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An Eclectic Approach to Language Valuation:
The Global Influence of the Portuguese Language[*]

Resumo: Uma Abordagem Ecléctica ao Valor da Língua: O Uso Global do Português

Apesar de ter um valor significativo, a língua é um activo intangível cuja medição permanece difícil e imprecisa. O efeito da globalização e da aprendizagem ao longo da vida conduz a um desenvolvimento assimétrico com um conjunto reduzido de idiomas em expansão.

A língua portuguesa tem um número crescente de utilizadores, sobretudo como segunda língua, sendo mesmo de aprendizagem obrigatória em diversos países. Para a sua avaliação, baseamo-nos numa abordagem ecléctica que inclui a perspectiva das externalidades de rede, do peso na actividade económica (em % do PIB) e da notoriedade das pessoas e marcas do espaço lusófono. Este estudo assenta num questionário dirigido a estudantes de português no mundo, na recolha de elementos estatísticos e na medição do peso da língua nas actividades económicas que integram o PIB nacional.

Abstract

Although it enjoys a significant value, language is a hard to measure intangible asset. Globalization and life long learning lead to an asymmetrical development, with only a few expanding languages.

The Portuguese language has a rising number of users, especially as a second language, having become required in the school curricula of several countries. To contribute to its valuation, we use an eclectic approach, including the network externalities approach, the weighted share of GDP and the recognition of people and brands from the Portuguese speaking world. This study is based on a questionnaire mailed to Portuguese language students throughout the world, the collection of statistical data and the measurement of the language allocated value of economic activities that make up the Portuguese GDP.

1.   Introduction

The economic analysis of language has attracted a rising attention, not least due to the role played by language in the global flows of ideas, people, capital and goods. The social implications are obvious and many governments define policies that promote some languages, domestically and abroad, and provide advice and support to the learning of others, regarded as a valuable knowledge for both the citizens and the nation. Karim (1995) states that governments have long recognized the impact of languages on international trade and commerce, although other intangible benefits should also be taken in consideration. One evidence is presented by the number of students of the French language, whose relative weight is well above the level it should have on purely economic considerations.

The concern with language implications is not bounded to the social or state level. Krishna (2005) analyses the challenges facing corporate planners in managing language as a corporate asset due to the evolution of the knowledge economy, the globalization of businesses, and the increasing diversity of the workforce. Multinational corporations, in particular, require and often sponsor diversified language skills among their employees.

Early studies on the economics of languages concentrated on the intrinsic characteristics and the impact on future expansion or decline. Grin (1990) quotes Marshak (1965) who suggested that more efficient languages, with the ability to transmit a certain amount of information in less time, had a larger chance of survival. However, Grin observes that there is no empirical evidence that confirms this prediction.

The functionalist approach led to the view of second (or n^{th}) language learning as a form of investment in human capital, whose instant costs bring benefits that are spread over time (Karim 1995). The return on this investment can find an objective measurement by comparing similarly skilled individuals with and without a given language skill.

A potentially powerful explanation for the interest in specific second languages deals with the network externalities approach. Languages are a public good whose value rises with the further use by other people. Therefore, languages enjoy the critical mass properties that are typical of telecommunications networks – most customers prefer to join a network with a large number of users, as within the network communication tends to be cheaper and easier.

Empirical studies have provided plenty of evidence of the network effect that attracts consumers to large operators. For instance, Doganoglu and Grzybowski (2006) have observed that the quick adhesion to dominant operators could not be explained by price factors alone. Other network effects such as quality signalling are also at play.

Belonging to a given social group enhances the network effect, accelerating adhesion through a process that is described as a "wave effect". Becker (1991) studies the economic impact of social interactions, a field exploited by an expanding body of the economics literature.

The size of economic literature on the role of social interactions and network effects has not translated into significant empirical research. We lack the capacity to measure the economic impact of a language, predict its evolution and evaluate the social engineering policies that impact the individual choices on language learning investment. In this study we try to shed light on the individual goals and motivations expressed by students of Portuguese from many different origins. The questionnaire that obtained about 2,500 answers asks the professional and personal aims, as well as the reflection of their learning on the identification of Portuguese brands and celebrities. Furthermore, we used a methodology borrowed from Martin Municio (2003) to identify the value of the language as a percentage of the Portuguese GDP.

