Online Appendix
Additional Empirical Results for
"International Shocks, Variable Markups and Domestic Prices"

Mary Amiti
Mary.Amiti@NY.FRB.ORG

Oleg Itskhoki
Itskhoki@Princeton.EDU

Jozef Konings
Joep.Konings@KULeuven.BE

May 9, 2018

The draft available at: http://www.princeton.edu/~itskhoki/papers/DomesticPrices.pdf

Table O1: Reduced-form results

	OLS				IV
Dep. var.: Δp_{it}	(1)	(2)	(3)	(4)	(5)
Δmc^*_{it}	0.521***	0.568***	0.790***		
	(0.139)	(0.147)	(0.184)		
Δmc^*_{-it}	1.074***	1.152***			
	(0.200)	(0.206)			
Δe^X_{-it}	0.122				
	(0.463)				
Δp^E_{-it}	0.466**				
	(0.188)				
Δmc_{it}				0.354***	0.771***
				(0.042)	(0.182)
Δmc_{-it}				0.108*	0.301*
				(0.059)	(0.168)
# obs.	64,823	64,823	64,823	64,780	64,780

Notes: This table produces alternative reduced-form results. In column 1, we regress Δp_{it} on all 4 instruments used in the baseline (column 4 of Table 1 in the paper). Column 2 only includes the own marginal cost and domestic competitior instruments. Column 3 only includes own marginal cost instrument. Column 4 regresses Δp_{it} on Δmc_{it} and Δmc_{-it}, with the latter constructed for domestic competitors of the firm (as in column 5 of Table 6 in the paper). Column 5 re-estimates column 4 with IV using all of the baseline instruments.

Table O2: Alternative weighting and clustering

	firm clustering		no weights		current weights	
Dep. var.: Δp_{it}	(1)	(2)	(3)	(4)	(5)	(6)
Δmc_{it}	0.650^{***}	1.006^{***}	0.600^{***}	0.725^{***}	0.637^{***}	1.085^{***}
	(0.163)	(0.189)	(0.091)	(0.110)	(0.140)	(0.203)
$\Delta mc_{it} \times \text{Large}_i$		-0.515^{*}		-0.298		-0.671^{**}
		(0.285)		(0.210)		(0.330)
Δp_{-it}	0.484^{**}	0.019	0.234^{**}	0.134	0.475^{***}	-0.072
	(0.220)	(0.196)	(0.092)	(0.112)	(0.141)	(0.243)
$\Delta p_{-it} \times \text{Large}_i$		0.604^{*}		0.234		0.741^{**}
		(0.318)		(0.171)		(0.349)
# obs.	64,823	64,823	64,823	64,823	64,823	64,823

Notes: The regressions re-estimate the baseline specifications in column 4 of Table 1 and column 3 of Table 2 in the paper. Columns 1 and 2 re-estimate the baseline results with firm-level clustering instead of industry-level clustering. Columns 3 and 4 are as the baseline specifications, except without weighting the observations; and columns 5 and 6 use current weights instead of the lagged weights.

Table O3: Multiproduct firms

Dep. var.: Δp_{it}	(1)	(2)	(3)
Δmc_{it}	0.728^{***}	0.642^{***}	0.700^{***}
	(0.217)	(0.103)	(0.107)
$\Delta mc_{it} \times \text{noncore}_i$	-0.231	-0.106	
	(0.304)	(0.260)	
$\Delta mc_{it} \times \text{single}_i$			0.375
			(0.324)
Δp_{-it}	0.314	0.799^{***}	0.445^{***}
	(0.294)	(0.139)	(0.137)
$\Delta p_{-it} \times \text{noncore}_i$	0.369	-0.011	
	(0.428)	(0.289)	
$\Delta p_{-it} \times \text{single}_i$			-0.668
			(0.434)
# obs.	64,823	64,823	64,823

Notes: All regressions are counterpart to column 4 of Table 1, and complement columns 1 and 2 of Table 5 in the paper. In column 1, the noncore_i dummy is defined equal to 1 for all 8-digit PC that are not the firm's core product (i.e., largest in terms of sales). Similarly in column 2, except the dummy is now based on the firm's largest 4-digit NACE sales. In column 3, the single dummy is equal to 1 if the firm produces only one PC 8-digit product (typically indicative of a small firm).

