

CHARACTERISTICS OF THE MAIN INSTITUTIONAL ACTORS IN THE PORTUGUESE CONSTRUCTION INDUSTRY

Jorge Lopes¹

Departamento de Construções Civas e Planeamento, Instituto Politécnico de Bragança, Apartado 134, 5301- 857, Bragança, Portugal

Since the early 1990s, it has been witnessed some positive developments in the operating environment of the construction industry in Portugal. These positive changes have been *inter alia* the diversification of the construction services particularly for the part of the major national construction companies, increasing demand for quality housing, fall in interest rates derived from competition between financial institutions and the country's participation in the Economic and Monetary Union, and development of major infrastructures. However, national construction enterprises face enormous challenges due to increased competition, globalisation of the construction market and the expected reduction in European Union structural funds from 2006. Recent studies (INOFOR, 1999; E & T, 2000; AECOPS, 2000) have emphasised the lack of an adequate policy that promotes the modernisation of the sector despite some encouraging initiatives with respect to the regulatory framework pertaining to the construction industry and economically-related sectors, and measures directed at quality, health and safety, and environmental concerns. These writers and those concerned with the construction industry activity call for an integrated programme of action that enhances the capability of the industry. This paper presents the framework conditions of the Portuguese construction sector. Secondly, it characterises the main actors of the construction industry using a modified version of the industry competition model. It draws on previous works on the subject, using, additionally, the analytical framework of the "construction sector system". Thirdly, it attempts to present a scenario for the construction industry in the near future.

Keywords: competition, construction industry, construction sector system, institutional actors, Portugal.

INTRODUCTION

The Portuguese construction sector is one of most important and largest industries of the nation. In 2000, It contribute 6,6% to total value added and 12.1% to national employment. Add to this the activities of design and consultancy services, property activities, building materials industry, construction machinery, and government construction departments, it is estimated that their share in total output and employment are roughly double of those values. Throughout the last decade, construction and economically- related sectors have experienced an impressive growth, in line with the development of general economy. However, in the last three years there has been a pattern of stagnation, particularly in the new residential housing segment. Although there have been positive changes in the operational environment of the construction market in Portugal, construction practices are still different from

¹ E-mail: lopes@ipb.pt

those in other European Union (EU) countries. Recent studies (INOFOR, 1999; E& T, 2000), have stressed the need for firms in the industry to make changes in their organisational structure and business approach to survive and grow in an increasingly competitive global scenario. These should be accompanied by policy measures that enhance the capability and capacity of the industry.

Since Porter's (1980) initial work, there is a wide body of literature that has shown that the structure of a sector has a vital influence on the way the rules of competition are determined (Carassus, 2000; Lan and Jackson, 1999). According to Porter, in any industry, the nature of competition is embodied in five competitive forces: 1) bargaining power of buyers; 2) threat of new entrants; 3) threat of substitute products or services; 4) bargaining power of suppliers and; 5) rivalry among existing competitors. However, Porter's framework has some shortcomings when applied to the study of the construction industry. The non-market side, particularly government intervention in specific economies, is not covered in Porter's analysis of the five competitive forces (Lan and Jackson, 1999). An approach that has been emerging, and has some similarities with industry analysis looked at the role of chains, clusters or systems, is the "mesoeconomic analysis" of the construction industry or "construction sector system", which takes into account not only construction firms but also the wide range of actors in the development of the built environment. Does this approach also apply to the construction sector in less developed countries such as Portugal? What is the effect of the increasing globalisation of the economy, particularly that of property investment, in the development pattern of the construction industry in less advanced countries?

In the remaining of the paper, the framework conditions of the construction industry in its broadest sense are presented. Next, the characteristics of the main actors of the construction system are presented and analysed. The information used in this section is based on data provided mainly by the Company Surveys from the National Institute of Statistics- INE. Finally, the development pattern of the industry in the near future is presented.

