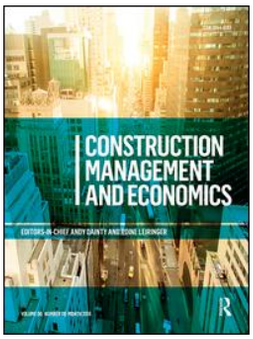

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Sources of competitive advantage of Turkish construction companies in international markets

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Michael Porter's diamond framework, a relatively recent attempt to improve our existing knowledge on the sources of competitive advantage, is applied to the Turkish construction industry. The results of this undertaking challenge a common approach that attributes Turkish contractors' success in international markets to labour cost advantages and geographic and cultural proximity to several promising markets. In the light of the diamond framework, Turkish contractors' advantages are found not to be limited to these 'factor conditions' and 'chance' events. There are other important advantages behind their success, such as the existence of a dynamic home market, favourable entrepreneurial variables, and pressures to upgrade stemming from intense domestic rivalry. The analysis also points to the areas in which they face troubles, including problems induced by the government, financing difficulties and the weak international position of the Turkish design engineering and consultancy services industry.

Keywords: Turkish construction industry, competitive advantage, international competitiveness, diamond framework

Introduction

A thorough understanding of the determinants of international competitive advantage is essential for both scholars and practitioners. The issue, as a result, has attracted the attention of many, and has been the subject of numerous studies. A relatively recent contribution to the area, Professor Michael Porter's (1990) diamond framework, significantly improved our understanding of the role of the national environment in influencing the international competitiveness of an industry.

The present study applies the model offered by Porter (1990) to the Turkish construction industry. The purpose is to contribute towards a better understanding of the sources of competitive advantage of Turkish contractors, whose success in international markets has attracted considerable attention (see *Engineering News Record*'s 'Top 225 International Contractors' ranking for various years). The total value of work undertaken by Turkish contractors abroad has amounted to US$42 billion (TCA, 1999).

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The diamond framework

Porter's (1990) study includes 10 nations, Denmark, Germany, Italy, Japan, Singapore, South Korea, Sweden, Switzerland, the United Kingdom and the United States, and constructs a new analytical framework, the 'diamond', which aims to capture the major determinants of competitive advantage together with their interactions with each other. In the light of information from over one hundred industry case studies from these 10 nations, Porter finds that four attributes of the home country environment shape the context which allows firms to gain and sustain competitive advantage: 'factor conditions', 'demand conditions', 'related and supporting industries', and 'context for firm strategy and rivalry'. Two exogenous factors, government and chance, in Porter's view, influence the functioning of these four major determinants.

For 'factor conditions', Porter (1990) defines two distinctions. In accordance with the first one, they are grouped into two: basic (e.g. natural resources, climate, location, etc.) and advanced (e.g. modern digital data communications infrastructure, highly educated personnel, etc.) factors. The second distinction he defines is built on 'specificity' and includes 'generalized factors'

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in the economy and 'specialized factors', most of which are relevant to a limited range or even to just a single industry. Porter believes that basic and generalized factors are either inherited or easy to create, whereas advanced and specialized factors are more decisive and a sustainable basis for competitive advantage.

Regarding 'demand conditions', Porter (1990) argues that home demand has a considerable influence on competitive advantage, and he presents the composition, the size and pattern of growth, and the internationalization of home demand as three broad attributes of it.

The existence of internationally competitive 'related and supporting industries' in a nation, according to Porter (1990), is an important determinant of the creation and sustainability of competitive advantage. Their similarities may, for instance, foster technological spillovers as well as joint research projects.

Porter (1990) defines the fourth broad determinant as including the strategies and structures of firms as well as the nature of domestic rivalry. He believes that there should be a good fit between an industry's sources of competitive advantage plus its structure, and the strategies, structures and practices favoured by the national environment. The existence of intense domestic rivalry, on the other hand, is of special importance since, for instance, it encourages firms in the industry to break the dependence on basic factor advantages.

Porter (1990) thinks that the roles played by the government and chance in the competitive development of an industry are important but indirect, mainly through influencing the four major determinants of competitive advantage. In his view, in the complete framework (see Figure 1) each determinant is influenced by the others, turning the system into a dynamic one. It is, in fact, this systemic nature that makes it difficult to replicate the exact structure of the industry in another country.

