



# **Evolution of the Portuguese Construction Sector**

Application of the Structure-Conduct-Performance Paradigm

**Tiago Gomes Romão**

**Extended Abstract**

**Supervisor:**

Professor Carlos Paulo Oliveira da Silva Cruz

**March 2015**



## **1. INTRODUCTION**

Similar to what happens in other countries worldwide, the Construction sector has a big influence in the Portuguese economy. The Construction products provide many, public and private, infrastructures that are essential to people and various activities, such as, transportation and commerce. The importance of the Construction sector is not just related with its final product, but also, with the fact that it creates employment, and because of that, it helps economy to grow. If the sector is expanding the economy is growing, on the other hand, if the sector is declining the economy is falling [1].

The Construction sector in Portugal has suffered a strong cutback since the beginning of the 2008 world crisis. As a result of this, Portugal had to apply several austerity measures, which led to a reduction of public investment and also private investment, due to the increasing difficulty of getting credit. In a context of economic crisis and small or almost none levels of growth, it's considered to be essential that Construction companies adopt new strategies of business, such as, internationalization and business diversification.

In this paper, and by applying the structure-conduct-performance paradigm to the Construction sector in Portugal, it's characterized the market structure, the type of conduct assumed by the companies, and the repercussions of both to performance. Also, as a result of this analysis, it's expected to conclude the kind of logic that relates these three vectors, and how they influence each other's.

## **2. OVERVIEW OF THE PORTUGUESE ECONOMY**

The Portuguese economy, presented its principal reduction of the gross domestic product in the year of 2012, with an annual growth rate of -3,2%. In the years before 2012, and after the 2008 economic crisis, only in 2010 has been verified progress, with an annual growth rate of 1,9% [2]. These negative variations that this macroeconomic indicator has been presenting, are suggestive of the drop in production of all business sectors in Portugal, which illustrate the lack of wealth in the country.

According to inflation, it has been verified that this indicator presented a decreasing tendency during the years of 2001 and 2005, and finished the year of 2012 with an annual growth rate of 2,8% [2]. It's also important to refer that in the year of 2009, inflation was negative, which means that there was deflation. With a negative annual growth rate, consumption drops, because families keep expecting the prices to reduce even more. A drop in consumption makes companies sell less, which makes stocks grow and production to reduce. With a cutback in consumption and production, the economy doesn't grow and companies have to decrease salaries and increase firings.

In relation of employment, it has been confirmed that companies are facing more lay-offs each day, which makes employment drop significantly. For example, in the year of 2012, the annual

growth rate of employment was -4,2% [2]. With equal tendency, employment in Construction is also facing a reduction in staff. These numbers show that companies from all sectors are facing more difficulties due to the drop of production and prices, and the only option for them is to let people go.

### **3. THE CONSTRUCTION SECTOR IN PORTUGAL**

#### **3.1. Main Stakeholders**

The construction of any edification represents a very complex process, and it's fundamental to keep in mind the interests of all concerned parties. The main stakeholders in the Construction sector are: a) construction companies, b) clients, c) banking entities, d) project authors, e) insurance companies and, f) regulators.

In terms of construction companies, there are in Portugal big enterprises, small and medium enterprises, and microenterprises. The differences between them are related with the number of people they allocate at work and the volume of their business. Nowadays, the biggest companies in the sector are Mota-Engil and Teixeira Duarte, with volume of business superior than 2000 [4], and 1000 [5] million euros, respectively.

In the Construction sector clients can be either public or private. Public clients are state entities, such as town halls or the government itself, and they operate through public investment funds. Private clients are private companies and individual entities. This type of client invests with his own resources or through credits from banking entities. Currently in Portugal has been verified that, due to the economic crisis, banks are loaning less money, which makes private clients reduce the investment in construction.

Project authors are engineers and architects. They are responsible for the conception of the project and also for the inspection activities. It is also important to refer the role that insurance entities have in the Construction sector. They are used to protect workers from accidents at work and, also, to protect the construction owner from any damaged occurred at the construction site due to natural causes.

Also regarding stakeholders, there are in Portugal several entities that regulate the Construction sector in terms of quality, health and safety, and environment. Examples of these entities are: a) Instituto da Construção e do Imobiliário, b) Sistema Português da Qualidade, c) Instituto para Segurança, Higiene e Saúde no Trabalho e, d) Agência Portuguesa do Ambiente.

### 3.2. Main Indicators

Regarding the number of companies in the Construction sector, it has been verified that, between the years of 1990 and 2008, this indicator has revealed an increasing tendency, which illustrates the growth of the sector. However, since the year 2008, which matches the year of the economic crisis, this number has dropped significantly. For example, since the year 2008, the number of companies fell from 117 027 to 99 179 companies [2]. These numbers are suggestive of all the difficulties companies went through to keep their business.

