Global Value Chains and the Exchange Rate Elasticity of Exports

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An illustrative example: German value chains

Following the enlargement of the EU in 2004, German value chains expanded to Poland, Hungary, Czech Republic and Slovakia (IMF, 2014)

have declined, differently from other Central and Eastern European countries

Our answers

Reduction of REER Elasticity

- Empirical strategy
- REER elasticity over time

Role of GVCs in reducing REER Elasticity

- Basic concepts and theoretical hypotheses
- Regression results using different GVC measures
  - Manufacturing exports
  - Industry level data
  - Regression results using domestic value-added exports and value-added REER (Bayoumi *et al.* 2013, Bems and Johnson, 2013)

Empirical Strategy: Estimating the REER Elasticity of Exports

Related literature:

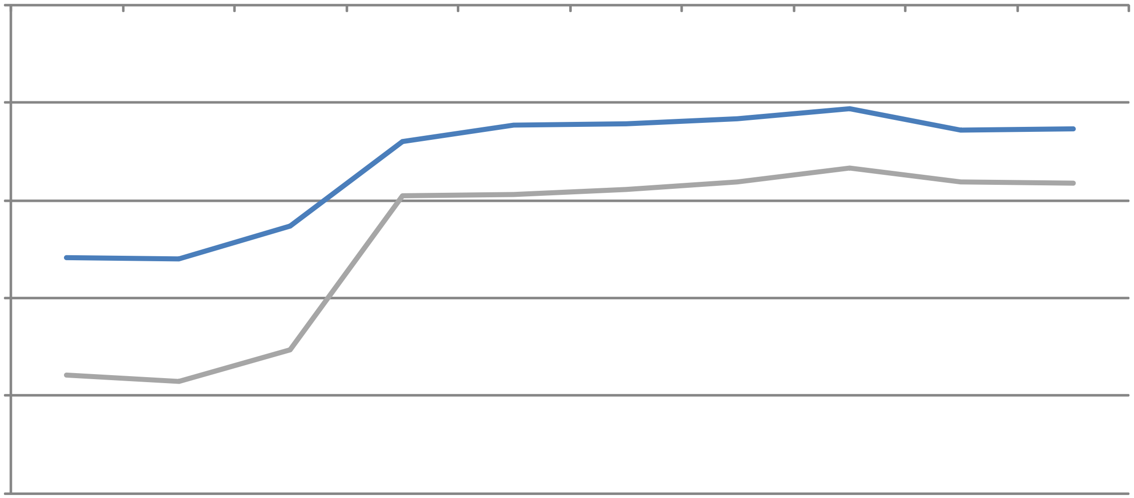
- Rodrik (1986, 2009)
- Freund and Pierola (2008) & Di Nino, Eichengreen, and O031 0 0 1 43