The publication of Porter's original ten-nation study in 1990 has stimulated further applications of the framework. As a result, the framework offered by Porter has been applied to many other countries (e.g. Canada, New Zealand, Norway) and regions (e.g. Massachusetts). Moreover, the framework has been the subject of much criticism and has created a lively debate in the academic literature.

Among the important criticisms[1] we should include those related to the role of national culture (e.g. Van den Bosch and Van Prooijen, 1992). The indirect role Porter attributes to government makes this diamond element one of the most criticized areas of his study (e.g. Stopford and Strange, 1991; Van den Bosch and De Man, 1994). Several scholars (e.g. Rugman and D'Cruz, 1993; Rugman and Verbeke, 1993) share the idea that double and/or multiple-linked diamonds may

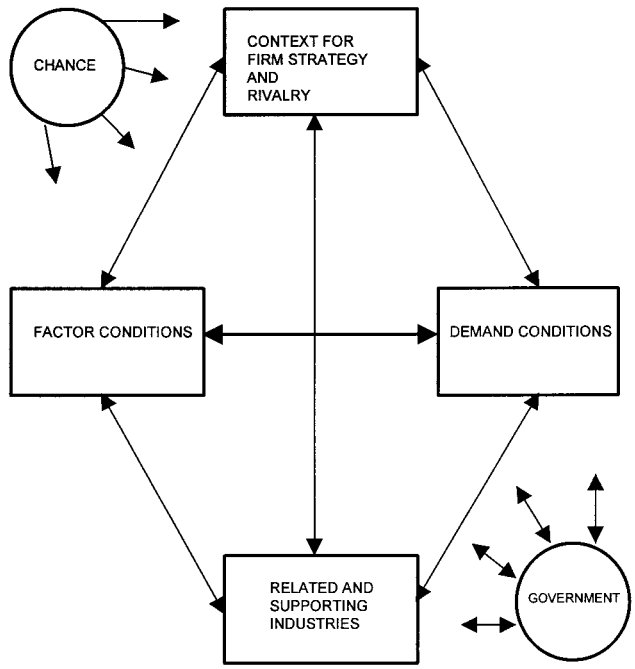

Figure 1 The diamond framework. Source: Porter (1990), p. 127 (revised in Porter (1998))

reflect the sources of competitive advantage better than Porter's single diamond framework. Dunning (1993), on the other hand, argues that Porter underestimates the role of multinational enterprises in the global economy.

The applicability of the framework to all countries and/or industries has also been questioned. To some researchers (Rugman, 1991; Yetton *et al.*, 1992; Bellak and Weiss, 1993; Hodgetts, 1993), Porter's framework cannot be used to model every country since most of the countries studied by Porter (1990) are developed nations. However, a study of Turkey (Öz, 1999) provided results indicating that the framework is applicable to Turkey, which is a middle-income developing country. That study prompted the question as to whether or not some industries, especially those closer to being perfectly competitive as opposed to monopolistic industries, are better explained by the diamond. In the light of these findings, we understand that further applications of the model to other countries, especially to the developing ones, may contribute towards clarifying the aforementioned disputes in the literature.

On the other hand, the merits of Porter's (1990) framework have also been recognized in the academic literature. Maucher (1990, p. 188), for instance, believes that '*The Competitive Advantage of Nations* may become one of those publications that makes history, setting a new framework for an old problem'. Jelinek (1992) thinks that 'this research should have a profound and far-reaching impact on academic course work,

managers' perceptions, and public policy as well'. According to Gray (1991, p. 506), in addition to the valuable and rich material derived from the diamond framework, Porter's contribution is to stress the role of clusters and the dynamic and mutually reinforcing nature of the four determinants he defines. According to Dunning (1992, p. 137), 'Porter's extensive field research has advanced our knowledge of why corporations domiciled in some countries have been successful in penetrating foreign markets in some product areas but not in others, and also why some countries have been able to attract the participation of foreign owned firms in some value added activities but not in others'. According to Grant (1991, p. 548), shortcomings of the study are trivial when compared with its achievements: 'A single analytical framework provides a cogent explanation of competitive advantage within industries which range from chocolate to auctioneering, and among countries as different as Sweden and Singapore'. Finally, he envisages that Porter's study encourages further research, both theoretical and empirical. A byproduct of this study will be to contribute towards that course, apart from enlarging our existing knowledge regarding the sources of international competitive advantage in the Turkish construction industry.