Also regarding the number of companies, it's important to differentiate partnerships from individual companies. So, for example, in the year of 2011, 44 820 of the total number of companies were partnerships, and 54 359 were individual companies [2].

In terms of the number of people at work, it has been verified that the tendencies shown before for the number of companies, apply for this indicator too. However, opposite from what was verified for the number of companies, partnerships have a bigger importance, allocating 329 814 people at work against 76 114 from individual companies [2].

Concerning the number of houses for sale, it's significant to highlight that there were two key moments after the 2008 economic crisis. For the first one, between the years of 2008 and 2011, the number of houses for sale went from 473 235 to 506 015 houses for sale [6]. These numbers show that, even with all the difficulties companies had of getting funds, they still managed to continue investing in construction. Nevertheless, in the year 2011 the number of houses for sale fell to 433 411 houses [6], which shows that companies couldn't handle the austerity measures and cut back the investment in the sector.

By analyzing the variation of the volume of business in the Construction sector, it has been confirmed that the same tendencies shown before for the number of companies and the number of people at work, apply for this indicator as well. The impact of the 2008 economic crisis is evident, with the volume of business dropping from 35 987 752 000,00 € in 2008, to 29 290 567 000,00 € in 2011 [2]. It is also important to refer, once again, the role that partnerships have in the sector, for example, in 2011 the volume of business from partnerships was 27.997.515,00 €, against 1.293.052,00 € from individual companies [2].

In terms of the gross value added, this indicator showed an annual growth rate of -15,80% in 2012 [2], which reinforces the negative tendency that this indicator was going through ever since the year 2002. Being the volume of business and the gross value added getting smaller as time goes by, it is safe to conclude that companies are seeing their margins drop, which explains the fact that the number of companies in the sector is decreasing.

### **3.3. Key Vectors of Development**

In a context of economic crisis and small or almost none levels of growth, it's considered to be essential that Construction companies adopt new strategies of business, for example, internationalization. The evolvement of Portuguese companies in foreign markets has been known for a very long time. As a result of this evolvement, and regarding the biggest Construction companies in Portugal, the volume of business from abroad is superior than the volume of business from inside the country, which reveals the importance of internationalization.

Another vector of development is innovation. Even though it is considered to be essential for the Construction sector, innovation has not been making a significant progress during the years [7]. However, it is important that companies start to innovate in order to optimize their construction processes and also to improve the quality of the edification. Regarding innovation companies can use it in terms of production or conception, by introducing new materials and new tools that make life easier and safer for the workers.

Also in the Construction sector, it has been verified that there is a big rivalry between companies. This kind of rivalry is negative because it is only centered in the price, and this makes profit margins drop significantly due to the reduction of revenue. As a result of this, companies have difficulties in surviving and most of them, by not being able to compete with low prices, have no other choice and close doors [8].

Regarding the subject of insolvencies, it is important to refer that this indicator is growing as time goes by. The districts with more insolvencies in Portugal are Lisbon and Porto, according to the year of 2013. Also, 67% of them are classified as microenterprises, which reveals that smaller companies with lower volume of business have more difficulties facing the actual economic conjecture [9].

## 4. Structure-Conduct-Performance Paradigm

The structure-conduct-performance paradigm assumes that market structure determines the conduct of the companies, and that determines their performance. This model is considered fundamental to economic industrial organizations, and has a big focus on their strategic views.

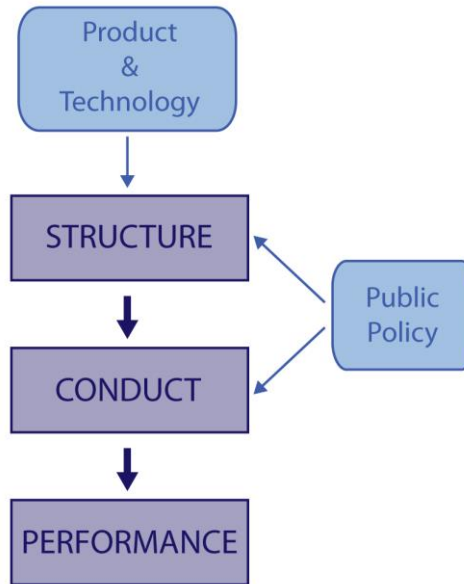


Figure 1 – Structure-Conduct-Performance Paradigm [10].

In order to apply the structure-conduct-performance paradigm to the Portuguese Construction sector, the next table shows the variables that were used and to which vector did they go to.

Table 1 – Variables used to apply the Structure-Conduct-Performance Paradigm.

