



Sector Monitor Series

Dubai Construction Sector and construction materials

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ملخص تنفيذي

ساهم قطاع البناء والتشييد في دبي بحوالي 12% من إجمالي الناتج المحلي للإمارة في عام 2005، وحقق ارتفاعاً في متوسط النمو السنوي بـ 27% خلال الفترة 2000 - 2005، الأمر الذي يعكس طفرة البناء والتشييد التي تشهدها دبي.

طبقاً لقاعدة بيانات عضوية غرفة تجارة وصناعة دبي، فقد بلغ عدد الشركات العاملة في قطاع البناء والتشييد والأنشطة ذات الصلة في دبي 8,170 شركة في الربع الثاني من عام 2006. يتضح من خصائص القطاع أن الشركات الصغيرة الحجم والتي توظف الواحدة منها 1 - 19 عاملاً تهيمن على القطاع وتشكل 73% من إجمالي عدد الشركات في الربع الثاني من عام 2006.

خلصت نتائج الدراسة إلى الملاحظات العامة التالية:

يمثل نشاط مقاولات البناء 45% من كافة الأنشطة التي تمارس في القطاع يعقبها مقاولات أعمال الإنهاء 33%. تعتبر الشركات الكبيرة جهة التوظيف الرئيسية في قطاع البناء حيث توظف 73% من إجمالي العمالة في القطاع تليها الشركات متوسطة الحجم التي توظف 21% ومن ثم الشركات الصغيرة 6%. انخفض إجمالي الإنتاجية الجزئية للعمالة في قطاع البناء والتشييد بدبي خلال الفترة 2000 - 2002. لكن بدأت في الارتفاع بشكل طفيف ابتداءً من عام 2003. في عام 2005، ارتفع عدد المباني التي اكتمل بناؤها بنسبة 17.5 في المائة لتبلغ 2,252 مبنى منها 68 في المائة مجمعات سكنية وفلل.

ننتقل إلى عدم استقرار أسعار مواد البناء حيث تذكر الدراسة أن الحديد والصلب قد شهد فائض في العرض في الأسواق العالمية بلغت 119 مليون طن متري في عام 2005 حيث بلغ الإنتاج العالمي في 2005 حوالي 1.132 مليار طن متري بينما بلغ الاستهلاك حوالي 1.013 مليار طن متري. ومع ذلك، فقد شهدت منطقة الشرق الأوسط زيادة في الطلب على الصلب بلغت في عام 2005 حوالي 18.8 مليون طن توجب تغطيته بالاستيراد. وقد واصلت أسعار الصلب في الارتفاع خلال الفترة 2000 - أغسطس 2006 وذلك بالنسبة لكل منتجات الصلب في الأسواق المحلية والعالمية.

تبلغ قيمة مشاريع البناء المزمع إكمالها في دبي خلال الخمسة أعوام المقبلة أكثر من 100 مليار دولار أمريكي.

خلال الفترة 2001 - 2005 ارتفع الاستهلاك العالمي للألمنيوم بمعدل 32% في حين زاد الإنتاج العالمي بنسبة 28%، وأدى هذا العجز إلى نقص في المعروض من الألمنيوم في الأسواق العالمية خلال نفس الفترة.

ارتفع إنتاج الألمنيوم في الشرق الأوسط من 1,180 ألف طن متري في عام 2000 إلى 1,460 ألف طن متري في 2005. بلغ إنتاج دبي من الألمنيوم في عام 2005 حوالي 0.76 مليون طن متري وقد بلغت قيمة الواردات من الألمنيوم ومنتجاته 1.5 مليار درهم في عام 2004 وإعادة الصادرات 356 مليون درهم.

ارتفعت أسعار الألمنيوم في السوق العالمي بنسبة 70% خلال الفترة 2003 - أغسطس 2006، وتحتديدا من 1,431 دولار أمريكي للطن في 2003 إلى 2,438 دولار للطن في أغسطس 2006.

أما بالنسبة للأسمنت فقد قدر الإنتاج العالمي في عام 2005 بحوالي 2.2 مليار طن متري ويمثل ذلك ارتفاعا بنسبة 4.2% عن العام السابق، في حين قدر الاستهلاك بحوالي 1.9 مليار طن متري في نفس العام الأمر الذي يوضح وجود زيادة في العرض. ساهم إنتاج الأسمنت في الشرق الأوسط بحوالي 5.5% من الإنتاج العالمي في 2005 ولم يغطي هذا الإنتاج استهلاك المنطقة مما تسبب في حدوث زيادة على الطلب، وبالتالي استمرت الأسعار في الارتفاع.

قدر إنتاج الإمارات للأسمنت بحوالي 11.2 مليون طن في 2005 وبلغ إنتاج الكلنكر 4.5 مليون طن. في عام 2005 بلغت قيمة واردات دبي من الأسمنت 143.5 مليون درهم، إعادة الصادرات 15.7 مليون درهم والصادرات 3.1 مليون درهم.

ارتفع الإنتاج العالمي للخشب بنسبة 17% خلال الفترة 2000 - 2004 ، في حين زاد إنتاج الخشب المنشور على شكل ألواح بمعدل 7% خلال نفس الفترة. فيما يتعلق بالألمنيوم، تقترح الدراسة الانتقال إلى اقتصاد الوفرة لتقليل كلفة الإنتاج وزيادة القدرات التنافسية.

كما تقترح الدراسة جذب تكنولوجيا جديدة لتطوير المصاهر الجديدة وتلك الموجودة أصلا و تنويع البدائل المبتكرة مثل المنتجات المصنعة أو شبه المصنعة التي تعتمد على الألمنيوم المصقول. كذلك تقترح الدراسة تعزيز المشاركة واقتسام المخاطر مع القطاع الخاص.

Executive Summary

The construction sector in Dubai contributed by 12 per cent to Dubai's GDP in 2005. Its annual average growth rate reached 27 per cent during the period 2000-2005, reflecting the construction boom being witnessed in the Emirate.

According to the DCCI membership database, the number of companies actively engaged in construction and construction related activities in Dubai was 8,170 in the second quarter of 2006. From the characteristics of the sector it is clear that the small size company "which employed 1-19 workers" dominated the sector, as it represented 73 per cent from the total number in the second quarter of 2006.

Results of the study draw the following general observations:

The building contracting activity represents 45 per cent of all activities practiced in the sector followed by building completion companies with 33 per cent.

The overall partial productivity of labor in Dubai's construction sector has decreased during the period 2000-2002, but started to increase slightly since 2003.

The number of completed buildings had increased by 17.5 per cent over the previous year reaching 2,252 buildings of which, 68 per cent were Villas & Residential complexes.

Moving on to the instability of the construction material price, the study mentioned that steel in the world market have an excess supply of 119 million metric tons in 2005. World production in 2005 totaled 1.132 billion metric tons, while consumption totaled 1.013 billion metric tons. The Middle East on contrary, witnessed an excess demand of 18.8 million tons in 2005 that was covered through imports. The steel price continued increasing during the period 2000 – August 2006 for all steel products in both international and local markets.

The construction projects in Dubai that planned to be completed during the next five years totaled more than US \$ 100 billions.

During the period 2001-2005, Aluminum global consumption increased by 32 per cent, while on the other hand aluminum global production increased by 27 per cent causing the shortage of supply.

Middle East Aluminum production increased from 1,180 thousand metric tons in 2000 to 1,460 thousand metric tons in 2005.

Dubai Aluminum production in 2005 amounted to 0.76 million metric tons, while the value of imports of Aluminum and product thereof reached AED 2.04 billions in 2005, and the re-exports stood at AED 226 millions.

Global aluminum prices had increased by 70 per cent during the period 2003-August 2006, from US \$ 1,431 per ton in 2003 to US \$ 2,438 per ton in August 2006.

World cement production estimated at 2.2 billion metric tons in 2005, representing an increase of 4.2 per cent over the previous year, while the consumption is estimated at 1.9 million metric tons in the same year, which gives an over supply.

In the Middle East, the cement production contributed 5.5 per cent to the world production and fall behind the consumption causing an excess demand. Accordingly, the price of cement continued to rise during the same period, due to the said excess demand.

UAE cement production was estimated at 11.2 million tons in 2005 and clinker production at 4.5 million tons. Cement imports in Dubai in 2005 valued at AED 143.5 millions, re-exports valued AED 15.7 millions and exports valued AED 3.1 millions.

Plywood global production had increased by 17 per cent during the period 2000-2004, while sawnwood production increased by 7 per cent during the same period.

Concerning the aluminum industry, the study suggests moving to economy of scale to decrease the cost of production and increase the competitiveness ability.

It also suggests attracting new modern technologies to develop the new and existing smelters and to diversify into innovative alternatives such as refined aluminum based finished or semi – finished products. In addition, the study suggests enhancing the participation and risk sharing with the private sector.

1. Introduction

1.1 Overview

The construction sector is one of Dubai's biggest industries. The sector is very important for the UAE economy and particularly to Dubai. In 2005, the sector accounts for 11.2 per cent and 12 per cent of the UAE's and Dubai's GDP respectively. The sector in the UAE employs more than 500 thousands people, of which Dubai contributed with around 30 per cent. The announcement of the new huge construction projects planned for the coming five years will increase the sector's significance further. By 2010, more than \$100 billion will be invested, which includes \$20 billion for Burj Dubai, \$3.4 billions for Dubai metro system, and \$17 billions for the Lagoons ...etc.

The construction industry is large, complex and diverse and covers a wide range of business interests and activities, united by their common usage and development of land.

The construction industry is comprised of clients including house-builders and commercial property developers who determine what should be built and where; designers who decide on the detail of what should be built; materials and components suppliers who extract and/or manufacture materials and components and contractors who carry out the building.

According to the Standard Classification of Economic Activities, there are four major construction activities, these are:

- ◆ Site preparation: demolition and wrecking of buildings, earth moving and test drilling and boring
- ◆ Building of complete constructions or parts thereof; civil engineering: general construction of buildings and civil engineering works, construction of highways, roads, airfields and sport facilities, construction of water projects and other construction work involving special trades
- ◆ Building installation: installation of electrical wiring and fittings, insulation work activities, plumbing and other building installation
- ◆ Building completion: plastering, joinery installation, floor and wall covering, painting and glazing and other building completion

The sector suffered badly when the construction materials prices had increased during 2000 – 2004. Some policy measures have been taken to control the fluctuations in the prices of the construction materials in 2005, but after a price stability period in 2005, again it started to increase.

1.2 Objective

The objective of this paper is to monitor the dynamics of the construction sector in Dubai as a whole, during the period 2000 – 2006 depending on data availability up to Aug 2006. Special emphasis will put on price fluctuations of the major construction materials such as steel, cement, aluminum and wood and their impact on the sector.