Industry history

The internationalization process of Turkish contractors started during the mid-1970s, a period when Turkey faced serious economic and political difficulties (Tavakoli and Tulumen, 1990). The embargo imposed after the Cyprus crisis in 1974 particularly hurt the economy. The depressed home market coincided with the recession in the world caused by the surge in oil prices. This situation ironically provided an opportunity for the internationalization of Turkish contractors. Oil-rich countries of the Middle East and Africa together with developing countries making use of the relatively cheap funds they obtained from international financial markets to which these petro-dollars flowed contributed to a boom in demand for construction services. In 1975, the Turkish-Libyan Joint Economic Co-operation Protocol facilitated the entry of Turkish contractors to Libya, giving them the valuable experience of working overseas. Their activities were soon spread over the other North African and Middle Eastern markets (Giritli *et al.*, 1990, p. 416). Subsequent rapid economic development in Turkey in the early 1980s started a massive building expansion in the domestic market as well. Although in the second half of the 1980s the Turkish construction industry experienced a contraction, an agreement made between Turkey and the Russian Federation in 1984 marked another turning point for Turkish contractors. The Turkish government decided to import Russian natural gas, but payment was made via a special payment system according to which 70% of the annual payments were cleared through Turkish goods and services. Accordingly, Turkish contractors began to undertake projects in Russia starting from 1987. They made good use of this opportunity and established themselves in this emerging market (Gürer, 1995).

An overall evaluation of the activities of Turkish contractors abroad reveals that in the 1970s their work concentrated in five countries: Libya (71%), Saudi Arabia (17%), Iraq (7%), Kuwait (5%) and Iran (0.01%). The most important activity in the 1970s was housing (37%), followed by seaports (21%), roads, bridges and tunnels (11%) and infrastructure (9%) (TCA and UIC-Turkey, 1998).

Although the share of Libya fell relatively in the 1980s, the majority of Turkish contractors' total work was still in that country (60%). Saudi Arabia and Iraq maintained their previous positions in the 1980s as well, capturing the second and third ranks, respectively, while the USSR entered the list for the first time with a 2% share. Among the activities of Turkish contractors, the share of housing increased further in the 1980s and reached 45%. The share of seaports, on the other hand, fell to 4%, while that of infrastructure increased to 16% (TCA and UIC-Turkey, 1998).

In the 1990s, however, we see that the trends observed during the previous two decades changed considerably. The share of Libya, for instance, fell sharply from 71% in the 1970s to 15% in the 1990s. The Russian Federation, on the other hand, increased its share to 40%; in fact, if we also take the Commonwealth of Independent States (especially Kazakhstan, Turkmenistan, and Azerbaijan) into account, the share of works undertaken in the former USSR rose to above half of all contracts awarded to Turkish contractors in the 1990s. As regards the field of activity, the share of housing in Turkish contractors' total work fell, relatively (27%), in the 1990s, but continued to capture the first rank. Industrial plants, on the other hand, occupied the second rank (15%), followed by trade centres (9%) (TCA and UIC-Turkey, 1998).

The beginning of the 1990s, therefore, was an important turning point for the Turkish construction industry. Starting from the early 1990s, Turkish construction firms were handling contracts in the Russian Federation and the other former republics of the USSR, in addition to the Middle Eastern and North African countries, which were classical markets for Turkish contractors in the pre-1990 era. Moreover, Turkish contractors diversified the countries they worked in by continuously searching for new markets, an attempt which intensified recently following the Russian crisis. A comparison

Table 1 Turkish contracting services abroad[a]

Value of the works undertaken by TCA/UIC-Turkey members	US$36 billion
Value of non-members' works	US$6 billion
Value of the total Turkish contracting services abroad	US$42 billion
Percentage share in the international contracting market	2%
Total amount of foreign exchange transferred to Turkey by means of contracting services abroad	US$15 billion

[a]Source: TCA (1999).

of the distribution of work abroad on the basis of field of activity, on the other hand, shows that Turkish contractors were engaging in a wider range of activities in the 1990s than in the previous period (TCA and UIC-Turkey, 1998). Table 1 summarizes the latest estimations of the Turkish Contractors' Association (TCA) on Turkish contracting services abroad.

