Globalization and the Gains from Variety
The Case of a Small Open Economy

Lukas Mohler

University of Basel

Vienna, December 12, 2008

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Introduction


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Broda and Weinstein (2006) are the first who structurally estimate these gains: 2.6% of GDP in the U.S. between 1972 and 2001.
Literature

- Feenstra (AER 1994)
  - Set up a CES-model where new varieties lower unit-costs.
  - Derived a corrected price index that accounts for variety change.
  - Developed a stochastic model to estimate the elasticities of substitution.
  - Showed that conventional import price indices are biased upwards.

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  - Apply this to many imported product categories using disaggregated trade data.
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- Proposing an alternative definition of traded variety and presenting the results for this new specification.
The calculation of the gains from variety can be divided into 3 steps:

1. Estimate the elasticity of substitution for each product category.
2. Calculate the corrected import price index and the aggregate bias.
3. Compute gains from variety by allowing for the domestic economy.
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The Corrected Price Index

- The Feenstra Price Index $\pi_g$ for good $g$ including varieties $c$:

$$\pi_g = P_g(I_g) \left( \frac{\lambda_{gt}}{\lambda_{gt-1}} \right)^{1/(\sigma_g-1)}$$

where

$$\lambda_{gt} = \frac{\sum_{c \in I_g} p_{gct}x_{gct}}{\sum_{c \in I_{gt}} p_{gct}x_{gct}},$$

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Computing the Gains from Variety

- Aggregating all the $\pi_g$’s we get the aggregated import price index $\Pi$ and thus the aggregate bias in the conventional import price index.
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- Since no information about the domestic structure of the economy is known, a simple Krugman-like economy is assumed.
Results: The Gains from Variety

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As a conclusion, the majority of the difference in the aggregate bias, namely about 90%, is due to the lower variety growth in Switzerland. The rest of the difference is due to the higher elasticities of substitution for Swiss import goods.
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  - the lambda ratios are a first step towards a more general definition of traded varieties.
Proposing a Definition of Traded Varieties

**Proposition:**

The lambda ratio is defined as

\[ \frac{\lambda_{gt}}{\lambda_{gt-1}} = \frac{\frac{\sum_{c \in I_g} p_{gct}x_{gct}}{\sum_{c \in I_{gt}} p_{gct}x_{gct}}}{\frac{\sum_{c \in I_g} p_{gct-1}x_{gct-1}}{\sum_{c \in I_{gt-1}} p_{gct-1}x_{gct-1}}} \]

To obtain a new version of the price index bias, the set \( I_g \) contains but one artificial variety with constant expenditure. Thus, the lambda ratio simplifies to

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– I propose a different and more general definition of traded variety, slightly changing Feenstra’s lambda ratios. I show that the differences in the gains from variety can be substantial using another specification.
Thank you!