-9.11	-5.26	-2.08
Quartiles of the annual producer price index over the period								
Q1	6.06	1.32	2.99	6.23	-5.62	-7.02	-3.51	-1.31
Q2	6.40	1.62	3.73	8.18	-6.17	-8.34	-4.32	-1.81
Q3	5.90	1.46	3.21	6.73	-5.69	-7.56	-3.79	-1.46
Q4	6.20	1.47	4.07	8.37	-5.87	-8.22	-3.34	-1.06

Note: The period covered is January 1995 - December 2005. Observations are weighted by the relevant plant's sales in the relevant market (home or export) expressed as a share of total within-sample sales in the year in question. This implies that each month in the sample is given equal weight in calculating overall frequencies.

Table 9: Invoice currency choice for exports to the UK

	N	IEP/EUR	GBP	Other	Mix of currencies		
		% plants	% plants	% plants	% plants	mean IEP/EUR	mean GBP
all	22128	19.13	45.05	2.42	33.40	38.06	44.36
Euro changeover							
95-97	7942	21.29	54.28	3.30	21.13	38.26	49.97
98-01	6253	17.93	45.13	2.67	34.27	38.51	50.19
02-05	7933	17.91	35.75	1.35	44.99	37.70	38.22
Plant size							
<20	6415	17.79	28.84	0.42	52.95	43.99	31.07
20-49	5841	24.29	49.58	0.96	25.17	36.90	52.09
50-249	7770	17.59	53.86	3.02	25.52	31.22	59.16
250-499	1313	17.44	49.96	7.77	24.83	29.34	51.89
500+	789	9.76	48.42	14.70	27.12	28.59	53.56
Quartiles of the share of exports to the UK							
Q1	5532	31.15	32.86	2.95	33.04	43.40	33.42
Q2	5531	20.79	38.71	3.45	37.05	41.35	43.24
Q3	5533	14.13	46.85	2.11	36.91	34.76	48.37
Q4	5532	10.45	61.79	1.17	26.59	31.41	53.95
Quartiles of the turnover exported to the UK							
Q1	5532	27.68	27.46	0.83	44.03	45.29	29.58
Q2	5532	22.78	40.84	1.81	34.58	40.15	43.75
Q3	5532	16.52	54.01	2.35	27.11	34.60	53.24
Q4	5532	9.54	57.90	4.70	27.86	27.41	59.83
Quartiles of the share of imported materials from the UK in variable cost							
Q1 impuk	5086	24.50	40.25	2.85	32.40	41.08	37.22
Q2	5087	22.17	40.61	4.11	33.10	37.11	41.82
Q3	5086	17.62	49.37	2.03	30.99	36.57	48.22
Q4	5087	15.63	57.11	1.22	26.05	33.88	52.60
Ownership							
domestic	16648	19.07	45.19	0.63	35.12	38.94	44.20
foreign (incl. UK)	5480	19.32	44.64	7.86	28.18	34.74	44.95
UK	906	21.52	52.87	0.99	24.61	45.94	44.49

Note: Information is based on the roughly 95% of plants for which data on the export currency for UK sales is available for each plant-year.

Table 10: Extensive margin: All foreign currency export sales

	Increases		Decreases	
	coeff.	s.e.	coeff.	s.e.
$\Delta_{s_t^{ik}} \ln e_t^k$	2.27	(3.26)	-3.52	(4.16)
N	5,458		5,097	
# f.e.	1052		988	
# clusters	151		126	
Pseudo-R ²	0.00		0.00	

Note: Sample includes all foreign currency export sales. Dependent variable is indicator for increase or decrease in invoice currency price. This means in the case of price increases, the indicator equals one if the invoice currency price is increased, equals zero if the invoice currency price remains unchanged or is decreased. The case of price decreases is analogous. Independent variable is the log change in the exchange rate between the home currency and the invoice currency over the relevant period. Estimator is conditional logit, conditioning on plant-product-month-age-of-price fixed effects. Observations are weighted by sales. Standard errors in brackets. Standard errors are clustered at the plant level. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level. A pseudo-R-squared is reported. The number of fixed effects indicates the number of plant-product-months used to identify the coefficient on exchange rates. The number of clusters indicates the number of plants used to identify the coefficient on exchange rates.