A post-disaster boom, following the earthquakes of 1999, is expected in the domestic market, which is likely to benefit the industry hit by recession at home and the financial crisis in Russia. However, it is undeniable that the earthquakes have cast a shadow over the Turkish construction industry, since thousands died as a result of shoddily-built housing (Boulton, 1999). Turkey's major contractors, however, try to distance themselves from those, whom Sever, the head of TCA, calls 'build and sell merchants' (*ENR*, 1999). In fact, there are more than 40 000 contractors in Turkey, but TCA has only 111 members,[2] which engage in bigger projects both at home and abroad. Specifically, these 111 members of TCA undertake about 60% of major domestic projects as well as 90% of overseas projects associated with the Turkish construction industry.

As emphasized before, a thorough understanding of the history of an industry is the first step in Porter's (1990) approach, since it enables us to see the historical environmental context in which firms created and sustained/lost international competitive advantage in the industry. Again following Porter's (1990) methodology, the rest of the analysis in this paper is based on semi-structured interviews with 21 individuals, who are principals of the TCA member companies, government officials, and representatives of industry associations (see Appendix for a list of the interviewees), and an examination of the secondary data available on the Turkish construction industry. The interviewees were first asked to provide a general evaluation of the advantages and disadvantages of Turkish contractors in international markets. This was followed by a series of open-ended questions regarding the sources of international competitive advantage in the Turkish construction industry within the context of the diamond framework. Each interview lasted for 1–1.5 hours on average. Interview data were transcribed and then used as a basis for analysis, combined with secondary data (comparative statistics on labour cost, market share statistics, statistics on awarded contracts, international trade data on the related and supporting industries, etc.) which were compiled from the Turkish Contractors Association, Union of International Contractors-Turkey, State Planning Organization, and ENR. Although the focus is on the international competitiveness of Turkish contractors, this study points to the areas in which the industry faces troubles not only in international markets but at home as well, and this is of special relevance in the post-earthquake era. It is a direct result of Porter's (1990) approach, which sees international competitive advantage as being largely determined by local conditions.

The determinants of international competitive advantage

Favourable factor conditions

Turkish construction firms prefer to employ Turkish workers. Among the reasons, the interviewees emphasize the advantage stemming from the relatively lower wages Turkish workers demand plus the fact that they are willing to work in harsh conditions, to which they can adapt easily. Moreover, by employing Turkish workers, Turkish contractors think they avoid possible communication (language as well as cultural incompatibility) problems. These interviewees agree that the ease of communication and ability to anticipate the likely performance of workers actually are more important than the other reasons, since otherwise it would be perfectly possible to employ local workers or workers from many other developing nations who in fact demand even less. As a result, considering the combined effect of these factors, the Turkish labour force becomes a major asset for Turkish contractors operating abroad. Similarly, regarding the Turkish engineers, the interviewees agree on the quality of educational standards achieved by several universities in Turkey, especially in the Middle East Technical University and Istanbul Technical University. A lack of systematic training (both standard education and on-the-job training) for mid-level positions, however, causes problems for Turkish contractors. INISEV, which aims at training construction workers on specific work-related issues, has been established recently to overcome this problem.

The fact that the wages of Turkish workers are tending to increase, coupled with bureaucratic problems regarding the transfer of workers abroad, are

causing Turkish contractors to consider employing foreign workers in their overseas activities, especially for more routine administrative tasks.

Turkish contractors benefit from the existence of an internationally competitive construction materials cluster in Turkey (see Öz (1999) for the clusters of competitive industries of the Turkish economy), which will be discussed further when analysing the 'related and supporting industries' determinant.

To be able to compete successfully in international markets, it is becoming increasingly unavoidable for construction firms to provide a financing package for the client. My interviewees believe that this is a major drawback for Turkish contractors, restricting them to the contracts with no financing requirements, for which competition is really intense. Financial problems are caused mainly by the macro-economic conditions prevailing in Turkey, which discourage Turkish banks from offering credits with favourable rates to the business community. Turkish banks are also slow to spread their activities over the new markets that Turkish contractors enter. The extent of Turkish contractors' concern about this is such that they are considering establishing their own sectoral bank.

