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Tradability, productivity, and international economic integration

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Abstract

This paper develops a model of endogenously tradable goods to study the implications of international integration for price dispersion and pricing to market. A distinctive feature of the model is heterogeneity in both trade costs and productivity. The model highlights the role of heterogeneity in shaping how new entrants at the extensive margin differ from incumbent traders, thereby giving extensive margin movements distinctive implications relative to the intensive margin. In particular, the model predicts that international integration mainly along the extensive margin should be associated with a more limited degree of price convergence. This prediction finds support in cross-sectional regressions on European data and offers insight into recent integration episodes.
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1. Introduction

This paper studies the implications of international goods market integration for price dispersion by developing a theoretical model where goods are endogenously tradable and

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Table 1
Trade response to integration

Exporting country	Importing country or region	Least traded goods, as share of total exports		Total exports (mil$)		Increase in least traded goods exports/increase in total exports
		1990	2000	1990	2000	
Sweden	EU	0.10	0.17	40959	44862	2.02
Italy	EU	0.10	0.14	111485	124438	1.44
Portugal	EU	0.10	0.19	13607	17727	0.86
France	EU	0.10	0.13	116917	190043	0.35
UK	EU	0.10	0.14	88793	153943	0.34
Spain	EU	0.10	0.16	40629	71384	0.25
		1989	1999	1989	1999	
Canada	Mexico	0.10	0.42	525	953	0.99
Mexico	Canada	0.10	0.28	1578	5825	0.41
Mexico	US	0.10	0.17	27590	101842	0.25
US	Mexico	0.10	0.16	24969	80342	0.24

Increase in least traded goods exports relative to increase in total exports defined as col5 = [col2 * col4 − (col1) * (col3)] / [col4 − col3].
Data sources: Exports of least traded goods accounting for 10% or less of total trade in 1989 or 1990, from Kehoe and Ruhl (2002); total trade figures from *Direction of Trade* Yearbooks 1996, 2003; 1999 and 2000 figures deflated by US GDP goods deflator.

heterogeneous. Empirical studies of recent episodes of international goods market integration in Europe and North America have produced a richer picture of how market integration affects cross-border trade and price differences. This picture has pointed out limitations in existing open economy macro models.

One empirical finding relates to quantities, in particular, the fact that trade integration works in part through increases at the extensive margin of goods not previously traded. For example, consider the set of "least traded goods" prior to the North American Free Trade Agreement (NAFTA), defined as the set of 4-digit SITC industries ordered in terms of trade shares, from that with the lowest trade share up to the point that they collectively account for 10% of trade. During the 1990s, these least traded goods accounted for roughly 25% of increased Mexican exports to the United States, 40% of increased Mexican exports to Canada, and almost 100% of increased Canadian exports to Mexico (see Table 1, showing calculations based on data from Kehoe and Ruhl, 2002). In the case of the European Union's implementation of the Single Market Program in the early 1990s, least traded goods accounted for more than 100% of the increased trade of Sweden and Italy and almost 90% of that of Portugal with the rest of Europe.

A second empirical finding relates to the price effects of market integration. The top panel of Table 2 extends the analysis of Engel and Rogers (2004) with more recent Economist Intelligence Unit data on price dispersion across European countries. It shows that the implications of market integration for price convergence can vary widely: there was significant price convergence in the early 1990s with the Single Market Program, but little to no convergence after the European Monetary Union (EMU) was established in 1999. The bottom panel of Table 2 shows a similar result for North America: price dispersion declined considerably in the early 1990s but appeared to increase after 1994 at the time of the adoption of NAFTA.[2]

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[2] This result is unaffected if the peso crisis years of 1994 and 1995 are excluded.