FRAMEWORK CONDITIONS

The construction sector system is implemented within the framework of operational configurations of players participating in the structure production or management, and is subject to a multitude of regulations (Carrassus, 2001). The fact that the affairs of the built environment are under the responsibility of different levels of authority are the main reasons that make some of the regulations specific to the construction sector system. The Portuguese construction sector system is characterised by the important roles played by Central and Local Government, and major construction companies. The principal promoters in the construction market are the central government and local private housing investors, but international investors and financial companies have been increasingly playing an important role, namely in the commercial property market and construction works in the concession regime. Although the enforcement of the rules regarding the construction industry and related sectors pertains to the central and local governments, there has been an increasing concern for the part of industrial and professional associations for the safety, quality and environmental aspects of the built environment. The role of the European Community is also becoming more important lately.

COMPETITION AND PROCUREMENT SYSTEMS

The characteristics of construction influence the competition of the construction market. Construction in Portugal is mainly a local market. Any company that wants to compete outside its own local market are charged with transportation costs for labour, material and equipment. This is the case for small companies, which generally carry out their activity in the house-building segment of the construction market (low - capital intensity and less complexity of works). There are, in general, few barriers to entry, with the exception of some segments of the industry, namely in civil engineering works, office and retail markets, which are the domain of major national companies. The construction enterprises are, according to the Decrees Laws 60/99 and 61/99 (Regime of Entry and Permanence in the Construction Activity), classified as either public work contractors or private work contractors. In both categories, there are further the division in classes: from class 1 to class 10. Thus, a class 1 enterprise can only undertake works up to 125,000 EUR (in 2001) and in a class 10 enterprise there is no limited value for its activity. Besides financial and economic capacity, the enterprises are differentiated by technical capability.

The traditional approach on procurement practices is by far the most commonly used in construction projects, especially in public ones. This may be derived by both cultural reasons and the latent conflicting objectives of different parties in the construction process. Owing to the changing industry structure, new contracting practices such as design-build and build-own-operate-transfer are being adopted. In 1999, the investment through the involvement of private sector accounted for 32% of the country's total investment in the road networks (ANEOP, 2000). Instead of the traditional reliance on tight prescriptive specifications and low-price selection criteria, those practices, allow, according to some advocates, best value for money. Several authors have already referred to the resistance to their use among some clients, many of whom are concerned about the quality of the finished project, inaccuracies in the clients brief, conflict between the brief and the contractors proposal, and the dubious quality of the work done by some firms (De Valence, 2001). As regards Portugal, account in media with reference to the concession of road projects points to the risks associated with this kind of procurement practice, particularly the excessive weight given to the price factor in detriment of safety.

With respect to tender procedures and selection criteria, there are different ways to invite tenders for project contracts: open tendering, invited tendering, and negotiated tendering. The most favoured way in public work contracts is open tendering as stipulated in the Decree Law 59/99. According to EU directives, if the estimates of the value of the works are equal or higher than 5 million EUR, the invitation to tender shall be advertised in the *Official Journal of the European Communities*. The article 105° of the Decree Law 59/99 also stipulates that the works shall be awarded to the most 'economically advantageous' tender, i.e. implying the weighting of different factors, namely the 'price, time, the cost of utilisation, the profitability and the technical value of proposal'. As regards the price factor, it is interesting to note that the Ministerial Order 15/72 (as amended in 1986) from the Ministry of Public Works provides instructions for the establishment of the fee level for project designs in public works (it is debatable whether the ministerial order applies to all public projects or only to those promoted by this ministry). What is unquestionable is that the price factor is one of the criteria for the selection of designers in public work projects (Decree Law 197/99) and the fee level rarely is higher than 5% of the price of the project contracts. The value stipulated in the Ministerial Order varies from 7 to 8%.

The Planning System, Building Regulations and Building Standards

The General Regime of Building and Urban Development enacted in 2001 (as an amendment of the formerly separate General Regime of Building and General Regime of Urban Development, both enacted in 1991) and the General Regulation of Urban Buildings enacted in 1951 (successively amended to take into account technical developments) constitute the core regulations for the Portuguese urban built environment. The former regulation deals with building and urbanisation work permits and covers the administrative procedures for building control and approval. The latter stipulates the mandatory minimum requirements concerning the safety, health and welfare of people in buildings and other urban facilities.

