**THE CONSTRUCTION AND RELATED ENGINEERING
SERVICES IN EGYPT: CHALLENGES AND POLICIES**

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Abstract

In developing countries, the construction industry plays a vital role in terms of its contribution to GDP, investment, employment and exports, and because of its strong linkages with other sectors in the economy. In Egypt, this industry has significant potential due to a combination of factors, namely, the accumulated expertise in this industry—being one of the oldest in the country, the availability of basic human and physical resources, as well as the high level of demand. However, evidence suggests that the role of the construction industry as an agent for promoting economic growth is rather modest, and that it produces limited developmental benefits. This study aims to test the above hypothesis and to explore the challenges that affect the development and competitiveness of the construction sector. It also assesses the impact of privatizing ten construction companies on their financial performance and discusses the benefits and costs of liberalizing the construction and related engineering services under GATS. To conclude, the study emphasizes the importance of addressing domestic challenges and reforming domestic regulations as crucial requirements for enhancing efficiency in the construction sector.

ملخص

تلعب صناعة التشييد والبناء دورا هاما في الدول النامية لما لها من مساهمة ملموسة في الناتج المحلي الإجمالي، والاستثمار، والتشغيل، والصادرات، فضلا عن الروابط القوية التي تتمتع بها مع القطاعات الاقتصادية الأخرى. وفي مصر، تتميز هذه الصناعة بإمكانات كبيرة ترجع إلى مجموعة من العوامل منها تراكم الخبرات——حيث إنها واحدة من أقدم الصناعات في الدولة، ووفرة الموارد البشرية والمادية الأساسية، بالإضافة إلى ارتفاع الطلب. وبالرغم من ذلك، تشير النتائج إلى تواضع مساهمة قطاع التشييد والبناء في النمو الاقتصادي ودفع عجلة التنمية. وفي هذا الإطار، تهدف الدراسة إلى اختبار هذه الفرضية والبحث في التحديات التي تحول دون تطوير وتنافسية هذا القطاع. كما تتناول بالتقييم تأثير خصخصة عشر شركات مقاولات على الأداء المالي لهذه الشركات، بالإضافة إلى مناقشة فوائد وتكلفة تحرير قطاع التشييد والبناء والخدمات الهندسية المرتبطة به في ظل اتفاقية الجاتس (GATS). وأخيرا، تؤكد الدراسة على أهمية مواجهة التحديات المحلية وإصلاح اللوائح الداخلية لكونهما من المتطلبات الهامة لتعزيز كفاءة قطاع التشييد والبناء.

1. INTRODUCTION

In developing countries, the construction industry plays a vital role in terms of its contribution to GDP, investment, employment and exports, and because of its strong linkages with other sectors in the economy. In Egypt, this industry has significant potential due to a combination of factors, namely, the accumulated expertise in this industry being one of the oldest in the country, the availability of basic human and physical resources, as well as the high level of demand. However, evidence suggests that the role of the construction industry as an agent for promoting economic growth is rather modest, and that it produces limited developmental benefits. This paper aims to test the above hypothesis and to explore the challenges that affect the development and competitiveness of the construction sector.

To enhance the developmental role of the construction industry, attempts for reform were made through liberalization under GATS and privatization. These attempts have given rise to a debate regarding their effectiveness and the extent to which their benefits would outweigh their costs. To this end, the paper will discuss whether liberalization of the construction industry is crucial to its ultimate reform and effectiveness.

The paper consists of five sections. After this introduction, Section 2 defines the sector according to both international and national standards, and sheds light on the new approach toward evaluating the contribution of the sector to the economy. It also highlights its importance to the Egyptian economy using different indicators and testing the causal relationship between value added in construction and GDP. Section 3 addresses the different factors affecting the development and competitiveness of the sector, as reported in various studies and reports, and based on personal interviews with various stakeholders in the industry. Section 4 assesses the impact of privatizing ten construction companies on their financial performance. It also discusses the benefits and costs of liberalizing the construction and related engineering services under GATS. Section 5 concludes and offers some insights into elements and sequence of successful reforms.

It is important to note that the scope of the study covers both construction activities as well as related engineering services due to the importance of the latter to the sector and to the whole economy, and also because they are included in Egypt's construction related commitments under GATS. However, due to data limitations regarding engineering services,

the contribution of the construction industry to macroeconomic variables will be limited to the construction activities only.

2. ROLE AND IMPORTANCE OF THE CONSTRUCTION INDUSTRY

The role of the construction and related engineering services sector in the Egyptian economy can be assessed in light of its contribution to the main macroeconomic indicators. In what follows, the study will first define the sector and then shed some light on the new approach to evaluating the contribution of the construction industry to the national economy. It will also review historical developments and the importance of construction in Egypt.

2.1. Definition

The definition of the construction sector raises questions as to the activities it comprises at the national level compared with the international standard, and whether this sector is a commodity sector or a service sector.

According to the United Nations International Standard Industrial Classification (ISIC) Rev. 4,[1] the construction sector is referred to as section (F) including three broad activities:

41- Construction of buildings (complete residential or non-residential buildings).

42- Civil engineering (roads and railways, utility projects and others).

43- Specialized construction activities (such as site preparation, installation activities, building and finishing).

Related engineering services fall under a separate section (M): Professional, scientific and technical activities, and specifically in sub-division 711: Architectural and engineering activities and related technical consultancy.

It is worth noting that the transactions of selling, buying, renting and operating real estate, all fall under another section (L): Real estate activities. The separation in treatment between the three categories of activities (construction, engineering services and real estate) in the ISIC is important when comparing the classification of the Egyptian national data with the international one.

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[1] ISIC Rev.4 has been officially released on 11August 2008. See: www.unstats.un.org/unsd/cr/registry.

Until 2000/01, the Ministry of State for Economic Development (MOED)—previously the Ministry of Planning—classified the different sectors of the economy into three separate categories, namely, the commodity sectors, the productive services sectors, and the social services sectors. According to this classification, the construction sector was one of the commodity sectors, while housing and real estate property were included in the social services sectors. Starting 2001/02, the sectoral classification of GDP into three categories was discontinued; the construction sector has been renamed to 'construction and building' and continued to be treated as separate from the real estate sector. The latter has been renamed to 'real estate activities' and includes real estate property and business services, which mostly encompass architectural, engineering and other technical activities.[2]

Thus, it is clear that the definition of the activities included in the construction sector is largely in line with the International Standard Industrial Classification (ISIC-Revision 4). However, the treatment of the related engineering services in the national classification is slightly different.

Notwithstanding the fact that the classification of GDP sectors into three broad categories has not been in use since 2001/02, the debate on whether construction is a commodity or a service is still ongoing. While national data treats it as a commodity, the WTO definition indicates that construction and related engineering services are service activities covered in GATS. More specifically, the GATS schedules largely follow a classification based on the United Nations Central Product Classification (CPC) system, which identifies 12 basic service sectors, including construction and related engineering services (WTO 1999).

Since construction activities extend to all sectors of the economy, one may wonder how both investments and value added of the different construction activities are treated. According to the accounting rules applied by MOED,[3] investments in construction activities implemented in each sector (such as education and health) are considered investment expenditures in that specific sector. Accordingly, investments of the construction sector itself, such as purchasing tractors or building equipment, are considered construction sector investments. Value added that results from all construction activities in all sectors of the

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[2] These activities are mostly included in business services in line with the previous ISIC Revision 3.1, and their data cannot be sorted out separately.

[3] Interview with Mahmoud Arafa, Head of the Central Department of National Accounts (MOED).

economy is considered value added of the construction sector. For example, expenditure on building a hospital will be added to the health sector investments, while the value added of this activity will be included in the construction sector output (value added).

2.2. The Economic Value of Construction

In 2003, an important report known as the Pearce Report (Ruddock 2007) drew a picture of the construction industry in the UK and its role in the national economy. The report asserted that fully appreciating the economic value of the construction sector requires making a distinction between the value of the sector *in* the economy and its value *to* the economy. While the value in the economy can be assessed easily and is measured as the contribution of the sector to GDP—considering construction activity to be merely the act of building—the value to the economy is a different issue and is difficult to assess. It considers construction in a broader context that includes quarrying of construction raw materials, manufacturing of building materials, sale of construction products and various related professional services. In other words, the entire built environment falls into the scope of construction.

In 2004, Carassus (2004) proposed a framework system approach for understanding the role of the construction sector. The rationale of this approach draws on the belief that this role should be viewed in a wider context than that of the narrow ISIC definition. The framework reflects the notable changes that have occurred since the 1990s in terms of the demands placed upon the construction sector. These changes include the supply chain for construction related products and reflect that the industry has become much more involved in dealing with whole life-cycle issues (Ruddock 2007). In short, comprehending the full value of the construction industry requires a more detailed look at the economic relationships between this industry and the rest of the economy.

The various empirical studies that assessed the contribution of the construction industry and its linkages with other sectors of the economy have used two analytical tools: Leontief's input-output (I/O) analysis, and the Granger causality test.

The I/O technique. This technique has been used widely to analyze the direct and indirect resource utilization in the construction sector; industrial interdependence; and the pull and push effects of the industry to the national economy in both developed and developing countries. Yet, current data limitations prevent a true assessment of the value of construction activity. One of the linkage measures of the construction sector that uses the I/O tables is the

hypothetical extraction method (HEM). This method hypothetically extracts a sector from an economic system and examines the influence of this extraction on the other sectors. The output differences between before and after the hypothetical extraction reflect the linkages of the construction sector (Song, Liu, and Langston 2006).

Empirical results using this technique confirm the observation reached in the studies concerned with the dynamics of the construction activity as an agent for promoting economic growth in economies at different stages of development. One such result was illustrated in the "Bon curve" and was attributed to Ranko Bon[4] who put forward in 1992 the idea of an inverted U-shaped relationship between construction activity and the level of per capita income. Bon indicated that in the early stages of development the share of construction increases but ultimately declines, in relative terms, in industrially advanced countries. His idea was empirically tested, and studies pointed to a general declining trend, in relative terms, in construction activity in developed countries (Ruddock 2007). Also of importance is the varying role of the different components of the construction activity in developing and developed countries. While the extraction of raw materials and on-site construction activity is most important in the former, the onus of professional services, the sale of end products as well as the large repair and maintenance activities fall on the latter.

The Granger causality test. The econometric methodology developed by Engel and Granger is becoming a popular tool for measuring the strength of linkages of a specific sector and its production interdependence. Green (1997) applied the Granger causality test to determine the lead/lag relationships between GDP and residential and non-residential investment. He concluded that housing leads, while other types of investment lag in the business cycle. The same econometric technique was used to determine the causal relationship between construction flows and GDP in Hong Kong and the results showed that GDP leads the construction flow and not vice versa (Khan 2008). As for the Pakistani economy during the period 1950-2005, the results of carrying out empirical tests using the Granger causality showed that there is a unidirectional causal relationship between the real growth rate of GDP and construction flows. It also showed that the latter precedes GDP and that the aggregate economy of Pakistan is greatly influenced by construction (Khan 2008). In the following

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[4] Ranko Bon (Professor of Construction Management, University of Reading, UK) is best known for his studies of building economics and for his contribution to the debate on sustainable construction.

section, the Granger causality test will be applied to identify the relationship between construction and economic growth in Egypt.

2.3. Development and Importance of the Sector in Egypt

2.3.1. Development trends

The construction industry is one of the oldest industries in the country dating back to the era of building pyramids and Pharaonic temples. After a long period of sustained growth from the beginning until the end of the 1950s when foreign and national private firms dominated the market, the nationalization wave of the 1960s aimed at achieving strict social objectives and impaired the construction industry. With the adoption of the Open-Door Policy in the 1970s, which allowed private capital to enter the market and invited foreign investment to participate, growth in the construction sector picked up again. As shown in Figure 1, this upward trend continued throughout the 1980s, driven mainly by ambitious government investment in infrastructure, housing projects and mega national projects.

