WORLD TRADE ORGANIZATION

RESTRICTED

S/C/W/302
18 September 2009

(09-4398)

Council for Trade in Services

CONSTRUCTION AND RELATED ENGINEERING SERVICES

Background Note by the Secretariat[1]

1. This Note has been prepared at the request of the Council for Trade in Services, with a view to stimulating substantive technical discussions in the Council on the construction and related engineering services sector. It provides background information and updates a previous Note on Construction and Related Engineering Services (S/C/W/38, dated 8 June 1998). This Note concentrates on developments and issues considered to be most relevant to the GATS, as well as on recent trends in the industry that may possibly have implications under the GATS. It is not intended to provide a comprehensive account of the sector, nor to cover all issues raised by Members to date in the negotiations on construction and related engineering services.

2. Following the introduction, Section II of this Note deals with the definition of the sector under the GATS. Section III then describes its importance for national economies (in terms of GDP and employment) as well as recent market trends and challenges faced by the industry. Section IV focuses on international trade in construction and related engineering services: how it is measured, who are the main exporters and importers, and what opportunities it brings for developing countries. Section V presents an overview of existing commitments under the GATS. Section VI examines the regulatory environment, identifying the most relevant or frequent trade restrictions and regulatory issues, followed by a conclusion. A table of contents is provided on page 2 of the Note.

[1] This document has been prepared under the Secretariat's own responsibility and without prejudice to the positions of Members and to their rights and obligations under the WTO.

I. INTRODUCTION

3. The construction industry accounts for around 5 per cent of world GDP and 7 per cent of employment. These figures, however, capture only part of the significance of this sector. Beyond the statistics, the construction sector has a profound impact on virtually every aspect of daily life. It provides the facilities needed for the production and consumption of essentially all goods and services: from the structures used for primary product extraction and power generation, through to manufacturing and services facilities, and finally to the housing used by ultimate consumers. The sector not only provides the buildings that host a wide variety of human activities, but also the infrastructure that links them into an increasingly complex network.

4. As a supplier of physical infrastructures, the sector has *links to many different markets and activities*: mining, petroleum and petrochemicals, power generation including renewable energy, manufacturing, water and utility distributions systems, sewer/waste, transportation, telecommunications, and public health are just a few. Some of these key infrastructural (and capital-intensive) sectors have traditionally been subject to substantive government involvement and intervention.

5. Construction is intimately related to the process of industrialisation and urbanisation, which are themselves related. Through the investment component, there is a strong link between construction, economic growth and economic development. The output of the construction sector is a response to the demand for new investment and, as such, a determinant of growth and economic development.[2]

6. As a major purchaser of materials, the sector generates significant feedbacks throughout the national economy. As shown in a study focusing on selected OECD economies, construction has one of the highest backward linkages among all sectors, reflecting its importance as a user of inputs from other industries.[3] Similarly, an export contract for construction services often generates important revenues from the associated export of capital equipment, as well as from the subsequent maintenance, repair and replacement thereof.

7. As reflected in many national stimulus packages implemented during economic downturns, governments often consider construction spending, in particular on public works (infrastructure construction programmes), as a strategic economic stimulant. Furthermore, public infrastructure – notably transportation infrastructure such as highways, airports, bridges and other facilities that often are the focus of public spending programs – are critical to attract investment generally and, eventually, to ensure the competitiveness of user industries.[4]

8. Obtaining reliable data on world construction output is difficult. Statistics differ widely according to the source used: for 2007 for instance, figures vary between US$2.9 trillion (United Nations Statistics Division) and US$6.7 trillion (Global Insight Inc, a Massachusetts-based economic consulting and research firm). One reason behind these discrepancies is the large informal sector,

---

[2] For a comprehensive discussion of the relationship between construction and economic development, see for instance Bon and Crosthwaite (2000), section 2.1.

[3] Pietroforte and Gregory (2003).

[4] One sector-specific aspect thereof is highlighted in the WTO Secretariat's Background Note on Tourism Services (S/C/W/298 of 8 June 2009), which quotes the UNECA/AU 2008 Economic Report on Africa, emphasizing that one of the major barriers to tourism investment in the African countries is the lack of essential infrastructure.

resulting in underreporting by many countries. According to a mid-range estimate by an industry expert based on national statistics, world construction output has reached US$4.8 trillion in 2007.[5]

9. A large proportion of this construction activity remains local or national – irrespective of the level of economic development of individual countries. Construction is a relatively local/national industry around the world, and one which does not lend itself easily to monopolies. It is characterised by a large number of small firms generally specialising in certain fields or operating in small geographic areas. According to the European Construction Industry Federation (FIEC), for example, out of the total 3 million construction companies in the EC-27 in 2008, 95 per cent were SMEs with fewer than 20 employees. In value terms, companies with fewer than 50 employees undertake around 60 per cent of European construction work.[6] However, industry sources indicate a recent trend towards consolidation and the creation of larger firms that provide the whole array of construction-related activities. Construction services may be carried out by general contractors who complete the entire work for the client, or by specialized subcontractors who undertake parts of the work.

10. The *international* construction sector consists primarily of multinational contractors who compete among themselves and with contractors that perform work only in the countries in which they are based. Multinational companies tend to specialize in certain types of construction work, often also as a result of domestic competitive advantages. For instance, US contractors perform well in international competitions in the field of petroleum, chemical and other industrial processing plants, and in the treatment of hazardous waste (the latter alongside with European firms). Japanese and Korean firms can capitalize on technological and project management expertise in the manufacturing market (notably auto and electronic assembly). European companies fare well in international competitions for general building, transport infrastructure (such as airports, roads and ports), power generation and sewer/waste treatment. Chinese firms are particularly active on markets such as general building, power, water, transportation and telecommunications. *Customers* of international construction services are generally large private corporations and governments. They are usually sophisticated buyers, who participate in the planning and execution of the projects.

11. The precise size of the *international* construction market is difficult to estimate given data-shortage as well as conceptual difficulties. For instance, there are hardly any reliable statistics on government purchases of construction services, even though these constitute an important part of the international construction market. According to Engineering News Record (ENR), the world's largest 225 international contractors, as a group, generated revenues of US$310.25 billion from projects outside their respective home countries in 2007. This represents a startling 38 per cent increase over 2006 in nominal US$ terms.[7] The top three international contractors in 2007 were (ranked on the basis of their revenues generated overseas): Hochtief AG from Germany, Vinci Construction from France, and Skanska AB from Sweden.[8] For these three companies, the share of revenues generated abroad in their total 2007 revenue represented as much as 89, 35 and 75 per cent respectively. Overseas revenues of the world's 225 largest international contractors in 2007 came from the following source markets: Europe (US$96.5 billion or 31 per cent), followed by the Middle East (20 per cent), Asia-Pacific (18 per cent) and the US (12 per cent). The African continent represented a little over 9 per cent. North Africa showed the biggest percentage increase in international work for

[5] Based on data from Asia Construct, Euroconstruct, and national statistics: Flanagan, R. (2009), slides presented at the OECD Experts Meeting on Services Trade Restrictiveness Indices (STRI), OECD, Paris, 2-3 July 2009, www.oecd.org/trade/stri.

[6] Figure reported by the Construction Unit of the European Commission's Directorate-General Enterprise and Industry.

[7] Engineering News-Record (ENR), The McGraw Hill Companies, Inc., 18 August 2008.

[8] The same three companies as the year before, albeit in a different order in 2006: 1. Hochtief AG; 2. Skanska AB; and 3. Vinci Construction. Engineering News-Record, The McGraw Hill Companies, Inc., 20 August 2007.

the Top 225 contractors, rising by 75 per cent to US$13.2 billion. It will be interesting to follow the evolution of these patterns once the effects of the financial crisis and of the various fiscal stimulus packages unfold. Section IV of this Note examines more closely international trade flows in construction services, using both country-level and firm-level data.

12. Regarding the impact of the 2008-09 global financial crisis: For large contractors the economic downturn began slowly in early 2008 in the wake of the recession in the US housing market. The construction sector usually reacts to economic downturns with a delay, given that most contracts are long-term, running for two to three years or more. In addition, contractors often build up backlogs over several years, allowing them to mitigate the effect of a crisis in the short run. But as the backlog shrinks and large projects are downsized or put on hold, the pressure on margins will be fully felt. Especially smaller contractors and subcontractors may need to bid very aggressively just to maintain their volume of business. According to ENR, contractors expect the worst of the crisis to unfold in 2010.[9] For some contractors, financial liquidity is an immediate concern for their economic survival.

II. SECTOR DESCRIPTION AND GATS COVERAGE

A. SECTOR DESCRIPTION

13. Traditionally,[10] and also during the 1990s and at the time of the Uruguay Round, construction services were defined as encompassing the *design* and *implementation* of structures and productive facilities. This definition reflects the two phases of the construction process. The design phase usually entails conceptual assessments and feasibility studies, followed by decisions on the site, type of structure and sources of financing. The implementation phase (sometimes characterised as 'physical construction') starts only once the firm that will design and manage the construction has been selected, final plans have been submitted and officially approved, general contractors and subcontractors selected, and financing arranged.[11] During both phases effective planning is essential. Both the 'designers' and the 'implementers' of the structure or productive facility must consider issues such as environmental impact, successful scheduling, budgeting, site safety, availability of materials, logistics, and inconvenience to the public caused by construction delays.

14. Construction projects generally fall into two distinct categories:

(i) **structures,** which comprise residential and non-residential buildings. The latter category is subdivided in industrial buildings (refineries, manufacturing facilities etc.), commercial buildings (offices, stores, shopping malls, etc.) and other non-residential buildings (hospitals, universities, theatres, cinemas, etc.);

(ii) **civil engineering works and productive facilities,** which include utility facilities (pipelines, power plants, etc.), transportation facilities (roads, bridges, ports, airports, etc.), and public works facilities (water and sewage systems, etc.).

15. In the "Services Sectoral Classification List" (MTN.GNS/W/120), which has been used by most Members to define the scope of the specific commitments in their GATS Schedules, the sector is classified as "3. Construction and Related Engineering Services (CPC 511-518)". In accordance with

---

[9] ENR, "The Top 400 Contractors", *The Construction Weekly*, 18 May 2009; pp. 40-54.

[10] U.S. Department of Commerce, "A Competitive Assessment of the U.S. International Construction Industry", Washington, D.C., July 1984; p. 2.

[11] Lee, J. and Walters, D. (1989), "International Trade in Construction, Design, and Engineering Services"; pp. 6-7.

the UN provisional CPC[12] classification of services, the activities covered under this heading are as follows (Box 1):[13]

Box 1: Sector Classification

3. CONSTRUCTION AND RELATED ENGINEERING SERVICES

A. General construction work for buildings (CPC Prov 512)

This item includes construction work (including new work, additions, alterations and renovation work[14]) for all types of buildings, residential or non-residential, whether privately or publicly owned.

B. General construction work for civil engineering (CPC Prov 513)

This item covers construction work for structures other than buildings such as highways and streets, railways and airfield runways, bridges and tunnels, waterways and harbours, dams, pipelines, communication and power lines, mining and manufacturing plants, and stadia and sports grounds.

C. Installation and assembly work (CPC Prov 514, 516)

This item includes such activities as the assembly and erection of prefabricated constructions, installation work for heating and air conditioning, water plumbing, gas fitting, electrical wiring, fire alarm construction, insulation, fencing and lift construction.

D. Building completion and finishing work (CPC Prov 517)

This item covers special trade construction work for the completion and finishing of buildings such as glazing, plastering, painting, floor and wall tiling, carpeting, carpentry, interior fitting and decoration, ornamentation fitting.

E. Other (CPC Prov 511, 515, 518)

This item includes pre-erection work at construction sites, as well as special trade construction work such as foundation work, water well drilling, roofing, concrete work, steel bending and erection, and masonry work. It also covers renting services related to equipment for construction or demolition of buildings or civil engineering works, with operator.

16. The five subdivisions of "Construction and Related Engineering Services", 3.A. to E., appear to be somewhat different in nature. The two first ones (CPC 512 and 513) reflect the previously mentioned distinction between structures (residential and non-residential buildings) and civil

[12] The W/120 categories are based on the UN provisional CPC of 1991. Further detail on the description of sub-sectors is found in the United Nations, "Provisional Central Product Classification", U.N. Statistical Papers, Series M No.771991. The latest version of the CPC is Version 2.

[13] Not all Members have adopted the CPC classification in making commitments in this sector. However, the use of national definitions is rarer than in other sectors such as financial services. See document S/CSC/W/9 for details.

[14] Although repair and maintenance work is not explicitly mentioned in the 1991 provisional UN CPC description, it may be assumed that they would normally be included, unless involving services which belong elsewhere in the classification.

engineering works. The two subsequent CPC subdivisions – "Installation and assembly work" (CPC 514, 516) and "Building completion and finishing work" (CPC 517) – instead cover distinct activities or phases of a given building project. Finally, the category "Other" (CPC 511, 515, 518) groups together building stages (pre-erection and site preparation work), special trade construction works such as foundation or masonry work, and particular means of supplying the service (renting services with operator).

17. CPC 512 ("Construction work for buildings") and CPC 513 ("Construction work for civil engineering") are probably the most important components of international trade in construction services. Yet, activities classified under subdivisions 3.C., 3.D. or 3.E. of the W/120 list may well constitute an essential element for the completion of a given building or civil engineering work. Several negotiating proposals submitted by WTO Members have stressed that construction and engineering services consist of a wide range of interrelated activities and that, therefore, future specific commitments should encompass all stages of the construction process ranging from "pre-erection work at construction sites" (CPC 511) to "building completion and finishing work" (CPC 517). This would ensure that service suppliers that are engaged in multi-stage or 'turn-key' construction projects obtain the array of commitments required so as to effectively carry out their work.[15]

18. Other negotiating proposals have drawn attention to the interrelation between the supply of construction services and the supply of architectural (CPC 8671), engineering (CPC 8672), integrated engineering (CPC 8673), urban planning and landscape architectural services (CPC 8674), and other related consulting services – although these services are classified elsewhere in the Services Sectoral Classification List, under professional services.[16] Internationally active construction firms in particular often provide these services in an integrated manner, from the pre-investment stage (e.g., feasibility studies), through project design and management, to project implementation (the actual physical construction).

19. As already pointed out in the 1998 Background Note, there appears to be an element of ambiguity regarding the respective coverage of "Engineering services" and "Construction and related engineering services" in the W/120 classification list.[17] In the UN provisional CPC, engineering services (CPC 8672) do *not exclude* construction-related engineering services, while "construction work" (CPC 511–518) does not appear to explicitly cover "related engineering services". In the provisional CPC, construction-related engineering services are included in "Other engineering services during the construction and installation phase" (CPC 86727), a subset of engineering services.[18]

B. NEW WAYS OF DOING BUSINESS FROM A GATS PERSPECTIVE

20. The construction industry differs from many other service industries in that its output is physical in nature. It is the production *process* that is exported, the final output is located in the host country. Especially in the final stages, some form of local 'presence' or 'establishment' is therefore

---

[15] See paragraph 8 of New Zealand's negotiating proposal (S/CSS/W/91 of 26 June 2001) as well as the negotiating proposal by Japan (S/CSS/W/42 of 22 December 2000).

[16] Negotiating proposals by Brazil (S/CSS/W/113 of 5 October 2001), paragraphs 5-7; by Cuba (S/CSS/W/145 of 22 March 2002), paragraphs 10(a) and 11; and by the European Communities (S/CSS/W/36 of 22 December 2000), paragraph 7.

[17] See Secretariat Background Note on Architectural and Engineering Services (S/C/W/44, dated 1 July 1998), paragraph 8.

[18] Some countries have scheduled construction and engineering services together (e.g., Morocco, Venezuela), or have added remarks to clarify the scope of construction and related engineering services (e.g., Hong Kong, China).

generally necessary. The type of 'presence' may vary from sending a crew just for the time span of a particular project (which can be as short as a few weeks or months) to a more or less permanent and 'duly constituted' commercial presence (Figure 1). One important difference between more permanent and short-term entry is that, in the former case, firms tend to source staff locally, while in short-term entry more expatriates are sent overseas.[19] Reportedly, there has been a tendency from the 1990s onwards to rely on more permanent forms of presence in new markets, rather than on what might be called 'mobile' (presence limited to the implementation of a project) types of entry and participation.[20]

Figure 1: Types of Market Entry ('Entry Modes') in International Construction according to Chen

Number	Entry Modes
1	Strategic alliance
	┌ Vertical alliance
	└ Horizontal alliance
	┌ Local partner
	├ Home partner
	└ International partner
2	Build-Operate-Transfer/equity project
3	Joint venture project
	┌ Integrated
	└ Nonintegrated
4	Representative office
5	Licensing
	┌ Long term
	└ Project based
6	Local agent
	┌ Long term
	└ Project based
7	Joint venture company
	┌ Major
	├ Equal
	└ Minor
	┌ New establishment
	└ Mergers & acquisitions
8	Sole venture company
	┌ New establishment
	└ Mergers & acquisitions
9	Branch office/company
10	Sole venture project

Source: Chen, C. (2009), presentation at the OECD Experts Meeting on Services Trade Restrictiveness Indices (STRI), OECD, Paris, 2-3 July 2009.