Table 11: Intensive margin: All foreign-currency export sales

$\Delta_{s_t^{ik}} \ln e_t^k$	R ² adj	N	# f.e.	# clust
0.99 (0.07)**	0.67	4687	1178	95

Note: Sample includes all foreign currency export sales. Independent variable is the log change in the exchange rate between the home currency and the invoice currency over the relevant period. Estimation method is OLS. Dependent variable is log change in home currency price since last price change. All regressions include a constant and the full set of plant-product-month-age-of-price fixed effects. Observations are weighted by sales. Standard errors are clustered at the plant level. Standard errors are in brackets. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level.

Table 12: Intensive margin by sign and size of price changes

	$\Delta_{s_t^{ik}} \ln e_t^k$	R ² adj	N	# f.e.	# clust
<-0.05	0.77 (0.38)**	0.66	748	382	42
≥ -0.05 & <0	0.93 (0.12)**	0.80	1149	517	46
≥ 0 & <0.05	0.96 (0.04)**	0.88	1377	579	71
≥ 0.05	1.03 (0.28)**	0.64	938	442	64

Note: Dependent variable is log change in home currency price since last price change. All regressions include a constant and the full set of plant-product-month-age-of-price fixed effects. Estimation method is OLS. Observations are weighted by sales. Standard errors are clustered at the plant level. Standard errors are in brackets. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level.

Table 13: Intensive margin - asymmetry

$\Delta_{s_t^{ik}} \ln e_t^{k+}$	$\Delta_{s_t^{ik}} \ln e_t^{k-}$	R ² adj	N
1.03 (0.08)**	0.97 (0.24)**	0.67	4212

Note: Estimation method is OLS. Dependent variable is log change in home currency price since last price change. All regressions include a constant and the full set of plant-product-month-age-of-price fixed effects. Observations are weighted by sales. Standard errors are clustered at the plant level. Standard errors are in brackets. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level.

Table 14: Intensive margin of price adjustment: Controlling for sectoral inflation

	$\Delta_{s_t^{ik}} \ln e_t^k$	$\Delta_{t-s_t^{ik}} \ln p_t^k$	R ² -adj	N	# f.e.	# clust
PPI	1.14(0.15)**	0.39(0.32)	0.67	3895	966	78
NACE2	1.07(0.12)**	0.40(0.44)	0.69	3285	1,048	86
NACE3	0.99(0.09)**	0.10(0.17)	0.71	3122	1,038	85
NACE4	0.99(0.12)**	0.07(0.31)	0.58	2759	980	84

Note: Dependent variable is log change in home currency price since last price change. All regressions include a constant and the full set of plant-product-month-age-of-price fixed effects. Irish PPI is taken from the CSO. UK PPI is taken from EUROSTAT. Nace 2, 3 and 4-digit price indexes for Ireland are constructed as sales-weighted indexes of prices based on our micro data. UK 2, 3 and 4-digit price indexes are from EUROSTAT. Estimation method is OLS. Observations are weighted by sales. Standard errors are clustered at the plant level. Standard errors are in brackets. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level.

