

Unpublished Statistical Appendix to:

**Price Competition and the Fallacy of Composition in
Developing Country Exports of Manufactures:
Estimates of Short-Run Growth Effects**

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Supplementary Tables

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Table A.1. *Technological and industrial composition of exports by country and region*

	High-Technology Exports as a			Exports by SITC Category as Percentage of Total Manufactured Exports							
	Percentage of Total Exports			1986				2000			
	1990	1995	2000	5	6	7	8	5	6	7	8
<u>East and Southeast Asia</u>											
China	NA	10.1	18.6	10.4	27.5	3.2	58.9	2.9	12.0	34.9	50.3
Hong Kong	NA	20.4	23.3	0.5	7.9	23.5	68.1	0.6	9.1	32.5	57.9
S. Korea	17.8	25.9	34.8	2.1	18.2	33.1	46.6	4.0	12.1	71.6	12.2
Malaysia	38.2	46.1	59.5	3.4	14.6	65.4	16.6	2.4	5.0	81.5	11.1
Philippines	NA	34.9	72.6	3.4	12.0	36.2	48.4	0.4	3.2	78.6	17.9
Singapore	39.9	53.9	62.6	5.1	4.6	74.6	15.7	6.9	1.3	84.2	7.7
Thailand	20.7	24.4	33.3	2.7	33.8	22.0	41.4	3.0	13.0	54.1	29.9
Taiwan	NA	NA	NA	1.8	16.8	32.8	48.5	2.5	11.5	69.9	16.1
<u>South Asia</u>											
Bangladesh	0.1	0.0	NA	0.0	49.1	0.3	50.5	0.4	9.2	0.8	89.5
India	2.4	4.3	5.0	3.0	62.4	3.9	30.7	8.2	47.7	8.3	35.7
Pakistan	0.1	0.0	0.4	0.2	62.4	8.7	28.7	0.5	48.7	0.8	50.1
Sri Lanka	0.5	NA	NA	1.0	18.8	0.8	79.4	0.5	16.0	3.9	79.6
<u>Latin America and Caribbean</u>											
Dominican Rep.	NA	NA	1.3	2.0	26.5	5.2	66.3	0.8	7.4	10.3	81.4
Jamaica	NA	0.0	0.1	16.1	1.0	8.5	74.5	6.6	29.0	1.5	62.9
Mexico	8.3	15.1	22.4	4.5	17.0	66.1	12.4	2.1	8.2	72.2	17.5
<u>Middle East and North Africa</u>											
Mauritius	0.5	0.9	1.0	0.1	7.0	1.0	91.9	0.2	4.6	1.2	94.0
Tunisia	2.1	1.6	3.4	13.2	12.9	9.3	64.5	3.6	6.7	17.9	71.8
Turkey	1.2	1.3	4.9	4.6	37.3	3.5	54.6	2.3	28.6	21.9	47.1

Sources: High-technology exports as a percentage of total exports are from World Bank (2003).

Exports by SITC category as a percentage of total manufactured exports are authors' calculations based on data from Source OECD.

Notes: SITC 5 is chemicals and related products; SITC 6 is manufactured goods classified chiefly by material (including rubber, textiles, iron and steel); SITC 7 is machinery and transport equipment (including telecommunications, electrical, computers, other electronics, and automobiles); SITC 8 is miscellaneous manufactured articles (including furniture, apparel, footwear, and instruments). NA means not available.

Table A.2. *Chow tests for poolability across panel members*

Panel:	Price measure: Relative export prices and producer prices (R_{PP}^N, R_{PX}^L)		CPI-adjusted real exchange rates (R_{CPI}^N, R_{CPI}^L)	
	Chow Statistic	<i>p</i> -value	Chow Statistic	<i>p</i> -value
ALL	2.080	0.000	2.355	0.000
SMALLOPEN	1.418	0.063	2.081	0.001
LARGE	2.904	0.000	2.294	0.000
HIMFRGDP	2.197	0.001	2.900	0.000
LOMFRGDP	1.610	0.010	1.463	0.030
HITECH	2.024	0.001	1.562	0.010
LOTECH	1.652	0.005	2.957	0.000
HIDEBT	1.881	0.000	2.277	0.000
LODEBT	2.121	0.005	2.667	0.000

Notes: Statistics computed using the generalized Chow test for poolability from Baltagi (2001). The sample period is 1985-2004 after using 1983-84 data for lags and differences. The estimation is done with all variables in log differences using OLS.