21. The various types of market entry and participation, as shown in Figure 1, represent different approaches of doing business. Depending on the nature and degree of foreign involvement, individual components of any particular project may fall under one or more modes of the GATS, in

[19] OECD (2009), "Services Trade Restrictiveness: Construction Services", paragraph 8.
[20] Chen, C. (2008), "Entry mode selection for international construction markets: the influence of host country related factors".

particular modes 3 (commercial presence) and 4 (presence of natural persons). Eventually, what matters for mode 3 commitments is whether or not the entrant establishes some form of commercial presence which he owns or controls to execute a specific project or stream of projects. Nowadays in most of the significant construction markets, foreign contractors are *required* to incorporate locally, in the form of a legal person, in order to execute construction business. In turn, this seems to render temporary forms of entry, possibly related to particular stages of a project, relatively less commercially attractive than longer-term forms of project involvement. The widespread use of subcontracting throughout the industry further complicates the picture. Experts report that in some international construction projects as much as 90 per cent of the work is subcontracted to local firms.

22. With a changing global competitive landscape, combined with newly available communication technologies and mounting financial challenges, construction firms are constantly seeking new ways of doing business. In a highly competitive and rather low-margin sector (except in niche segments), they seek to *add more value* to their services. At the same time, the procurement methods of their clients, both public and private, have become more demanding in terms of cost effectiveness, quality, health and safety.[21] For construction companies, this implies more partnering with the client, assuming responsibility not only for the 'brick and mortar' part but for an entire project, and looking at the whole-life costs of a built asset. For instance, growing emphasis is being placed by private as well as public sector contracts on 'design-build', a project delivery system whereby the design and construction aspects are contracted for with a single supplier known as the design-builder. This results in a greater integration of design and physical construction. With the emergence of new ways of procuring projects – such as Private-Public-Partnerships (PPP), Build-Operate-transfer (BOT), Special Purpose Vehicles (SPV) and Private Finance Initiatives (PFI) –, construction firms assume part of the financial risk of a project and, in some cases, even acquire an equity stake in it. They also often deliver infrastructure (for instance a road) *together* with the provision of associated services such as maintenance.

23. As a result, contractors increasingly become providers of integrated design, engineering, construction, project management and consulting services, offering integrated solutions to the client/owner of the project. They embrace a wide range of construction-related activities enabling them to offer a "one stop shop" for design, financing, operation as well as subsequent maintenance and repair. Members may thus need to assess whether and how these changing business models, which involve multiple subsectors, need to be translated into commitments under the GATS.

III. ECONOMIC PROFILE AND MARKET TRENDS

A. SHARE IN GDP AND EMPLOYMENT

24. In most developed economies, the share of construction value-added in total GDP is in the range of 4 to 8 per cent (Annex Table 1).[22] Among OECD members, Germany (4.0 per cent), the United States (4.8 per cent) and Canada (5.5 per cent) pertained to the lower range, as compared to countries like Japan (6.2 per cent), Australia (7.0 per cent), Greece (7.8 per cent) and Spain (11.5 per cent). For Korea, the share was 9.2 per cent in 2007. Construction continued booming in the GCC

[21] Traditional forms of procurement involved tendering for *each* key stage in a construction project – such as design, selecting the main contractor, appointing subcontractors –, and awarding each contract on the basis of the lowest price bid. However, this has proved *not* to provide the best value for money in the longer term. Indeed, selecting the lowest-price contract may result in a building or road that is more expensive to operate and maintain. For the perspective of the public sector as a client of construction services see: NAO, UK National Audit Office (2000 and 2005).

[22] Source: United Nations Statistics Division, 2007 data. Definitional differences exist with regard to the scope of 'construction' in the national accounts statistics across countries, but are not taken up in this Note. In terms of *gross* output, shares would be twice as high.

countries, representing 7.3 per cent of the United Arab Emirates' GDP – and 6.2 per cent of Qatar's where several multi-billion projects are underway, such as the new Doha international airport, the new Doha port, 'Education City' or the Pearl Qatar residential project. Following the 2008-09 global financial crisis, these figures could possibly decline. The share of construction in total GDP for the BRIC countries in 2007 was: Brazil (5.2 per cent), China (5.7 per cent), India (6.8 per cent) and Russian Federation (5.7 per cent).

25. An interesting case in point is Armenia, which tops the list with an astounding 28 per cent of GDP. An ongoing residential and commercial construction boom, post-earthquake reconstruction of infrastructure and other public projects have kept Armenia's economic growth in double digits in recent years. Construction has been the fastest growing sector of the economy.

26. In lower-income developing countries, construction typically accounts for 3-5 per cent of GDP. But in some smaller countries where major projects are underway, construction achieves much higher shares. Examples are Bhutan (17.4 per cent) where major hydroelectricity power and cement plant projects are underway in cooperation with India (notably the Tala hydroelectric dam), and Zambia (15.8 per cent) whose construction industry has maintained double-digit growth over the past years thanks notably to the government's Road Sector Investment Programme, a program supported by the World Bank.

27. The labour intensity of the sector is reflected in somewhat higher employment shares as compared to GDP shares (Annex Table 2). In 2007, construction represented between 6-9 per cent of total employment for most OECD countries, except for Ireland (13.4 per cent), Spain (13.3 per cent) and Portugal (11 per cent), where residential markets boomed. In Japan, the share was 8.6 per cent, 8.4 per cent in Mexico and 7.9 per cent in the Republic of Korea. In the United States alone, 7.6 million people were employed in the construction industry in 2007 (U.S. Bureau of Economic Analysis). The corresponding figure for EC-27 was 16.9 million people or 7.5 per cent of total employment. Since the start of the recession however, construction employment in several countries has fallen sharply.[23]

B. IMPORTANCE OF THE PUBLIC SECTOR AND MAIN CHALLENGES FACING THE INDUSTRY

28. The construction sector is closely intertwined with government on at least three accounts. Firstly, public-sector financing and public procurement is an important driver of demand for construction services, estimated to generate up to one half of it. In 2005, for example, government procurement accounted for around 35 per cent of construction activity in Germany and the UK, and almost 50 per cent in the United States.[24] Following the national stimulus packages adopted by several countries in 2009, this share is likely to increase in 2009-10. Procurement practices can thus have a significant impact on international trade in construction and related engineering services. Secondly, governments frequently own construction firms – as in China or Vietnam – or have construction departments. Finally, governments have a significant role in regulating the industry, including overseeing the quality and safety of structures and civil engineering works.

29. According to Transparency International, corruption in the construction sector is higher than in any other sector of the economy. Cases of corruption uncovered in construction are legion. The corruption issue is a major one for many companies. Because of construction's central role in development, corruption in this sector can be particularly harmful as its impact may go much beyond

[23] U.S. Bureau of Labour Statistics: "In June [2009], employment in construction [in the U.S.] fell by 79,000, with losses spread throughout the industry. Since the start of the recession, construction employment has fallen by 1.3 million" (see: http://www.bls.gov/news.release/empsit.nr0.htm).

[24] OECD (2009), "Services Trade Restrictiveness: Construction Services", paragraph 12.

bribe payments. Indeed, corruption may affect the quality of construction, steer public spending towards environmentally dubious projects, and ultimately result in poor project selection and insufficient maintenance. Eventually, this could carry high human costs.[25]

Challenges faced by the Industry

30. Except perhaps at the top end, construction is a very cyclical and relatively low-margin industry. Increased competition has pushed construction firms into joint bidding procedures as well as mergers and acquisitions to reduce internal costs and gain footholds in new geographical markets. Merger and acquisitions are eased by the fact that, in most markets, smaller construction companies are on sale at some point of time.

31. The industry's main concern in 2009-10 is, of course, the recession and its impact on credit markets, jobs and competition, which drives many bids below costs. Showing how cyclical the industry is, just a year before, in 2008, the key concern was price hikes for materials used in the industry, notably fuel, steel and cement. The risk of high prices for materials (and price volatility) is likely to return in the medium run. A key challenge for construction firms therefore is to create stable income streams for the longer term. In the last ten years, international contractors have striven to reduce risks by increasing their share of steady revenue generators, such as maintenance work and privately financed contracts. One example is Hochtief AG from Germany, which is increasingly focusing on high-earning markets and segments, mainly outside Germany. A fifth of Hochtief's revenue comes from facility management, airport operations and other services, *i.e.*, not from physical construction. Increasingly, long-term operating contracts are won as part of build-operate-transfer (BOT) deals. The French contractor Groupe Vinci, for example, earned half of its profits in 2003 as part of build-operate-transfer and service operations.

32. Large international construction companies increasingly focus on network and value-added. Their product and service portfolios more and more extend to several links in the project value chain and stages of the built asset's life cycle. Development and design, physical construction, facility management, operation and maintenance services become increasingly closely interrelated.

[25] See Kenny, C. (2007), and Transparency International, Global Corruption Reports 2003 and 2005, available at: http://www.transparency.org/publications/gcr /gcr_2003, respectively /gcr_2005.

IV. TRADE PROFILE

33. In spite of the importance of construction services to most national economies, *international* construction constitutes a relatively small percentage of all construction. For a long time, the costs and difficulties of long-distance communication and transportation largely restricted the construction industry to domestic and regional projects. Construction services supplied internationally typically relate to large-scale, technologically sophisticated projects (so-called 'big-ticket' projects) such as airports, harbours, petroleum, chemical or power-generation plants, major infrastructure upgrades and signature buildings. Such projects are often undertaken by specialized international contractors with local sub-contracting.

A. HOW TO MEASURE INTERNATIONAL TRADE IN CONSTRUCTION SERVICES

34. This Subsection seeks to explain which part of trade in construction services is captured by Balance of Payments Statistics and by Foreign Affiliates Trade in Services, respectively. As noted before, given the predominantly local nature of the construction business, construction services are primarily supplied through the establishment of a commercial presence abroad.[26] Furthermore, establishment of a local presence in the foreign market often is a *necessary* prerequisite for obtaining contracts. Construction thus represents an exception in the Extended Balance of Payments Services Classification (EBOPS). In almost all other service sectors, international transactions as measured in the EBOPS can be allocated to modes 1, 2 and 4. In construction, they are modes 3 and 4. Technically, "smaller" project work (e.g. generally taking less than one year) is covered by BOP statistics. If the project lasts more than one year, separate accounts for this project are available, and income tax is payable in the host country, it becomes a resident establishment, which is no longer captured by BOP statistics, but falls within the purview of Foreign Affiliates Trade in Services (FATS).

35. By definition, FATS statistics capture trade through construction establishments, which are considered resident in the economy where the construction project is taking place. Thus, their focus is on commercial presence in the form of subsidiaries, branches or other. FATS statistics are conventionally regarded as the closest and best available proxy for mode 3, despite some deficiencies. Outward FATS statistics measure the sales abroad of domestic contractors through their foreign-based affiliates. Inward FATS statistics quantify sales of foreign contractors through their domestic-based affiliates.

36. As seen above, a substantial part of international trade in construction occurs in mode 3, which is partly accounted for by BOP statistics (besides mode 4) and partly by FATS statistics (Figure 2).

[26] The construction industry differs from other service industries in that its output is physical in nature and, in the case of an export, in that the final output is located in the host country (see also Subsection II.B of this Note).

Figure 2: Measuring modes: the Specificity of Construction

EBOPS ↓	FATS ↓
"Short-term" commercial presence, usually in the form of smaller scale projects (Mode 3), and presence of natural persons (Mode 4)	"Longer-term" commercial presence (mode 3)

Note: Distinction according to the standard rules of the Manual on Statistics of International Trade in Services. However, Members may apply these rules flexibly.

37. To date, unfortunately, sector-specific statistics on inward and outward sales of foreign affiliates (FATS) are very sparse. All OECD countries, except Mexico and Switzerland, collect trade data on construction services on a Balance of Payments basis (EBOPS 249). But only about 12 OECD Members report outward sales of foreign affiliates primarily engaged in construction activities (ISIC 45). Furthermore, the quality of the data is poor: only very few countries report relatively longer time series, and the latest available statistics generally date back to 2005.

B. MAJOR EXPORTERS AND IMPORTERS

Construction Exports and Imports in Balance of Payments Statistics[27]

38. In 2007, world construction exports as defined in EBOPS totalled US$70 billion (including intra-EC 27 trade), up 24 per cent in nominal US$ terms from 2006.[28] This represented 2 per cent of total commercial services exports. In the period 2000-2007, world construction exports have grown by an annual average of 14 per cent in nominal terms, compared to 12 per cent for all commercial services.

39. Tables 1 and 2 show major exporters and importers of construction in 2006 and 2007 respectively.[29]

[27] In the Balance of Payments, "construction" covers work performed on construction projects and installation of employees of an enterprise in locations outside the territory of the enterprise (a one-year rule to determine residency is to be applied flexibly). In addition, goods used by construction companies for their projects are included, which implies that the "true" services component tends to be overestimated. The only exception is the United States, which publishes exports of construction services net of merchandise exports and net of outlays abroad for wages, services, materials, and other expenses.

[28] WTO Secretariat estimates based on national statistics.

[29] Countries that do not collect or report construction services separately (e.g., Switzerland, the United Arab Emirates) are not included. As a result, the ranks – notably on the import side – reflect only part of the reality. The 2007 figures for Iraq were not available at the time of writing.

Table 1: Major Exporters and Importers of Construction, 2006

(Million dollars and percentage)

Rank	Exporters	Value	Share in 15 economies	Annual percentage change	Rank	Importers	Value	Share in 15 economies	Annual percentage change
1	European Union (27)	32,170	60.4	12	1	European Union (27)	20,237	43.0	10
	Thereof: Extra-EU (27) exports	16,907	31.7	14		Thereof: Extra-EU (27) imports	8,612	18.3	16
2	Japan	8,981	16.9	24	2	Japan	6,202	13.2	30
3	Russian Federation	3,050	5.7	38	3	Russian Federation	4,603	9.8	14
4	China	2,753	5.2	6	4	Kazakhstan	3,238	6.9	67
5	Malaysia	1,041	2.0	28	5	Saudi Arabia a	3,154	6.7	...
6	Turkey	936	1.8	6	6	China	2,050	4.4	27
7	India a	789	1.5	...	7	Angola	1,476	3.1	12
8	United States	663	1.2	...	8	Malaysia	1,314	2.8	21
9	Singapore	555	1.0	2	9	Azerbaijan	1,300	2.8	-13
10	Israel	509	1.0	46	10	Indonesia	985	2.1	36
11	Indonesia	456	0.9	-6	11	India a	660	1.4	...
12	Egypt	430	0.8	-14	12	United States	589	1.3	...
13	Thailand	336	0.6	32	13	Thailand	581	1.2	85
14	Norway	330	0.6	30	14	Iraq	330	0.7	-16
15	Hong Kong, China	268	0.5	-14	15	Chinese Taipei	295	0.6	-22
	Above 15	**53,270**	**100.0**	**-**		**Above 15**	**47,015**	**100.0**	**-**

a Secretariat estimate.

Note: Based on information available to the WTO Secretariat. As certain economies do not collect or report construction services separately (e.g., Switzerland, Saudi Arabia, United Arab Emirates), they do not appear in the list. Data sources: see WTO, International Trade Statistics 2008, Section IV.2.2 ('Metadata').

Table 2: Major Exporters and Importers of Construction, 2007

(Million dollars and percentage)

Rank	Exporters	Value	Share in 15 economies	Annual percentage change	Rank	Importers	Value	Share in 15 economies	Annual percentage change
1	European Union (27)	38,430	58.4	19	1	European Union (27)	26,042	41.2	29
	Thereof: Extra-EU (27) exports	21,649	32.9	28		Thereof: Extra-EU (27) imports	10,519	16.6	22
2	Japan	10,322	15.7	15	2	Japan	7,938	12.6	28
3	China	5,377	8.2	95	3	Russian Federation	6,454	10.2	40
4	Russian Federation	3,450	5.2	13	4	Saudi Arabia a	6,318	10.0	...
5	Malaysia	1,378	2.1	32	5	Kazakhstan	4,352	6.9	34
6	United States	1,170	1.8	76	6	China	2,910	4.6	42
7	Egypt	984	1.5	129	7	Angola	2,634	4.2	78
8	Turkey	856	1.3	-9	8	Malaysia	1,699	2.7	29
9	India a	845	1.3	...	9	Azerbaijan	1,471	2.3	13
10	Singapore	698	1.1	26	10	Indonesia	740	1.2	-25
11	Israel	665	1.0	31	11	India a	691	1.1	...
12	Thailand	518	0.8	54	12	Thailand	640	1.0	10
13	Indonesia	459	0.7	1	13	United States	612	1.0	4
14	Hong Kong, China	346	0.5	29	14	Chinese Taipei	371	0.6	26
15	Norway	342	0.5	4	15	New Caledonia	322	0.5	172
	Above 15	**65,840**	**100.0**	**-**		**Above 15**	**63,195**	**100.0**	**-**

a Secretariat estimate.

Note: Based on information available to the WTO Secretariat. As certain economies do not collect or report construction services separately (e.g., Switzerland, Saudi Arabia, United Arab Emirates), they do not appear in the list.