This study is organized as follows. Section 2 addresses the presence of the Portuguese language in the world, analysing the number of native speakers and the possible mo-

tives for its learning. Section 3 provides some insights into its network effects, including the economic impact on trade and migration. Section 4 measures the value as a percentage of Portuguese GDP. Section 5 presents some questionnaire results on people and brands identification. Finally, section 6 summarizes the main conclusions and suggests some venues for future research and possible extensions of this study.

2.   Portuguese around the world

The maritime expansion of the 15th and 16th centuries led a language first used by less than a million people to spread to many continents, especially South America, Africa and Asia. Besides Portugal, Portuguese became the official language of Angola, Brazil, Cape Verde, Guinea- Bissau, Mozambique, São Tomé and Príncipe and Timor, as portrayed in table 1:

Portuguese speaking countries	Population (millions)	World ranking
Brazil	191.6	5
Mozambique	21.4	49
Angola	17.0	56
Portugal	10.6	74
Guinea-Bissau	1.7	145
East Timor	1.1	151
Cape Verde	0.5	161
Saint Tome and Prince	0.2	182
Total	244	
Percentage of world population	3.7%	

Table 1: Portuguese native speakers around the world (millions). Source: World Bank (2006)

A few native speakers still remain in other small regions such as Goa (Índia) and Macau (China), not to mention the Portuguese migrants that are even more spread, estimated at about 5 million people.

Linguists (Calvet 2002) classify Portuguese as a supercentral language, a second tier level, after English and at a level equivalent to French, Spanish and others.

The Portuguese language has also inspired a community – Comunidade dos Países da Língua Portuguesa, joining all Portuguese speaking countries. This association is similar to the Commonwealth (English speaking countries, La Francophonie (French speaking countries) or the League of Arab States (Karim 1995).

Portuguese has also become a prominent language on the emerging mega–media provided by the internet. From the Internet World Statistics (2008), we see that Portuguese is placed on the 8th position, and is bound to rise as it enjoys one of the highest growth rates:

10 top languages	% of total Internet users	Internet users (millions)	Internet access	Internet growth (2000-2008)	Language users in 2008 (millions)
English	30.4%	427	21.0%	201.1%	2.039
Chinese	16.6%	233	17.1%	622.0%	1.365
Spanish	8.7%	122	27.1%	395.7%	452
Japanese	6.7%	94	73.8%	99.7%	127
French	4.8%	67	16.4%	451.8%	410
German	4.5%	64	66.0%	129.6%	96
Arabic	4.2%	60	16.7%	2062.2%	357
Portuguese	4.1%	58	24.3%	668.0%	240
Korean	2.5%	34	47.9%	82.9%	73
Italian	2.4%	34	57.9%	155.4%	58
TOP 10	84.8%	1.194	22.9%	263.6%	5.218
Other	15.2%	213	14.6%	556.7%	1.458
World total	100.0%	1.408	21.1%	290.0%	6.676

Table 2: Internet users and total speakers, by language (millions)

3.   Network effect

Given the network effect, the larger the number of native speakers and secondary users, the larger is the reward for learning a given language. Moreover, the cumulative wealth of its users is also important for reinforcing the network effect. The recent explosion of interest for Mandarin, a very difficult language for non native learners, is certainly related with the continuous double digit growth of the Chinese economy during at least the past two decades. Grin (2001: 68) suggests that "the relative position of a language, *ceteris paribus*, is positively correlated with the aggregate purchasing power of its speakers".

Therefore, it is interesting to compare the relative size and wealth of the native Portuguese speaking community. For that we have added the population of CPLP member states and the first generation Portuguese migrants. We assume that their individual wealth equals the average of per capita income in the hosting nations. This measurement may slightly underestimate the size and wealth of the Portuguese speakers living in other nations, as some citizens from other CPLP members have also migrated to non Portuguese speaking countries – Brazil and Cape Verde, for instance, have a significant number of emigrants. Table 3 presents the relative share of native Portuguese speakers, on the world's population and wealth:

	Total (€ million)	% of world values
CPLP population	244,049	3.7%
Portuguese emmigrants	4,442	0.1%
Total	248,491	3,8%
CPLP GDP	1,090,549	2.9%
GDP of Portuguese Emmigrants	107,997	0.3%
Total	1,198,546	3.2%

Table 3: Share of native Portuguese speakers. Source: World Bank (2006)

The average wealth of Portuguese speakers (3.2%) is slightly lower than the world average, as they represent 3.8% of the total world population.

