

The Duration of EU Seafood Imports from Developing Countries: The Impact of Trade Policies and Chinese Products

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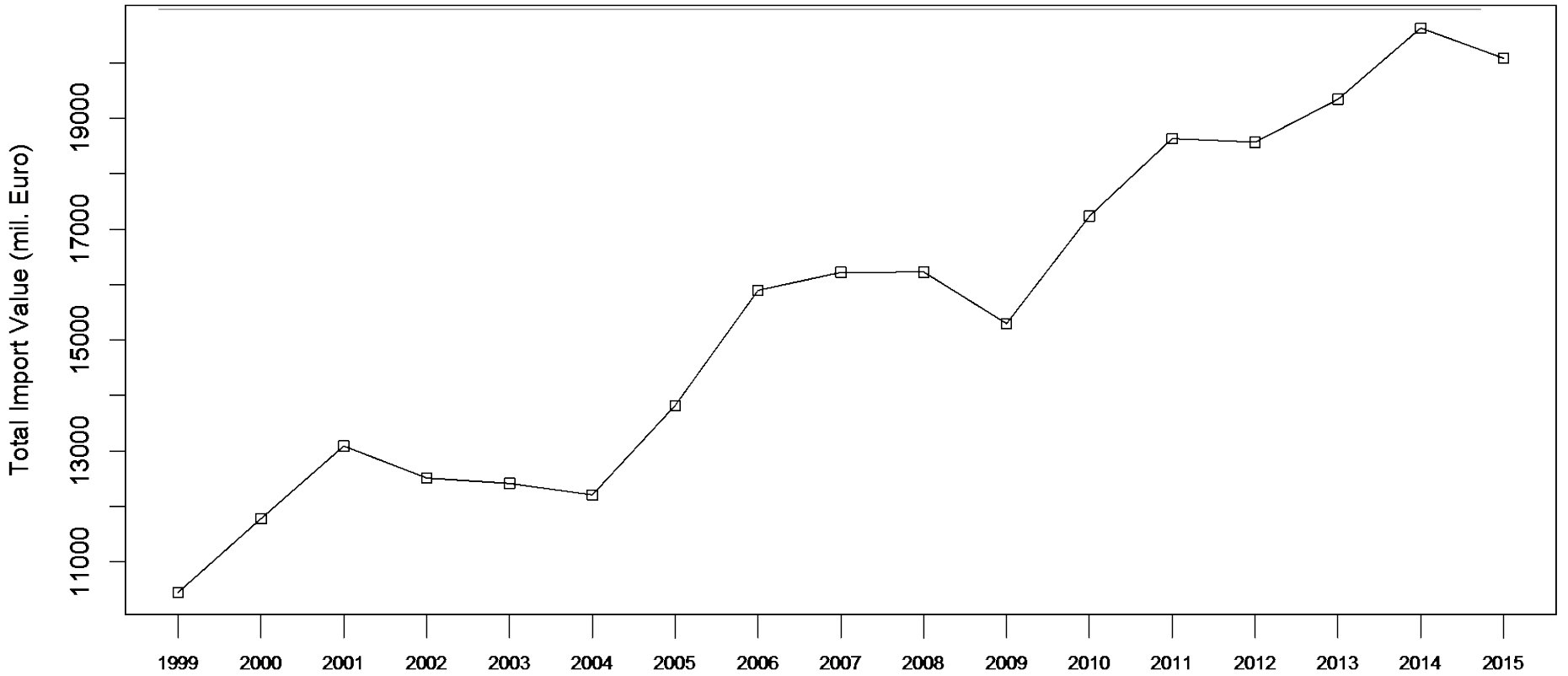
Purpose of this study

- This paper explores the patterns of EU seafood imports with a particular focus on
 - The impact of the EU GSP scheme and Chinese products on other developing countries
- Model: A duration analysis to identify the determinants of trade spell time.