Note: For the US, BOP exports of construction are published *net of merchandise exports*, which are included in merchandise trade in the U.S. international transactions accounts (merchandise exports represented US$26 million in 2006 and US$33 million in 2007), and *net of outlays abroad for wages, services, materials, and other expenses* (US$1,363 million and US$2,256 million for 2006 and 2007 respectively). Similar input data are not collected on construction undertaken in the US territory by foreign contractors, and no estimates are made because they are believed to be small. By using this information, *gross* data for the US can be estimated, which would move the US to become at least the 5th exporter of construction in 2006 (over US$2 billion) and 3rd in 2007 (around US$3,5 billion). On the import side, the US would be in the third position (US$2 and US$3 billion for 2006 and 2007).

40. In 2007, EC-27, Japan and the United States jointly accounted for over 70 per cent of world construction exports on a BOP basis (including intra-EC 27 trade). However, developing and emerging economies have achieved a certain competitive advantage; they represent a growing share of world construction exports: notably China (8.2 per cent of Top 15), the Russian Federation (5.2 per cent), Malaysia (2.1 per cent), Egypt, Turkey, India and Singapore. There clearly is considerable South-South trade taking place in construction and related engineering services. And this is likely to expand in the future (see also Subsection D. hereafter). Unfortunately, South-South trade flows cannot be measured due to the lack of bilateral trade in services statistics.

41. How successful developing and emerging economies have been in penetrating the markets of developed countries is difficult to assess, given the shortage of bilateral trade in services statistics. Mirror statistics – *i.e.*, using *import* statistics of developed countries – could provide some indication (Annex Tables 3b and 4b displaying imports of EC-27 and Japan respectively). However, caution must be exercised when interpreting these statistics. Imports, say, of EC-27 from Nigeria also include expenditures on goods and services by EC-27 contractors in Nigeria in the context of works they perform there (local procurement of materials and local subcontracting). For more details on the exact composition of bilateral extra-EC 27 imports and exports, see Annex Table 3c.

42. On the import side, non-OECD countries accounted for at least 40 per cent of world construction imports in 2007 according to available data. However, when including construction projects funded under multilateral, regional or bilateral development aid (including notably those co-financed by the World Bank), it is estimated that over 60 per cent of the international construction market lies in developing countries.[30]

Sales Abroad through Foreign Affiliates (FATS)

43. Table 3 compares exports of construction services on a BOP basis with sales abroad of domestic companies active in the construction sector through foreign-based affiliates (outward FATS) for three countries for which recent data are available: Germany, Japan and the United States. Unlike Germany and Japan, the United States publishes BOP exports of construction services net of merchandise exports and net of outlays abroad for wages, services, materials, and other expenses (Note to Tables 1 and 2).

44. As can be seen from Table 3, in Germany and the United States, total turnover of domestic construction firms through foreign-based affiliates ('mode 3') by far outweighed exports of construction on a BOP basis; this is the case even when using the US *gross* operating revenue estimate (as specified in the Note to Tables 1 and 2). The reverse seems true in Japan, where BOP exports exceeded sales abroad of foreign affiliates, at least in 2001-2004. Thus, it seems that especially US, but also German construction firms do business abroad mainly though affiliates. Japanese construction firms seem to favour more mobile (project-based) entry on overseas markets. However, this finding must be treated with caution as it may well reflect differences in statistical recording methods. Indeed Japan records all construction projects where an affiliate is not identified under the BOP.

45. In Germany and Japan, the world's leading exporters of construction, the sector represented a sizeable share of total commercial services exports: around 6 per cent for Germany and over 9 per cent for Japan in 2008 (on a BOP basis). It has been reported that the ratio of Japan's construction revenue from foreign markets to total construction revenue has steadily increased as overseas operations of major Japanese construction firms have expanded worldwide.[31]

---

[30] UNCTAD (2000), pp. 9-10.

[31] Industrial Structure Council, Japan, 1998 Report on the WTO Consistency of Trade Policies by Major Trading Partners.

Table 3: Exports of construction (BOP basis) and outward sales of foreign affiliates engaged in construction activity – Germany, Japan and United States, 2000-2008

Million US$

	Germany	2000	2001	2002	2003	2004	2005	2006	2007	2008
Exports (BoP)	Construction	4,244	4,283	5,070	7,109	7,097	10,408	12,255	13,120	14,509
	Total commercial services	79,659	84,270	96,785	116,216	138,256	157,342	184,574	216,958	241,590
	Share of construction exports in total commercial services exports	5.3%	5.1%	5.2%	6.1%	5.1%	6.6%	6.6%	6.0%	6.0%
Outward FATS (turnover)	Construction [1]	6,181	3,573	10,472	12,590	14,421	16,223	18,608	N.A.	N.A.
	Total turnover of foreign affiliates engaged in services activities (including construction)	268,223	293,048	618,006	716,027	850,762	1,060,595	1,143,144	N.A.	N.A.
	Share of construction turnover in total turnover of foreign affiliates engaged in services activities	2.3%	1.2%	1.7%	1.8%	1.7%	1.5%	1.6%	N.A.	N.A.

	Japan	2000	2001	2002	2003	2004	2005	2006	2007	2008
Exports (BoP)	Construction	5,849	4,793	4,625	4,550	6,865	7,224	8,981	10,322	13,814
	Total commercial services	69,430	64,769	66,054	71,784	89,668	102,071	115,140	127,060	146,440
	Share of construction exports in total commercial services exports	8.4%	7.4%	7.0%	6.3%	7.7%	7.1%	7.8%	8.1%	9.4%
Outward FATS Turnover	Construction [1]	6,499	3,881	3,728	3,899	4,390	N.A.	N.A.	N.A.	N.A.
	Total turnover of foreign affiliates engaged in services activities (including construction)	660,529	539,550	546,382	583,377	692,544	N.A.	N.A.	N.A.	N.A.
	Share of construction turnover in total turnover of foreign affiliates engaged in services activities	1.0%	0.7%	0.7%	0.7%	0.6%	N.A.	N.A.	N.A.	N.A.

Million US$

	United States	2000	2001	2002	2003	2004	2005	2006	2007	2008
BoP Exports	Construction services [2]	673	823	568	557	299	428	663	1,170	N.A.
	Total commercial services	278,090	266,661	273,209	284,173	330,185	362,134	408,663	472,680	521,378
	Share of construction exports in total commercial services exports	0.2%	0.3%	0.2%	0.2%	0.1%	0.1%	0.2%	0.2%	N.A.
Outward FATS Turnover	Construction [1]	10,805	10,714	10,627	10,324	11,498	15,398	14,764	N.A.	N.A.
	Total turnover of foreign affiliates engaged in services activities (including construction)	2,507,433	2,524,459	2,515,641	2,865,226	3,312,531	3,786,867	4,123,547	N.A.	N.A.
	Share of construction turnover in total turnover of foreign affiliates engaged in services activities	0.4%	0.4%	0.4%	0.4%	0.3%	0.4%	0.4%	N.A.	N.A.

Source:

- For BOP data: IMF, OECD and WTO estimates;
- For FATS: Eurostat for Germany, OECD for Japan, and U.S. Bureau of Economic Analysis for the United States.

Notes:

N.A.: Not available
[1] This represents the sales (total turnover of goods and services) by foreign affiliates of resident companies. i.e., affiliates located abroad primarily engaged in construction activities (outward FATS).
[2] US construction services exports (BOP) are net of merchandise exports and of outlays abroad for wages, services, materials, and other expenses.

C. TOP INTERNATIONAL CONTRACTORS

46. In 2007 the world's largest 225 international contractors, as a group, generated revenue of US$310.25 billion from projects outside their respective home countries. This represented a startling 38 per cent increase over 2006 in nominal US$ terms.[32] The globalisation trend identified in the preceding Subsection is confirmed by firm-level data: the major change in the world market is just *how international* it has become. In 2007, the 'Top 225' included contractors from 35 different countries. A few years ago, the Top 225 international contractors used to be dominated by US, European and Japanese firms. In recent years, construction groups based in China, Brazil, Turkey, Korea, India and the Middle East have increasingly appeared on the list. In 2007, 68 out of the Top 225 international contractors were from non-OECD countries.

47. Table 4 presents the top 20 international contractors based on contracting revenues from projects outside their home country. For each firm, the ratio of international to total billings (in per cent) is specified as an indicator of its reliance on foreign markets for revenue (shaded column). Out of the Top 20 companies, two are from developing countries, China and Brazil. Whereas back in 1980, US companies accounted for seven of the Top 10 international contractors, only one US company, Bechtel, made it to the top 10 in 2008.

[32] Top 225 published by Engineering News-Record (ENR), The McGraw Hill Companies, Inc., August 18, 2008. The Top *International* Contractors list ranks firms on the basis of revenues they earned doing work outside their home countries. Part of this surge is due to currency fluctuations: namely the rise of the Euro, Japanese yen and several other currencies against the dollar in 2007.

Table 4: The Top 20 International Contractors in 2007
(Based on contracting revenue from projects outside the home country)

Rank in			2007 Revenue (US$ Million)		Percentage of Intl. Revenue in Total Revenue	New Contracts in 2007 (US$ Million)	Markets (Percentage of 2007 international revenue)								
2007	2006	Firm	International	Total			General Building	Manu facturing	Power	Water Supply	Sewer/ Waste	Petroleum Industry	Transport	Hazardous Waste	Telecoms
1	1	HOCHTIEF AG, Essen, Germany†	21,313	23,861	89.3%	32,436	48	1	2	4	2	2	19	0	5
2	3	VINCI, Rueil-Malmaison, France†	14,685	41,716	35.2%	42,688	20	0	5	2	0	6	55	0	3
3	2	SKANSKA AB, Solna, Sweden†	13,982	18,547	75.4%	21,705	61	0	1	1	4	4	27	0	1
4	4	STRABAG SE, Vienna, Austria†	12,689	15,797	80.3%	17,925	35	10	0	3	0	8	40	0	4
5	5	BOUYGUES, Paris, France†	12,090	32,062	37.7%	38,947	25	0	6	1	2	0	63	0	0
6	6	BECHTEL, San Francisco, Calif., U.S.A.†	11,742	17,696	66.4%	17,458	0	0	0	0	0	70	29	0	0
7	**	SAIPEM, San Donato Milanese, Italy†	11,339	11,757	96.4%	16,455	0	0	0	0	0	100	0	0	0
8	7	TECHNIP, Paris la Defense, France†	9,843	10,004	98.4%	9,865	0	0	0	0	0	100	0	0	0
9	9	BILFINGER BERGER AG, Mannheim, Germany†	8,475	12,642	67.0%	15,456	22	0	6	0	2	25	45	0	0
10	12	BOVIS LEND LEASE, Millers Point, NSW, Australia†	8,011	9,649	83.0%	12,752	38	0	0	0	0	2	1	0	0
11	10	FLUOR CORP., Irving, Texas, U.S.A.†	7,940	13,332	59.6%	22,590	7	0	2	0	0	88	0	0	3
12	11	ROYAL BAM GROUP NV, Bunnik, The Netherlands†	7,007	12,275	57.1%	NA	45	0	0	0	0	0	52	0	0
13	22	FCC, FOMENTO DE CONSTR. Y CONTRATAS SA, Madrid, Spain†	6,855	19,047	36.0%	NA	32	0	3	3	4	0	55	1	2
14	20	BALFOUR BEATTY PLC, London, U.K.†	6,469	14,986	43.2%	11,500	61	0	6	1	1	1	31	0	0
15	8	KBR, Houston, Texas, U.S.A.†	6,319	7,159	88.3%	4,469	2	0	0	0	0	17	0	0	0
16	13	CONSOLIDATED CONTRACTORS GROUP, Athens, Greece†	5,471	5,471	100.0%	6,248	8	0	0	4	2	82	3	0	0
17	16	CHIYODA CORP., Yokohama, Japan†	4,606	5,303	86.9%	1,921	0	0	0	0	0	100	0	0	0
18	14	CHINA COMMUNICATIONS CONSTRUCTION GROUP, Beijing, China†	4,178	20,005	20.9%	30,859	9	0	1	1	1	2	86	0	0
19	17	GRUPO ACS, Madrid, Spain†	3,653	23,130	15.8%	N.A.	0	0	32	0	9	34	23	0	2
20	21	CONSTRUTORA ODEBRECHT, Sao Paulo, Brazil†	3,423	4,950	69.2%	14	0	8	19	6	8	45	0	0	0

Source:

Notes:

- Companies are ranked according to construction revenue generated outside of each company's home country in 2007 in US$ millions. Firms not ranked the year before are designated by **.
- General Building: commercial buildings, offices, stores, educational facilities, government buildings, hospitals, medical facilities, hotels, apartments, housing, etc.
- Manufacturing: auto assembly, electronic assembly, textile plants.
- Power: thermal and hydroelectric power plants, waste-to-energy plants, transmission lines, substations, cogeneration plants, etc.
- Water supply: dams, reservoirs, transmission pipelines, distribution mains, irrigation canals, desalination and drinking water, treatment plants, pumping stations, etc.
- Industrial process: pulp and paper mills, steel mills, non-ferrous metal refineries, pharmaceutical plants, chemical plants, food and other processing plants, etc.
- Petroleum: refineries, petrochemical plants, offshore facilities, pipelines, etc.
- Transportation: airports, bridges, roads, canals, locks, dredging, marine facilities, piers, railroads, tunnels, etc.
- Hazardous waste: chemical and nuclear waste treatment, asbestos and lead abatement, etc.
- Telecommunications: Transmission lines and cabling, towers and antennae, web hotels, etc.

48. The ranking of construction firms according to their global contracting revenue, both at home and abroad, makes it even more obvious that 'mega firms' are no longer the preserve of Europe, the United States and Japan. Among the 20 biggest construction companies in the world in 2007, 9 came from the EC (France, Germany, Spain, Sweden and Austria), 5 from China, 4 from Japan and 2 from the US.[33] The top global contractors from China were: China Railway Group Ltd (third largest construction firm worldwide in 2007), China Railway Construction Corp. (4th), China State Construction Engineering Corp. (7th), China Communications Construction Grp. (8th) and China Metallurgical Group Corp. Among these firms, Beijing-based China State Construction Engineering Corp. achieved the biggest initial public offering (IPO) so far in 2009, raising US$7.34 billion at the Shanghai Stock Exchange with a huge amount of subscriptions in July.[34]

49. The Top 225 international contractors' shares of the world market are shown in Table 5. Based on the sample at hand, European, North-American, Japanese and Chinese firms together accounted for 87 per cent of the international contracting market. For each region – Middle East, Asia, Africa, Europe, US, Canada and Latin America/Caribbean – the top three contractor nationalities doing work there are indicated in bold. In the Middle East, for example, European, US and Japanese firms seem to do particularly well. In Asia, European, Chinese and US international contractors are quite present. In Africa**,** European and Chinese firms seem particularly successful.

[33] ENR's Top *Global* Contractors list ranks firms on the basis of their total contracting revenue, both at home and abroad. Source: Engineering News-Record, The McGraw Hill Companies, Inc., August 18, 2008.

[34] *The Wall Street Journal*, 24-26 July 2009, p. 21; and *Le Temps*, 25 July 2009, p. 21. China State Construction built signature buildings such as the 'Water Cube' used for the 2008 summer Olympics. It also built Disneyland in Hong Kong, and the 492-meter high Shanghai World Financial Centre.

Table 5: Top 225 International Contractors' Shares of the World Market, 2007

Contractor nationality	Nb of firms	Int'l billings		Middle East		Asia		Africa		Europe		U.S.		Canada		Latin Am. /Caribbean	
		Million US$	%	Million US$	%	Million US$	%	Million US$	%	Million US$	%	Million US$	%	Million US$	%	Million US$	%
AMERICAN	35	42,735	**13.8**	13,843	**22.0**	8,186	**14.8**	1,957	6.8	9,684	**10.0**	–	–	5,526	**66.7**	3,540	**16.7**
CANADIAN	3	2,767	0.9	22	0.0	0	0.0	0	0.0	304	0.3	2,401	6.5	–	–	40	0.2
EUROPEAN	64	179,577	**58.0**	26,669	**42.4**	23,268	**42.0**	13,660	**47.8**	75,311	**78.0**	25,211	**68.3**	2,562	**30.9**	12,897	**60.7**
British	4	11,310	3.6	2,466	3.9	2,519	4.5	139	0.5	2,721	2.8	3,445	9.3	2	0.0	19	0.1
German	5	32,088	10.3	652	1.0	13,383	24.2	933	3.3	6,676	6.9	9,683	26.2	247	3.0	514	2.4
French	5	38,695	12.5	5,409	8.6	2,941	5.3	4,364	15.3	19,288	20.0	3,246	8.8	1,689	20.4	1,758	8.3
Italian	22	25,342	8.2	7,552	12.0	3,115	5.6	5,774	20.2	4,221	4.4	676	1.8	444	5.4	3,559	16.7
Dutch	2	6,756	2.3	0	0.0	59	0.1	35	0.1	6,091	6.3	571	1.5	0	0.0	0	0.0
Spanish	11	25,161	8.1	2,681	4.3	519	0.9	886	3.1	13,451	13.9	1,635	4.4	6	0.1	5,984	28.1
Other	15	40,225	13.0	7,909	12.6	733	1.3	1,528	5.3	22,862	23.7	5,955	16.1	173	2.1	1,065	5.0
AUSTRALIAN	4	10,115	3.3	259	0.4	1,963	3.5	0	0.0	2,945	3.1	4,806	13	141	1.7	2	0.0
JAPANESE	16	23,859	**7.7**	8,575	**13.6**	7,685	13.9	1,150	4.0	1,960	2.0	3,422	**9.3**	9	0.1	1,057	5.0
CHINESE	51	22,678	7.3	3,482	5.5	9,177	**16.6**	7,696	**26.9**	991	1.0	389	1.1	45	0.5	898	4.2
KOREAN	11	8,016	2.6	4,062	6.5	2,235	4.0	850	3.0	265	0.3	476	1.3	0	0.0	128	0.6
TURKISH	23	8,506	2.7	2,074	3.3	1,377	2.5	956	3.3	4,099	**4.3**	0	0.0	0	0.0	0	0.0
ALL OTHERS	18	11,532	3.7	3,910	6.2	1,509	2.7	2,327	**8.1**	891	0.9	201	0.5	0	0.0	2,694	**12.7**
ALL FIRMS	225	309,783	100.0	62,895	100.0	55,400	100.0	28,596	100.0	96,449	100.0	36,906	100.0	8,281	100.0	21,257	100.0

Excluding: Antarctic/Arctic - $84.0 million; Unassigned - $380.0 million.