3.1   Immigration

The network effect has a significant impact on migration and the integration of migrants. The migrant has lower adaptation costs in a host country whose language he shares. Employers also face lower communication barriers.

Recently, Portugal has attracted a large number of immigrants. Indeed, the resident population has expanded even despite a sharp decline of fertility rates. The following table shows the relative share of Portuguese immigrants:

Country of origin	Immigrants (thousands)	%
Cape Verde	65	16%
Brazil	65	16%
Angola	33	8%
Guinea-Bissau	25	6%
UK	20	5%
Spain	17	4%
Saint Tome and Prince	11	3%
US and Canada	10	2%
China	10	2%
Mozambique	6	1%
Other in Latin America	72	18%
Other in Africa	10	2%
Other	65	16%
Total	409	100%
Total from CPLP countries	205	50%

Table 4: Immigration in Portugal, by country of origin

About 50% of Portuguese immigrants come from other CPLP countries. This contrasts with a much lower share of foreign trade, as Europe represents about 70% of the total. The next largest group is made up of Spanish speaking citizens from Latin American countries, a group with little difficulty to learn and fluently use the host country's language. Analysing the behavior of immigrants to the US, Lazear (1999) observes that the value of assimilation is larger to an individual from a small minority than to one from a large minority group. When a society has a very large majority of individuals from one culture, individuals from minority groups will be assimilated more quickly. From this point of view, Portugal should have less difficulty with assimilation, as immigrants from very different languages don't constitute large communities. Indeed, there is anecdotal evidence of extremely quick learning by adult immigrants from several Slavic countries, and even more so by their children of school age.

3.2   Outward migration

A large number of Portuguese born citizens live in other countries, namely Europe and North America, as portrayed in table 5:

World ranking	Main host countries	Number (thousands)	Pop. (millions)	% of Portuguese	GDP (€ million)	Migrants' share (€ million)
1	US	973	302	0.3%	9,395,759	30.319
3	Germany	130	82	0.6%	2,243,108	3.536
5	UK	350	61	0.6%	1,855,726	10.642
6	France	950	62	1.5%	1,743,125	26.824
8	Spain	108	45	0.2%	972,302	2.340
9	Canada	594	33	1.8%	902,334	16.265
15	Australia	57	21	0.3%	559,013	1.523
22	Switzerland	166	8	2.2%	282,676	6.247
28	South Africa	274	48	0.6%	188,838	1.088
34	Venezuela	590	27	2.1%	155,157	3.333
63	Luxembourg	85	0.5	17.7%	32,615	5.776
	Asia	163	1520	0.01%	978,675	105
	Total	4440	2209		4071,61	107.998
	Share of world GDP					0.3%

Table 5: Outward migration from Portugal, by hosting country

This was an earlier migration wave, far less influenced by language factors. Geography and economic opportunities were the main triggers for migration.

3.3   User's benefits

Our questionnaire has a specific section about the main interests of students of the Portuguese language. The following tables summarize those interests, confirming that work and social relations come on the top of the list. We confirm also that the super-central nature of Portuguese may be at play in the motivations of many respondents, as they regard foreign languages as a valuable type of human capital.

Reasons for learning Portuguese:	%
To learn other languages (important for the future)	60.9
To learn more about the Portuguese culture	39.1
To earn more culture	32.9
To find or progress in my job	29.1
This is my country's official language	25.3
To communicate with friends	23.6
To study in a Portuguese speaking country	23.2
This is the official language in many countries	22.2
The language is rising	18.1
To communicate with my family	14.2
This is the official language in many international organizations	8.2
This is my parents/grand parents language	7.9
To do business	7.3

Table 6: Motivations for learning Portuguese

A more specific question on the using context (current and future) shows similar results:

Situations in which I speak Portuguese	%
To talk to friends / colleagues	55.4
To travel	48.1
At home	34.4
In my work	30.8
In the future I plan to speak Portuguese to:	(%)
To travel	77.6
In my work	60.6
Leisure	43.2
Study	39.7
International events	25.3

Table 7: Current and future uses of the Portuguese language

3.4   Value in the labor market

Several studies have produced a concrete measurement of the benefit of learning a foreign language, based upon the income differencial for people with the capability to speak a certain language. These studies have benefited from the availability of census data. Rendon (2007) studied the wealth differencial for Catalunya residents with the capacity to speak Catalan. This study took advantage of a favourable setting – the change of regulation that required Catalan for the exercise of a number of jobs and the availability of data. It showed that people with understanding of spoken and written Catalan had a 3 to 5% higher probability of finding a job.