The report aims at answering the following questions:

1. What are the main characteristics of the construction sector in Dubai?
2. What were recent fluctuations of major construction materials?
3. To which extent do main construction materials fluctuations affect the sector?
4. What are the perspectives for the construction sector in Dubai?

1.3 Data and Methodology

This sector monitor used a survey questionnaire that was sent to the traders of the construction materials in Dubai to get their feed back on the price increase in August 2006 compared to the average price in 2005, in addition to existing secondary data from international sources. Available local, regional and international statistics were used also.

The DCCI membership database is used to determine and analyze the characteristics of the construction sector in Dubai.

1.4 Outline of the study

Section 2 analyzes the major characteristics of the construction sector in Dubai, and section 3 examines fluctuations in prices of the major construction materials and their effect on the sector. Section 4 concludes the report and closes with recommendations.

2. Characteristics of Dubai Construction Sector

2.1 Dubai Construction Sector GDP

Dubai GDP has increased by 125 per cent during the period 2000 – 2005 on annual growth rate of 17.6 per cent. Within this, the construction sector's absolute contribution to GDP has increased furthermore; it achieved an increase of 225 per cent over the period 2000 to 2005 which is equivalent to an annual growth rate of 26.6 per cent.

Table 1: Contribution of Dubai Construction Sector to Dubai's GDP at Factor Cost, 2000-2005 (AED million)

Years	Dubai GDP	Construction sector GDP	%
2000	62,335	5,066	8
2001	66,028	5,218	8
2002	80,494	8,870	11
2003	97,743	11,961	12
2004	118,428	13,977	12
2005*	140,200	16,462	12

Source: Ministry of Economy

* Preliminary

In 2005, the sector's GDP increased by 17.8 per cent. However, the sector's contribution to the emirate GDP has remained more or less fixed (12per cent) over the last three years. However, given that the emirate's GDP has continued to increase this actually reflects the strength of the construction sector.

2.2 Gross Fixed Capital Formation

The Gross Fixed Capital Formation of the construction sector in Dubai has increased by 159 per cent during the period 2000 to 2005, with an annual growth rate of 21per cent, similarly reflecting the boom in the sector.

Table 2: Capital Formation of the Construction Sector, Dubai, 2000-2005 (AED Million)

	2000	2001	2002	2003	2004	2005*
Total Dubai	18716	19486	21174	27534	31795	37801
Construction Sector in Dubai	740	761	780	1781	1990	1920

Source: Ministry of Economy

* Preliminary

2.3 Establishments

For the purpose of the study, establishments were classified into three different sized classes according to the number of employees. Small establishments were defined as those employing 1-19 workers; medium employing 20-249 workers; and the large establishments employing 250 workers or more.

According to the DCCI membership database in the 2nd quarter of 2006, there was an estimated 8,170 active construction and construction related companies in Dubai of different sizes and specializations. This represents a 38 per cent increase from the year 2005, where 5,938 companies were recorded.

Small sized companies (1 –19) dominate the construction sector, representing approximately 73 per cent of total employees in the sector in the second quarter of 2006, followed by medium sized companies with 23 per cent, (table 3).

Table 3: Construction Companies in Dubai by Size 2003 – 2006*

	1 - 19 Employees	20 – 249 Employees	250 – over Employees	Total
Year 2003	2,692	705	114	3,511
<i>per cent from total</i>	76.7 per cent	20 per cent	3.3 per cent	100 per cent
Year 2004	3,279	1,042	177	4,498
<i>per cent from total</i>	72.9 per cent	23.2 per cent	3.9 per cent	100 per cent
Year 2005	5,653	1,504	380	7,537
<i>per cent from total</i>	75 per cent	20 per cent	5 per cent	100 per cent
Year 2006*	5,965	1,879	326	8,170
<i>Per cent from total</i>	73 per cent	23 per cent	4 per cent	100 per cent

Source: DCCI Membership Database

* Second Quarter in, 2006

In the 2nd quarter of 2006, 45 per cent of all construction companies working in the sector were engaged in contracting of civil engineering followed 33 per cent in building completion activities, 20 per cent in building installation and only 2 per cent in site preparation (Table 4).

Large establishments are the major employers within the construction sector, employing 73 per cent of the total workers in the sector, followed by the medium class with 21 per cent and finally only 6 per cent of the sector's labor force employed by the small ones.

Table 4: Distribution of Construction Companies by Activity, 2nd quarter 2006

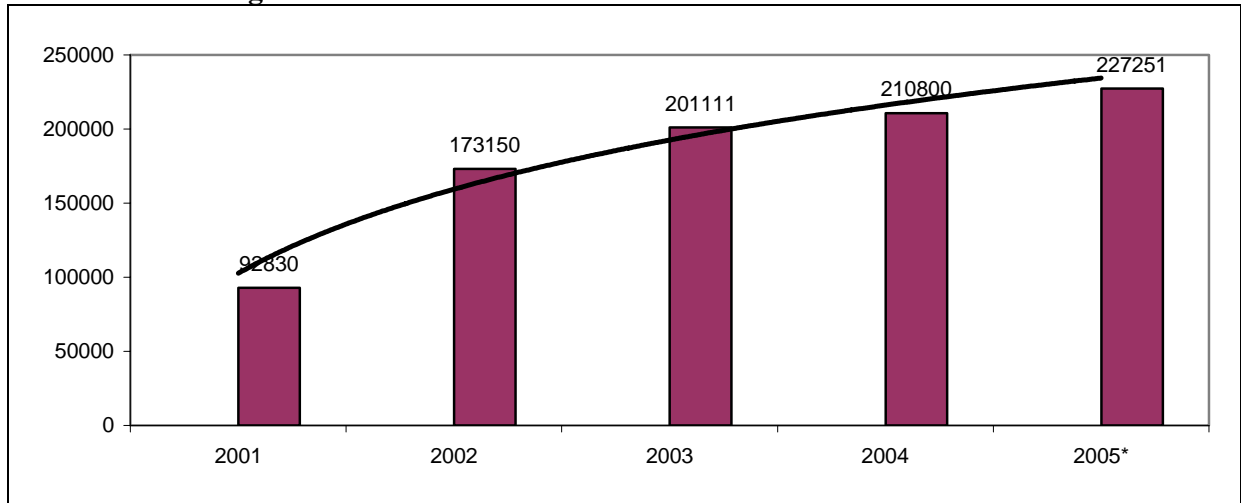
Activity	Number of Companies	%
Site preparations (demolition, land draining, land digging, foundation contracting, reclamation, canal dredging, line coring & ditching).	132	1.6
Contracting of civil engineering works (Construction of building, roads, dams, sewage & drainage, oil & gas pipelines, desalination plants, communication lines, electric power lines, ports & marine construction, general maintenance)	3,663	44.8
Building installation (Air conditioning & ventilation, lifts & escalators, exhibition stands & fittings, electromechanical equipment installation & maintenance, fencing & barbed wire, safety & security system installation, internal communication installation, wireless system equipment installation, plumbing, other fittings)	1,673	20.5
Building completion (concrete restoration, floor & wall tiling, scaffolding, building maintenance, interior decoration, landscaping, electrical fittings & fixtures services/ repairing)	2,702	33.1
Total	8,170	100

Source: DCCI membership database

2.4 Employment

The construction sector is one of the major employers of the Dubai labor force. In 2005, there were 227,251 employees recorded to be working in the sector, representing 23.6 per cent of the total labor force. This represents an increased of 7.8 per cent on the previous year, (Figure1).

Figure 1: Workers in Dubai construction sector 2001-2005*

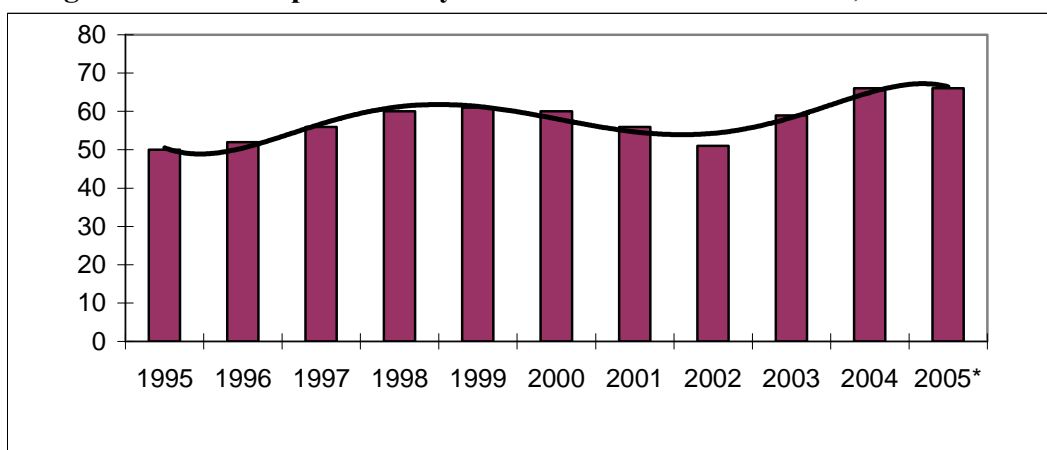


Source: Ministry of Economy
* Preliminary

The majority of the sector's workforce is engaged in the contracting of civil engineering works which includes the contracting of buildings; pre-fabricated concrete and wooden houses; steel construction; roads, bridges, tunnels and dams; sewage, drainage and pipelines; electric; marine and ports; and general maintenance.

The overall partial productivity of labor in Dubai's construction sector decreased over the period 2000-2002, but has been increasing since 2003. There has similarly been an increase in the number of workers in the sector over the same period. (Figure2)

Figure 2: Workers productivity in Dubai Construction Sector, 1995 -2005*



Source: Ministry of Planning
* DCCI Preliminary Estimation

2.5 Completed buildings

The total number of completed buildings in Dubai increased by 17.5 per cent during the period 2000 – 2005 from 1,917 buildings in 2000 to 2,252 in the year 2005 (Table 5).

Villas and residential complexes increased by 39.3 per cent during 2000-2005, while the number of completed buildings in the industrial, recreational and services buildings has declined over the same period. Completed buildings in the Multi –storey commercial buildings have slightly increased over the same period apart from a decrease in 2005 compared with 2004.

Table 5: Completed Buildings in Dubai, 2000-2005

Year	Villas & Residential Complexes	Multi-storey Commercial Buildings	Industrial, Recreational, & Services Buildings	Total
2000	1,098	330	489	1,917
2001	1,672	355	418	2,445
2002	1,558	412	289	2,259
2003	1,112	423	348	1,883
2004	1,436	393	290	2,119
2005	1,529	337	386	2,252

Source: Dubai Municipality

In 2006, the major new projects in Dubai valued at US \$ 96.5 billion, of which US \$ 20 billion is from the Burj Dubai and US \$ 17.7 billion from The Lagoon (Table 6).