Unlike the previous two decades, the first half of the 1990s witnessed a slowdown of construction growth due to contractionary trends in public investment that accompanied the implementation of the Economic Reform and Structural Adjustment Program (ERSAP). Since the mid-1990s, the rate of growth of the construction sector fluctuated considerably. It peaked in some years due to unprecedented growth of hotels and power plants construction (1996/97-1997/98), but declined to moderate and low rates with the recessionary trends that hit the Egyptian economy in the late 1990s and the first three years of the new millennium. Nowadays the construction industry is reverting to high growth rates as investment in real estate is increasing dramatically—mostly due to speculation—in addition to the housing plan of President Mubarak's campaign program in 2005. Figure 1 highlights the unprecedented rates of growth in the last two years.[5] It is also clear that the development of construction industry has been highly driven by the private sector growth rate.

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[5] Rates of growth for years 2005/06-2006/07 (before the international financial crisis). The rate of growth of the first half of 2008/09 fell to 9.4 percent compared to 15.6 percent in the corresponding half of 2007/08. See the MOED follow-up report of economic and social development plan, 2nd quarter and first half of the year 2008/09, Figure 5.

Figure 1. Real Growth Rates in the Public and Private Construction Sector Value Added (1981/82-2006/07)
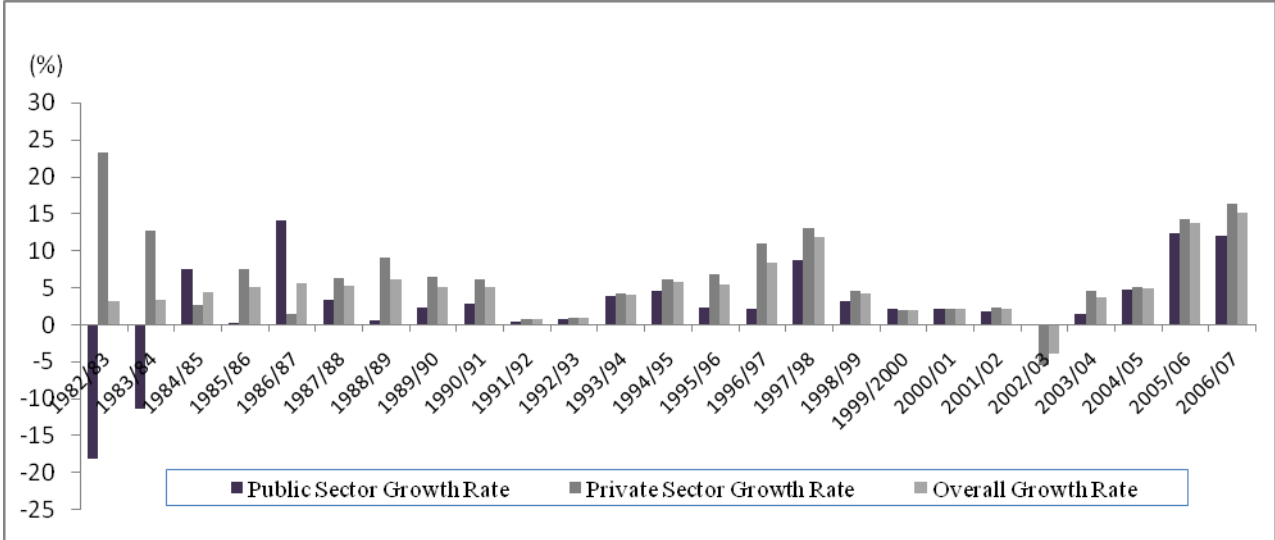
Source: Based on data from the Ministry of State for Economic Development (2008, pp. 16-20).

2.3.2. *Economic contribution of the construction sector*

The construction industry plays a significant role in the Egyptian economy as it generates income, employment and foreign exchange earnings due to its wide-ranging linkages with other economic sectors and activities. During the period 1981/82-2006/07, the construction sector contributed an average of 5.2 percent in GDP.[6] Figure 2 shows the share of the sector and illustrates the fluctuations around this average during the 25-year period. As seen in the figure, very high relative shares of construction in GDP marked the last two years. This upward trend can be attributed to both public and private real growth rates of construction value added (12 percent and 16.4 percent respectively in 2006/2007 as seen in Figure 1). In 2006/07, the construction sector's share in GDP ranked seventh and its share in private GDP ranked fourth in all GDP sectors.

The cyclical fluctuations in growth rates and the relative share of the construction sector—almost every five years—point to the highly sensitive nature of this industry to economic policies and developments.

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[6] The figures of the relative share of construction sector in GDP do not include the value added of related engineering services as the latter is included in the 'real estate activities' sector and cannot be identified separately.

Figure 2. Share of Construction Sector in GDP and Total Investments in 1981/1982-2006/2007
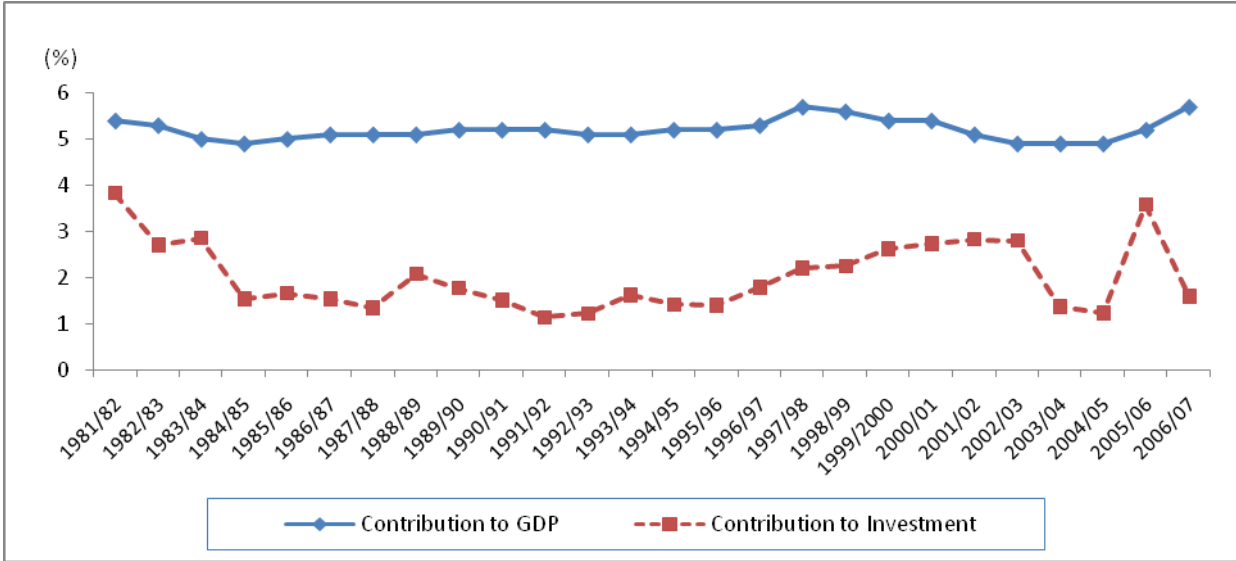
The share of construction in total investments amounted to an average of 2 percent during the 25-year period. Figure 2 shows the fluctuations of the relative share of construction during that period, while Figure 3 illustrates the clear dominance of private sector investments in construction since the mid-1990s due to privatization, reaching almost 81 percent of total investments in 2006/07 compared to less than 15 percent in the early 1980s.

Figure 3. Public and Private Shares in Construction Investments
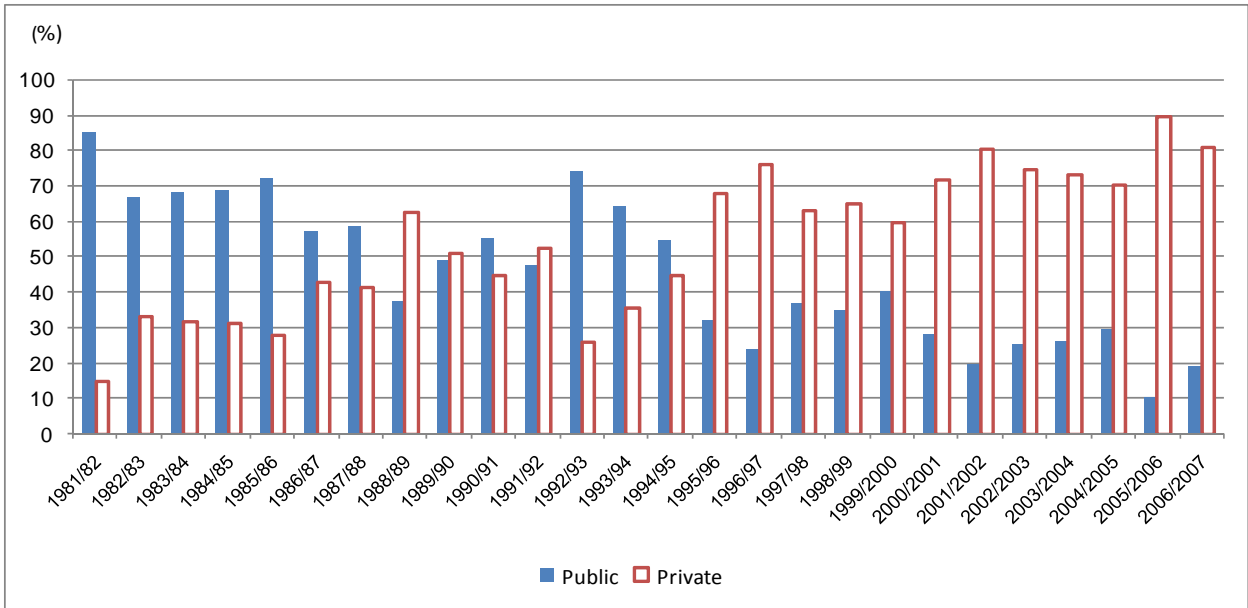
The modest average share of construction in total investments stated above (2 percent) does not attest to the actual involvement of the sector in every investment activity in the national economy. According to the Egyptian Federation of Construction and Building Contractors (EFCBC), expenditure on construction in all sectors of the economy amounts to LE 50-60 billion, representing an average of 40 percent of total investment expenditures.[7]

A breakdown of construction production by sector—shown in Figure 4a—indicates that in 2005/06 public administration and defense ranked first with a share of 48 percent of total production by public construction firms, followed by the water, electricity and gas sector, and the transportation, communications and storage sector. The three sectors together account for a share of 85 percent, and the main works implemented in these sectors were the building of roads and bridges, sewage stations and networks, and water stations and networks.