Grim (2001) looks at Swiss citizens with the distinct capability of speaking English. In a multilingual context, with several official languages, English knowledge was found to raise the average income by 12 to 30%. This approach is objective but raises some methodological concerns. Both examples provide clear evidence that language knowledge is correlated with higher probability of finding a job or with average salary. However, other factors may be at play as Catalan speakers may enjoy better connections that raise the odds of finding a job. In general, people who speak several languages may also be better educated, enjoying other skills that may facilitate selection for attractive jobs.

4.   Valuation as a share of GDP

There is no doubt that language played a crucial role in enhancing the productivity of society as a whole. The division of labor is possible due to the communication skills developed by mankind. A common culture and language is a facilitator of trade (Lazear 1999) while individuals who know only different languages face strong barriers to both trade and interaction within a firm.

The importance of communication and understanding is very high in some activities such as teaching or radio, while in others like mining or manufacturing, it plays a smaller role. This logic may lead to the valuation of the language as a share of GDP for a given country. Martin Municio (2003) led a team who carried a thorough study on "The Economic Value of the Spanish Language". This was a very detailed analysis of all economic activities carried out in Spain, estimating a coefficient for the value of language for each activity.

In this method, we need to identify first those activities or products in which language is a key component. These include such traditional activities as the press, radio, TV, publishing or telecommunication as well as the support activities that render these possible. Research and development for telecommunications, telephone rooters, editing, translation, data mining and other activities that contribute to writing or broadcasting information are an example of these. Next, Martin Municio consider those activities that are closely linked, as suppliers of inputs such as the paper industry or the manufacturing of radios or TV sets. At the opposite end come activities that have a much lower language content such as mining or agriculture. The study gives much attention to detail. One example is the distinction between advertising based on outdoors (low language content) and news paper texts (high content).

The coefficients range from high levels such as Printing (91%), Mail and Telecommunications (95%) and Education (82%), to medium levels such as Recreation, Culture and Sports (40%) and Public Administration (25%) and to low levels of language content such as Agriculture (0.6%), Electricity and Gas (0.04%) or Waste disposal (0.07%). These coefficients were multiplied by the value of each activity, obtaining a total that was divided by the Spanish GDP yielding a percentage of approximately 15%.

We replicated this study for the Portuguese economy. We benefitted from the fact that the National Accounts of both countries follow the *Nomenclature des Activités Économiques* (*NACE*) defined by the European Union in 1986. The Spanish *Clasificación Nacional de Actividades Económicas* (*CNAE93*) and the Portuguese *Classificação das Actividades Económicas* are identical. Small differences remained as the level of specification is higher in Spain, with a total of 70 activities versus only 60 for Portugal. However, we expect that the adoption of the coefficients used in Martin Municio (2003) must provide a reasonable estimation of the value of the Portuguese language, under the very same methodology. Moreover, we benefit from a higher uniformity as Portugal has only one language. In Spain one is measuring the value of the Spanish languages rather than the value of Spanish or Castilian.

The next table presents the aggregate value of the Portuguese language, under this methodology:

	Language coefficient	GDP	GDP_L
Agriculture, forests and fishing	0,544%	3729	20
Electricity	0,063%	3816	2
Manufacturing	8,699%	21584	1878
Building and construction	0,078%	8884	7
Market services	14,931%	55011	8214
Other services	29,297%	46673	13674
Total		139697	23795
GDP_L	23.794,7		
GDP_L /GDP	17,033%		
$Taxes_L$	3.917,2		
GDP_L	27.711,9		
GDP_L /GDP	17,010%		

Table 8: Value of the language as a % of Portuguese GDP. Source: GDP by industry was obtained from INE (National Statistics Institute) data

The value of the Portuguese language is close to 17%, a higher value than in Spain reflecting the slightly different structure of the Portuguese economy, as the relative weight of activities with a high language content is higher.