Structure	Conduct	Performance
<ul style="list-style-type: none"> <li>Portuguese Construction companies ranking;</li> <li>Structure of the sector in terms of segments of economic activity;</li> <li>Structure of the sector in terms of dimension classes;</li> <li>Total investment in the construction sector;</li> </ul>	<ul style="list-style-type: none"> <li>Evolution of the international volume of business;</li> <li>Importance of the international volume of business when compared to the total volume of business;</li> <li>Companies with other business apart from construction.</li> </ul>	<ul style="list-style-type: none"> <li>Volume of business of the top 5 national Construction companies;</li> <li>International volume of business of the top 5 national Construction companies;</li> <li>Variation of the national and international volume of business from</li> </ul>

<ul style="list-style-type: none"> <li>• Volume of new credits to habitation.</li> </ul>		Mota-Engil; <ul style="list-style-type: none"> <li>• Variation of the national and international volume of business from Teixeira Duarte;</li> <li>• Apparent labor productivity per person;</li> <li>• Debt;</li> <li>• Liabilities;</li> <li>• Sales profitability;</li> <li>• Active profitability;</li> <li>• Grossed fixed capital formation.</li> </ul>
--	--	---

#### 4.1. Structure

Regarding market structure, it has been confirmed that the number of companies is falling, and that the biggest construction companies have kept their position at the top throughout the years, whereas the smaller companies have more difficulties due to their fewer resources.

Analyzing the segments of economic activity, it has been verified that the construction of edifications is the most important segment in terms of number of companies, number of people at work and volume of business. Also, bearing in mind dimension segments, it has been verified that microenterprises are the most relevant when considering the number of companies. However, in terms of number of people at work and volume of business, small and medium enterprises are the segment that most contributes to these indicators [11].

Another important fact for the characterization of market structure is related with public investment. Actually, in a context of economic crisis, many have been the austerity measures putted in practice by the Portuguese government, which reduced public investment. For example, public investment has dropped from 2 569 180 000 € in 2008, to 1 379 567 000 € in 2011 [2], which represents a reduction of almost 50%.

Similar to public investment, also the volume of new credits has been drastically dropping. For example, in 2007 the volume of credit was 1 875 million euros, and this number reduced to 153 million euros in 2012 [12]. When we put together the reduction of public investment and private investment, it's possible to conclude that, if these measurements continue, the Construction sector will have more difficulties to recover as time goes by.



## **4.2. Conduct**

In terms of conduct, there was a strong investment in internationalization by construction companies. The volume of international business went from 428 million euros in the year 2000, to 5300 million euros in the year 2013 [13], which shows the significant evolution of this indicator. It is also possible to conclude that, companies with volume of business superior than 400 million euros, have less difficulties to internationalize. Companies with volume of business lower than this value, because of their smaller structures and fewer resources, face more constraints in the internationalization process [14].

Another strategic companies implemented to improve their results was activities diversification. This means that companies not only expect results from the construction itself, but also from other activities related with construction. This type of conduct is related with the change in demand that the construction sector has been suffering during the years. With this strategic companies reduce the risk of construction, however, they become exposed to new threats, depending on the amount of investment needed to access new activities [14].

Regarding business diversification, it has been verified that construction companies prefer diversification through concessions, mostly highways. It has been also verified that, companies that prefer a short term approach, have invested in the materials industry and also real state [14].

## **4.3. Performance**

In relation to performance, this vector is dependent of the conduct that companies adopt due to market structure. So, it is relevant to refer the importance of the volume of international business, which has been growing for the top Portuguese Construction companies. In relation to the national volume of business it has been decreasing.

It is also relevant to refer the importance of the apparent labor productivity per person. This indicator had a significant growth after the economic crisis of 2008, which reveals that workers had to work harder after companies reduced their staff, in order to keep the business going [2].

Also considering performance, it has been shown that company's debt and liabilities are growing as time goes by [2]. In fact, due to all the austerity measures the country faced after the economic crisis, companies felt strong difficulties in keeping their business growing and had to use borrowed capital. Also, adding to this fact, it is important to refer the cutback in sales profitability and productivity [2], which made life even harder for the construction companies.

Another important variable to analyze performance is active profitability. This variable has shown a decreasing tendency between the years of 2010 and 2011 [2], which reveal that all the equipment that companies had was not being to its fullest capacity. Also, grossed fixed capital

formation has been decreasing too [2], which tell us that companies lost most of their actives during the years.

#### **4.4. Considerations**

By applying the structure-conduct-performance paradigm to the Portuguese Construction sector, it was possible to verify that this paradigm can be very helpful to analyze the changes in a determined sector and how those changes occurred. Also, by characterizing structure, conduct and performance, it was possible to conclude that these three vectors influence each other's, which means that the variations in one vector will make the other two vectors change as well.

On the other hand, the application of the structure-conduct-performance paradigm can be challenging, due to the amount of data available, due to the chosen variables and also to which vector do they go to. Another limitation of the paradigm is that it doesn't really tell us the future of the sector, it can only reveal us the past tendencies.

