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Title: **Context Costs and Comparative Advantages in the Telecommunications sector in Portugal and China**

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实事求是

(Shí shì qiú shì)

Seek truth from facts

Book of Han, finished AD 111

Abstract

This Work Project aims to discuss the Context Costs and Comparative Advantages of the Telecommunications sector both in Portugal and China. The work was built mostly on primary research by interviews with relevant people (business persons, University Professors and Agencies directors), and by economic data publicly available. A list of context costs and comparative advantages was drawn for each country and possible resolutions suggestions were made in the end. The context costs depend heavily on the economic situation of the countries and it should be taken into account when assessing the degree of magnitude of each cost of context. The competitive advantages of each country were drawn in comparison with one another. Some key results stand out: firstly, Portugal's costs of context depend mainly on governmental decisions, uncertainties and instability and China's cost of context depend primarily on cultural norms, mainly the Guanxi; second, the telecommunications sector shares most of its context costs and advantages with other sectors; third, China as an economic power could use the telecommunications sector as a way to further develop and boost its economy.

Key Words: Context Costs, Comparative Advantages, Telecommunications, Portugal, China

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Introduction

Motivation

During the MBA I had the opportunity to participate in a consulting project developed for Portugal Telecom in partnership with Huawei that took place both in Portugal and in China. The project focused in assessing the introduction of several technological innovative products in the education system in Portugal and the team, which had Portuguese and Chinese members, developed the work firstly in China, in Shenzhen and Shanghai, and then in Portugal, in Lisbon and Aveiro.

From the first days in China I became very interested in the differences between Portugal and China in several aspects. We stayed for two weeks in China where we had contact with the Chinese business and academic environment. We had the opportunity to stay in Shenzhen for five days where we had several meetings with Chinese executives at Huawei headquarters, and the rest of the time in Shanghai where we started to develop the project at Fudan University. The project lasted for two months and on the last two weeks we had the opportunity to welcome the Chinese team in Portugal, visiting an innovation lab in Aveiro and presenting the final report to Portugal Telecom in Lisbon.

Since the first few days in China I understood the similarities and differences of Portuguese and Chinese business environment and I got very interested in how easy or difficult it was for companies to do business in both countries. Moreover, China has become in the last decade one of the largest economies in the world, and its telecommunications industry has had an overwhelming development. Therefore I became motivated to study the context costs of both economies and the competitive advantages one has against the other.

Objective and Structure

The objective of this work is to answer the following questions: What are the context costs for the telecommunications sector in Portugal and in China? How can these context costs be overcome by companies? What are the comparative advantages of Portugal and China for the telecommunications sector?

The document is organized in seven main parts: (i) an introduction, where I explain the motivation, the objective and the research methodology of the work; (i) a macroeconomic analysis of Portugal and China to provide an economic background to the ensuing analysis; (iii) a description and analysis of the telecommunications sector in Portugal and China and the most recent world developments in the sector; (iv) a wrap-up of the theoretical content of context costs and comparative advantages; (v) a context costs and advantages analysis with testimony from relevant people; (vi) a discussion in a strategic and economic point-of-view based on the previous research; (vii) a conclusion of the findings. Finally, a list of acronyms, references and annexes can be found.

Research Methodology

The methodology to develop the work for this document consisted on:

- research of published and available literature in the fields of economics and strategy,
- my own experience of the consulting project in China and dealing with Chinese executives, students and professors,
- the analysis of the macroeconomic context of Portugal and China,
- the analysis of the telecommunications industry in Portugal and China,
- interviews with relevant people in business agencies and associations and managers of companies with business interests in Portugal and China.

Interviews were conducted with the following people:

- Alexandre Lima, *Managing Director, Sinopor*
- Bruno Fazenda, *General Manager, ZTE Portugal*
- Madalena Oliveira e Silva, *Context Costs Director, AICEP Portugal Global*
- Nuno Guimarães da Costa, *Professor, ICN Business School* and *The Lisbon MBA*
- Sérgio Martins Alves, *Secretary-General, Portuguese-Chinese Chamber of Commerce & Industry*
- Xu Zhengchuan, *Professor, Fudan University*

The research was based on 2011 data by reference agencies and institutions. There is some available data for 2012 but it is not yet consolidated for both countries, China and Portugal or some parameters are missing. For that reason, most of the data used in this document are up to 2011.

Macroeconomic Analysis of Portugal and China

Portugal[1] and China[2] couldn't have a more different economic situation than today. While China is the most populated country in the world, waiting to be overthrown by India in the next years[3], and the second largest economy by nominal GDP[4] with 7.3 trillion $US (2011), after the United States[5], Portugal is, according to the World Bank, only the 40th largest economy, with a GDP worth approximately 237 billion

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[1] Officially, the Portuguese Republic.

[2] Officially, the People's Republic of China.

[3] World Bank Data: http://data.worldbank.org/indicator/SP.POP.TOTL/countries/CN-IN?display=Figure

[4] All international institutions account for China as being the second largest economy by nominal GDP, however the values differ. The United Nations considers 7.208 trillion $US and the World Bank provides a value of 7.318 trillion $US, all values for 2011. Just for reference, the already available data for 2012 by The International Monetary Fund and the CIA World Factbook provide 8.250 trillion $US.

[5] If we consider the European Union (EU) as an economic entity itself, China is the third biggest, because the EU surpasses the United States by all institutions (International Monetary Fund, World Bank, CIA World Factbook). We will not consider the EU an economic entity by itself in this document.

$US[6]. Still an emerging economy along with the BRICS, China has achieved an impressive GDP growth. With 4 cities surpassing 10 million people (Shanghai, Beijing, Guangzhou and Shenzhen), 14 cities over 5 million people and important economic centers like Shanghai, Hong Kong and Macao[7], China has achieved a rapid economic growth, especially in the last 35 years, after the economic reform led by Deng Xiaoping in 1978 which in some way allowed western capitalism in the socialist society created by the Cultural Revolution of Mao Zedong between 1949 and 1966. In fact, the last decade has seen a bigger economic growth in China for two main aspects that are interconnected: (i) the general openness to the international trade and (ii) the fact that China joined the World Trade Organization. Along with these factors the growing industrialization of the country has also been a factor of rapid growth. The Chinese goal is to become the world's largest economy by 2025, surpassing the USA.

Portugal, on the other hand has had a different recent economic history. A poor country by European standards with Chinese-like GDP growth (around 10%) before the Carnage Revolution in 1974, only after 1986 with the admittance to the European Union the country experienced high-development rates. In the last years, however, the country saw the stagnation of its GDP, in spite of a small increase on GDP per capita (PPP). Since 2008 Portugal has experienced a recession because of the credit crunch and sovereign debt crises. If we look at Figure 1 which computes GDP per capita (PPP) in Portugal against

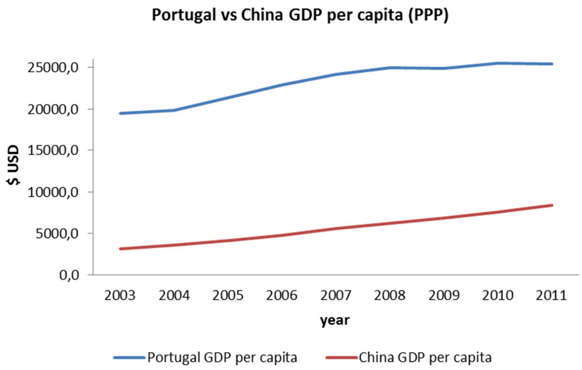


Figure 1 - Portugal vs China GDP per capita

that of China from 2003 until 2011 we can see that while China has sharply increased its GDP per capita (PPP) value, Portugal's GDP per capita (PPP) has not increased in the same proportion. We can also understand by the Figure 1 that since 2008 there has been virtually no growth in Portuguese GDP per capita, but apparently China continued to grow, in the path of closing the gap. If we compute the proportional difference between Portuguese GDP per capita (PPP) and Chinese GDP per capita (PPP) for the same time length (2003 until 2011) we come up with Figure 2, which shows that in the last 8 years

[6] For Portugal the GDP values differ little, with the World Bank and the United Nations accounting for 237 billion $US and the CIA World Factbook 238.9 billion $US, all figures for 2011. The United Nations estimate for 2012 a Portuguese GDP of 237.6 billion $US.