Table 15: Intensive margin controlling for real exchange rates

	$\Delta_{s_t^{ik}} \ln rer_t^k$	R ² adj	N	# f.e.	# clust
PPI	1.21 (0.14)**	0.67	3895	966	78
NACE2	1.07 (0.12)**	0.69	3285	1048	86
NACE3	0.68 (0.16)**	0.70	3122	1038	85
NACE4	0.60 (0.18)**	0.57	2759	980	84

Note: Dependent variable is log change in home currency price since last price change. All regressions include a constant and the full set of plant-product-month-age-of-price fixed effects. Independent variable is constructed in turn using the following price indexes. Irish PPI is taken from the CSO. UK PPI is taken from EUROSTAT. Nace 2, 3 and 4-digit price indexes for Ireland are constructed as sales-weighted indexes of prices based on our micro data. UK 2, 3 and 4-digit price indexes are from EUROSTAT. Estimation method is OLS. Observations are weighted by sales. Standard errors are clustered at the plant level. Standard errors are in brackets. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level.

Table 16: Intensive margin controlling for demand proxy

$\Delta_{s_t^{ik}} \ln e_t^k$	dem proxy	R ² adj	N	# f.e.	# clust
1.01 (0.09)**	0.03 (0.04)	0.70	4212	1048	86

Note: Dependent variable is log change in home currency price since last price change. Demand proxy is the log change in monthly imports over the relevant time horizon. All regressions include a constant and the full set of plant-product-month-age-of-price fixed effects. Estimation method is OLS. Observations are weighted by sales. Standard errors are clustered at the plant level. Standard errors are in brackets. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level.

Table 17: Intensive margin using forward exchange rates

$\Delta_{s_t^{ik}} \ln f \left(\bar{s}^{ik} \right)_t^k$	R ² adj	N	# f.e.	# clust
1.01 (0.08)**	0.68	3437	933	58

Note: Dependent variable is log change in home currency price since last price change. Independent variable is the change in the forward exchange rate over the relevant time interval. The horizon for the forward rate is that closest to the median duration of a price for the plant-product pair in question. Only plant-product pairs with similar durations across Irish and UK markets are included in the estimation sample. All regressions include a constant and the full set of plant-product-month-age-of-price fixed effects. Estimation method is OLS. Observations are weighted by sales. Standard errors are clustered at the plant level. Standard errors are in brackets. Two stars indicates significantly different from zero at the 5% level, one star indicates significantly different from zero at the 10% level.

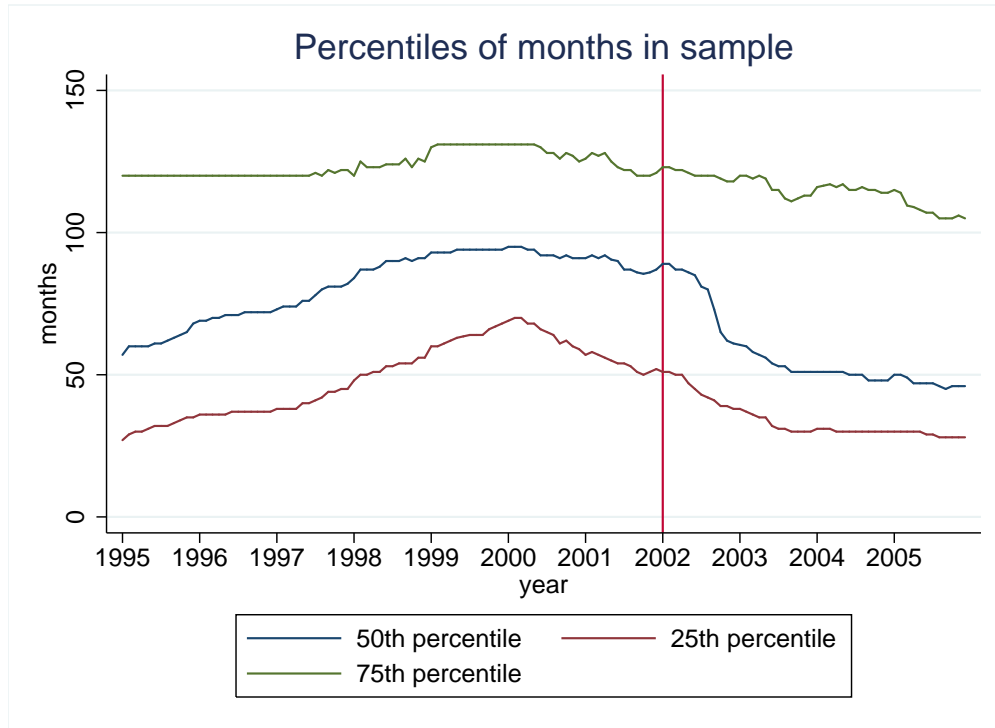


Figure 1: Summary statistics on cross-section distribution of quote-line durations