D. PERFORMANCE OF DEVELOPING COUNTRIES

50. Several developing and emerging economies have developed highly competitive construction sectors which have become regional and sometimes even global exporters: e.g. China, Argentina, Brazil[35], Colombia, Egypt, Hong Kong, India, Philippines, South Africa, Vietnam, etc.[36] Back in 1965, the Korean Hyundai Engineering and Construction Company began overseas construction activities in Southeast Asia. By the 1970s this firm, as well as other Korean firms, had extended overseas construction operations to other developing countries in the Middle East, Pacific Region and Africa. By the late 1970s, their long experience in construction, both in domestic and foreign markets, enabled them to further broaden the geographical scope of their activities and bid for contracts worldwide, notably in North America, the Middle East and Southeast Asia.[37]

51. Subcontracting has proved to be a major entry point to the international market for construction firms from developing countries. They also have increasingly joined forces under *ad-hoc* cooperation agreements with companies of developed countries, built around specific projects. Equally important are *South-South and regional trade*, which tend to offer great potential for specialisation and efficiency gains. South-South inter-firm cooperation/consortia – where both the host country firm and the exporting firm are from developing countries – have multiplied to jointly tap international project financing and implement a given project.[38]

V. GATS COMMITMENTS AND MFN EXEMPTIONS[39]

52. During the Uruguay Round of trade negotiations, a working group on construction services and engineering services was created to discuss the applicability to the construction and engineering sector of the basic concepts developed for the services agreement. Three meetings were held between June and October 1990.[40] Some specificities of the sector identified in the meetings were the relevance of transparency, movement of personnel across borders, movement of equipment and material, movement of capital, transfers of technology to developing countries, and the importance of government procurement. Two draft proposals were made for an annex on this sector by the European Communities and Korea.[41] It was decided in the end that no sector-specific provisions or annotations were necessary for the construction and engineering sector.

---

[35] The negotiating proposal by Brazil (S/CSS/W/113 of 5 October 2001) points out in its paragraph 7 that "Some developing countries have attained competitive advantage in this sector and have started to export construction and related services".

[36] Some least-developed countries also have been able to export construction and related services successfully. ATEPA Technologies from Senegal (www.atepa.com) provides architectural, engineering, and construction services and is the leader in its field in West Africa. It gets three quarters of its revenues from exports – the first Senegalese architectural firm to have done so – with contracts in Equatorial Guinea, Gabon, and Congo.

[37] Tolentino, P. E. (1993), pp. 357-8.

[38] UNCTAD (2000a), p. 5.

[39] The following analysis of existing commitments under the GATS is based in part on information generated by the electronic database developed by the Secretariat. Commitments under the GPA are not described, but all GPA signatories have made commitments in construction services, most of them covering all construction services belonging to CPC Division 51.

[40] Minutes of these meetings are available in documents MTN.GNS/CON/1 to /3.

[41] These proposals were contained in documents MTN.GNS/CON/W/1 and W/2.

A. OVERVIEW

53. As of August 2009, as a result of the Uruguay Round and subsequent accessions, a total of 90 governments (counting EC Member States individually; or 79 schedules counting EC-12 as one) have made commitments in at least one of the five sub-sectors of construction and related engineering services (Annex Table 5). This represents roughly 60 per cent of all WTO Members and includes twelve least-developed countries.[42] Since the previous Secretariat Background Note, in June 1998, 21 recently acceded Members have contributed commitments in this sector, covering in several cases all five sub-sectors.

54. Forty-two schedules (counting EC-12 as one) cover all five sub-sectors of construction services, while eight schedules are limited to one sub-sector only (two from least-developed countries and six from developing countries). The average is four sub-sectors per schedule. The sub-sectors most commonly covered are general construction work for civil engineering (CPC 513, included in 70 schedules), closely followed by general construction work for buildings (CPC 512, 68 schedules) and installation and assembly work (CPC 514+516, 67 schedules). The lowest number of commitments concerns 'other services' (53 schedules). Within the sub-sectors scheduled, however, coverage is sometimes quite limited.

55. With regard to the level of commitments, a distinction may be made between full commitments (no limitations other than minor horizontal ones, which do not directly affect the supply of construction services as such), partial commitments (those made with certain limitations), and no commitments (unbound).[43] Table 6 in the Annex summarises the findings by sub-sector and mode of supply.

B. MODAL DISTRIBUTION OF COMMITMENTS

56. Most of the commitments focus on mode 3, in recognition of the need – and often the regulatory requirement – for the supplier to establish at or near the construction site in order to supply the service.

57. By comparison commitments on mode 1 appear to be negligible, except in the engineering design phase. Table 6 in the Annex reveals some variation across WTO Members in handling this mode. Roughly half of the schedules consider mode 1 as technically unfeasible for physical construction ("unbound*"). Nonetheless, several of these schedules take mode 1 commitments on related professional services such as design, or on specific sub-sectors such as CPC 5111 or 5114. A number of countries, however, do commit mode 1, in some cases without restrictions. Others still mark mode 1 as "unbound", which might indicate a stronger hesitation to undertake commitments as compared to those Members that referred to feasibility-related constraints. The latter may change over time. With advanced communications systems, blueprints and designs can be transmitted electronically, and possibly certain pre-erection work such as site investigation may be conducted cross-border. Furthermore, given the interrelationship with architectural, engineering and related advisory and project management services, mode 1 commitments in these services could be all the more relevant.[44]

---

[42] Burundi (5 sub-sectors), Cambodia (5), Democratic Republic of Congo (2), Gambia (1), Haiti (4), Lesotho (4), Malawi (5), Nepal (29), Sierra Leone (5), Solomon Islands (2), Togo (1), and Zambia (5).

[43] Such a broad categorization of commitments is necessarily very crude and, thus, only gives a rough indication of the level of commitments made. In practice, for example, a "partial" commitment could be very close to a full commitment if the limitation maintained is minor.

[44] Regarding advisory services related to construction, see http://www.infrastructureworld.com. InfrastructureWorld LLC is an international investment and advisory firm providing strategic and implementation advice on the development of major infrastructure projects.

58. Finally, given that the supply of construction services frequently involves large movements of workers at different skill levels, including low-skilled workers, it is particularly significant that mode 4 usually has a lower level of commitments than the other modes. Barriers are also related to the lack of recognition of qualifications of professionally qualified personnel, as well as citizenship or residency requirements (see also Subsection D. hereafter).

C. RESTRICTIONS AFFECTING MODE 3

59. Regarding mode 3, a commonly observed market access restriction affecting the sector are measures requiring local incorporation as a particular type of legal entity – thus hampering temporary, project-based presence. Requirements to have a local partner as a condition for the supply of construction services, and limitations on foreign equity participation also are frequent. For example, a number of schedules allow commercial presence only in the form of joint-venture companies with a local partner, with foreign capital not exceeding 30, 49, 50 or 51 per cent as the case may be; or as a subcontractor of local service suppliers. In certain instances, the local incorporation requirement applies only to key infrastructural sectors, or only to certain geographical sub-divisions of a given State. Only one Member has included an explicit commitment on short-term presence by specifying in its horizontal section, under market access, that "Building projects with a duration of less than a year are excepted from the requirement of establishing a branch or appointing a resident representative".

60. A number of schedules list prior approval requirements by the government or local authorities. Some of these approval requirements are discretionary, rendering the right to supply the service uncertain. Others contain various types of economic needs test: for instance limitations stipulating that only projects which cannot be handled by domestic contractors alone can be undertaken jointly with foreign suppliers. In other cases, approval is made subject to local content or local use requirements such as: the preferential use of local services or service suppliers to the extent they are available (compulsory subcontract systems), employment of local staff, or local procurement of materials. Other unspecified prior approval requirements may be of a non-discriminatory regulatory nature, if they aim to ensure the technical and/or financial capacity of the contractor, or the quality of the service. For instance, a few schedules list *minimum* capital outlay and foreign equity requirements as licensing or registration/certification criteria under 'market access'. As regards minimum requirements, qualification rating systems constitute an interesting case in point. They restrict the eligibility to bid – usually for capital-intensive or technically highly complex contracts – to those companies with a given financial and/or technical capacity and track record. It is not always clear whether such systems are applied in an objective and non-discriminatory manner – in which case they may not need to be scheduled at all –, or whether they are applied in a way as to limit *foreign* entry, thus restricting market access.

61. Another category of common market access problems relates to public utilities. Construction services supplied to the public sector or in collaboration with public sector enterprises are frequently subject to concessionary regimes. In general, the higher the government involvement the more stringent market access and national treatment restrictions become. Construction links back to a number of key infrastructural and capital-intensive sectors that have traditionally been subject to significant government involvement and intervention, such as mining, petroleum and petrochemicals, public highways, railways, public water systems and other utility distributions systems. Several countries restrict market access by granting exclusive rights for the construction, maintenance and management of key infrastructural projects, such as highways and airports. A couple of countries have excluded construction work related to mining (or other sub-sectors such as pipelines) from their commitments in the sector column. As seen in Subsection II.B, construction companies at times like to hold an equity stake in a project they undertake. This may prove more difficult when the project pertains to a public utility sector. A few schedules stipulate under market access that investments in public utilities generally are subject to a concession or some other form of unspecified prior authorisation.

62. A few schedules subject (foreign) construction companies that supply services to or within the public sector to nationality condition for members of the board of directors, or to stricter certification and registration requirements. In case of collaboration with public sector enterprises or government undertakings, preference in access is sometimes given to service suppliers which offer the best terms for technology transfer, research and development programs, or training of local manpower.

63. In the context of infrastructural facilities and services, concessions in the form of Build-Operate-Transfer (BOT) or Public-Private Partnership (PPP) contracts between a government entity and a commercial enterprise, are often resorted to. The question arises whether these types of contracts are to be considered a form of government procurement or not. These issues have been discussed by the Working Party on GATS Rules and the Working Group on Transparency in Government Procurement.[45] A couple of schedules subject the participation of foreign contractors in purchases by governmental entities or in concessions to an economic needs test, prior written permission and/or other conditions such as technology transfer and the obligation to employ a given percentage of nationals.

64. Restrictions on the ownership of land by foreigners are normally applied to all sectors (horizontal limitation), but may have a strong effect on the construction industry, since property developers will not be able to own apartments and houses under construction until completion. Finally, subsidies and tax incentives are provided by a number of countries to promote their domestic construction sector including its exports. Several schedules include national treatment limitations for subsidies granted to local suppliers only.

D. RESTRICTIONS AFFECTING MODE 4

65. A large majority of Members has scheduled their mode 4 limitations uniformly across all sectors.[46] With its extensive use of skilled and unskilled labour, the construction sector is strongly affected by restrictions on the movement of natural persons, such as labour market tests, nationality and residency requirements, training requirements for local staff, and the like. A few schedules also make reference to licensing, accreditation or prior permit requirements as well as to constraints concerning the recognition of (foreign) technical and professional qualifications. The latter, however, are less common than in the case of professional services.

66. Only two schedules include commitments regarding contractual service suppliers and/or independent professionals in relation to the construction sector: EC-12 on contractual service suppliers for services contracts obtained in construction services or site investigation work, and Saudi Arabia regarding contractual service suppliers and independent professionals in the field of construction and related engineering services. Incidentally, the supply of construction services – notably in the oil and gas, and chemical process industries – often implies the installation of complex and expensive equipment and machinery, which may require the presence of specialized experts, such as installers and maintainers.

E. MFN EXEMPTIONS

67. There are very few MFN exemptions specific to the construction sector. However, some Members provide preferential treatment to suppliers from neighbouring countries, such as preferential short-listing in international competitive bidding. Horizontal MFN exemptions concerning the movement of personnel, research and development subsidies, and foreign investment could also affect this sector significantly.

---

[45] See for instance Job(00)/5657 of 20 September 2000 and the Background Note by the Secretariat entitled "Interpretation of Procurement-Related Provisions in GATT: Possible Application to Article XIII of GATS" of 31 March 1999 (S/WGPR/W/29).

[46] See the Background Note on Presence of Natural Persons (Mode 4).

VI. TRADE AND REGULATORY ENVIRONMENT

A. TRADE BARRIERS

68. Given its intensive use of (notably low-to-medium skilled) labour, materials and capital, the construction sector is subject to a wide range of 'measures by Members', whether in the form of a law, regulation, decision, administrative action, or any other form. Barriers to the movement of any one of these factors of production can significantly affect trade in construction services. *Labour*, i.e., the movement of foreign natural persons supplying services, may be subject to labour market tests, quotas, nationality, residency or other staffing requirements, even for project-related work of short duration. In some cases short-term contracts for construction workers are not permitted at all. As regards qualified personnel, non-recognition of their qualifications, or overly burdensome/costly qualification requirements and procedures to achieve such recognition emerge as prominent constraints. Construction *equipment and materials* (raw material, finished and semi-finished products) often have to comply with a variety of national technical specifications and standards that are not always internationally harmonised. Sometimes they face import restrictions; or goods imported on a temporary basis, such as machinery and specialty equipment, are not released from the payment of import duties and taxes. Finally, *capital* may be subject to manifold restrictive measures – as already noted in Subsection V.C. These range from exclusive rights, limitations on the type of commercial presence, foreign equity restrictions – either specific to the construction sector or horizontal – to restrictions on currency exchange, transfer of funds between projects or repatriation of profits. Economic needs tests, local content requirements (on either the personnel or materials), compulsory subcontracting of a given amount of the contract value, and high registration fees complete the picture.

Government Procurement and Subsidies

69. In light of the importance of public procurement for construction services (Subsection III.B), regulations and practices adopted in this area are likely to have a particularly strong impact on trade in the sector. Foreign providers may be affected by a variety of measures: price-based, procedural, transparency-related (e.g. with respect to the criteria of awarding contracts), etc. It is recalled that the GATS explicitly exempts laws, regulations or requirements governing government procurement from the application of Articles II, XVI and XVII, and that government procurement of services is currently being negotiated subject to the mandate in Article XIII.[47] This being said, many of the above-mentioned issues are relevant also for concession contracts, Build-Operate-Transfer (BOT), management or other types of Public-Private Partnership (PPP) arrangements.

70. Subsidies such as direct financial aid, whether for R&D costs or investment, export credits for feasibility studies and subsequent project stages, government guarantees for bank loans, tax exemptions and public risk-sharing – if granted only to national providers – can have a bearing on the provision of construction and related services. Tied aid might be added to this list.

B. REGULATORY ISSUES

Licensing and Qualification Requirements and Procedures, Technical Standards

[47] One may recall that the Agreement on Government Procurement (GPA) also contains a provision in Article III:3 that the national treatment and non-discrimination principles shall not apply to measures affecting trade in services other than laws, regulations, procedures and practices regarding government procurement covered by the GPA.

71. Firms attempting to participate in foreign markets for construction services must conform with numerous domestic regulations. These include controls on land use and urban planning; building regulations and technical requirements; building permits and inspections; registration of proprietors, contractors and professionals; regulation of fees and remunerations; health, safety and environmental regulations; etc. Licensing is prevalent and, especially for more complex projects, construction firms have to comply with pre-qualification standards (also referred to as qualification rating systems, see Subsection V.C) regarding their financial and/or technical capacity and track record. Domestic regulatory measures would normally be applied in a non-discriminatory manner, based on objective criteria.

72. Difficulties for foreign service suppliers may be created not only by the nature of the restriction, but also by the fact that the required permits and licenses are granted by many different government authorities at a variety of levels, or even by industry associations. These may not always welcome foreign competition in the market or may not be sensitive to the trade effects of regulation. The lack of transparency concerning the rules that apply, as well as certain informal business practices and, possibly, collusion of established suppliers with local authorities, could hamper market access. Competition policy is relevant, as the sector has often given rise to anti-competitive behaviour and practices in the past.