Table 6: Major new projects in Dubai, 2006 (Value in billion dollars)

	Project Name	Estimated value
1	Burj Dubai	20
2	The Lagoons (Sama Dubai Projects)	17.7
3	Dubai land projects	11.7
4	Dubai Aerospace Enterprise (DAE) projects	15
5	Dubai Waterfront	10
6	Dubai International Financial Centre (DIFC) projects	7.4
7	Dubai International Properties	5.2
8	Dubai Metro Systems	3.4
9	Dubai Mountain City	3.4
10	Dubai International Chess City	2.7
	Total	96.5

Source: www.meedprojects.com; www.ameinfow.com ; Newspapers

3. Fluctuations of the main Construction Materials 2000 – 2005

Prices of construction materials have, after a short period of stability, started to rise again in 2006 due to a host of internal and external factors. Over the last few years the majority of construction materials have witnessed large fluctuations in production, consumption and most of all in price. Such price fluctuations had affected a wide range of businesses, such as the contractors, business owners, real estate sector, etc. In this chapter price fluctuations of each individual construction material will be discussed and explained from both the supply and demand point of view at a local, regional, and international level.

3.1 Steel

Steel has had a major impact on our lives! It is used in construction works, electricity-power-line towers, natural-gas pipelines and machine tools; the list is endless! Steel is by far the most important, multi-functional and most adaptable material and its strength and inherent uses make it the backbone of developed economies. The importance of steel in the development of any modern economy cannot be over-emphasized; it is a core industry input and its demand is strongly linked to the overall level of economic activity in the country.

This section investigates the size of steel production and consumption in the world market, Middle East and the UAE "Dubai".

3.1.1 World Market

World production of steel has increased by 7.3 per cent in 2005, from 1,055 million metric tons in 2004 to 1,132 million metric tons in 2005, while world consumption of steel has increased by a staggering 10.3 per cent in the same period, from 918 million metric tons in 2004 to 1,013 million metric tons in 2005. World production recorded an increase of 34 per cent during the period 2000 to 2005, and similarly world consumption also increased by 34 per cent over the same period (Table 7).

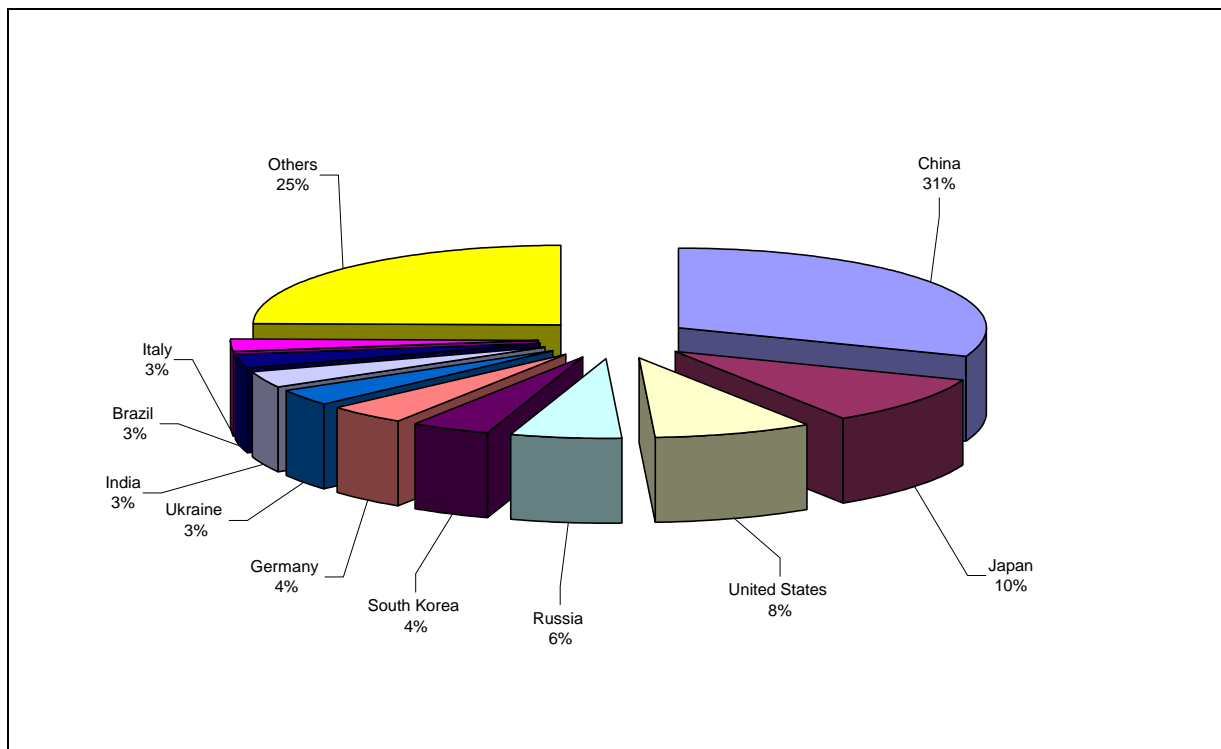
Table 7: World Steel Production and Consumption, 2000 – 2005 (Million metric tons)

	2000	2001	2002	2003	2004	2005
Production	845	845	886	963	1,055	1,132
Consumption	758	766	810	872	918	1,013
Excess supply	87	79	76	91	137	119

Source: MEPS

In 2005, China dominated the production of steel with 31 per cent of the total world production, followed by Japan and the United States (Figure 3).

Figure 3: Major Steel Producing Countries, 2005



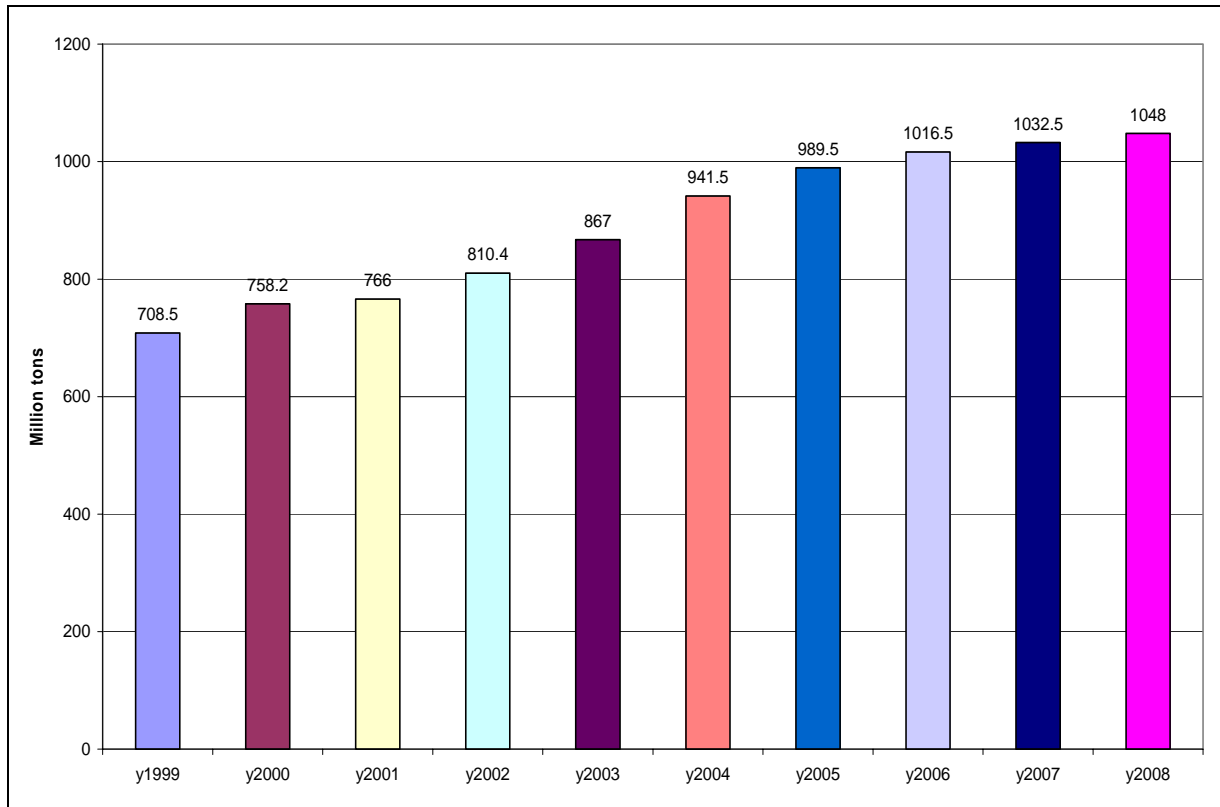
Source: International Iron and Steel Institute (IISI)

During the period 2000 to 2005 there is an obvious excess of supply of steel which should make the price of steel relatively stable.

In the 2nd quarter of 2006 total world crude steel production amounted to 593.4 million tons. Finished steel production increased by 31 per cent from 758 million tons to 990 million tons in

2000 and 2005 respectively. Figure 4 below shows the forecast for the expected consumption of finished steel until 2008.

Figure 4: Apparent Consumption of Finished Steel, 1998 – 2008



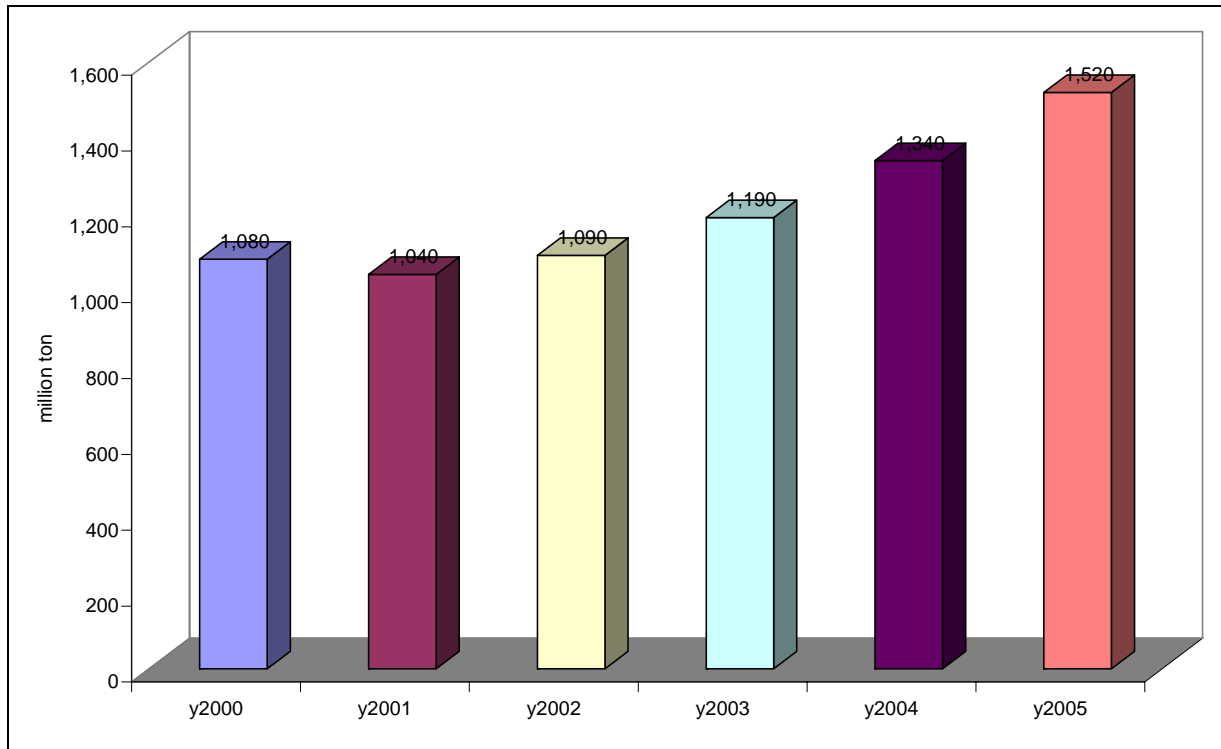
Source: MEPS – Global Iron and Steel Production to 2008