Note: Each quote-line in the sample has a duration in months. There is censoring of quote-lines at the beginning and end of the sample. The effect of this censorship is most persistent on long duration quote-lines. This figure shows the time series evolution of percentiles of the cross-section distribution of durations for active quote-lines.

3 Additional information on CIP data

Our first data source is the Irish Census of Industrial Production (CIP). This census of manufacturing, mining and utilities takes place annually at both the firm (enterprise) and plant (local unit) level. About 90% of plants belong to firms with only one plant in Ireland, and for these, “enterprise” and “local unit” are synonymous. All local units with 3 or more employees are required to fill in a return. The industries covered are NACE Revision 1.1 (the harmonized European industrial classification system) classes 10 to 41. To maintain confidentiality, we exclude from our analysis local units whose share of total industrial sales in any given year is greater than 4%. We also exclude NACE 2-digit sector 37 (recycling) and sectors 40 and above (electricity, gas and water). The data available to us covers the period 1991 to 2005. Survey forms and methodology documents for this data are available on the web at www.cso.ie.

While data on the turnover of local units is collected by the CSO, it is not reported in the official publication of the Census of Industrial Production. For the micro data turnover is therefore set to zero for some local units (6.5% over the period 1995-2005), in particular in cases where there are multiple local units within an enterprise. As gross output is reported in the official publication this there are a large number of cases where the entry for turnover is zero, but the entry for gross output is positive. In these cases local unit turnover can be calculated in reverse as $\text{Turnover from goods produced and industrial services} = \text{Gross output} + \text{Freight charges for transport of the enterprise's products} - \text{Operating subsidies} + \text{Excise duty paid or payable on goods produced by the enterprise} - \text{End of year stock of work in progress and finished goods} + \text{Beginning of year stock of work in progress and finished goods} - \text{Value of capitalized work performed by the unit for its own use}$. For 1.6% of the observations between 1995 and 2005 turnover is still zero after this procedure.

Figures on employment relate to employment in the local unit in the second week of September. In some cases this can result in zero employees in combination with a positive wage bill. Where the average wage is clearly out of line with the local unit’s employment history, the figures are adjusted. For example, if employment is zero but the wage bill is positive, employment figures are obtained by averaging the average wage over the previous and the following year and backing out the employment figure closest to the nearest full number from the wage bill for the current year.

Once-off changes in ownership or NACE classification that revert in the following year are ignored.

The share of turnover exported is cleaned from values smaller than zero and values larger than 100 using information from previous and/or later years of the observation in question. From 2001 enterprises are not only asked for the share of turnover they export but also for the value of their exports. Comparing these two figures where available suggests that information based on the share of turnover exported overestimates the true figures by 1-2 percentage points per year on average. From 2001 the share of turnover exported is calculated from the value figures where possible. However, since not all enterprises answer the “value of exports” question, information based on the “share of turnover exported” question is more comprehensive. In years where some of the information for a local unit is imputed or the entire observation is estimated by the CSO, information on exports is adjusted to relate to earlier or later non-imputed/estimated information for the plant rather than to industry averages.

Information on the destination of exports is adjusted to match the figures on the share of turnover exported.

Information on the share of exports to the UK by invoice currency is collected at the enterprise level since 1994, and at the local unit level from 2001. Where possible, pre-2001, the enterprise-level data is merged in at the plant level.