[7] Hong Kong and Macao are Special Administrative regions of the People's Republic of China, under the "One Country, Two Systems" model. In this sense, Macao and Hong Kong have different political, judiciary, administrative and economic systems, except for foreign relations and military defense, in which they depend on China.

Chinese GDP per capita (PPP) has grown from 13% to 33% of Portuguese GDP per capita (PPP). Keeping the same rate, China will match Portuguese GDP per capita in the year 2044.

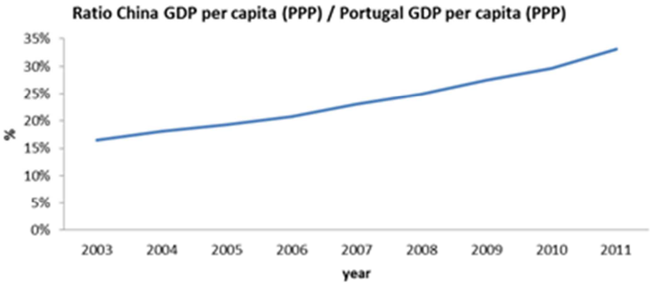


Figure 2 - Ratio China vs Portugal GDP per capita (PPP)

In Figure 3 we can see the annual growth of real GDP in nominal terms. China has achieved an enormous growth peaking 14.2% in 2007 but growing no less than 9.2% (2009). The dashed lines are the average annual growth of the two countries and we can understand that while China had in the last 8 years an average annual growth of 10.8%, Portugal's average annual growth was 0.2%, which means that Portugal had virtual zero growth in the last 8 years. Moreover, in the same time frame Portugal experienced for 3

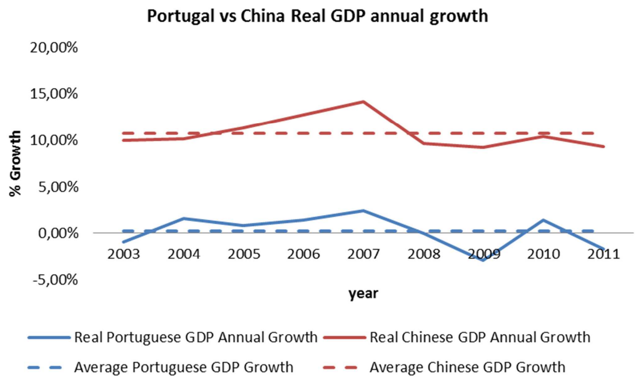


Figure 3 - Portugal vs China Real GDP annual growth

times a negative growth (2003, 2009 and 2011), reaching -2.9% in 2009, while the highest growth was only 2.4% in 2007[8]. In Portugal, the 2000s have been called "the lost decade" due to this near zero growth.

If we look at the composition of the GDP by sector for both countries in Figure 4 we can also understand a significant difference. Portugal's structure is much more similar to the rich first-world countries than China's, with an almost negligible contribution from the Agriculture sector (2.5%) and approximately three-quarters from the Services sector. China, on the other hand, has a significant but low contribution from the Agriculture sector (10.1%) and the rest is approximately evenly distributed from the Industry and the

[8] The Portuguese government already came forward with a negative growth for 2012 of -3.2%.

Services sectors (46.8% and 43.1%, respectively), which are, in percentage, approximately twice of the weight of the industry sector in the Portuguese GDP. This goes in line with the idea that China is "the factory of the world", which means that the weight of the Industry sector is very high in comparison with

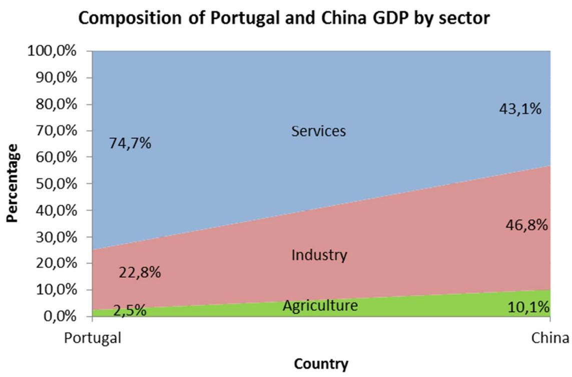


Figure 4 - Composition of Portugal and China GDP by sector

Western economies. In this sense, the emerging countries and China at the forefront have an economy based on producing goods that are bought by countries with higher GDP per capita, like Portugal. This is clearly a transfer of wealth from rich countries to emerging countries, allowing them to sustain their high growth rates, as we have seen before for China. Without this transfer of wealth, there is not enough capital for investments as gross fixed capital formation (GFCF). In this sense, it is useful to analyze the contribution of the several factors (private consumption, government expenditure, investments, imports and exports) to the countries' GDP. If we look at figure 5, which shows the comparison of the evolution of private consumption, government expenditure, investments and net exports (balance of trade) for China and Portugal from 2003 until 2011, we can understand considerable differences between the two countries. First of all, Portugal's GDP contribution of each item has remained considerably stable, while for China there is great variability. If we consider the private consumption we can see that Portugal's contribution is in line with the Western countries, around 66%, while consumption in China has increased from 37% in 2003 to 55% in 2008. This shows the increase in the purchase power of Chinese people (as we could infer from the increase of the GDP per capita). While private consumption in China has been increasing, government expenditure has been decreasing, from 14.8% in 2003 to 12.7% in 2011. In Portugal government expenditure has been approximately constant throughout these 8 years, around 20.5%. In terms of investment, we can see that for Portugal it has decreased from 2003 until 2011, but with a higher slope in 2010 and 2011, reaching 18%. In spite of knowing that there is a minimum investment contribution to maintain capacity utilization, we can understand some disinvestment in the Portuguese economy. For China, however, we see an irregular investment contribution to GDP, that goes as low as 24% (2005) and as high as 75% (2009). This shows that China has greater Gross Fixed Capital Formation (GFCF) than Portugal and also that investment is one of the driving forces of Chinese economic growth due to the quinquennial plans of the Chinese planned economy. Also, according to greater time-series, GFCF in China usually peaks every 5 to 6 years. In Figure 5 we can see that before

2009 it also peaked in 2003. It is also noteworthy that in China investment seems to balance net exports. This means that when the balance of trade has a positive growth, investments get lower and the opposite also happens. In this sense, if we look at the net exports for both countries, we notice a huge discrepancy.

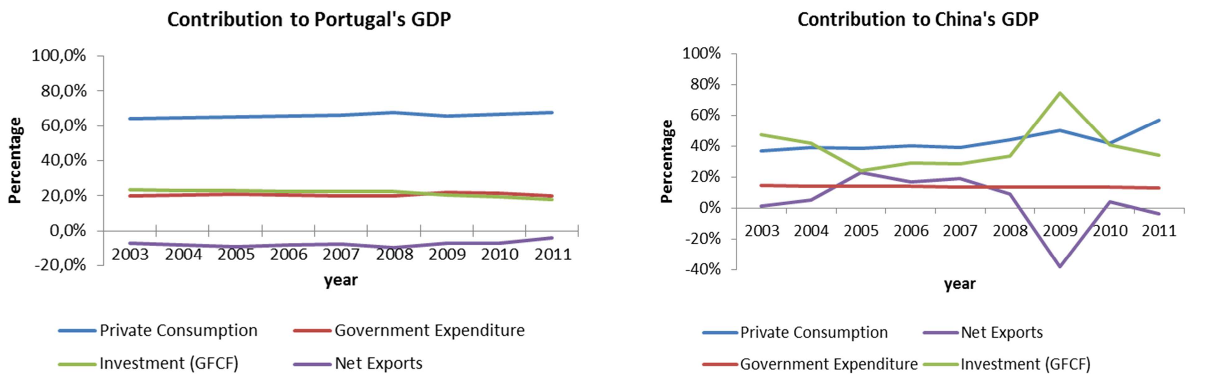


Figure 5 - Contribution of factors to Portugal and China GDP

While China has had a positive net exports contribution to GDP, except for a deep fall in 2009 and a small negative balance in 2011, Portugal's net exports have always been negative from 2003 until 2011. The sharp decrease (-38%) on the China graph for net exports in 2009 can be attributed to the financial crisis that started around 2008 and prevented the rich western countries to buy Chinese-produced goods due to lack of available credit. If we take out the 2009 figures, China's average net exports reach 12%, which goes in line with the importance of the industry sector in Chinese GDP. Portugal's net exports, on the other hand, reached a minimum of 9.5% and efforts have been made to invert the tendency. In 2011, Portuguese net exports reached -3.8%, nevertheless it continues to be negative. In this sense, Portugal imports more than what it exports, showing a systemic problem for Portuguese economy.

