



THE ROLE OF LANGUAGE IN INTERNATIONAL TRADE: HOW DOES LANGUAGE AFFECT THE CHOICE OF FOREIGN TRADING PARTNERS?

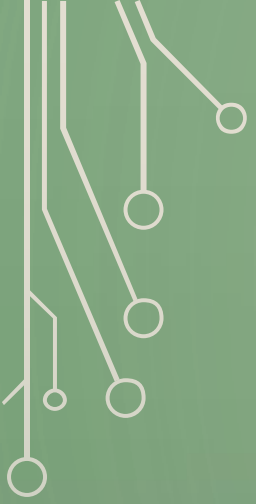
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Faro, 6th May 2016



INTRODUCTION

H1

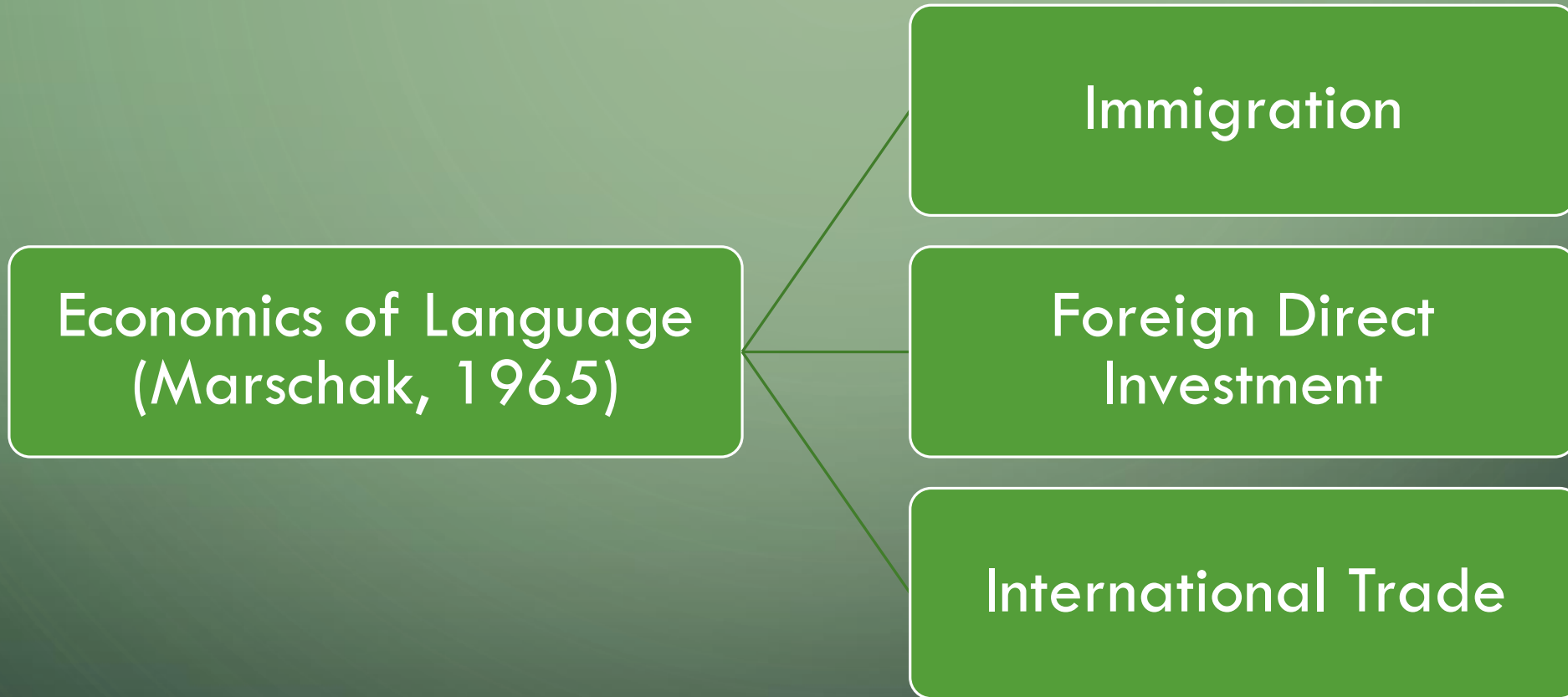
Portuguese exports are higher to countries that share the same language.

H2

Portuguese exports are higher to countries that share a similar language.



LANGUAGE AND THE ECONOMY





1. Same language
2. Intercommunication (each one uses his/her language)
3. One from their two respective languages
4. Foreign language for both
5. Translator/interpreter

Linguistic
Similarity

Linguistic Criteria
Specifically
Etymological

Languages Groups

Portuguese
Spanish
French
Catalan
....