VII. CONCLUDING REMARKS

73. The international construction sector – consisting typically of large-scale, technologically sophisticated, so-called 'big ticket' projects, often undertaken by specialized international contractors with local sub-contracting – is increasingly global. In 2007, EC-27, Japan and the United States jointly accounted for over 70 per cent of world construction exports on a BOP basis (including intra-EC trade). Nonetheless, several developing and emerging economies have built up highly competitive construction sectors, which have become regional and even global exporters, notably China, the Russian Federation, Malaysia, Egypt, Turkey, India, Singapore, Argentina, Brazil, Colombia, Hong Kong (China), Philippines, South Africa, Vietnam, etc. It is thus not surprising that interest among *both developed and developing* Members for new and better commitments on construction and related engineering services is a notable feature of the Doha Development Agenda negotiations.

74. Subcontracting has proved to be a major entry point to the international market for construction firms from developing countries. Subcontracting, as well as *ad hoc* cooperation projects with companies from developed countries built around specific projects, offer contractors from developing countries potential for acquiring know-how, further specialisation and productivity gains. Furthermore, since the construction sector is a major purchaser of materials from many other industries, it potentially generates significant feedbacks throughout the national economy of a host state. This is evidenced, for instance, in Annex Table 3c, which shows the expenditures on goods and services (local procurement of materials and local subcontracting) by EC contractors in the host economies where they perform work (shaded area "B"). There clearly is also considerable South-South trade taking place in construction and related engineering services.

75. Albeit construction services were considered a relatively open sector as a result of the Uruguay Round and subsequent accessions, substantial trade barriers remain, as seen in Sections V and VI. Some may be addressed in market access negotiations, while other are more closely related to the ongoing rule-making agenda. Relevant topics include:

(i) **The evolution of market access and national treatment conditions.**

- **A greater role for mode 1?** As argued in Subsection II.B, design and production are becoming increasingly integrated. Construction services are more and more performed as a *collaborative process,* requiring permanent communication between

contractor, subcontractor and client/owner. Information technologies are key to making these new procurement and business models work. With advanced communications systems, more and more design- and conception-related services can be conducted cross-border.[48]

- **Improvements under mode 3?** Potentially relevant issues include local incorporation requirements (which hamper temporary, project-based presence); requirements to have a local partner and/or limitations on foreign equity participation; unspecified prior approval requirements; economic needs tests; local content or local use requirements; references to *minimum* capital outlay and foreign equity requirements as licensing or registration/certification criteria; market access problems linked to public utilities; and discriminatory subsidies.

- **A particular concern: access under mode 4.** Improved conditions for the movement of staff, including for project-related work of short duration, is a widely shared objective of the industry. Horizontally applicable policies restricting the temporary movement and presence of natural persons, as enshrined in labour and related legislation, may have a much stronger impact on this sector than on many other services. This also raises the question whether and to what extent mode 4-related limitations (and, of course, the underlying policies) ought to be tailored to the conditions of particular sectors.

(ii) **Domestic regulation,** including the interaction between commitments and possible future regulatory disciplines under GATS Article VI:4. Large parts of the construction process as the well as the final product, which is physical in nature, are located in the *host* country. Domestic regulation is thus paramount. In addition to regulatory content, compliance with due-process obligations and transparency disciplines are key to ensure that scheduled access conditions translate into effective opportunities for foreign market participation.

[48] Engineering News-Record, for instance, reports that the oil, gas and chemical process industries have been successfully using virtual design and construction for more than thirty years to make sure that all engineering and procurement specifications are correct. This must be ensured *before* construction begins on the enormous, complex and expensive facilities the industry requires. Source: Engineering News-Record (ENR) Insider, "Virtual Design and Construction: Digital-Modelling Veterans Want Data For Life Cycles", 9 August 2009.

ANNEX

Table 1: Share of Construction Value-Added in GDP, 2000-2007

Percentage

	2000	2001	2002	2003	2004	2005	2006	2007
World	**5.4**	**5.4**	**5.4**	**5.3**	**5.4**	**5.5**	**5.6**	**5.6**
Albania	8.3	10.4	12.0	13.7	13.9	14.3	14.8	14.8
Angola	2.8	3.7	3.5	3.6	3.8	3.2	3.6	3.5
Antigua and Barbuda	11.9	12.6	12.9	13.2	12.9	15.1	19.2	15.7
Argentina	5.0	4.5	2.6	3.3	4.2	4.9	5.8	4.1
Armenia	12.4	11.7	15.3	18.8	16.7	21.2	26.4	28.0
Australia	5.4	5.9	6.3	6.8	7.0	7.0	7.4	7.1
Austria	7.9	7.5	7.5	7.7	7.6	7.6	7.7	7.6
Bahrain	3.2	3.7	3.9	3.5	3.8	4.2	4.4	4.1
Bangladesh	7.7	7.9	8.0	7.9	7.9	8.2	8.2	8.1
Barbados	5.9	5.2	5.6	5.4	5.6	5.5	5.5	5.6
Belgium	5.0	4.9	4.8	4.9	4.8	4.8	5.0	4.9
Belize	5.6	5.4	5.3	4.2	4.3	4.1	3.9	4.1
Benin	4.1	4.1	4.2	4.4	4.5	4.5	4.5	4.6
Bolivia	3.3	3.0	3.4	2.6	2.4	2.6	2.9	3.0
Botswana	6.0	5.7	5.6	5.7	5.6	5.1	4.7	4.5
Brazil	5.5	5.3	5.3	4.7	5.1	4.9	6.1	5.2
Brunei Darussalam	3.0	3.6	3.7	3.5	3.2	2.6	2.9	2.9
Bulgaria	4.6	4.6	4.4	4.4	4.9	5.4	5.9	8.2
Burkina Faso	6.4	4.6	5.5	5.8	6.5	6.5	6.8	7.0
Burundi	4.5	4.7	4.6	4.8	4.8	5.4	5.0	5.1
Cambodia	5.5	5.1	6.2	6.3	6.4	6.7	7.0	7.2
Cameroon	2.7	2.9	2.9	2.9	3.2	3.3	3.4	3.3
Canada	5.0	5.3	5.4	5.4	5.6	5.5	5.5	5.5
Cape Verde	8.2	8.0	8.8	8.3	8.3	9.7	9.6	9.2
Central African Republic	4.5	4.6	5.0	4.9	4.9	4.8	4.8	4.8
Chad	1.6	1.5	1.5	1.6	1.2	1.0	1.0	1.1
Chile	7.5	7.8	7.9	7.3	6.6	6.5	6.5	7.3
China	5.6	5.4	5.4	5.5	5.4	5.5	5.6	5.7
Colombia	3.8	3.7	4.1	4.6	5.5	6.2	7.3	6.3
Congo	2.5	3.8	3.7	4.3	4.1	3.4	4.4	4.0
Costa Rica	3.9	4.6	4.5	4.4	4.5	4.3	4.8	5.6
Côte d'Ivoire	3.0	3.0	3.1	3.0	3.4	4.2	4.6	4.1
Croatia	4.6	4.9	5.3	6.3	6.6	6.5	6.8	6.8
Cuba	6.4	6.0	5.6	5.5	5.8	6.2	7.0	6.4
Cyprus	6.8	6.9	7.4	7.6	8.0	8.2	8.3	8.4
Czech Republic	6.5	6.3	6.2	6.4	6.5	6.7	6.4	6.5
Democratic Republic of the Congo	4.3	3.7	4.6	4.2	4.1	4.3	4.7	4.4
Denmark	5.5	5.2	5.1	5.3	5.5	5.6	5.5	5.5
Djibouti	6.6	6.7	6.8	6.9	7.7	8.3	7.6	7.9
Dominica	7.7	7.9	6.3	7.3	7.6	8.7	9.2	8.5
Dominican Republic	6.6	5.9	6.4	4.8	4.8	6.1	6.8	7.0
Ecuador	7.7	8.5	8.9	8.0	8.8	8.8	8.8	8.8
Egypt	4.6	4.5	4.2	4.4	3.6	3.8	3.8	3.8
El Salvador	4.5	4.8	4.9	4.9	4.3	4.3	4.4	4.2
Estonia	5.6	5.6	5.9	5.8	5.7	6.7	7.4	7.9
European Communities (EC-27)	5.6	5.7	5.7	5.7	5.8	6.0	6.2	6.4
Fiji	4.3	3.9	4.0	4.3	4.1	5.2	5.4	4.9
Finland	5.5	5.5	5.2	5.3	5.4	5.9	6.1	5.8
Former Yugoslav Republic of Macedonia (FYROM)	6.6	5.9	5.9	6.2	6.3	6.4	6.5	6.4
France	5.2	5.3	5.3	5.3	5.5	5.8	6.3	5.9
Gabon	8.2	7.3	7.3	7.4	7.9	8.9	8.9	8.6
The Gambia	6.3	6.4	7.3	7.2	6.6	6.5	6.8	6.6
Georgia	3.9	4.1	5.4	6.7	8.8	9.0	7.8	7.7
Germany	5.2	4.8	4.6	4.4	4.2	3.9	4.0	4.0
Ghana	9.0	9.2	9.2	9.3	8.8	8.2	7.6	8.2

Table 1: Continued (2/3)

Percentage

	2000	2001	2002	2003	2004	2005	2006	2007
Greece	7.0	7.8	7.4	7.9	7.7	7.2	8.6	7.8
Grenada	9.9	8.4	8.3	9.7	10.2	19.6	19.8	16.6
Guatemala	4.3	4.2	5.0	5.1	5.0	4.9	5.5	5.8
Guinea	11.7	10.1	9.9	9.8	9.7	10.8	12.0	10.8
Guinea-Bissau	2.3	2.4	2.5	2.4	3.0	3.0	3.2	3.1
Guyana	4.9	5.0	4.7	5.0	5.2	6.1	6.4	6.8
Haiti	14.5	14.7	14.9	15.1	15.3	15.4	15.1	15.1
Honduras	6.2	5.8	5.3	5.8	5.6	5.4	5.6	5.8
Hong Kong, China	5.0	4.6	4.2	3.8	3.2	2.9	2.7	3.0
Hungary	5.0	5.0	5.2	4.8	4.9	4.9	4.8	4.8
Iceland	8.6	7.7	7.3	7.5	8.4	9.4	8.5	8.8
India	5.8	5.8	6.0	6.2	6.5	6.8	6.9	6.8
Indonesia	5.5	5.7	6.1	6.2	6.6	7.0	7.5	7.0
Ireland	7.5	7.7	7.7	8.1	8.9	9.5	9.9	9.4
Israel	5.5	5.3	5.3	5.3	4.8	4.7	4.9	5.1
Italy	5.0	5.3	5.4	5.6	5.8	6.0	6.1	6.0
Jamaica	9.2	9.6	9.7	9.5	10.2	10.4	10.0	10.2
Japan	7.1	6.9	6.6	6.3	6.4	6.1	6.1	6.2
Jordan	3.9	4.1	4.2	4.1	4.4	4.6	4.7	4.4
Kenya	3.2	3.5	3.5	3.7	4.2	4.6	4.8	4.6
Korea, Republic of	8.4	8.6	8.6	9.6	9.3	9.2	9.1	9.2
Kuwait	2.1	2.4	2.6	2.4	2.2	1.9	2.2	2.1
Kyrgyzstan	4.5	4.0	3.7	3.2	2.7	3.0	3.0	3.9
Latvia	6.2	5.6	5.5	5.6	5.8	6.1	7.4	8.4
Lebanon	8.0	8.2	7.6	7.4	7.4	8.2	7.7	7.8
Lesotho	17.7	17.3	15.6	15.0	14.2	13.5	12.7	14.2
Liechtenstein	5.3	5.4	5.4	5.5	5.4	5.7	5.6	5.6
Lithuania	6.0	6.0	6.3	7.1	7.3	7.6	8.8	7.9
Luxembourg	5.7	6.2	6.7	6.5	6.2	6.1	5.3	5.9
Macao, China	2.5	2.2	2.6	3.9	3.2	5.4	4.1	4.2
Madagascar	1.8	1.9	1.9	2.1	2.5	3.0	3.7	3.9
Malawi	4.0	4.1	4.3	4.3	4.1	4.4	4.2	4.2
Malaysia	3.8	3.9	3.7	3.5	3.2	2.9	2.7	2.7
Maldives	3.1	3.4	3.2	3.4	4.2	5.1	5.1	5.7
Mali	5.7	5.4	5.9	5.3	4.9	4.7	5.0	4.8
Malta	4.1	3.7	4.6	3.7	4.0	3.9	3.9	3.9
Mauritania	6.4	7.5	8.2	8.1	9.2	8.7	8.6	8.8
Mauritius	5.3	5.2	5.4	5.7	5.5	5.3	5.3	5.9
Mexico	5.1	5.0	5.0	5.2	5.4	5.3	5.6	5.4
Moldova	3.0	3.4	3.3	3.4	3.9	3.9	4.6	5.6
Mongolia	1.9	2.0	2.5	3.4	2.6	2.3	1.8	2.5
Morocco	4.9	5.2	5.2	5.5	6.1	6.2	5.9	6.1
Mozambique	8.8	8.1	3.8	3.7	3.2	3.2	3.3	3.2
Myanmar	1.8	2.2	3.3	3.9	3.9	3.7	3.9	3.8
Namibia	2.2	3.1	2.4	3.3	3.3	3.4	4.0	3.3
Nepal	6.0	6.5	6.5	6.4	6.5	6.5	6.4	6.5
Netherlands	5.6	5.7	5.7	5.5	5.4	5.4	5.5	5.4
Netherlands Antilles	5.3	4.6	5.4	5.5	5.3	5.4	5.4	5.4
New Zealand	4.3	4.4	4.6	5.0	5.5	5.0	5.2	5.2
Nicaragua	6.8	7.0	5.6	5.4	5.9	6.5	6.2	6.8
Niger	2.4	2.5	2.5	2.5	2.7	2.5	2.5	2.5
Nigeria	0.7	0.9	0.7	0.7	1.5	1.5	1.3	1.4
Norway	4.1	4.2	4.5	4.4	4.6	4.4	4.6	5.2
Oman	1.9	2.0	2.1	2.3	2.8	2.4	2.5	3.0
Pakistan	2.4	2.3	2.2	2.2	2.5	2.4	2.5	2.5
Panama	5.1	4.0	3.6	4.8	4.9	4.7	5.1	5.2

Table 1: Continued (3/3)

Percentage

	2000	2001	2002	2003	2004	2005	2006	2007
Papua New Guinea	5.6	7.0	8.8	9.2	9.6	8.5	8.8	9.0
Paraguay	5.0	5.0	4.9	5.4	5.1	5.1	5.2	5.1
Peru	5.9	5.7	5.9	5.9	5.9	6.0	6.2	6.0
Philippines	6.5	4.9	4.8	4.5	4.4	3.9	3.9	4.4
Poland	7.7	7.0	6.3	5.8	5.5	6.0	6.6	6.0
Portugal	7.6	7.8	7.6	7.1	7.1	6.9	6.6	6.8
Qatar	3.5	4.5	5.0	5.3	5.5	5.5	5.7	6.2
Romania	5.5	5.9	6.4	6.5	6.7	7.3	8.4	7.4
Rwanda	8.9	8.5	8.1	6.2	6.9	7.0	6.7	6.9
Saint Kitts and Nevis	15.1	16.6	16.0	13.6	13.4	12.4	12.7	12.8
Saint Lucia	7.5	7.3	6.9	6.3	6.2	7.3	8.5	9.2
Saint Vincent and the Grenadines	10.6	11.1	10.7	11.1	11.8	11.5	13.1	12.1
Saudi Arabia	5.9	6.2	6.3	5.8	5.4	4.6	4.5	4.8
Senegal	4.6	4.0	4.4	4.5	5.0	4.9	5.7	5.2
Sierra Leone	1.8	1.8	2.1	2.0	2.0	1.9	1.9	1.9
Singapore	6.0	5.9	5.0	4.5	3.9	3.8	3.7	4.0
Slovak Republic	7.1	6.4	7.2	6.1	6.3	6.8	6.9	6.7
Slovenia	5.9	5.5	5.4	5.5	5.4	5.8	6.2	5.9
Solomon Islands	2.8	2.7	2.7	2.8	2.7	2.7	2.7	2.7
South Africa	2.5	2.4	2.3	2.4	2.4	2.5	2.6	2.9
Spain	8.3	8.9	9.4	9.9	10.6	11.6	12.2	11.5
Sri Lanka	7.1	7.1	6.5	6.5	6.5	7.4	7.8	7.8
Suriname	3.6	4.0	3.1	3.4	3.7	3.9	4.0	3.9
Swaziland	6.5	6.2	6.2	6.2	6.3	6.8	6.8	6.6
Sweden	4.0	4.4	4.4	4.3	4.5	4.6	4.5	4.5
Switzerland	5.3	5.4	5.4	5.5	5.4	5.7	5.6	5.6
Tanzania (Mainland)	5.0	5.2	5.3	5.5	5.5	5.6	5.5	5.5
Tanzania (Zanzibar)	3.7	4.5	4.7	5.6	6.8	7.1	8.5	7.5
Thailand	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9
Togo	2.5	2.5	2.4	2.5	2.8	2.7	3.5	3.0
Tonga	8.9	8.6	8.6	8.0	7.4	7.5	7.6	7.5
Trinidad and Tobago	7.3	7.8	7.2	7.3	7.7	7.4	7.5	7.5
Tunisia	5.3	5.4	5.9	5.9	6.0	6.0	5.8	5.8
Turkey	5.2	5.0	4.1	3.6	3.6	4.5	5.4	4.5
Uganda	8.8	9.2	9.9	10.0	10.5	10.5	11.1	10.7
Ukraine	3.9	4.0	3.7	4.2	4.5	4.1	4.3	4.9
United Arab Emirates	6.4	6.7	7.7	8.0	7.4	7.1	7.4	7.3
United Kingdom	5.3	5.6	5.7	5.8	5.9	5.8	5.5	5.7
United States of America	4.5	4.7	4.6	4.5	4.6	4.9	4.8	4.8
Uruguay	5.6	5.1	4.0	3.3	3.4	3.8	4.2	4.1
Venezuela (Bolivarian Republic of)	8.1	10.0	9.5	6.4	6.9	6.9	7.9	7.5
Viet Nam	5.4	5.8	5.9	6.0	6.2	6.4	6.6	6.4
Zambia	5.2	5.9	6.9	7.8	9.6	11.9	14.3	15.8
Zimbabwe	1.9	1.1	0.8	0.8	1.0	2.1	1.2	1.4

Source: United Nations Statistics Division, and Eurostat for EC-27.