Finally, it is noteworthy to point out the differences between Portugal and China in political terms and inequality issues that may affect the economy. While Portugal has been a well-established democracy for almost 40 years[9] with most of its economy privately held and subject to European law, China is a state-controlled country that only started to open itself in the 1990s, mainly with the Go Out Policy[10] and the free trade economy with the entrance of China in the WTO in 2001. The majority of the issues pointed out to China relate to high levels of corruption, inequality among regions (the rich south and eastern coast in opposition to the rural poor central China), monopolies and oligopolies in some industries and state-owned companies. Nevertheless, with the importance of the Chinese economy worldwide, it is expected that these problems will become smoother over the years. Some of these issues are going to be studied in the forthcoming chapters. For the ensuing discussion it would also be interesting to study come economic

[9] Portugal became a democracy after the April 25th 1974 Revolution, also known as the Carnage Revolution.

[10] Go Out Policy, or Go Out Strategy (Chinese: 走出去战略) is China's policy to encourage national companies to have foreign direct investment.

indicators as the Ease of Doing Business[11]. Thus, the Ease of Doing Business rank (Figure 6) was computed for Portugal and China in comparison with the best and the worst countries in the world. Data for the rank can be broken down in several factors, which can be found at Exhibit 4.

Ease of Doing Business (1st - 185th)	
Singapore	1st
Portugal	30th
China	91st
Central African Republic	185th

Figure 6 - Ease of Doing Business rank for Portugal and China

If we look at the table we can take some conclusions. In a first analysis we can conclude that it is easier to perform any kind of economic activity in Portugal than in China. According to the table, which ranks 185 countries in the world, Singapore comes in first place and the Central African Republic is the worst place to do business. China comes approximately in the middle of the table (91 out of 185) while Portugal is on the first sixth of the list (30 out of 185). A further and deeper analysis will be done in the next chapters.

The telecommunications sector

Overview

Portugal

According to ANACOM, the Portuguese Regulatory Authority for the Communications sector in its 2012 report, there are 85 companies that have some kind of activity related to the sector in Portugal. This number embraces all types of communicatons: integrated communications, fixed line, mobile, internet, cloud computing services, local service providers… However, in spite of this large number of companies, only a small number of companies have a significant penetration in the market. Also according to ANACOM, the five main players in the sector had a global market share of 78.9% in 2012. These five main players are Portugal Telecom, ZON Multimédia, Sonaecom (Optimus), Vodafone and Cabovisão. Optimus and ZON announced a merger on December 2012 which was approved by the shareholders in March 2013. This will further concentrate the market by reducing it to four main players. In spite of this, the companies have different market shares if we consider fixed telephone lines, mobile and broadband internet connection. In recent years, Portugal Telecom and ZON have also developed triple play offers that combine television, fixed telephone and broadband internet connection and Portugal Telecom launched in early 2013 a quadruple play, adding mobile-cellular telephone to the combined offer. Portugal have also a high penetration of mobile phones (115% in 2011) and there is 3G coverage in almost 100%

[11] Ease of Doing Business: Annual rank build upon economic indicators by the World Bank and the International Finance Corporation (IFC).

of the country. Portugal does not have national manufacturers and import all the equipment, namely from Nokia-Siemens, Samsung, Sony-Eriksson, Motorola, Cisco, Alcatel-Lucent and Apple.

China

The Chinese telecommunications market is also separated by telecom operators, manufacturers and content providers. There are three state-owned telecom operators: China Telecom, China Unicom and China Mobile. In the manufacturers' side, the main companies are Huawei Technologies and ZTE. Other small manufacturing companies are scattered throughout the country but their market share is much smaller than Huawei's or ZTE's. As the Chinese telecom market is growing at an amazing speed, the manufacturers, Huawei and ZTE have grown at a very high rate in the previous years. Particularly, Huawei is on the verge of surpassing Alcatel-Lucent and Nokia-Siemens Networks to claim its place on the podium of the largest telecom equipment manufacturers in the world. However, the Chinese market has also a large share of imported material, mainly from Alcatel-Lucent, Cisco, Ericsson, Nokia-Siemens, Motorola and Samsung, due to the growing purchase power of Chinese people. China is also a hub for several manufacturers, taking for example Apple, which most products are produced by Foxconn that, in spite of being a Taiwanese[12] company, has large factories in China. The political and administrative structure of China and the planned economy makes the market pretty closed to operators and carriers, but fairly open to manufacturers. Because of this, while China Telecom, China Unicom and China Mobile operate mainly in China, Huawei and ZTE developed an internationalization strategy, supported by the Chinese government's Go-Out Strategy.

[12] Taiwan, officially the Republic of China, is not recognized as an independent country by the People's Republic of China

Market analysis and global developments

The Portuguese and Chinese telecom markets are quite distinct and are in different stages, as we will see. If we analyze the evolution of the penetration of fixed telephones, mobile-cellular telephones and broadband connection for Portugal and China in the last 7 years and compare it to Developed Countries, Developing Countries and World data (Figure 7), we come across interesting facts.

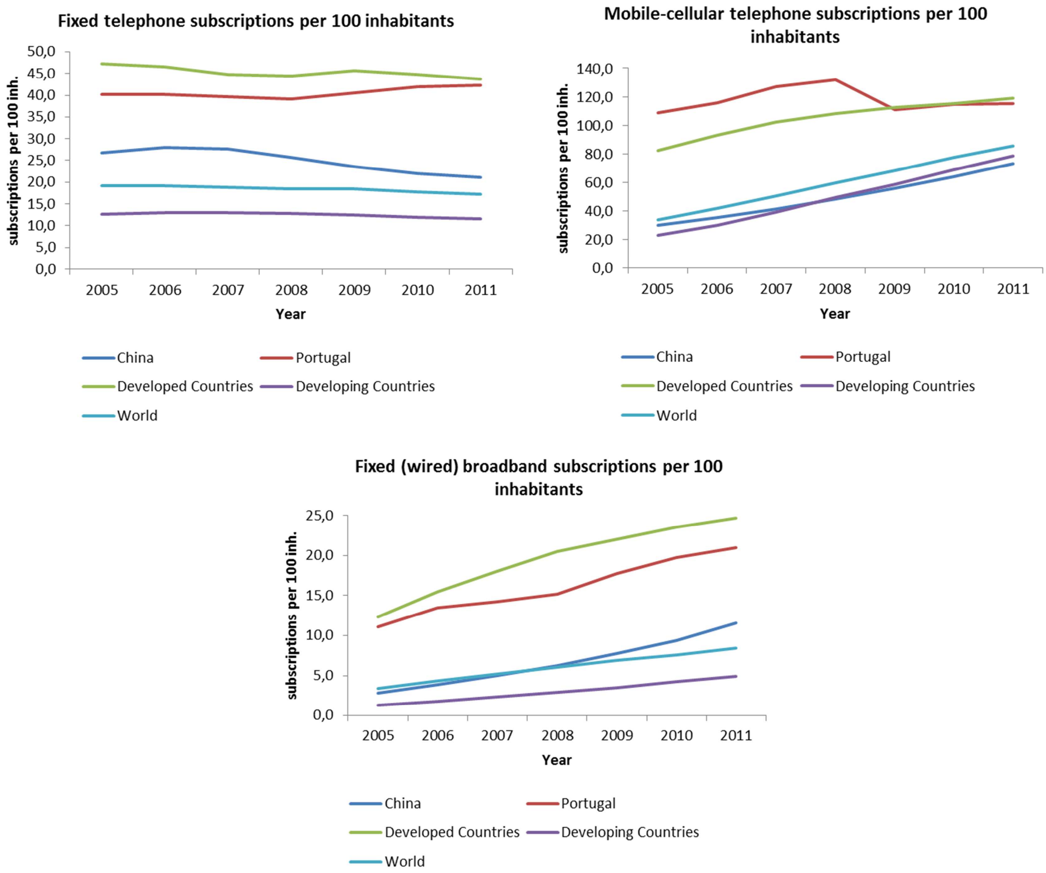
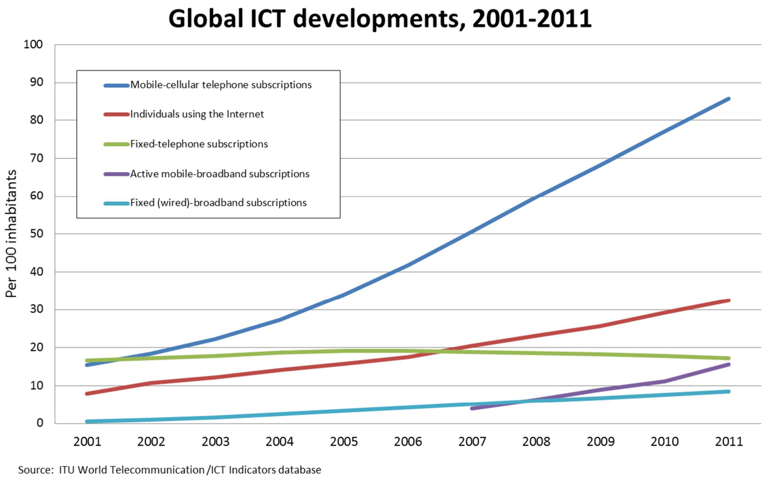