EU Seafood Imports

- About 38% of total fisheries production is exported globally in the form of various food and feed items (FAO, 2012).
- The EU is the biggest seafood importer.
- Imports from suppliers outside the EU was euro 19.2 billion, an increase of 64 percent relative to 1999.

Total Import Value of Seafood by EU (million)



Competition among Developing Countries

- Among the main suppliers, developing countries are responsible for about 60% of total import values of fish products in the EU.
- Import value of products from developing countries grew 56% relative to 1999.
- During the same period, the major supplier, China, gained over 300% growth in this market .

Import Value Shares of Seafood from Developing and Developed Countries (%)

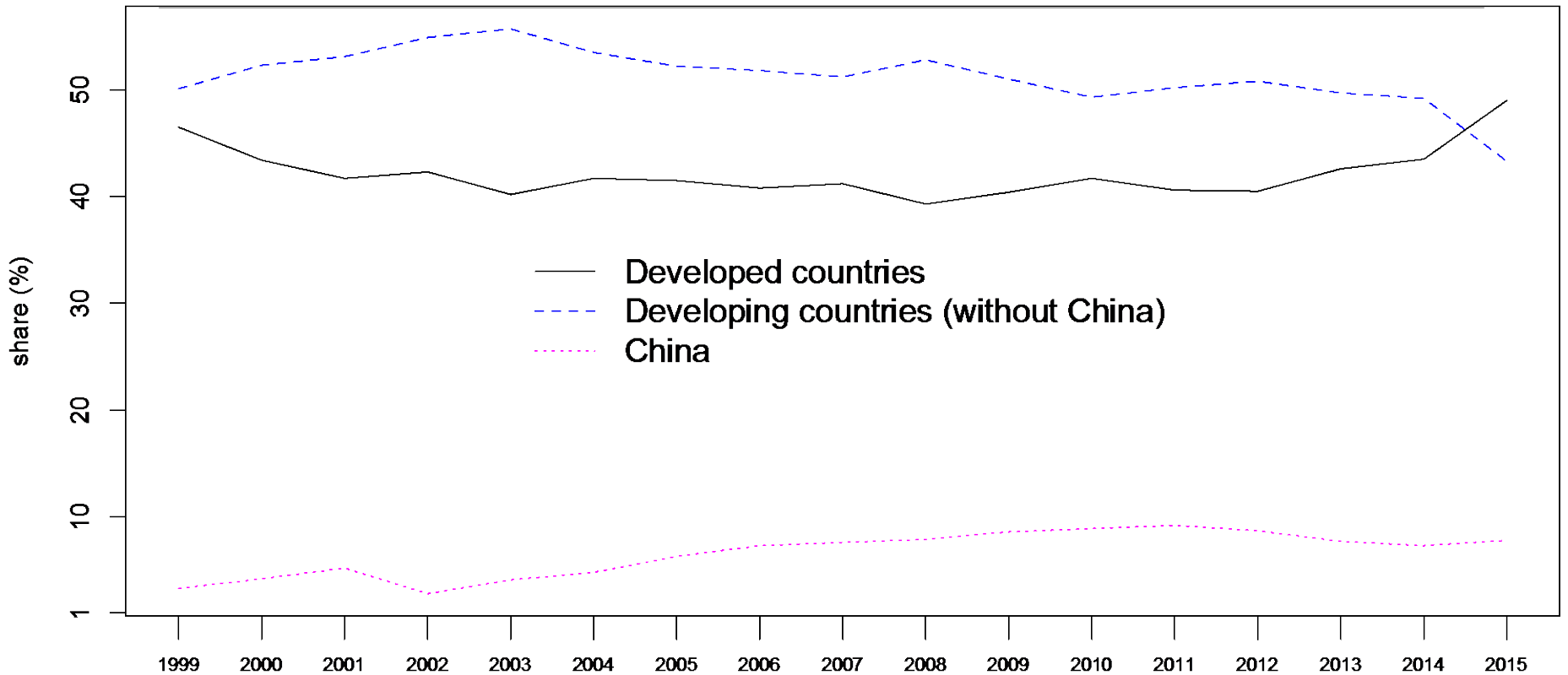
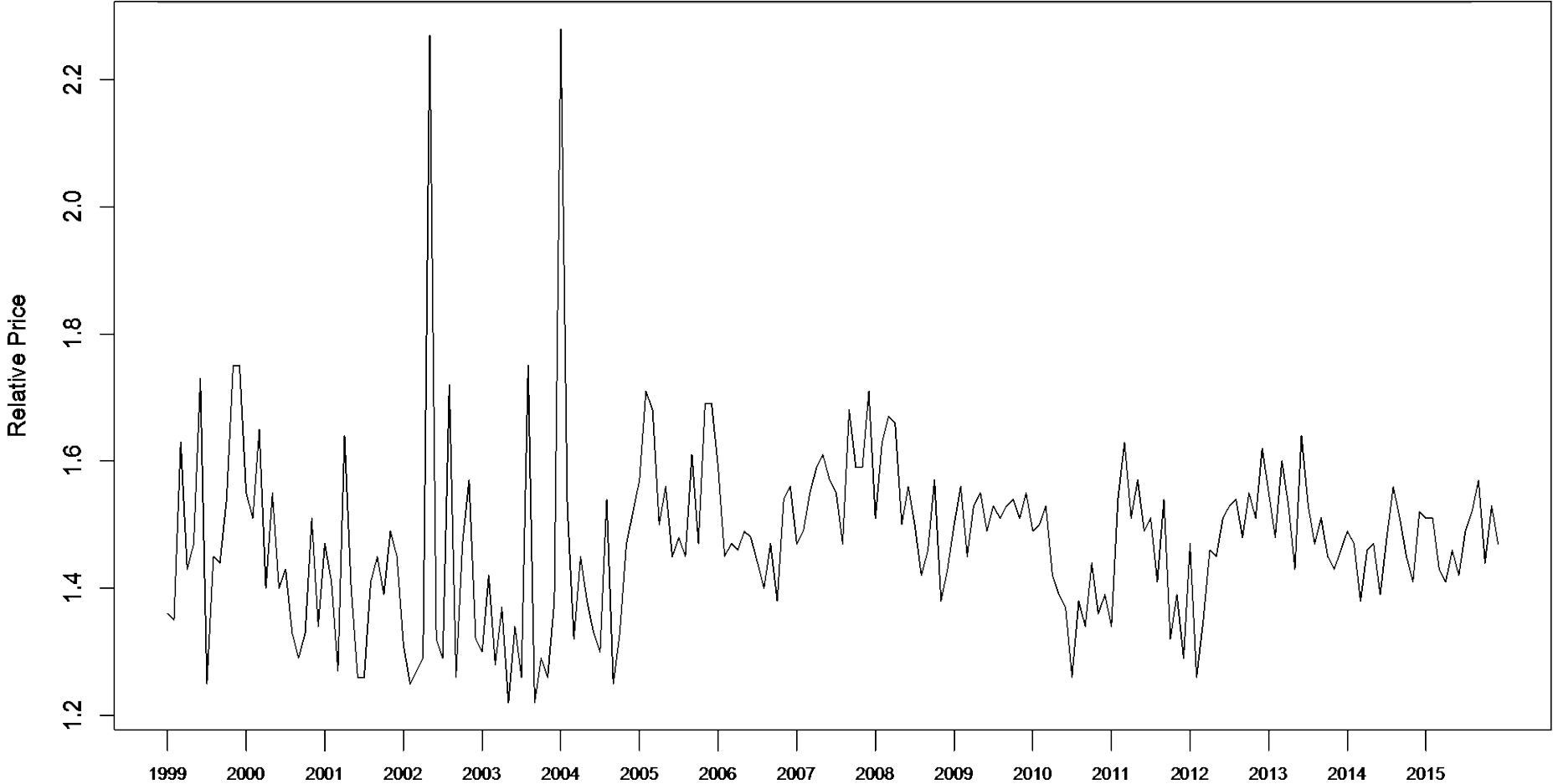


