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GPoC 2018
Global Powers of Construction

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Introduction

Global Powers of Construction analyses the current economic situation of the construction industry worldwide and examines the strategies and performance of the most representative listed global construction groups in 2018.

We are pleased to present Global Powers of Construction, a publication that identifies and ranks the world's major listed construction groups and provide insights into the current marketplace. All the data in this edition of GPoC were gathered from external sources, such as annual company reports, Euroconstruct, the European Commission, the International Monetary Fund, the World Economic Forum, the World Bank, Forbes and ENR reports.

As usual, the macroeconomic situation and expectations for coming years in the global construction industry are discussed throughout this publication. The construction market continues to grow at a moderate pace in the context of a global economy that is showing signs of a slight deceleration.

In any event, the overall long-term outlook for the construction industry is particularly positive. Population growth in emerging countries, necessary upgrades to infrastructure in certain developed countries, the trend towards increased residential development and expected investments in renewables and telecommunications are forecast to result in the construction industry growing above global GDP growth over the next decade.

This edition analyses the main financial indicators of the major players within the industry: market position and performance in terms of revenue, market capitalisation, internationalisation, diversification, profitability, indebtedness and other financial ratios. Overall, in 2018 the aggregate sales of the Top 100 GPoC rose by 10% (2% in local currency) and amounted to USD 1.39 trillion. However, total market capitalisation decreased by 12% (-9% in local currency (see Figure 1.1).

With regard to our analysis of internationalisation and diversification strategies, we have assessed the current position of the Top 30 main industry players. In 2018 international and non-construction sales remained in line with 2017 and represented around 21% and 22% of total sales, respectively. We have identified the main players in non-construction activities ssuch as concessions, engineering, services and real estate, and their main financial information has been compared with that of our GPoC.

Our 2018 publication also includes a section in which we analyse a number of sector trends that have been shaping the construction industry over the past few years or are expected to have a great impact in the near future.

We hope that you find our GPoC 2018 analysis of the global construction industry of interest, and that the information detailed herein helps you to understand and assess its related challenges and opportunities for the coming years. As always, we welcome any thoughts and suggestions you may have with regard to any of the topics covered.

Ranking of listed global construction companies

Total revenue recorded by the GPoC increase by 10% in 2018 (2% in local currency), with 45 groups recording double-digit increases. As in prior years, Chinese companies dominate the Top 100 ranking in terms of revenue, representing 41% of the total.

As in prior years, Chinese, Japanese, US and French companies dominate the Top 100 listed construction companies in terms of revenue. Total revenue recorded by the GPoC in 2018 (Figure 1.2) amounted to USD 1.39 trillion, 10% higher than in 2017. By number of companies, Japan, the United States, the United Kingdom and China all have ten or more companies in the Top 100 ranking. In terms of geographical areas, the largest companies are based in China (41%), Europe (26%), Japan (13%), the United States (9%) and South Korea (7%) (Figure 1.1).

Figure 1.1: Top 100 Global Construction Companies by Country

Country	Number of companies	Sales 2018 ($ M)	% variation 2018 vs 2017	% variation local currency 2018 vs 2017	Maket capitalisation 2018 ($ M)	% variation 2018 vs 2017	% variation local currency 2018 vs 2017
CHINA	10	570,690	14%	11%	117,800	(30%)	(27%)
JAPAN	15	179,763	2%	5%	108,946	25%	19%
USA	12	127,121	20%	20%	75,213	(12%)	(12%)
FRANCE	3	113,293	14%	9%	70,739	(18%)	(14%)
SOUTH KOREA	7	91,998	4%	1%	30,884	(3%)	1%
SPAIN	7	74,795	(1%)	(6%)	38,490	(6%)	(1%)
UNITED KINGDOM	12	58,182	7%	3%	38,758	(18%)	(17%)
SWEDEN	4	34,215	5%	6%	11,936	(19%)	(7%)
AUSTRIA	2	23,825	19%	13%	3,586	(31%)	(27%)
INDIA	1	18,596	13%	9%	28,202	24%	25%
NETHERLANDS	3	17,368	12%	7%	2,250	(41%)	(38%)
AUSTRALIA	1	12,841	2%	(1%)	8,500	15%	19%
CANADA	2	10,304	10%	10%	6,699	(25%)	(18%)
ITALY	1	6,392	(7%)	(11%)	799	(58%)	(56%)
U.A.E.	2	5,696	(8%)	0%	1,546	(18%)	(19%)
GREECE	3	5,651	9%	5%	1,979	(18%)	(14%)
TURKEY	2	5,391	9%	45%	5,777	(36%)	(10%)
MEXICO	1	5,029	1%	3%	6,509	(13%)	(14%)
SWITZERLAND	1	4,460	14%	13%	620	(50%)	(49%)
NORWAY	1	4,376	15%	13%	1,498	(1%)	4%
FINLAND	1	4,356	94%	85%	1,228	27%	34%
BELGIUM	1	4,298	24%	19%	2,505	(32%)	(29%)
PORTUGAL	1	3,327	14%	9%	438	(58%)	(56%)
TAIWAN	1	2,126	(10%)	(11%)	1,105	(5%)	(2%)
DENMARK	1	1,934	16%	8%	717	28%	31%
GERMANY	1	1,876	(0%)	(5%)	691	(45%)	(41%)
ISRAEL	1	1,616	(8%)	(8%)	865	(2%)	6%
BRAZIL	1	1,484	(1%)	14%	1,404	(30%)	(18%)
PERU	1	1,186	(38%)	(38%)	389	2%	6%
KUWAIT	1	984	10%	10%	172	(26%)	(26%)
Grand Total	**100**	**1,393,173**	**10%**	**2%**	**570,245**	**(12%)**	**(9%)**

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloomberg and company financials.

Among the Top 100 companies, 74 recorded an increase in sales in US dollars, with 45 recording double-digit increases. In addition, over half of the Top 100 companies recorded a double-digit decrease in market capitalisation, as a consequence of the volatile financial markets which were affected by investors' risk aversion on the back of fears of a global economic slowdown and, in particular, the trade war between China and the US, together with political tensions in Europe.

The Chinese giant China State Construction Engineering, with over USD 180,000 million in total revenue, again leads the ranking in 2018 with a significant advantage over its nearest competitors, other Chinese companies such as China Railway Group and China Railway Construction. The Top 3 companies in the ranking (Figure 1.2) represent approximately 29% of the GPoC's total revenue, but only 13% of the aggregate market capitalisation.

There are 44 European companies included in the Top 100 ranking, with aggregate sales that rose by 9%, but market capitalisation that decreased by 18% when compared with the previous year. In line with prior years, Vinci, ACS and Bouygues, which are ranked in 5th, 7th and 8th position, respectively, are the largest European construction companies in terms of revenue (Figure 1.2). Total sales of these three groups amounted to USD 136,632 million, 12% higher than the figure recorded in 2017, and represented 10% of the total GPoC sales. Even after a sharp 13% decrease in its market capitalisation in 2018, the French company Vinci again leads the market capitalisation ranking of the Top 100 GPoC companies (Figure 2.1).

Japanese companies, which reported aggregate revenues of USD 179,763 million, continue to strengthen their presence in the Top 100 ranking, representing almost 13% of total revenue (Figure 1.1). Their aggregate sales recorded a 2% increase and their market capitalisation increased by over 25%. The largest Japanese companies are Daiwa House Industry and Sekisui House, placed in 9th and 16th position and which are mainly focused on homebuilding.

The United States has a strong presence in the industry, with twelve companies included in the Top 100 ranking (Figure 1.1). Their total revenue grew by 20% while market cap decreased by 12% with respect to the previous year. The largest US companies by revenue, Lennar and AECOM, are ranked in 12th and 13th position (Figure 1.2).

The largest South Korean company included in our ranking is Samsung C&T, placed in 10th position with sales of over USD 28,000 million. The second-largest South Korean company in terms of sales is Doosan, which made it to 21st position in our ranking. While aggregate sales of South Korean companies increased by 4%, market capitalisation decreased by 3%.

Other areas such as India, Australia, Canada, United Arab Emirates, Turkey and Mexico are represented by medium-sized companies. Among these countries, only the Indian company Larsen & Toubro and the Australian company Lendlease reported sales exceeding USD 10,000 million.

Top 100 GPoC – ranking by sales

Figure 1.2: Top 100 Global Construction Companies by Sales

Rank 2018	Company	Country	Sales 2018 ($ M)	% variation 2018 vs 2017 (a)	% variation local currency 2018 vs 2017 (a)	Market capitalisation 2018 ($ M)	% variation 2018 vs 2017	% variation local currency 2018 vs 2017
1	CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD. (CSCEC)	CHINA	181,467	16%	14%	34,102	(17%)	(13%)
2	CHINA RAILWAY GROUP LTD. (CREC)	CHINA	112,026	10%	7%	20,796	(23%)	(19%)
3	CHINA RAILWAY CONSTRUCTION CORP. LTD. (CRCC)	CHINA	110,473	10%	7%	18,829	(15%)	(15%)
4	CHINA COMMUNICATIONS CONSTRUCTION COMPANY LTD. (CCCC)	CHINA	73,939	9%	6%	15,282	(46%)	(43%)
5	VINCI	FRANCE	51,378	13%	8%	49,299	(13%)	(9%)
6	METALLURGICAL CORPORATION OF CHINA LTD (MCC)	CHINA	43,809	21%	19%	4,974	(65%)	(63%)
7	ACTIVIDADES DE CONSTRUCCION Y SERVICIOS, S.A. (ACS)	SPAIN	43,279	10%	5%	11,941	(2%)	3%
8	BOUYGUES	FRANCE	41,975	13%	8%	13,365	(30%)	(26%)
9	DAIWA HOUSE INDUSTRY CO.	JAPAN	34,260	6%	8%	25,659	35%	29%
10	SAMSUNG C&T CORP.	SOUTH KOREA	28,342	9%	6%	15,488	(20%)	(16%)
11	SHANGHAI CONSTRUCTION GROUP (SCG)	CHINA	25,805	23%	20%	3,922	(23%)	(19%)
12	LENNAR CORP.	USA	20,572	63%	63%	13,855	(8%)	(8%)
13	AECOM	USA	20,156	11%	11%	5,127	(12%)	(12%)
14	EIFFAGE, S.A.	FRANCE	19,940	16%	11%	8,075	(23%)	(20%)
15	SKANSKA AB	SWEDEN	19,752	7%	9%	6,506	(23%)	(20%)
16	SEKISUI HOUSE	JAPAN	19,315	3%	7%	12,608	13%	9%
17	FLUOR CORP.	USA	19,167	(2%)	(2%)	4,497	(38%)	(38%)
18	LARSEN & TOUBRO LTD. (L&T)	INDIA	18,596	13%	9%	28,202	24%	25%
19	STRABAG	AUSTRIA	17,971	18%	13%	3,014	(28%)	(25%)
20	OBAYASHI CORP.	JAPAN	17,154	(1%)	1%	7,866	17%	12%
21	DOOSAN	SOUTH KOREA	16,872	8%	5%	1,492	(6%)	(1%)
22	KAJIMA CORP.	JAPAN	16,522	(2%)	0%	9,644	42%	36%
23	DR HORTON	USA	16,068	14%	14%	15,871	6%	6%
24	HYUNDAI ENGINEERING & CONSTRUCTION CO. LTD. (HDEC)	SOUTH KOREA	15,220	2%	(1%)	5,460	44%	50%
25	JACOBS ENGINEERING	USA	14,985	50%	50%	10,880	55%	55%
26	TAISEI CORP.	JAPAN	14,309	4%	7%	11,401	37%	30%
27	DAITO TRUST CONSTRUCTION	JAPAN	14,052	2%	4%	12,970	24%	18%
28	SHIMIZU CORP.	JAPAN	13,713	(5%)	(3%)	7,024	(0%)	(5%)
29	LENDLEASE	AUSTRALIA	12,841	2%	(1%)	8,500	15%	19%
30	CHINA FORTUNE LAND DEVELOPMENT (CFLD)	CHINA	12,679	51%	48%	10,933	(23%)	(19%)
31	IIDA GROUP HOLDINGS	JAPAN	12,052	6%	8%	5,397	22%	16%
32	GS ENGINEERING & CONSTRUCTION	SOUTH KOREA	11,955	16%	13%	3,094	66%	73%
33	SUMITOMO FORESTRY	JAPAN	11,029	7%	10%	2,912	8%	3%
34	BALFOUR BEATTY	UNITED KINGDOM	10,412	(2%)	(6%)	2,193	(21%)	(16%)
35	PULTEGROUP	USA	10,188	22%	22%	7,202	(24%)	(24%)
36	DAEWOO ENGINEERING & CONSTRUCTION CO. LTD.	SOUTH KOREA	9,648	(7%)	(10%)	1,989	(13%)	(9%)
37	ACCIONA	SPAIN	8,865	8%	4%	4,846	3%	9%
38	ROYAL BAM GROUP NV	NETHERLANDS	8,510	14%	9%	787	(37%)	(34%)
39	DAELIM INDUSTRIAL CO. LTD.	SOUTH KOREA	8,416	(15%)	(18%)	3,203	19%	24%
40	SNC-LAVALIN INC.	CANADA	7,783	8%	8%	5,917	(26%)	(19%)
41	HASEKO	JAPAN	7,340	3%	5%	4,532	39%	33%
42	TOLL BROTHERS	USA	7,143	23%	23%	4,920	(32%)	(32%)
43	FOMENTO DE CONSTRUCCIONES Y CONTRATAS, S.A.	SPAIN	7,070	8%	3%	5,076	29%	36%
44	HEBEI CONSTRUCTION GROUP CO. LTD.	CHINA	7,058	16%	13%	900	(9%)	(9%)
45	NVR	USA	7,004	13%	13%	8,719	(33%)	(33%)
46	VOLKERWESSELS	NETHERLANDS	6,994	9%	4%	1,267	(45%)	(42%)
47	FERROVIAL	SPAIN	6,773	(51%)	(53%)	14,964	(10%)	(6%)
48	NCC AB	SWEDEN	6,596	3%	5%	1,677	(19%)	(12%)
49	BARRATT DEVELOPMENTS PLC	UNITED KINGDOM	6,563	12%	5%	6,887	(7%)	(8%)
50	SALINI IMPREGILO SPA	ITALY	6,392	(7%)	(11%)	799	(58%)	(56%)

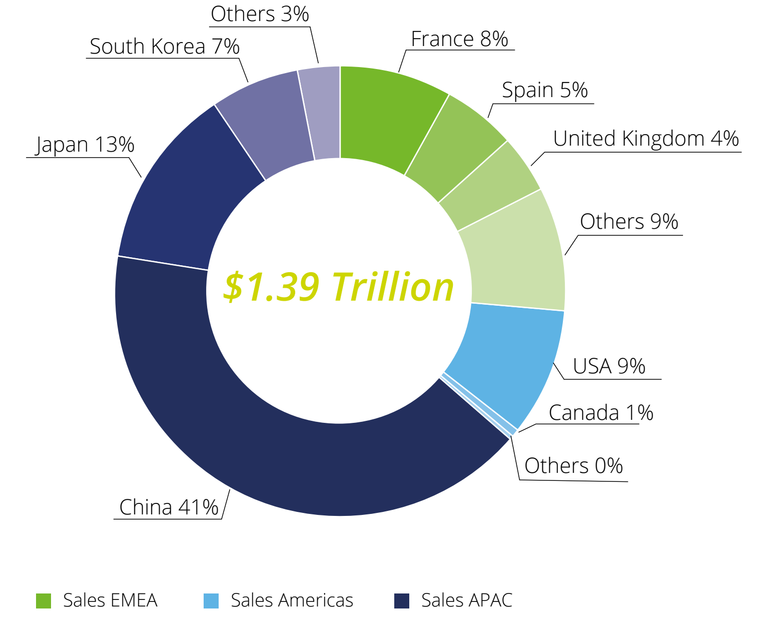
Rank 2018	Company	Country	Sales 2018 ($ M)	% variation 2018 vs 2017 (a)	% variation local currency 2018 vs 2017 (a)	Market capitalisation 2018 ($ M)	% variation 2018 vs 2017	% variation local currency 2018 vs 2017
51	KIER GROUP PLC	UNITED KINGDOM	6,075	12%	5%	1,235	(21%)	(22%)
52	PEAB AB	SWEDEN	6,008	2%	4%	2,397	(6%)	2%
53	PORR AG	AUSTRIA	5,854	21%	16%	572	(41%)	(38%)
54	TAYLOR WIMPEY PLC	UNITED KINGDOM	5,447	7%	3%	5,693	(38%)	(34%)
55	GRUPO CARSO	MEXICO	5,029	1%	3%	6,509	(13%)	(14%)
56	PERSIMMON PLC	UNITED KINGDOM	4,988	13%	9%	7,802	(32%)	(28%)
57	PENTA-OCEAN CONSTRUCTION CO. LTD.	JAPAN	4,755	3%	5%	2,093	51%	45%
58	SACYR, S.A.	SPAIN	4,481	28%	23%	1,106	(27%)	(23%)
59	IMPLENIA AG	SWITZERLAND	4,460	14%	13%	620	(50%)	(49%)
60	TUTOR PERINI CORP.	USA	4,455	(6%)	(6%)	799	(37%)	(37%)
61	VEIDEKKE ASA	NORWAY	4,376	15%	13%	1,498	(1%)	4%
62	YIT OYJ	FINLAND	4,356	94%	85%	1,228	27%	34%
63	INTERSERVE PLC	UNITED KINGDOM	4,305	3%	(1%)	20	(89%)	(89%)
64	CFE	BELGIUM	4,298	24%	19%	2,505	(32%)	(29%)
65	MAEDA CORP.	JAPAN	4,221	8%	11%	2,245	33%	27%
66	BELLWAY PLC	UNITED KINGDOM	3,986	23%	16%	4,709	(9%)	(8%)
67	MORGAN SINDALL PLC	UNITED KINGDOM	3,965	10%	6%	611	(29%)	(25%)
68	GALLIFORD TRY PLC	UNITED KINGDOM	3,912	14%	10%	1,280	2%	(1%)
69	TODA CORP.	JAPAN	3,872	(1%)	1%	2,225	20%	15%
70	SUMITOMO MITSUI CONSTRUCTION CO. LTD.	JAPAN	3,766	1%	3%	964	9%	3%
71	BERKELEY GROUPS HOLDINGS	UNITED KINGDOM	3,607	2%	(1%)	7,445	26%	18%
72	OBRASCON HUARTE LAIN, S.A.	SPAIN	3,432	(5%)	(10%)	214	(88%)	(87%)
73	HAZAMA ANDO CORP.	JAPAN	3,403	(10%)	(8%)	1,406	13%	8%
74	MOTA ENGIL SGPS	PORTUGAL	3,327	14%	9%	438	(58%)	(56%)
75	GRANITE CONSTRUCTION INC.	USA	3,318	11%	11%	1,880	(26%)	(26%)
76	ORASCOM CONSTRUCTION LTD.	U.A.E.	3,014	(18%)	(18%)	770	(17%)	(17%)
77	KELLER GROUP PLC	UNITED KINGDOM	2,969	11%	7%	453	(52%)	(49%)
78	PRIMORIS SERVICES CORP.	USA	2,940	24%	24%	970	(31%)	(31%)
79	ENKA INSAAT VE SANAYI AS	TURKEY	2,881	(1%)	(1%)	4,328	(41%)	(17%)
80	ARABTEC HOLDING PJSC	U.A.E.	2,682	8%	8%	776	(20%)	(20%)
81	AECON GROUP INC.	CANADA	2,521	17%	16%	782	(17%)	(10%)
82	TEKFEN HOLDING AS	TURKEY	2,510	22%	62%	1,449	(13%)	22%
83	ELLAKTOR SA	GREECE	2,192	4%	(0%)	246	(27%)	(23%)
84	CTCI CORP.	TAIWAN	2,126	(10%)	(11%)	1,105	(5%)	(2%)
85	COSTAIN GROUP PLC	UNITED KINGDOM	1,953	(12%)	(15%)	430	(36%)	(32%)
86	PER AARSLEFF HOLDING	DENMARK	1,934	16%	8%	717	28%	31%
87	OCEANWIDE HOLDINGS	CHINA	1,877	(21%)	(23%)	3,528	(41%)	(35%)
88	BAUER AG	GERMANY	1,876	(0%)	(5%)	691	(45%)	(41%)
89	HEIJMANS NV	NETHERLANDS	1,864	11%	6%	196	(22%)	(18%)
90	JM AB	SWEDEN	1,859	(7%)	(5%)	1,356	(15%)	(7%)
91	MYTILINEOS HOLDINGS	GREECE	1,803	5%	-	1,193	(24%)	(20%)
92	GEK TERNA	GREECE	1,656	24%	18%	540	5%	10%
93	ELECTRA LTD.	ISRAEL	1,616	(8%)	(8%)	865	(2%)	6%
94	FULLSHARE HOLDING LIMITED	CHINA	1,557	(5%)	(7%)	4,534	(50%)	(50%)
95	HANJIN HEAVY INDUSTRIES & CONSTRUCTION CO. LTD.	SOUTH KOREA	1,545	0%	(2%)	158	(52%)	(50%)
96	MRV ENGENHARIA	BRAZIL	1,484	(1%)	14%	1,404	(30%)	(18%)
97	GRANA Y MONTERO (GYM)	PERU	1,186	(38%)	(38%)	389	2%	6%
98	MATRIX SERVICE CO.	USA	1,125	(6%)	(6%)	493	98%	98%
99	COMBINED GROUP CONTRACTING CO. (KSC)	KUWAIT	984	10%	10%	172	(26%)	(26%)
100	GRUPO SAN JOSE	SPAIN	895	16%	11%	343	24%	30%
	TOTAL		**1,393,173**	**10%**	**2%**	**570,245**	**(12%)**	**(9%)**

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Bloomberg and company financials.