To conclude, an overall evaluation of the factor conditions reveals a relatively favourable position for the industry, since the only source of trouble as far as this determinant is concerned is the financing difficulties Turkish contractors face.

A dynamic home market

Turkish exports of construction services reflect the pattern of demand in Turkey's domestic market, which is dominated by housing and infrastructure projects. Hotel construction emerges as another area in which success at home parallels that abroad. Given this picture for the domestic market, it is no surprise that the countries where Turkish contractors are active resemble Turkey as a developing country. The Russian Federation, for instance, the most important client for the Turkish contractors in recent years, is badly in need of infrastructure, housing stock, public buildings and hotels, a similar demand pattern to that of Turkey (Öz, 1999).

Especially following the recent earthquakes, we observe pressure for higher standards and quality in the domestic market. This, however, does not change the fact that it is the developed countries that lead the industry in terms of quality and technological developments as is evident from the continual references to Europe by the interviewees when asked about quality. The recent revival in hopes for EU membership will probably have a positive impact in this respect, since it necessitates adapting the current regulations to the EU norms. Large Turkish contracting firms, in fact, proved their ability to conduct high quality work both at home and abroad. Whether or not this potential is actualized is related mainly to the relevant regulations and their proper enforcement, which will be discussed while analysing the role of government in the following pages.

Although it has been stagnant in recent years, the domestic market is still important for Turkish contractors. Turkey is a developing country with a rapidly increasing population, which makes it hard to postpone investments, especially in infrastructure and housing. This nature of the domestic market, therefore, provides Turkish contractors with an advantage while working in other developing countries, where they can make use of the experience they accumulated over the years in Turkey.

Related and supporting industries: the cluster

The Turkish construction industry is linked to a large number of supplementary industries such as glass, steel, wood, cement, bricks, ceramics, sand and clay, which are competitive Turkish industries (Öz, 1999).

There are two exceptions to note regarding the related and supporting industries to the Turkish construction industry. The first one is the construction equipment industry, which is dominated by a few firms. In fact, Caterpillar and Komatsu are the most important players in the industry all over the world. When we examine the situation in Turkey, we see that the industry includes mainly Turkish companies that are dealers for these giants: Borusan Makina is the dealer for Caterpillar and Sabanci is the dealer for Komatsu (*Construction Europe*, 1995).

The weak competitive position of Turkish design engineering and consultancy services, which is in sharp contrast to the satisfactory performance of the Turkish construction industry, constitutes the second exception. The most important reason for the lagging position of Turkish design and construction engineering services is the fact that the related Turkish government agencies assumed that role themselves for a long period of time. The poor performance of the industry is also often attributed to the fact that Turkish construction firms first started to internationalize as subcontractors to foreign firms during the 1970s, which delayed the development of design engineering and consultancy firms. The relatively lagging competitive position of Turkish design engineering and consultancy firms signals problems for the long run, since weaknesses in these services could result in uncompetitive bids in design and bid contracts. Moreover, during the design phase, firms have the opportunity to promote the use of materials and/or contractors from their own country, like the European and American design engineering

and consultancy firms, which dominate the industry, often do.

To conclude, Turkish firms enjoy the benefits of a cluster of competitive industries such as construction materials, glass, ceramics, and iron and steel. However, they suffer from the poor international performance of the engineering design and consultancy services.

Pressures to upgrade: context for firm strategy and rivalry

The competition among Turkish contractors is very intense, both in the domestic and international markets. In fact, when asked about their key rivals abroad, the interviewees often named other Turkish companies. Beside them, organizations from South Korea, China, India, Jordan, Iran and Iraq as well as American, Japanese and European (especially the Finnish, Italian, German, and French) firms that employ local and/or cheap labour from developing countries constitute the main rivals of Turkish firms.

In the Turkish construction industry, family firms dominate. Owner managers are usually professionals themselves, and it is not uncommon for them to be involved in practical work, supervising the details personally. Therefore, usually the internal organization of Turkish construction firms is not that formal. The fact that the widespread use of subcontracting in the construction industry gives an organization a capacity to undertake work beyond its scope in terms of size and specialization also contributes to a lack of attention to formalization (Giritli *et al.*, 1990). Recent research on the Turkish construction industry provides evidence for further subletting of work to secondary or even to tertiary subcontractors (Sözen and Küçük, 1999).