Figure 7 - Fixed telephone, mobile-cellular telephone and fixed broadband subscriptions per 100 inhabitants

Analyzing the penetration of fixed and mobile-cellular telephone subscriptions, we see a clear difference. While the fixed telephone subscriptions are nearly stagnant, having a small decrease for China, mobile-cellular telephone subscriptions have been increasing for all groups of countries (developed and developing) and for the world total. In this particular case Portugal has had a strong penetration – Portugal is known to have been an early-adopter of this technology, surpassing 100% of penetration in the year 2004 –, above that of developed countries, while after 2009 penetration of mobile-cellular telephones have converged to the developed countries' rate, around 115% in 2011. It should be noted that although mobile-cellular telephone penetration rate in China has been increasing, the slope is smaller than developing countries' and the world's rate – China has a penetration of mobile-cellular telephones of 73.2% for 2011, developing countries have a rate of 78.9% and the world's 85.5%, all figures for 2011 -

meaning that China is being held back in the mobile-cellular telephone market. However, this market represents an enormous growth margin because of the growing Chinese population and crescent economy. If we look at the fixed broadband subscriptions for the same past 7 years, we understand that, in spite of both countries and all groups are growing, Portugal (21% in 2011) is diverging from the developed countries (24.7% in 2011) and China is experiencing a soaring growth, especially since 2008, reaching 11.6% in 2011, while the world's average is 8.4% and the developing countries reached only 4.9%. Again, this is a growing market with a large potential for telecom companies in China. Analyzing the Global Developments by ITU for the years 2001 until 2011 for all the markets in the telecom sector (Figure 8), we can take out interesting conclusions. While in 2001 the biggest share was in the fixed telephone



subscriptions with 16.6%, followed by mobile-cellular telephone subscriptions with 15.5%, individuals using the internet with only 8% and fixed broadband subscriptions with a marginal rate of 0.8%, in 2011 the most important market was the mobile-cellular telephone with 85.7% worldwide, which represents a CAGR of 16.8%, and, as we already saw, in developed countries this rate exceeded 100% in 2007. The next important market is the rate of individuals using the internet that grew 13.6% annually to 32.5% in 2011. The rate of fixed telephone subscriptions, on the other hand, have been decreasing since 2006 turning out to be only the third most important product of the telecom sector, and could in fact be overturn in the next years by mobile broadband subscriptions, which were only 4% in 2007 to 15.7% in 2011, representing an enormous annual growth of 31.4%. In fact, several facts helped this huge increase of the telecom market: the US deregulation act of 1996, followed by other deregulation laws, the wide usage of the internet and the personal computer commoditization in mid-90's and, as stated by Thomas Friedman in its bestseller *The World is Flat*, 2001 saw a huge development in the telecom market indirectly caused by the burst of the dot.com bubble: "[The internet stock boom] sparked a huge overinvestment in fiber optic cable companies, which then laid massive amounts of fiber-optic cable […] which dramatically drove down the cost of making a phone call or transmitting data anywhere in the world"[13]. In short, the telecommunications sector has had an enormous development in the last few years, mostly in the developed countries, but developing countries are catching up the pace. However, some market segments are becoming saturated, which has led innovation to other levels.

Theory of Context Costs and Comparative Advantages

According to AICEP, the Portuguese Agency for Foreign Investment and Trade, "context costs are actions or omissions that harm business activities and are not chargeable to the investor, the business or the organization. They can result from disproportionate or unreasonable actions of the Public Administration, anti-competitive practices or political choices or even conditions dependent from the development stage of the Portuguese economy". The same does apply to other economies, not only Portugal. In other words, the context costs can be defined as the extrinsic costs that a company has to incur when investing and operating which can cause prejudice for the company's operations, activity and performance. The context costs can therefore be considered temporary or systemic, which would require different approaches to minimize or eliminate. These costs do not depend on the companies and are usually the result of:

- legal, fiscal, administrative and environmental obligations
- political malfunction and instability
- lack of infrastructures
- high overhead costs
- high direct and indirect labor costs
- lack of resources available
- difficult credit and financial access and availability,

which result in a lack of competitiveness and reduction of profit.

A comparative advantage is the ability to perform some kind of economic activity in a more efficient manner that is, with a lower marginal and opportunity cost. This is closely connected with the context costs for the latter can potentially decrease the efficiency of production, increasing marginal and opportunity costs. Therefore, a country has a potential comparative advantage when its context costs for a certain industry are low, in comparison with another country. If a country has an advantage in producing all goods, that is an absolute advantage and the net benefits of trading products that have a lower marginal and opportunity cost are called gains from trade. The theory of comparative advantages has been studied for almost 200 years, starting with *On The Principles of Political Economy and Taxation* by David Ricardo in 1817 and evolving to the Ricardian Theory and the Heckscher-Ohlin-Samuelson theory. These theories have evolved over time and they are interesting for an assessment of the advantage a country has or does not have in a specific product or industry. Moreover, since China belongs to the World

[13] Thomas Friedman, *The World is Flat*, Penguin Books, page 72.

Trade Organization (WTO) since 2001, we can consider that China and Portugal are in similar trading positions of free trade that allow assessing the comparative advantages and context costs in the industry. It is clear that this is a present day interesting area of knowledge and the following discussion aims to add upon the existing understanding of the subject.