REER Elasticity: Manufacturing versus Total Exports

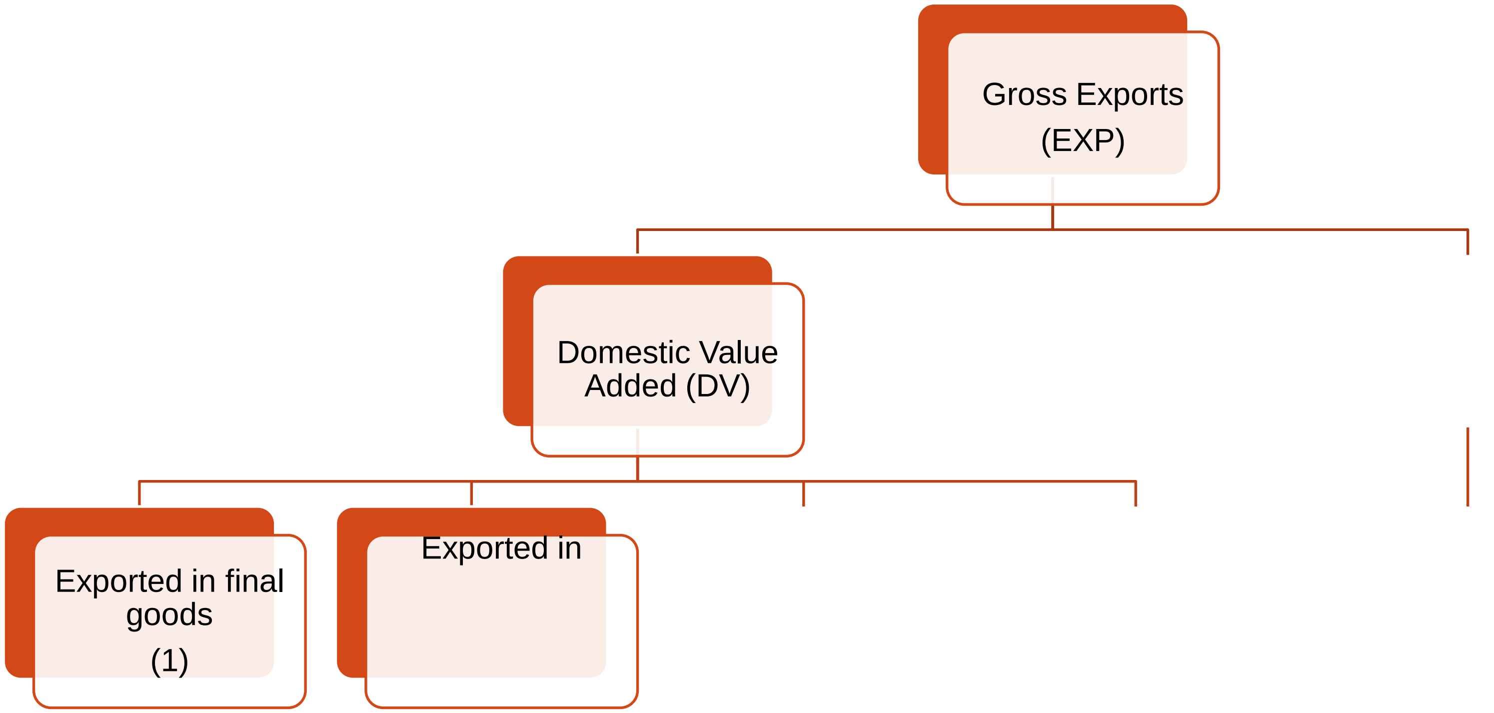
Dependent variable:	Growth of Total Exports from COMTRADE			Growth of Manufacturing Exports from COMTRADE		
	0.223	0.261	0.094	0.246	0.300	0.120
	3.213	19.558	3.460	3.901	21.896	7.579

The sensitivity of exports to currency movements decreased over time

REEER Elasticity of Manufacturing Exports over Time



The decline in REER elasticity of manufacturing exports pre-dates the global financial crisis


Gross Exports
(EXP)
Domestic Value Added (DV)
Exported in final goods
(1)
Exported in

GVCs and REER Elasticity

Dependent variable:

		(2)	(3)	(4)
	0.246	0.411	0.216	0.609
		0.006		
			0.370	
				0.006
				0.032
	0.238	0.342	0.251	0.222
		0.006		
			0.087	
				0.006
				0.018
All Regressions:				
Lag real GDP and Foreign real GDP	Y	Y	Y	Y
Time Fixed Effects	Y	Y	Y	Y
Country Fixed Effects	Y	Y	Y	Y

Note: *** indicates statistically significant 1%, ** indicates statistically significant at 5%, and * indicates statistically significant at 10%.

The grey shaded areas are jointly significant using Wald tests.

Possible Ranges of Elasticity

GVCs and REER Elasticity: Sectoral Analysis

Dependent variable:

Gross versus Value Added Exports

Total Exports/REER	-1.05	-1.22	-0.68
Value Added Exports/ REER in Value Added Terms	-0.17 *	-0.13	-0.24

Conclusion

Exchange rate elasticity of exports has declined over time

The rise of GVC participation could explain 40 percent of the fall in the elasticity (using average GVC participation)

Our findings suggest that while currency depreciations can boost exports, their effectiveness does appear to have muted

Future research should explore alternative channels such as lags of depreciations, differences across GVCs, pricing to market effects, weak external demand, world trade slowdown or protectionism