The major reason behind the sharp increase in the price of steel and its products has been shortages of three key raw materials (iron ore, coking coal and coke). There are, however, a variety of indications of the easing problem. In the case of iron ore and coking coal and coke, investments in new capacity building are taking place and prices are expected to settle, but, at levels higher than those prevailing several years ago. In the case of scrap, prices are also expected to ease, but once again at structurally higher levels than before which may result in renewed interest in ore-based complements such as sponge iron. Increased transaction costs caused by a shortage in transportation, is also expected to ease as seaborne capacity increases.

Iron Ore production increased by 41 per cent during the period 2000 to 2005, from 1,080 million metric tons in 2000 to 1,520 million metric tons in 2005. It is, however, difficult to measure the consumption of iron ore, as it is not directly measured by statistics. Nonetheless, indicators such

as imports of iron ore and production of crude steel and pig iron can be used to approximate estimates (Figure 5).

Figure 5: Iron Ore World Production, 2000-2005

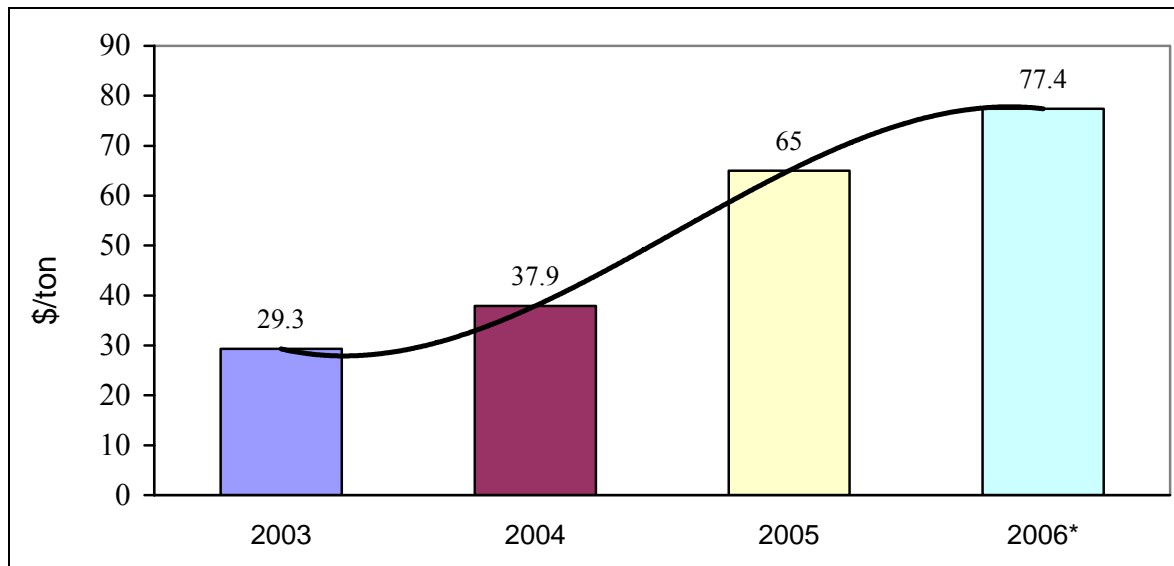


Source: U.S. Geological Survey (USGS)

The prices of Iron ore have been increasing drastically since 2003. In 2003, lump iron ore prices increased by 9 per cent; in 2004 by another 18-22 per cent. In 2005 the price of iron ore sale products increased by an astounding 71.5 per cent and between 2005 and June 2006 by a further 19 per cent.

This huge increase in the price has affected the production of steel and its products by increasing the cost of production (Figure 6).

Figure 6: Iron Ore World Prices, 2003-2005



Source: IMF Primary Commodity Prices
 * June 2006

3.1.2 Middle East Market

Middle East production of steel has increased by 12 per cent over 2005 from 14.2 million metric tons in 2004 to 15.9 million metric tons in 2005, whereas Middle East consumption of steel has increased by 37 per cent over the same period from 25.3 and 34.7 million metric tons in 2004 and 2005 respectively. Between 2000 and 2005 the production of steel in the Middle East has increased by 47 per cent whilst steel consumption has increased of 74.4 per cent (Table8).

Table 8: Middle East Steel Production and Consumption, 2000 – 2005 (Million tons)

	2000	2001	2002	2003	2004	2005
Production	10.8	11.7	12.4	13.4	14.2	15.9
Consumption	19.9	22.8	23.5	24.4	25.3	34.7
Excess demand	9.1	11.1	11.1	11	11.1	18.8

Source: MEPS

It is evident from these figures that the Middle East is experiencing excess demand resulting from the construction boom. The region has thus resorted to importing to fill the gap; regional production is completely swallowed by the high domestic demand. Steel produced from Saudi

Arabia and Qatar gets exhausted in the Middle East purely due to the high demand from the construction sector.

The total amount of steel imported to Middle East in 2004 was 38 million tons, compared to 22 million tons in June 2005.

3.1.3 Steel at Dubai "UAE" Market

The local demand for steel and its products is growing rapidly as both public and private sectors are floating tenders for the construction of diversified commercial, residential and institutional buildings. The UAE in general and Dubai, more specifically, have witnessed great fluctuations in the price of steel over the period 2000 to 2004. There are many construction projects running in Dubai and scheduled for the next 5 years; for example, Burj Dubai, Nakheel Islands, Dubai Land, etc...

Total consumption of steel long products in the GCC countries totaled 7.5 billion tons, of which 29 per cent were used in the UAE. Production of steel long products in the GCC countries totaled 6.4 billion tons in 2004, of which the UAE contributed 20 per cent. It is clear that the GCC countries have excess demand in the steel long product which culminates in increases in the price of steel products.

Steel global prices increased sharply in August 2006 with respect to the previous years. The hot rolled product price increased by 128 per cent during the period 2001 to August 2006, while a similar scenario could be seen with the hot rolled plates price which increased by 137 per cent over the same period (Table 9).

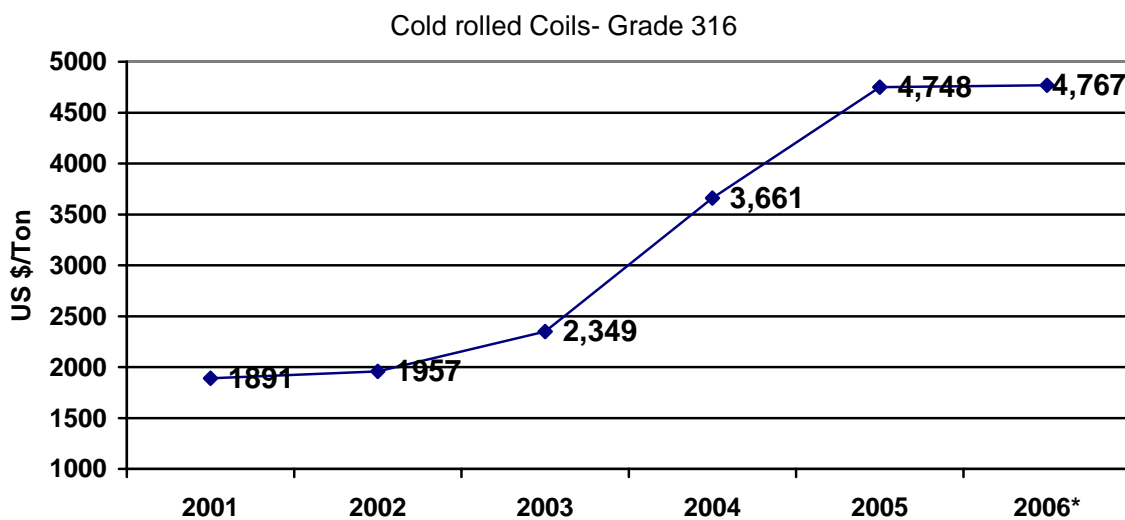
Table 9: Steel Price in the International Market by Product Type 2001 – 2006*
Average Price in US\$/Ton

	REBARS	BEAMS	WIREEOD	HRPLATE	HRCOILS	CRCOILS	HDGCHR	Stainless steel Cold R. C	
								Grade 304	Grade 316
2001	270	326	253	302	250	334	387	1,386	1,891
2002	278	338	267	305	314	373	439	1,417	1,957
2003	297	371	302	345	342	423	489	1,715	2,349
2004	481	581	474	602	555	635	721	2,516	3,661
2005	457	600	463	701	562	665	723	2,577	4,748
2006*	516	666	495	717	569	668	784	2,802	4,767

Source: calculations based on data from MEPS International
 * May 2006

The price of stainless Steel CR Type 316 has increased dramatically over the years 2001 and 2005 by a staggering 151 per cent but by less than one per cent from May 2006 over the previous year. The product price increased by 144 per cent during the period 2001 to May 2006 which, considering the huge increase in this vital product, indicates that steel prices are still rocketing in the world market (Figure7).

Figure 7: World Stainless Steel Product Price, 2001-2006*



Source: calculations based on data from MEPS International
 * May 2006

Dubai's "UAE" market is not that different from the case above; the price of steel in the local market is rising due to the increase in global demand and a decline in the supply of raw materials from major source markets. Table 10 below shows steel prices in Dubai.

It is clear, from Table 9 that the prices of all steel products have increased over the period Dec.2005 to August 2006; steel prices have on average increased by 34 per cent.