Typically, Turkey's main construction companies are diversified entities. Among the other industries they operate in, we see banking, tourism, marketing, construction materials and cement production, which are often chosen opportunistically. Although it is difficult to observe a pattern in their diversification, construction related industries and tourism frequently appear as the most popular areas. Construction, however, seems to remain as their major area of activity. The overwhelming extent of diversification in the industry is not a surprise, given the unsteady nature of demand in the construction industry in general and the volatile economic and political environment of Turkey in particular.

Gürer, the Secretary General of the TCA, argues that the success of Turkish construction firms in international markets depends largely on their entrepreneurial skills, in particular their courage in taking risks. The interviewees argue that they cannot see any other advantage so peculiar to Turkish contractors. Their communication skills are also considered to be a major asset. They know how to deal with bureaucracy. They can establish good ties with foreign governments and customers. In fact, the managers interviewed argue that contacts play a key role for them in winning contracts abroad. The previous satisfactory performance they achieved and good relationships they established, in other words, seem to be fundamental to their success abroad (Öz, 1999).

In summary, managerial capabilities of Turkish contractors can be considered among the most important assets of the Turkish construction industry, providing them with a competitive edge. Moreover, rivalry amongst Turkish contractors, which sharpens competitive advantage according to Porter (1990), is very intense indeed, even in foreign markets.

Chance events

Undoubtedly, the most important 'chance' event for the Turkish construction industry has been the construction boom in the Middle East and North Africa in the 1970s. In addition to geographic proximity, there are undeniable cultural and religious ties that facilitated Turkish contractors' entry into these promising markets.

The Iran–Iraq War and Iraq's invasion of Kuwait, on the other hand, created difficulties for Turkish contractors. Payment problems with Libya, which emerged after the US embargo, constituted yet another unlucky event that caused problems for the Turkish firms operating in that country.

Starting from the early 1990s, Turkish contractors were again lucky to enjoy the advantages stemming from geographical and cultural proximity in the CIS (Commonwealth of Independent States) following the disintegration of the USSR. However, the recent crisis in the Russian Federation, currently the most important market for Turkish contractors has created problems. Despite the stagnation in the Russian market, the preference of the Turkish firms is not to withdraw from Russia, but instead follow a 'wait and see strategy', and they are hopeful that there will be a revival in this market in the near future.

Finally, the earthquakes of 1999 put the industry into the centre of public attention and badly harmed its image. Although it is possible to consider the expected post-earthquake reconstruction boom as a favourable outcome for the industry, this situation will turn into a positive chance event only if concrete actions to improve the current structure and functioning of the industry are put into practice.

The role of government

Government-induced problems such as bureaucratic obstacles that delay the assignment of personnel overseas and the return of idle machinery to Turkey create troubles for Turkish contractors. Similarly, the regulations concerning the failure or delay of payment do not work properly.

The major factor disadvantage for Turkish contractors, financing, relates to the role government plays for two reasons. First, high interest rates make it very hard to obtain the necessary funds through capital markets. Second, a major source of financing for the rest of the world, government funds, in the form of export credit for instance, are not a serious alternative for Turkish contractors because they are very limited. Since government support is inadequate, contractors usually form joint ventures with foreign companies to overcome financing problems. Build-operate-transfer (BOT) systems also emerged as a way to overcome such financing difficulties.

The Turkish government fails to assume an active role in supporting Turkish contractors' efforts to enter into new markets. The slow handling of the problems that might emerge when entering into a new country, such as differences in foreign trade and customs regulations between the client country and Turkey, and incompatibilities in the social security regulations, are of special concern in this respect.

The Turkish government has provided support for the contractors from time to time. Tax incentives and tax rebates offered by the Turkish government during the early 1980s, for instance, certainly encouraged the construction companies to go abroad (Kaynak and Dalgiç, 1992, p. 70). Similarly, the previously mentioned natural gas barter agreement with the Russian Federation facilitated Turkish contractors' entry into this emerging market. Nevertheless, the Turkish government has failed to form a coherent and systematic policy towards the industry, and Turkish contractors have had to be content with the occasional support and incentives provided.