Mandatory detailed requirements are laid down (by means of Decree-Laws) in separate Regulations pertaining to structural safety, traditional materials, fire safety, acoustic and thermal comfort, water supply and wastewater systems, electrical appliances, building installations, toxic and hazardous substances, and facilities for disabled people. Other technical details regarding construction materials and components can be found in the Portuguese Standards and the LNEC (National Laboratory of Civil Engineering) Specifications and Homologation Documents. The Portuguese Institute for Quality and the LNEC are the main official bodies of the Portuguese System for Quality for the accreditation of constructions products and processes, within the framework of the Construction Products Directive of the European Union.

MAIN ACTORS IN THE CONSTRUCTION SECTOR SYSTEM

Although the Government is a major client of the construction industry (it is estimated that public projects represent 35 to 40% of the construction market), the concern here is the role of Government as the main regulator of the industry, which was described in the preceding section. Thus, construction firms, construction design and property professions, and building materials producers and distributors are the main actors covered in this analysis.

Construction Firms

The construction industry in Portugal is very fragmented and dominated by small firms. Table 1 below shows the distribution of firms according to company size in the period 1993- 1998. Although there is a discontinuity in the series in 1995-1996 due to change in statistical procedures and improvement in statistical coverage, it can be observed that small firms (up to 9 employees) represent 93% of total firms in 1996-1998, a pattern similar to those of other countries in the European Union. The number of large and medium-sized firms remained fairly stable in the period 1993-1998. The share of large firms (firms with employment of 100 or more) varied between 0.7 and 0.8% in 1993-1995, and between 0.3 and 0.4% in 1996-1998.

The distribution of employment according to company size in the period 1993-1998 is presented in Table 2. It is shown that there was no significant change in employment and in its distribution across size category in the period 1993-1995. In line with the increase in total employment in the period 1995-1998, the contribution of small firms to total employment increased both absolutely and relatively, and the share of large firms decreased relatively in the same period.

Table 1: Construction Firms by Size of Company (1993-1998)

Size	1993		1994		1995		1996 *		1997		1998	
	N° of firms	%	N° of Firm	%	N° of firms	%	N° of firms	%	N° of firms	%	N° of firms	%
Up to 9 Employee	2378	83.7	2645	84.2	2559	84.2	6397	93.1	5966	92.8	6375	93.1
10 – 19 Employee	2548	9.0	2732	8.7	2665	8.8	2724	4.0	2738	4.3	2831	4.1
20 – 100 Employee	1844	6.5	1971	6.3	1923	6.3	1786	2.6	1683	2.6	1692	2.5
100 + Employee	237	0.8	246	0.8	225	0.7	236	0.3	218	0.3	240	0.4
Total	2840	100	3140	100	3040	100	6871	100	6430	100	6858	100

Source: INE, various years (Company Surveys) *- New series

Table 2: Employment in Construction Firms by Size of Company (1993-1998)

Size	1993		1994		1995		1996 *		1997		1998	
	N° of Emplo yees	%	N° of Emplo yees	%	N° of Emplo yees	%	N° of Emplo yees	%	N° of Emplo yees	%	N° of Emplo yees	%
Up to 9 Employee	69823	30.	75657	30.	74314	32.	14459	47.	15918	49.	18589	52.
10 – 19 Employee	31423	13.	35585	14.	33282	14.	31224	10.	34375	10.	40142	11.
20 – 100 Employee	63964	27.	71313	29.	64242	27.	65198	21.	64763	20.	65269	18.
100 + Employee	67539	29.	62225	25.	60636	26.	65392	21.	65237	20.	62270	17.
Total	23280	10	24478	10	23247	10	30640	10	32356	10	35357	10

Source: INE, various years (Company Surveys) *- New series

Table 3: Turnover in Construction Firms by Size of Company: 1993-1998 (EUR million)

Size	1993		1994		1995		1996 *		1997		1998	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Up to 9 Employee	2477	24.8	2932	27.	2951	25.	7879	42.	1109	46.	1596	53.
10 – 19 Employee	1281	12.8	1239	11.	1553	13.	1703	9.1	2071	8.8	2477	8.4
20 – 100 Employee	2525	25.3	2757	25.	3042	25.	3443	18.	3682	15.	4343	14.
100 + Employee	3729	37.1	3926	36.	4265	36.	5689	30.	6688	29.	6948	23.
Total	9988	100	1085	100	1181	100	1871	100	2353	100	2973	100