Note: Construction defined as ISIC 45.

Table 2: Share of Construction in Employment, 2000-2007, percentage

		Share of construction in total employment							
Rank [a]	Economy	2000	2001	2002	2003	2004	2005	2006	2007
1	United Arab Emirates [b]	...	...	...	...	...	28.1	...	...
2	Qatar	...	19.1	...	...	...	...	23.7	...
3	Peru	4.2	4.5	23.7	23.9	23.6	23.8	23.4	22.7
4	Cayman Islands	...	...	...	...	...	19.9	18.1	16.1
5	Ireland	10.0	10.5	10.3	10.6	11.2	12.6	13.1	13.4
6	Spain	11.1	11.6	11.9	12.2	12.5	12.4	12.9	13.3
7	Bahamas	...	11.4	11.0	10.0	10.5	11.8	12.4	12.4
8	Macau, China	8.3	8.3	7.5	8.0	8.3	9.6	11.7	12.8
9	Cyprus	9.6	9.8	9.9	10.7	11.7	11.5	11.2	11.8
10	Saudi Arabia	9.0	10.1	10.6	...	...	...	11.1	10.2
11	Portugal	11.8	11.3	12.0	11.4	10.7	10.8	10.7	11.0
12	Luxembourg	9.8	9.8	9.8	9.8	9.8	9.9	10.5	10.6
13	Jamaica	8.8	8.5	9.4	9.3	10.3	10.1	10.0	...
14	Lithuania	6.0	6.3	6.6	7.4	8.1	9.0	9.9	11.1
15	Slovakia	8.0	8.0	8.3	9.0	9.5	9.5	9.8	10.1
16	Estonia	6.9	6.8	6.6	7.2	7.9	8.0	9.7	12.3
17	Latvia	6.0	7.1	6.1	7.4	8.5	8.7	9.6	11.2
18	Venezuela, Bolivarian Rep. of	8.0	8.2	8.0	...	...	...	9.4	9.7
19	Mauritius	9.3	9.3	9.4	9.6	9.7	9.3	9.4	9.5
20	Czech Republic	9.3	9.1	8.9	9.3	9.3	9.6	9.0	9.1
21	Australia	7.7	7.4	7.6	8.0	8.3	8.6	8.9	9.0
22	Egypt	7.9	7.7	7.4	7.4	7.5	8.5	8.9	...
23	Malaysia	8.6	8.9	9.5	9.5	8.9	9.0	8.8	8.8
24	Argentina	7.9	7.2	6.2	7.1	7.8	8.5	8.8	...
25	Japan	10.1	9.9	9.8	9.6	9.2	8.9	8.8	8.6
26	New Zealand	6.7	6.1	6.4	7.2	7.6	7.8	8.7	8.5
27	Iceland	6.7	7.2	7.8	6.9	7.4	7.7	8.7	8.9
28	Kyrgyzstan	...	...	3.3	5.3	7.2	7.4	8.7	...
29	Panama	7.4	7.2	6.8	7.4	8.0	7.7	8.5	9.7
30	San Marino	...	8.5	8.5	8.7	8.7	8.6	8.4	7.9
31	Croatia	6.4	6.6	6.9	8.1	8.2	8.2	8.4	8.8
32	Chile	7.5	7.7	8.0	7.5	8.1	8.0	8.3	8.3
33	Italy	7.6	7.9	8.0	8.2	8.2	8.5	8.3	8.4
34	Austria	9.0	8.9	8.8	8.9	8.1	8.2	8.2	8.2
35	Chinese Taipei	...	...	...	...	...	8.0	8.2	8.2
36	Hungary	7.0	7.1	7.0	7.6	7.9	8.1	8.2	8.4
37	Mexico	6.4	6.1	6.2	6.7	6.3	7.8	8.2	8.4
38	United Kingdom	7.2	7.3	7.3	7.5	7.7	7.9	8.1	8.2
39	Greece	7.2	7.5	7.6	8.1	8.1	8.4	8.1	8.7
40	Malta	6.9	7.7	8.1	7.6	7.2	8.3	8.0	7.4
41	South Africa	5.6	5.7	5.4	5.8	7.1	7.6	8.0	8.1
42	Morocco	...	...	6.8	6.8	6.7	7.1	8.0	...
43	Korea, Republic of	7.5	7.3	7.9	8.2	8.1	7.9	7.9	7.9
44	Hong Kong, China	9.4	8.9	8.8	8.1	8.0	7.9	7.9	7.9
45	FYR Macedonia	...	...	5.8	6.6	7.0	6.5	7.6	6.4
46	Netherlands Antilles	7.1	...	7.3	7.1	6.8	7.1	7.5	7.7
47	Denmark	6.8	6.7	6.7	6.7	6.8	7.0	7.2	6.9
48	Ecuador	7.1	6.4	7.0	6.8	6.4	6.6	7.2	...
49	Norway	6.5	6.7	6.9	7.0	7.0	6.9	7.1	7.4
50	Switzerland	7.2	7.2	7.1	6.9	6.9	7.0	7.0	7.0
51	Dominican Republic	...	...	...	7.1	6.6	6.5	7.0	7.0
52	Costa Rica	6.8	6.9	6.7	6.7	6.5	6.5	6.9	7.9
53	Belgium	6.4	6.4	6.4	6.4	6.6	6.5	6.9	...
54	France	...	...	...	6.6	6.6	6.6	6.8	6.9
55	El Salvador	5.1	5.4	5.6	6.5	6.4	5.7	6.7	...
56	Guatemala	...	...	...	...	...	...	6.6	...
57	Finland	6.3	6.1	6.2	6.3	6.2	6.5	6.6	6.9

Table 2: Continued (2/3)

		Share of construction in total employment							
Rank [a]	Economy	2000	2001	2002	2003	2004	2005	2006	2007
58	**Germany**	8.5	7.9	7.5	7.2	6.8	6.6	6.6	6.6
59	**Brazil**	...	...	7.1	6.5	6.3	6.5	6.5	...
60	**Uruguay**	8.5	8.2	7.5	6.7	6.6	6.7	6.4	6.9
61	**Poland**	7.0	6.7	6.2	5.9	5.7	6.0	6.3	6.9
62	**Sweden**	5.4	5.5	5.5	5.6	5.7	5.9	6.2	6.4
63	**Netherlands**	6.1	6.3	6.2	6.0	6.0	6.1	6.2	6.1
64	**Pakistan**	5.8	5.8	6.1	6.1	5.8	5.8	6.1	6.6
65	**Serbia**	...	...	...	...	5.2	6.1	6.1	6.1
66	**Romania**	3.7	4.0	4.5	4.6	5.2	5.5	6.0	7.3
67	**Senegal**	...	...	...	...	...	...	5.9	...
68	**United States**	5.5	5.5	5.4	5.5	5.6	5.8	5.9	5.8
69	**Slovenia**	5.4	6.0	5.9	5.8	5.7	6.2	5.9	6.1
70	**Turkey**	6.3	5.2	4.5	4.6	4.7	5.3	5.7	5.8
71	**Albania**	1.2	1.2	6.1	6.2	5.6	5.6	5.7	...
72	**Thailand**	3.9	4.2	4.7	4.7	5.3	5.1	5.6	5.2
73	**Azerbaijan**	4.1	4.2	4.8	4.8	5.0	5.0	5.6	5.6
74	**Mongolia**	2.9	2.5	2.9	3.8	4.1	5.1	5.6	5.9
75	**Bulgaria**	4.3	4.2	4.1	4.2	4.2	4.9	5.5	...
76	**Ethiopia**	...	...	...	...	5.6	...	5.4	...
77	**Maldives**	4.3	...	...	...	...	...	5.4	...
78	**Moldova, Republic of**	2.9	2.9	3.1	3.9	4.0	3.9	5.4	6.1
79	**Singapore**	...	6.3	6.1	6.1	5.7	...	5.3	5.6
80	**Israel**	5.2	5.2	5.2	5.6	5.3	5.1	5.2	5.6
81	**Cuba**	6.4	5.2	5.2	5.2	5.1	5.2	5.1	5.0
82	**Colombia**	...	3.9	5.0	4.4	4.4	4.7	5.1	5.1
83	**Philippines**	...	5.2	5.3	5.3	5.2	4.9	4.9	5.2
84	**Indonesia**	3.9	4.2	4.7	4.4	4.8	4.9	4.9	5.3
85	**Nicaragua**	...	...	...	3.8	4.8	4.5	4.8	...
86	**Ukraine**	...	4.3	4.2	4.1	4.5	4.6	4.8	4.9
87	**Georgia**	1.8	1.9	1.9	2.2	2.4	2.5	3.1	4.2
88	**Armenia**	...	...	3.3	3.4	3.1	3.2	2.7	...
89	**Sri Lanka**	...	...	4.5	5.7	...	0.0	0.0	0.0
90	**Algeria**	...	10.4	...	12.0	12.4	...	...	...
91	**Anguilla**	...	14.7	...	...	...	...	...	...
92	**Antigua and Barbuda**	...	8.6	...	...	...	...	...	...
93	**Bahrain**	...	9.1	...	...	...	...	...	...
94	**Bangladesh**	...	...	...	3.5	...	3.2	...	...
95	**Barbados**	10.8	11.0	10.3	9.5	10.2	...	...	...
96	**Belize**	...	...	...	...	...	7.0	...	...
97	**Bhutan**	...	...	...	...	...	12.4	...	...
98	**Botswana**	9.3	...	...	9.1	...	...	...	...
99	**Brunei Darussalam**	...	8.4	...	...	...	...	...	...

Table 2: Continued (3/3)

		Share of construction in total employment							
Rank [a]	Economy	2000	2001	2002	2003	2004	2005	2006	2007
100	**Cambodia**	...	...	...	...	0.1	...	...	...
101	**China**	4.9	5.0	5.3	...	...	...	...	...
102	**Guyana**	...	...	6.8	...	...	...	...	...
103	**Honduras**	...	5.2	...	...	5.9	5.3	...	...
104	**Iran, Islamic Rep. of**	...	...	...	...	...	10.4	...	12.3
105	**Kazakhstan**	...	3.9	4.0	4.7	5.3	...	...	...
106	**Madagascar**	...	...	...	0.7	...	0.1	...	...
107	**Mali**	...	...	...	...	4.3	...	...	...
108	**Montenegro**	...	...	...	...	...	2.9	...	...
109	**Morocco**	8.9	8.8	0.0	0.0	...	...	...	...
110	**Namibia**	5.0	...	...	...	5.1	...	...	...
111	**Oman**	2.8	...	...	...	...	...	...	...
112	**Paraguay**	...	...	...	...	...	...	...	5.7
113	**Saint Lucia**	9.4	...	8.2	7.8	7.9	...	...	...
114	**Sierra Leone**	...	...	...	...	2.0	...	...	...
115	**Suriname**	...	...	...	...	9.0	...	...	...
116	**Syrian Arab Republic**	...	11.9	13.2	...	...	...	...	...
117	**Tajikistan**	...	...	...	...	12.1	...	...	...
118	**Tanzania (Tanganyika)**	...	0.9	...	...	...	...	...	...
119	**Trinidad and Tobago**	12.5	13.8	13.1	13.6	14.9	16.5	...	...
120	**Turks and Caicos Islands**	...	13.5	12.2	13.3	13.7	13.8	...	...
121	**Uganda**	...	...	...	1.3	...	...	...	...
122	**United Arab Emirates**	19.1	...	...	...	...	...	...	...
123	**Viet Nam**	2.5	3.2	3.7	4.4	4.6	...	...	...
124	**Zambia**	1.3	...	...	...	...	...	...	...

Source : ILO 2009 and U.S. Bureau of Economic Analysis.

Notes:
[a] Rankings are based on the 2007 share of construction in total employment (latest most complete data set), except for the United Arab Emirates where the latest available data was 2005 and except for those countries where no data was available.
[b] Source: United Arab Emirates, Ministry of Economy, Central Statistic Department (December 2005 census).

Table 3a: Extra-EC 27 Exports of Construction by Partner, 2004-2007 (BOP)

	(Million US$ and percentage)				
Rank	**Destination country**	**2004**	**2005**	**2006**	**2007**
	World	**22,873**	**28,707**	**32,170**	**38,430**
	Extra-EC27	51.5%	51.7%	52.6%	56.4%
	Intra-EC27	48.3%	48.3%	47.4%	43.7%
	As a percentage of total extra-EC exports:				
1	Norway	9.0%	6.6%	5.1%	6.2%
2	Russia	6.5%	7.0%	5.5%	5.7%
3	United States	10.5%	9.0%	7.2%	5.3%
4	Nigeria	6.0%	7.2%	8.1%	5.2%
5	Switzerland	5.5%	4.9%	4.8%	3.8%
6	China	4.6%	5.8%	4.6%	3.4%
7	Brazil	0.9%	2.0%	2.3%	2.6%
8	India	2.0%	2.1%	1.5%	2.2%
9	South Africa	1.8%	1.2%	1.5%	2.0%
10	Venezuela (Bolivarian Republic of)	0.7%	1.9%	2.3%	1.3%
11	Canada	1.0%	1.0%	1.5%	1.3%
12	Egypt	1.0%	1.2%	2.2%	1.2%
13	Iran	3.7%	2.5%	1.6%	1.2%
14	Turkey	1.4%	1.1%	1.0%	1.1%
15	Malaysia	0.7%	0.9%	0.5%	1.0%
16	Korea, Rep. of	0.9%	2.0%	1.5%	1.0%
17	Australia	0.4%	1.4%	1.1%	0.9%
18	Japan	1.1%	0.9%	1.2%	0.8%
19	Singapore	2.2%	1.6%	1.2%	0.7%
20	Mexico	1.4%	1.2%	1.1%	0.7%
21	Chinese Taipei	1.6%	1.0%	1.2%	0.7%
22	Croatia	1.5%	1.4%	1.4%	0.6%
23	Chile	1.0%	0.6%	0.4%	0.6%
24	Morocco	0.8%	0.8%	0.5%	0.5%
25	Thailand	0.4%	0.6%	0.4%	0.4%
26	Iceland	0.1%	0.2%	0.3%	0.4%
27	Argentina	0.1%	0.2%	0.5%	0.4%
28	Israel	0.5%	0.4%	0.5%	0.2%
29	Indonesia	0.4%	0.6%	0.3%	0.2%
30	Hong Kong, China	0.5%	0.7%	0.4%	0.2%
31	Uruguay	0.0%	0.0%	0.1%	0.1%
32	New Zealand	0.0%	0.1%	0.1%	0.1%
33	Philippines	0.5%	0.1%	0.1%	0.1%
34	Liechtenstein	0.1%	0.1%	0.1%	0.0%
	Total	68.7%	68.2%	62.0%	52.0%

Source: WTO estimates on the basis of Eurostat data.