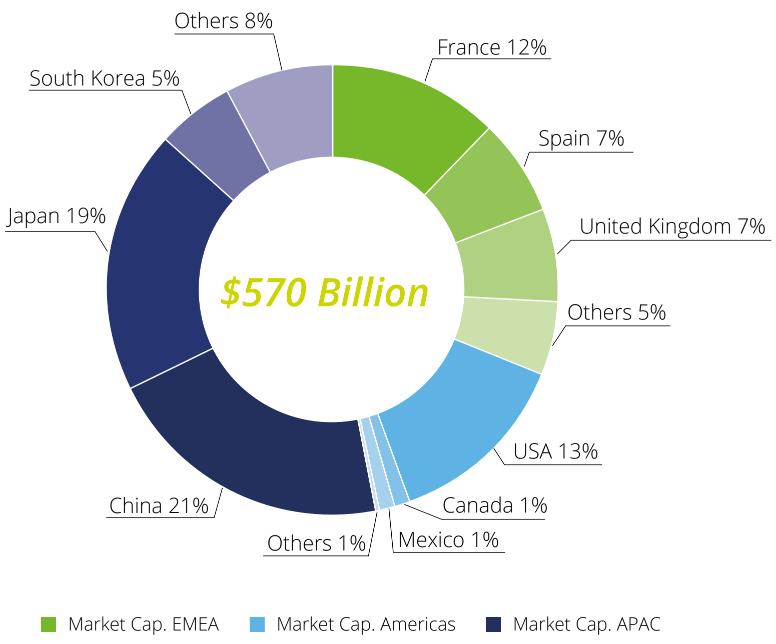
(a) % variation is calculated over total sales included in 2017's financial statements, without considering any subsequen restatement.
The TOP 100 GPoC ranking by sales was prepared based on information taken from the ENR "Top 250 Global Contractors" ranking and the Forbes "Global 2000" list, filtered by "Construction Services". We have excluded non-listed groups, as well as those groups whose main activity is engineering and which do not have significant presence in the field of civil construction work.
Listed entities consolidated into a larger group have also been excluded from the ranking. All remaining listed companies have been ranked by total sales in US dollars for 2018.

Figure 1.3: Top 100 Global Construction Company Sales and Market Capitalisation

Sales



Market capitalisation



Top 30 GPoC – ranking by market capitalisation

The financial markets were volatile throughout the year but showed a downward trend during the last quarter. This is explained by investors' risk aversion on the back of fears of a global economic slowdown and, in particular, the trade war between China and the US, and political uncertainties in Europe.

The aggregate market capitalisation of our Top 30 GPoC (Figure 2.1) ranked by market capitalisation at the end of 2018 was USD 428,622 million, down 8% on the 2017 figure. In terms of the geographical distribution of our ranking, Japan has the most companies on the list (seven), while both the US and China are represented with five companies each. It should also be noted that nine European groups are included in this ranking.

Performance has varied across the different geographical areas. The total market value of the European groups decreased by 15%, slightly better than the performance of the Stoxx Europe 600 Construction & Materials, which recorded a 21% decrease. The decline in the European market can be explained by various factors, including tensions in Europe over a hard Brexit, social unrest in France at the end of the year as well as uncertainty in Italy, all resulting in a reduction in overall investment in Europe. With the exception of Berkeley Groups Holdings, all the European groups experienced a decrease in their market capitalisation values. Chinese groups recorded a 25% decrease in their overall market value in comparison with the previous year. On the other hand, Japanese companies' market capitalisation increased by 25% to USD 87,172 million. Lastly, US groups recorded a 5% decrease in market capitalisation.

Among our Top 30 GPoC ranked by market capitalisation, nineteen groups' values decreased in 2018. China Communications Construction Company, Vinci and China

Figure 2.1: Top 30 Global Construction Companies by Market Capitalisation

Rank	Company	Country	Market Capitalisation ($ M) 2018	Change (%)	Change local currency (%)
1	VINCI	FRANCE	49,299	(13%)	(9%)
2	CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD. (CSCEC)	CHINA	34,102	(17%)	(13%)
3	LARSEN & TOUBRO LTD. (L&T)	INDIA	28,202	24%	25%
4	DAIWA HOUSE INDUSTRY CO.	JAPAN	25,659	35%	29%
5	CHINA RAILWAY GROUP LTD. (CREC)	CHINA	20,796	(23%)	(19%)
6	CHINA RAILWAY CONSTRUCTION CORP. LTD. (CRCC)	CHINA	18,829	(15%)	(15%)
7	DR HORTON	USA	15,871	6%	6%
8	SAMSUNG C&T CORP.	SOUTH KOREA	15,488	(20%)	(16%)
9	CHINA COMMUNICATIONS CONSTRUCTION COMPANY LTD. (CCCC)	CHINA	15,282	(46%)	(43%)
10	FERROVIAL	SPAIN	14,964	(10%)	(6%)
11	LENNAR CORP.	USA	13,855	(8%)	(8%)
12	BOUYGUES	FRANCE	13,365	(30%)	(26%)
13	DAITO TRUST CONSTRUCTION	JAPAN	12,970	24%	18%
14	SEKISUI HOUSE	JAPAN	12,608	13%	9%
15	ACTIVIDADES DE CONSTRUCCION Y SERVICIOS, S.A. (ACS)	SPAIN	11,941	(2%)	3%
16	TAISEI CORP.	JAPAN	11,401	37%	30%
17	CHINA FORTUNE LAND DEVELOPMENT (CFLD)	CHINA	10,933	(23%)	(19%)
18	JACOBS ENGINEERING	USA	10,880	55%	55%
19	KAJIMA CORP.	JAPAN	9,644	42%	36%
20	NVR	USA	8,719	(33%)	(33%)
21	LENDLEASE	AUSTRALIA	8,500	15%	19%
22	EIFFAGE, S.A.	FRANCE	8,075	(23%)	(20%)
23	OBAYASHI CORP.	JAPAN	7,866	17%	12%
24	PERSIMMON PLC	UNITED KINGDOM	7,802	(32%)	(28%)
25	BERKELEY GROUPS HOLDINGS	UNITED KINGDOM	7,445	26%	18%
26	PULTEGROUP	USA	7,202	(24%)	(24%)
27	SHIMIZU CORP.	JAPAN	7,024	(0%)	(5%)
28	BARRATT DEVELOPMENTS PLC	UNITED KINGDOM	6,887	(7%)	(8%)
29	GRUPO CARSO	MEXICO	6,509	(13%)	(14%)
30	SKANSKA AB	SWEDEN	6,506	(23%)	(20%)
	TOTAL		**428,622**	**(8%)**	**(1%)**

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Bloomberg and company financials.

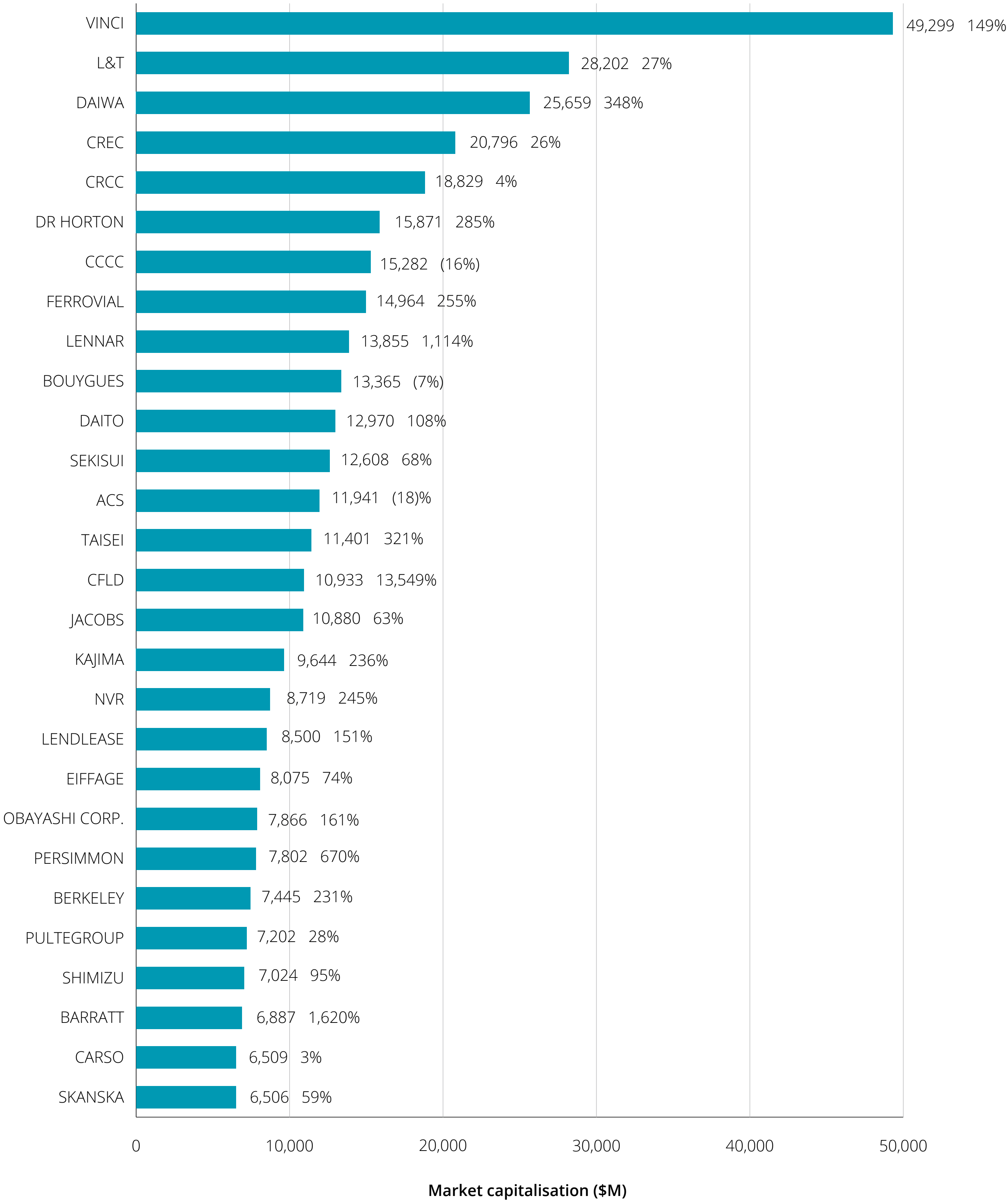
State Construction Engineering recorded the largest reductions in absolute terms, with an aggregate reduction exceeding USD 27,000 million. French stocks lagged behind the 11% decrease in the CAC 40 index, which registered its worst performance since 2011. China Communications Construction Company, NVR and Persimmon recorded the largest decreases in relative terms (46%, 33% and 32% decrease, respectively). In contrast, Jacobs Engineering and Kajima registered the largest increases of 55% and 42%, respectively.

Despite the significant reduction in its market capitalisation during the year, Vinci continues to top the ranking, consolidating the position it has held in recent years. The difference between Vinci and second placed China State Construction was nearly USD 16 billion in 2017 and USD 15 billion in 2018. As in 2017, the Indian company Larsen & Toubro holds the third position with a market capitalisation of USD 28,202 million at the end of 2018.

As already discussed, the stock market showed significant volatility during 2018. The year was characterised by a period of abrupt price increases, a long period of highly volatile share prices, and lastly a market correction in the fourth quarter. Due to these developments, the 2018 closing price of almost all major stock exchanges was lower than in the previous year, which we have observed in the market capitalisation of most of the companies under analysis.

The aggregate market capitalisation of our Top 30 GPoC (Figure 2.2) at the end of 2018 was 128% higher than at the beginning of the financial crisis in 2008. Twenty-seven companies included in our Top 30 ranking by market capitalisation have recorded market capitalisation increases in the 2008-2018 period, with China Fortune Land Development and Barratt Developments leading this trend (in relative terms) with 13,549% and 1,620% growth rates over this ten year period.

Figure 2.2: Top 30 Global Powers of Construction Companies. Market Capitalization (2018 vs 2008) [(1)]



[(1)] China State Construction Engineering and Samsung C&T were not included in our graph, since these companies were not yet listed in 2008

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Bloomberg and company financials.

Top 30 GPoC – ranking by international sales

As noted in the "Outlook for the construction industry" section, the global economy is expected to expand within a moderate range of 2.5% to 3% per year in 2018-2022, while the pace of expansion in the construction industry is set to average 3.6% per year over the same period. From a longer-term perspective, significant infrastructure needs will be fulfilled in the next two decades since aggregate investment until 2040 is estimated at USD 3.7 trillion per year. This global context represents an important opportunity for our GPoC to consolidate their presence in the international marketplace.

In the last decade, major listed construction groups have sought growth opportunities abroad and, as of today, our 2018 GPoC obtain 21% of total revenue outside of their respective domestic markets. Excluding the seven Chinese groups under analysis, which are focused mainly on their domestic markets, international income represents 36% of total sales. By geographical area, the most internationalised companies are European groups (57%) followed by the US-based GPoC (24%). As in 2017, ACS is the largest international contractor among our GPoC (86% of total income obtained outside Spain). Other European groups such as Vinci, Bouygues, Strabag and Skanska complete the Top 5 (Figure 3.1).

Figure 3.1: Top 30 Global Construction Companies by 2018 International and Domestic Sales

Rank	Company	Country	International sales ($ M)	National sales ($ M)	International sales as % of total sales
1	ACS	SPAIN	37,124	6,154	86%
2	VINCI	FRANCE	22,137	29,241	43%
3	BOUYGUES	FRANCE	16,253	25,722	39%
4	STRABAG	AUSTRIA	15,104	2,866	84%
5	SKANSKA	SWEDEN	15,096	4,656	76%
6	CCCC	CHINA	14,401	59,538	19%
7	CSCEC	CHINA	13,660	167,807	8%
8	FLUOR	USA	10,861	8,306	57%
9	DOOSAN	SOUTH KOREA	9,302	7,569	55%
10	SAMSUNG C&T	SOUTH KOREA	8,990	19,352	32%
11	CREC	CHINA	6,485	105,542	6%
12	L&T	INDIA	6,159	12,438	33%
13	HDEC	SOUTH KOREA	6,102	9,117	40%
14	JACOBS	USA	5,466	9,520	36%
15	AECOM	USA	5,403	14,754	27%
16	CRCC	CHINA	5,380	105,095	5%
17	LENDLEASE	AUSTRALIA	4,972	7,870	39%
18	EIFFAGE	FRANCE	4,615	15,325	23%
19	OBAYASHI	JAPAN	4,171	12,983	24%
20	KAJIMA	JAPAN	4,165	12,357	25%
21	MCC	CHINA	3,407	40,401	8%
22	SEKISUI	JAPAN	2,744	16,572	14%
23	TAISEI	JAPAN	1,431	12,878	10%
24	SCG	CHINA	895	24,910	3%
25	CFLD	CHINA	855	11,824	7%
26	SHIMIZU	JAPAN	840	12,872	6%
27	DR HORTON	USA	191	15,877	1%
28	LENNAR	USA	56	20,517	0%
29	DAIWA	JAPAN	-	34,260	0%
30	DAITO	JAPAN	-	14,052	0%

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloomberg and company financials.