Context Costs and Comparative Advantages Research

After we understood the macroeconomic environment and the characteristics and evolution of the telecom sector in Portugal and China, it is time to analyze the costs and advantages that companies should take into account. The main concern is to identify the context costs and competitive advantages of each country in what the telecommunications sector is concerned. In this sense, several people were interviewed to understand the main differences between Portugal and China and which ones should be considered context costs for companies in the Telecom sector. These people include business people like Alexandre Lima, Managing Director of Sinopor, a Portuguese company that has offices in China for several years now, and Bruno Fazenda, General Manager of ZTE Portugal, the Portuguese branch office of the multinational ZTE Corporation; University Professors like Nuno Guimarães da Costa, professor at ICN Business School and The Lisbon MBA, with a deep knowledge of both contries, and Xu Zhengchuan, professor at Fudan University, who has a strong interest in the relationships between Portugal and China; Sérgio Martins Alves, Secretary-General of the Portuguese-Chinese Chamber of Commerce and Industry, that coordinates relationships between companies in the countries, and Madalena Oliveira e Silva, Context Costs Director from AICEP, the Portuguese Agency for Foreign Investment and Trade.
There are several aspects that should be mentioned as context costs for companies in China, and one of the most important and mentioned by several people is the Guanxi[14][15], the network of relationships a business person should initiate and maintain in order to get the influence needed for doing business. This is crucial in Chinese culture and, according to Nuno Guimarães da Costa, “not fully understood by westerners”. Professor Guimarães da Costa said that “all the context costs will be minimized if you are in the right network with the right people. Obviously no one will tell you this directly but it is fundamental to understand which network is important and then build the relationships.” Many of the business deals are made not only because of the deal itself but also because of the people doing the deal – Chinese need to bond with the people doing business and they take the time to conduct that discovery and to create that bond. Professor Guimarães da Costa also mentioned that one of the problems of Europeans and Americans is that “they do not understand that it takes time to deal with the Chinese executives, and sometimes while westerners want to make the deals quickly, they end up losing the entire deal, just

[14] Guanxi: 关系

[15] For more information on the Guanxi, cf. BONGARDT, A.; NEVES, M. S.; *A Comunidade Empresarial Chinesa em Portugal: Estratégia de Negócio e Internacionalização* (The Business Comunity in Portugal: Internationalization and Business Strategy), Universidade de Aveiro, 2005

because they didn't get the point of those endless dinners." This feeling was also shared by Alexandre Lima: "when I go to a client's office or factory I feel the urge to introduce myself to the Director or the President of the company, even though the deal does not come to fruition, because next time he already knows me and it becomes easier to negotiate. When a client comes to my office I invite him to have lunch or dinner at a good restaurant because otherwise he will be annoyed and it can compromise the deal." According to Alexandre Lima, Guanxi, as building relationships not only with clients but also with government officials may provide the company some tax or social security exemptions, and even to gain some deals against other companies that do not belong to the same Guanxi. The political issue comes to play at a very high level because the network may allow political connections to favor one player instead of another. Corruption is a big problem in China, with the country ranked 80th with a score of 39 in the Perception of Corruption Index, as can be seen in Figure 12 (against OECD's average of 69 and Portugal's 63, ranked 33rd) but the line between a Guanxi and an illegal exchange of favors and information may become thin and an executive can find himself balancing in a tightrope. In a still closed one-party political environment, where many of Chinese companies' CEOs have a seat at the National People's Congress and accumulate huge wealth, there are some signs that China is trying to repel corruption[16]. In some sense, the human relationships are much more important in China than in Europe. While in Europe this procedure is considered as an unlawful behavior and lobbying, in China this is part of their tradition, culturally acceptable and legally tolerable.

The political power and influence finds itself deeply connected with the number of possible Guanxi a business person can establish, and they vary according to the region. There are national rules but also regional and local ones that vary according to the unique administrative system of China, with Provinces, Municipalities, Autonomous Regions and Special Administrative Regions, as Alexandre Lima testified with an example: "The rules of different regions in China makes them look like different countries. As an example, if I go out of Shanghai I pay roaming when talking with my mobile phone; it becomes cheaper to buy a prepaid card, like if I got out of the country." Each of the regions, municipalities and provinces have unique laws and different Guanxi. The "untold" rules play probably an even more important part as the written ones, for they can be somewhat overruled by having contacts and networking in the proper Guanxi. This becomes crucial when the Guanxi acts to protect its own market against new entrants in the industry. With millions of potential clients, companies in a specific municipality or region achieve such a dimension protected by its Guanxi that it becomes virtually impossible for an "hostile" company to do business in that market. As Nuno Guimarães da Costa said: "It's all about dimension, political power, influence, and money! Every product in China has an enormous market that can be explorer but with the political protection each player has in its own market (local, regional or national), competition can be controlled in order to allow scale economies that are difficult to overcome by a late entrant (even for a Chinese company that is a different Guanxi)."

[16] The Economist, *Life and Death Struggle – the fight against corruption*, Dec. 8th 2012

A serious problem that companies face in China is the lack of respect to Intellectual Property. If a company enters the Chinese market with a breakthrough innovation, it may end up “having its products copied by a company next-door that by chance has a partner who is a friend of your own partner”, as described by Professor Nuno Guimarães da Costa. This is in fact a huge problem for companies that rely on innovation as one of its greatest sources of differentiation, like the telecom companies, especially manufacturers. There has been some concern by European and American companies that when establish themselves in China have its products copied by Chinese companies and then sold at a lower price, compromising the investment in innovation and the incentive to commercialize the products in China. While the big manufacturers like ZTE and Huawei bet on own products and innovative solutions because they have the financial and human capabilities that allow them to do that, the menace to foreign companies that want to commercialize in China are the small manufacturers that copy features of the new releases and patent them, preventing the original manufacturer to sell the products in China, as was recently done before the release of iPhone 5 by Apple[17]. Nevertheless, Bruno Fazenda stressed the fact that “one wrongly tends to generalize China in terms of lack of quality and intrusive in what safety concerns”, pointing out that the United States also tend to act protectionist towards American brands. Professor Xu Zhengxuan corroborated the opinion that small companies that want to do business in China “will pay the cost of innovation.” This is a legal and political issue that will probably needs standardization between China and Western economies.

While the Intellectual Property issues seem to be a problem for China, Chinese companies also face legal difficulties when internationalizing and doing business. Asked about bureaucracy in Portugal, Bruno Fazenda, General Manager of ZTE Portugal said “bureaucracy makes it a little bit hard, especially in companies like ours in the process of internationalization always needing expats working in Portugal, where the rules are not always clear and sometimes have different interpretations”. This is different from the feeling pointed out before that the networks and the Guanxi in China can boost a business or dooms it. In Portugal, unlike China, is the law itself and the bureaucratic obligations and procedures that make business rules sometimes a bit blur. On the other hand, Sérgio Martins Alves from CCILC didn’t have the same opinion. According to him, China is a “bureaucratic monster”, and in comparison, “very different from the other BRICS, mainly Brazil and Russia”. Mr. Alves considered that bureaucracy is much complicated in China than in Portugal, and “one must have the proper networking and a «comfort letter» to present to administrative officials in order to get things done with a minimum of bureaucracy.” This was also the feeling of Madalena Oliveira e Silva who said that “comparing to China we have a great legislation”.

Beyond bureaucracy, companies complain about Justice, the Fiscal System and the Social Security System, according to Madalena Oliveira e Silva: “the main costs of context in Portugal, without prejudice to all the others are the delay of the judicial system, the complexity of the fiscal system and the costs associated with Social Security”. As Madalena Oliveira e Silva explained, companies complain that the Portuguese fiscal system is too complex and confusing and taxes are high in comparison to other OECD

[17] http://www.gizchina.com/2012/09/04/chinese-phone-maker-goophone-i5-might-have-blocked-iphone-5-sales-in-china/

countries. Also, the security system obliges companies to incur in high costs and the judicial system does not respond in due time to companies' legal issues. The Deloitte report on Fiscal Competitiveness in Portugal highlights the courts slow decisions and the payments terms as the main context costs in Portugal. Sérgio Martins Alves also confirmed that one of the main issues that companies complain about the Portuguese economic environment and is in fact a significant cost of context is the uncertainty in what concerns decision-making by the government and the judicial system. Hence, according to Mr. Alves, political instability, hesitations and slow judicial decisions contribute decisively to businesses outcomes.