Table A.3. Unit root testsLog levels of variables:

Variable	Y	Z^N	R_{PP}^N	R_{PX}^L	R_{CPI}^N	R_{CPI}^L	F
Lags	0-4	0-4	0-3	0-1	0-4	0-3	0-2
Im-Pesaran-Shin W-stat	3.488 (1.000)	-0.886 (0.188)	1.516 (0.935)	-0.246 (0.403)	-2.187 (0.014)	-1.863 (0.031)	-4.701 (0.000)
ADF-Fisher Chi-square	34.127 (0.462)	32.894 (0.522)	30.244 (0.652)	38.913 (0.258)	55.507 (0.011)	45.160 (0.096)	84.372 (0.000)
PP-Fisher Chi-square	46.615 (0.073)	42.194 (0.158)	29.373 (0.694)	35.288 (0.407)	57.007 (0.008)	48.858 (0.048)	90.473 (0.000)

Log differences of variables:

Variable	\hat{Y}	\hat{Z}^N	\hat{R}_{PP}^N	\hat{R}_{PX}^L	\hat{R}_{CPI}^N	\hat{R}_{CPI}^L	\hat{F}
Lags	0-3	0-4	0-3	0-3	0-3	0-2	0-2
Im-Pesaran-Shin W-stat	-8.856 (0.000)	-14.461 (0.000)	-10.209 (0.000)	-10.650 (0.000)	-13.679 (0.000)	-10.706 (0.000)	-16.534 (0.000)
ADF-Fisher Chi-square	141.155 (0.000)	231.45 (0.000)	158.78 (0.000)	166.96 (0.000)	216.967 (0.000)	167.488 (0.000)	262.329 (0.000)
PP-Fisher Chi-square	143.66 (0.000)	239.81 (0.000)	182.77 (0.000)	208.50 (0.000)	245.335 (0.000)	182.640 (0.000)	712.191 (0.000)

Notes: Each test assumes an individual unit root process with an intercept but no trend. The null hypothesis is a unit root (p -values in parentheses). Sample period 1983-2004 (including lags and differences); lag selection based on the Schwartz Information Criterion. Probabilities for Fisher tests are computed using an asymptotic χ^2 distribution; other tests assume asymptotic normality (all tests based on Newey-West bandwidth selection using the Bartlett kernel). See section 3.2 of text and Table 3 for variable definitions and sources.

Table A.4. OLS estimates with country fixed effects using relative export prices and producer prices, detailed results for individual lags; sample period after lags and differences, 1985-2004