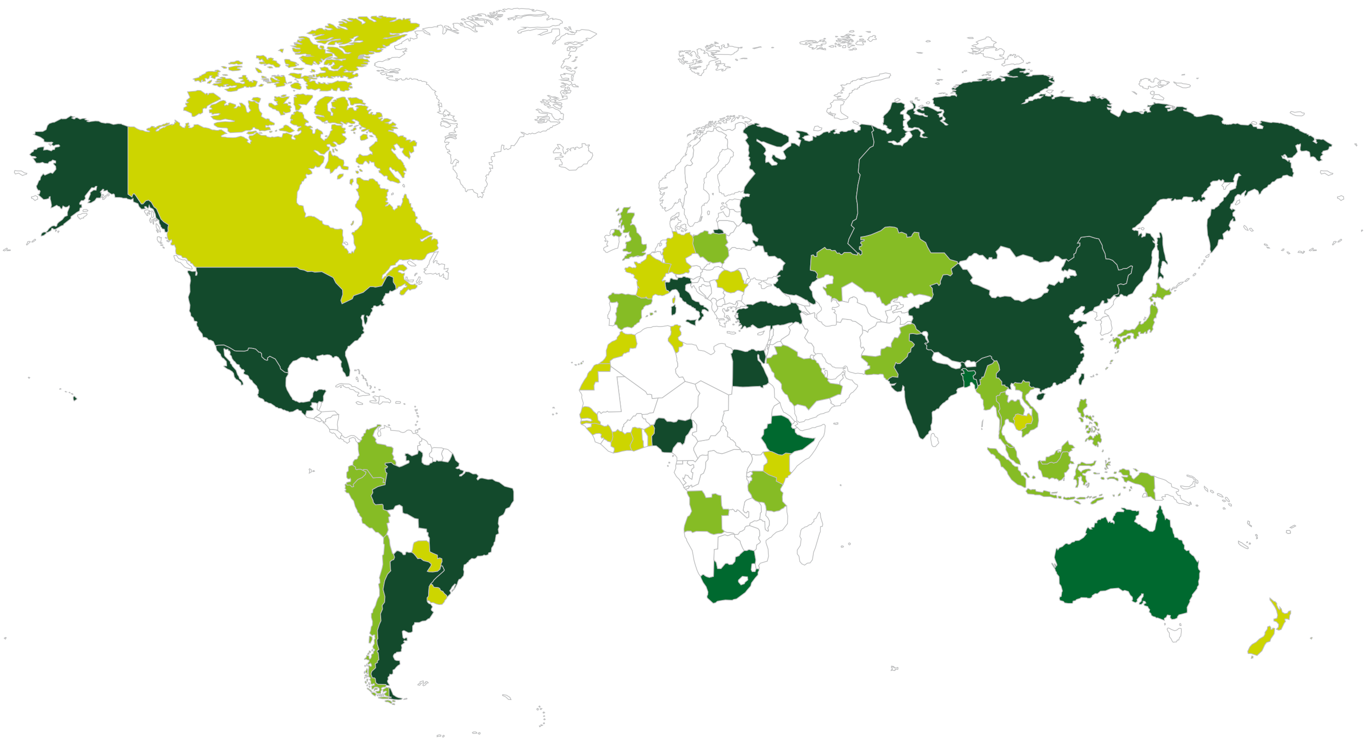
Outlook for the construction industry

The global economy is forecast to expand by between 2.5% and 3% per year between 2018 and 2022, while the pace of expansion in the construction industry is set to average 3.6% over the same period, with estimated revenue of USD 15 trillion by 2025.

Infrastructure investment is crucially important for the most advanced economies, but also for those at the initial stages of development. In developing economies, as roads are built, reliable electricity is installed and clean water is made available to all, infrastructure can have a truly transformative impact on the lives of citizens and the prospects of businesses. In more mature economies too, keeping pace with demand and building new and upgraded infrastructure are key to sustaining economic growth.

The construction industry has a direct impact on the global economy but also has important linkages with other sectors, which means its impact on GDP and economic development goes far beyond the direct contribution of construction activities. The completion of infrastructure boosts GDP, while its availability can increase productivity and promote both competition and cooperation.

According to the World Economic Forum, the construction industry as a whole employs more than 100 million people worldwide and accounts for 6% of global GDP. More specifically, it accounts for about 5% of total GDP in developed countries and 8% of GDP in developing economies[1]. Significant infrastructure



Total forecast infrastructure investment gaps

- >$200 billion
- $150-$200 billion
- $100-$150 billion
- $50-$100 billion
- $0-$50 billion
- N/A

Source: Global Infrastructure Outlook. Global Infrastructure Hub.

needs are expected to arise in the next two decades, but they will only be addressed if governments increase the proportion of GDP they dedicate to infrastructure. Global infrastructure investment until 2040 is estimated at USD 3.7 trillion per year and it should be considered that the infrastructure investment gap is proportionately largest for the Americas and Africa in comparison with other areas[2].

The global economy is forecast to expand by between 2.5% and 3% per year in 2018-2022, while the pace of expansion in the construction industry is set to average 3.6% a year over the same period, with estimated revenue of USD 15 trillion by 2025[3,4]. The Asia-Pacific region remains the largest global construction market, while the Middle East and African construction markets are expected to achieve the fastest growth between 2018 and 2022. From a longer-term perspective, eight global construction markets (China, the US, India, Indonesia, the UK, Mexico, Canada and Nigeria) will account for 70% of all global growth in construction until 2030[5].

In addition, it must be noted that the existing forecasts for the coming years could be negatively affected by certain intensifying downside risks to global economic growth, notably stemming from the emerging trade war between the US and China, geopolitical risks (Brexit, Italy, the Middle East) and the potential tightening of monetary policy in major markets.

In any case, the outlook for the global construction industry is positive, but a more in-depth analysis by geographical area is included below:

The Americas

When analysing the economic growth of the continent and forecasts for the coming years, we must distinguish between North America and Latin America due to the significant differences between the two areas.

North America

According to the IMF, GDP in the US rose by 2.9% in 2018, but growth is projected to slow to 2.3% in 2019[6]. In 2018 total engineering and construction spending was around 5% higher than in 2017, with a 3% increase expected in 2019. The construction unemployment rate has fallen considerably in recent years, from 20% in 2009 to 5% in 2018[7]. The rise of US construction is driven by a strong cyclical rebound, with solid growth prospects until 2030, with a particularly strong boost to housing.

Every year the US spends over USD 400 billion on public infrastructure. This figure appears high, but annual spending routinely falls short of major maintenance requirements and results in a deterioration of the country's infrastructure assets. In this context, President Trump's infrastructure initiatives, if effectively launched, could raise investment over the coming years.

Canada's real GDP is expected to rise by 1.5% in 2019 and by 1.9% in 2020[6], according to the IMF. The construction industry has always been an important driver of the Canadian economy as a whole, contributing almost 7% of Canada's GDP and employing about 7.5% of Canada's total workforce[8]. Moreover, continuous investment in infrastructure remains one of the priorities of the Canadian Government, which is currently executing various plans for the development of sustainable social and transport infrastructure. In 2018 total construction spending increased by 3% on 2017 and it is likely to accelerate further entering 2019. By segment, the non-building segments of power and water supply will lead all others in growth of construction spending through to 2023[9]. Additionally, the recent creation of the Canada Infrastructure Bank ensures greater availability of both public and private resources.

Latin America

GDP in Latin America remained stable in 2018 but it is projected to recover over the next two years, with forecast growth of 1.4% in 2019 and 2.4% in 2020 supported by favourable effects of stronger commodity prices, rising business confidence, increased consumption and stronger exports[6].

Over the last few years, the slower level of economic growth in LATAM, coupled with the visibility of the Odebrecht corruption scandal, have resulted in a certain hesitancy amongst private investors in committing to new projects. Total infrastructure investment in the region is estimated at 2.8% of GDP, which significantly trails the 5.2% investment requirement as defined by the United Nations[10]. Estimates of the infrastructure financing gap in the region vary, but it is generally accepted that if the gap is to be closed, investment levels must increase in the six countries that account for over 90% of infrastructure investment in the region (Brazil, Peru, Mexico, Argentina, Chile and Colombia)[10].

According to BMI Research, construction industry growth in the region is expected to accelerate to an annual average of 2.6% until 2022[11]. With a total of 421 projects valued at USD 241.5 billion, Brazil has the highest number of infrastructure projects in the pipeline. It is followed by Chile with 309 projects (USD 117.1 billion), Peru with 230 projects (USD 83.1 billion) and Mexico with 209 projects (USD 98 billion). Colombia and Argentina also have a large number of projects, with 114 (USD 66.8 billion) and 92 (USD 58 billion), respectively. Among the smaller markets, Bolivia and Panama have pipeline values of USD 43 billion and USD 32.7 billion, respectively[12].

A combination of favourable demographic trends and the implementation of a number of legislative reforms throughout the region are generating a wide range of infrastructure investment opportunities for investors. Total infrastructure spending is projected to reach USD 142.5 billion in 2019 and USD 175.8 billion in 2020[13].

European Union

The GDP annual growth rate in the European Union averaged 1.79% from 1996 until 2019, reaching an all-time high of 4.6% in the second quarter of 2000 and a record low of -5.40% in the first quarter of 2009[14]. GDP in the European Union increased by 2.1% in 2018, and by 1.8% when considering just the eurozone. Growth is set to fall to 1.3% in 2019 and become significantly more moderate by 2020[6]. Although global growth may have peaked, the economy appears more balanced than it was ten years ago.

European construction has experienced major fluctuations in the last ten years. After the financial crisis, construction contracted for five years and began to grow once more in 2014. This year is the fifth consecutive year of growth. European

construction growth has occurred in all main sectors: residential, non-residential and civil engineering. According to Eurostat, average production in construction for 2018 increased by 2% compared with 2017 in the EU-28 zone. By country, the highest increases in production in construction were recorded in Hungary (+17.5%), Poland (+11.4%), Slovakia (+11.1%) and Spain (+10.9%), and the largest decreases in Romania (-7.7%) and Germany (-4.1%)[15]. The Investment Plan for Europe ("the Juncker Plan") is also expected to continue supporting investment, while rising incomes bode well for construction investment. The current macroeconomic outlook in Europe, supported by moderate medium-term economic growth, suggests that infrastructure performance should remain robust over the coming years across various sectors. However, the European construction market will not recover pre-crisis levels of spending in the short and medium term.

Asia

The outlook for the Asia-Pacific region remains robust and it continues to be the main growth engine of the world, with an expected GDP growth rate of 5.4% for 2019 and 2020[16]. The Asia region will continue to account for the largest share of the global construction industry given that it includes major markets such as China, Japan and India.

In 2018 the Chinese economy continued to perform reasonably well: GDP grew by approximately 6%, while construction activity rose by 4.5% year-on-year[6]. The gross output of the construction industry in China increased to USD 2.9 trillion. However, construction output growth in China is set to slow down in the coming years to average 4.2% in 2018-2022[4]. These figures are below the double-digit growth which the sector had previously enjoyed, but in any case there will be significant opportunities for the infrastructure industry in the coming years. For instance, China's huge Belt and Road Initiative (BRI), an infrastructure financing initiative launched in 2013, and the Asian Infrastructure Investment Bank (AIIB) offer Central and Southwest Asia new opportunities to address infrastructure needs and strengthen economic and financial connectivity. From a long-term perspective, China will remain the largest construction market in the world and its contribution to the global construction growth story remains strong.

Japan's economy continued to recover at a moderate pace in 2018 (0.8% growth), with expected growth of 1% in 2019[6]. In the domestic construction market, both government and private investments in construction were steady, allowing the construction industry to maintain a solid business environment. In addition, it is important to highlight that the Japanese construction and engineering sectors have profited from the Olympic Games, which will take place in 2020. Nevertheless, the housing market in Japan will experience close to zero growth in the next decade until 2025 as population shrinks.

India's GDP rose by around 7% in 2018 and is expected to remain around the same level over the coming years[6]. India's infrastructure investment requirement until 2022 is set at USD 777.73 billion in order to allow for the country's sustainable development[17]. In this context, the Government of India is taking every possible initiative to boost the infrastructure sector, with significant investments set out in the 2019-20 Union Budget. India is also one of the largest housing markets in the world and it will need to build 170 million houses over the next 15 years to meet the needs of its growing and rapidly urbanising population[18].

The construction market in ASEAN countries (Malaysia, Indonesia, Brunei, Vietnam, Cambodia, Laos, Myanmar, Singapore, Thailand and the Philippines) is expected to exceed USD 1 trillion by 2030, with growth driven by labour-intensive light manufacturing industries moving across the South China Sea to Asia's emerging markets, where wages are around half of what they are in China[5].

Oceania

Australia's output growth remained resilient in 2018 with a 2.8% increase in the GDP rate, achieving 27 consecutive years of growth. The IMF has forecast annual growth of around 2% until 2024[6]. With regard to the construction market, both building and civil engineering have recorded double-digit growth rates in recent years. Australia's buoyant economy, increased trade footprint, growing population and substantial pipeline of projects provide the ideal conditions for investment in major infrastructure schemes. In this context, as part of the Infrastructure Investment Program, the Australian Government plans to tie up USD 100 billion over the next 10 years from 2019-2020[19]. This significant investment is a crucial part of the Government's strategy to relieve congestion, better connect regions across the country, improve safety on the roads and meet the national freight challenge.

Over the past decade, the New Zealand construction industry has grown larger than ever and, although the rate has slowed in recent months, growth still remains at almost 2% per annum[6]. A new independent infrastructure body, the New Zealand Infrastructure Commission -Te Waihanga-, has been established to ensure that New Zealand gets the quality infrastructure investment needed to improve long-term economic performance and social wellbeing. The Commission will help improve the manner in which New Zealand coordinates and plans its infrastructure, make the most of the infrastructure already built and implement long-term plans to ensure investment delivery in line with the country's needs[20].

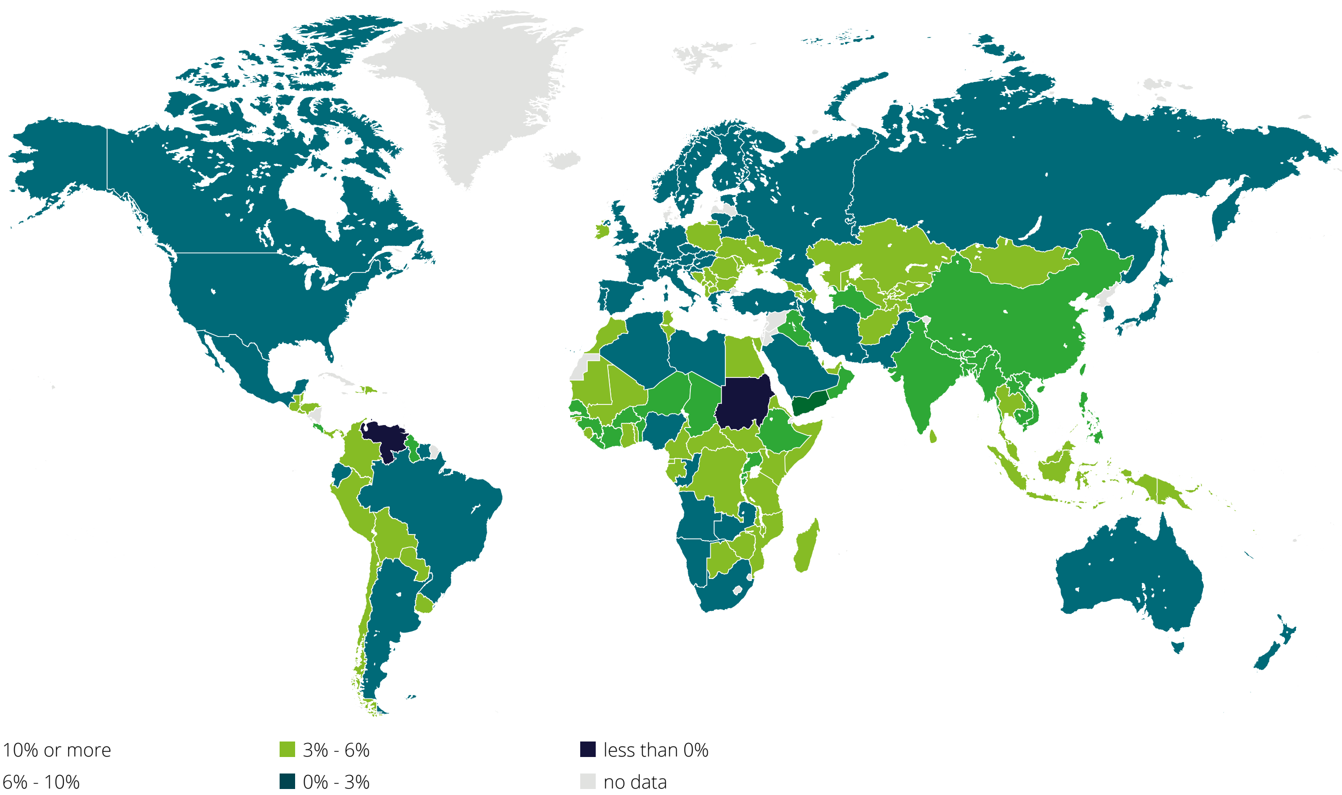
Africa and the Middle East

Growth in the Middle East and North Africa (MENA) improved in 2018, to approximately 2%, assisted by an acceleration in activity of both oil exporters and importers[6]. Among the countries of the Gulf Cooperation Council (GCC), increased oil production and prices have eased fiscal consolidation pressures, enabling higher public spending and supporting higher current account balances. Among non-GCC oil exporters, anaemic growth in Iran associated with US sanctions has been a drag on regional growth.

The construction sector in MENA will grow at the fastest pace globally in 2019 as regional governments continue to invest in infrastructure projects and rebuild conflict areas. The MENA construction industry is estimated to grow at an average year-on-year rate of 7.5% in 2019 and will expand at an average of 6.8% every year until 2022. Oman, Egypt and Iraq will drive most of the region's construction activity, while Qatar's construction industry will remain one of the fastest-growing, driven by a number of multi-billion infrastructure development projects, as well as those related to the Qatar World Cup 2022[21].

The economic recovery in Sub-Saharan Africa continues. Regional growth is set to pick up from 3% in 2018 to 3.5% in 2019, before stabilising at close to 4% over the medium term[7]. Countries in the region share the challenge of strengthening resilience and creating higher, more inclusive and durable growth. Addressing these challenges requires building fiscal space and enhancing resilience to shocks by stepping up actions to mobilise revenue, together with policies to boost productivity and private investment.

Real GDP growth (Annual percentage change, 2020)



Shaping the future

The construction business has generally been considered as a traditional industry, having being the sector with the lowest productivity gains in the last 30 years and is characterised as an industry with limited appetite for innovation. Nevertheless, during the last years innovation in the sector has been driven but a significant role falls to several companies and start-ups specialised in innovative technologies and services that are entering the construction industry.

The world is changing faster than ever and the engineering and construction sector cannot be left out of this new social and economic environment. While certain industries have implemented significant changes over recent years, the construction business has not been as successful. As a result, construction is the economic sector with the lowest productivity gains over the last 30 years.

Nevertheless, the sector is affected by different trends that are shaping the future of the industry. These trends can be classified into the following areas:

Innovation

The construction business has generally been considered as a traditional industry, with limited appetite for innovation. The first ever debate is currently underway on whether the traditional approach should evolve to a more industrialized and digitalized approach (fabrication of building parts, common processes, centralized purchasing of certain supplies, etc.). Innovation in the sector is not only driven by traditional and well-established construction companies, but a significant role falls to several companies and start-ups specialized in innovative technologies and services that are entering the construction industry. Some of these companies could be considered as "Construction Industry Disruptors".

Some examples of innovative solutions developed in recent years are as follows:

- Materials represent an important opportunity for innovation since they can have a significant impact on the construction costs, quality and sustainability of the assets. The solutions emerging from the building material industry are numerous and wide-ranging: from the innovation of existing materials, to the development of new material combinations with additional multifunctional characteristics. Although the benefits seem to be clear, the limited track record of these innovations discourages construction companies from introducing them in the business cycle.

- Standardization, modularization and prefabrication of components could have a positive impact on the industry's productivity in terms of costs, time and certainty over outcomes that could be achieved. However, a certain perception of lower quality, the client´s demand for individual solutions or the limited experience in the application of these techniques, all act as obstacles for their increased use.