Bruno Fazenda stressed the fact that in his opinion, apart from the legal and bureaucratic issues, companies in the telecommunications sector do not incur in many context costs in Portugal. According to him, "all the merchandise comes from China so we must have some specificity in what concerns transportation costs, but even this is a rarity given the number of companies that import merchandise from China and other Asian countries", making the transportation costs the only point that can hinder companies in Portugal in the telecommunications sector. In fact, Mr. Fazenda underlined the advantages of Portugal as a beachhead for the Portuguese-speaking market, especially in Africa and the feeling of the industry that Portugal can be a testing zone for new and innovative technologies. In Mr. Fazenda's own words: "I believe on of the advantages of Portugal is the expectation of access to the PALOP[18] and technologically, at least in the telecommunications sector, Portugal is known to be a disruptive country and useful as a tester of innovative technological solutions because of its scale and geography." The geographic aspect was also stressed by Alexandre Lima, who mentioned that Portugal could be viewed as a hub for logistics and operations for Europe, Africa and the Americas. In the telecom sector, this factor could be decisive for the implantation of companies who want to use a rather small market in order to spread to other countries. In fact, the ease of access to the Portuguese-speaking market was stressed as a competitive advantage of Portugal by almost every one of the people interviewed. Sérgio Martins Alves mentioned "when the government sells the idea of doing business in Portugal, one of the main concerns is saying: look, if you do business in Portugal, you can then enter easily Brazil, Angola and Mozambique". If this is a fact for investment, it is also true when companies are well established, for they can use privileged networks and governmental relationships between Portugal and other Portuguese-speaking countries.

The social advantages of Portugal were also mentioned by Bruno Fazenda, stressing that the strong ability of the Portuguese people to adapt to different environments is a strong asset and should be developed. In the Chinese culture where personal relationships are so important and can decide the success of a business, "Portugal has a clear advantage in comparison to Northern European people", said Alexandre Lima. Still according to Mr. Lima, "Portuguese and other Latin countries have this advantage in businesses – they try and push face to face, in a more open way, much like Brazilian executives".

The Human Resources issue, however, can cause context costs in many dimensions. As mentioned earlier, Portugal and China have different needs and capabilities in what work-force is concerned. Due to

[18] PALOP: Países Africanos de Língua Oficial Portuguesa (African Portuguese-speaking Countries)

the high economic growth of China in previous years, and while western companies established in China there has been a lack of qualified people, however, this situation is changing. According to Alexandre Lima, “There is a lack of qualified work-force, a lack of people who speak English, a lack of workers with technical knowledge, in short, there is a cultural backlog”, however, as Professor Nuno Guimarães da Costa said, “all the human resources issues tend to disappear due to the increasing number of students who take University degrees.” Still according to Alexandre Lima, “while before 2005 or 2006 the market would absorb every expat that wanted to come to China, nowadays things don’t work that way anymore. There are more than 1 million foreigners working and living in Shanghai, and there is virtually no room for more foreigners except for very specific positions. Nowadays companies hire locally, which in fact reduces costs dramatically – for example, a Chinese executive can be hired for €800 to €1200; an expat would asked for much more”, opinion shared by Professor Xu Zhengxuan: “I think the competitive advantages of China come from the very large market and competitive low human resources cost”. The quality of Chinese higher education is also increasing and an example of that are the seven Chinese business schools in the Financial Times Global MBA ranking[19], as of 2013 [see Exhibit 2], two of which are in the 15 top spots, alongside France. To some analysts, China’s higher education is growing in influence and quality[20] and that is a clear signal to companies, foreign or national, in China. When talking to MBA students in Shanghai I confirmed that while the market needs people holding University degrees, they feel that the number of opportunities is decreasing and wages increasing, nevertheless, continue to be less than wages in OECD countries, like Portugal. This means that companies can now find people with acceptable education, paying much less than they would pay for an expat. As for Portugal, with the ongoing economic crisis, labor costs have decreased while the number of University graduates has increased [see Exhibit 3]. Sérgio Martins Alves also mentioned that Portugal has lost competitiveness in the labor market since the European Union enlargement, which contributed to lower labor costs. However, Alexandre Lima’ s opinion is that Portugal lacks executives that can give a boost to Portuguese companies, especially when they go abroad and internationalize. This happens across sectors, but is especially important in the telecommunications sector, where technical knowledge is a crucial asset. An example of this is that Portuguese companies in China “have no dimension”, according to Alexandre Lima: “In China we have all the big companies, but none is Portuguese. There are no Portuguese banks, no companies in the telecom sector or the energy sector, and that is an issue of Portuguese companies themselves. They need to grow outside Portugal.” Sérgio Martins Alves also mentioned that Portuguese companies have a difficulty in seizing the opportunities and gave examples about Macau: “What do we [Portuguese] have in Macau? Portuguese companies left Macau while HSBC, founded in Hong-Kong, is one the largest banks in the world. Macau is known for its gaming industry and the largest gaming company in Portugal [Estoril-Sol] is Chinese! We simply didn’t take the opportunities.” Another aspect

[19] Financial Times Global MBA ranking 2013: http://rankings.ft.com/businessschoolrankings/global-mba-ranking-2013

[20] The FT Full-Time MBA Ranking 2013 – Winners and Losers: http://www.mba50.com/the-ft-mba-rankings-2013-winners-and-losers/

related to the working force mentioned by Madalena Oliveira e Silva, which was the working flexibility. According to her, “In Portugal the labor market is not very flexible, and flexibility is something companies look for.” In this sense, the ability to increase or decrease the number of workers in a specific area of the company acts as an important issue. Compared to China, Portugal has, therefore, a problem of workers’ over protection that counts as a context cost.

In the telecommunications sector is also important to analyze the consumers’ behavior towards technology and innovation. Portuguese are known to be early adopters of technology, which can be shown, as an example, by the high penetration of mobile-cellular telephones, as we saw previously, achieving 100% of the population in 2004, while for the same year the developed countries average was below 80% and the world’s average was around 27%. This confirms what was told before about Portugal being a useful country for “testing”, before companies launch products in bigger markets. Madalena Oliveira e Silva had the same opinion when asked if Portugal could be used a “testing market”: “Oh yes! Some managers come to me and say that Portugal has all the characteristics of a testing market – we are a rather small developed country, have a predisposition to use technology, and if they screw up things here, it does not have the effect it would have in a larger market. So companies really bet their innovations in Portugal.” As for China, while the majority of the population still has very low income, the use of innovative telecom products is not an option. However, according to Nuno Guimarães da Costa, “Chinese people are eager to try new things and are extremely sensible to innovation, therefore, the experimentation field is wide open.” The dimension of the Chinese market can act here as a great asset, confirming Professor Xu Zhengxuan’s opinion stated above: “I think the competitive advantage of China comes from the very large market and competitive low human resources costs.”

The issue of transports and logistics was also highlighted as both an advantage and a cost of context for the Portuguese economy. As Madalena Oliveira e Silva referred “we have a very good roads system but a problem in the railroad system and lack of intermodal terminals. The ports are also not fully integrated, which cause a logistics problem.” This operational issue in Portugal is a major advantage of China, whose ports of Shanghai, Ningbo-Zhoushan, Tianjin, Guangzhou, Qingdao, Qinhuangdao and Hong Kong were in 2011 on the top ten of the busiest ports in the world[21].

Analyzing some data we can also take some interesting conclusions. We have seen in a previous chapter the Ease of Doing Business Ranking and understood that Portugal was ranked 30th in the World and China was 91st. If we break down the index as shown in Exhibit 4, we can therefore construct a table comparing both countries and determine which one performs better in which item, as can be seen in Figure 9.

	Economy Rankings (in comparison)										
	Ease of Doing Business	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Preperty	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Portugal	30	+	+	+	+		+	+	+		+
China	91					+				+	

[21] http://www.marineinsight.com/marine/top-10-biggest-ports-in-the-world-in-2011/

As we can see in Figure 9, Portugal performs better in every item except in Getting Credit, because of the credit crunch and sovereign debt crises that since 2008 makes it difficult for companies to get credit, and the item enforcing contracts, which corroborates the problems already mentioned of the Portuguese judicial system. Also, other relevant data can be used to compare the economic activity of both countries. In Figures 10 to 12 we can analyze the Gini index, the Index of Economic Activity and the Corruption Perception Index.