Information on the share of imported materials is collected at the enterprise level since 1994,

but at the local unit level from 2001 only. This data as well as the source country information undergoes checking and processing similar to the export information. The CSO changed processing systems for the CIP from 2000 to 2001. This leads to significant changes in the shares of imported materials, in some cases so extreme that we decide not to use this information; in other cases adjustments are made in line with the data collected after 2000.

4 Additional information on PPI Data

The second source of data is the micro data collected for the purpose of constructing the Producer Price Index (PPI). The sampling frame for this data is the population of plants in the CIP. Plants participate in the PPI on a long-term basis, though there is periodic resampling from the CIP to maintain coverage following attrition in the original sample and entry of new plants into the CIP. Participants report prices monthly, and we have access to the data from January 1995 through November 2006. The price data can be linked to the CIP plant data using a unique plant identifier. Survey forms and methodology documents for this data are available at www.cso.ie.

New entrants to the PPI survey are asked to fill out a long form in the first month they participate. They are asked to provide a detailed description of their main products (supplemented e.g. by tariff codes), partially or fully manufactured in Ireland, where the products included should be suitable for pricing every month. Prices provided should be those invoiced for the product satisfying the detailed description on the 15th of the month, excluding value added taxes, before discounts and surcharges are applied, net of direct subsidies (where applicable) and excluding excise duty. There is a separate space on the form for discounts and surcharges to be reported. Both home market prices and export prices (where relevant) are specifically requested. The long form supplied to new participants has explicitly labeled spaces for home sales and export sales within the panel for each separate product. Prices should be reported in the currency in which they are quoted, and there is a space on the form for respondents to report the currency in which the price is quoted, and the relevant units. Respondents are asked to give an approximate breakdown of the relative importance of the different products and markets (home or export) in total sales at the time of entrance to the survey (this information is not systematically supplied by all respondents). Information on "trading terms" (type of customer, order size, delivery terms, currency surcharges etc.) is also requested. For exports, the country of sale is requested.

Continuing respondents are provided with a short form where the product description, terms of sale, discounts and surcharges, currency in which the price is charged, units and previous month's price are already filled in. They are asked to report the price for the current month, and to state the reason for price changes. If products or terms of sale are no longer available or are not representative, replacements are requested, and there is space on the form to fill in the details solicited on the long form described above. In addition, if the firm adds new products or markets, it is asked to fill in the full details of this new quote-line.

Because of data storage restrictions dating back to the early 1990s, the CSO stores time series data on only a limited subset of the variables collected in the survey. For an additional set of variables, data is available for price quotes present in the last cross-section that is collected, but as soon as a price quote exits, this information is lost.

In the form that it reaches us, we have a 4-digit NACE identifier a plant identifier, a product identifier (which allows for matching of products within and across firms, at a sub-NACE 4-digit level, but not exactly lined up with PRODCOM), an item identifier (at a more detailed level of disaggregation than the product identifier, again not exactly lined up with PRODCOM) and for some observations, a within-plant weighting variable that does not change over time (there are many

missing values for this variable). For each quote-line in the sample, we have monthly information on the price (in two forms, which we describe below), the invoice currency, the end-of-day exchange rate between the Irish Pound and the invoice currency in question on the date closest to the 15th of the month, and whether the price quote is for a domestic sale or an export sale.

There are two formats for prices: the price level (in domestic currency, Irish Pounds or Euros), and the "price relative." The price level is the price reported by the respondent, adjusted for the reported discounts or surcharges. The price relative is the ratio of the domestic currency price in the current month to the domestic currency price in the previous month (during the Euro changeover, the fixed Euro exchange rates are used to convert the last Irish Pound price to Euros to take this ratio). There are no gaps in the domestic currency price series. That is, if a particular price quote is available at date t and at date $t+k$, it is available at all dates in between. However there are gaps in the price relative series where the CSO deems there to be problems with the reported home currency price. All of the empirical work is based on the data as presented in price relative form. For prices not quoted in domestic currency, the ratio of the original currency price in the current month to the original currency price in the previous month is backed out using the price relative and the exchange rate series provided with the data. A rounding rule is used to select observations for which there is no change in the original currency price from month to month.