- Digital and advanced technologies are already having a large impact on the industry. From cloud-based collaboration and the development of digital twins to robots, wearable technology, and artificial intelligence, an incredible array of developments is helping to improve this industry. As an example, the full development of 3D printing could have a disruptive impact on the construction industry. In the same vein, the technology around BIM (Building Information Modelling) is changing the way assets are built and it is considered to be a platform to centralized design, modelling and planning. Other technological advances such as Augmented Reality (AR) and Virtual Reality (VR) can be used in design engineering for large construction projects and also in identifying the most suitable execution/construction delivery methods. Using drones on some high-profile building projects can speed up the logistics of construction by monitoring deliveries and offering real-time updates on any changes or improvements that may be necessary.

- Internet of Things: connected construction is an ecosystem of connected job sites, machines, and workers that enhances operational effectiveness and safety. A core component of connected construction involves equipping the job sites, machines, and workers with sensors and tags to create visibility from the field, interact with machines and job sites, collaborate with other work packages, create dashboards/reports to monitor progress and maintenance, and perform analytics on processes, resource performance, and environmental conditions. A connected construction company is expected to be able to improve operational processes by optimizing time and resources; enhance construction project performance with near-real-time visibility into progress; manage construction assets including equipment condition and maintenance more effectively; and streamline the design change process with more efficient procurement and faster access to resources.

Although construction companies have a key role in the transformation of the industry, other bodies also need to act proactively: policy-makers must establish the right conditions and create an innovation-friendly environment that encourages the widespread adoption of new technologies, processes and business models. For example, since 2017 Hong Kong has required that BIM be used on all capital works projects with a budget in excess of HKD 30,000 million[22].

Competitive dynamics and margin improvement

The traditional low margins in the construction industry combined with increasing project complexity, fierce competition from Asian companies and supply chain constraints put extra pressure on the sector's profitability. In this context, it is essential for contractors to be proactive in managing processes and operations and to "industrialise" construction activity. Some of the main topics that are currently under discussion relate to the following areas:

- Supply chain: in order to achieve productivity improvements, companies need to encompass the entire construction cycle, including all companies throughout the value chain. In particular, it is extremely important for suppliers and subcontractors to be more comprehensively integrated, a task that mainly falls to the principal contractor. An agile supply chain could respond flexibly and promptly to changes in the external environment, thereby contributing to increased productivity.

- Lean approach: many companies in other industries have applied "lean" methods to manage complexity and drive step-change improvements in efficiency. Given the greater complexity of operations in the construction business, it is harder to apply "lean" methods. However, the fact that a lean approach reduces complexity and uncertainty by reducing waste and non-value-adding activities throughout the entire value chain means it should be considered. It makes processes more stable, predictable and efficient.

- Construction services are highly commoditized and bidding procedures increase the cost pressure even more. Many firms are therefore seeking opportunities to differentiate their services in the marketplace and identify their strategic focus. Companies need to find the right balance between, on the one hand, specializing in a segment and providing customized solutions and, on the other, providing more general solutions and thereby achieving economies of scale.

- Budgeting and scheduling: accurate and up-to-date budgeting and scheduling are essential. Currently, project monitoring in the construction industry is often limited to documenting the cost overruns and construction delays. Project monitoring needs to become more real-time and forward-looking than that, providing data that can immediately be translated into action – action that would put projects back on track.

- The redefinition of processes and operations is highly linked with the sector's digitalization. Industry leaders may define a new vision, map a comprehensive digital blueprint, and work toward realigning their business models to reflect the opportunities that technology brings.

Internationalisation

Traditionally, construction has been a local business in which relationships and resources are paramount. Although construction companies tend to obtain

higher margins in their domestic markets, the international expansion of the industry seemingly continues to be a dominant trend. From 2017 through to 2035, USD 69.4 trillion are required to be invested in infrastructure, which represents more than 4% of the GDP for that period and an above-GDP growth rate. More than 60% of global infrastructure investment in the period will be required in emerging economies, particularly in Asia, while the US and Canada will account for approximately 20%. In this context, GPoC companies obtained 21% of total income abroad in 2018. The expected increase in global competition will produce winners and losers as strengths and strategies differ between companies and markets. When entering new countries, companies may assess if the best strategy is to cooperate with local firms (joint ventures), or pursue mergers and acquisitions. In addition, the type of project also needs to be considered since it may differ between markets. Developed economies may call for asset maintenance or upgrade while emerging countries require the development of completely new infrastructure assets. Those firms that are able to adapt their business models to new markets and environments will prove to be the winners.

Compliance, regulation and transparency

Past and recent corruption incidents, together with company failings, have clearly affected the construction industry's reputation. There is an urgent need to enhance compliance practices at construction companies, reshape regulation and increase transparency across the board.

Reducing informality and corruption and increasing transparency throughout the tendering and execution processes are key aspects that should be addressed.

Changes in the contracting environment should also be addressed in order to move away from a system based on confrontation to a collaboration and problem-solving model.

It has been noted that current contractor schemes have not been able to enhance productivity, reduce corruption or provide an adequate capital return for many construction companies.

Sustainability

Sustainable construction is not just about ensuring that resources are being used in an efficient way, it also means considering the environmental impacts that are created by the way materials are sourced and the processes applied to get the job done. Adequate management of the enormous amounts of waste generated during the construction phase, or ensuring more efficient methods of heating, cooling and lighting the assets constructed, represent factors that are nowadays deeply discussed and reviewed. Sustainability is becoming a requirement rather than just an extra and firms must be able to introduce improvements in a cost efficient way.

Top 30 GPoC strategies: internationalisation and diversification

In 2018 international sales and non-construction revenue of our GPoC represented 21% and 22%, respectively. European groups appears to be the most internationalized while Japanese and American groups are the most diversified.

In 2018 our Top 30 GPoC recorded 21% of total sales abroad, while 22% of revenue arose from non-construction activities. These percentages represent a slight decrease from the 23% that both non-domestic sales and non-construction activities recorded in 2017. As in our previous editions of this publication, we have identified four main categories within the Top 30 GPoC, based on the different levels of internationalisation and diversification achieved in terms of total sales (Figure 4.1). The following paragraphs discuss the developments across each of these four categories.

Domestic construction groups

This segment is composed of companies focused principally on construction activities carried out in their domestic markets. Of the 30 GPoC under analysis, 14 are considered to be "Domestic construction groups".

As shown in Figure 4.1, this category is dominated by Asian groups, particularly from China and Japan. The seven Chinese groups included in our Top 30 GPoC are classified in this segment since 86% of their sales arise from construction activities carried out mainly in their home market. Overall, international sales amounted to USD 45,083 million, but in relative terms this only represents 8% of aggregate income. Only China Communications Construction Company recorded a significant level of international presence with 19% of total income obtained abroad, mainly in Australia and other countries in Africa and Asia.

Five Japanese groups complete the Asian presence in this category. Up to 90% of total income corresponds to construction activities carried out mainly in the domestic market, with real estate construction being particularly significant. On average, international presence among these groups does not exceed 10%, with the exception of Obayasi and Kajima, which obtained about 25% of total sales abroad.

D.R. Horton and Lennar, both headquartered in the US, are the only non-Asian companies included in this category. Both obtain most of their revenue from residential building construction throughout the entire domestic market, with both companies considered "homebuilders". Non-construction activities, as well as international business, are residual.

Aggregate sales among the "Domestic construction groups" category amounted to USD 692,796 million, approximately 65% of GPoC 2018 total income. On average, non-construction and international revenue does not represent more than 15% of total activities.

International construction groups

This category is composed of groups with a relatively low level of diversification, with a significant percentage of their sales coming from construction business performed abroad.

Five of the seven groups classified as "International construction groups" are from Europe: Vinci, ACS, Bouygues, Skanska and Strabag. The lower number of major projects and the negative performance of the European market during the financial crisis led several large European construction groups to attempt geographical diversification. The aforementioned five groups obtained almost 60% of total revenue abroad.

Vinci, ranked in first position in terms of market capitalisation, obtained 43% of total revenue abroad, mainly in Europe, America and Africa, but the company's target for the medium term is to increase its international presence beyond 50%. In line with the previous year, non-construction activities represented around 18% of total revenue, obtained mainly through its concessions business.

The Spanish group ACS is the company with the largest international presence of the Top 30 GPoC. Thanks to the internationalisation strategy implemented by the Group through organic and inorganic growth, in 2018 international sales represented more than 86% of total income. For the coming years, worldwide business will remain solid since 89% of its backlog corresponds to contracts awarded abroad. This group's diversification strategy was strengthened in 2018 with the acquisition of Abertis, a worldwide leader in the management of toll highways and infrastructure, which will allow ACS to accelerate the investment plan aimed at concession infrastructure projects.

Bouygues, Skanska and Strabag complete the European representation within this category. Aggregate sales for these companies amounted to USD 79,698 million, with nearly 60% corresponding to activities performed abroad. Non-construction activities are residual for Skankska and Strabag, while Bouygues has a large telecom and media business.

Non-European presence in this category corresponds to Hyundai Engineering & Construction (HDEC) and Lendlease. While HDEC has a strong presence in other Asian countries as well as the Middle East and Africa, Lendlease's international business comes mainly from the Americas.

In 2018 the seven groups classified as "International construction groups" obtained 19% of the aggregate sales of our Top 30. Average diversification and internationalisation levels reached 20% and 58%, respectively.

Domestic conglomerates

The "Domestic conglomerates" category is composed of groups that have focused their main activities on their respective local markets. However, these companies are characterised by high levels of diversification, including significant non-construction activities. This category is represented by seven groups: Samsung C&T, Sekisui, Aecom, Eiffage, Larsen & Toubro, Jacobs and Daito.

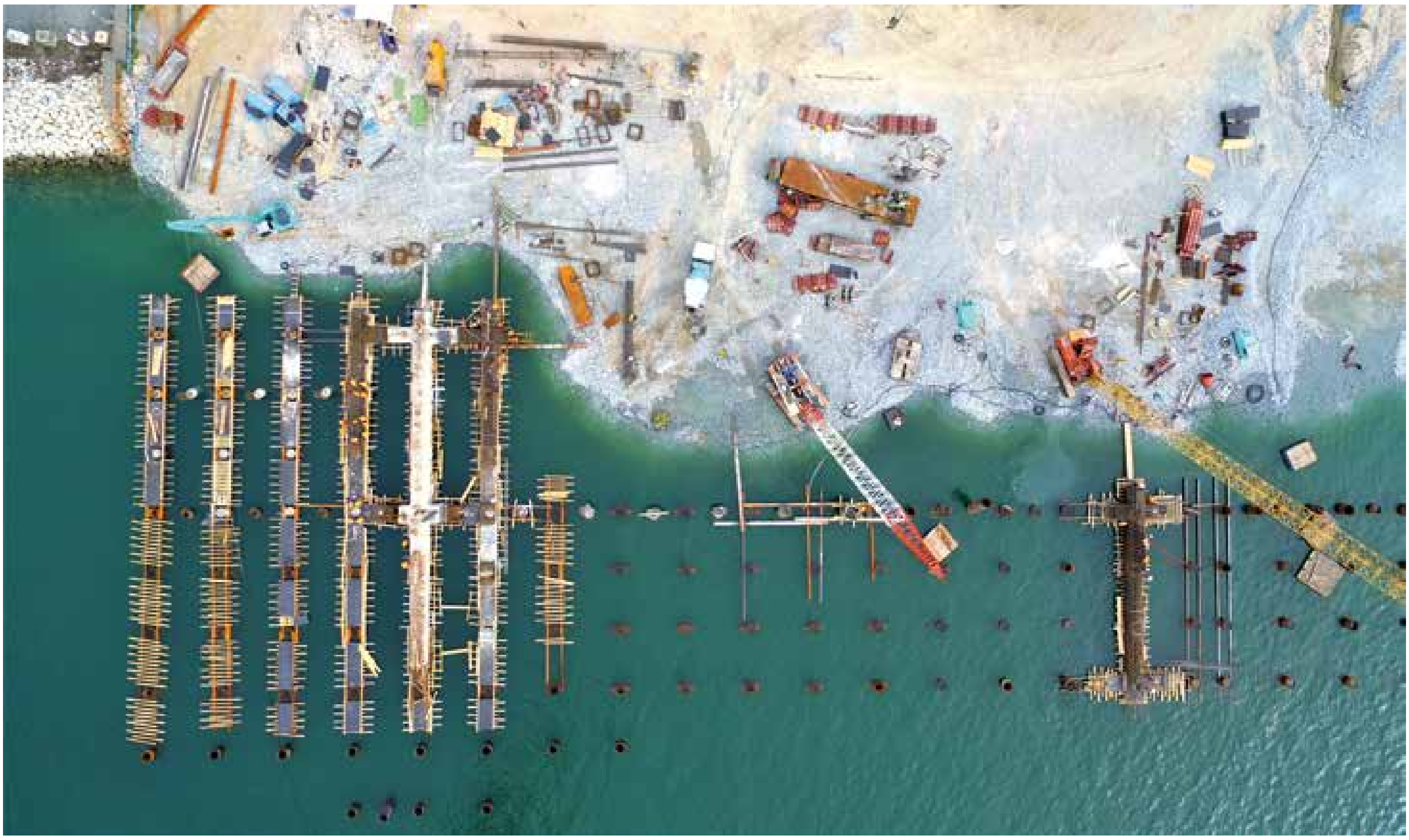
Samsung C&T Corporation is a diversified South Korean company that obtained 61% of sales from non-construction business. These activities are represented mainly by the "Trading and Investment" segment, which is focused on the trading of industrial commodities as well as the organisation of projects in the fields of infrastructure, renewable energy and power plants. In 2018 the group expanded its international presence from 29% to 32% as a result of a strong performance in Europe and certain Asian countries.

AECOM, the second-largest US group in terms of revenue, obtained 59% of total income from non-construction operations. In 2018 the solid performance of "Design and Consulting Services" in the local market strengthened AECOM's position as a "domestic conglomerate". Also, Jacobs recorded diversification levels similar to those of AECOM. However, the combination of the effects of the acquisition of CH2M, a global engineering company, together with the announcement of the divestment of the "Energy, Chemicals and Resources" segment, could change the classification of this group in the coming years.

Eiffage, which has intensified its activities in Europe in recent years, still obtains almost 80% of its total income in France. The French group is considered to be a "domestic conglomerate" due to the strong position of its Concessions and Energy division, which represented 43% of total revenue in 2018. Nevertheless, 2018 was a great year for the construction business, notably buoyed by the ramping-up of work on the Grand Paris Express project and by the growth of its international activities, propelled by acquisitions completed in 2018 in Spain (EDS), the Netherlands (Kropman) and Switzerland (Priora), among others.

Sekisui House has a strong presence in the housing industry in Japan. Although its property sales in the US and Sydney grew in 2018, the company obtained less than 15% of total revenue abroad.

The Japanese company Daito also has a strong position in the rental housing market: revenue generated by its Real Estate Business, which increased by more than 5% due mainly to higher rental income, represents 56% of the Company's total sales, being its largest segment.



Due to the diversification into different lines of businesses such as technology services, automation and heavy engineering, Larsen and Toubro obtained almost 50% of total revenue from non-construction activities. In addition, the company is focusing on expanding its businesses to selected geographical areas such as Saudi Arabia, where the company has a considerable presence predominantly in the Infrastructure and Hydrocarbon sectors. Thus, in the coming years Larsen and Toubro may move to the "International conglomerates" category.

The total revenue recorded by these groups amounted to USD 135,385 million, representing 13% of the total sales of the Top 30 GPoC in 2018.

International conglomerates

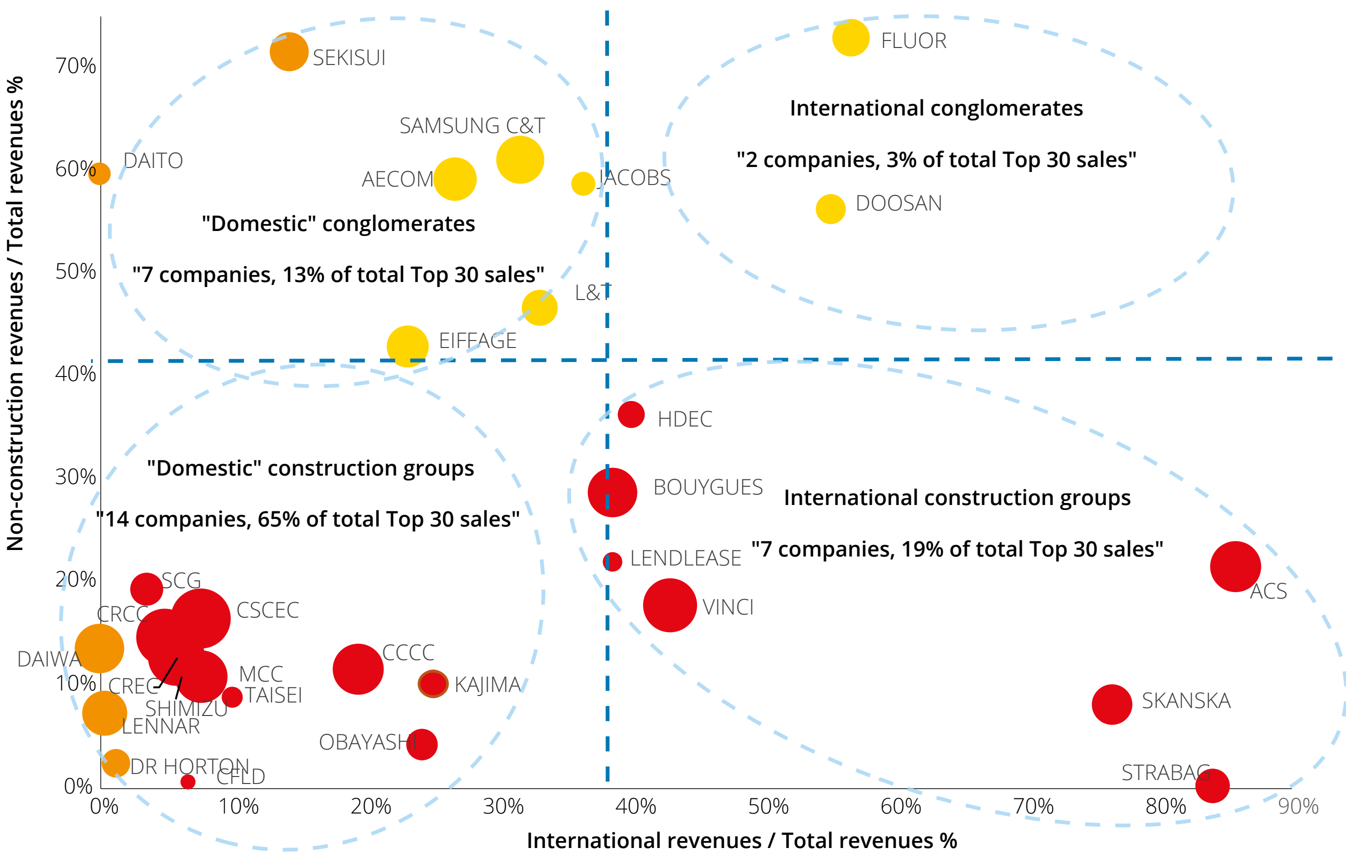
Groups with notably diversified portfolios and a strong international presence compose the "International conglomerates" category. In 2018 only two groups were classified as international conglomerates: Doosan and Fluor Corporation.