Fig. Price Ratio between Chinese and other developing countries seafood



General Preference System (GPS)

- The Generalized System of Preferences (GSP) provides duty-free tariff treatment for certain products from designated **developing countries**.
- The EU GSP comprises three arrangements including
 - The general arrangement;
 - The special arrangement for Least Developed Countries (e.g. **EBA**, Everything but Arms),
 - The **“GSP+”** incentive for vulnerable countries.
- The EU’s new GSP regime started to apply on 1 January 2014. However, China was removed from GSP benefits as of 1 January 2015.

Duration Analysis

- The purpose of the duration modeling is to explore the determinants of the length of a spell.
- In this study, **spell** is defined as the number of periods (months) between the entry of a product and its withdrawal from the EU market.

Duration Analysis

- Survival function: the cumulative probability that a commodity will last beyond t .

$$S(t) = \Pr(T \geq t),$$

- Hazard rate: a spell is completed after t periods, conditional that the commodity has survived until t .

$$\lambda(t) = \frac{f(t)}{S(t)}$$

Cox Model

$$\lambda(t_i) = \exp(\mathbf{X}'_i \boldsymbol{\beta}) \lambda_0(t_i)$$

- $\exp(\beta_j)$ represents the ratio of two hazards, different only by a unit value of variables (X_j)

Empirical Model 1

- To test the impact of trade regions on hazard rate.
- Sample: seafood from developed and developing countries
- Control variables: price, market share, GDP, exchange rate, trade region, distance