Figure 4. Sectoral Distribution of Public and Private Construction Production (2005/06)

a) Distribution of Public Construction Production among Economic Activities in 2005/06 (%)

b) Sectoral Distribution of Private Construction Production in 2006*
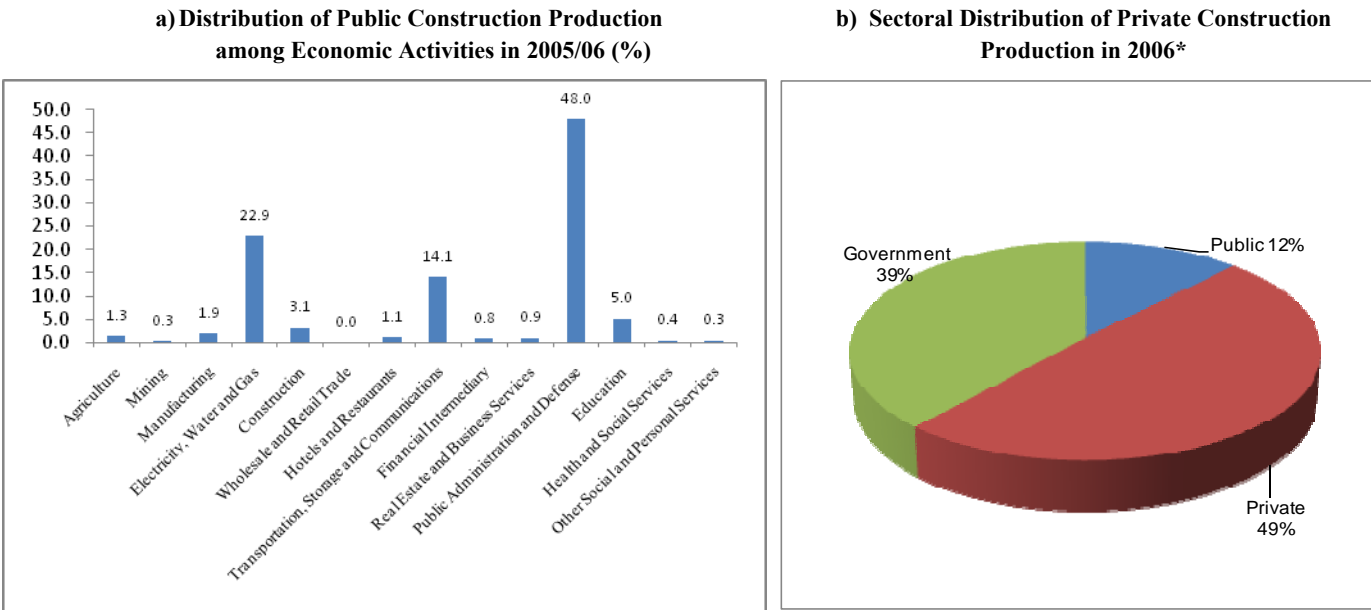
Source: Based on data from CAPMAS (2007a, 2007b).

* CAPMAS data for private construction production are classified only by sector and not by economic activity.

As for the production of private construction firms, it was mainly confined to the private sector itself (49 percent) followed by the government sector and the public sector as illustrated in Figure 4b. The CAPMAS data reveal that residential buildings are the main

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[7] Interview with Eng. Mohamed El Hayatmi (General Secretary of EFCBC) on 17/11/2008.

construction works implemented by private construction firms, followed by educational buildings and sewage networks.

Similar to other developing countries, the construction sector in Egypt contributes significantly to generating job opportunities and income to millions of skilled and unskilled workforce, working formally and informally. It also plays a notable role in creating income for poor households and reducing poverty.

More than two millions are currently working in construction, representing an average of 8 percent of total employment. As shown in Figure 5, this share has doubled throughout the period 1982/83-2006/07 due to high growth rates of construction employment that averaged 5.5 percent annually and reached almost 8 percent in some years.

Figure 5. Employment in the Construction Sector (Percent of Total Employment, and Annual Growth Rate) 1982/83-2006/07
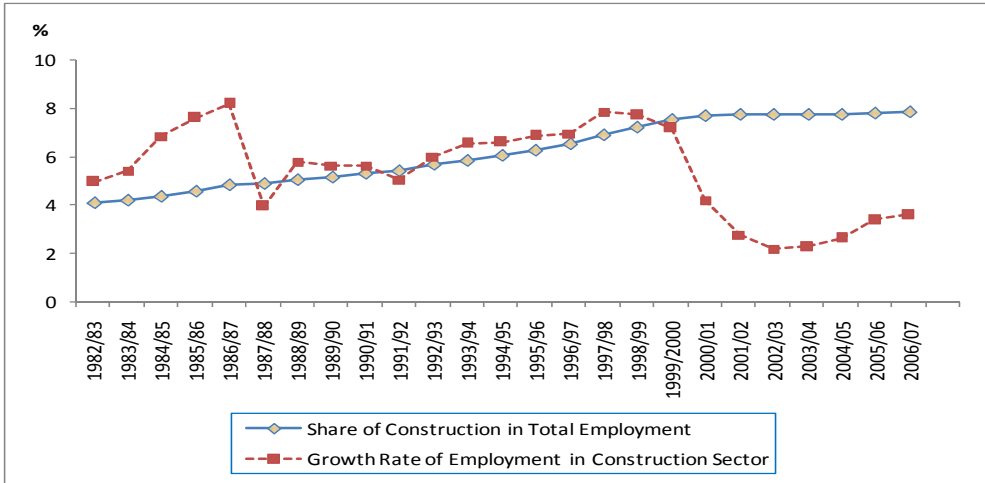
Source: Based on data from the Ministry of State for Economic Development (2008, pp 48-52).

Absorbing this percentage of the labor force in construction places the sector in the fifth rank in overall employment, and in the fourth rank in private sector employment after manufacturing, agriculture and trade. In fact, the construction sector is one of the leading sectors in creating job opportunities for a wide range of skills and it is highly responsive to growth in creating jobs. In a study conducted to measure the employment intensity of growth in Egypt, it was found that the sector ranked second after social services during the period 1980/81-1990/91 and also ranked second after manufacturing during the period 1991/92-2004/05.The employment elasticity to value added of the sector was 0.51 and 0.54 in the two

periods, respectively. As for the employment elasticity to overall GDP, it was 0.39 in both periods (El Ehwany and El Megharbel 2008).

One of the main characteristics of employment in construction is the high degree of informality. According to the Labor Force Sample Survey (LFSS) of 2007, the construction sector absorbed 9.6 percent of total employment. Around 86 percent of the two millions working in this sector are working informally (out of establishments), and more than two-thirds of them are wageworkers.[8] These trends are a result of fluctuating demand, the short-term project base in residential construction as well as the practice of subcontracting and outsourcing labor.

Among the reasons that render the construction sector attractive for employment is its relatively higher wages. The 'Employment, Wages and Hours of Work' (EWHW) bulletin of 2006 indicates that the average weekly rates in construction, for formal public and private employment, is higher than the overall economy average for the last five years (CAPMAS 2006). During the period 1995/96-2005/06, the share of employees' compensation in the construction and building sector in total compensations averaged 6.2 percent and ranked six among all economic sectors (Ministry of State for Economic Development 2008).

In terms of contribution to foreign exchange earnings, the role of construction is limited and is constrained by the modest competitiveness of its services. This has become a key concern with the increasing globalization of the Egyptian economy and liberalization of the sector.

In spite of being one of the oldest industries in the country and of the fact that Egyptian construction firms have gained experience from executing works outside Egypt, the value of work assigned abroad to Egyptian firms is low. According to the Engineering News Record weekly magazine (ENR), the share of international revenues of the Egyptian construction companies to the equivalent revenues of all international contractors is only 0.12 percent (Shouman 2004). Table 1 portrays foreign trade in construction services and shows that despite the continuous positive trade balance throughout 1999/2000-2007/08 (with the exception of 2000/01), exports of construction represent an average of 1.3 percent only of total Egyptian exports of goods and services and do not exceed a low average of 2.4 percent of total service receipts.

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[8] Calculated from Table 14 in CAPMAS (2007c).

Table 1. Foreign Trade in Construction and Building Services (CBS) (Million $)

Years	CBS exports (1)	CBS imports (2)	CBS trade balance (3)	% of CBS exports to total exp. of goods and services (4)	% of CBS imports to total imp. of goods and services (5)	% of CBS exports to total services receipts (6)
1999/2000	127.8	83.5	44.3	0.7	0.5	1.1
2000/01	96.7	112.1	-15.4	0.5	0.8	0.8
2001/02	154.9	74.6	80.3	0.9	0.5	1.6
2002/03	174.7	136.7	38	0.9	1.0	1.7
2003/04	315.4	142.0	173.4	1.3	1.3	2.4
2004/05	485.7	227.2	258.5	1.7	0.9	3.2
2005/06	508.9	151.7	357.2	1.4	0.7	2.9
2006/07	576.3	189.5	386.8	1.4	0.4	2.8
2007/08*	1497.3	356.6	1140.7	2.6	0.5	5.5

Sources: Columns 1, 2 and 3 from unpublished data of the Central Bank of Egypt. Columns 4 to 6 calculated from CBE (2009).

* Preliminary figures.

In addition to its direct contribution to output, investment, employment and foreign earnings, the importance of construction to the Egyptian economy lies in its interdependance with other sectors and its linkages with more than 50 industries. The main industries that support the sector include building materials, especially cement, steel and construction chemicals; and machinery and equipment, most of which—except heavy and sophisticated ones—are widely available on the local market (AmCham 2003).

Notwithstanding the notable contribution of the construction industry in the Egyptian economy, as revealed by the above analysis, the actual developmental benefits of the sector are below its inherent potential. The sector's contribution to GDP, although almost equal to the corresponding figure in most industrialized economies (ranging between 5 to 7 percent), is lower than it should be in a developing country. The corresponding shares in other countries such as Japan (10.3 percent), Korea (13.9 percent), Thailand (7.0 percent) and Singapore (7.1 percent) confirm the conclusion of the Bon curve stated previously. Also, construction absorbs higher percentages (between 4-10 percent) of total employment in many countries (WTO 1998).

2.3.3. Construction industry and its relation to GDP growth

This part of the paper tests the relationship between value added in the construction sector and GDP growth in Egypt. Empirical literature shows that in many countries, especially in the developing world, construction strongly affects GDP. In a fewer cases, however, construction

has been found to be affected by GDP. In the case of Egypt, the former impact seems to be more relevant.

The methodology used here is the traditional Granger causality test, which verifies whether there is a causal effect between the two variables of construction value added and GDP, and in which direction the causality runs. We use annual time series data for the two variables in Egypt from 1960 to 2007. Data (in millions of pounds in current prices) are derived from the WDI database for GDP, and from the MOED for construction. Table 2 shows summary statistics for the variables.

Table 2. Descriptive Statistics (Variables in LE Million)

Variable	Observations	Mean	Std. dev.	Min.	Max.
GDP	47	125146.4	175461.9	1324.2	684429.8
Construction value added	47	5811.481	7662.273	44.2	30175.3

Source: Author's calculations.

Figure 6 plots the evolution of both variables over the whole period. Both variables are henceforth expressed in natural logarithms. The graph shows a very strong relationship between construction (lnva) and GDP (lngdp). It even indicates that changes in construction value added might in fact be preceding changes in GDP. The coefficient of correlation is almost equal to unity.