For observations that are present in the last cross-section available to us (November 2006), we additionally observe units, trading terms and destination country, if the respondent has chosen to fill in these fields. The nature of the responses in these fields are at the discretion of the respondent, and they have not been systematically coded. Frequently, the respondent leaves these fields blank, or provides information that is difficult to interpret.

5 Weighting procedure

The fact that we can match price information with plant census data means that we can weight observations at a much greater level of disaggregation than is usual in studies that use micro price data. Within each month, across destination market categories and plants, weights are given by plant-level domestic and export sales as a share of total sales in the CIP for the relevant year. Within plants and destination market categories, we know nothing about the breakdown of sales, so we assign all quotes equal weight. All months in the sample are given equal weight.

To illustrate, suppose plant i reports $J_{h,y,m}^i$ price quotes in the home market in month m of year y and total home sales of $SALES_{h,y}^i$ in that year. Then the weight for each individual price quote for this plant in the home market at time y, m is given by:

$$w_{h,y,m}^i = \frac{\frac{1}{J_{h,y,m}^i} SALES_{h,y}^i}{\sum_{i=1} \sum_{k=h,e} SALES_{k,y}^i}$$

If this plant reports $J_{e,y,m}^i$ price quotes in the export market, the analogous weight for an export price quote is:

$$w_{e,y,m}^i = \frac{\frac{1}{J_{e,y,m}^i} SALES_{e,y}^i}{\sum_{i=1} \sum_{k=h,e} SALES_{k,y}^i}$$

6 NACE 3-digit industries in 6 groups based on Vermeulen et al. (2007)¹

I. Consumer food products 151 Production, processing and preserving of meat and meat products 152 Processing and preserving of fish and fish products 153 Processing and preserving of fruit and vegetables 154 Manufacture of vegetable and animal oils and fats 155 Manufacture of dairy products 158 Manufacture of other food products 159 Manufacture of beverages 160 Manufacture of tobacco products **II. Consumer non-food non-durables** 174 Manufacture of made-up textile articles, except apparel 175 Manufacture of other textiles 177 Manufacture of knitted and crocheted articles 181 Manufacture of leather clothes 182 Manufacture of other wearing apparel and accessories 183 Dressing and dyeing of fur; manufacture of articles of fur 191 Tanning and dressing of leather 192 Manufacture of luggage, handbags and the like, saddlery and harness 193 Manufacture of footwear 221 Publishing 222 Printing and service activities related to printing 223 Reproduction of recorded media 244 Manufacture of pharmaceuticals, medicinal chemicals and botanical products 245 Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations 364 Manufacture of sports goods 365 Manufacture of games and toys 366 Miscellaneous manufacturing n.e.c. **III. Consumer durables** 297 Manufacture of domestic appliances n.e.c. 323 Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods 334 Manufacture of optical instruments and photographic equipment 335 Manufacture of watches and clocks 341 Manufacture of motor vehicles 354 Manufacture of motorcycles and bicycles 361 Manufacture of furniture 362 Manufacture of jewelry and related articles 363 Manufacture of musical instruments **IV. Intermediate goods** 132 Mining of non-ferrous metal ores, except uranium and thorium ores 141 Quarrying of stone 142 Quarrying of sand and clay 143 Mining of chemical and fertilizer minerals 145 Other mining and quarrying n.e.c. 156 Manufacture of grain mill products, starches and starch products 157 Manufacture of prepared animal feeds 171 Preparation and spinning of textile fibres 172 Textile weaving 173 Finishing of textiles 176 Manufacture of knitted and crocheted fabrics 201 Sawmilling and planing of wood; impregnation of wood 202 Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board, fibre board and other panels and boards 203 Manufacture of builders' carpentry and joinery 204 Manufacture of wooden containers 205 Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials 211 Manufacture of pulp, paper and paperboard 212 Manufacture of articles of paper and paperboard 241 Manufacture of basic chemicals 242 Manufacture of pesticides and other agro-chemical products 243 Manufacture of paints, varnishes and similar coatings, printing ink and mastics 246 Manufacture of other chemical products 247 Manufacture of man-made fibres 251 Manufacture of rubber products 252 Manufacture of plastic products 261 Manufacture of glass and glass products 262 Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic products 263 Manufacture of ceramic tiles and flags 264 Manufacture of bricks, tiles and construction products, in baked clay 265 Manufacture of cement, lime and plaster 266 Manufacture of articles of concrete, plaster and cement 267 Cutting, shaping and finishing of ornamental and building stone 268 Manufacture of other non-metallic mineral products 271 Manufacture of basic iron and steel and of ferro-alloys 272 Manufacture of tubes 273 Other first processing of iron and steel 274 Manufacture of basic precious and non-ferrous metals 275 Casting of metals 284 Forging, pressing, stamping and roll forming of metal; powder metallurgy 285 Treatment and coating of metals; general mechanical engineering 286 Manufacture of cutlery, tools and general hardware 287