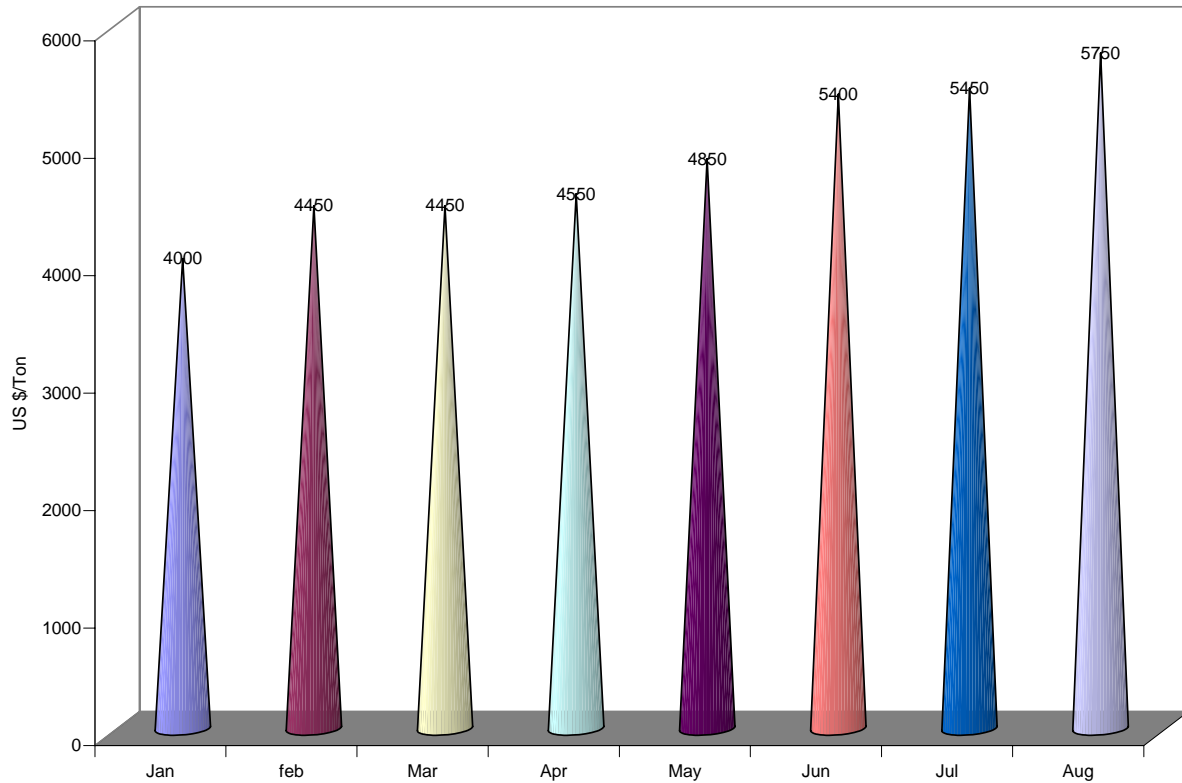
**Table 10: Average Steel Price CFR Dubai, Dec 2005- August 2006 (US \$/ton)
CFR Dubai**

July 2006 - Import Steel Prices	Dec 2005	August 2006	Countries of Origin
Billets - Blooms	335	450	CIS, Turkey
Reinforcing Bars	425	535	Turkey
Angles	420	482.5	CIS - China
Beams - Channels	485	560	China
Wire Rod	417.5	507.5	CIS, Turkey, Far East, China
Hot Rolled Plates	465	675	CIS - China
Hot Rolled Coils	405	557.5	Ukraine
Cold Rolled Coils	500	645	Ukraine
Hot Dip Galv. Coils, HR base	560	795	Far East, India
Hot Dip Galv. Coils, CR base	600	895	India, Far East
Prepainted Galv. Coils 0.35mm	830	1,175	Far East, India
Tinplate 0.32MM	855	890	Far East, West Europe
Stainless HR Coils 304 base	2,050	3,650	Far East, W. Europe, Brazil, S. Africa
Stainless HR Coils 316L base	4,050	5,750	Far East, W. Europe, Brazil

Source: calculations based on data from MEsteeel.com

The highest price increases were seen in products such as Stainless Steel HR Coils 304 base, at 78 per cent, Hot Dip Galvanized Coils CR base, at 49 per cent, and Hot Rolled Plates, at 45 per cent. From January to August 2006 stainless steel HR coils 316L prices increased by 44 per cent from US\$ 4,000 in January to US\$ 5,750 in August (see Figure 8).

Figure8: Stainless Steel HR Coils 316L base prices, 2006*



Source: Calculations based on data from MEstee.com

** January – August 2006*

3.2 Aluminum

3.2.1 World Market

Aluminum has rapidly become the most widely consumed base metal in terms of number of tons bought. Aluminum has a stable outlook given that nearly all of its uses will continue to be important in the growth of developed economies. Furthermore, with the rapid industrialization and urbanization of large countries like China and India, the demand for aluminum is set to accelerate sharply. Primary aluminum demand has risen from 2 million tons in 1950 to more than 31 million tons in 2005 and is expected to rise to 33 million tons in 2006.

The predominant uses of aluminum are in construction, which consumed 22 per cent of aluminum produced; transportation industries consuming 26 per cent; and packaging consuming 22 per cent. Because of its broad applications, the demand for aluminum has generally been

linked to fluctuations in national and international economic conditions. Historically, the price of aluminum had been affected by the level of production, consumption in end-use markets, production of Alumina and its price and, to a more limited extent, speculation in the commodities market.

Table 11 below shows the international aluminum market: “supply – demand” and the changes during 2000-2005.

Table11: Global Primary Aluminum Supply & Demand 2000 – 2005
(Thousand Metric Tons)

Years	Production	Consumption	Excess
2000	20,230	20,659	-429
2001	24,466	24,016	450
2002	26,090	25,680	410
2003	27,700	27,540	160
2004	29,800	30,485	-685
2005	31,200	31,600	-400

Source: Global Aluminum Market analysis in mid 2006 – May 2006

It is clear from the above table that global aluminum consumption exceeded global production in 2005 which lead to a shortage in global market supply and, subsequently, to price hikes. Aluminum consumption during the period 2001 to 2005 increased by 32 per cent, whilst production increased by only 28 per cent leading to a deficit in the supply of the aluminum in the global market.

According to the global aluminum analysis in mid 2006 report¹, the first quarter of 2006 witnessed a shortage of 300 million tons in the world supply of aluminum. The subsequent price hikes affected all regions of the world. The international aluminum market will continue to face shortages in supply in 2006 due to the high demand for aluminum; price is expected to continue on an upsurge.

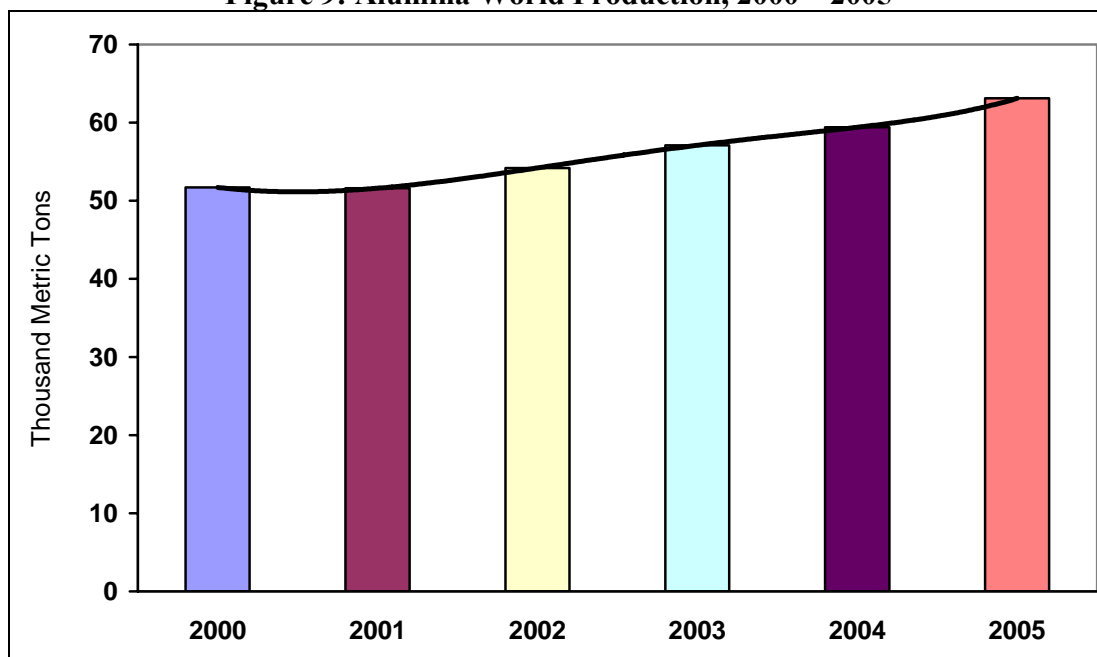
Europe has dominated the world’s production of primary aluminum, producing 35 per cent of world production, followed by North and Latin America and then Asia.

¹ The Global Aluminum Market in mid-2006 (Garming Nappi May 31-2006 Toronto).

Activities in the global aluminum market have affected the Middle East market. The deficit in the global market has caused the regional price to increase. The reason for this increase is the failure of aluminum capacity increase to keep the pace.

Alumina is the primary raw material for aluminum production. The demand for alumina is driven by the demand for aluminum, with approximately two tons of alumina required to produce one ton of primary aluminum. Figure 9 below shows the world's alumina production during the period 2000 to 2005.

Figure 9: Alumina World Production, 2000 – 2005



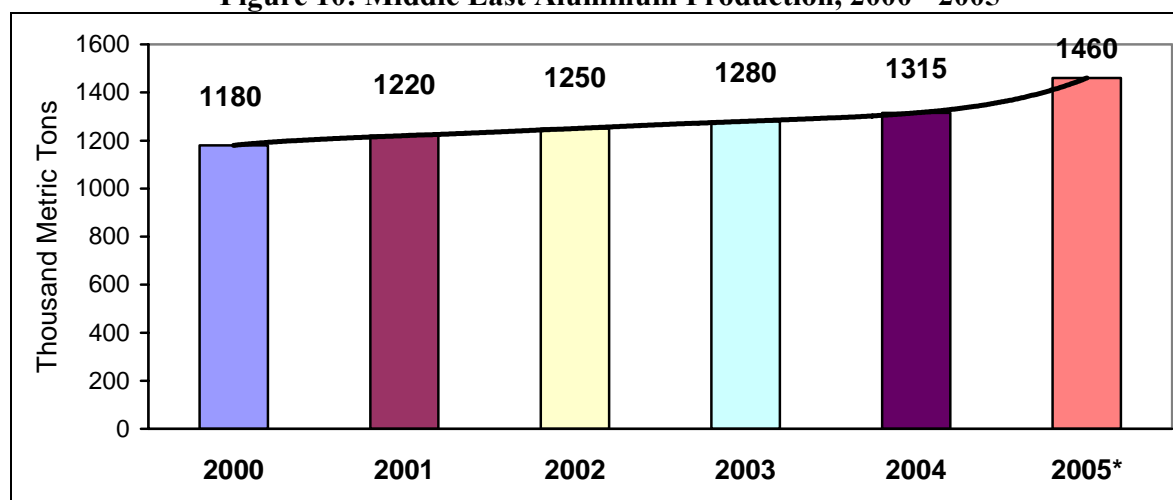
Source: U.S. Geological Survey (USGS)

Strong global demand for aluminum has left alumina in short supply, a plight set to persist for at least the next two or three years and that will ensure prices continue to rise. Furthermore, prices of alumina have also experienced slight increases this year as a result of the short supply which has also lead to further price hikes in aluminum. The required utilization production capacity is set to increase in 2006 to meet higher consumption demands.