Figure 6. GDP and Construction Value Added in Logarithms (1960-2007)
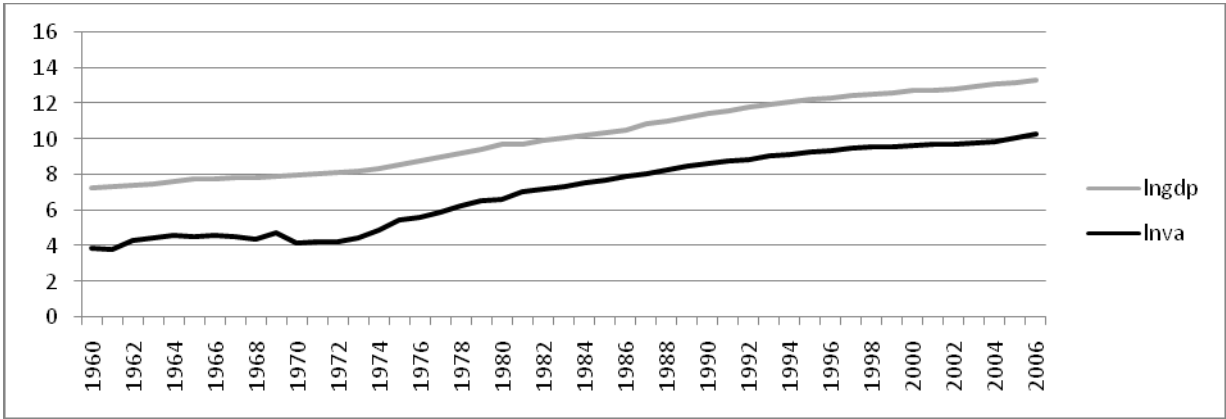
Source: Author's calculations based on data from the World Bank's WDI database (GDP) and Ministry of State for Economic Development (Construction).

Before proceeding with the Granger causality test, we checked for stationarity. As it is well known, if the series are non-stationary, hypothesis tests are then unreliable. The Augmented Dickey Fuller unit root test for the two variables showed that the series are in fact

non-stationary. After differencing once, two stationary series are obtained at the 5 percent level of significance, which makes the Granger test applicable.

The basic concept behind the Granger causality test is that the future cannot affect the past. If past values of construction affect future values of GDP, then construction 'Granger-causes' GDP. If it is GDP that affects construction, then GDP changes are expected to occur before changes in construction (Khan 2008).

The Granger causality test is based on the following equations:

$$lngdp_t = \beta_o + \sum_{t=1}^{n}\beta_{1t}\,lngdp_{t-t} + \sum_{t=1}^{n}\beta_{2t}\,lnva_{t-t} + u_t \qquad (1)$$

$$lnva_t = \alpha_o + \sum_{t=1}^{n}\alpha_{1t}\,lnva_{t-t} + \sum_{t=1}^{n}\alpha_{2t}\,lngdp_{t-t} + v_t \qquad (2)$$

where u_t and v_t are white noise error terms. Checking for causality from construction to GDP is testing the null hypothesis that $\sum_{t=1}^{n}\beta_{2t} = 0$ against $\sum_{t=1}^{n}\beta_{2t} \neq 0$. Checking for causality from GDP to construction is testing the null $\sum_{t=1}^{n}\alpha_{2t} = 0$ against $\sum_{t=1}^{n}\alpha_{2t} \neq 0$. Causality is believed to exist when the null hupothesis is rejected. It is unidirectional if either the coefficients β_{2t} or the coefficients α_{2t} are significant. But if both are significant, then causality is bi-directional (Khan 2008). Results are shown in Table 3 below.

Table 3. Granger Causality between Construction and GDP in Egypt

From construction to GDP	From GDP to construction
H$_0$: $\sum_{t=1}^{n}\beta_{2t} = 0$ (construction does not Granger-cause GDP)	H$_0$: $\sum_{t=1}^{n}\alpha_{2t} = 0$ (GDP does not Granger-cause construction)
F(3,36) = 8.83	F(3,36) = 1.28
Probability (F) = 0.0002	Probability (F) = 0.2968
Equ. (1) Adjusted R^2 = 0.57	Equ. (2) Adjusted R^2 = 0.09

Source: Author's estimations.

Results lead to rejection of the hypothesis of no causality from construction to GDP at the 5 percent level of significance, while the study could not reject the hypothesis of no causality from GDP to construction. This strongly confirms the initial assumption that the construction industry affects GDP. The number of time lags included in the regressions was three. All coefficients were insignificant in the case of causality from GDP to construction. From construction to GDP only the coefficient for the third time lag (β_{23}) was insignificant, while the coefficients for the first two time lags, β_{21} and β_{22}, were significant and equal to 0.21 and 0.10, respectively. Since the variables are expressed in logarithms, these coefficients indicate elasticities. Therefore, if value added in the construction sector increases by 1

percent, one would expect this increase to yield an increase in GDP by 0.21 percent the following year and by 0.1 percent two years later.

The significant relationship between construction and GDP, and the causal relation from construction services to GDP reveal the importance of this sector to the Egyptian economy. Meanwhile, the modest contribution of the sector to GDP, employment and trade indicates that it is necessary to identify the main obstacles and challenges that affect the development of this important industry, and hence are responsible for its unsatisfactory performance.

3. CONSTRUCTION: OBSTACLES AND CHALLENGES

The importance of construction and related engineering services to the Egyptian economy in the past and now has been addressed in the previous section. As in many other countries in the early and middle stages of development, the future role of construction as an agent for economic growth in Egypt is promising.

The prospects of growth and development of the sector stem from several factors. *First*, there is a large and increasing government and private demand for residential and non-residential construction. For example, with respect to housing, it is estimated that the current and future number of needed residential units until the year 2022 amounts to almost 8.5 million (CAPMAS 2008a). Also, as part of the government's efforts to solve the problem of slum areas, which reached 1221 areas in January 2007, rehabilitation work has been implemented in 340 areas in 14 governorates, and is planned to extend to 870 other areas, with a population of 12.2 million (CAPMAS 2008b). In addition, large investments have been injected into infrastructure construction. High demand and investment in the sector will boost overall growth as a result of its strong linkages with other sectors of the economy. *Second*, the basic factors of production are relatively available, namely, semi-skilled and unskilled labor at low cost, natural resources and energy, inputs and raw materials, supporting industries and the relative availability of skilled top managers and accumulated expertise. *Third*, the regulatory framework that governs the construction sector is sound. The tenders law 89/1998 governing government tenders and bids has been partially amended by law 5/2005 to compensate contractors when clients default on payments. The Cabinet has decided on 18/4/2008 that compensation should take account of price changes every three months. The absence of compensation in law 89/1998, and hence "unfair" and "unbalanced" contracts favoring government entities, was the main source of contractor complaints. Law 104/1992, which

established the Egyptian Federation for Construction and Building Contractors (EFCBC), extends membership to foreign companies, as correspondant (temporary) members, thus allowing them to execute works in Egypt. Mortgage law 148/ 2001, which established the Mortgage Finance Authority and became effective as of August 2003, will have a positive effect on construction financing. Finally, the unified building law of 119/2008 will help organize the sector and regulate construction activities.

Despite these areas of strength, a myriad of factors still constrain the sustainable development and growth of construction and related engineering services in Egypt. The following analysis sheds light on the main constraints, namely financing, size of the companies, human resources, cost of doing business, impact of macroeconomic policies, institutional framework as well as export barriers.

3.1. Financing

The shortage of financial resources comes at the top of the list of obstacles and is mainly due to the high cost of borrowing (13 percent on average) coupled with the reluctance of banks to finance new construction projects. Following the devaluation of the pound in 2003 and the failure of some contractors to meet their obligations toward banks, many banks refused to issue letters of guarantee, while others insisted that contractors cover the full value of the letter in advance. A state of mistrust has prevailed since then between banks and contractors, especially small contractors.

Meanwhile, accumulated government arrears owed to construction companies resulted in poor cash flows and sometimes led to overdrafting. On 30 June 2004 government arrears owed to construction firms reached LE 8 billion, distributed between private business sector companies (LE 5.5 billion) and the Arab Contractors Company (LE 2.8 billion) (Salah 2008). Although this problem was partially resolved later as government entities had met some of their obligations[9] and due to the ministerial decree 219/2006, which stipulated that they should obtain financial clearance from their financial controller prior to tendering,[10] the problem of compensating contractors for arrears since 2003 remains pending. Despite law 5/2005 and the approval of the Cabinet in April 2008 to compensate contractors for contracts

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[9] Government arrears owed to the Arab Contractors Company, for example, are currently 20 percent only of initial government arrears to the company (interview with Eng. Ibrahim Mahlab, Chairman of the Arab Contractors Company on 14 January 2008).

[10] Ministry of Finance (MOF), decree 219 /2006, article (1).

concluded since 29/1/2003 until now, the technical committees in charge of assessing the price increases of building materials (and accordingly fair compensations) face difficulties due to the complexity and the length of the period of assessment.[11]

3.2. Size of Companies

For contractors to be able to execute works worth more than LE 50,000, they should be members in the EFCBC. In addition, EFCBC has issued a registration schedule for both local and foreign contractors. Using eight criteria,[12] the schedule identifies seven different grades for registration for every type of work. According to this classification, out of 33,121 registered contractors in 2008, more than 28,000 (86.2 percent) belong to the sixth and seventh grades.[13] The following table shows the number of construction companies in terms of size. Contractors in the first grade[14] account for 1.1 percent only.

Table 4. Registered Contractors in EFCBC, According to Grade of Classification, 2008

Grade	Registered contractors	
	Number	**%**
First	364	1.1
Second	251	0.8
Third	403	1.2
Fourth	1689	5.1
Fifth	1855	5.6
Sixth	5523	16.7
Seventh	23036	69.6
Total	**33121**	**100.0**

Source: EFCBC, unpublished data.

The fact that large firms (grades 1, 2 and 3) and medium firms (grades 4 and 5) represent only 3.1 percent and 10.7 percent of total firms, respectively, means that the majority of construction companies are small-sized firms, which perform small-scale and unsophisticated activities and rely on labor-intensive rather than technologically advanced techniques. In addition to firms registered in the EFCBC, there are thousands of private

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[11] See note 7.

[12] The eight criteria are: (1) Paid-in capital; (2) years of experience of the contractor; (3) number of technical staff; (4) financial structure; (5) administrative and legal structure; (6) the highest value of the work carried out during the last five years; (7) the value of the largest operation successfully completed during the five years prior to the submission of the application; and (8) the upper limit of the allowable value of the tender.

[13] Sixth and seventh grades require a minimum paid-in capital of LE 100,000 only and a minimum of one engineer, and a maximum value of tender of LE 2 million for the seventh grade, and of LE 4 million for the sixth grade.

[14] First grade stipulates a minimum paid-in capital of LE 10 million; 15 years of experience; 20 engineers; integrated financial, administrative and legislative staff, as well as a minimum of LE 20 million for biggest contracting operation value in the last five years prior to registration application.

contractors who work informally to avoid registration fees and taxes, and who implement works of less than LE 50,000.

According to EFCBC data, in 2008 less than one third of total registered contractors paid the annual fees,[15] which reflects the harsh conditions of the market since the floatation of the pound in 2003, coupled with the unexpected and unjustified price increases of building materials.

As for engineering services related to the construction sector, the number of consultant engineers reached 11,382 (as of 21 December 2008), almost half of them work in civil engineering as shown in Table A.1 in the Appendix. The table also shows that the number of consultancy firms reached 704.

3.3. Human Resources

Although there is an abundant supply of unskilled, semi-skilled and non-technical labor at low cost working in the construction sector, yet the shortage of trained labor in certain specializations remains a constraint and affects the productivity and hence the unit labor cost in this industry. There are several factors that explain the poor productivity of construction employment, including:

a) Shortage of well-trained skilled and semi-skilled workers (such as supervisors) and insufficient supply of technical labor.

b) Despite the increasing number of engineers, a significant percentage of them lack expertise and international exposure. In addition, there is a shortage of engineers and consultant engineers specialized in key areas (e.g., chemical and piping engineering). In general, the last few years have witnessed a shortage of engineers due to excess local and Arab demand, coupled with the preference of many engineers to work in other fields (such as IT). Furthermore, Arab consultancy firms currently retain the services of a growing number of Egyptian engineers who perform their duties in Egypt rather than in offices in the Gulf states.[16]

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[15] EFCBC, unpublished data. It is worth noting that registration fees range between LE 300-1000 for the seven grades, while the annual fees range between LE 500-5000. Foreign companies pay LE 10,000 for temporary membership. See EFCBC (undated).