Table 3b: Extra-EC 27 Imports of Construction by Partner, 2004-2007 (BOP)

	(Million US$ and percentage)				
Rank	**Source country**	**2004**	**2005**	**2006**	**2007**
	World	**17,243**	**18,422**	**20,237**	**26,042**
	Extra-EC27	41.1%	40.3%	42.6%	40.5%
	Intra-EC27	58.8%	59.8%	57.5%	59.8%
	As a percentage of total extra-EC imports				
1	United States	12.7%	8.9%	8.3%	10.2%
2	Switzerland	8.6%	7.4%	6.4%	6.6%
3	Russia	7.1%	7.3%	5.9%	6.5%
4	Nigeria	1.6%	2.5%	6.6%	5.2%
5	China	4.6%	4.0%	5.0%	5.1%
6	Canada	1.4%	1.7%	3.6%	4.7%
7	Korea, Rep. of	3.7%	3.2%	4.2%	4.2%
8	Norway	8.1%	5.6%	4.0%	4.0%
9	India	1.1%	1.6%	1.3%	1.9%
10	Egypt	1.0%	1.6%	1.4%	1.5%
11	Singapore	3.7%	3.9%	2.3%	1.5%
12	Turkey	1.4%	1.4%	1.3%	1.5%
13	Brazil	1.5%	1.4%	1.2%	1.4%
14	Mexico	1.9%	1.1%	1.0%	1.3%
15	South Africa	1.8%	1.1%	1.4%	1.1%
16	Hong Kong, China	1.0%	0.7%	0.8%	1.1%
17	Croatia	1.5%	3.2%	2.1%	1.0%
18	Japan	1.8%	1.3%	1.8%	1.0%
19	Malaysia	1.1%	1.0%	0.9%	1.0%
20	Australia	0.5%	1.3%	1.0%	0.9%
21	Iran	1.7%	1.8%	1.4%	0.8%
22	Chinese Taipei	0.6%	0.6%	0.4%	0.6%
23	Morocco	1.0%	1.0%	0.4%	0.4%
24	Thailand	0.2%	0.3%	0.2%	0.4%
25	Indonesia	0.3%	0.4%	0.3%	0.3%
26	Argentina	0.1%	0.5%	0.5%	0.3%
27	Liechtenstein	0.4%	0.4%	0.4%	0.3%
28	Venezuela (Bolivarian Republic of)	0.2%	0.2%	0.8%	0.2%
29	Israel	0.3%	0.4%	0.2%	0.2%
30	Uruguay	0.1%	0.0%	0.0%	0.2%
31	Philippines	0.1%	0.5%	0.2%	0.1%
32	Chile	0.5%	0.2%	0.2%	0.1%
33	New Zealand	0.1%	0.0%	0.0%	0.1%
34	Iceland	0.0%	0.0%	0.1%	0.0%
	Total	71.3%	66.5%	65.5%	65.9%

Source: WTO estimates on the basis of Eurostat data.

Table 3c: Extra-EC 27 Exports and Imports of Construction, and Expenditures on Goods and Services in Host Economy, 2004-2007 (BOP)
(Million US$ and percentage)

Construction abroad

	A. Total value of construction abroad by European contractors					**B. Expenditure on goods and services by European contractor in host country**				
	2004	**2005**	**2006**	**2007**		**2004**	**2005**	**2006**	**2007**	
World	21,126	26,440	29,326	35,057		12,259	12,862	13,811	17,486	
Extra-EC27	11,332	14,215	15,966	20,553	58.6%	5,845	6,377	7,520	9,187	52.5%
Intra-EC27	9,794	12,223	13,360	14,501	41.4%	6,414	6,488	6,290	8,302	47.5%
Norway	1,034	933	777	1,172		496	354	271	361	
Russian Federation	746	1,016	883	1,186		478	506	474	642	
United States	1,151	1,190	1,005	925		674	503	590	873	
Nigeria	676	1,028	1,308	1,073		75	135	553	536	
Switzerland	590	655	705	713		350	357	331	411	
China	543	849	769	735		317	276	373	430	
Brazil	100	289	371	530		92	98	102	142	
India	230	298	249	467		65	108	91	182	
South Africa	208	176	239	425		119	75	111	105	
Venezuela (Bolivarian Republic of)	86	268	389	282		14	12	69	24	
Canada	115	152	256	264		60	106	296	482	
Egypt	114	171	369	262		63	116	114	152	
Korea, Rep. of	100	295	257	206		254	234	352	429	

Construction in the EC 27

	C. Expenditure on goods and services by non-resident (foreign) contractor					**D. Total value of construction by non-resident contractors in the EC**				
	2004	**2005**	**2006**	**2007**		**2004**	**2005**	**2006**	**2007**	
World	1,749	2,267	2,843	3,373		4,983	5,561	6,427	8,556	
Extra-EC27	472	632	940	1,094	32.4%	1,244	1,035	1,089	1,334	15.6%
Intra-EC27	1,275	1,635	1,902	2,279	67.6%	3,739	4,525	5,336	7,223	84.4%
Norway	27	48	79	165		76	62	76	58	
Russian Federation	19	20	41	39		29	32	32	37	
United States	89	153	211	231		230	158	126	208	
Nigeria	34	42	62	45		39	47	13	14	
Switzerland	63	70	111	107		260	187	219	283	
China	4	6	14	6		9	21	55	110	
Brazil	10	14	22	26		10	3	3	9	
India	5	10	6	14		10	12	19	20	
South Africa	3	2	8	9		6	7	8	13	
Venezuela	1	8	5	2		0	0	1	1	
Canada	1	2	2	16		41	18	15	9	
Egypt	4	3	3	2		6	6	6	9	
Korea, Republic of	3	2	3	1		5	6	12	12	
	Total A+C = EC 27 EXPORTS					**Total B+D = EC 27 IMPORTS**				

Source: WTO estimates on the basis of Eurostat data.

Table 4a: Japan's Exports of Construction by Partner, 2004-2007 (BOP)

Rank	Destination country	2005	2006	2007
	In million US$ and percentage			
	World (mio US$)	**7,224**	**8,981**	**10,322**
	of which in percent:			
1	United Arab Emirates	15.8%	16.6%	18.6%
2	Saudi Arabia	7.0%	15.2%	14.2%
3	Thailand	6.0%	8.1%	5.4%
4	Philippines	1.4%	1.5%	4.8%
5	Chinese Taipei	11.5%	7.3%	4.2%
6	Singapore	2.8%	2.5%	3.4%
7	EC	1.6%	2.9%	3.2%
8	Indonesia	5.8%	5.7%	3.0%
9	Vietnam	3.2%	3.2%	2.7%
10	Malaysia	1.7%	1.3%	2.4%
11	Russian Federation	2.7%	2.9%	1.9%
12	United States of America	2.4%	2.8%	1.7%
13	Iran	4.0%	2.7%	1.7%
14	China	3.8%	2.0%	1.2%
15	Australia	0.3%	0.4%	1.1%
16	Mexico	2.9%	0.8%	0.8%
17	India	0.7%	0.7%	0.7%
18	South Africa	0.2%	0.0%	0.5%
19	New Zealand	1.5%	0.7%	0.5%
20	Cayman Islands	0.2%	0.7%	0.4%
21	Switzerland	0.0%	0.0%	0.3%
22	Korea	0.3%	0.2%	0.3%
23	Brazil	0.0%	0.0%	0.2%
24	Hong Kong, China	0.3%	0.3%	0.2%
25	Canada	0.6%	0.1%	0.1%
	Total	76.7%	78.7%	73.6%

Source: Bank of Japan.

Note: EC 25 for 2005, EC 27 as from 2007.

Table 4b: Japan's Imports of Construction by Partner, 2004-2007 (BOP)

Rank	Source country	2005	2006	2007
	In million US$ and percentage			
	World (mio US$)	**4,765**	**6,202**	**7,938**
	of which in percent:			
1	United Arab Emirates	5.9%	11.1%	14.7%
2	Saudi Arabia	2.5%	7.4%	10.3%
3	EC	11.9%	11.3%	9.7%
4	Singapore	6.4%	8.7%	7.9%
5	Thailand	10.0%	9.6%	7.2%
6	Chinese Taipei	15.6%	8.0%	5.4%
7	Australia	0.8%	0.9%	3.9%
8	Philippines	2.2%	3.8%	3.6%
9	Indonesia	4.4%	4.6%	2.7%
10	Malaysia	0.5%	1.1%	2.4%
11	Vietnam	1.6%	2.4%	2.3%
12	Korea	3.5%	2.6%	2.1%
13	Mexico	3.4%	1.5%	2.1%
14	United States of America	6.3%	3.8%	2.0%
15	India	1.0%	1.1%	1.6%
16	Iran	5.2%	3.8%	1.6%
17	China	4.0%	1.4%	0.8%
18	Switzerland	0.1%	0.1%	0.7%
19	New Zealand	1.9%	1.3%	0.5%
20	Hong Kong, China	0.5%	0.6%	0.5%
21	Russian Federation	2.4%	2.2%	0.4%
22	Brazil	0.0%	0.2%	0.1%
23	Canada	0.4%	0.1%	0.1%
24	Cayman Islands	0.0%	0.4%	0.0%
25	South Africa	0.0%	0.0%	0.0%
	Total	90.5%	88.1%	83.0%

Source: Bank of Japan.

Note: EC 25 for 2005, EC 27 as from 2007.

Table 5: Summary of Specific Commitments in Construction and related Engineering Services (as of August 2009)

	WTO Members	3.A. General construction work for buildings	3.B. General construction work for civil engineering	3.C. Installation and assembly work	3.D. Building completion and finishing work	3.E. Other	TOTAL of sub-sectors with commitments (by Member)
1	Albania	X	X	X	X	X	5
2	Argentina	X		X	X	X	4
3	Armenia	X	X	X	X		4
4	Australia	X	X	X	X		4
5	Austria	X	X	X	X	X	5
6	Brazil	X	X	X		X	4
7	Bulgaria	X	X	X	X		4
8	Burundi	X	X	X	X	X	5
9	Cambodia	X	X	X	X	X	5
10	Canada	X	X	X	X	X	5
11	Cape Verde	X	X	X	X	X	5
12	China	X	X	X	X	X	5
13	Colombia	X	X	X		X	4
14	Congo, Democratic Republic of	X	X				2
15	Côte d'Ivoire			X			1
16	Croatia	X	X	X	X	X	5
17	Cuba	X	X				2
18	Czech Republic	X	X	X	X	X	5
19	Dominican Republic	X	X	X	X	X	5
20	Ecuador					X	1
21	Egypt		X	X		X	3
22	Estonia	X	X	X	X	X	5
23	European Community (EC-12) [1]	X	X	X	X	X	5
24	Finland	X	X	X			3
25	FYR Macedonia	X	X	X	X	X	5
26	Gabon			X			1
27	Gambia					X	1
28	Georgia	X	X	X	X	X	5
29	Ghana	X	X	X			3
30	Haiti	X	X	X	X		4
31	Hong Kong				X	X	2
32	Iceland	X	X	X	X		4
33	India		X				1
34	Indonesia	X	X	X		X	4
35	Japan	X	X	X	X	X	5
36	Jordan	X	X	X	X	X	5
37	Korea RP	X	X	X	X	X	5
38	Kuwait	X	X	X	X		4
39	Kyrgyz Republic	X	X	X	X	X	5
40	Latvia	X	X	X	X	X	5

	WTO Members	3.A. General construction work for buildings	3.B. General construction work for civil engineering	3.C. Installation and assembly work	3.D. Building completion and finishing work	3.E. Other	TOTAL of sub-sectors with commitments (by Member)
41	**Lesotho**	X	X	X	X		4
42	**Lithuania**	X	X	X	X	X	5
43	**Malawi**	X	X	X	X	X	5
44	**Malaysia**	X	X	X	X	X	5
45	**Mexico**	X	X		X	X	4
46	**Moldova**	X	X	X	X	X	5
47	**Mongolia**			X	X		2
48	**Morocco**	X	X	X	X	X	5
49	**Nepal**		X			X	2
50	**New Zealand**	X	X	X	X	X	5
51	**Norway**	X	X	X	X	X	5
52	**Oman**	X	X	X	X	X	5
53	**Pakistan**		X				1
54	**Panama**	X	X	X	X		4
55	**Papua New Guinea**	X	X				2
56	**Poland**	X	X	X	X	X	5
57	**Qatar**	X	X	X	X		4
58	**Romania**	X	X	X	X		4
59	**Saudi Arabia**	X	X	X	X	X	5
60	**Sierra Leone**	X	X	X	X	X	5
61	**Singapore**	X	X	X	X	X	5
62	**Slovak Republic**	X	X	X	X	X	5
63	**Slovenia**	X	X	X	X	X	5
64	**Solomon Islands**	X	X				2
65	**South Africa**	X	X	X	X		4
66	**Sweden**	X	X	X	X	X	5
67	**Switzerland**	X	X	X	X	X	5
68	**Chinese Taipei**	X	X	X	X	X	5
69	**Thailand**	X	X	X			3
70	**Togo**			X			1
71	**Tonga**	X	X	X	X	X	5
72	**Trinidad and Tobago**	X					1
73	**Turkey**	X	X	X	X		4
74	**Ukraine**	X	X	X	X	X	5
75	**United Arab Emirates**	X	X	X	X	X	5
76	**USA**	X	X	X	X	X	5
77	**Venezuela**	X	X	X	X	X	5
78	**Viet Nam**	X	X	X	X	X	5
79	**Zambia**	X	X	X	X	X	5
	Total schedules (79) [2]	**68**	**70**	**67**	**59**	**53**	

Source: **WTO**

Notes:

Countries that acceded to the WTO since June 1998 (date of the previous Secretariat Background Note) are marked in:

[1] European Communities counted as EC-12 based on schedule in force.

[2] A total of 79 schedules include a commitment in at least one sub-sector of construction and related engineering services. The 79 schedules represent a total of 90 governments (counting the EC-12 Member States individually).

Table 6: Specific Commitments in Construction and related Engineering Services by Sub-Sector and Mode of Supply (as of August 2009)

	WTO Members		3.A. General construction work for buildings (CPC 512)	3.B. General construction work for civil engineering (CPC 513)	3.C. Installation and assembly work (CPC 514, 516)	3.D. Building completion and finishing work (CPC 517)	3.E. Other (CPC 511, 515, 518)	Total Modes 1, 2 and 3 for all subsectors covered (Mode 4 excluded)
1	Albania	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
2	Argentina	Mode 1	1		1	1	1	12
		Mode 2	1		1	1	1	
		Mode 3	1		1	1	1	
		Mode 4	0.5H		0.5H	0.5H	0.5H	
3	Armenia	Mode 1	0*	0*	0*	0*		8
		Mode 2	1	1	1	1		
		Mode 3	1	1	1	1		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
4	Australia	Mode 1	0*	0*	0*	0*		8
		Mode 2	1	1	1	1		
		Mode 3	1	1	1	1		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
5	Austria	Mode 1	0*	0*	0*	0*	0*	5
		Mode 2	0.5	0.5	0.5	0.5	0.5	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
6	Brazil [8]	Mode 1	0	0	0		0	3.5
		Mode 2	0	0	0		0	
		Mode 3	1	1	1		0.5	
		Mode 4	0.5H	0.5H	0.5H		0.5H	
7	Bulgaria	Mode 1	0*	0*	0*	0*		4
		Mode 2	0.5	0.5	0.5	0.5		
		Mode 3	0.5	0.5	0.5	0.5		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
8	Burundi	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5	0.5	0.5	0.5	0.5	
9	Cambodia	Mode 1	0*	0*	0*	0*	0*	7.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
10	Canada	Mode 1	1	0.5	1	1	0.5	11.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
11	Cape Verde	Mode 1	0	0	0	0	0	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
12	China	Mode 1	0*	0*	0*	0*	0*	7.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
13	Colombia [1]	Mode 1	0	0	0		0	6
		Mode 2	1	1	0.5		0.5	
		Mode 3	1	1	0.5		0.5	
		Mode 4	0.5H	0.5H	0.5H		0.5H	
14	Congo, Democratic Republic of [5]	Mode 1	1	1				5
		Mode 2	1	1				
		Mode 3	0.5	0.5				
		Mode 4	0.5H	0.5H				

Table 6: Continued (2/6)

	WTO Members		3.A. General construction work for buildings (CPC 512)	3.B. General construction work for civil engineering (CPC 513)	3.C. Installation and assembly work (CPC 514, 516)	3.D. Building completion and finishing work (CPC 517)	3.E. Other (CPC 511, 515, 518)	Total Modes 1, 2 and 3 for all subsectors covered (Mode 4 excluded)
15	Côte d'Ivoire [1]	Mode 1			0			0.5
		Mode 2			0			
		Mode 3			0.5			
		Mode 4			0.5			
16	Croatia	Mode 1	0*	0*	0*	0*	0*	9
		Mode 2	1	1	1	1	0.5	
		Mode 3	1	1	1	1	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
17	Cuba	Mode 1	0*	0*				1
		Mode 2	0	0				
		Mode 3	0.5	0.5				
		Mode 4	0.5H	0.5H				
18	Czech Republic	Mode 1	0*	0*	0*	0*	0*	4.5
		Mode 2	1	1	1	1	0.5	
		Mode 3	0	0	0	0	0	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
19	Dominican Republic	Mode 1	0*	0*	0*	0*	0*	2.5
		Mode 2	0	0	0	0	0	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
20	Ecuador	Mode 1					0.5	1.5
		Mode 2					0.5	
		Mode 3					0.5	
		Mode 4					0.5H	
21	Egypt [1]	Mode 1		0*	0*		0*	1.5
		Mode 2		0*	0*		0*	
		Mode 3		0.5	0.5		0.5	
		Mode 4		1	1		1	
22	Estonia	Mode 1	1	1	1	1	1	12.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
23	European Communities (EC-12)	Mode 1	0*	0*	0*	0*	0* (except 1 for CPC 5114)	N.A.
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
24	Finland	Mode 1	1	1	1			7.5
		Mode 2	1	1	1			
		Mode 3	0.5	0.5	0.5			
		Mode 4	0.5H	0.5H	0.5H			
25	FYR Macedonia	Mode 1	0	0	0	0	0	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
26	Gabon	Mode 1			0			0.5
		Mode 2			0			
		Mode 3			0.5			
		Mode 4			0.5			
27	The Gambia	Mode 1					0.5	1.5
		Mode 2					0.5	
		Mode 3					0.5	
		Mode 4					0.5H	
28	Georgia	Mode 1	0.5	0.5	0.5	0.5	0.5	10
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	