3.2.2 Middle East Market

In the Middle East, there are four major aluminum factories spread over the UAE, Bahrain, Iran, and Turkey. Although total production increased from 1,180 thousand metric tons in 2000 to 1,460 thousand metric tons in 2005, or by 23.7 per cent, it is only equivalent to 4.8 per cent of world production (Figure10). Thus, the region continues to be a small player in the international aluminum market. Rapidly developing economies are especially vulnerable to the supply shortages and the subsequent upward pressures on prices.

Figure 10: Middle East Aluminum Production, 2000 - 2005*



Source: minerals.usgs.gov – mineral industries of the Middle East

* Estimated

The region announced future expansions in aluminum production to cope with the high levels of demand both locally and internationally. As seen in the international aluminum market, the deficit in supply will extend into 2006 and will continue as shortages in production persist and world demand increase.

The announced expansion will increase the total aluminum production in the region to represent a 10 per cent share of world production by the year 2010.

3.2.3 Dubai "UAE" Market

Aluminum represents a major processing industry for Dubai. In 2005, Dubai's imports of aluminum and aluminum products amounted to AED 2 billion; exports to AED 2.4 billion, and re-exports to AED 226 million (Table 12).

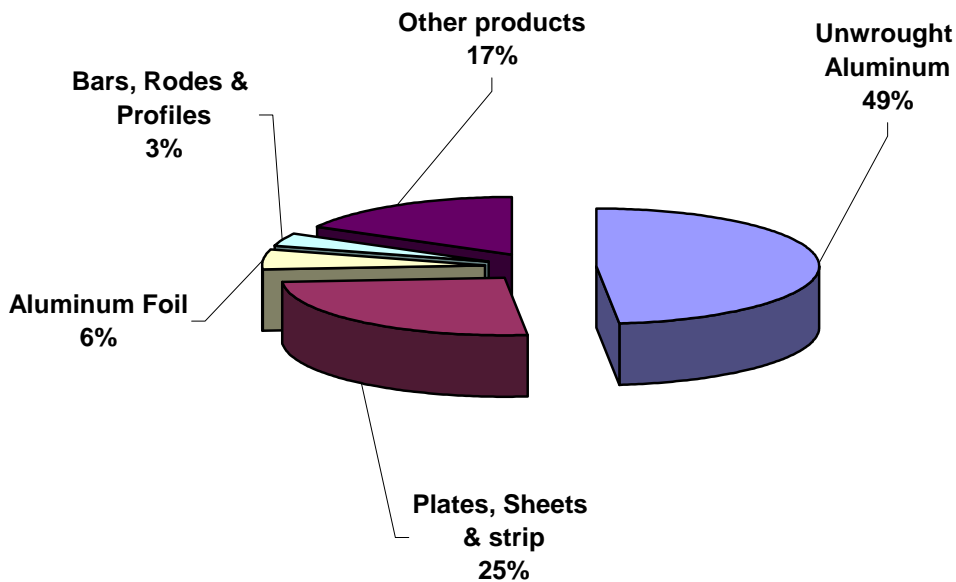
Table12: Dubai Aluminum and Aluminum Products Foreign Trade, 2000 – 2005
(Value in Thousand AED)

Years	Import	Re-Export	Export
2000	535,675	84,190	3,305,489
2001	728,350	65,742	2,963,722
2002	787,544	92,457	2,623,354
2003	1,067,774	190,717	2,376,207
2004	1,492,146	355,861	2,242,346
2005	2,040,655	226,199	2,420,304

Source: Statistics Department, Dubai World

In 2005, around 50 per cent of aluminum imports into Dubai were raw materials and 25 per cent were plates, sheets and strip (Figure 11).

Figure 11: Dubai' Aluminum Imports by Type, 2005



Source: Dubai Ports, Customs and Free Zone Corporation

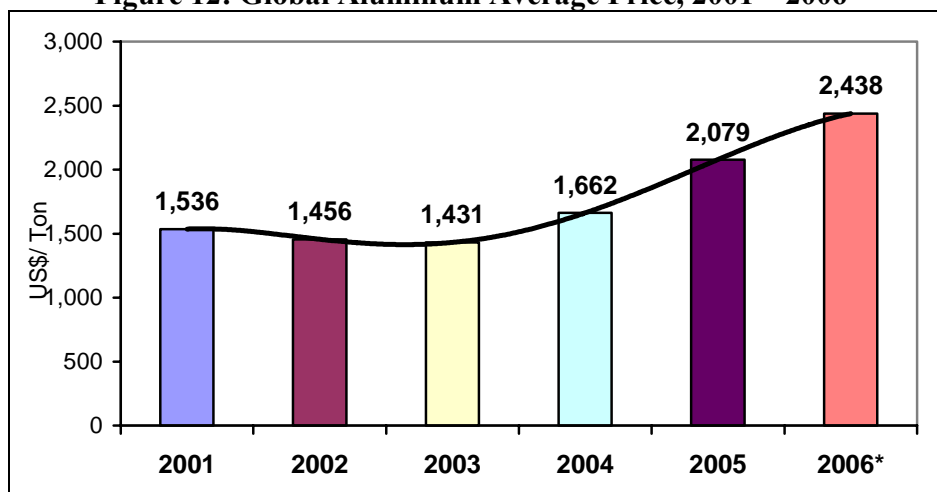
Conversely, 85 per cent of Dubai's aluminum exports, in 2005, were unwrought aluminum not alloyed (52 per cent) and unwrought aluminum alloyed (32.7 per cent).

Production of aluminum, in Dubai, increased by 11 per cent in 2005 reaching 761 thousand metric tons in 2005 compared with 683 thousand metric tons in 2004. By 2005 aluminum constituted as much as 51 per cent of total Middle East production. This great development coincided with the establishment of some forward integration within the industry into areas such as aluminum rolling and chips, in addition to several industries relating to the construction sector.

Dubai Aluminum Company (Dubal) has been a major player in the Gulf's aluminum industry and has undergone a significant expansion since its inception in 1979. The production of aluminum in Dubai is planned to increase to nearly one million ton a year.

With respect to prices, it is noticeable that while global aluminum prices have declined by 10 per cent over the period 2000 to 2003, they have witnessed a 70 per cent increase since then continuing to August 2006 (Figure 12).

Figure 12: Global Aluminum Average Price, 2001 – 2006*



Source: minerals.usgs.gov, 2005

* August 2006

The latest increases in international aluminum prices will have had a large impact on the construction sector in Dubai as aluminum is utilized in the various different stages of construction which has, as previously demonstrated, been witnessing a boom.

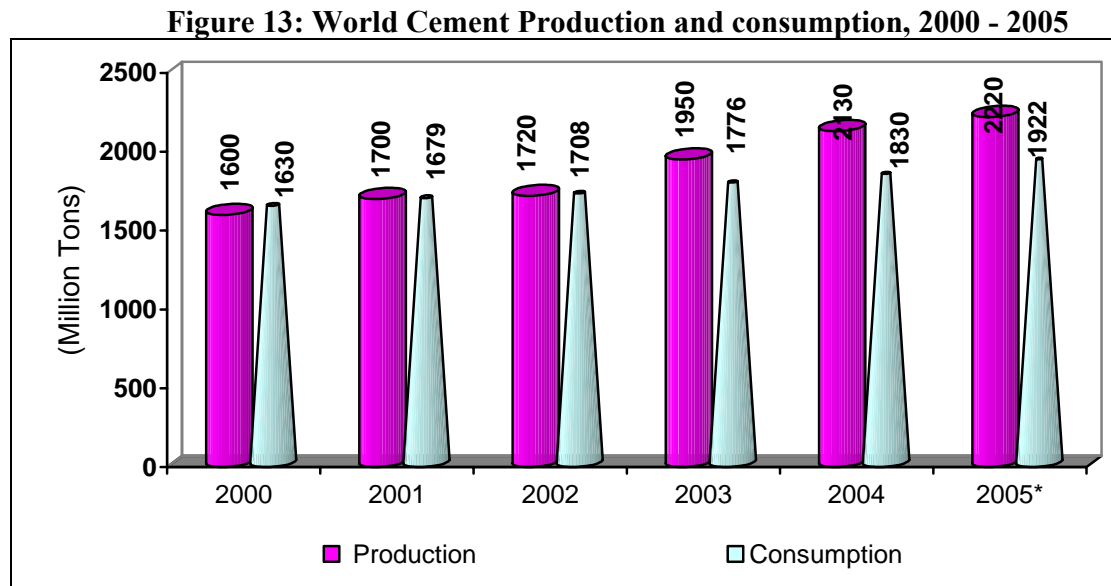
The UAE in general and Dubai more specifically, stands to benefit from this situation. Aluminum represents a major mining and processing industry within the UAE and thus the availability of raw materials and major resources used in the production will qualify the UAE to become a dominant player in the aluminum industry.

3.3 Cement

3.3.1 World Market

World cement production approximated 2.2 billion tons in 2005 representing an increase of about 4.2 per cent on the previous year, and a continuation of the underlying annual expansion, which has seen year-on-year growth.

Figure 13 below shows the global cement production & consumption during the period 2000 to 2005.