Fluor Corporation is the most diversified group in our GPoC. However, in 2018 the importance of non-construction sales was reduced as a result of the contraction in the activities of the "Energy & Chemicals" business unit. In any case, this division recorded the highest backlog of all segments as at December 2018 and, accordingly, in the coming years "Energy & Chemicals" will remain the main business line. In addition, in 2018 international sales rose by 15%, with the company expanding its presence beyond the US. Sales in the domestic market represented around 43% of total income.

The levels of diversification and internationalisation achieved by the South Korean company Doosan reached around 55% in terms of total sales, in line with 2017. The group is considered to be an "international conglomerate" due to a significant presence in America and Asia through its entire Consumer and Service business area.

Total sales recorded by the groups included in this category amounted to USD 36,039 million in 2018 and represented 3% of the total revenue of our Top 30 GPoC.

Figure 4.1: Top 30 GPoC Strategies



The graph above identifies the groups through three main colours, according to each group's core business. The red companies are those whose main business is civil engineering and construction, the yellow are diversified companies that carry on other businesses and the orange are companies that are considered to be homebuilders.

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Company financials.

Financial performance of the GPoC 2018

The financial performance of our Top 30 GPoC was uneven in 2018. While sales grew by 12% and operating profitability stood at 6.1%, total indebtedness increased by 22% to USD 164,977 million. Their performance in the stock market was also weaker this year, with a 10% decrease in overall market value with respect to 2017.

The financial performance of our Top 30 GPoC was uneven in 2018. While sales grew by 12% and operating profitability stood at 6.1%, total indebtedness increased by 22% to USD 164,977 million. Their performance in the stock market was also weaker this year, with a 10% decrease in overall market value with respect to 2017.

The most noteworthy aspects of the financial performance of our Top 30 GPoC are discussed in this section:

EBIT margin

GPoC 2018 profitability levels are better analysed by separating construction from other activities (Figures 5.1 and 5.2). Based on the figures obtained in 2018 and 2017, the following conclusions may be drawn:

On average, EBIT from construction activities is 5.5% of sales (0.2 percentage points above 2017), while EBIT from non-construction activities averaged 8.3% (in line with 2017), resulting in a combined average EBIT margin of 6.1%. Fifteen groups recorded above-average construction margins in 2018.

The Top 5 in terms of construction margin includes four companies which could be classified as "homebuilders": Daito, Sekisui, D.R. Horton and Lennar. Daito, which also has a significant civil engineering business, recorded the highest construction margin among the GPoC 2018. Excluding homebuilders, average construction margins stand at 4.8% (2 percentage points above 2017). Regionally, construction margins of European companies continue to be lower than Asian (5.9%) and US (8.4%) companies.

AECOM and Fluor are the only Top 30 GPoC groups that recorded construction operating losses in 2018. Execution challenges on a handful of projects impacted AECOM's profitability but the company expects to achieve a 2% construction operating profit in the coming year. Fluor's losses arose from forecast revisions in relation to estimated cost growth at a fixed-price, gas-fired power plant project.

As in 2017, Vinci led the ranking for non-construction activities in terms of profitability, due to the strong contribution

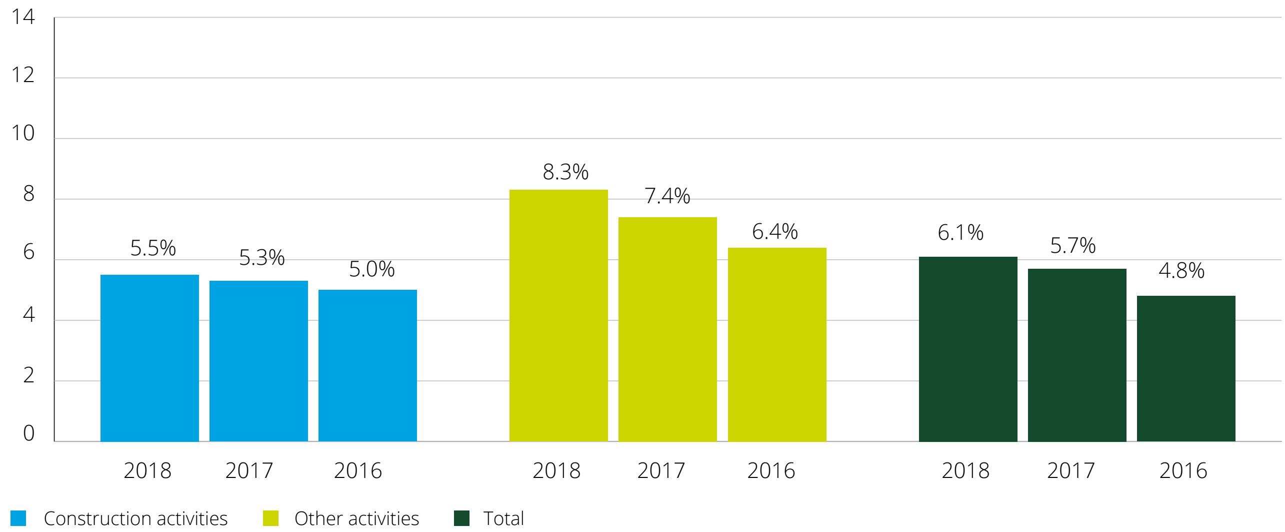
Figure 5.1: Top 30 GPoC EBIT/Sales

	EBIT* / Sales					
	Construction activities		Other activities		Total	
Company	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
DAITO TRUST CONSTRUCTION (**)	17.4%	17.5%	1.8%	1.3%	8.1%	8.0%
SEKISUI HOUSE (**)	13.9%	14.0%	7.2%	6.4%	9.1%	8.8%
DR HORTON (**)	12.5%	10.8%	27.5%	36.7%	12.8%	11.5%
LENNAR CORP. (**)	11.8%	11.3%	13.9%	20.3%	12.0%	12.4%
TAISEI CORP.	11.6%	9.6%	10.0%	8.4%	11.5%	9.5%
DAIWA HOUSE INDUSTRY CO. (**)	9.9%	9.4%	4.5%	4.5%	9.1%	8.8%
DOOSAN	9.8%	9.0%	4.0%	4.8%	6.6%	6.7%
LARSEN & TOUBRO LTD. (L&T)	9.1%	9.1%	11.7%	8.2%	10.3%	8.7%
CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD. (CSCEC)	8.2%	7.8%	-5.4%	-3.6%	6.0%	5.7%
KAJIMA CORP.	8.2%	7.1%	12.6%	18.6%	8.6%	8.5%
SHIMIZU CORP.	8.0%	7.4%	8.0%	3.9%	8.0%	7.0%
JACOBS ENGINEERING	7.8%	6.9%	1.9%	2.1%	4.3%	3.9%
OBAYASHI CORP.	7.0%	6.9%	14.0%	13.1%	7.3%	7.1%
CHINA COMMUNICATIONS CONSTRUCTION COMPANY LTD. (CCCC)	6.4%	6.3%	9.8%	11.8%	6.8%	6.9%
SAMSUNG C&T CORP.	6.4%	4.2%	1.7%	2.2%	3.5%	3.0%
AVERAGE	**5.5%**	**5.3%**	**8.3%**	**7.4%**	**6.1%**	**5.7%**
ACTIVIDADES DE CONSTRUCCION Y SERVICIOS, S.A. (ACS)	4.2%	3.8%	7.5%	7.6%	4.9%	4.7%
VINCI	4.1%	3.8%	45.5%	45.1%	11.5%	11.4%
STRABAG	3.7%	3.3%	4.5%	3.1%	3.7%	3.3%
EIFFAGE, S.A.	3.2%	2.8%	21.4%	21.2%	11.0%	11.0%
BOUYGUES	2.7%	1.6%	10.6%	10.7%	5.0%	4.3%
CHINA RAILWAY GROUP LTD. (CREC)	2.6%	3.3%	12.4%	2.7%	3.9%	3.2%
METALLURGICAL CORPORATION OF CHINA LTD (MCC)	2.1%	2.7%	14.3%	9.2%	3.4%	3.6%
CHINA RAILWAY CONSTRUCTION CORP. LTD. (CRCC)	1.8%	1.8%	13.4%	9.8%	3.5%	3.1%
SKANSKA AB	0.7%	0.8%	32.9%	43.1%	3.3%	2.9%
LENDLEASE	0.4%	2.1%	30.1%	24.3%	6.9%	7.5%
FLUOR CORP.	-0.3%	-3.9%	3.5%	3.7%	2.5%	2.0%
AECOM	-1.3%	1.6%	4.6%	5.0%	2.2%	3.6%
AVERAGE ASIAN COMPANIES	**5.9%**	**5.8%**	**5.3%**	**4.0%**	**5.7%**	**5.4%**
AVERAGE US COMPANIES	**8.4%**	**7.3%**	**4.2%**	**4.9%**	**6.7%**	**6.2%**
AVERAGE EUROPEAN COMPANIES	**3.3%**	**2.9%**	**20.9%**	**20.8%**	**7.0%**	**6.7%**
AVERAGE EXCLUDING HOMEBUILDERS	**4.8%**	**4.6%**	**8.6%**	**7.7%**	**5.6%**	**5.3%**

(*) EBIT figures, as reported by these groups correspond to operating income from ordinary activities.
Shanghai Construction Group, China Fortune Land Development and Hyundai E&C have not been included in the analysis since these companies do not disclose construction EBIT from other activities.
(**) Lennar, D.R. Horton, Daiwa, Daito and Sekisui are considered to be homebuilders.

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Company financials.

Figure 5.2: Top 30 GPoC EBIT Margin



of its concessions business, particularly in France. This business represents about 17% and 69% of the Group's total revenue and profit from operations, respectively. On the other hand, China Estate Construction Engineering recorded operating losses from non-construction activities.

Net income attributable

The following conclusions may be drawn from the analysis of the net income obtained by the Top 30 GPoC in 2018 (Figure 5.3):

- In 2018 total net income obtained by the Top 30 GPoC grew by 16% to USD 39,387 million, while total sales rose by 12%. As a result, average net margin increased by 0.1 percentage points to 3.7%. Fourteen groups recorded above-average margins in the year.

- By country, Indian and Japanese companies recorded the highest profitability (an average of 6.3% and 6.2%, respectively). Chinese, American and European groups recorded net income margins of between 3% and 5%.

- South Korea reported net income ratios below the 3% average. Doosan, which recorded net profit in 2017, reported net losses in 2018, due to the company recognising in advance allowances and exceptional expenses in 2018.

- China State Construction Engineering Corporation, which is ranked 1st in terms of total revenue and 2nd in terms of market value, remains the group with the highest net income in absolute terms. However, it recorded a below-average net income/sales margin.

Figure 5.3: Top 30 GPoC: Net income / Total Sales

	Net Income* / Total Sales	
Company	**2018**	**2017**
CFLD	14.0%	14.8%
DR HORTON	9.1%	7.4%
LENNAR	8.2%	6.4%
TAISEI	8.0%	6.1%
KAJIMA	6.9%	5.8%
VINCI	6.9%	5.1%
L&T	6.3%	5.6%
DAIWA	6.2%	5.7%
SEKISUI	6.2%	6.0%
DAITO	5.6%	5.5%
SHIMIZU	5.6%	6.3%
SAMSUNG	5.5%	2.2%
OBAYASHI	4.9%	5.0%
EIFFAGE	3.7%	3.6%
AVERAGE Top 30 GPoC	**3.7%**	**3.6%**
BOUYGUES	3.7%	3.3%
LENDLEASE	3.5%	3.9%
CCCC	3.5%	5.3%
CSCEC	3.0%	3.0%
SKANSKA	2.7%	2.6%
ACS	2.5%	2.3%
CRCC	2.5%	2.4%
STRABAG	2.3%	2.1%
CREC	2.3%	2.3%
HDEC	2.3%	2.9%
MCC	2.2%	2.5%
FLUOR	1.2%	1.0%
SCG	1.2%	2.0%
JACOBS	1.1%	2.9%
AECOM	0.7%	1.9%
DOOSAN	-0.6%	0.2%
AVERAGE ASIAN COMPANIES	**3.3%**	**3.4%**
AVERAGE US COMPANIES	**4.6%**	**3.7%**
AVERAGE EUROPEAN COMPANIES	**4.8%**	**4.2%**
AVERAGE EXCLUDINGHOMEBUILDERS	**3.3%**	**3.3%**

(*) Net income figures, as reported by these groups, correspond to net income attributable to the group.

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Company financials.

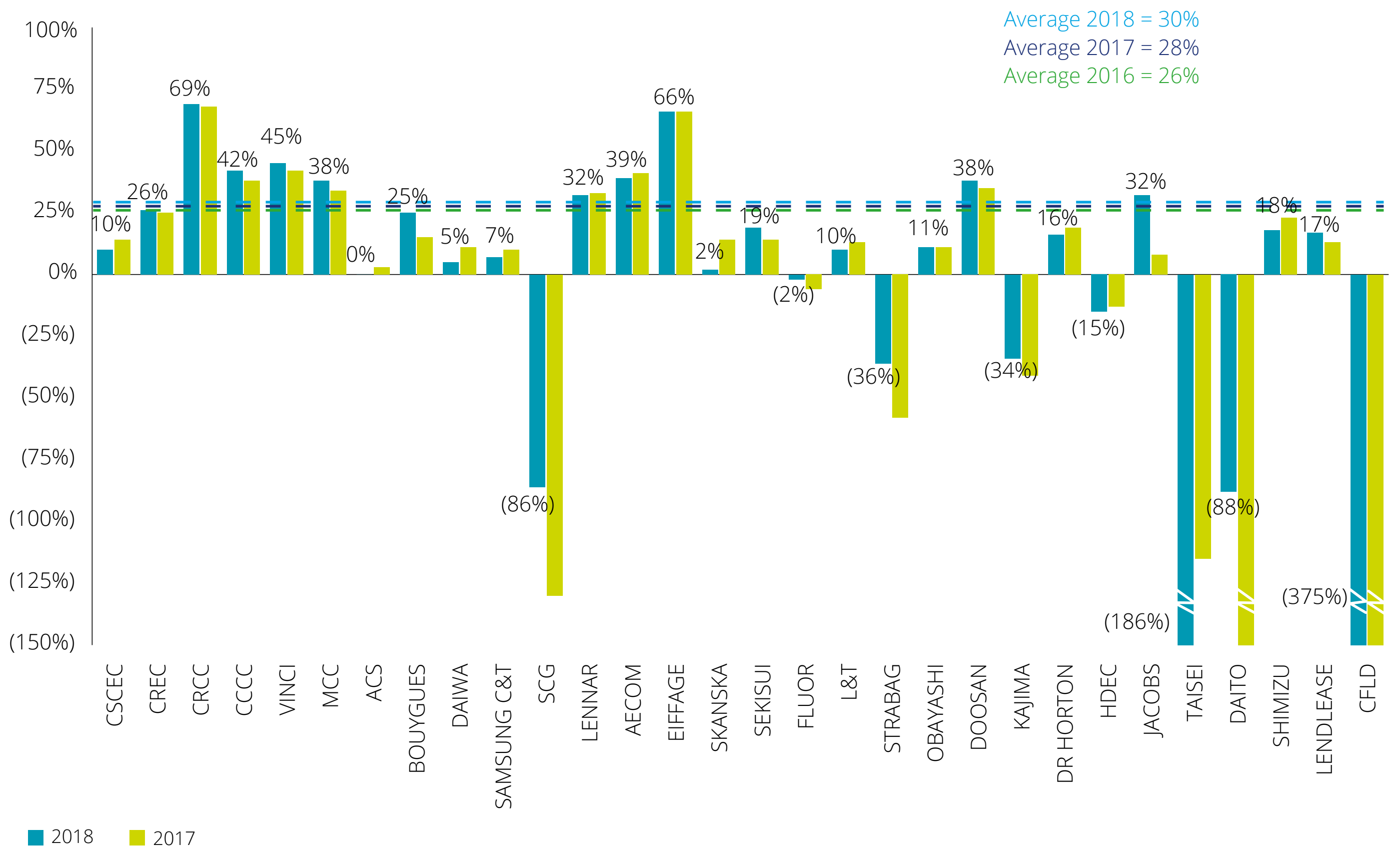
Net debt / Net debt + Equity

The analysis of the net debt/(net debt + equity) ratio (Figure 5.4) gives rise to the following most notable observations:

- Aggregate net debt and shareholders' equity grew by 22% and 10%, respectively, which resulted in an average net debt/(net debt + equity) ratio of 30%, two percentage points above 2017. By geographical region, Chinese and European entities reported above-average ratios (35%).

While aggregate net debt grew by 22%, market value fell by 9%. As a result, the average net debt to market capitalisation ratio worsened in 2018.

Figure 5.4: Top 30 GPoC Net Debt / (Net Debt + Equity)



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

- Eight companies recorded a negative net debt/(net debt + equity) ratio as a result of the net cash position reported. On the other hand, China Railway Construction and Eiffage, which obtained 13% and 43% of their total sales from non-construction activities, respectively, reported the highest ratios among our Top 30 GPoC.

- Among the ten largest groups in terms of sales, ACS recorded the lowest indebtedness, since the group has managed to reduce its net debt in recent years through divestments of non-core assets. Total net debt amounted to USD 4 million in 2018 compared with USD 9,168 million in 2010.

- Based on our analysis of the net debt/(net debt + equity) ratios and the level of diversification of our Top 30 GPoC, there seems to be a positive correlation between a higher diversification and a higher net debt/(net debt + equity) ratio (Figure 5.5). Excluding the Chinese groups, which distort the analysis due to their significant size and particular characteristics in terms of diversification and internationalisation, the GPoC that reported diversification levels of above 40% recorded an average net debt/(net debt + equity) ratio of 27%, four percentage points above the less-diversified GPoC.