Table O4: Extensive- and intensive-margin adjustment to exchange rate shocks

Dep. var.:	y_{jt}		Δn_{jt}	Δmc^*_{it}	
	(1)	(2)	(3)	(4)	(5)
$\Delta e_{k(j)t}$	−0.092	−0.094	0.021		
	(0.070)	(0.070)	(0.144)		
Δe_{st}				0.085***	
				(0.013)	
Δe_{it}					0.078***
					(0.017)
# obs.	490,053	489,610	91,844	64,823	64,821
R^2	0.321	0.361	0.148	0.004	0.005

Notes: Columns 1 and 2: observations are at the firm–HS8-product–country–year level. The dependent variable y_{jt} is equal to 1 if a firm starts importing a given HS8 product from a given country in that year, −1 if it stops importing, and 0 if there is no change. The explanatory variable is the bilateral exchange rate with a given country $k(j)$. Column 1 inclusdes year, HS8 and country fixed effects. Column 2 has the same fixed effects as column 1 plus firm fixed effects.
In column 3, the observations are at the firm-country-year level; the dependent variable is the change in the log number of HS8 product varieties imported from a given source country; and it includes year, country and firm fixed effects. Columns 1–3 are using ex-euro data and are weighted by import values.
Columns 4 and 5 are at the firm-product-year level, as in our baseline estimates. In column 5, we regress our marginal cost instrument Δmc^*_{it} on industry import-weighted exchange rate and in column 6 on firm import-weighted exchange rate.

Table O5: Exchange rates and import intensity

Dep. var.:	ϕ_{it}			ϕ^X_{it}		
	(1)	(2)	(3)	(4)	(5)	(6)
Δe_{it}	−0.311***	0.100**	0.070			
	(0.104)	(0.042)	(0.046)			
Δe^X_{it}				−0.161***	0.010	0.005
				(0.024)	(0.011)	(0.013)
# obs.	64,821	64,821	64,821	64,781	64,781	64,781
R^2	0.002	0.898	0.899	0.010	0.870	0.870
Year F.E.	no	no	yes	no	no	yes
Firm F.E.	no	yes	yes	no	yes	yes

Notes: Columns 1–3 regress the firm-year import intensity ϕ_{it} (total imports divided by total variable cost) on a weighted exchange rate using firm's imports by source country as weights: with no fixed effects in column 1, firm fixed effects in column 2, and both year and firm fixed effects in column 3. Columns 4–6 are in parallel, except they only include imports from outside the eurozone in both the dependent and independent variables.

Table O6: Imports from high-income countries

Dep. var.: $\Delta \log(\phi_{it}^H / \phi_{it})$	(1)	(2)	(3)
Δv_{it}	0.043		0.049
	(0.040)		(0.041)
Δp_{-it}		−0.027	−0.043
		(0.060)	(0.063)
# obs.	35,748	36,939	35,748
R^2	0.000	0.000	0.000

Notes: The dependent variable $\Delta \log(\phi_{it}^H / \phi_{it})$ is defined at the firm-year level as the log change in the ratio of imports from high-income countries to total imports, where high income are OECD non-eurozone countries. The first explanatory variable Δv_{it} is the weighted change in import prices at the firm-year level. There are no fixed effects included.

Table O7: Exporters versus non-exporters

	Full sample			Large firms		
Exporters	Yes	No	Both	Yes	No	Both
Dep. var.: Δp_{it}	(1)	(2)	(3)	(4)	(5)	(6)
Δmc_{it}	0.619***	0.690***	0.604***	0.419*	0.620*	0.606**
	(0.131)	(0.191)	(0.188)	(0.224)	(0.351)	(0.276)
$\Delta mc_{it} \times$ Exporters			0.069			−0.131
			(0.257)			(0.381)
Δp_{-it}	0.483***	0.497***	0.596***	0.648***	0.620*	0.573*
	(0.143)	(0.235)	(0.230)	(0.179)	(0.355)	(0.346)
$\Delta p_{-it} \times$ Exporters			−0.163			0.054
			(0.320)			(0.464)
# obs.	27,869	36,954	64,823	10,341	5,013	15,354

Notes: This table checks whether results differ across exporters and non-exporters. Column 1 re-estimated the baseline specification (in column 4 of Table 1 in the paper) just for the subsample of exporters; in column 2 for the subsample of non-exporters; and column 3 includes the full sample with an interactive dummy equal to 1 if the firm is an exporter. Columns 4–6 repeat these specifications just for the subsample of large firms (with more than 100 employees, as in column 2 of Table 2 in the paper).

Table O8: Additional Robustness

Dep. var.: Δp_{it}	Asymmetry (1)	Concorded CN8 (2)
Δmc_{it}	0.654^{***}	0.661^{***}
	(0.232)	(0.118)
$\Delta mc_{it} \times \text{UP}_{it}$	-0.137	
	(0.372)	
Δp_{-it}	0.823^{***}	0.475^{***}
	(0.160)	(0.123)
$\Delta p_{-it} \times \text{UP}_{it}$	-0.150	
	(0.287)	
# obs.	64,823	64,823
R^2	0.079	0.053

Notes: These specifications are analagous to the baseline estimates in column 4 of Table 1. In column 1, we interact both explanatory variables with a dummy=1 if both own costs and comopetitor prices increase. The dummy equals 1 for 36% of the observations (and is also included separately in the regression). Column 2 re-estimates the baseline specification using concorded CN 8-digit import data to avoid dropping observations in the construction of Δmc^*_{it} that change product codes.