[16] Interview with Eng. Salah Hegab, Managing Partner, Sabbour Associates, on 4 December 2008.

c) Poor management due to shortage of managerial staff, lack of marketing knowledge, as well as the absence of proper and advanced procurement management techniques.

d) High degree of labor informality as shown earlier. Construction ranks third—after trade and manufacturing—in absorbing informal employment (El Ehwany and Metwally 2001).

e) Instability of work. Sixty eight percent of all male employees in construction companies in the public and public enterprises sector are employed on a temporary basis. This percentage increases to 90 percent in the case of construction workers and to 83 percent in the case of general services workers. It also reaches 59.5 percent and 57.1 percent for engineers and technicians, and for supervisors, respectively (CAPMAS 2007a). Instability of work and lack of registration and working licenses are major obstacles to efficient training and human capital development in the construction sector.

f) Poor and inefficient system of public vocational education and vocational training centers, together with lack of private training centers for the construction sector. The number of trainees in construction is around 15,000 a year, in addition to 10,000 trainees in industrial vocational training under the Mubarak-Kohl Initiative. These numbers are insufficient and even insignificant compared to total employment in the sector. One of the main reasons for insufficient training is the reluctance of contractors and workers to be engaged in training due to the temporary, project-based nature of activities. The current system of training centers falls short of meeting the needs of the market in terms of quantity and quality (El Tohamy and Madbouly 2007).

The above factors result in poor productivity of labor in the construction sector. As shown in Table 5, the average real productivity level calculated for the last five years (2002/03-2006/07) in construction is LE 2,100 per worker compared to LE 3,250 per worker for the whole economy.The table also reveals that labor productivity in construction is low, ranking eighth among ten sectors, preceding only social services and agriculture.

Table 5. Average Real Productivity of Labor (LE/Worker) (2002/03-2006/07)

Sectors	Average real labor productivity
Agriculture	1,567
Manufacturing	4,756
Oil and products	50,982
Electricity	5,140
Construction	**2,097**
Transportation, storage, communications and Suez Canal	8,518
Trade, finance and insurance	5,855
Hotels and restaurants	5,667
Housing and real estate	10,553
Public utilities, social insurance, government, personal and social services	1,698
Total economy	**3,247**

Source: Calculated from Table A.2 in the Appendix.

3.4. Cost of Doing Business

Construction companies face a serious problem owing to the continous increase in the cost of implementing construction activities. The increase is due to the following reasons:

a) Increasing prices of land—especially in the last five years—due to speculation in addition to growing population.

b) Unexpected and unjustified increase of intermediate input and building material prices, particularly steel and cement, which represent 16 percent and 12 percent of the cost of a residential unit, respectively. Prices of cement and steel increased between 2002 and March 2008, by 152.6 percent for the former and by 370.4 percent for the latter. Moreover, the percentage increase in both inputs during the first quarter of 2008 reached 33.6 percent for cement and 78.9 percent for steel. The impact of increases in building material prices on the cost of a residential unit was estimated at 33 percent during the quarter, of which the impact of cement prices was 4 percent while the impact of steel prices reached 12.6 percent. The EFCBC estimated that the total increase in the cost of an ordinary residential unit between 2003 (year of floatation) and March 2008 reached 110.6 percent (EFCBC 2008). It is worth noting that the third quarter of 2008 witnessed a slowdown in price increases of all materials, recording only 2.4 percent as compared to 22.1 percent and 7.3 percent in the first and second quarters of 2008, respectively (EFCBC 2008).

c) Increase in the number of informal small firms that produce low-price and low-quality building materials.

d) Implicit costs associated with the time and effort wasted due to red tape and corruption. According to the latest ECES survey on business sector views about past performance and future expectations, which covers the most important sectors including 56 construction firms, the majority of firms reported 'difficulty in dealing with government and legal procedures' as the most severe constraint affecting their performance, followed by 'insufficient demand' and 'lack of skilled labor' (ECES 2009).

e) The complex and costly process of issuing construction permits. Table 6 compares the ranking of Egypt with that of other countries in issuing construction permits with respect to time, cost and number of procedures. It shows that the process of issuing permits is complex, lenghty and costly. Sound regulations ensure that safety standards are observed to protect the public, but if procedures are overly complicated or costly builders tend to build without a permit.

Table 6. The Process of Issuing Construction Permits in Selected Countries

Countries	Rank (out of 181countries)	Procedures (numbers)	Time (days)	Cost (% of income per capita)
Singapore	2	11	38	21.2
Bahrain	14	13	56	57.2
Qatar	27	19	76	0.8
U.A.E	41	21	125	1.5
Saudi Arabia	50	18	125	74.7
Jordan	74	18	122	443.7
Kuwait	82	25	104	171.4
Morocco	90	19	163	292.5
Tunisia	101	20	84	1017.8
Malaysia	104	25	261	7.9
Israel	120	20	235	112.8
Turkey	131	25	188	249.3
India	136	20	224	414.7
Egypt	**165**	**28**	**249**	**376.6**
China	176	37	336	698.4

Source: World Bank and IFC (2008).

It is worth noting that despite the high cost of doing business in construction, competition among firms and contractors is based on cost advantage and low price. As a result, competition results in cost reduction at the expense of quality. In addition, contractors face the dilemma of keeping prices low to win the tender, but offering low prices exposes them to risk if prices increase unexpectedly during the period of executing the work.

3.5. Impact of Macroeconomic Policies

Macroeconomic policies can have an adverse impact on the construction industry. As mentioned earlier, the nationalization wave of the 1960s refelected negatively on large companies and on the industry as a whole. The floatation of the Egyptian pound and its subsequent depreciation against the US dollar in 2003 led to the insolvency of more than 20,000 contractors. The complex process of compensating them for unexpected increases in building costs has not yet been put into effect.

While the burden of sales tax and customs duties on contractors and consulting offices is not significant and—more importantly—transparent, companies face a problem with income tax and other fees. On one hand, contractors are required to provide the tax authority with documents on 93 percent of their raw material purchases. In most cases, traders of these inputs refuse to hand receipts to contractors who end up bearing a higher tax burden.[17] On the other hand, in addition to profession taxes and employee pensions, consulting offices have to pay other fees that are not related to the engineering profession.[18]

As for privatization and its impact on construction firms, an assessment of the financial performance of some privatized companies is presented in Section 4.

3.6. Institutional and Legislative Framework

Two main institutions govern and support construction and engineering consultancy in Egypt. The first is the EFCBC, established by law 104/1992 as an independant legal entity. Article 3 of the law identifies the objectives of the Federation in supporting the common interests of its members; organizing the status and conditions of the profession; enhancing and protecting it; resolving disputes that arise between members and others; and contributing to the implementation of the general plan of the state. Article 4 adds establishing training centers in collaboration with member companies as a main objective of the EFCBC.

Despite its efforts in disseminating market information and developing human resources through training, the role of the Federation needs to be enhanced to assist in the development of the construction industry.

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[17] See note 7.

[18] Such as fees paid to the Syndicate of Applied Arts Professions. See note 16.

The second institution is the Egyptian Engineers Syndicate (EES). It is an independent legal entity established in 1946 with the aim of organizing the engineering industry in Egypt to best serve the national and economic goals of the country. The achievements of the syndicate have been very limited, as it does not provide training especially in the new areas of high technology and marketing; it also faces various financial and administrative problems (AmCham 2003). The syndicate is currently under sequestration and is being managed by a sequestrator appointed by the court rather than by the board of directors.

As for the legislative framework, although there are several effective laws that govern the construction industry, contractors still have complaints regarding unbalanced contracts; assigning government contracts by direct order; and lengthy court procedures. These complaints result from abuse of articles of the tenders law 89/1998 and its amendments in law 5/2005, and reflect corruption in government entities. Moreover, consulting engineering offices demand that the Egyptian government use the FIDIC form of contracting, which gives consulting engineers a major role in the performance of the work.[19]

3.7. Barriers to Exports

As shown in Section 2, exports of construction services are meager whether in absolute or relative terms. A myriad of factors are responsible for the limited construction exports, especially financial factors and policies adopted by foreign partners.

Both banks and the government impose costs on exporters that affect the competitiveness of construction companies. On one hand, the government does not grant companies financial aid to encourage exports in potential markets, while competitors in these markets receive financial support from their governments. On the contrary, the government of Egypt has delayed payments and compensations to companies, hence affecting their liquidity. It has also imposed high customs duties on capital goods and equipment used in foreign markets, as well as a sales tax on these goods. In addition, the Egyptian Export Credit Guarantee Company, established by law 21/1992, does not provide insurance to exporters against political risks during the period of the project construction (AmCham 2003). In general, exporters are not insured against non-commercial risks. These risks include security and safety risks, thefts, road accidents and lack of safe infrastructure in importing countries, problems of unsafe transportation of equipment and workers to some African countries that do

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[19] FIDIC is the "Federation Internationale des Ingenieurs Civils". See note 16.

not have access to sea ports, unpaid dues following civil wars or coups d'etat, in addition to risks associated with contract management especially if the client is a foreign government.[20]

On the other hand, Egyptian banks and insurance companies also require high foreign currency coverage from exporters for issuing letters of guarantee, and impose high charges for issuing these letters (3-4 percent) as well as high insurance fees.This is particulalrly the case with exports to countries with high political risks. It is worth noting that other foreign exporters, such as French companies, have always enjoyed insurance coverage, which makes them more competitive than their Egyptian counterparts in potential markets.[21]

Policies of foreign countries, especially Arab countries, represent constraints to potential Egyptian exports. These constraints include restrictions on the percentage of foreign workers and foreign partnership, transferring equipment bought in the local market, and visa issuance. These policies also include high taxes on net profit in some countries (30 percent in Algeria) (Salah 2008), high insurance fees on temporary imports of machinery and equipment as well as high health insurance fees for employees. Additionally, discrimination between foreign and local companies prevails in some Gulf states (Abu Dhabi). The ability of Egyptian companies to export and to compete internationally is further undermined by limited expertise in areas such as marketing, design, operation and maintenance of projects and also by the lack of international standards of quality and performance (AmCham 2003).

4. LIBERALIZING THE CONSTRUCTION INDUSTRY

Privatization and liberalization (under GATS) of the construction industry have started a growing debate on the positive and negative implications of these policies. This section analyzes both policies with a view to drawing policy recommendations.

4.1. Privatization

Since the implementation of ERSAP until 31 July 2008, 15 construction companies have been privatized. Ten companies were privatized through majority public offerings (MPO), one company was sold to an anchor investor and four companies were liquidated. The sales value of these companies reached LE 1.2 billion, representing 7 percent of total sales value of privatized companies (Ministry of Investment, unpublished data).

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[20] Interview with Mohamed Onsi, Deputy of CFO (Arab Contractors Company) on 14 January 2009.

[21] See previous note.

The following analysis assesses the financial performance of ten of the privatized companies for which financial statements were available. Nine of these companies have been privatized through MPO while the tenth was sold to an anchor investor.

It should be emphasized at the outset that a comprehensive assessment of the impact of privatization should include the implications not only on the financial performance, but also on competitiveness, employment, governance and the investment pattern of privatized companies. As this evaluation requires tools, time and effort that go beyond the scope of this paper, the analysis in this paper will be limited to financial performance bearing in mind the limitations of the results. Moreover, as the analysis would give mixed findings because of using different criteria, it should be emphasized that the general trend is what matters in this paper.