Source: INE, various years (Company Surveys) *- New series

Table 3 shows the evolution of turnover by construction firms and its distribution across size category in the period 1993-1998. It is observed that the pattern is similar to that of the employment in the same period. However, the largest firms play an important role, particularly in civil engineering and non-residential building sub-segments, added to the increasing trend in concession regime. According to the Construction Annual Report (AECOPS, 2001), the turnover of the 13 largest construction companies totalled EUR 4.1 billion, about 17% of total turnover of the industry in 1998. The value of construction works abroad from the companies with employment of 20 or more increased from 205 million EUR in 1992 to 435 million EUR in 1998.

The recent development of capital markets influenced the operating environment of major national construction enterprises through merger and acquisitions. Another feature is the increasing market diversification of these companies, namely in the property activities and utilities services. It is also worth noting that according to Decree Law 59/99, the concession consortiums must include at least one construction company. There are today three major holdings with an annual turnover above 500 million EUR each. They are Mota-Engil, Somague-Sacyr and Teixeira Duarte-Soares da Costa.

The main representative organisations of Portuguese contractors are: AECOPS (Association of Building Construction and Public Work Contractors); ANEOP (National Association of Public Work Contractors); AICCOPN (Northern Industrial Association of Building Construction and Public Works); and AICE (Industrial Association of Builders). Their main functions are to represent the interests of their member associations to the Government and other public bodies related to the institutional environment of the construction industry, and provide information and services concerning relevant aspects of the industry to their members.

Design and Consultancy Services and Property Professionals

Table 4 presents the distribution of firms, employment and turnover across size category for property activities in 1998. It is clearly shown the dominance of small firms in the activity. Firms with employment up to 9 accounted for 97.4% of total firms and contributed 81.6% and 87% to employment and turnover respectively. Firms with employment of 20 or more account for just over 8.8% of the total turnover of the industry, which reveals the prevalence of a 'local' market in the Portuguese property sector. The average employment in property activities is 3.1.

The distribution of firms, employment and turnover according to firm size in design and consultancy services shows a pattern similar to that of property activities, although the fragmentation is less pronounced (Table 5). Firms with up to 9 employees accounted for 92.3% of total firms and contributed 65.5.6% and 71.6% to total employment and turnover, respectively. Firms with employment of 20 or more represents 24.9% and 20.4% of, respectively, total employment and total turnover. The average employment in design and consultancy services is 5.7, higher than that of property activities.

In terms of professional practice, the graduate professionals are architects, civil engineers or technical civil engineers. In order to legally practise in the field, the former must be registered with the Order of Architects and the latter two with the Order of Engineers and the Professional Association of Technical Engineers, respectively. The role of these organisations are to ensure and enforce educational and training standards, and set up and control the professional conduct of their respective

members. As far as the qualification of the design professionals, the legal regime is somewhat ambiguous (Lopes and Ribeiro, 2001). According to the Decree Law 73/73, the architects are the sole qualified for undertaking architectural designs in restricted areas and those concerning 'prestigious' buildings. In other kind of architectural designs, these professionals compete either with technical civil engineers or with civil engineers, the first of the latter two being educated with a three- years degree, the second with a five-years degree. In terms of engineering design and direction and management of construction works, technical civil engineers and civil engineers are the ones that are entitled to carry out these activities. However, the Decree Law 73/73 stipulates that in construction projects of great complexity both the design and execution of works 'should' be under the responsibility of a civil engineer, but no definition of 'great complexity' is given. As regards project management and real estate professions there are no educational provisions or any legal regime that regulates the activities of these professionals. It should be noted, however, that some design consultants act also as project managers, particularly those that are members of the Portuguese Association of Designers and Consultants (APPC).