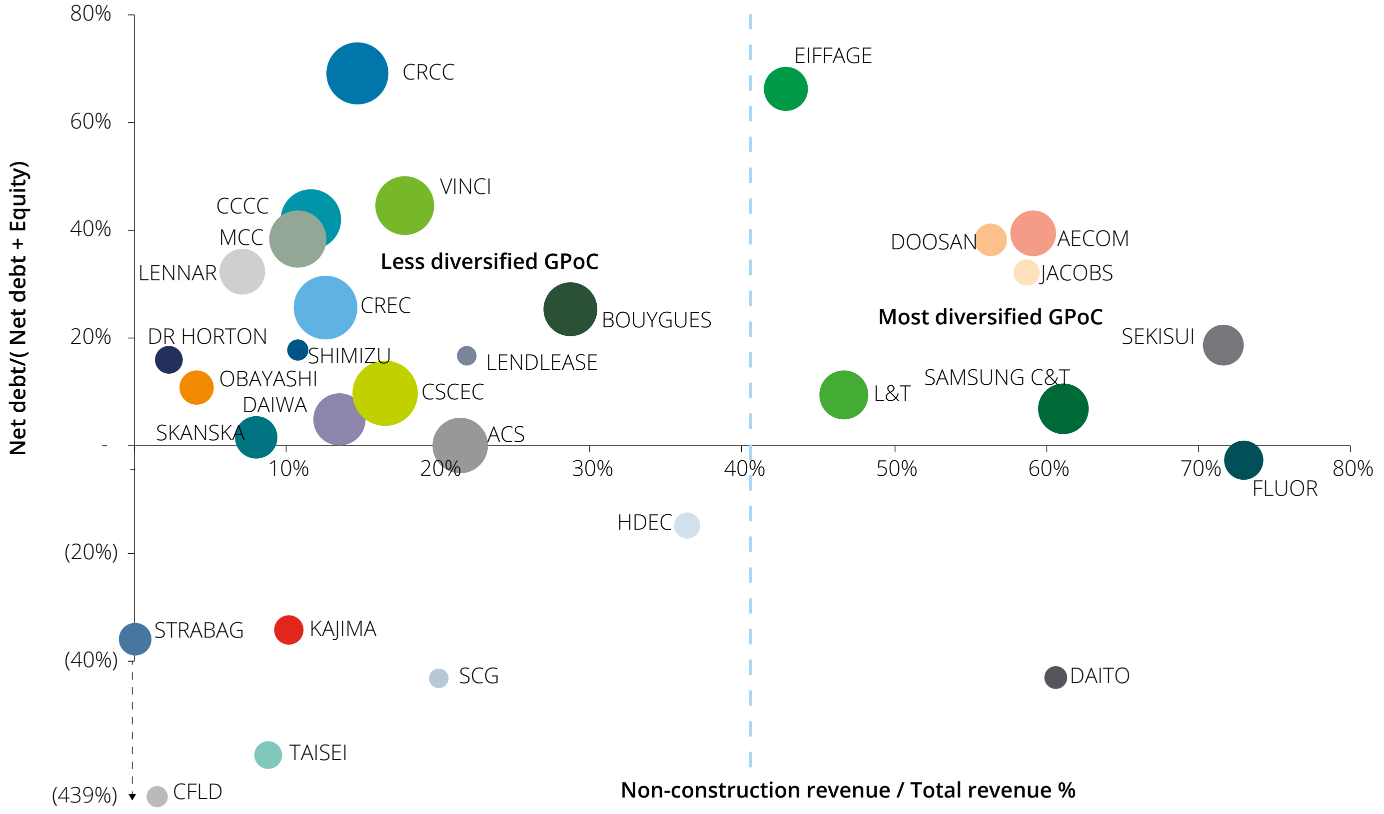
Net debt / Market capitalistation

The following conclusions can be drawn from the analysis of data included in Figure 5.6:

- While aggregate net debt grew by 22% in 2018, market value fell by 9%. As a result, the average net debt to market capitalisation ratio worsened to 0.42. Eight groups, which include four Chinese GPoC, reported above-average ratios. Specifically, China Railway Construction recorded the highest ratio (3.6 in 2018 compared with 2.6 in 2017).

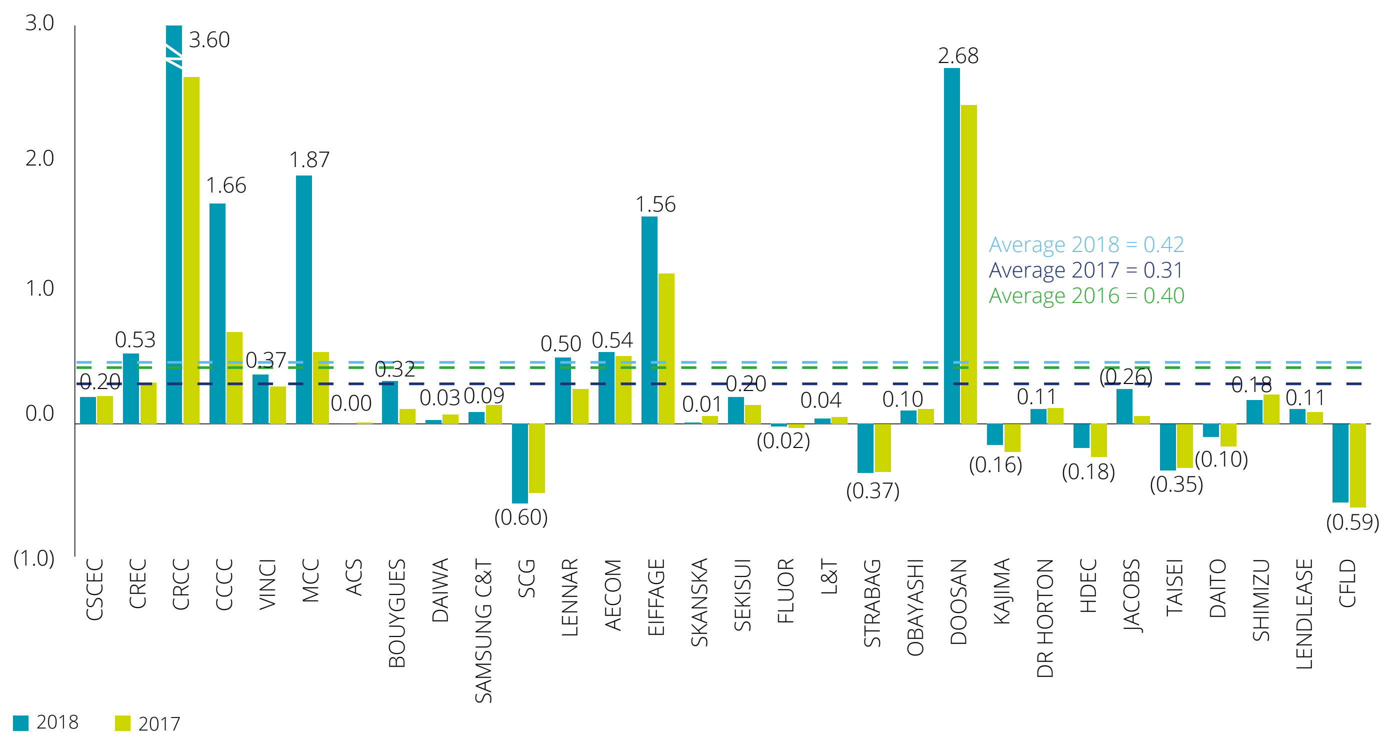
- The French GPoC reported an average ratio of 0.5 in 2018 compared with 0.35 in 2017. This is explained mainly by an aggregate contraction in market value of more than USD 16,000 million. As previously discussed, in general terms financial markets were volatile throughout the year due to the high level of investors' risk aversion. In addition, the decline in Vinci's share price is also attributable to the social unrest in France at the end of the year, which adversely affected Vinci Autoroutes' business.

Figure 5.5: Top 30 GPoC Non-construction revenue (%) / Net debt (Net Debt + Equity)



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

Figure 5.6: Top 30 GPoC Net Debt / Market Capitalisation



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloomberg and company financials.

Market capitalisation / Book value

The combination of a 9% decrease in market capitalisation plus an 8% increase in book value resulted in a market capitalisation/book value ratio of 1.2, as compared with 1.5 in 2017 (Figure 5.7). Four companies reported ratios of over 2, 15 groups posted ratios of between 2 and 1, and 11 groups trade in the stock markets at a discount to book value.

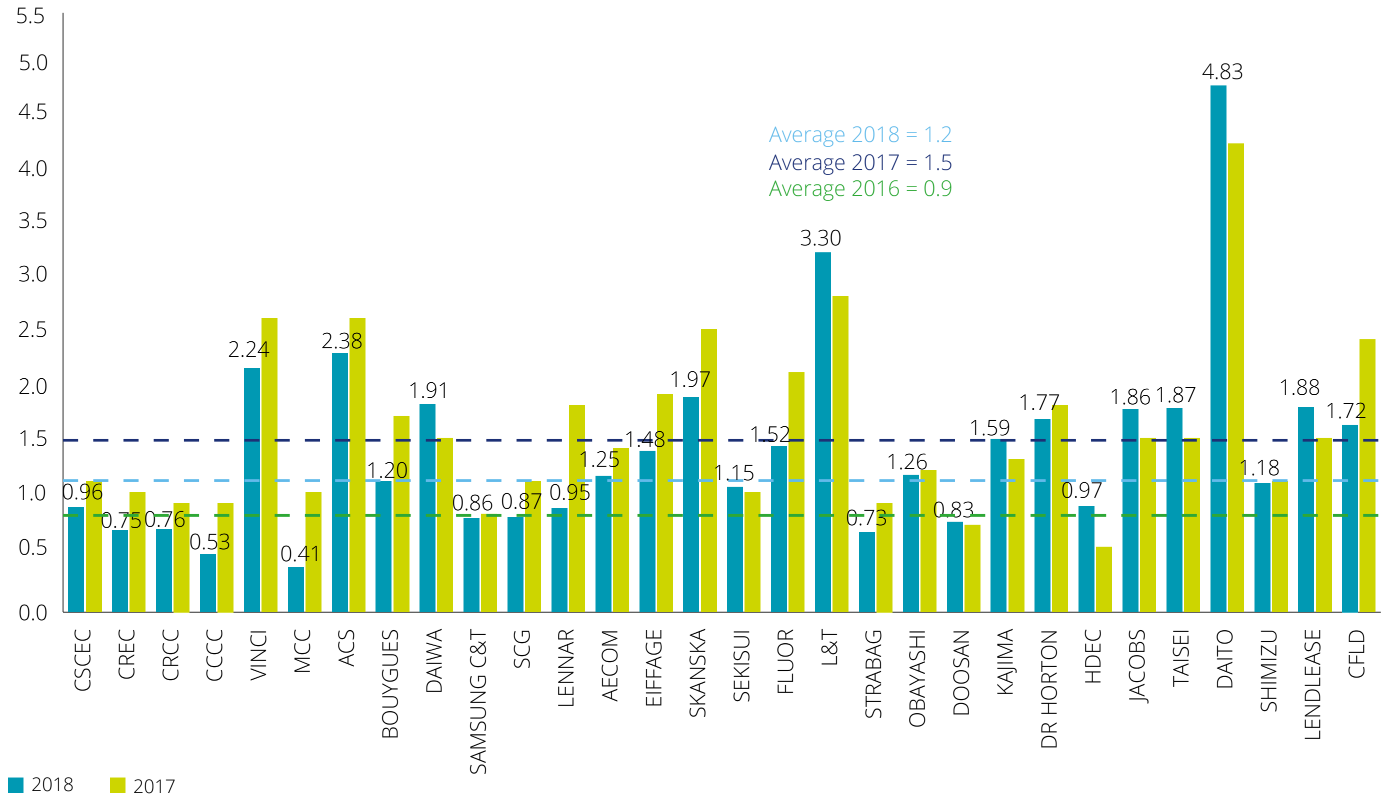
European, US, Indian and Japanese companies reported overall ratios of above 1. The average market capitalisation/book value ratio for Chinese and South Korean entities was 0.78 and 0.88, respectively.

Daito Trust Construction, which is ranked in 1st position in terms of operating profitability (Figure 5.1), is the only GPoC that reported a ratio above 4 in 2018 and 2017. The podium is completed by Larsen & Toubro and ACS.

Enterprise value / EBITDA

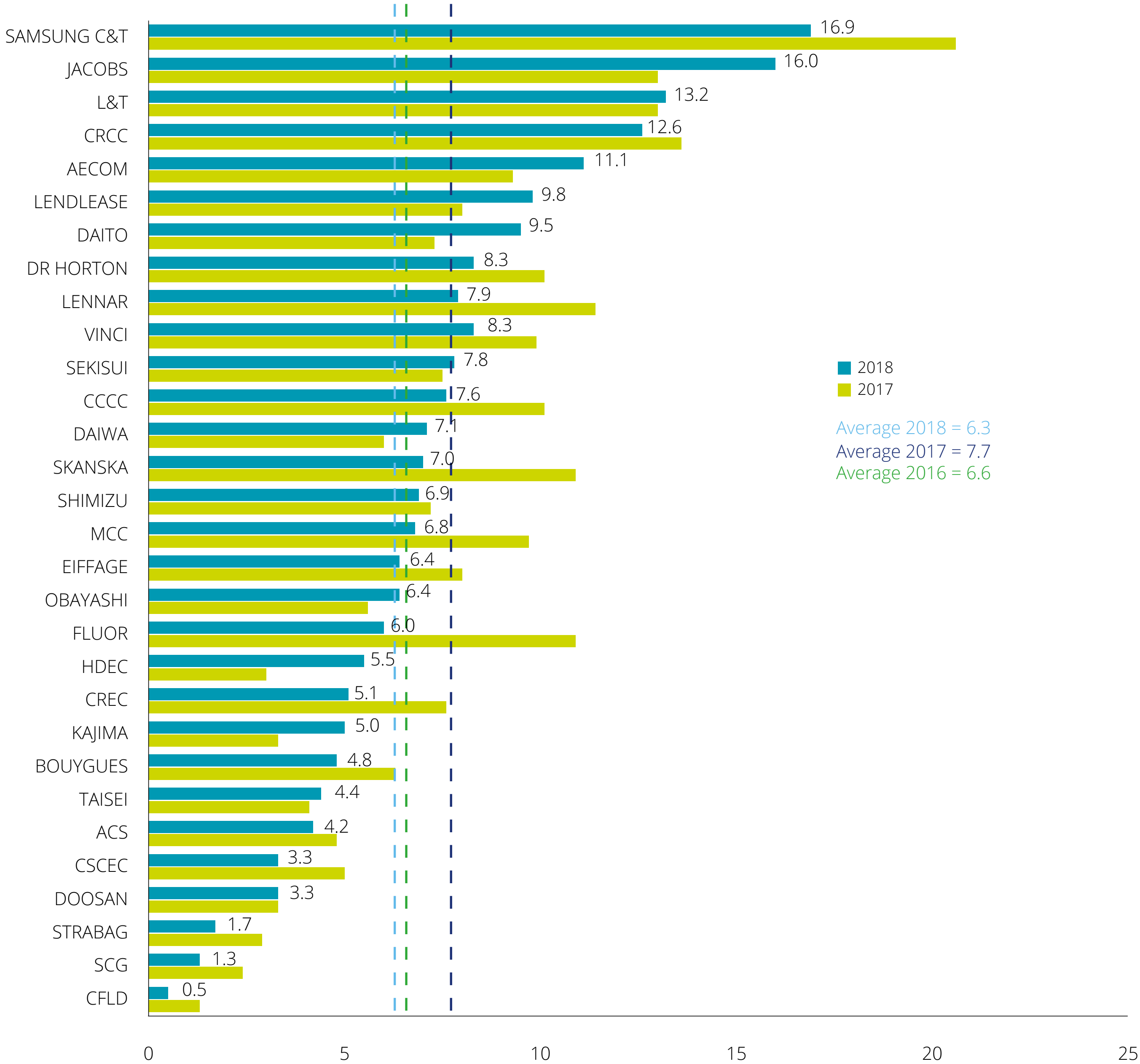
The average enterprise value/EBITDA multiple (Figure 5.8) decreased from 7.7 in 2017 to 6.3 in 2018 as a result of the combined effects of a 22% increase in net debt, a 9% decrease in market value and 20% growth in aggregate EBITDA.

Figure 5.7: Top 30 GPoC Market capitalisation / Book value



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloomberg and company financials.

Figure 5.8: Top 30 GPoC Enterprise value / EBITDA



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

Five groups posted ratios of above 10 and only China Fortune Land Development recorded a ratio below 1. Samsung C&T and Jacobs Engineering lead the ranking as they recorded an enterprise value/EBITDA ratio of above 15.

In terms of country performance, US-based entities achieved 9.1, significantly higher than the Top 30 GPoC average. However, as a result of a weak performance in the stock markets, Fluor's enterprise value/EBITDA ratio fell from 10.9 in 2017 to 6 in 2018.

Net debt / EBITDA

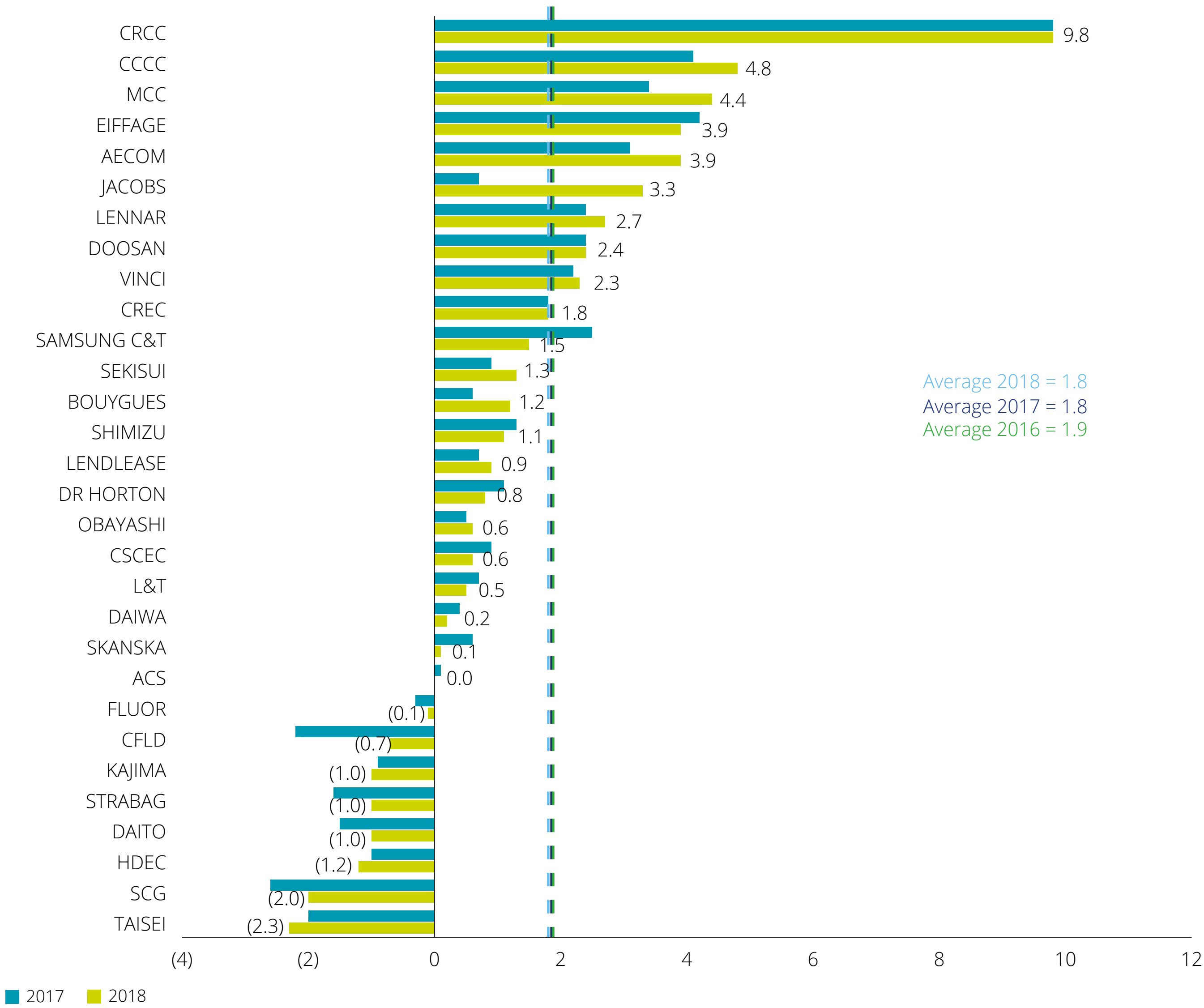
The average net debt/EBITDA ratio (Figure 5.9) was 1.8 in 2018, in line with 2017: the 22% growth in net debt was partially offset by a 20% increase in aggregate EBITDA. Ten groups reported ratios above 1.8.