The financial statements of the ten companies[22] have been analyzed with respect to five indicators: profitability, investment, liquidity, leverage and activity. For each indicator, two or three indicative ratios have been calculated. The methodology adopted is one of a comparison between the averages prior to/post privatization. The pre-privatization period ranges between 3 and 5 years, while for post-privatization the period ranges between 3 and 11 years.

Results of calculations are reported in Tables 7 and A.4 for the ten companies, referred to in serial numbers without identifying their names.

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[22] Details of privatized companies are presented in Table A.3 in the Appendix.

Table 7. Financial Performance Ratios for Ten Privatized Companies in the Construction Sector

	Companies		Profitability ratios			Liquidity ratios		Leverage ratios		Activity ratios	
			Return on net worth (ROE)	Return on investment (ROI)	Net profit margin (ROS)	Current ratio	Quick ratio	Debt to assets	Debt to equity	Inventory turnover	Total assets turnover
Majority public offering	1	Av. Pre	0.31	0.10	0.64	1.20	0.93	0.317	2.108	0.63	0.17
		Av. post	0.19	0.06	0.49	1.73	1.06	0.108	0.305	0.41	0.13
	2	Av. Pre	0.064	0.005	0.006	1.080	0.913	0.422	5.573	6.494	0.760
		Av. post	0.130	0.013	0.013	1.070	0.905	0.513	6.091	6.526	0.960
	3	Av. Pre	0.930	0.011	0.013	1.196	1.066	0.463	57.139	10.786	0.953
		Av. post	0.183	0.019	0.026	3.451	2.010	0.772	8.278	1.814	0.605
	4	Av. Pre	0.08	0.01	0.01	1.12	0.91	0.542	5.147	4.32	0.59
		Av. post	-8.25	-0.40	-1.22	0.48	0.25	1.250	4.307	0.78	0.40
	5	Av. Pre	0.259	0.063	0.480	3.765	2.892	0.128	0.65	0.84	0.136
		Av. post	0.400	0.133	0.664	1.419	1.035	0.002	0.004	0.818	0.202
	6	Av. Pre	0.53	0.05	0.04	1.20	1.01	0.191	0.043	7.95	0.97
		Av. post	0.25	0.07	0.10	1.37	1.23	0.037	0.101	6.69	0.68
	7	Av. Pre	0.18	0.01	0.01	1.19	1.05	0.302	3.938	8.53	0.76
		Av. post	0.30	0.03	0.04	1.04	0.97	0.411	4.617	11.04	0.69
	8	Av. Pre	0.177	0.023	0.559	0.578	0.575	0.048	0.350	31.580	0.042
		Av. post	0.490	0.084	0.824	1.163	0.927	0.007	0.026	0.756	0.120
	9	Av. Pre	0.237	0.028	0.350	1.014	0.817	0.347	2.911	0.488	0.113
		Av. post	0.131	0.029	0.477	1.863	1.193	0.135	0.308	0.322	0.116
Anchor investor	10	Av. Pre	0.093	0.013	0.020	1.243	0.975	0.006	0.038	3.712	0.666
		Av. post	0.163	0.044	0.058	1.349	1.180	0.163	0.596	4.949	0.633

Source: Calculated by the author using company financial statements.

* Return on equity (or return on net worth) = Profits after taxes/total stockholders' equity.

* Return on total assets (or return on investment) = Profits after taxes/total assets.

* Net profit margin (or return on sales) = Profits after taxes/sales.

* Current ratio = Current assets/current liabilities.

* Quick ratio = Current assets-inventory/current liabilities.

* Debt-to-assets ratio = Total debt/total assets.

* Debt-to-equity ratio = Total debt/total stockholders' equity.

* Inventory turnover = Sales/inventory of finished goods.

* Total assets turnover = Sales/ total assets.

4.1.1. Profitability

To assess profitability, the study calculates the following three ratios:

a) Return on equity (ROE) (or return on net worth). It measures the rate of return on stockholders' equity in the enterprise. The ratios in Table 7 show mixed results. Out of nine companies sold through MPO, the average ROE increased in four companies after privatization, declined in four, while in one company (no. 4) it turned to a loss.

b) Return on Investment (ROI). It measures the return on total assets of the enterprise. The analysis shows that while post-privatization performance was clearly unsatisfactory in one company (no. 4) and slightly better in two companies (no. 8 and no. 5), changes in ROI were not significant in the other six companies. In fact, ROI itself is very low in most companies prior to and after privatization.

c) Net profit margin or net return on sales (ROS). It shows the after-tax profit per LE of sales. Apart from the worst performing company (no. 4), which experienced losses after privatization, ROS declined in one company, while in the other seven companies the return on sales was higher. However, it is worth noting that improvement in ROS in most companies was insignificant with the exception of the best performing company (no. 8).

As for the company that was sold to an anchor investor (no.10), the three ratios of profitability increased after privatization. We can conclude from the behavior of the three ratios in the ten companies that the results are mixed, but tend to be positive. It is worth noting that in both the best performing company (no. 8) and worst performing company (no. 4), the percentage of shares kept in the hand of the holding company was almost the same as shown in Table A.3 of the Appendix. This indicates that the ownership structure of the companies after privatization is not the sole factor affecting their performance. Other factors such as management, labor productivity, asset utilization and marketing could also be profitability enhancing.

4.1.2. Investments

Table A.4 presents the average growth rates of investment in the companies under study prior to and after privatization, as well as their year-to-year growth rates. In the majority of companies sold through MPO, the average growth rate of investment after privatization turned negative in five companies and declined in two companies. Interestingly, in all of these companies an unprecedented growth rate was recorded in the year prior to privatization as compared to negative or zero growth rates in investments in the years that followed privatization. This could be explained by the fact that capital was injected into these companies for restructuring purposes before the selling process, and that no (or negligible) investments have been allocated in these

companies after privatization. An exception to this is the best performing company (no. 8) and company no. 5, which invested substantially after privatization. Contrary to expectations, in company no. 10 (sold to an anchor investor) investments were injected at high rates before privatization and then no new investments have been made for eight years following privatization. An explanation is that some companies had recourse to leasing facilities instead of acquiring new equipment and machinery (EL Dessouki 2009).

4.1.3. Liquidity

The two main ratios used to measure company liquidity are the current and quick ratios. The current ratio indicates the extent to which the claims of short-term creditors are covered by assets that are expected to be converted to cash in a period roughly corresponding to the maturity of the liabilities. The quick ratio (or acid-test ratio) measures the firm's ability to pay off short-term obligations without relying on the sale of its inventories.

Table 7 shows that in company no. 10, both current and quick ratios improved after privatization. The same improvement has been seen in five of the companies sold through MPO, while both ratios declined in two companies, and remained almost the same in one company. In general, calculations point to an improvement in the liquidity of privatized companies. Improvement of liquidity ratios in some of the companies sold through MPO (no. 3 and no. 8) surpassed that in the company sold to an anchor investor.

4.1.4. Leverage

Leverage ratios point to companies' debt structure. The two ratios in use are the debt-to-assets ratio and the debt-to-equity ratio. While the former measures the extent to which borrowed funds have been used to finance the firm's operations, the latter shows the funds provided by creditors versus the funds provided by owners. Table 7 shows that following privatization the leverage status improved reasonably in two companies and substantially in two others. As for the remaining companies, leverage ratios have either worsened or improved moderately, although they are still poor. The results further show that the method of sale had no considerable effect on the debt structure after privatization.

4.1.5. Activity

Two indicative ratios were used:

a) Inventory turnover provides an indication of whether a company has excessive or inadequate finished goods in inventory. In all companies, with the exception of company no. 7 and the company sold to an anchor investor, the declining ratios point to excessive inventory after privatization.

b) Total assets turnover measures the utilization of all firm's assets. Data in Table 7 show that the ratios declined in five companies, and remained relatively stable in two companies, indicating that following privatization the companies did not generate a sufficient volume of business, given the size of their asset investments. In the remaining three companies, total assets turnover improved.

Two main conclusions can be drawn from the above analysis. First, the general trend is that companies have been able to achieve moderate success with respect to profitability, liquidity and leverage after privatization, while in terms of activity, ratios have deteriorated or did not improve. Exceptions have been clear in two companies: the best performer (no. 8) and the worst performer (no. 4). As for investments, companies in general have been reluctant to invest after privatization. It is worth mentioning that the economic environment that prevailed in the last three years of the 1990s as well as the recession that hit the Egyptian economy in the first three years of the new millennium have affected the level of activity of the companies. The second conclusion is that the method of sale did not have a significant effect on the performance results, as the company sold to an anchor investor has not fared better than the best performer sold through MPO.

4.2. Liberalization under GATS

In 1994, Egypt committed itself to liberalizing construction and related engineering services under GATS, aiming to reap various developmental gains. This sub-section sheds some light on the current liberalization process of the sector and explores the potential benefits that may accrue to the economy as well as the risks involved in light of the sector's performance, market conditions and trading partners' commitments.

4.2.1. Potential benefits and risks

The potential gains that may accrue from liberalizing the construction industry are numerous. Higher economic growth and increased efficiency come at the top as several studies have found a strong positive impact of liberalizing many services—including construction—on GDP per capita growth (Matto, Rathindran, and Subramanian 2001). This is due to the considerable scope for

learning by doing, knowledge generation, expanding product variety and upgrading product quality, especially in the case of foreign participation (Hoekman and Mattoo 2008), and when the sector is strongly linked to other sectors of the economy. Increased efficiency is triggered mainly by strong competition in both domestic and international markets. Moreover, liberalization means more exports and higher revenues for the national economy. In addition, the commercial presence of foreigners in the form of joint ventures allows technical knowledge transfer and skills upgrading and enhances technological innovation. Moreover, because trade in construction services is only feasible under modes 3 and 4,[23] liberalizing the sector means large inflows of FDI as well as opportunities for national workers to temporarily work abroad on a legal basis and in decent jobs.

As opposed to these gains and benefits, the potential risks that may accompany liberalization of the construction industry arise mainly from the negative implications of 'unfair' competition. As has been shown in Section 3, almost 86 percent of registered contractors belong to the sixth and seventh grades of the EFCBC classification (Table 4). This means small paid-in capital; almost no experience; poor administrative, financial and legal management; and reliance on labor-intensive techniques and inability of performing sophisticated projects. Hence, opening up the construction industry on a large scale without undertaking domestic reforms beforehand would impair this industry.

In order to assess whether the benefits from liberalizing construction under GATS would outweigh the losses, it is important to analyze Egypt's schedule of commitments.

4.2.2. Schedule of commitments in construction

GATS is governed by two general principles: The most-favored-nation treatment (MFN) and national treatment (NT). In addition, members can choose to have MFN exemptions vis-à-vis certain members. They can also select the sectors where they wish to undertake commitments and put limitations on national treatment and market access according to sector-specific objectives and constraints. This has yielded country-specific 'schedules of commitments'. These in turn are divided into horizontal commitments, which apply to the sectors the member has decided to liberalize, and sector-specific commitments, which differ from one sector to another.

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[23] There are 4 modes for supply of services under GATS. Mode 1 refers to cross-border supply of services, such as distance learning. Mode 2 refers to consumption abroad, such as tourism. Mode 3 refers to commercial presence of the service supplier in the country receiving the service, such as hotel branches in different countries. Mode 4 refers to movement of natural persons who provide the service, such as teachers working abroad.