Table 4: Firms, Employment and Turnover in Property Activities: 1998

Size	Firms		Employment		Turnover		Average Employment
	Number	%	Number	%	(EUR million)	%	
Up to 9 Employees	8690	97.4	22625	81.6	5079.3	87.0	2.6
10 – 19 Employees	154	1.7	1854	6.7	247.4	4.2	12.0
20 + Employees	82	0.9	3231	11.6	508.3	8.8	39.4
Total	8926	100.0	27710	100.0	5835.0	100.0	3.1

Source: INE (Company Surveys: 1998)

Note: Includes property developers, house-renting companies, estate agencies, and building administrators. It does not include property development by construction companies.

Table 5: Firms, Employment and Turnover in Consultant and Design Services: 1998

Size	Firms		Employment		Turnover		Average Employment
	Number	%	Number	%	(EUR million)	%	
Up to 9 Employees	3139	92.3	12623	65.5	1205.1	71.6	4.0
10 – 19 Employees	162	4.8	1854	9.6	135.2	8.0	12.9
20 + Employees	93	2.9	4561	24.9	341.7	20.4	49.7
Total	3394	100.0	19280	100.0	1682	100.0	5.7

Source: INE (Company Surveys:1998)

Note: Includes architects, engineers, project managers, technical designers, land surveyors and other technicians. It excludes not registered individual designers and other technicians, and construction and construction-related government departments.

BUILDING MATERIALS PRODUCERS AND DISTRIBUTORS

The indigenous building materials industry impacts heavily on the fate of a country's construction industry, even in a globalised market of construction products and services. As pointed out by Branco and Garcia (2001), innovation in this sector will be a key factor in the competitiveness of the Portuguese construction industry. The building material sector is more concentrated than the construction sector, although the heterogeneity of the former is also evident. One distinct category is the very concentrated, high-technology and capital-intensive activities of cement and lime production, sanitary equipment and special steel products. In the bottom end, the dispersed activities of low technology manufacturing of bricks for walls, cement products and stonework. It is hard to get a real measure of the output of the building materials industry that goes directly to construction industry even with the powerful contribution of the input-output tables, which in the case of Portugal are outdated. Indeed, many segments of the building industry provide products that are not exclusively aimed at the construction sector. Thus, the data provided here concern the activities of non-metallic mineral products, which are, for the most part, directed at construction industry activity.

Table 6: Firms, Employment and Turnover in Non metallic Mineral Manufacturing: 1998

Size	Firms		Employment		Turnover		Average Employment
	Numbe	%	Number	%	(EUR million)	%	
Up to 9 Employees	3383	74.4	14650	20.0	490.7	11.4	4.3
10 – 19 Employees	513	11.3	7032	9.6	292.7	6.7	13.7
20 + Employees	647	14.3	51629	70.4	3523.1	81.9	79.8
Total	4543	100	73311	100	4306.5	100	16.1

Source: INE (Company Surveys:1998)

Table 6 shows the distribution of firms, employment and turnover across size category for the non-metallic mineral sub-sector in 1998. Although the great majority of the firms has less than 10 employees, it is observed that firms with employment of 20 or more play an important role in these activities, contributing 70.4% to employment and 81.9 % to turnover. As can be constructed from Company Surveys: 1998 (INE, various years), the combined value added and employment of this sub-sector of the building materials industry were, respectively, 27.6% and 20.7 % of those of the construction firms in 1998.

TRENDS AND CONCLUSIONS

The paper has presented and commented on the characteristics of the main actors, and the institutional context in the Portuguese construction system. The analytical framework used here that extended the scale of the industry has provided a more representative picture of the Portuguese construction industry. Data presented in the study have shown that the combined share of employment and turnover in property services, design and consultant services, and non-metallic mineral industries are, respectively, 46% and 40 % of those pertaining to the construction industry proper. Add to this the activities of construction equipment manufacturing and distribution, construction and construction-related government departments, and other segments of

the building materials industry, the contribution of the construction system to national output is about 13%, and its share in total national employment is about 20%, doubling the corresponding values of the construction industry (Lopes, 2002).