As in 2017, China Railway Construction reported the highest ratio (9.8) since the net debt, as reported by this Chinese group, includes certain trade accounts payable. On the contrary, eight groups achieved negative ratios due to the net cash positions they reported at the end of the year under analysis. None of our Top 30 GPoC recorded operating losses in terms of EBITDA.

Capital expenditure / Sales

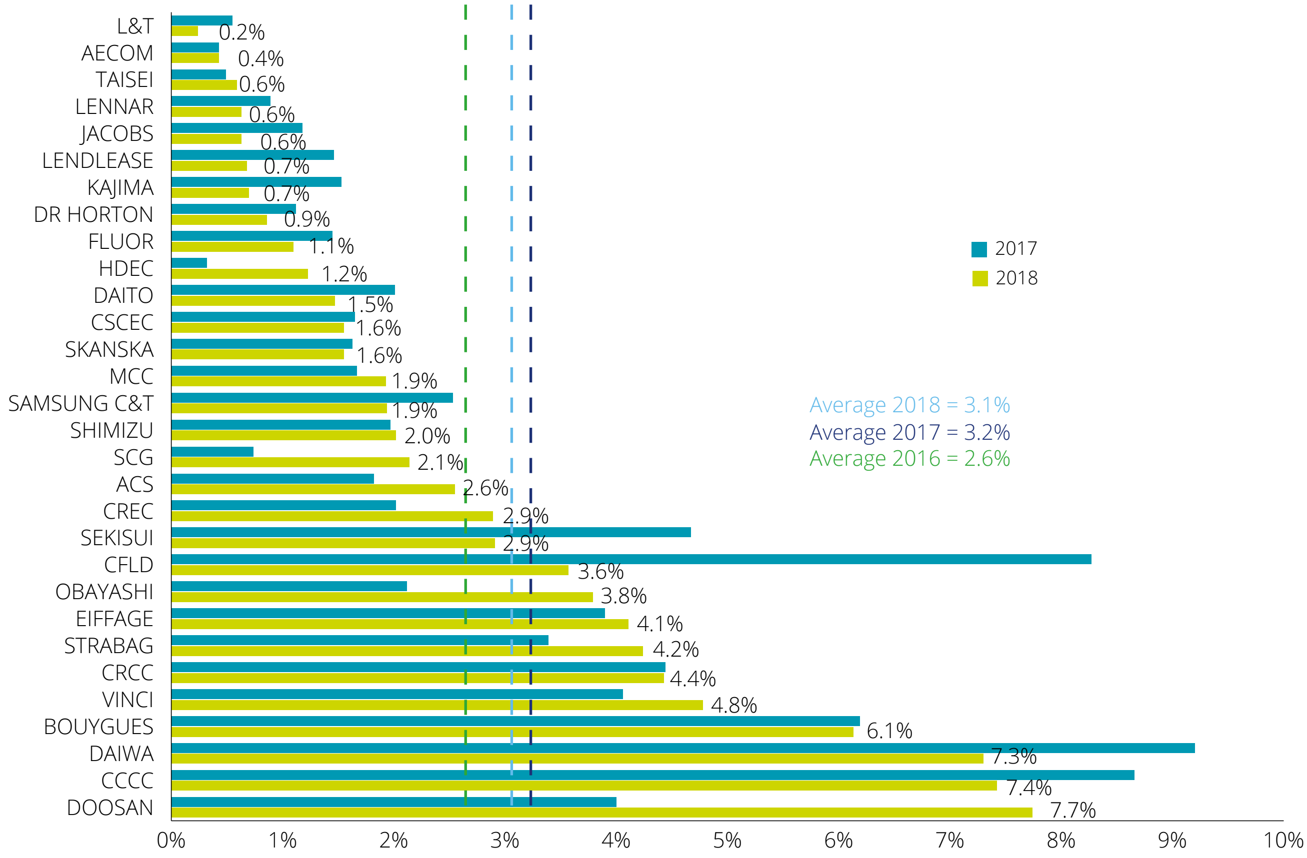
The capital expenditure/sales ratio (Figure 5.10) remained stable, amounting to 3.1% in 2018 as compared with 3.2% in 2017. It should be noted that the traditional construction business does not require significant investments, since the execution of construction contracts is generally

Figure 5.9: Top 30 GPoC Net Debt / EBITDA



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

Figure 5.10: Top 30 GPoC Capital expenditure / Sales



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

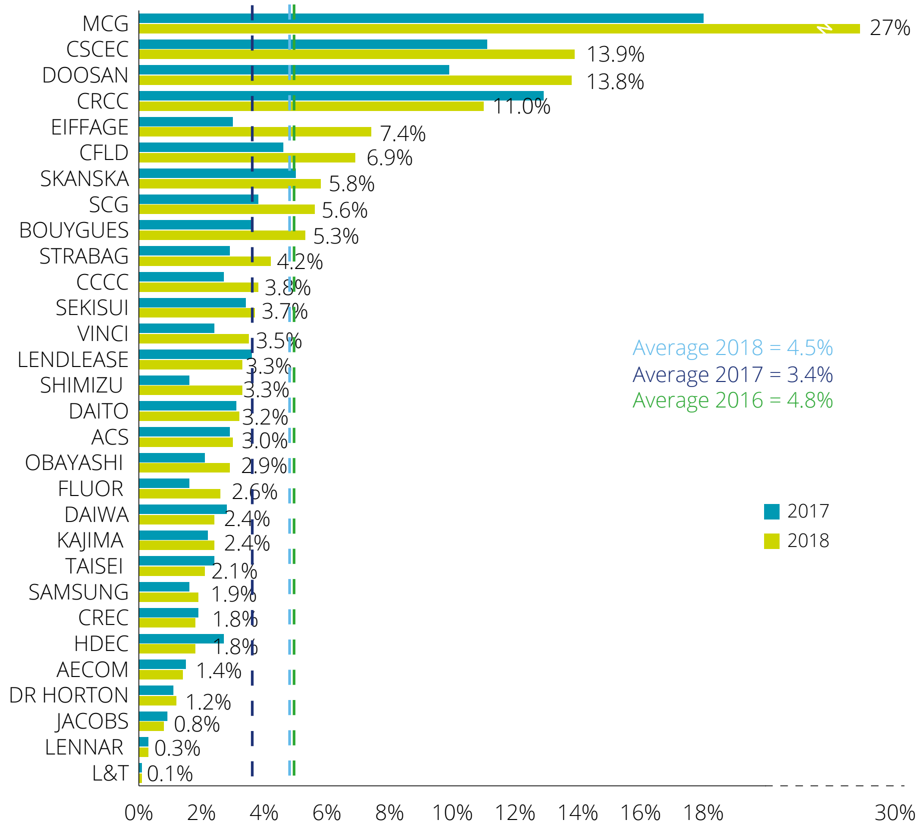
financed through down payments. Nevertheless, there are conglomerates in our Top 30 ranking which operate in the services, concessions and real estate businesses and require substantial capital expenditure.

Ten groups reported above-average ratios, while Doosan, which has a highly diversified business portfolio, achieved the highest ratio among the Top 30 GPoC.

Dividend yield

In 2018 the Top 30 GpoC companies reported an average dividend yield of 4.5%, signficantly higher than in 2017 (3.4%) (Figure 5.11). The ranking is led by two Chinese groups, Metallurgical Corporation of China and China State Construction Engineering, followed by the Korean group Doosan. Larsen & Toubro, as well as Lennar, distributed low dividends in comparaison with their market capitalisation levels, both recording figures lower than 0.5%.

Figure 5.11: Top 30 GPoC Dividend Yield



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloombeg and company financials.

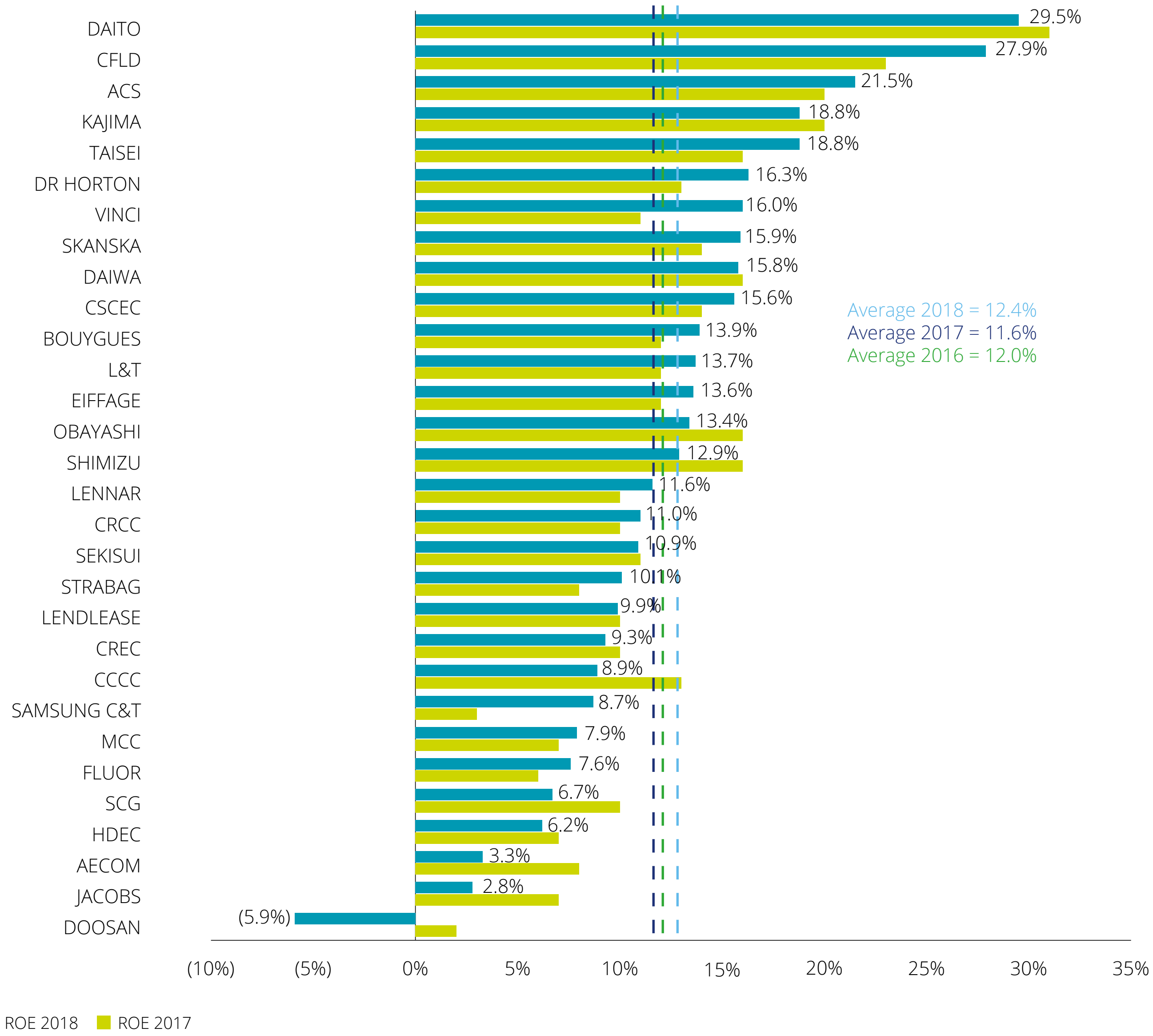
Return on Equity (ROE)

The average ROE (Figure 5.12) for the Top 30 GPoC improved, increasing from 11.6% in 2017 to 12.4% in 2018. Fifteen groups reported above-average ratios, while only Doosan Corporation recorded net losses in 2018.

Overall, there seems to be a direct correlation between ROE and market value. Daito Trust Construction, China Fortune Land Development and ACS, which recorded ROE ratios of over 20%, also reported above-average market capitalisation/book value ratios in 2018.

The average net debt/EBITDA ratio was 1.8 in 2018, in line with 2017: the 22% growth in net debt was partially offset by a 20% increase in aggregate EBITDA. Ten groups reported ratios above 1.8.

Figure 5.12: Top 30 GPoC Return on Equity



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

As a summary of our Top 30 GPoC performance we have calculated average ratios for the different categories into which we classify our top groups in the "GPoC Strategies: internationalisation and diversification" and average ratios on a regional basis (Figure 5.13). The analysis of the average ratios give rise to the following notable observations:

- As shown in the table below (Figure 5.13) and in terms of operating profitability, most of the groups present consistent margin figures, with the exception of "International Conglomerates", with average margin two percentage points lower than the average. The same trend can be noted in the net income margin, where "Domestic Conglomerates" posted the highest figure (4.2%) while "International Conglomerates" obtained just 0.3%.

- In terms of companies' debt as a percentage of their capital structure, the ratio of "Domestic Construction Groups" is 6 percentage points above that of "International Construction Groups".

- Regarding market valuation, "Domestic Conglomerates" seem to be listed at a premium on the stock markets, recording an enterprise value/EBITDA over 10. On the other hand, "International Conglomerates" show the lowest ratio at 4, due to current low operating margins. The same trend explains that only "International Conglomerates" report below 10% ROE.

- Although having lower EBIT margins pure construction groups show higher ROE than conglomerates, mainly as a result of lower capital intensity.

- Overall European companies present higher profitability in terms of operating income and net income however they also show larger indebtness levels (38% ND/ (ND+EQ)). On the other hand US groups reported the lowest ROE figures (8.1%), four percentage points below the Top 30 GPoC average.

Figure 5.13: Top 30 GPoC financial ratios

Types	EBIT Margin (*)	Construction EBIT Margin (*)	Net Income Margin	ND/ (ND+EQ)	EV/EBITDA	Dividend Yield	ROE
Domestic Conglomerates	6.7%	7.1%	4.2%	27%	10.32	2.1%	10.4%
Domestic Construction groups	5.9%	5.9%	3.7%	32%	5.56	6.0%	12.7%
International Conglomerates	4.4%	5.7%	0.3%	29%	4.12	5.1%	2.5%
International Construction Groups	6.6%	3.1%	3.9%	26%	6.25	3.9%	14.2%
TOTAL (AVERAGE 2018)	**6.1%**	**5.5%**	**3.7%**	**30%**	**6.26**	**4.6%**	**12.4%**
ASIAN COMPANIES	**5.7%**	**5.9%**	**3.3%**	**29%**	**5.91**	**5.4%**	**12.2%**
US COMPANIES	**6.7%**	**8.4%**	**4.6%**	**27%**	**9.14**	**1.1%**	**8.1%**
EUROPEAN COMPANIES	**7.0%**	**3.3%**	**4.8%**	**38%**	**6.32**	**4.3%**	**15.4%**

(*) Shanghai Construction Group, China Fortune Land Development and Hyundai E&C have not been included in the analysis since these companies do not disclose construction EBIT from other activities.

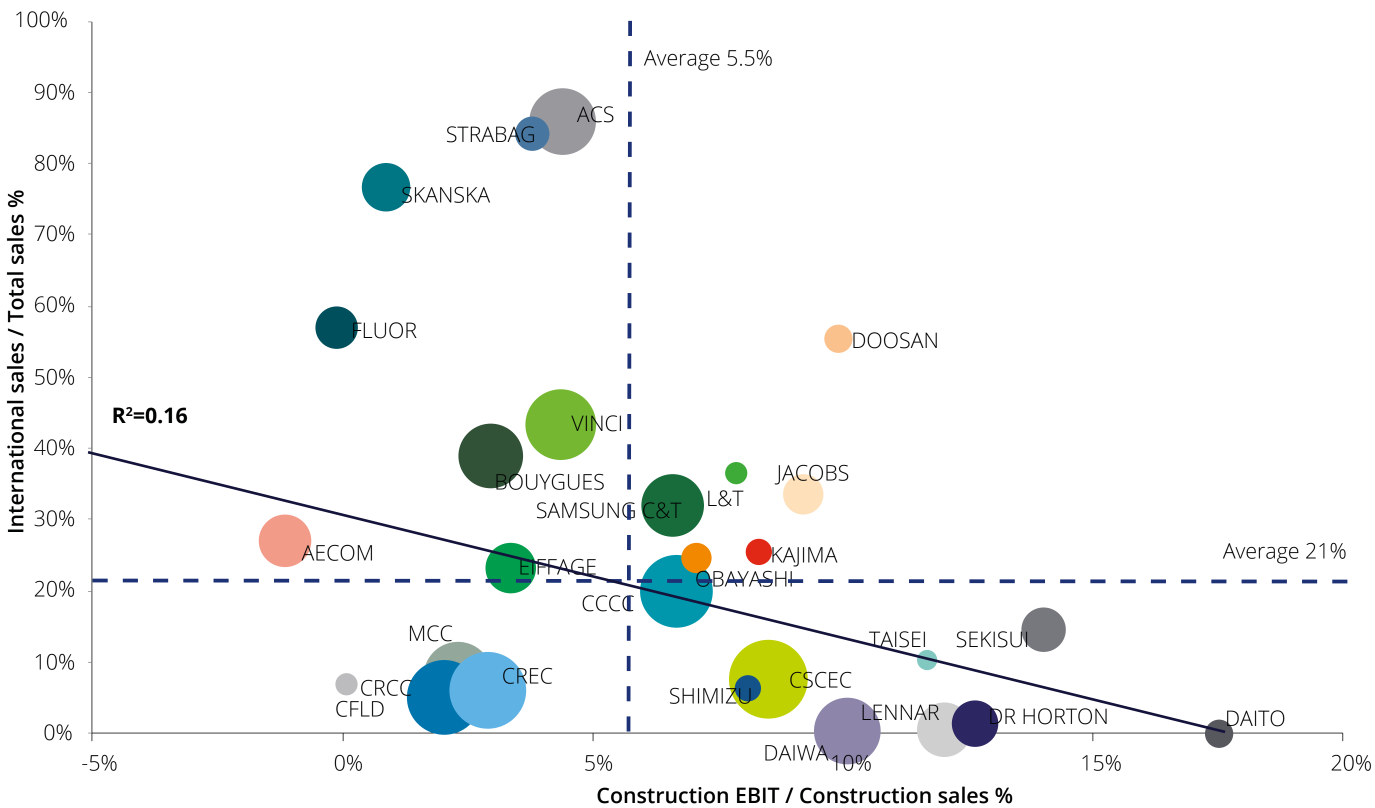
International presence of our GPoC 2018

As explained in the "Top 30 GPoC Ranking by International Sales" section, the combination of the forecast moderate growth of the global economy and significant infrastructure needs in certain regions have driven the international expansion of our GPoC.

However, the internationalisation strategy entails additional risks that could negatively affect the traditionally low margins of construction activity, as well as the cash flows obtained from operating activities. Companies have experienced difficulties associated with making their international contracts profitable and repatriating funds to their domestic markets. Additionally, management of working capital and conversion of sales into cash is normally more successful in local markets, due mainly to a more extensive knowledge of customers and subcontractors and a greater understanding of how to submit and negotiate claims and change orders. Stricter discipline when bidding for projects, sticking to selected core project types and geographies and placing profit ahead of volume are extremely relevant factors in ensuring the profitability of international projects.