There are serious problems regarding building regulations as well as their enforcement, which have been painfully noted following the earthquakes of 1999. In the public mind, all contractors are accused of violating regulations in collusion with corrupt officials (Boulton, 1999). As has been mentioned, the situation harmed the image of Turkish contractors abroad and caused officials from several countries including the Russian Federation and Turkmenistan to declare that they would closely examine work undertaken by Turkish contractors in their countries (*ENR*, 1999).

Turkey has learnt from the earthquakes that there is a pressing need to improve regulations and develop mechanisms to ensure their implementation. There is pressure from abroad as well. For instance, The World Bank is demanding better enforcement of building regulations before it disburses a US$750 million reconstruction loan (Boulton, 1999).

Another important point regarding building regulations is related to the contract awarding mechanism in Turkey. In the current system, all contractors are eligible to bid for a project, and the project is awarded to the lowest bidder. This predictably results in over-lasting projects. Contractors are demanding a pre-qualification system, which will take such factors as experience in the field and capability (in terms of financial resources, human resources and construction machinery) into consideration. In fact, complaints about the contract awarding system are not new. The relevant parties have been trying to convince the government to change the system for more than a decade. The interesting question then is why there is such a strong resistance to changing the current system. Key explanations are twofold: political reasons and the limited financial resources of the government.

To conclude, it is hardly true to say that the role government plays provides an advantage for Turkish contractors in international markets. Ironically, the only advantage we can think of regarding the role of government relates to the troubles it creates for the industry. As one manager interviewed stated: 'We are used to work in a very competitive market with a very difficult bureaucracy, which actually becomes an advantage when we encounter a similar environment abroad'.

The Turkish construction industry in perspective

If we analyse the latest developments in the world market, we see that an ability to provide the necessary technology and financing in a single service package is becoming increasingly important. Together with this, there is a crucial role attributed to the design engineering and management services. The link between international relations and economic interests, which makes the government a key actor, is also of special interest. Keeping this picture in mind, it may be tempting to conclude that prospects for Turkish contractors are not that favourable in the long run if we follow the classical view, which attributes much of their success to cheap labour employed in the geographically and culturally proximate markets. In the light of our analysis, conducted with the help of the 'diamond' framework, however, we know that these are not the only advantages Turkish contractors rely upon. Apart from these 'factor conditions' and 'chance' advantages, there are

advantages in 'demand conditions' and 'context for firm strategy and rivalry', as discussed in detail above. Furthermore, Turkish contractors achieved their success despite economic and political instability and without notable government support. This has become possible, thanks to the self-reinforcing systemic advantage Turkish contractors created and sustained over the years. In fact, it is this systemic nature of the 'diamond' for the Turkish construction industry that makes it very difficult to replicate the exact structure of the industry in another country (Öz, 1999). This rationale also helps us understand why it is Turkish contractors that have succeeded in international markets, rather than contractors from many other developing countries, which also can make use of the cheap labour and geographic and cultural proximity to some promising markets.

The positive conclusions reached above regarding the Turkish construction industry of course do not mean that Turkish contractors do not suffer from some disadvantages. Indeed, our analysis conducted in the light of the 'diamond framework' reveals that there is an urgent need to improve the following areas.

(1) Problems related to financing should be eased, especially with the help of Eximbank credits. It is agreed that financing difficulties stem mainly from Turkey's macro-economic conditions. In particular, high government borrowing requirements distort the structure of the banking sector, discouraging banks from offering commercial credits to the private sector with favourable terms.
(2) Practical education should be improved. Previously mentioned attempts such as INISEV should be supported in this respect. Following Porter's (1990) approach, more specialization should be encouraged for civil engineers; universities should offer programmes in road engineering, tunnel engineering, and construction management, not just at the graduate level but at the undergraduate level as well.
(3) The position of the design engineering and consultancy services should be improved to achieve a well functioning 'diamond' and 'cluster' as defined by Porter (1990). Recent changes in regulations requiring independent auditors and controller engineers for all construction activities constitute a positive step in that direction.
(4) European firms can be good joint venture partners for Turkish contractors, a process that is expected to accelerate following the declaration of Turkey's EU candidacy. The fact that European firms have advantages especially in terms of design engineering and finance compensates for the weak points of Turkish contractors. Turkish contractors believe such joint ventures may provide fruitful results, especially in the CIS, and Eastern and Central Europe.
(5) It can be argued that the typical structure of Turkish construction firms as a family enterprise poses a challenge for Turkish contractors in terms of the sustainability of their competitiveness in the long run. In this respect, the transferability of Turkish contractors' entrepreneurial abilities in particular is a vital issue. The prospects for Turkish contractors will, in other words, depend partly on the degree to which first-generation managers can transfer their experience over the years in the domestic market and abroad to the second-generation members of the family as well as to the professional managers.
(6) The contract awarding system should be changed, and a pre-qualification system should be introduced to take experience and capability into account, instead of solely relying on price. Such a system would also encourage specialization and improve quality in the industry.
(7) The Turkish government should be more active in informing, guiding and supporting Turkish contractors abroad, especially during their first entry into a new market.
(8) A government body, preferably an under-secretariat to the prime ministry, should be formed to address and solve specific problems of the industry.[3]