Source: U.S. Geological Survey, 2005

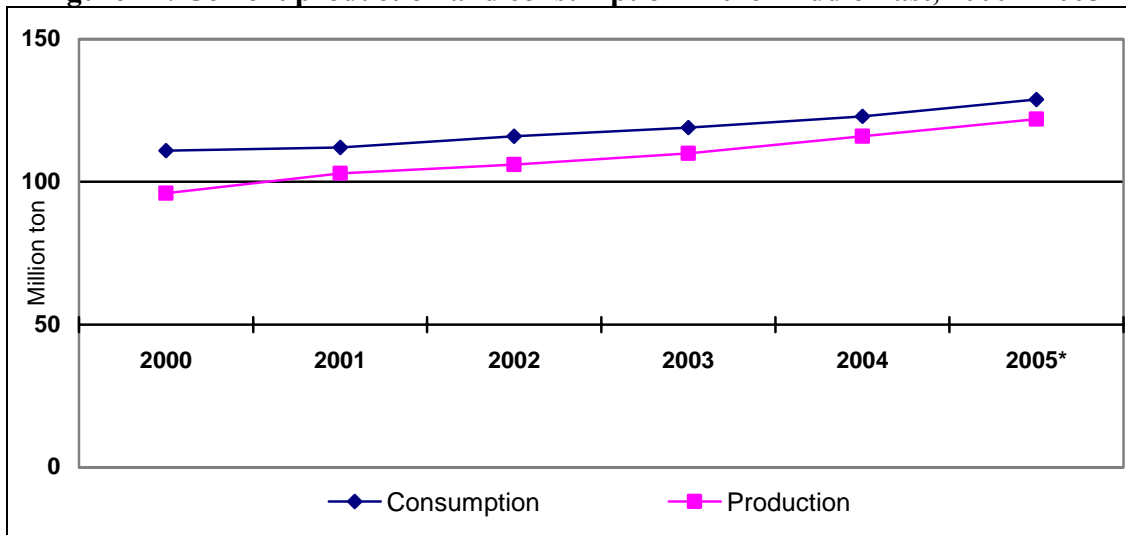
* Estimated

World cement consumption increased by 5 per cent in the year 2005 from 1,830 million tons in 2004 to 1,922 million tons in 2005. Demand is growing faster than the supply which will cause a deficit in the "short run" and lead to price increases.

3.3.2 The Middle East Market

The Middle East contribution to global cement production was 5.5 per cent in 2005; 122 million tons. Despite the increase in the Middle East cement production, cement consumption is still higher than production due to the huge construction boom witnessed in the region and has therefore caused a supply deficit. Cement consumption in the Middle East was estimated at 128.8 million tons in 2005.

Figure 14: Cement production and consumption in the Middle East, 2000 – 2005



Source: www.worldcement.com/Cement

* Estimation

Cement consumption rose in virtually all markets in the region; in some of them very sharply indeed. The increase has been primarily due to residential construction and the expansion of both commercial and the transportation infrastructure.

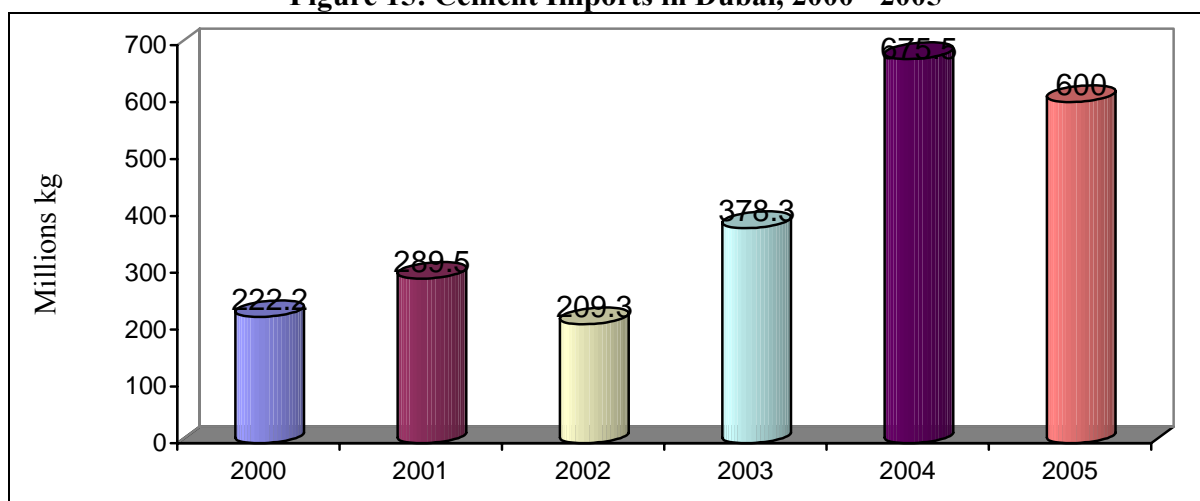
3.3.3 Dubai "UAE" Market

Cement production in the UAE is undertaken by 11 companies, including clinker and cement producers, white cement manufacturers, and quarries. The total production in the year 2005 was estimated at 11.2 million tons, while clinker production was estimated at 4.5 million tons. Cement capacity in the UAE totaled 12.3 million tons, while clinker capacity totaled 5.6 million tons.

With continual growth in infrastructure and the development of the property market in the UAE, the consumption of cement had increased substantially reaching around 12.8 million tons in 2005 and causing a deficit in the cement market which is filled through imports.

In 2005, cement imports (all types of cement²) weighed 600 million kg and were valued at AED 143.5 million compared with 378.3 million kg and a value of AED 40.8 million in 2003. Cement re-exports weighed 19 millions kg and were valued at AED 7.7 million in 2005 compared with 36.1 million kg and a value of AED 15.7 million in 2004.

Figure 15: Cement Imports in Dubai, 2000 - 2005



Source: Statistics Department, Dubai World

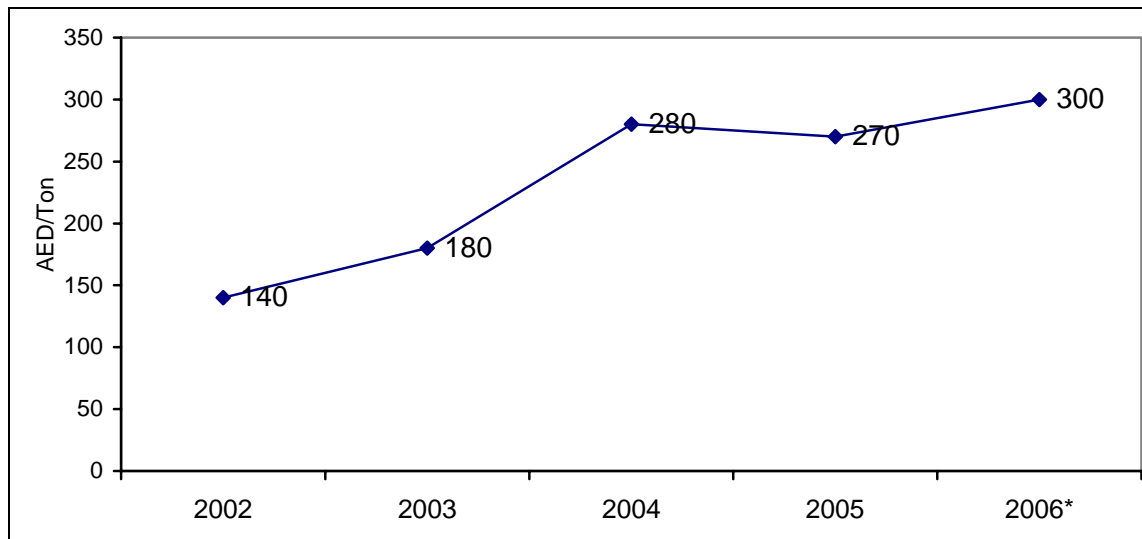
Cement prices increased by 11 per cent in August 2006 compared with its average price in 2005 according to Dubai's construction material traders.

During the period 2000 to August 2006, cement price increased by 114 per cent due to the high consumption and increased infrastructure development, in both the country as a whole and particularly in Dubai.

Cement prices increased by 30 per cent between 2002 and 2003 and by 60 per cent between 2003 and 2004. In 2005 prices decreased but once again increased in 2006. Figure 16 below shows cement price in UAE between 2002 and August 2006.

² Imported cement types are; cement clinker; Portland cement, white; Portland cement other than white; hydraulic cement and aluminous cement.

Figure 16: Cement price in UAE, 2002 – 2006*



Source: Emirates Industrial Bank; www.ameinfo.com; DCCI survey on construction material, 2006
* August 2006

In light of the huge construction projects many cement factories have increased their capacity. Cement production has increased and therefore supported by imports market demand is met.

3.4 Wood

3.4.1 World Market

Wood and wood products are widely used in many applications, such as construction, furniture and packaging. The construction sector is the largest sector in terms of consuming wood and wood-based products. The main wood products that are used in construction are plywood, sawnwood, roundwood & wood-based panels. The global production of these products is shown in Table 13.

Table 13: Global Wood Production, 2000-2004 (Million Cubic Meters)

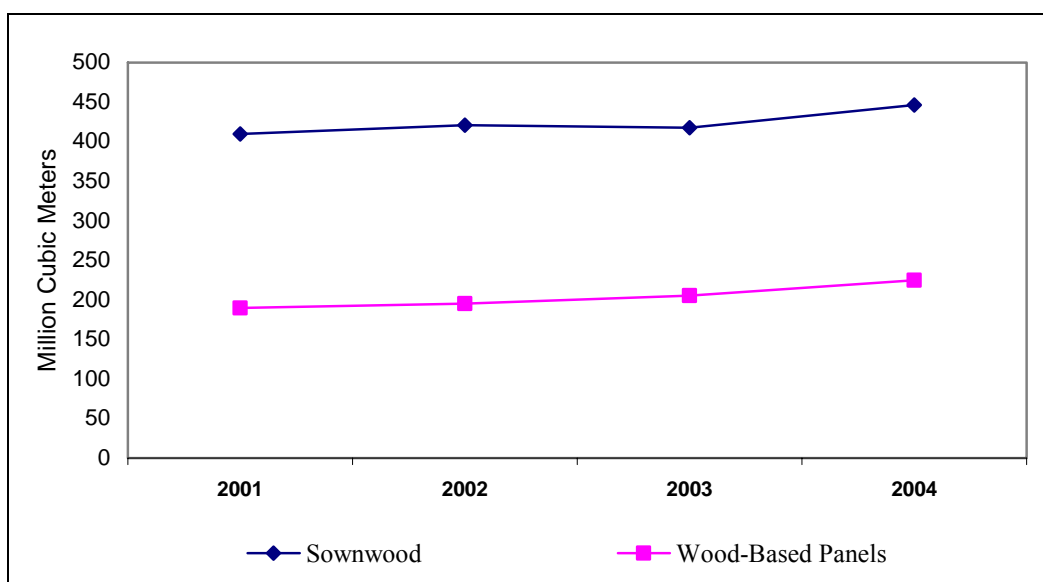
	2000	2001	2002	2003	2004
Sawlogs & Veneer logs	966.5	911.8	931.2	942.5	970.5
Plywood	58.2	54.3	59.4	68.4	68.1
Sawnwood	387.6	378.5	392.9	398.5	415.6
Ind. Roundwood	1,598	1,536	1,556	1,598	1,646
Wood-Based Panels	184.8	181.3	192.6	213	224.9

Source: FAO statistics division, 2006

Global production of plywood increased by 17 per cent during the period 2000 to 2004 from 58.3 million cubic meters in 2000 to 68.1 million cubic meters in 2004. Global production of sawnwood increased by 7 per cent; industrial roundwood increased by only 3 per cent; and the wood-based panels, by 22 per cent.

Global consumption of sawnwood and wood-based panels is illustrated in Figure 17.