¹Includes only industries where firms are recorded to be in production in Ireland

Manufacture of other fabricated metal products 312 Manufacture of electricity distribution and control apparatus 313 Manufacture of insulated wire and cable 314 Manufacture of accumulators, primary cells and primary batteries 315 Manufacture of lighting equipment and electric lamps 316 Manufacture of electrical equipment n.e.c. 321 Manufacture of electronic valves and tubes and other electronic components **V. Energy** 101 Mining and agglomeration of hard coal 102 Mining and agglomeration of lignite 103 Extraction and agglomeration of peat 111 Extraction of crude petroleum and natural gas 112 Service activities incidental to oil and gas extraction, excluding surveying 232 Manufacture of refined petroleum products **VI. Capital goods** 281 Manufacture of structural metal 282 Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers 283 Manufacture of steam generators, except central heating hot water boilers 291 Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines 292 Manufacture of other general purpose machinery 293 Manufacture of agricultural and forestry machinery 294 Manufacture of machine tools 295 Manufacture of other special purpose machinery 300 Manufacture of office machinery and computers 311 Manufacture of electric motors, generators and transformers 322 Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy 331 Manufacture of medical and surgical equipment and orthopaedic appliances 332 Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control 333 Manufacture of industrial process control equipment 342 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers 343 Manufacture of parts and accessories for motor vehicles and their engines 351 Building and repairing of ships and boats 352 Manufacture of railway and tramway locomotives and rolling stock 353 Manufacture of aircraft and spacecraft 355 Manufacture of other transport equipment n.e.c.

7 Rauch classification at the 2- to 4-digit NACE level

Homogenous 151 Production, processing and preserving of meat and meat products 154 Manufacture of vegetable and animal oils and fats 232 Manufacture of refined petroleum products **Reference priced** 132 Mining of non-ferrous metal ores, except uranium and thorium ores 152 Processing and preserving of fish and fish products 153 Processing and preserving of fruit and vegetables 155 Manufacture of dairy products 156 Manufacture of grain mill products, starches and starch products 157 Manufacture of prepared animal feeds 1583 Manufacture of sugar 1585 Manufacture of macaroni, noodles, couscous and similar farinaceous products 1586 Processing of tea and coffee 1587 Manufacture of condiments and seasonings 1588 Manufacture of homogenized food preparations and dietetic food 1589 Manufacture of other food products n.e.c. 1591 Manufacture of distilled potable alcoholic beverages 1594 Manufacture of cider and other fruit wines 1596 Manufacture of beer 1597 Manufacture of malt 16 Manufacture of tobacco products 1753 Manufacture of non-wovens and articles made from non-wovens, except apparel 1754 Manufacture of other textiles n.e.c. 2121 Manufacture of corrugated paper and paperboard and of containers of paper and paperboard 2411 Manufacture of industrial gases 2412 Manufacture of dyes and pigments 2413 Manufacture of other inorganic basic chemicals 2414 Manufacture of other organic basic chemicals 2415 Manufacture of fertilizers and nitrogen compounds 244 Manufacture of pharmaceuticals, medicinal chemicals and botanical products 247 Manufacture of man-made fibres 274 Manufacture of basic precious and non-ferrous metals **Differentiated** 101 Mining and agglomeration of hard coal 111 Extraction of crude petroleum and natural gas 1411 Quarrying of ornamental and building