Romance Languages

English
German
Dutch
....

Germanic Languages

METHOD

Gravity model

The initial model was represented by:

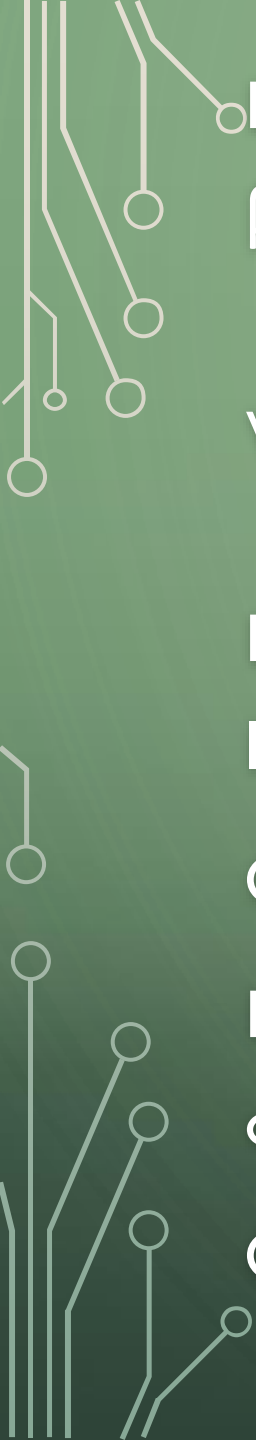
$$T_{ij} = f \left[\frac{(GDP_i \cdot GDP_j)}{D_{ij}} \right] \quad (1)$$

$$T_{ij} = \beta_0 (GDP_i \cdot GDP_j)^{\beta_1} \cdot D_{ij}^{\beta_2} \cdot e^{\varepsilon} \quad (2)$$

T – trade volume between countries

GDP – real GDP

D – Distance


$$\ln(T_{ij}) = \beta_0 + \beta_1 \ln(GDP_i GDP_j) + \beta_2 \ln D_{ij} + \beta_3 \text{Lang}_{ij} + \beta_4 \text{Cont}_{ij} + \beta_5 \text{RTA}_{ij} + \beta_6 \text{ComCol}_{ij} + \varepsilon_{ij} \quad (3)$$

Where i and j indicate countries and the variables:

Lang – dummy variable that is 1 when i and j share a common language and 0 otherwise

Cont – 1 when i and j share a common land border and 0 otherwise

RTA – 1 when i and j belong to a free trade agreement area and 0 otherwise

Comcol – 1 when i and j had a colonial relationship and 0 otherwise



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graph TD; A[Most Studies] --> B[NxN Countries]; C[Our Study] --> D[One country]; D --> E[Data available for international trade flows from 2014 (real data 2013)];
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Most Studies

Our Study

NxN Countries

One country

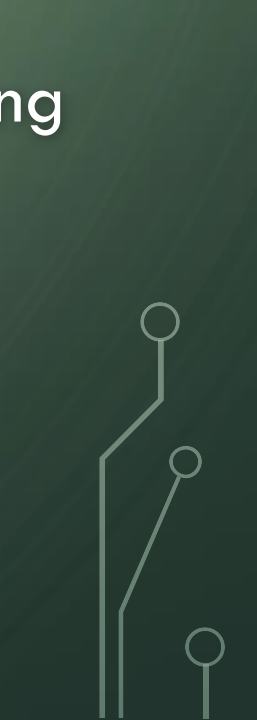
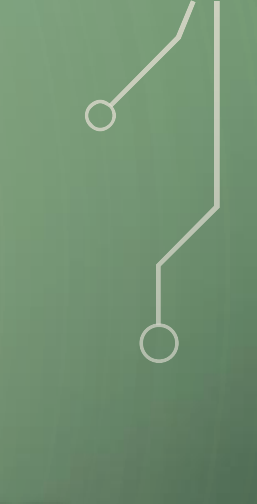
Data available for international trade flows from 2014 (real data 2013)



This type of study is fairly recent:

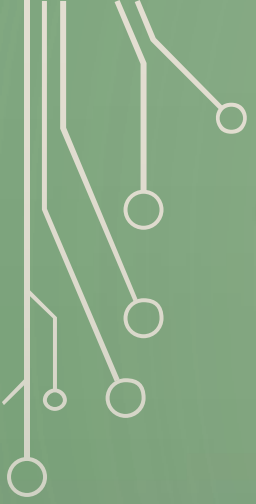
Wall (1999) – trade flows between the US and 85 countries from 1994 to 1996 in order to estimate the costs of protectionism

Sohn (2005) – explain South Korean trade flows and the idea of using the model to study a particular country took hold.