### **5. CONCLUSIONS**

By applying the structure-conduct-performance paradigm to the Construction sector in Portugal, it has been verified that there is a logic that relates structure, conduct and performance.. This logic was evidenced by verifying that these three vectors are dependent and that they influence each other. For example, due to the reduction of public investment shown in performance, it was verified that the number of companies and people at work dropped, as also did the volume of business. These changes in market structure, owing to changes in performance, made companies rethink their philosophy and invest in new strategies, which made conduct change.

As a result of this analysis, it has also been concluded that most companies are getting more debt as time goes by, which means that they are using more remote capital, which makes their liabilities bigger. Adding to these facts the shrinkage of sales profitability, it's obvious that Construction companies have to rethink their business philosophy in order to overcome all the constraints.

It has also been concluded that the crisis that the construction sector has been dealing with, will not be resolved with more construction and more companies. The sector needs to reduce in quantity and grow in terms of quality. This means less companies, but better companies. Companies with better organizational and technological capacity, and also with more qualified professionals. These are the needed companies, and stable companies can afford better salaries and also they can operate inside and outside of the country.

During the years Portugal has shown excess of construction and infrastructures, for example, highways. This excess does not contribute to the improvement of the sector and it's time to make a change, it is time to rethink some of policies that have been made and invest in new

opportunities. So, it is considered fundamental that the sector invests more in rehabilitation, that sometimes is more complex than construction and requires more qualified professionals.

Bearing in mind the panorama in the Construction sector, it has been concluded that companies are investing more in business diversification. With the sector's recession, and if credit and public funds continue to be restricted, a reduction of diversification can happen, however, it may not be sufficient to change the tendency verified in the last few years. Diversification puts companies in a place where they can find new opportunities, so it is vital that they keep investing in this type of conduct in order to succeed in the future.

Also, internationalization must continue to be used as a strategic tool for the future of the companies. Companies have been internationalizing long before the economic crisis in 2008, and when the recession came internationalization was a necessity and a matter of survival for most companies. So, it is considered that this effort that companies made must not go away, and they still need to seek new markets and new opportunities in order to keep the sector healthy and growing for many years.

In terms of future tendencies, and knowing that Portugal doesn't need economic rescue anymore, it is expected that the next years present a modest recovery. Indicators like the level of confidence and employment might also present of positive evolution, in order to respond to the negative tendency verified in the last few years. Bearing in mind that credit interest for small and medium enterprises is dropping, it can be expected a small and controlled investment in the Construction sector.

## 7. REFERENCES

- [1] **Baganha, M. I.; Marques, J. C.; Góis, P. (2000).** *O Sector da Construção Civil e Obras Públicas em Portugal: 1990-2000.*
- [2] **INE (2013).** *Empresas em Portugal 2011.* Instituto Nacional de Estatística, Lisboa.
- [3] **Engenharia Civil (2014).** Obtained on the 28th of December of 2014:  
<http://www.engenhariacivil.com/rankings/ranking-empresas-construtoras>
- [4] **Mota-Engil (2014).** *Relatório e Contas Consolidadas 2013.* Edition 2014.
- [5] **Teixeira Duarte (2014).** *Relatório e Contas 2013.* Edition 2014.
- [6] **Confidencial Imobiliário (2012).** Obtained on the 18th of February of 2014:  
<http://www.conheceracrise.com/indicador/174/oferta-de-casas-para-venda#tab-0-1>
- [7] **Martins, S. (2008).** *Análise do Sector da Construção Civil e Obras Públicas.* Edition 14th of January of 2008.
- [8] **Inofo (2002).** *Construção Civil e Obras Públicas em Portugal.* Instituto para Inovação na Formação, Lisbon.
- [9] **COSEC (2014).** *Estudo Anual COSEC Insolvências 2013.* Edition 11th of February of 2014.
- [10] **Policonomics (2014).** Obtained on the 26th of February of 2014:  
<http://www.policonomics.com/structure-conduct-performance-paradigm/>

- [11] **Banco de Portugal (2014)**. *Análise do Sector da Construção*. Edition January of 2014.
- [12] **Imovirtual (2014)**. Obtained on the 10th of February of 2014:  
[http://www.imovirtual.com/estatisticas/credito\\_habitacao/novos\\_creditos/](http://www.imovirtual.com/estatisticas/credito_habitacao/novos_creditos/)
- [13] **AECOPS (2013)**. *Cadernos da Internacionalização – A Construção Portuguesa nos Mercados Externos*. Edition October of 2013.
- [14] **Deloitte (2010)**. *O Poder da Construção em Portugal – Impactos 2009/2010*. Deloitte e Associação Nacional de Empreiteiros de Obras Públicas, Lisbon.