The application of the 'diamond' framework to the Turkish construction industry has provided three distinct results. First, the analysis presented in this paper has contributed to the debates in the relevant academic literature, especially regarding the application of the framework to industries in developing countries, and is a clear sign in favour of the 'diamond'. Second, in the light of the 'diamond' framework, we have understood the true sources of Turkish contractors' advantages which, in contrast to frequent assertions, are not simply low cost advantages ('factor conditions'), and geographic and cultural proximity to several promising markets ('chance events'). We have identified other key advantages behind their success: accumulated experience at home ('demand conditions'), favourable entrepreneurial variables and pressures to upgrade stemming from intense domestic rivalry ('context for firm strategy and rivalry'), and several competitive related industries ('related and supporting industries'). Finally, the framework has also helped us to detect the areas of trouble for the industry and has provided valuable insights regarding possible remedies.

Notes

1 Porter's (1990) study has attracted so much attention in the academic literature that it is impossible to include a full coverage of this literature here. I have therefore mentioned the most important criticisms, and concentrated on the criticisms that are most relevant to the central issues of this paper. (A detailed review of this literature can be found in Öz (1999).)

2 Two out of 111 TCA member firms are associated with shoddily-built housing in the earthquake region.

3 The Consultancy to the Prime Ministry for International Contracting Services, which was established in 1992 to solve Turkish contractors' problems systematically, is a good example to cite in this respect regarding how useful such an entity could be. Unfortunately, it could not be institutionalized, and later was abolished, together with changes in the political environment.

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Appendix: List of Interviewees

Mr. Selçuk Alten (General Manager) Tepe Construction Co. Inc.

Mr. Savas Bayazit (Expert) State Planning Organisation

Mr. Eren Güney (Manager) Kiska Construction Co. Inc.

Mr. K. Yilmaz Gürer (Secretary General) TCA & UIC-Turkey

Mr. M. Kaan Dogan (Business Devevopment Manager and MOB) Atilla Dogan Construction Co. Inc.

Mr. Bülent Erdogan (General Manager) Nurol Construction Co. Inc.

Mr. Yüksel Erimtan (Chairman of the Board and CEO) EMT Contracting Co. Inc.

Mr. Ergil Ersü (Executive Member of the Board and General Manager) Gama Group of Companies
Mr. Turan Esen (General Coordinator) Nurol Construction Co. Inc.
Mr. Oguz Gürsel (President) Kiska Construction Corporation
Mr. Mehmet Karabag (Expert) Consultancy to the Prime Ministry for International Contracting Services
Mr. Önder Karaduman (Head of the Construction Division) Bayindir Holding
Mr. R. Cihat Kiliç (General Manager) Yenigün Construction Co. Inc.
Mr. Atilla Önen (President) Age Construction & Trading Co. Ltd.
Mr. Mustafa Özkan (Manager) Idil Construction Trade Co. Inc.
Mr. Yasar Özkan (President) Yasar Özkan Contracting Co. Inc.
Mr. Kadir Sever (Chairman of the Board, Metis, and TCA/UIC-Turkey Chairman) Metis Group of Companies, TCA & UIC-Turkey
Mr. Ibrahim Seyfettinoglu (Assistant General Manager) Zafer Construction Co. Inc.
Mr. Atila Senol (Chairman of the Board, General Manager)Mesa Group of Companies
Mr. T. Mete Teoman (Deputy Chairman of the Board) Güris Holding Co. Inc.
Mr. Bülent Varlik (Head of The Research Department) Turk Eximbank