5.   **Famous Portuguese speakers**

Interest for a foreign language is both determined and a cause of interest for local writers, artists, sportsmen and brands. In our questionnaire we asked respondents to freely name Portuguese speaking celebrities and brands. The following table gives a list of the spontaneous responses obtained:

Personalities	Number of references
1° Lula da Silva	*241*
2° Ronaldinho Gaúcho	237
3° Figo	232
4° José Saramago	*220*
5° Ronaldo	215
6° Cristiano Ronaldo	213
7° Fernando Pessoa	*207*
8° Paulo Coelho	*198*
9° Camões	*187*
10° Mariza	*170*
11° Durão Barroso	*133*
12° Amália	*130*
13° Mia Couto	*122*
14° José Sócrates	*119*
15° Cesária Évora	*107*
16° Cavaco Silva	*106*
17° Pelé	104
18° Caetano Veloso	*100*
19° Roberto Carlos	*81*
20° Lurdes Mutola	78

Table 9: References of well known Portuguese speakers

Both Portuguese and Brazilian personalities were mentioned. It is interesting to note that a vibrant literary and artistic community is emerging in younger Portuguese speaking nations. Therefore, it is no surprise that some personalities from Angola, Cape Verde and Mozambique have also been mentioned. All names (in italic) refer to "language workers", people who became well known by being writers, singers or politicians. The next group is made up of sports stars, mainly from football.

We have also asked the Portuguese students about their knowledge of brands from the Portuguese speaking world. The results were poorer, probably showing that many respondents live in regions beyond the reach of these firms:

Brands	Number of references
1º Sagres	50
2º Millenium BCP	38
3º Pingo Doce	37
4º Sonangol	28
5º Jumbo	25
6º Vodafone	24
7º Jerónimo Martins	23
8º Sumol	17
9º PT Comunicações	16
10º TAP e Compal	15

Table 10: Brand recognition

A later stage of questionnaire analysis will enable the understanding of regional differences for both people and brand recognition. It is important to acknowledge that not all Portuguese or Brazilian firms use their brand names abroad. One interesting example is the case of Jerónimo Martins, who brands its subsidiary in Poland, the largest local retailer, Biedronka, the Polish word for "lady bug".

6.   Summary and conclusions

Language is a public good whose use by one party enhances the value of the next user. Measuring the value of a language is elusive, but there are steps that can be made towards a more accurate assessment. First of all there are some activities that can be called language industries. Those enjoy the largest network effect and include the literature, cinema, press and education, well beyond language education itself, among others.

Languages with a large number of native and non native users provide a larger market for cultural goods than those that are understood by a smaller number of people. Next come other activities with a high language content. The growth of the service sector leads to a higher language content for the economy as a whole. Although some services such as cleaning have a low language content, most are more language intensive than manufacturing or agriculture and mining. These activities can be performed by virtually any worker, regardless of his language skills, while many services, including basic functions as performed by call centers, require a good knowledge of the client's language.

A language is also a facilitator and a beneficiary of its speakers' wealth. Portuguese has enjoyed much recent attraction as a second language due to the rising demand of Angolan and Brazilian produce. We found evidence that people flows and trade are significantly influenced by language. The measurement of the language content of the

Portuguese economy, provided a significant value, reflecting the high share of service industries. Finally, we observed that interest for a foreign language is correlated with the knowledge of influential personalities, with a high visibility for "language workers" such as writers and singers.

In this study we tried an eclectic approach to language valuation with contributions from different theories. Some of the analysis is more preliminary, requiring further and more robust observation and testing. One example is the impact of language on trade and FDI. We expect that a systematic comparison will show that trade and FDI are more intense among Portuguese speaking countries. Moreover the higher the language differences the less relative trade and investment should exist. Again, "language distance avoidance" should be more significant in language intensive industries. For instance, trade in raw materials and agricultural products should be less sensitive than trade in services or goods with a high language content. Indeed, one interesting exercise would be the test of the impact of language coefficients as defined by Martin Municio (2003).

However, a truly advance in the learning of language value would require a comparative study including different languages, local and global, or hypercentral, super central, central and local in Calvet's (2002) classification. The benefits of one such study are twofold – academic progress in the valuation of an intangible asset with strong network externalities and identification of efficient policies by members of a given language zone.

7.   Bibliography

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