The construction system in Portugal is very fragmented and dominated by small firms. The share of firms with up to 9 employees is about 95% of total firms. In terms of employment and turnover the patterns are less pronounced, particularly in construction firms and high-capital intensive activities of cement and lime production, and special steel production. The share of large firms (100 + employees) in the construction industry segment was about 30% of total turnover of the industry in the 1990s, which is a reflection of the recent drive of these firms (following the pattern prevailing in advanced industrial countries) to a “construction sector system” approach to the market. These firms need to deal and invest in activities with recurrent profits, such as utilities, concession contracting and property development. (Carassus, 2001). With the changing macroeconomic environment after the boom of the 1990s, added to the expected reduction in EU structural funds from 2006 (the end of the Community Support Programme), the construction industry in Portugal faces new challenges. The operational environment of the industry will undoubtedly experience significant changes in the years to come. The market, and organisational structure and business approach of the enterprises are the main vectors that will shape the development of the construction industry.

The market for the construction companies will still be essentially national, but some major companies (owned by, or associated with, financial institutions and major industrial companies) will continue to be involved in major projects in the Portuguese speaking countries of Africa and Brazil. At the public level, the major market segment will be the civil engineering as the country is developing its infrastructures: road and railway networks, infrastructures for the EURO 2004 and environmental works – POLIS Programme. At the private level, non-residential building will continue its increasing trend, particularly in office and retail market in major metropolitan areas, which are promoted or intermediated by multinational companies. In the residential market, repair and refurbishment works will increase substantially due to recent policy measures and as this market sub-segment represents only 7% of the construction market. The new residential housing segment, which accounted for about 50% of total construction market in the 1990s, will continue its decreasing trend of the last three years.

Many major construction firms will feel the need to take a more proactive business practices and change their organisational structure to face competition from the more powerful international companies, particularly in the works in the concession regime and major developments promoted by international property investors. These will be associated with a policy of mergers and acquisitions and diversification of their products and services, particularly in property activities and utility services. The introduction of new technologies (information technologies) and new management practices (management contracting and outsourcing), added to innovation in products and processes are seen as important factors for the competitiveness of the construction firms at the beginning of the twenty-first Century.

REFERENCES

- AECOPS (various years) *Relatorio AECOPS da Construção*, Lisboa.
- Branco, F. and Garcia, A. (2001), R& D in Construction: The Portuguese Situation, in A Manseau and G. Seaden (Eds), *Innovation in Construction: An International Review of Public Policies*, London, Spon Press
- Carassus, J. (2000), "A Meso-economic Analysis of the Construction Sector Applied to the French construction Industry", *Proceedings of the Joint Meeting of CIB Working Commissions W55 and W65 and Task Groups TG 23, TG 31 and TG 35*, The University of Reading, UK, September 13-15.
- Carassus, J. (2001), *From the Construction Industry to the Construction Sector System*, CIB W55-W65 Comparative Analysis Project Group Report, CSTB, France
- De Valence, G (2001), *Comparison of Traditional and Cluster Models of the Construction Industry Structure*, University of Technology of Sydney
- INE (various years), *Estatística das Empresas*, Instituto Nacional de Estatística, Lisboa.
- E& T 2000 (2000), O Sector de Construção, *Engenharia e Tecnologia- E & T 2000*, Lisboa.
- INOFOR (1999), *Construção Civil e Obras Públicas em Portugal- Coleção Estudos Sectoriais n.º 4*, Instituto para a Inovação na Formação, Lisboa.
- Lan, P and Jackson, J (2000), Currents Characteristics of the Main Stakeholders in the Chinese Construction Industry, *International Journal of construction Market*, Vol.1, Issue 1, <http://www.brookes.ac.uk/other/conmark/IJCM>
- Lopes, J (2002), The Portuguese Construction System: The Adjustment Process to a Changing Market after the Boom Years, *CIB TG31 Meeting, W65 International Symposium*, 9-13 September 2002, Cincinnati, Ohio, US A
- Lopes, J and Ribeiro, F (2001), Working Out a Rational Institutional Framework for the Development of the Construction Industry, *Proceedings of the ARCOM 17TH Annual Conference*, 5-7 September 2001, University of Salford.
- Porter, M (1980), *Competitive Strategy: Techniques for Analysing Industries and Competitors*, New York, The Free Press.