Gini index (0-100)		
	score	rank
Denmark	24.0	1
OECD average	33.3	-
Portugal	38.5	67
China	47.0	110
Namibia	70.7	136

Figure 10 – Gini index

Index of Economic Freedom		
	score	rank
Hong Kong	89.9	1
Portugal	63.0	68
OECD average	71.1	-
China	51.2	138
North Korea	1.0	179

Figure 11 – Index of Economic Freedom

Corruption Perception Index		
	score	rank
Denmark	90	1
OECD average	69	-
Portugal	63	33
China	39	80
North Korea		
Somalia	8	174
Afghanistan		

Figure 12 – Corruption Perception Index

According to the Gini index (where 0 represents perfect income equality and 100 perfect income inequality), Portugal, ranked 33 is much more close to Denmark, which is the least unequal country in the world, than China, ranked 80, which comes at a certain distance, however, at a safe distance from Namibia, which is the more unequal country in the world. This relates to the differences between the rich industrialized cities and the poor hinterland and also to the inequality between the well-paid elite and the poor blue-collar workers in China. As the Gini index confirms, that difference is smaller in Portugal, however, quite far from Denmark, and below the OECD average, which means that Portugal is one of the more unequal countries of the OECD. If we look at the Index of Economic Freedom, we understand that, while Hong Kong is the more economically free territory in the world, China is one of the less free, ranked 138 out of 179 countries and territories. This is particularly interesting because as Hong Kong is not an independent country, belonging to China, is economically separated from China and the disparity of positions is huge. Portugal is ranked 68, but it can be considered a good rank for it is above the OECD average. China's lack of economic freedom can be interpreted as a result of coercions and constraints to economic liberty by the government and other institutions. Nevertheless, China performs better in the Corruption Perception Index than in the Index of Economic Freedom. While Portugal is ranked 33, a little below the OECD average, China ranks 80 in a total of 174 countries and territories. This shows that China is more perceived as more corrupt than Portugal, however, in the first half of the table. All these aspects contribute to determine the costs of context and the comparative advantages of both countries. In the next section we will systematize the research done and provide a list of changes to reduce context costs in the telecommunications sector.

There is a crucial point to mention which is the sector regulation. Portugal's telecommunications sector is open and regulated, which means that new players can enter the market but only with permission from the regulator. Chinese market is unregulated since Beijing's government dictates the rules. In this sense, this is a handicap for the Chinese market due to lack of competition, but Sérgio Martins Alves also mentioned that there have been uncertainties in what concerns the regulated market in Portugal. In his opinion, the regulator should act more decisively and enforce rules more thoroughly. Another issue are the telecommunication costs.

A final word to comment on the relationship between Portugal and China. Portuguese were the first European sailors to reach China, after Jorge Álvares landed in the Pearl River Delta in 1513, at the height of the Ming Empire. Portugal was, at the time, the largest and most powerful Empire on Earth. After some years of political mistakes, the relationship between the two countries stabilized in the 19^{th} century, after the Opium Wars, when in some way Portugal stood on the Chinese side against the British Empire, the United States, France and the Russian Empire, getting to occupy Macau until the handover in 1999. As explained by Martin Page in "The First Global Village – How Portugal changed the world", Portugal inaugurated the Globalized World with doing business in China. Therefore, the relationships between China and Portugal have been very good, but as explained by Sérgio Martins Alves from CCILC, "Chinese have memory even though they are pragmatic." In this sense, Portugal and China could and should use this collective memory to improve business relations, leveraging both countries' advantages.

Strategic Discussion

SWOT Analysis

After the research we are in conditions to analyze the telecommunications sector in both countries in what concerns its strengths, weaknesses, threats and opportunities, hence SWOT analysis were built in order to better understand the sector, what companies should be aware of, and the opportunities to grow. After the SWOT analysis is time to finally describe the context costs and compare the competitive advantages of both countries.

Telecommunications Sector in Portugal – SWOT Analysis	
Strengths	**Weaknesses**
• Focus on innovation • "Testing market" • Technologically disruptive country • Strong adaptation ability of Portuguese people • English-speaking population	• Small market • Judicial system • Ports, railroads and intermodal systems • Confusing bureaucratic procedures • Social security system and taxes • Lack of executives • Lack of flexibility of the labor market • Telecommunication costs • Electricity costs

Threats	**Opportunities**
• Diminishing purchase power • Eastern European markets • Political Instability • Political Uncertainties • Credit crunch crisis • Financial unavailability	• Access to other European markets • Privileged access to Portuguese-speaking markets • Hub for Europe, Africa and the Americas

In the same way we can construct a SWOT Analysis for the Telecommunications Sector in China.

Telecommunications Sector in China – SWOT Analysis	
Strengths	**Weaknesses**
• Very large market • Good financial situation • Easy credit access • Good infrastructures • Labor costs • Operations / Logistics • Political stability • Enforcing contracts	• "Many Chinas" – political and cultural diversity • Lack of qualified work-force • Electricity costs • Lack of English-speaking population

Threats	**Opportunities**
• Guanxi • Income inequality • Corruption • Protected market • Own IP laws / disrespect for Western IP laws • State-owned companies / oligopolies	• Access to other Asian markets • Chinese people prone to innovation • Unsaturated market

Context Costs and Comparative Advantages Analysis

We can therefore build a list of context costs for the sector for each country.

	Context Costs	Importance
Portugal	Bureaucracy / Confusing administrative procedures	High
	Slow and confusing judicial system	High
	Unrealiable fiscal system	High
	High costs related to Social Security System	Low
	Political instability	Low
	High corporate taxes	Low
	High cost of capital	Low
	Difficult credit access	Low
	Deficitary intermodal transportation systems	Low
	Low labor flexibility	Low
	Lack of executives	Low
	High energy costs	Low
	High communication costs	Low
China	Guanxi - difficulty in integrating existing networks	High
	Bureaucracy	High
	IP protection issues	High
	Lack of knowledge of English	High
	"Many Chinas" - legislative and cultural diversity	Low
	Low investors protection	Low
	High corporate taxes	Low
	Difficult trading across borders	Low
	Difficulty in resolving insolvency	Low
	Lack of qualified workers	Low

For each context cost item, the column "importance" was added, meaning its degree of importance in "High" or "Low". According to the testimony of the interviews and the data collected, the degree of importance was determined in how it would affect the companies' businesses, in a qualitative manner. For Portugal, the main issues that were referred as context costs were the bureaucracy and the confusing administrative procedures that cause delays and extra human resources and time to resolve; the slow and confusing judicial system, that was mentioned as one of the greatest problems of Portuguese economy; an unreliable fiscal system, with high corporate taxes that turns fiscal procedures complicated. Other issues but with less relevance for context costs are the high costs paid to the social security system, but this is a transversal issue over most European countries; the political instability, which changes rules and procedures more than what companies wanted; the high cost of capital and difficult credit access due to the financial crisis; the deficitary intermodal transportation systems, which increase operations and logistics costs; the lack of executives, as was referred in the interviews, the high energy and communication costs. For China, the main context costs are the Guanxi because it turns very difficult for companies to walk between the Chinese networks; the bureaucracy ("China is a bureaucratic monster"); the IP protection laws that makes it difficult for manufacturers to innovate and sell the products in China; the lack of knowledge of English. Other costs of context are the fact that legislative and cultural diversity makes it difficult to standardize business procedures; the low investors protection; high corporate taxes, difficulty in trading across borders; difficulty in resolving insolvency; and the lack of qualified workers, that is a problem now but with the increasing number of qualified Chinese people, this problem tends to disappear.

A list of comparative advantages was also drawn upon the results of the research:

	Comparative Advantages
Portugal	"Testing market"
	Technologically disruptive country
	Strong adaptation of Portuguese people
	English-speaking population
	Access to European markets
	Priviliged access to Portuguese-sepaking countries
	Hub for Europe, Africa and the Americas
	Regulated and competitive market
China	Access to a very large market
	Growing Economy
	Good financial accessibility and easy credit access
	Access to Eastern Markets
	Good infrastructures (eg.: ports)
	Low labor costs
	Low operational costs to Asian markets
	Political stability
	Unsaturated market

Reducing Context Costs

There are many possible ways to reduce context costs, and governments, institutions, agencies and companies should work together to develop ways to improve businesses and the economy.