Table 6: Continued (3/6)

	WTO Members		3.A. General construction work for buildings (CPC 512)	3.B. General construction work for civil engineering (CPC 513)	3.C. Installation and assembly work (CPC 514, 516)	3.D. Building completion and finishing work (CPC 517)	3.E. Other (CPC 511, 515, 518)	Total Modes 1, 2 and 3 for all subsectors covered (Mode 4 excluded)
29	Ghana	Mode 1	1	1	1			9
		Mode 2	1	1	1			
		Mode 3	1	1	1			
		Mode 4	0.5H	0.5H	0.5H			
30	Haiti	Mode 1	1	1	1	1		12
		Mode 2	1	1	1	1		
		Mode 3	1	1	1	1		
		Mode 4	0	0	0	0		
31	Hong Kong, China [1]	Mode 1				0	0	3
		Mode 2				0.5	0.5	
		Mode 3				1	1	
		Mode 4				0	0	
32	Iceland	Mode 1	1	1	1	1		12
		Mode 2	1	1	1	1		
		Mode 3	1	1	1	1		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
33	India	Mode 1		0*				0.5
		Mode 2		0*				
		Mode 3		0.5				
		Mode 4		0.5H				
34	Indonesia	Mode 1	0*	0*	0*		0*	4
		Mode 2	0.5	0.5	0.5		0.5	
		Mode 3	0.5	0.5	0.5		0.5	
		Mode 4	0.5H	0.5H	0.5H		0.5H	
35	Japan	Mode 1	0*	0*	0*	0*	0*	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
36	Jordan [5]	Mode 1	0*	0*	0*	0*	0*	7
		Mode 2	1	1	1	1	0.5	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
37	Korea, Republic of [8]	Mode 1	0* (except 1 for CPC 5111)	0*	0*	0*	0*	7.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
38	Kuwait [1], [6], [7]	Mode 1	0	0	0	0		2
		Mode 2	0	0	0	0		
		Mode 3	0.5	0.5	0.5	0.5		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
39	Kyrgyz Republic	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
40	Latvia [5]	Mode 1	0*	0*	0*	0*	0*	9
		Mode 2	1	1	1	1	0.5	
		Mode 3	1	1	1	1	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
41	Lesotho	Mode 1	0*	0*	0*	0*		8
		Mode 2	1	1	1	1		
		Mode 3	1	1	1	1		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
42	Lithuania	Mode 1	0*	0*	0*	0*	0*	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	

Table 6: Continued (4/6)

	WTO Members		3.A. General construction work for buildings (CPC 512)	3.B. General construction work for civil engineering (CPC 513)	3.C. Installation and assembly work (CPC 514, 516)	3.D. Building completion and finishing work (CPC 517)	3.E. Other (CPC 511, 515, 518)	Total Modes 1, 2 and 3 for all subsectors covered (Mode 4 excluded)
43	Malawi [1]	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
44	Malaysia	Mode 1	0*	0*	0*	0*	0*	7
		Mode 2	1	1	1	1	0.5	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
45	Mexico	Mode 1	0	0		0	0	2
		Mode 2	0*	0*		0*	0*	
		Mode 3	0.5	0.5		0.5	0.5	
		Mode 4	0.5H	0.5H		0.5H	0.5H	
46	Moldova	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
47	Mongolia [1]	Mode 1			0*	0*		4
		Mode 2			1	1		
		Mode 3			1	1		
		Mode 4			0.5H	0.5H		
48	Morocco [9]	Mode 1	0	0	0	0	0	2.5
		Mode 2	0	0	0	0	0	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
49	Nepal [8]	Mode 1		1			1	5
		Mode 2		1			1	
		Mode 3		0.5			0.5	
		Mode 4		0.5H			0.5H	
50	Netherlands Antilles	Mode 1	0*					1.5
		Mode 2	1					
		Mode 3	0.5					
		Mode 4	1					
51	New Zealand	Mode 1	0*	0*	0*	0*	0*	9
		Mode 2	1	1	1	1	0.5	
		Mode 3	1	1	1	1	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
52	Norway [5]	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
53	Oman	Mode 1	1	1	1	1	1	12.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
54	Pakistan	Mode 1		0*				0.5
		Mode 2		0*				
		Mode 3		0.5				
		Mode 4		0.5H				
55	Panama	Mode 1	0*	0*	0*	0*		6
		Mode 2	1	1	1	1		
		Mode 3	0.5	0.5	0.5	0.5		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
56	Papua New Guinea	Mode 1	0*	0*				3
		Mode 2	1	1				
		Mode 3	0.5	0.5				
		Mode 4	0.5H	0.5H				

Table 6: Continued (5/6)

	WTO Members		3.A. General construction work for buildings (CPC 512)	3.B. General construction work for civil engineering (CPC 513)	3.C. Installation and assembly work (CPC 514, 516)	3.D. Building completion and finishing work (CPC 517)	3.E. Other (CPC 511, 515, 518)	Total Modes 1, 2 and 3 for all subsectors covered (Mode 4 excluded)
57	Poland [5]	Mode 1	0*	0*	0*	0*	0*	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
58	Qatar [7]	Mode 1	1	1	1	1		10
		Mode 2	1	1	1	1		
		Mode 3	0.5	0.5	0.5	0.5		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
59	Romania	Mode 1	0*	0*	0*	0*		8
		Mode 2	1	1	1	1		
		Mode 3	1	1	1	1		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
60	Saudi Arabia	Mode 1	0*	0*	0*	0*	0*	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
61	Sierra Leone	Mode 1	1	1	1	1	1	10
		Mode 2	1	1	1	1	1	
		Mode 3	0	0	0	0	0	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
62	Singapore [1]	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
63	Slovak Republic [5]	Mode 1	0*	0*	0*	0*	0*	4.5
		Mode 2	1	1	1	1	0.5	
		Mode 3	0	0	0	0	0	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
64	Slovenia	Mode 1	0*	0*	0*	0*	0*	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
65	Solomon Islands [6]	Mode 1	0*	0.5				3.5
		Mode 2	1	1				
		Mode 3	0.5	0.5				
		Mode 4	0.5H	0.5H				
66	South Africa	Mode 1	0*	0*	0*	0*		8
		Mode 2	1	1	1	1		
		Mode 3	1	1	1	1		
		Mode 4	0.5H	0.5H	0.5H	0.5H		
67	Sweden [2]	Mode 1	0*	0*	0*	0*	0*	9
		Mode 2	1	1	1	1	0.5	
		Mode 3	1	1	1	1	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
68	Switzerland [3]	Mode 1	0*	0*	0*	0*	0*	8
		Mode 2	1	0.5	1	1	0.5	
		Mode 3	1	0.5	1	1	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
69	Chinese Taipei	Mode 1	0*	0*	0*	0*	0*	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
70	Thailand [6]	Mode 1	0	0	0			4.5
		Mode 2	1	1	1			
		Mode 3	0.5	0.5	0.5			
		Mode 4	0.5H	0.5H	0.5H			

Table 6: Continued (6/6)

	WTO Members		3.A. General construction work for buildings (CPC 512)	3.B. General construction work for civil engineering (CPC 513)	3.C. Installation and assembly work (CPC 514, 516)	3.D. Building completion and finishing work (CPC 517)	3.E. Other (CPC 511, 515, 518)	Total Modes 1, 2 and 3 for all subsectors covered (Mode 4 excluded)
71	Togo	Mode 1			1			2
		Mode 2			1			
		Mode 3			0			
		Mode 4			0.5			
72	Tonga	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
73	Trinidad and Tobago [4], [5]	Mode 1	0.5					1.5
		Mode 2	0.5					
		Mode 3	0.5					
		Mode 4	0.5					
74	Turkey	Mode 1	0.5	0.5	0.5	0.5		8
		Mode 2	1	1	1	1		
		Mode 3	0.5	0.5	0.5	0.5		
		Mode 4	0.5	0.5	0.5	0.5		
75	Ukraine	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
76	United Arab Emirates [6]	Mode 1	1	1	1	1	1	12.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
77	United States of America [1]	Mode 1	0*	0*	0*	0*	0*	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
78	Venezuela	Mode 1	0	0	0	0	0	10
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
79	Viet Nam	Mode 1	0*	0*	0*	0*	0*	7.5
		Mode 2	1	1	1	1	1	
		Mode 3	0.5	0.5	0.5	0.5	0.5	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	
80	Zambia [1]	Mode 1	1	1	1	1	1	15
		Mode 2	1	1	1	1	1	
		Mode 3	1	1	1	1	1	
		Mode 4	0.5H	0.5H	0.5H	0.5H	0.5H	

Source: **WTO Secretariat**

Notes:

- Countries that acceded to the WTO since June 1998 (date of the previous Secretariat Background Note) are marked in:
- European Communities counted as EC 12 based on schedule in force.
- 0.5H means that this mode is unbound, except for horizontal commitments.
- 0 means that no commitment was made ('unbound'). 0* means that no commitment was made due to lack of technical feasibility.
- 0.5 indicates a **partial commitment** either at the sectoral level (*i.e.*, a limitation in at least one of the columns, market access or national treatment, or a limitation of the scope of the sectoral coverage) or as a result of horizontal limitations which affect the construction and related engineering services sector.
- 1 means a commitment without limitations ('none').

[1] Schedule indicates no CPC numbers.
[2] A founding party of a legal entity shall either reside in Sweden or be a Swedish legal entity.
[3] Subsector CPC 513 is only partially covered: CPC 5133-5139 (construction work for waterways, pipelines, mining and manufacturing) are excluded.

[4] Commitments under Subsector A. General construction work for buildings (CPC 512) cover only construction relating to hotel and resort development (CPC 51206).
[5] Mode 3: acquisition of real estate by foreigners subject to authorisation (or permit, concession, etc.), as per entry in the horizontal section of the Schedule.
[6] Mode 3: the horizontal section provides for substantial limitations on foreign ownership of local companies and/or an economic needs test.
[7] Although the sector-specific section indicates a full market access and national commitment in mode 3, the horizontal section provides for substantial limitations on purchases by governmental, semi-governmental and public sector departments.
[8] Phase-in commitment which has entered into force.
[9] Mode 3: None except that a foreign enterprise established in Morocco must associate Moroccan enterprises through some form of association (joint venture, subcontracting or else). Commitments cover also CPC 8672 (engineering services).

REFERENCES

- Abdul-Aziz, A.R. (1994), "Global strategies: a comparison between Japanese and American construction firms", Construction Management & Economics, Vol. 12 No. 6, pp.473-82.

- Akintoye, A., McIntosh G. and Fitzgerald E. (2000), "A survey of supply chain collaboration and management in the construction industry", *European Journal of Purchasing and Supply Management*, No. 6 (2000), pp. 159-168.

- Bon, R. and D. Crosthwaite (2000), "The Future of International Construction", American Society of Civil Engineers, Thomas Telford.

- Butkeviciene, J. (2005), "Managing Request-Offer Negotiations Under GATS: The Case of Construction and Related Engineering Services," UNCTAD, Geneva, Switzerland.

- Chan, E.H.W., Kwok, G. (1999), "Foreign participation in housing development in mainland China: legal concerns on property ownership", *Journal of Review of Urban and Regional Development Studies*, Vol. 11 No. 3, pp.154-67.

- Chen, C. (2008), "Entry mode selection for international construction markets: the influence of host country related factors" *Construction Management and Economics* 26(3), 303-314.

- Chen, C. (2009), "A Unified Measure of a Fragmented Sector: My Views on STRI for Construction Services", slides presented at the OECD Experts Meeting on Services Trade Restrictiveness Indices (STRI), OECD, Paris, 2-3 July 2009, www.oecd.org/trade/stri.

- Copplestone, P. (2006), "Vietnam: The Vital Construction Industry", mimeo, World Bank.

- Engineering News Record (2008), "Top 225 International Contractors 2008", August 18, 2008, McGraw Hill Construction.

- European Foundation for the Improvement of Living and Working Conditions (2005), "Trends and Drivers of Change in the European Construction Sector: Mapping Report", available at: http://www.eurofound.europa.eu/emcc/publications/2005/ef04149en.pdf.

- European Construction Industry Federation FIEC (2009 a), "Key Figures: Construction in Europe in 2008", June 2009 edition.

- European Construction Industry Federation FIEC (2009 b), "Impact of the Crisis on the Construction Industry", slides presented at a European Parliament Hearing on global financial crisis, 6th February 2009, http://eesc.europa.eu/ sections/ccmi/Hearingsandconferences /Thepast/Financial_crisis/documents/Detemmerman_Vincent.ppt.

- Flanagan, R. (2009), "STRI – A Reality Check from an Engineer", slides presented at the OECD Experts Meeting on Services Trade Restrictiveness Indices (STRI), OECD, Paris, 2-3 July 2009, www.oecd.org/trade/stri.

- Kox, H. and A. Lejour (2005), "Regulatory Heterogeneity as an Obstacle for International Services Trade", CPB Discussion Paper No. 49.

- Kenny, C. (2007), "Construction, Corruption and Developing Countries", World Bank Policy Research Working Paper No. 4271, June 2007.

- KPMG (2008) “Embracing Change? Global Construction Survey 2008”, http://www.kpmg.com/ SiteCollectionDocuments/Global_Construction_Survey_2008.pdf.

- Lee, J. and D. Walters (1989), "International Trade in Construction, Design, and Engineering Services", The American Enterprise Institute and Ballinger Publishing Company, Cambridge, Mass.

- Mawhinney, M. (2001), "International Construction", Blackwell Science, Oxford; Malden, MA.

- Ministry of Commerce the People's Republic of China (2008), "China Trade in Services Report 2008", China Commerce and Trade Press.

- Myers, D. (2008), “Construction Economics: A New Approach” Taylor and Francis, New York, USA.

- NAO, UK National Audit Office (2005), "Improving Public Services Through Better Construction", report by the Comptroller and auditor general ordered by the House of Commons, 15 March 2005;

- NAO, UK National Audit Office (2001), "Modernising Construction", ", report by the Comptroller and auditor general ordered by the House of Commons, 8 January 2001.

- OECD (2009), "Services Trade Restrictiveness: Construction Services", paper presented at the OECD Services Experts Meeting, 2-3 July 2009, Paris.

- OECD (2008), "Trade and Regulation: The Case of Construction Services", paper presented at the OECD Services Experts Meeting, 11 December 2008, Paris.

- Office of Technology Assessment, OTA (1987), "Trade in Services: Exports and Foreign Revenues", U.S. Government Printing Office, Washington D.C., July 1987 (Chapter 4 entitled "International Competition in Engineering and Construction").

- Oo, B.L., Drew, D. (2005), "The bidding environments of Hong Kong and Singapore construction industries", in Wang, Y., Shen, Q. (Eds), Proceedings of the 2005 International Conference on Construction and Real Estate Management, Penang, pp.65-70.

- Shash, A.A. (1993), "Factors considered in tendering decisions by top UK contractors", Construction Management & Economics, Vol. 11 No. 2, pp.111-18.

- Stansbury, N. (2005), “Exposing the Foundations of Corruption in Construction”, Transparency International, http://www.transparency.org/publications/gcr/download_gcr/ download_gcr_2005.

- Tolentino, P. E. (1993), Technological Innovation and Third World Multinationals, Routledge, London-New York.

- Transparency International (2003), "Global Corruption Report 2003", http://www.transparency.org/publications/gcr/gcr_2003.

- Turin, D.A. (1969), "The Construction Industry: Its Economic Significance and Its Role in Development", London, Building Economics Research Unit, University College Environmental Research Group.

- UNCTAD (2006), “Trade in Services and Development Implications”, Note by the UNCTAD Secretariat, TD/B/COM.1/EM.12/2, 16 January 2006.

- UNCTAD (2000a), “Regulation and Liberalisation in the Construction Services Sector and its Contribution to the Development of Developing Countries”, Note by the UNCTAD Secretariat, TD/B/COM.1/77, 12 September 2000.

- UNCTAD (2000b), “Report of the Expert Meeting on National Experiences with Regulation and Liberalisation: Examples in the Construction Services Sector and its Contribution to the Development of Developing Countries”, TD/B/COM.1/EM.12/3, 18 December 2000.

- U.S. International Trade Commission (2008), "Recent Trends in U.S. Services Trade – 2008 Annual Report", Publication No. 4015, June 2008, http://www.usitc.gov/publications/pub3805.pdf.

- U.S. International Trade Commission (2002), "Recent Trends in U.S. Services Trade – 2008 Annual Report", Publication No. 3514, May 2002, http://hotdocs.usitc.gov/docs/pubs/332/PUB3514.pdf.

- U.S. Department of Commerce (1996), "The U.S. International Construction Industry", Office of Business and Industrial Analysis, Washington, D.C., January 1996.

- U.S. Department of Commerce (1984), "A Competitive Assessment of the U.S. International Construction Industry", Washington, D.C., July 1984.

- WTO Secretariat (2005), “Construction and Related Engineering Services – Information Note by the Secretariat”, JOB(05)/216, 29 September 2005.

- WTO Secretariat (1998), “Construction and Related Engineering Services – Background Note by the Secretariat”, S/C/W/38, 8 June 1998.

- WTO Trade Policy Reviews.