In its schedule of commitments (Table A.5. in the Appendix), Egypt has undertaken four horizontal commitments applying to construction and related engineering services as well as to the four other sectors liberalized by Egypt.[24] The first commitment removes all constraints on market access via mode 3, namely, commercial presence. The second commitment, which concerns market access via mode 4, restricts the number of foreign employees in any service entity to 10 percent of the total number of personnel employed therein. The third horizontal commitment relates to national treatment in mode 3 and requires authorization for acquisition of land or real estate property, but exempts free zones from this requirement. The last horizontal commitment specifies no constraints on national treatment in mode 4. As to construction services, in addition to the horizontal commitments Egypt restricted market access by requiring commercial presence to be only in the form of joint ventures, with foreign equity not exceeding 49 percent. However, no restrictions were imposed on movement of natural persons. Similarly, no sector-specific restrictions were placed on national treatment.

In light of these commitments, three questions emerge:

1) Are Egypt's commitments in line with national legislations, or on the contrary they contradict them?

2) Do Egypt's commitments involve high costs for the industry stemming from foreign competition?

3) Reciprocally, what are the chances for Egyptian companies to access the global markets?

   A close examination of Egypt's commitments under GATS indicates the following:

1) Egypt's construction-specific commitments yield a low level of liberalization limited to a few sub-sectors that include sophisticated and large-scale activities only. Egypt has not liberalized any activity related to the construction of buildings, where small contractors are largely concentrated. It has liberalized, however, most civil engineering activities (dams, harbors, elevated highways and long-distance pipelines). It is worth noting that the World Bank has calculated an index (scale 0-100, most liberal) for the extent of liberalization in each sector for each country under GATS. Egypt's construction sector index was 31.24 among a set of 83 countries that liberalized their construction services. Starting from the most liberal, Egypt ranked 55 (World Bank 2008a).

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[24] The other four sectors are tourism and travel related services, financial services, international maritime services and communications.

2) Comparing GATS commitments with law 104/1992 that established the EFCBC, it appears that these commitments are more restrictive. Pursuant to article (9) of the executive regulations of the law, a foreigner or a foreign company seeking the membership of the Federation—to be able to execute works in Egypt—has to apply as a correspondent member of the Federation, and its membership will be valid only for the length of implementation of its projects in Egypt. There are no other restrictions in the law or in the executive regulations impeding market access for foreigners. Whereas under GATS, commercial presence is only allowed for joint venture partnerships, and foreign capital equity is limited to a maximum percentage of 49 percent.

3) Despite the non-restrictive nature of the law, the rules issued later by the Federation with respect to registering correspondent members stipulate that foreigners have the right to pursue all activities listed by the Federation as long as they are classified as class A in their own countries (equivalent to the first grade of EFCBC classification). An exception is made if the specialization of the foreigner has no equivalent in Egypt. In addition, foreigners are required to be in partnership with a national member of the Federation whose share is not less than 51 percent of the project's value, which should be worth not less than LE 40 million. GATS commitments are in line with the Federation rules requiring foreign partnership with a local company with majority ownership to the local. Moreover, the restrictive domestic rules stipulating that foreigners be classified as class A have not been reflected in the GATS schedule, leading to ambiguity and lack of transparency for foreigners.

4) It is also worth noting that there are some national restrictions concerning the commercial presence of engineering consultancy offices. Article 8 of the Ministerial Decree 1684 for 1972—issued by the Minister of Irrigation (being responsible for the Union of Engineers)—allows "foreign consultancy offices and foreign consultancy architects or engineers to undertake consultancy projects, provided they have professional cooperation with one of the Egyptian consultancy offices through a partnership agreement that defines the role of each in detail. A copy of that agreement must be submitted to the Engineers Syndicate on condition that the Egyptian consultancy office's share should not be less than 50 percent, and taking into consideration the public interest." Moreover, article 1 of the decree of performing the architectural profession—issued by the Engineers Syndicate in 1977 through its general assembly—notes that the Egyptian consultancy office is the one

that has to register at the syndicate and its owner must be an architect or engineer. Besides, the office has to be registered as an Egyptian firm. There are no restrictions against foreigners unless they are individuals, in which case they cannot establish an office in their name. This is not the case if they are establishing an Egyptian firm pursuant to law 159/1982.

5) As for liberalizing movement of natural persons, examining the schedule of commitments of Egypt's partners shows that they are reluctant to liberalize mode 4 in construction services or in services in general. Table A.6 in the Appendix shows the main destination countries for Egypt's construction services and their mode 4 status, and pinpoints the restrictions that impede the movement of workers.

Thus, one can confidently conclude that Egypt's commitments under GATS are less liberal—or more restrictive—than under the national law. However, they are on the same level of restriction as the rules of the Federation and the Engineers Syndicate. Moreover, movements of natural persons are highly restricted.

Accordingly, to answer the question whether liberalization is detrimental to construction, one should differentiate between the impacts on two types of companies: the majority of small companies and the few big ones.

For small companies, foreign competition is not harmful as the nature of works undertaken by small firms differs from that of foreign firms. Whether foreign contractors will access the Egyptian market without explicit restrictions on the nature of the operations in terms of classes or minimum value (i.e., under GATS) or according to the Federation's rules, they will enter for the sophisticated and highly technologically advanced projects, which are by their very nature above the capabilities of small companies. In fact, foreign participation in these projects is likely to be beneficial to smaller contractors since larger firms will eventually engage them as subcontractors.[25]

As for the ability to compete with large foreign firms, Egyptian large companies are able to compete relying on cost advantages and experienced engineers. Yet, they have many disadvantages in terms of management, marketing strategies and use of technologies. Competing with international players would drive them to address such problems in order to

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[25] See notes 9 (interview) and 20.

remain in the local market, even before expanding to the international market. Such pressure will eventually lead to lower costs and raising the quality of their services. Participating in tenders abroad or even in tenders for sophisticated local projects will also require them to meet certain specifications without which their offers would not be accepted. For large companies to be able to compete, problems and factors affecting their competitiveness should be resolved. These issues will be addressed in Section 5.

Finally, the last question relates to the extent to which Egyptian construction and engineering consultancy firms can access foreign markets. As a matter of reciprocity, Egyptian companies will enter the global markets under the same GATS conditions. Again, this means that small firms will not be able to compete unless they undergo structural reform enabling them to upgrade to better and higher grades of international classification and standards. Other large Egyptian companies will be able to implement work in foreign markets. In fact, a number of Egyptian companies are already listed among the world top 120 contractors.[26] Nevertheless, many of the large Egyptian companies still lack several factors that affect their competitive advantages, including managerial, marketing and organizational skills as well as highly qualified engineers, designers and IT specialists, in addition to their inability to provide maintenance and post-construction services. This makes developing those skills a policy priority to improve Egypt's position in exporting construction services.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The contribution of the construction industry to the Egyptian economy cannot be underestimated. However, its role is still below the developing world's average, and falls short of achieving the desired development objectives. According to the analysis in this paper, the unsatisfactory performance of construction and related engineering services can be explained by several factors and constraints. Addressing them through comprehensive, bold and non-traditional reforms is a policy priority. Based on the research findings, this paper highlights the following set of recommendations as broad suggestions for a reform package.

1- Assessing the real economic contribution of the industry requires addressing the problem of lack of data on engineering services. This problem arises because the national classification of GDP considers 'construction and building' as a commodity

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[26] In terms of its 2007 revenues, the Arab Contractors Company was ranked 117 in the Engineers News Record (ENR) 2008 report, while Orascom Construction Industries was ranked 77 (www.enr.com).

sector, while engineering services are included in 'the real estate activity services' and their data are not treated separately. To be in line with the WTO classification, engineering services should be added to construction, which should be treated as a service sector, especially that Egypt's commitments under GATS treat both of them as one service sector.

2- Financial constraints should be eased to help contractors expand the scope and size of their activities. In this respect, a top priority is to settle the delayed payments as well as other obligations owed by government entities to contractors and to set a transparent and declared schedule of gradual payment. Besides ensuring the flow of cash to the contractors, settlement of government arrears will improve the contractors' relationship with banks. It is important to add an article in the bids and tenders law imposing penalties on government authorities in case of delayed payments to construction companies. Reducing the interest rate on loans to contractors is also necessary. It is also imperative that the government creates mechanisms between the financial sector and the construction sector to provide companies with sufficient support both locally and internationally. Such mechanisms exist in countries like France, China and Korea. However, such support should be limited to certain types of construction activities needed in the economy (e.g., infrastructure, and middle and low-cost housing) and in certain targeted areas (poor, rural and urban). The problem of financing raises questions about the national treatment clause in GATS, since applying it with no restrictions leads to unfair competition. In fact, many countries subsidize their local players until they build a competitive advantage in international markets. Allowed under the GATS general principles, this strategy may prove useful in the case of Egypt, at least temporarily.

3- The analysis pointed out that the shortage of trained workers strongly affects labor productivity—and hence the unit labor cost in this industry—and undermines the competitiveness of this industry. Encouraging formality of labor and developing human capital should be priority areas of reform.

The analysis reveals that labor informality and job instability are major obstacles to training, in addition to insufficient training. Although labor law 12/2003 prohibits employers from hiring workers without working permits from the concerned

administrative authority, and despite the fines for hiring informal workers, enforcement of such regulations is weak and the number of registered workers is small, preventing training.

To encourage formalization and registration of workers, self-employed individuals and sub-contractors, it is important to streamline the process of registration through a one-stop shop. A media campaign to enhance awareness of workers regarding the benefits of registration and training as well as acquiring skills in line with international standards will be useful in this respect. Moreover, positive and negative incentives to contractors are necessary to encourage registration. The former may include adding the requirement of having a number of registered workers in the tenders, as well as including registration as one of the basic criteria for ranking contractors registered in the EFCBC (El Tohamy and Madbouly 2007). Negative incentives will be applied on non-complying contractors. Registration should involve benefits to workers such as insurance protection and hiring priority.

However, reforming the system of training remains a key aspect of enhancing human capital. In this regard, the following aspects are of crucial importance:

a. Private sector partnership is an important element in the training process. In addition to enhancing the training function of EFCBC, private sector companies should contribute to vocational training. Both positive and negative incentives are useful in this regard.

b. Standardization and accreditation of vocational training will ensure quality in the market and enhance competitiveness of labor in both local and regional markets (El Tohamy and Madbouly 2007).

c. Human resource development may start in educational institutions where internships and in-company training can be incorporated into educational curricula.

d. Enhancing company management, marketing and procurement knowledge as well as strategic planning by enrolling managers in relevant training programs.

4- To reduce the cost of doing business and compensate contractors for fluctuations in input prices, it is imperative to activate and empower the Egyptian Competition Authority (ECA). This is also necessary to avoid future escalation in the prices of steel

and cement. Moreover, there is a need for reducing bureaucracy and the paperwork required to perform construction activities, such as registration and the issuance of construction permits. Of great importance also is developing a database of construction companies and local and international markets in order to save time and effort and hence reduce costs.

5- Institutional and regulatory reforms are required. Empowering the Federation as an independent entity and activating its role in training and in defending the rights of contractors is important. The Federation currently undertakes the function of the regulator, with the minister as chairperson of the board. Hence, it is difficult to ensure transparency and neutrality of the Federation's decisions, emphasizing the need for an independent regulator. In addition, removing the sequestration placed on the Engineers Syndicate is urgently required.

6- Assessment of the impact of privatization was limited in this paper to the financial performance of privatized firms. Results of the assessment pointed to a positive impact in general in terms of profitability and liquidity ratios. Nevertheless, an in-depth and comprehensive analysis should be conducted of the impact of privatization on employment, competitiveness, governance and investments. To get meaningful results requires a survey using a detailed questionnaire. The support and endorsement of the Ministry of Investment to such undertaking is essential.