Ordinary Least Squares (OLS) method

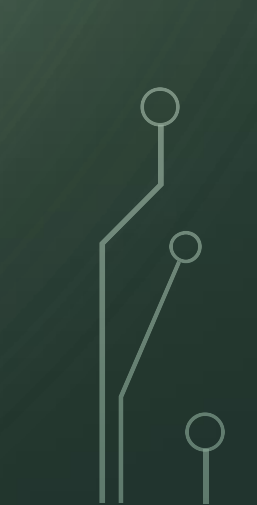
- ✓ is the most usual technique for estimating the coefficients of the gravity model specification in its log-log form.
- ✓ has been extensively used in the past forty years and has shown to have empirical robustness and explanatory power (Kepaptsoglou et al., 2010).
- ✓ variable explained as an economic variable translating the logarithm of export volume between Portugal and a trading partner.



The variables used in the regression are:

- ✓ economic (such as export volume between Portugal and a trading partner),
- ✓ linguistic (official language of the country, language family and/or language proximity), and
- ✓ geographical (distance between Portugal and a trading partner).

56 main trading partners worldwide in 2013



RESULTS AND DISCUSSION

To draw a conclusion on H1, we studied the following model:

$$\ln(T_{ij}) = \beta_0 + \beta_1 P_i + \beta_2 \ln D_{ij} + \varepsilon_{ij} \quad (4)$$

Where

T_{ij} represents exports between Portugal and country j ,

P_i is a dummy variable that is 1 when country j has Portuguese as an official language and 0 otherwise

D_{ij} is the distance between Portugal and country j .

Table 1 - Results of the estimation of model (4)

Explanatory variables	Ln Exports	
	OLS Coefficient	Standardized coefficient (Beta)
Constant	18.667 (1.601)	-----
P _j	0.403 (0.519)	0.095
LnD _{ij}	-0.764 (0.197)	-0.476
F = 7.599		

Notes:

Numbers in parentheses are standard deviations

Significance level 5%

$$\ln(T_{ij}) = \beta_0 + \beta_1 R_i + \beta_2 G_i + \beta_3 \ln D_{ij} + \varepsilon_{ij} \quad (5)$$

Table 2 - Results of the estimation of model (5)

Explanatory variables	Ln Exports	
	OLS Coefficient	Standardized coefficient (Beta)
Constant	17.999 (1.611)	-----
R _j	0.682* (0.391)	0.243
G _j	0.447 (0.382)	0.163
LnD _{ij}	-0.723 (0.192)	-0.450

F = 6.026

Notes:

Numbers in parentheses are standard deviations

Significance level 5%

* Significance level 10%

$$\ln(T_{ij}) = \beta_0 + \beta_1 \text{ProxLing}_i + \beta_2 \ln D_{ij} + \varepsilon_{ij} \quad (6)$$

$$\ln(T_{ij}) = \beta_0 + \beta_1 \text{UEProxLing}_i + \beta_2 \ln D_{ij} + \varepsilon_{ij} \quad (7)$$

Table 3 - Results of the estimation of models (6) and (7)

Explanatory variables	Ln Exports (6)		Ln Exports (7)	
	OLS Coefficient	Standardized coefficient (Beta)	OLS Coefficient	Standardized coefficient (Beta)
Constant	18.107 (1.546)	-----	15.578 (1.835)	
ProxLing _j	0.726 (0.318)	0.243	-----	
UEProxLing _j	-----	-----	0.757 (0.271)	
LnD _{ij}	-0.722 (0.187)	-0.450	-0.450 (0.210)	
F = 10.475			F = 12.144	

Notes:

Numbers in parentheses are standard deviations

Significance level 5%

* Significance level 10%

CONCLUSION

- Language barriers can impose significant costs on bilateral trade between countries that do not share some sort of common spoken language — either official or acquired foreign languages.
- Decrease in trade with a country due to increase in distance
- We found no support for H1 — companies might not be taking full advantage of the network of portuguese-speaking countries to expand their business.
- We found support for H2 — the variables R and ProxLing has explanatory capacity which increases when both countries belong EU.

- We think that Portuguese and Spaniards alike would have an incentive to learn each other's languages.
- Multilingualism is still not widely promoted in Portugal.
- More should be done to promote Portuguese learning abroad. Portuguese is spoken as an additional language (i.e. not first-language) by only 1% of EU population (European Commission, 2012)

FUTURE WORK

- Expand our analysis to all the 211 countries to which Portugal exports, and
- Consider other languages besides the official language of the destination countries
- Include total exports and imports as well and thus provide a comprehensive analysis of Portuguese commercial relations.

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THANK YOU!