For Portugal, it is clear that most of the context costs depend exclusively on the political power. Government should take efforts to reduce bureaucracy and make procedures simpler. The judicial system should be reformed to allow quick and proper decisions. This, in particular, has been done by several governments, but, apparently, without the necessary success. The fiscal system should also be reformed to allow a more reliable execution, in particular, reducing corporate taxes. The political instability can be considered a consequence of democracies, but even this issue could be improved by national consensus.

The high cost of capital and difficult credit access are probably temporary issues and should improve with the economic growth. The deficitary intermodal transportation systems should be improved with the development of ports and connecting these ports with the main railroad and road system. The government should also develop efforts to improve labor flexibility, giving freedom to companies to use resources available in the best way possible. The lack of executives can be overcome by investing in business schools. Finally, energy and telecommunication costs should be reduced by deals between the government and the industry to improve business conditions.

For China, the Guanxi should have less importance in doing business, because companies find themselves in a difficult situation when they cannot enter the existing networks. Government should reduce bureaucracy and implement standardizes IP protection laws, in line with Western countries. The lack of knowledge of English could be overcome by introducing English in the first years of school. The legislative diversity of China could also be overcome by standardizing laws and procedures all over the country. The government could also help to protect investors and reduce high corporate taxes, as well as in trading across borders and resoling insolvencies.

Concluding Remarks

In conclusion, we can say that Portugal and China, besides being in a very different economic situation, both have context costs and comparative advantages in the industry of telecommunications. We also understood that the telecommunications sector in each country has some specific context costs and advantages, but many of them are shared across sectors and are not specific of the telecommunications sector. We also understood that the sector is in different stages in both countries and different actions should be considered when doing business in Portugal or in China.

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Annexes

Acronyms

EU	European Union
IMF	International Monetary Fund
CIA	Central Intelligence Agency
USA	United States of America
WB	World Bank
UN	United Nations
BRICS	Brazil, Russia, China, India, South Africa
GDP	Gross Domestic Product
PPP	Purchase Power Parity
CAGR	Compound Annual Growth Rate
GFCF	Gross Fixed Capital Formation
ANACOM	Autoridade Nacional de Comunicações (Communications National Authority of Portugal)
WTO	World Trade Organization

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Exhibit 1 – Data Portugal and China GDP

	PORTUGAL			CHINA			Ratio China GDP per capita / Portugal GDP per capita
year	Portugal GDP per capita	YOY Growth	Real Portuguese GDP Annual Growth	China GDP per capita	YOY Growth	Real Chinese GDP Annual Growth	
2003	19463,2		-0,90%	3198,6		10,00%	16%
2004	19853,4	2,00%	1,60%	3599,2	12,52%	10,10%	18%
2005	21369,0	7,63%	0,80%	4114,6	14,32%	11,30%	19%
2006	22937,1	7,34%	1,40%	4760,1	15,69%	12,70%	21%
2007	24188,1	5,45%	2,40%	5564,4	16,90%	14,20%	23%
2008	24939,0	3,10%	0,00%	6201,6	11,45%	9,60%	25%
2009	24888,0	-0,20%	-2,90%	6826,7	10,08%	9,20%	27%
2010	25519,2	2,54%	1,40%	7553,3	10,64%	10,40%	30%
2011	25372,0	-0,58%	-1,70%	8400,2	11,21%	9,30%	33%

Source: The World Bank

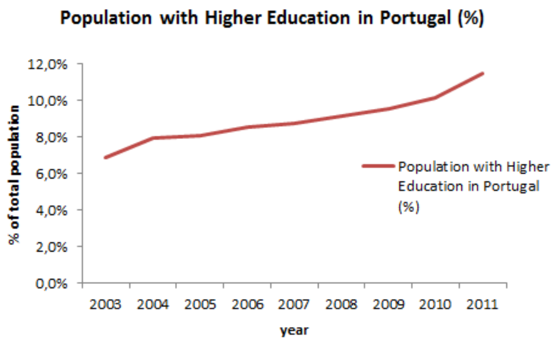
Exhibit 2 – Financial Times Global MBA Ranking (Chinese and Portuguese schools only)

Rank 2013	School name	Country
8	Hong Kong UST Business School	China
15	Ceibs	China
27	CUHK Business School	China
31	University of Hong Kong	China
57	Hult International Business School	US/UK/UAE/China
61	The Lisbon MBA	Portugal
66	Peking University: Guanghua	China
89	Fudan University School of Management	China

Source: Financial Times

Exhibit 3 – Population with HIgher Education in Portugal

Year	Population with Higher Education in Portugal (%)
2003	6,8%
2004	7,9%
2005	8,0%
2006	8,5%
2007	8,7%
2008	9,1%
2009	9,5%
2010	10,1%
2011	11,5%



Source: Pordata

Exhibit 4 – Economy Rankings

	Economy Rankings (1 - 185)										
	Ease of Doing Business	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Preperty	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Portugal	30	31	78	35	30	104	49	77	17	22	23
China	91	151	181	114	44	70	100	122	68	19	82

Source: www.doingbusiness.org

Exhibit 5 – Fixed telefone, mobile celular telefone and fixed broadband subsriptions (total and per 100 inhabitants)

	Fixed telephone subscriptions (total, millions)							Fixed telephone subscriptions per 100 inhabitatants						
	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011
China	350,445	367,786	365,637	340,359	313,732	294,383	285,115	26,8	28,0	27,7	25,6	23,5	21,9	21,2
Portugal	4,234	4,242	4,204	4,160	4,328	4,477	4,530	40,2	40,1	39,6	39,1	40,6	41,9	42,4
Developed Countries	570,000	565,000	546,000	544,000	562,000	552,000	542,000	47,2	46,6	44,8	44,5	45,7	44,7	43,7
Developing Countries	673,000	696,000	708,000	705,000	691,000	676,000	662,000	12,7	13	13	12,8	12,4	12	11,5
World	1.243,000	1.261,000	1.254,000	1.249,000	1.253,000	1.228,000	1.204,000	19,1	19,2	18,8	18,5	18,4	17,8	17,3
							12,231783							

	Mobile-cellular telephone subscriptions (total, millions)							Mobile-cellular telephone subscriptions per 100 inhabitants						
	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011
China	393,406	461,058	547,306	641,245		747,214	859,003	30,1	35,1	41,4	48,3	56,0	64,0	73,2
Portugal	11,447	12,226	13,477	14,049		11,795	12,210	108,6	115,6	127,0	132,1	110,7	114,4	115,4
Developed Countries	992,000	1.127,000	1.243,000	1.325,000	1.383,000	1.418,000	1.475,000	82,1	92,9	102	108,3	112,5	115	119
Developing Countries	1.213,000	1.618,000	2.125,000	2.705,000	3.257,000	3.901,000	4.487,000	22,9	30,1	39,1	49,1	58,3	69	78,3
World	2.205,000	2.745,000	3.368,000	4.030,000	4.640,000	5.320,000	5.962,000	33,9	41,7	50,6	59,8	68,1	77,2	85,5

	Fixed (wired) broadband subscriptions (total, millions)							Fixed (wired) broadband subscriptions per 100 inhabitants						
	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011
China	37,350	50,853	66,414	82,879	103,978	126,337	156,487	2,9	3,9	5,0	6,2	7,8	9,4	11,6
Portugal	1165440,000	1,424	1,512	1,614	1,888	2,104	2,240	11,1	13,5	14,3	15,2	17,7	19,7	21,0
Developed Countries	148,000	188,000	219,000	251,000	271,000	291,000	306,000	12,3	15,5	18	20,5	22	23,6	24,7
Developing Countries	71,000	96,000	127,000	159,000	197,000	236,000	282,000	1,3	1,8	2,3	2,9	3,5	4,2	4,9
World	220,000	284,000	346,000	411,000	468,000	527,000	588,000	3,4	4,3	5,2	6,1	6,9	7,6	8,4

Source: International Telecommunication Union