Dependent variable: growth rate (log difference) of real GDP, $\hat{Y}(t)$									
Panel	ALL	SMALLOPEN	LARGE	HIMFRGDP	LOMFRGDP	HITECH	LOTECH	HIDEBT	LODEBT
Cross-sections included	17	8	9	7	10	8	11	12	5
Total panel observations	326	153	173	133	194	153	214	229	99
Constant	0.047 (0.000)	0.043 (0.000)	0.050 (0.000)	0.063 (0.000)	0.042 (0.000)	0.053 (0.000)	0.043 (0.000)	0.042 (0.000)	0.064 (0.000)
$\hat{Z}^N(t)$	0.047 (0.012)	0.040 (0.091)	0.048 (0.031)		0.037 (0.025)	0.088 (0.001)	0.030 (0.037)	0.033 (0.003)	0.054* (0.131)
$\hat{R}_{PP}^N(t)$	-0.082 (0.003)	-0.057 (0.079)	-0.113 (0.014)	-0.421 (0.000)		-0.189 (0.000)			-0.292 (0.005)
$\hat{R}_{PX}^L(t)$				0.229 (0.000)	-0.052 (0.065)		-0.049 (0.068)	-0.061 (0.026)	
$\hat{F}(t)$	0.299 (0.000)	0.177 (0.000)	0.448 (0.000)	0.237 (0.000)	0.303 (0.016)	0.301 (0.000)	0.267 (0.018)	0.295 (0.000)	0.150 (0.003)
$\hat{Z}^N(t-1)$								-0.025 (0.041)	0.041 (0.020)
$\hat{R}_{PP}^N(t-1)$	-0.026 (0.024)	-0.025 (0.075)	-0.037 (0.027)	-0.032 (0.106)	-0.012* (0.239)	-0.042 (0.011)	-0.013* (0.209)		
$\hat{R}_{PX}^L(t-1)$									-0.108 (0.001)
$\hat{F}(t-1)$	0.151 (0.064)		0.264 (0.032)	0.232 (0.022)		0.248 (0.008)			
Adjusted R ²	0.350	0.223	0.456	0.346	0.416	0.475	0.399	0.239	0.412
S.E. of regression	0.029	0.030	0.028	0.032	0.026	0.031	0.025	0.030	0.027
Sum of squared residuals	0.264	0.128	0.125	0.125	0.119	0.136	0.126	0.193	0.065
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Durbin-Watson statistic	1.633	1.430	1.718	1.312	2.038	1.320	2.043	1.762	1.684
Redundant fixed effects (p-value)	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.001
Wald test statistic (p-value)	0.749	0.199	0.575	0.580	0.428	0.675	0.496	0.160	0.144

Notes: *p*-values in parentheses, based on White period standard errors and variance (degrees of freedom corrected). *denotes variables that were not significant at the 10% level, but which were included based on Wald tests. Fixed country effects were included in all regressions. See table 4 in the text for more details.

Table A.5. OLS estimates with country fixed effects using CPI-adjusted real exchange rates, detailed results for individual lags; sample period after lags and differences, 1985-2004

Dependent variable: growth rate (log difference) of real GDP, $\hat{Y}(t)$									
Panel	ALL	SMALLOPEN	LARGE	HIMFRGDP	LOMFRGDP	HITECH	LOTECH	HIDEBT	LODEBT
Cross-Sections Included	17	8	9	7	10	8	11	12	5
Total panel observations	331	158	173	139	194	158	214	234	99
Constant	0.047 (0.000)	0.042 (0.000)	0.049 (0.000)	0.054 (0.000)	0.045 (0.000)	0.050 (0.000)	0.044 (0.000)	0.043 (0.000)	0.060 (0.000)
$\hat{Z}^N(t)$	0.056 (0.004)	0.074 (0.020)	0.053 (0.020)	0.061 (0.015)	0.044 (0.015)	0.127 (0.000)	0.034 (0.015)	0.045 (0.020)	0.078 (0.070)
$\hat{R}_{CPI}^N(t)$	-0.099 (0.003)	-0.061 (0.104)		-0.239 (0.001)		-0.157 (0.004)		-0.085 (0.022)	-0.161 (0.047)
$\hat{R}_{CPI}^L(t)$			-0.121 (0.000)		-0.059 (0.008)		-0.058 (0.008)		
$\hat{F}(t)$	0.250 (0.000)	0.152 (0.000)	0.369 (0.003)	0.117 (0.008)	0.273 (0.012)	0.242 (0.000)	0.245 (0.012)	0.242 (0.002)	0.159 (0.011)
$\hat{Z}^N(t-1)$					-0.024* (0.132)			-0.019* (0.148)	0.038 (0.003)
$\hat{R}_{CPI}^N(t-1)$	-0.027 (0.064)	-0.103 (0.038)			-0.075 (0.018)		-0.055 (0.018)	-0.094 (0.015)	
$\hat{R}_{CPI}^L(t-1)$		0.076 (0.081)		-0.092 (0.006)	0.083 (0.006)		0.061 (0.006)	0.068 (0.070)	
$\hat{F}(t-1)$	0.117 (0.061)		0.244 (0.054)			0.192 (0.032)			
Adjusted R ²	0.368	0.246	0.489	0.357	0.446	0.467	0.421	0.274	0.341
S.E. of regression	0.029	0.029	0.027	0.031	0.025	0.031	0.025	0.029	0.028
Sum of squared residuals	0.259	0.126	0.118	0.126	0.111	0.142	0.120	0.185	0.073
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Durbin-Watson statistic	1.569	1.470	1.562	1.234	1.937	1.261	1.925	1.688	1.341
Redundant fixed effects (p-value)	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000
Wald test statistic (p-value)	0.789	0.122	0.729	0.445	0.200	0.402	0.179	0.259	0.908