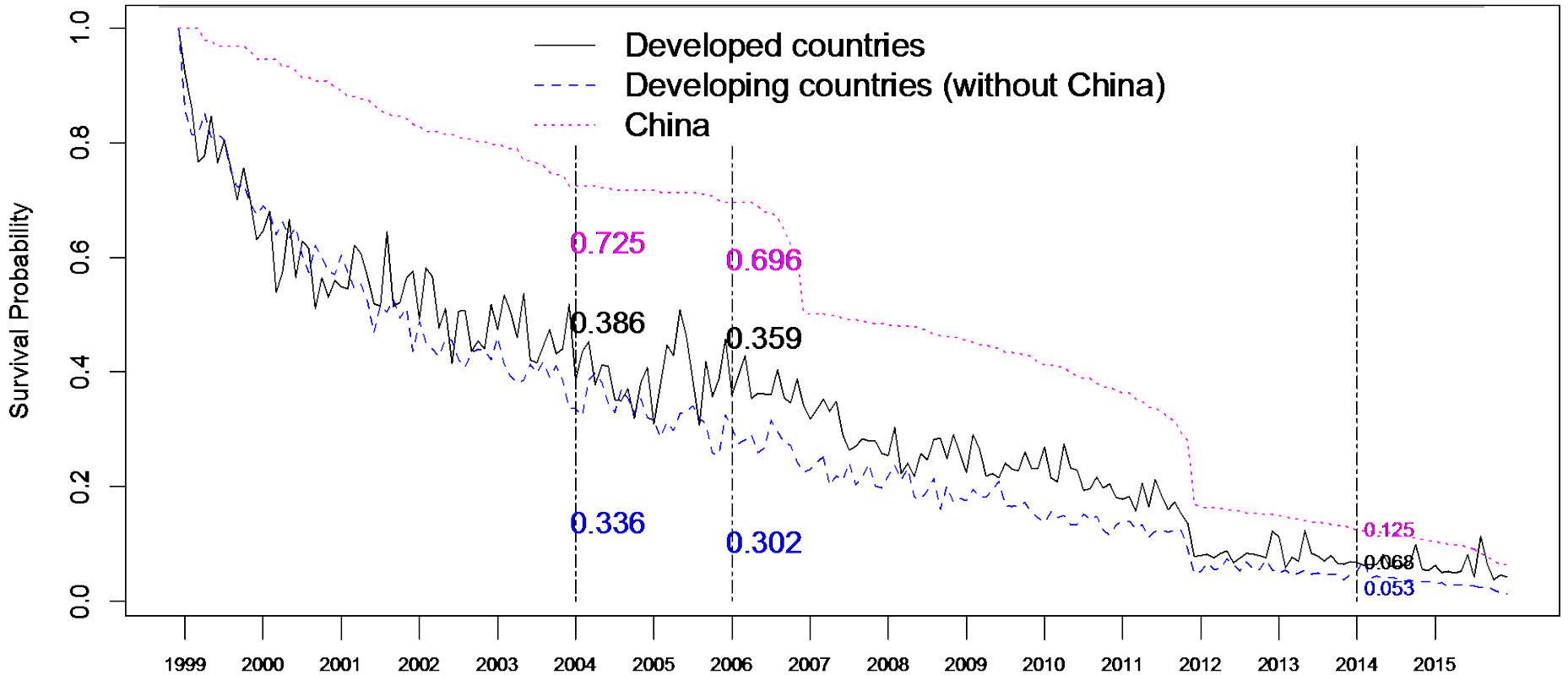
Empirical Model 2

- To test the impact of China's products on hazard rates of products from other developing countries
- Sample: top 30 seafood products from China by years; other developing countries
- Control variable: **relative price**, market share, GDP, exchange rate, trade region, distance

Survival Probability

- The cumulative probability that the product will last beyond t .

Estimated Survival Probability for Developing and Developed Countries



Estimation results — Cox model

- For the exponential coefficients, $\text{Exp}(\beta_j)$:
 - Values less than 1 implies a reduced hazard (longer duration)
 - Values greater than 1 implies an enhanced hazard rate (shorter duration).

Variable	Coef	p-value
Price	0.999	0
Import value share	0.424	0
Exchange rate	0.999	0
GDP – exporters	0.969	0
GDP – EU27	0.345	0

Distances (base: Europe & Central Asia)

East Asia & Pacific	1.199	0
Latin America & Caribbean	1.265	0
Middle East & North Africa	1.041	0.098
North America	1.188	0

Tariff preferences (base: developed countries)

EBA	1.881	0
HMI	1.351	0
OP	1.013	0.626
GSP – plus	1.13	0.005
other GSP	1.017	0.493

Dummy (EU 27 as of 2004)

Developed-countries : Dummy	1.238	0
Developing-countries : Dummy	1.152	0

Variable	Coef	p-value
Price	1.086	0
Import value share	0.96	0
Exchange rate	0.997	0.007
GDP – exporters	0.923	0
GDP – EU27	0.294	0
Distances (base: Europe & Central Asia)		
East Asia & Pacific	0.538	0
Latin America & Caribbean	0.671	0
Middle East & North Africa	0.407	0
South Asia	0.547	0
Sub-Saharan Africa	0.46	0
Economy Zone (base: High income)		
Low income	0.9	0.427
Lower middle income	0.759	0.001
Upper middle income	0.852	0.034
Dummy (EU 27 as of 2004)		
Dummy	1.36	0.003

Conclusions (1/2)

- Duration of products from developing countries relative to developed countries (Model 1):
 - Tariff preferences do not lead to a longer product lifetime.
 - Increasing the EU GDP can considerably reduce the hazard rate.
 - Price does not affect product lifetime.

Conclusions (2/2)

- Duration of products from other developing countries relative to China (Model 2):
 - Product with a higher price has a marginally high risk of withdrawing from the market.
 - Increasing the EU GDP leads to a lower hazard rate.
 - Products from lower income countries have a relative high risk (and are affected strongly by China's products).