Figure 17: World Consumption of Sawnwood and Wood-based panels, 2001-2004



Source: Calculations based on the UNECE/FAO forest products Annual Market Review, 2005-2006

Consumption of the other wood products is measured using imports as it is difficult to measure their consumption directly.

Table 14 shows that world imports of industrial roundwood increased by 6 per cent during 2000 to 2004 from 155.3 million cubic meters in 2000 to 122.3 million cubic meters in 2004. During the same period, world imports of Plywood increased by 32 per cent, indicating the huge demand for this product.

Table 14: Plywood, Veneer sheets and Industrial Roundwood World Imports

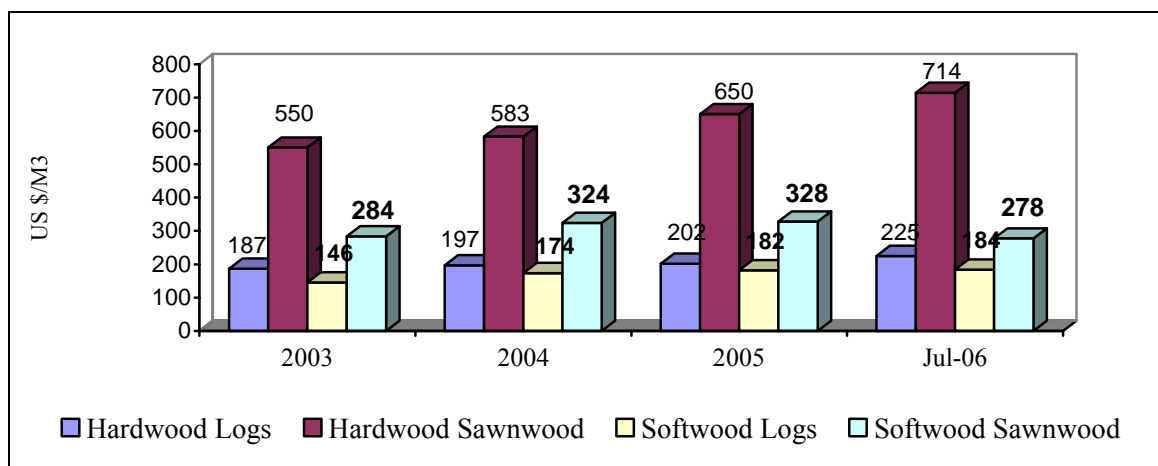
2000-2004 (million m³)

	2000	2001	2002	2003	2004
Industrial roundwood	115.3	117.5	118.2	119.3	122.3
Plywood	18.9	19.5	20.7	21.7	24.9
Veneer sheets	4.3	4.1	4.2	4.1	4.7

Source: FAO Stat Database

Due to the combination of high rates of deforestation in Indonesia, the world's largest wood producer; high levels of consumption in China, ranked as the second largest importer of wood products; and to losing the wooded area in Switzerland every year, global wood prices have increased substantially over the past few years (Figure18).

Figure 18: Hardwood and Softwood Global Prices, 2003-July 2006



Source: IMF, World Commodity Price, 2006

The price of hardwood logs and sawnwood increased by 20 per cent and 30 per cent respectively in the global market, over the period 2003 to July 2006. The price of softwood logs increased by

26 percent and softwood sawnwood by 15 percent between 2003 and 2005, however decreased in June 2006.

3.4.2 Middle East market

The Middle East only contributes a small amount to the world's wood production due to the geographical nature of the region. The region's share in the world production of plywood was only 0.2 per cent in 2004 whilst the share of industrial roundwood was 1 per cent.

The region's 'saw logs & veneer logs' production remained unchanged over the period 2000 to 2004 whilst the production of plywood has been declining over the last five years. In 2004 sawnwood production increased by 9.5 per cent, industrial roundwood production increased by 2.7 per cent and wood-based panel production increased by 19 per cent in the region (Table 15).

Table 15: Middle East Wood Production, 2000-2004

	2000	2001	2002	2003	2004
	Thousand Cubic Meters				
Saw logs & Veneer logs	6.7	6.5	6.9	6.7	6.7
Plywood	186.5	145.0	176.4	138.1	133.7
Sawnwood	6,159	5,664	6,271	6,214	6,802
Ind. Roundwood	15,926	15,469	16,230	15,977	16,401
Wood-Based Panels	3,008	2,823	3,412	3,895	4,637

Source: FAO statistics division, 2006

The region is dependent on wood imports. Industrial roundwood imports in the region increased by 28 per cent from 1.8 million cubic meters in 2000 to 2.3 million cubic meters in 2004. Sawnwood imports in the region increased by 31 per cent from 4.9 million cubic meters in 2000 to 6.4 million cubic meters in 2004 and wood-based panel imports increased by 100 per cent, from 2.1 million cubic meters, in 2000 to, 4.2 million cubic meters, in 2004.

3.4.3 Dubai "UAE" Market

The surge in construction activities across the Middle East and Dubai in particular has brought about an unprecedented demand for wood-based products. Additionally, wood is finding newer

areas of application and uses in today’s rapidly-changing world. The wood market is expected to grow at an even faster pace over the next few years.

The total trade of wood and its products has recorded a remarkable 27.7 per cent jump in 2005. Wood products imported into Dubai have increased during the period 2000 to 2005 by 126.5 per cent; an annual growth rate of 17.8 per cent, from AED 829 millions in 2000 to AED 1,878 million in 2005.

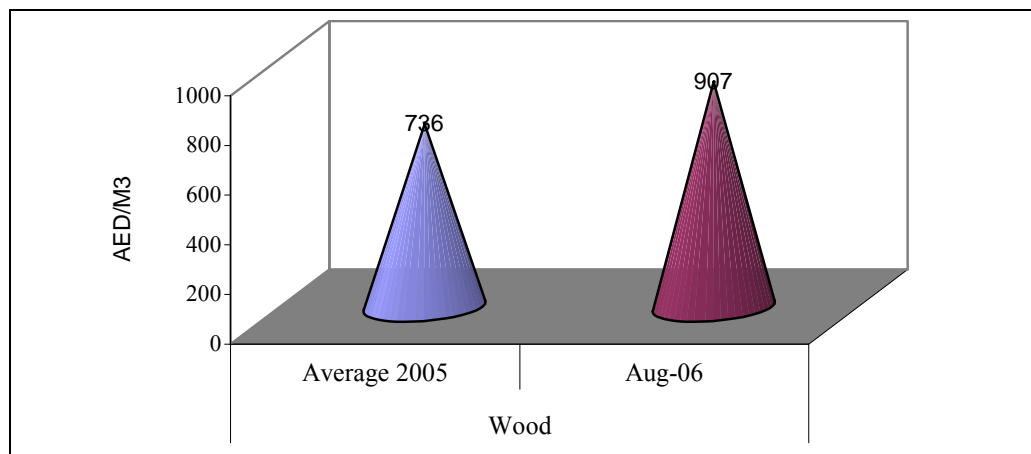
Table 16: Dubai Wood Foreign Trade, 2000-2005 (AED Million)

	2000	2001	2002	2003	2004	2005
Import	829	837	869	1046	1,529	1,878
Export	1.4	6	1	2	5	11.7
Re-Export	101	108	140	200	205	332.2

Source: Statistics Department- Dubai World

According to the construction material traders in Dubai, wood prices have increased by 23 per cent in August 2006 with respect to the average price from 2005 (Figure 19).

Figure 19: Wood Average Prices in Dubai, 2005-August 2006



Source: DCCI survey on construction material, 2006

4 Evaluation and Recommendations

Dubai's construction sector is still booming, its GDP grew by 23.5 per cent in 2005 contributing to 12 percent of Dubai's total GDP. Huge projects are planned to be completed during the coming few years and infrastructural projects which are unparalleled in the whole of the Arab world. Such projects are huge residential and commercial complexes. The huge construction and infrastructural development projects either announced or under development in Dubai are both exciting and challenging for example the Burj Dubai, Palm Islands, Dubai metro system, etc. The total value of these projects amounts to an estimated \$100 billion.

Despite a plateau in prices over the previous year, the price of construction materials have started to increase again in 2006 due to a variety of factors such as high local consumption, the increase in international freight charges, fuel price increases, high regional demand, high transportation costs and the high international price of products and raw materials.

The construction sector in Dubai is expected to continue on its high growth path in the near future. It is clear from both the growing projects and the planned ones that in the short and medium terms the construction sector will continue to grow and the problem of prices will continue to increase.

The study suggests improvements in the investment opportunities and general business environment of the sector to allow for future growth. Therefore, imports of vital materials such as steel, cement and wood products for the sector require continuous monitoring and improved organization and set-up. With regards to cement, it is expected that the market will act accordingly to satisfy domestic demand.

The aluminum industry in the UAE and more specifically in Dubai should benefit from the situation of shortages in aluminum markets both internationally and locally since all resources are available. Focusing on economies of scale will decrease the cost of production and increase the competitiveness of the products. Focus should be turned to attracting new modern technologies, developing new and existing smelters and diversifying the assortment into innovative alternatives, such as refined aluminum based finish and semi- finished products. Similarly, it is important to enhance the participation and risk sharing with the private sector.

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Appendix: Steel Products Prices by Type (in US\$)

Date	Hot Rolled Coil		Hot Rolled Plate		Cold Rolled Coil		Drawn Bar	
	Grade 304	Grade 316	Grade 304	Grade 316	Grade 304	Grade 316	Grade 304	Grade 316
March 05	2,501	4,600	2,900	4,978	2,748	4,877	3,050	5,243
April 05	2,510	4,513	2,933	4,899	2,748	4,794	3,087	5,139
May 05	2,541	4,698	2,987	5,094	2,778	4,964	3,168	5,318
June 05	2,444	4,603	2,911	5,004	2,678	4,855	3,113	5,236
July 05	2,400	4,656	2,868	5,065	2,628	4,899	3,085	5,329
August 05	2,434	4,721	2,909	5,138	2,664	4,968	3,130	5,412
Sep. 05	2,292	4,508	2,768	4,933	2,487	4,714	2,968	5,225
Oct. 05	2,232	4,310	2,714	4,746	2,434	4,534	2,895	4,973
Nov. 05	2,192	4,327	2,665	4,750	2,389	4,531	2,803	4,925
Dec. 05	2,043	4,139	2,506	4,578	2,217	4,341	2,607	4,705
Jan. 06	2,064	4,145	2,542	4,589	2,251	4,374	2,630	4,708
Feb. 06	2,196	4,170	2,613	4,551	2,373	4,383	2,690	4,633
March 06	2,311	4,167	2,725	4,514	2,481	4,376	2,746	4,596
April 06	2,460	4,314	2,827	4,634	2,621	4,546	2,889	4,698
May 06	2,601	4,486	2,996	4,843	2,802	4,767	3,034	4,912
June 06	2,873	4,834	3,307	5,202	3,087	5,099	3,412	5,325

Source: MEPS