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The dynamics of trade margins: Evidence from the European integration☆

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HIGHLIGHTS

- We study sectoral exports margins dynamics for 10 transition countries in the EU.
- Export growth along both margins was due to around 1% of all HS 6-digit products.
- Largest gains in both margins took place in the same subset of sectors.
- We find a positive correlation between productivity growth and extensive margin.

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ABSTRACT

We analyze the exports trade margins dynamics for ten transition countries, both at the industry and product level, during the period of accession to the EU. We find that trade along both margins was driven by only about 1% of almost 5000 (HS 6-digit) products. Moreover, the largest intensive and extensive margin gains were mostly concentrated around the same subset of sectors. Last, we find a positive correlation between productivity growth and the extensive margin across the transition economies.

1. Introduction

Exports growth following trade liberalization reforms can occur through two channels: countries selling more of the goods they were previously exporting – the intensive margin – or instead exporting previously non-traded goods—the extensive margin. Which margin plays a more prevalent role during trade liberalization events? The literature does not provide a conclusive answer. While, for example, Kehoe and Ruhl (2013), Hummels and Klenow (2005) and Dalton (2014) highlight the importance of the extensive margin, Helpman et al. (2008) and Besedeš and Prusa (2011) conclude that the intensive margin is instead the dominant force.

Previous studies have underscored the relevance of the imports trade margins following trade liberalization reforms. For example, Mukerji (2009) quantifies the welfare-enhancing role of new goods imports after India's 1990s trade liberalization. Similarly, Mukerji (2013) finds that new goods imports grow faster in technology-lagging countries than in advanced ones.

We aim to contribute to the literature by documenting the patterns of the *exports* margins during a large-scale episode of trade liberalization: the accession of ten transition economies of Central and Eastern Europe into the European Union (EU).[1] Moreover, we analyze sectoral-level patterns to determine whether liberalized

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[1] The ten countries are: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

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access to new markets encouraged exports of goods from new industries or intensified already existing exports. This aspect has received little attention in the literature. Our analysis focuses on the 1995–2008 period, an era that includes the signing of free trade agreements (FTAs) during the countries' candidacy years, as well as their EU accession. This period is long enough to include potentially lagged effects of such trade reforms, but stops prior to the Global Financial Crisis to avoid any distorting implications.

As trade with the EU was liberalized, did the goods accounting for the bulk of exports of these countries expand or contract? Did trade barriers removal encourage new products exports? Did these countries specialize or broaden their exports industry distribution? Was export growth due to the intensive or extensive margin? We answer these questions quantitatively using highly disaggregated export data. We also investigate which margin measures are correlated with productivity growth. Our study complements works like Fabrizio et al. (2007), which examine the export performance of eight transition economies, but focus on total exports rather than export margins.

2. Data

For each country, we collect product-level (nominal) data on exports to the EU15[2] for the 1995–2008 period from the UN Comtrade database, using the 6-digit Harmonized System classification.[3] For the industry-level analysis, each product is assigned to one of 16 industries according to the International Standard Industrial Classification (ISIC) Revision 3. Our study covers 4924 products.[4] Table 1 shows the product distribution across industries.

3. Top-traded goods

3.1. Frequency of top-traded goods

For each country, we order goods by their export values in descending order and label those that collectively account for 50% of total exports as "top-traded" (TT) goods. Table 2 shows the number of TT goods in 1995 and 2008, and the changes experienced during that period. An interesting fact is the small number of goods in this category. On average, 55 goods (or 1.2% of all goods) accounted for half of the exports in 1995, and that number decreased to 38 (0.8% of all goods) in 2008. The decline in the number of TT goods was the trend for most countries, except for Latvia, Romania, Estonia and Bulgaria.

3.2. Changes in the industry distribution of top-traded goods and exports

In 1995 industries A to 27 – mainly primary goods and manufactures with relatively low value-added – accounted for about three quarters of all TT goods. In 2008, instead, industries 29 to 34 – corresponding to Machinery, Transportation Equipment, and Electric Equipment – accounted for more than half of the TT goods, reflecting a shift in the nature of the transition economies' most heavily-traded goods.

Table 3 shows the changes in the industry distribution of the frequency of TT goods between 1995 and 2008. On average, all industries from codes A to 27 experienced reductions in their shares of TT goods, except for industries 23 (Coke/Petrol) and 25 (Rubber/Plastics). Textiles registered the largest decrease in TT goods, while Transportation Equipment experienced the largest increase, followed by Electric Equipment and Machinery.

Table 4 shows a similar story for TT goods' export values, with Coke and Petrol, Machinery, Electric Equipment, and Transportation Equipment increasing their shares, and the remaining industries experiencing reductions in their relative importance.

4. Least-traded goods

We follow the methodology in Kehoe and Ruhl (2013), hereinafter KR, and label those goods with initially very low trade volumes, or not traded at all, as "least-traded" (LT) goods. Specifically, we rank goods in ascending order according to their average export value during 1995–1997.[5] The goods that account for the bottom 10% of total exports are labeled as LT or "new" goods.

4.1. Frequency of least-traded goods

Table 5 reveals that in 1995 the vast majority of goods were exported in very small values, or not at all. In fact, 4448 goods composed the average LT basket, implying that about 90% of all goods were essentially not traded. A notable exception is the Czech Republic with a much lower fraction (78%). However, the relative importance of LT goods in total exports grew disproportionately, going from representing 10% of exports in 1995 to accounting, on average, for more than one third of total exports in 2008, with Slovakia and Latvia leading the group.

Moreover, we find that although LT goods experienced sizable increases in the overall exports shares, this was due to very few goods. On average, only 31 goods (0.7% of all LT goods) accounted for 50% of LT goods exports. In what follows, we call this subset the "top" LT, or TLT goods.

4.2. Industry distribution of top least-traded goods and exports

In addition to being concentrated on a small number of products, we find that the distribution of TLT goods and their exports were clustered on only a handful of industries. As shown in Table 6, Basic and Fabricated Metals, Machinery, and Electric and Transport Equipment accounted on average for nearly 70% of all TLT goods in 2008. As Table 7 reveals, the sectoral concentration of TLT goods' exports was even more pronounced. Over 55% of TLT exports were concentrated in the Electric and Transport Equipment sectors. This pattern was quite robust across countries, except for Lithuania, which specialized in the Food and Chemicals sectors.

5. TT and LT goods transitions

5.1. Persistence of top-traded goods

Previously we documented that the TT goods basket was composed of a small number of products. However, there was significant turnover within that category. Fig. 1 displays the fraction of TT goods in 1995 that remained as such in 2008. On average, less than a third of TT goods in 2008 were also TT in 1995, and those goods accounted for nearly 36% of TT goods exports in 2008. Slovenia displayed the highest persistence in goods remaining as TT (56.5%), and Latvia the lowest (17.6%).

[2] EU15 refers to the EU members prior to the 2004 expansion. In what follows, "exports" and "total exports" imply exports to the EU15, unless otherwise noted.

[3] For Bulgaria, data are only available starting in 1996.

[4] Some products had to be dropped since there was no corresponding industry assigned to them.

[5] We average values over those 3 years to avoid any potential distortions derived from an anomalous initial year.