7- To reap the potential gains from liberalizing the construction sector, it is necessary to design a careful strategy that strikes a balance between complete opening-up and restrictions aiming to protect the industry. The current schedule of commitments is restrictive and is limited to some segments of the construction sector. It is advisable to keep this scope of liberalization and pursue a gradual policy of opening up in order to protect small contractors. If foreign companies start to undertake projects and works currently implemented by small local contractors, this would certainly harm the latter due to the efficiency and technological gap. For large companies, competition will enhance their efficiency as previously stated. In this respect, keeping the 49-percent limit on foreign equity has little justification; it is for the benefit of local companies that their foreign partners have the larger share of equity to ease financial constraints and to benefit from management expertise, know-how and training of local employees.

The domestic regulations of the EFCBC concerning the classification of foreign companies in class A in their home countries are ambiguous, as it is unclear what class A means. In addition, this is not reflected in Egypt's schedule of commitments under GATS. Domestic law and regulations need revision to be in line with international agreements. For purposes of transparency and consistency, a threshold of the value of projects can be set in both national law and international commitments. The threshold can be revised as companies grow to allow for more foreigners in the industry. Finally, policies should provide incentives for training of technical personnel by foreign firms, and pre-defined frameworks for transfer of know-how need to be established. As for mode 4, the current limit of 10 percent of foreign personnel is reasonable and should be kept to strike a balance between creating jobs for nationals and benefiting from the transfer of technical knowledge.

Finally, it is important to emphasize that notwithstanding the merits of liberalization, addressing domestic challenges and reforming domestic regulations remain the most crucial requirements for enhancing efficiency in the construction industry. More importantly, further liberalization should follow—and not precede—the adoption of bold policy actions to raise the efficiency and competitiveness of construction companies.

Table A.1. Number of Consultant Engineers and Consultancy Firms Registered with the Engineers Syndicate, as of December 21, 2008

Type	Numbers	%
Engineering consultancy firms		
Specialized firms	658	93.5
Multi-specialty firms	24	3.4
Consultancy houses (expertise houses)	22	3.2
Total	**704**	**100.0**
Consultant engineers		
Civil engineers	5916	52.0
Architectural engineers	2690	23.6
Mechanical engineers	1274	11.2
Electrical engineers	1099	9.7
Chemical engineers	227	2.0
Petroleum and mining engineers	106	0.9
Textile engineers	70	0.6
Total	**11382**	**100.0**

Source: Engineers Syndicate, unpublished data.

Table A.2. Real Labor Productivity (000LE/worker) 2002/03-2006/07

Years Sectors	2002/03	2003/04	2004/05	2005/06	2006/07
Agriculture					
GDP*	7735.2	7948.7	8207.5	8474.1	8786.0
Employment**	5084.0	5157.0	5243.0	5333.0	5427.0
Productivity	1.521	1.541	1.565	1.589	1.619
Manufacturing					
GDP	10619.7	10915.1	11399.1	12075.3	12991.1
Employment	2251.2	2331.8	2428.5	2529.9	2642.5
Productivity	4.717	4.681	4.694	4.773	4.916
Oil and products					
GDP	3916.8	3976.0	4008.2	4791.9	4957.5
Employment	65.0	72.9	83.0	98.0	115.5
Productivity	60.258	54.540	48.292	48.897	42.922
Electricity					
GDP	659.6	696.2	743.6	808.6	859.5
Employment	139.5	144.1	146.8	149.1	152.0
Productivity	4.728	4.831	5.065	5.423	5.655
Construction					
GDP	2679.0	2792.6	2933.0	3344.4	3874.4
Employment	1405.0	1437.0	1475.0	1525.0	1580.0
Productivity	1.907	1.943	1.988	2.193	2.452
Trans. and storage [1]					
GDP	6516.8	7077.7	7712.5	8414.4	9411.5
Employment	853.9	880.9	910.0	943.0	988.0
Productivity	7.632	8.035	8.475	8.923	9.526
Trade and finance [2]					
GDP	10081.6	10316	10663.4	11325.7	12231.9
Employment	1732.5	1793.1	1857.4	1930.0	2007.0
Productivity	5.819	5.753	5.741	5.868	6.095
Hotels and restaurants					
GDP	1014.0	1482.5	1794.6	1872.5	2120.6
Employment	239.0	260.0	285.0	315.0	345.0
Productivity	4.243	5.702	6.297	5.944	6.147
Housing and real estate					
GDP	2637.9	2682.7	2737.7	2839.9	2957.5
Employment	248.0	254.0	262.0	270.0	279.0
Productivity	10.637	10.562	10.449	10.518	10.600
Social services [3]					
GDP	9965.5	10306	10659.2	11099.3	11637.1
Employment	6060.9	6177.2	6312.3	6447.0	6584.0
Productivity	1.644	1.668	1.689	1.722	1.767
Total					
GDP	55826.1	58193.5	60858.8	65046.1	69827.1
Employment	18079.0	18508.0	19003.0	19540.0	20120.0
Productivity	3.09	3.14	3.20	3.33	3.47

Source: Based on data from the Ministry of State for Economic Development (2008, pp. 16-20).

1- Including communications and Suez Canal.
2- Including insurance.
3- Including public utilities; social insurance; and government, personal and social services.

* GDP at fixed prices, base year 1981/82 in LE million.
** Number of workers: 1000 employees.

Table A.3.The Ten Privatized Construction Companies

Names	Value of sales (in LE million)	% of Shares			Date of privatization	Method of sale
		Private sector	Employees' association	Holding company		
United for Housing and Development	5	93.00	7.00	0.00	12/2/1996	MPO
Nasr City for Housing and Development	189.6	65.00	10.00	25.10	13/5/1996	MPO
El Shams for Housing and Development	30.8	50.00	5.50	44.50	1/9/1996	MPO
Cairo (El Kahera) for Housing and Development	117.8	69.00	10.00	21.00	24/3/1997	MPO
Upper Egypt General Contracting	15	75.00	10.00	15.00	5/6/1997	MPO
Giza General Contracting Company	33.17	70.00	10.00	20.00	15/9/1997	MPO
Industrial and Engineering Enterprises Company	299.1	80.00	10.00	10.00	29/10/1997	MPO
Al Mahmoudia General Contracting	54.422	70.00	10.00	20.00	17/1/1998	MPO
El Nasr Civil Works	104.628	71.00	10.00	19.00	24/5/1998	MPO
El Nasr for Utilities and Erection	40.0	90.0	10.00	0.00	10/11/96	Anchor Investor

Source: Ministry of Investment, unpublished data.

Table A.4. Rates of Growth of Investments in 10 Privatized Companies (Annual and Average Rates)

Company	1		2		3		4		5		6		7		8		9		10	
	Years	%	Years	%	Years	%	Years	%	Years	%	Years	%	Years	%	Years	%	Years	%	Years	%
Pre-Privatization	1991		1991		1991		1991		1991		1991		1991		1991	2.67	1991		1991	
	1992		1992		1992		1992		1992		1992		1992		1992	3.02	1992		1992	
	1993		1993		1993		1993	0.00	1993	-0.36	1993		1993	0.00	1993	0.00	1993	-0.18	1993	321.3
	1994		1994		1994		1994	-57.26	1994	-3.48	1994	0.00	1994	-7.07	1994		1994	-1.43	1994	0.5
	1995	0.00	1995	310.03	1995	0.00	1995	0.00	1995	25.88	1995	0.00	1995	151.09	1995		1995	296.47	1995	75.1
	1996	173.77	1996	151.77	1996	536.07	1996	5700.94	1996	14.02	1996	0.00	1996	0.00	1996		1996	8.24	1996	37.9
Post Privatization	1997	11.82	1997		1997	-83.99	1997		1997		1997	274.11	1997		1997		1997		1997	
	1998	4.94	1998		1998	10.62	1998		1998	27.67	1998		1998		1998	160.71	1998		1998	0
	1999	-73.35	1999		1999	18.74	1999		1999	5.83	1999		1999	20.27	1999	-5.05	1999	18.93	1999	-0.3
	2000	0.00	2000		2000	39.48	2000		2000	643.50	2000		2000	-97.63	2000	-28.46	2000	0.00	2000	0
	2001	0.00	2001		2001	0.00	2001		2001	-22.87	2001		2001	0.00	2001	0.00	2001	-15.92	2001	0
	2002	0.00	2002		2002	-96.03	2002		2002	3.69	2002		2002	0.00	2002	4.28	2002	125.87	2002	0
	2003	0.00	2003		2003		2003		2003	2.68	2003		2003	1.09	2003	4.31	2003	-55.73	2003	0
	2004	0.04	2004		2004		2004		2004	5.34	2004		2004		2004	1.34	2004	0.00	2004	0
	2005	0.00	2005		2005		2005	0.00	2005	9.68	2005		2005		2005	0.04	2005	15.14	2005	0
	2006	0.00	2006		2006		2006		2006	9.33	2006	-1.08	2006		2006	-3.04	2006		2006	0
	2007		2007		2007		2007		2007		2007		2007		2007		2007		2007	37.1
Av. Pre		86.89		230.90		268.04		1410.92		9.02		68.53		36.00		1.90		75.78		108.7
Av. Post		-5.65				-18.53		0.00		76.10		-1.08		-15.25		14.90		12.61		4.6

Source: Calculated from the financial statements of privatized companies.

Table A.5. Egypt's GATS Commitments Relating to Construction Services

Sector	Limitations on market access	Limitations on national treatment	Additional commitment
Horizontal commitments			
All sectors included in this schedule	3) None 4) <u>The entry and temporary stay of natural persons</u> - According to the labor code (law no. 137/1981) and its executive regulations, the number of foreign personnel necessary to the supply of services in any entity, regardless of the number of its branches, shall not exceed 10 percent of the total number of personnel employed therein, unless otherwise specified in a sectoral entry of this schedule.	3) <u>Acquisition of land</u>: - Authorization is required for the acquisition of land and/or real estate property. Applications in this respect are considered on the basis of evaluation of the specific projects for which the acquisition is requested and in accordance with the national policy objectives. - Acquisition of land and/or real estate property in free zone areas is unbound. 4) None[27]	
Sector specific commitments			
3. Construction and related engineering services B. Construction work for civil engineering[28]	3) - Commercial presence is only allowed for joint-venture companies - Foreign capital equity shall not exceed 49 percent of the total capital required for the project 4) None	3) None 4) None	

Source: WTO, Egypt's schedule of commitments.

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[27] In GATS terminology, 'none' means no restrictions, i.e., full commitment to liberalization, whereas 'unbound' means no commitments were undertaken.

[28] Egypt has liberalized subsector 'B' only in the schedule of commitments. This subsector includes construction work for civil engineering, special trade construction work, installation work and electrical work. As for other sectors (A, C, D and E, of the schedule), they were not yet liberalized.

Table A.6. Status of Mode 4 Liberalization in Egypt's Trading Partners

Country	Status of mode 4
UAE	Unbound except for intra-corporate transferees at the level of managers, executives and specialists.
Saudi Arabia	Unbound except for intra-corporate transferees at the level of managers, executives and specialists, with a maximum of 25 percent of total workforce of the service supplier. Alternatively, the number of managers, executives and specialists to be limited to 15 percent and other employees to be allowed under the limit of 10 percent of total workforce.
Qatar	Unbound except for managers, specialists and skilled technicians.
Algeria	Construction services non-liberalized.
Sudan	Construction services non-liberalized.
Nigeria	Construction services non-liberalized.
Mauritania	Construction services non-liberalized.
Uganda	Construction services non-liberalized.
Pakistan	Unbound, except for a maximum of 50 percent in superior categories (namely, executives and specialists).

Source: WTO Members' schedules.

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