Notes: p -values in parentheses, based on White period standard errors and variance (degrees of freedom corrected). *denotes variables that were not significant at the 10% level, but which were included based on Wald tests. Fixed country effects were included in all regressions. See Table 5 in the text for more details.

Table A. 6. GMM estimates using relative export prices and producer prices, detailed results for individual lags; sample period after lags and differences, 1987-2004

Dependent variable: growth rate (log difference) of real GDP, $\hat{Y}(t)$									
Panel	ALL	SMALLOPEN	LARGE	HIMFRGDP	LOMFRGDP	HITECH	LOTECH	HIDEBT	LODEBT ^a
Cross-Sections Included	17	8	9	7	10	8	11	12	5
Total panel observations	292	137	155	119	173	137	191	204	88
$\hat{Z}^N(t)$	0.070 (0.000)	0.074 (0.000)	0.089 (0.000)	0.095 (0.000)	0.091 (0.000)	0.159 (0.000)	0.070 (0.000)	0.047 (0.026)	
$\hat{R}_{PP}^N(t)$	-0.159 (0.000)	-0.159 (0.000)	-0.077 (0.000)	-0.329 (0.000)	0.044 (0.024)	-0.264 (0.000)		-0.148 (0.000)	
$\hat{R}_{PX}^L(t)$		0.064 (0.007)		0.164 (0.000)	-0.081 (0.002)	0.206 (0.011)			
$\hat{F}(t)$	0.492 (0.000)	0.206 (0.000)	0.740 (0.000)	0.424 (0.000)	0.332 (0.000)	0.535 (0.000)	0.267 (0.000)	0.534 (0.000)	
$\hat{Z}^N(t-1)$	-0.023 (0.083)	-0.052 (0.001)			-0.028 (0.015)	0.042 (0.000)	-0.031 (0.005)	-0.031 (0.008)	
$\hat{R}_{PP}^N(t-1)$		-0.058* (0.126)	-0.072 (0.012)	0.093 (0.000)	-0.074 (0.077)	0.109 (0.016)	-0.090 (0.034)		
$\hat{R}_{PX}^L(t-1)$		0.049 (0.069)	0.035 (0.039)	-0.092 (0.000)	0.064 (0.089)	-0.088 (0.058)	0.084 (0.020)		
$\hat{F}(t-1)$	0.134 (0.027)		0.237 (0.000)	0.245 (0.000)	0.099 (0.002)	0.260 (0.000)	0.100 (0.015)	0.145 (0.044)	
$\hat{Y}(t-1)$	0.225 (0.002)	0.290 (0.000)	0.167 (0.000)	0.321 (0.000)	-0.009 (0.869)	0.307 (0.000)	0.035 (0.629)	0.122 (0.071)	
S.E. of regression	0.030	0.029	0.028	0.030	0.026	0.031	0.026	0.031	
Sum of squared residuals	0.262	0.109	0.113	0.099	0.112	0.120	0.125	0.193	
Wald test statistic (p-value)	0.784	0.252	0.425	0.283	NA	NA	0.879	0.263	
Sargan test (p-value)	0.232	0.821	0.800	0.837	0.337	0.391	0.265	0.518	

Notes: *p*-values in parentheses, based on White period standard errors and variance (degrees of freedom corrected). *denotes variables that were not significant at the 10% level, but which were included based on Wald tests. "NA" denotes "not applicable." See Table 6 in the text for more details.