stone 1412 Quarrying of limestone, gypsum and chalk 1421 Operation of gravel and sand pits 145
Other mining and quarrying n.e.c. 1581 Manufacture of bread; manufacture of fresh pastry goods
and cakes 1582 Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes
1598 Production of mineral waters and soft drinks 1751 Manufacture of carpets and rugs 1752 Man-
ufacture of cordage, rope, twine and netting 176 Manufacture of knitted and crocheted fabrics 177
Manufacture of knitted and crocheted articles 18 Manufacture of wearing apparel; dressing and
dyeing of fur 19 Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, har-
ness and footwear 202 Manufacture of veneer sheets; manufacture of plywood, laminboard, particle
board, fibre board and other panels and boards 203 Manufacture of builders' carpentry and joinery
204 Manufacture of wooden containers 205 Manufacture of other products of wood; manufacture
of articles of cork, straw and plaiting materials 211 Manufacture of pulp, paper and paperboard
2122 Manufacture of household and sanitary goods and of toilet requisites 2123 Manufacture of
paper stationery 2125 Manufacture of other articles of paper and paperboard n.e.c. 221 Publish-
ing 222 Printing and service activities related to printing 2416 Manufacture of plastics in primary
forms 242 Manufacture of pesticides and other agro-chemical products 243 Manufacture of paints,
varnishes and similar coatings, printing ink and mastics 245 Manufacture of soap and detergents,
cleaning and polishing preparations, perfumes and toilet preparations 2511 Manufacture of rubber
tyres and tubes 2512 Retreading and rebuilding of rubber tyres 252 Manufacture of plastic products
261 Manufacture of glass and glass products 2626 Manufacture of refractory ceramic products 263
Manufacture of ceramic tiles and flags 264 Manufacture of bricks, tiles and construction products,
in baked clay 265 Manufacture of cement, lime and plaster 266 Manufacture of articles of concrete,
plaster and cement 267 Cutting, shaping and finishing of ornamental and building stone 268 Man-
ufacture of other non-metallic mineral products 281 Manufacture of structural metal products 282
Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators
and boilers 286 Manufacture of cutlery, tools and general hardware 287 Manufacture of other fab-
ricated metal products 29 Manufacture of machinery and equipment n.e.c. (except NACE 296)
311 Manufacture of electric motors, generators and transformers 313 Manufacture of insulated wire
and cable 314 Manufacture of accumulators, primary cells and primary batteries 315 Manufac-
ture of lighting equipment and electric lamps 316 Manufacture of electrical equipment n.e.c. 321
Manufacture of electronic valves and tubes and other electronic components 322 Manufacture of
television and radio transmitters and apparatus for line telephony and line telegraphy 323 Man-
ufacture of television and radio receivers, sound or video recording or reproducing apparatus and
associated goods 331 Manufacture of medical and surgical equipment and orthopaedic appliances
332 Manufacture of instruments and appliances for measuring, checking, testing, navigating and
other purposes, except industrial process control equipment 334 Manufacture of optical instruments
and photographic equipment 335 Manufacture of watches and clocks 34 Manufacture of motor ve-
hicles, trailers and semi-trailers 35 Manufacture of other transport equipment 36 Manufacture of
furniture; manufacturing n.e.c.