^aThe equation for LODEBT was invalid because of singularity-related problems and is not reported.

Table A.7. GMM estimates using CPI-adjusted real exchange rates, detailed results for individual lags; sample period after lags and differences, 1987-2004

Dependent variable: growth rate (log difference) of real GDP, $\hat{Y}(t)$									
Panel	ALL	SMALLOPEN	LARGE	HIMFRGDP	LOMFRGDP	HITECH	LOTECH	HIDEBT	LODEBT
Cross-Sections Included	17	8	9	7	10	8	11	12	5
Total panel observations	297	142	155	124	173	142	191	209	89
$\hat{Z}^N(t)$	0.093 (0.000)	0.130 (0.000)	0.086 (0.000)	0.087 (0.000)	0.085 (0.000)	0.170 (0.000)	0.063 (0.000)	0.083 (0.000)	0.103 (0.000)
$\hat{R}_{CPI}^N(t)$	-0.147 (0.000)	-0.203 (0.000)	-0.051 (0.001)	-0.202 (0.000)	-0.093 (0.002)	-0.058 (0.000)	-0.082 (0.007)	-0.142 (0.000)	-0.088 (0.000)
$\hat{R}_{CPI}^L(t)$		0.061 (0.027)		-0.118 (0.000)		-0.116 (0.000)			-0.084 (0.016)
$\hat{F}(t)$	0.369 (0.000)	0.153 (0.001)	0.678 (0.000)	0.196 (0.000)	0.183 (0.001)	0.432 (0.000)	0.161 (0.005)	0.351 (0.000)	0.105 (0.004)
$\hat{Z}^N(t-1)$		-0.032 (0.000)		-0.012 (0.001)	-0.022 (0.002)		-0.025 (0.003)	-0.019 (0.055)	-0.021 (0.003)
$\hat{R}_{CPI}^N(t-1)$	-0.111 (0.020)	-0.100 (0.000)	-0.070 (0.000)		-0.085 (0.000)	-0.035 (0.000)	-0.085 (0.003)	-0.092 (0.002)	
$\hat{R}_{CPI}^L(t-1)$	0.126 (0.009)	0.102 (0.000)	0.098 (0.000)	-0.024 (0.017)	0.091 (0.001)	0.044 (0.000)	0.106 (0.000)	0.090 (0.003)	0.025 (0.073)
$\hat{F}(t-1)$	0.075 (0.028)		0.216 (0.000)	0.052 (0.000)	0.090 (0.000)	0.176 (0.000)	0.047 (0.020)	0.080 (0.094)	
$\hat{Y}(t-1)$	0.234 (0.000)	0.195 (0.000)	0.271 (0.000)	0.328 (0.000)	-0.060* (0.210)	0.230 (0.000)	0.040* (0.519)	0.139 (0.011)	0.310 (0.000)
S.E. of regression	0.028	0.028	0.027	0.027	0.026	0.028	0.025	0.029	0.027
Sum of squared residuals	0.229	0.108	0.108	0.087	0.110	0.105	0.116	0.165	0.059
Wald test statistic (p-value)	0.423	0.215	0.390	0.885	0.677	0.981	0.295	0.168	0.754
Sargan test (p-value)	0.208	0.593	0.806	0.681	0.402	0.737	0.375	0.117	0.690

Notes: *p*-values in parentheses, based on White period standard errors and variance (degrees of freedom corrected). *denotes variables that were not significant at the 10% level, but which were included based on Wald tests.