Based on an analysis of the level of internationalisation and construction margins achieved by our Top 30 GPoC (Figure 6.1), there seems to be an

Figure 6.1: Top 30 GPoC Construction margin (%) / International sales (%)



Shanghai Construction, Hyundai Engineering and China Fortune Land Development have not been included in the analysis since they do not disclose their international revenues thus it is impossible to classify the company in the categories defined above.

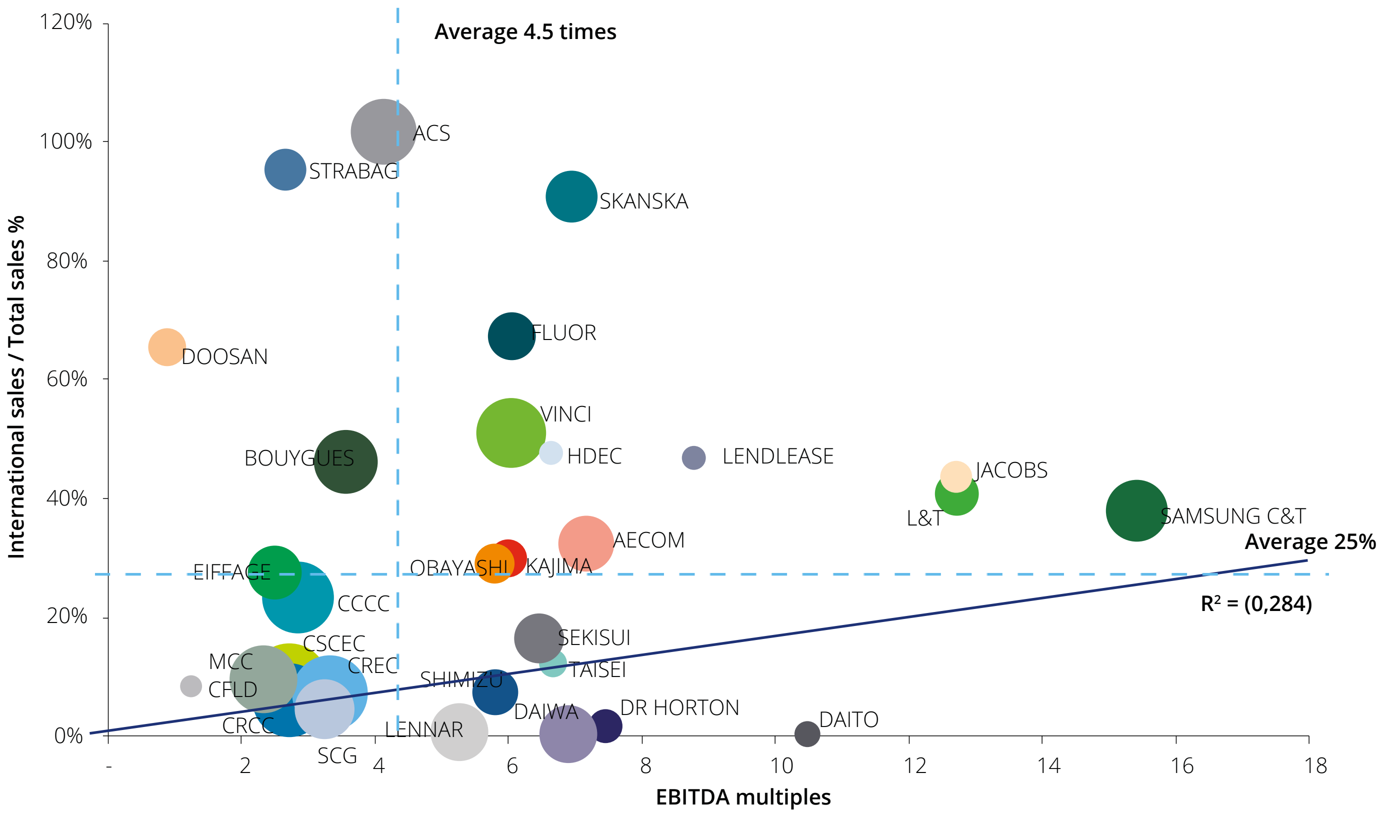
Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Company financials.

inverse correlation between the two figures. The groups with a higher level of internationalisation obtain lower EBIT margins in their construction business. An analysis of detailed information on the construction margins by geographical area reinforces this hypothesis. In this context, the overall average construction EBIT margin in 2018 was 5.5%, while the average construction margin for the most internationalised groups such as ACS, Bouygues and Skanska was 2.9%. On the other hand, Daito and Taisei, groups that obtained close to 90% of sales in their local market, recorded an average construction margin of 15%. Daiwa, Sekisui, D.R. Horton and Lennar obtained above-average margins, but it must be taken into account that these companies are classified as homebuilders, the activity of which records higher profits than civil construction work.

An analysis of the EBITDA multiples and the level of internationalisation (Figure 6.2) indicates that there is a slight positive correlation between a higher internationalisation level and a higher EBITDA multiple. Samsung, Jacobs and Larsen & Toubro, which recorded the highest EBITDA multiples, obtained 40% of total sales abroad, 15 percentage points above the Top 30 GPoC average. However, there are notable exceptions to this trend, since ACS and Strabag, European groups that obtained more than 80% of total income abroad, did not manage to achieve above-average EBITDA multiples.

As previously mentioned, our Top 30 GPoC 2018 companies have a global presence and, in line with previous years, they obtain about 21% of their revenue abroad. A summary of the presence of our GPoC by region (excluding those companies operating in their domestic markets) is as follows:

Figure 6.2: Top 30 GPoC EBITDA multiples / International sales (%)



Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

The Americas

The presence of the Top 30 GPoC 2018 in the Americas is led by two European Groups, ACS and Skanska, and the Australian company Lendlease (Figure 1.2):

- As in 2017, the Spanish group ACS, considered the largest international contractor among the GPoC 2018, has an extensive presence in the American market. In 2018 the company obtained almost USD 19,000 million in income from the Americas, representing almost 50% of ACS's total sales. By country, the most important markets within the Americas are the US, Canada and Mexico. In the US and Canada the ACS Group performs its construction activities through subsidiaries such as Dragados, Turner and Flatiron. In Mexico the Industrial Services division, through ACS's subsidiary Avanzia, is a major contractor in the oil and gas sector, but also in renewable energy. Brazil is another important market for the group where significant contracts for the construction of transmission lines have been executed in recent years.

- Skanska obtained about 40% of its sales in this region. Operations in the area are currently focused on the US as the group has had no ongoing projects in Latin America since March 2016. Currently, the US represents Skanska's single largest market and 50% of the Group's order book comes from this region. Nevertheless, in 2018 Skanska took certain strategic actions aimed at improving profitability and reducing risk. In relation to construction activities in the US, these actions mean that Skanska will no longer bid on power sector projects, engineer-procure-construct (EPC) projects and mega design-build public-private partnerships (PPP).

- Lendlease obtained about 30%, 14% and 15% of total sales, EBITDA and profit after tax, respectively, in the Americas with a particular focus on the US. Among the Group's three business lines (Construction, Development and Investment), its presence in the Americas is attributable mainly to the Construction segment. Total sales from construction activities in the Americas rose by 2%, while margin decreased by 90 bps to 1.4%.

Asia/Oceania

Doosan, Samsung C&T Corporation and Hyundai Engineering and Construction Group, all headquartered in South Korea, recorded the strongest international presence in the area in 2018:

- Doosan posted revenue of USD 4,147 million in the region. Doosan's operations on this continent are carried out mainly through subsidiaries such as Doosan Power Systems India, which is as a major domestic player in the power sector, and Doosan VINA, specialised in the manufacture of heavy industrial equipment in Vietnam. One of the flagship projects executed in the area is the Mundra coal-fired thermal power plant, an ultra-large 4000MW-class power plant that supplies electricity to five states in India.

- Samsung C&T Corporation reported revenue of USD 7,237 million in Asia, 25% above that of 2017. The company is currently participating in certain major infrastructure projects in the region, such as the construction of the Riyadh Metro network in Saudi Arabia. In addition, its power plant business has become a global leader in the sector through notable projects such as the first nuclear power plant in UAE and the Prai Combined Cycle Power Plant in Malaysia.

- Hyundai Engineering and Construction Group is a Seoul-based general construction company and a subsidiary of the South Korean Hyundai Motor Group. In 1966 it became the first Korean construction company to enter overseas markets and since then has been one of the leading contractors working in Asia/Oceania. In 2018, 20% of total income arose from this region. The Sheikh Jaber Al-Ahmad Al-Sabah Causeway, one of the world's longest and vastest high-speed bridges, is one of the group's flagship projects in the area.

Africa

Although the infrastructure investment gap is particularly severe in Africa, the presence of our GPoC in the region is still limited.

Hyundai Engineering and Construction Group and the French entities Bouygues and Vinci lead the presence in the area, according to our analysis:

- As in Asia/Oceania, Hyundai Engineering and Construction Group also has a strong presence in Africa: In 2018 more than 15% of its total sales were obtained in this region. Some of the most significant projects developed in Africa correspond to power plants, particularly combined cycled power plants under construction in Algeria (Biskra and Jijel) as well as simple cycle power plants in Nigeria (Ondo).

- Bouygues posted revenue of USD 1,381 million in Africa, representing 3% of total income. Activities in the area relate mainly to the construction business. In Egypt, after taking part in the construction of Lines 1 and 2 of the Cairo Metro, the company is building the new phase of Line 3. In addition, the company's expertise in earthworks for opencast mining is demonstrated through its operation of gold mines at Kibali in the Democratic Republic of Congo, Tongon in the Ivory Coast and Gounkoto in Mali. Bouygues Construction is also involved on a one-off basis in roadbuilding projects in other African countries. In the Middle East the company is building sewage tunnels in Doha, Qatar.

- Vinci, in line with Bouygues, obtained 3% of its sales on the African continent. Vinci's operations on this continent are carried out through its subsidiary Sogea-Satom. Operating in 24 countries, Sogea-Satom is a major player in Central, West, Equatorial and East Africa. In 2018 new contracts were signed in Benin (construction of substations to reinforce distribution capacity in the Greater Cotonou area), the Ivory Coast (reinforcement and safety upgrade of nine strategic EHV substations) and Senegal (contract with a total value of USD 233 million covering the expansion, reinforcement and reliability upgrade of the Senelec transmission and distribution grid).

Europe

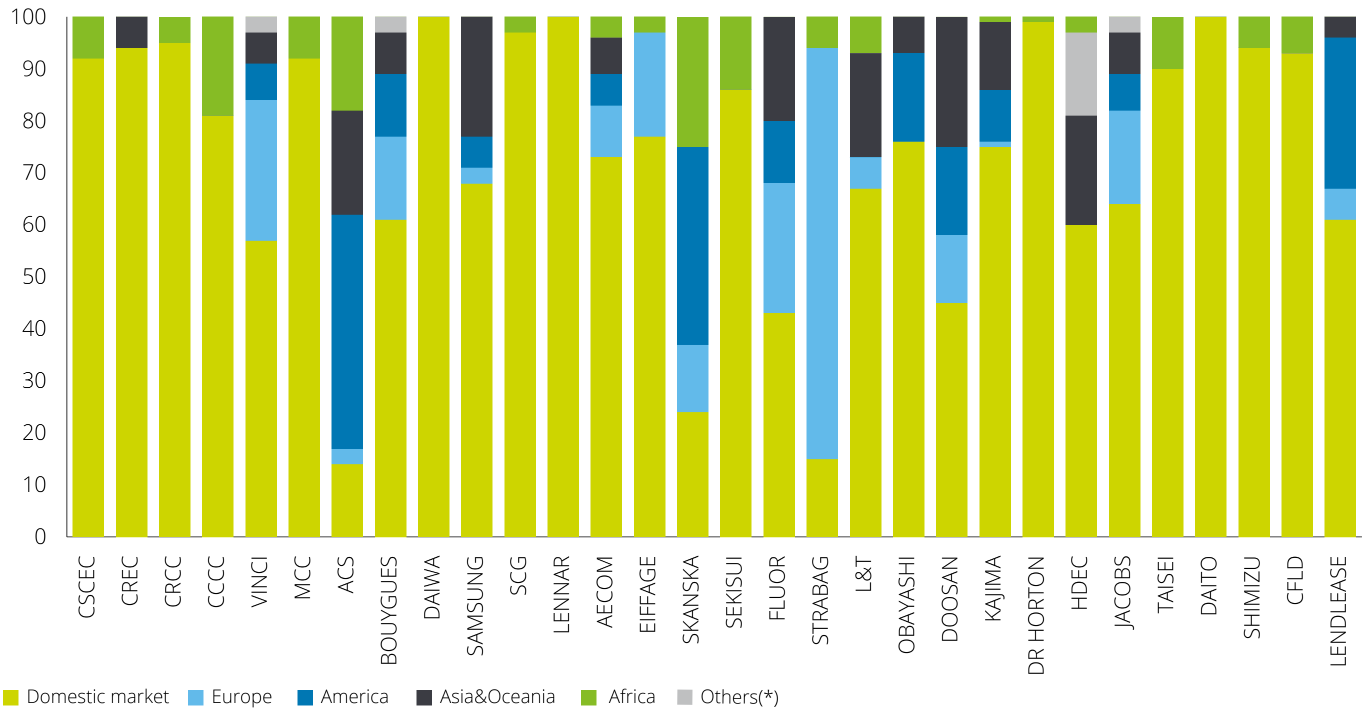
Strabag, Vinci and Fluor lead the presence of our Top 30 GPoC in Europe, with 80%, 27% and 25% of total income, respectively, originating from this region:

- In 2018 Strabag obtained USD 14,115 million in sales in the region. Although the group is attempting to expand businesses to other countries in order to become less dependent on individual markets, Germany still represents the group's largest geographical segment. In addition, Germany will remain the core market since 43% of the group's total backlog will be executed in this country in the coming years.

- Vinci obtained revenue of approximately USD 13,813 million in Europe. It should be noted that the acquisition in late 2017 of Infratek, Horlemann and Eitech reinforced the group's position in Germany and Northern Europe. Vinci also has an extensive presence in the Baltic region. Following the acquisition of the Latvian company Saldus Ceļinieks in 2017, Vinci continued to expand its presence in the area by acquiring TREV-2 Grupp in Estonia, which operates in asphalt production, roadworks and local utility maintenance under multi-year contracts.

- Fluor executes significant contracts in the area, such as the first high-speed rail line in the Netherlands which, to date, is the single largest public-private partnership (PPP) contract awarded by the Dutch state to a private party. In 2018 new awards in the region exceeded USD 3,500 million.

Figure 6.3: Top 30 GPoC Sales by region



(*) The percentages included in the "Others" segment were taken from percentages that the companies did not disclose in their annual reports or in their financial statements.

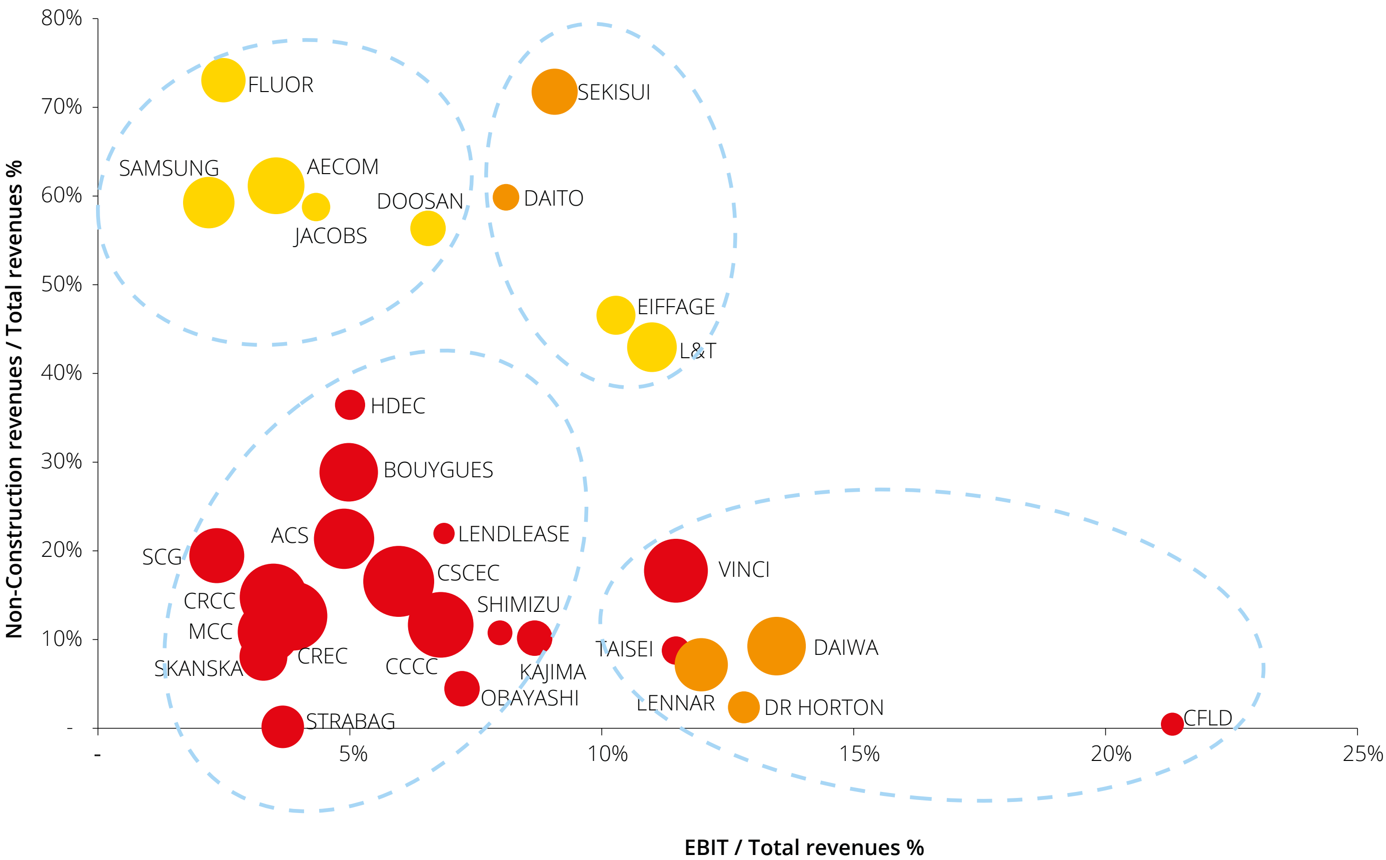
Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Company financials.

Diversification of the GPoC 2018

Non-construction activities performed by the GPoC are characterised by high operating margins, but higher diversification usually leads to higher indebtedness. Indian, South Korean and US-based companies recorded average diversification levels over 40%.

Operating profitability is lower in construction than in other GPoC activities due to the narrow margins and high level of competition (the average construction EBIT/sales margin was 5.5% and 5.3% in 2018 and 2017, respectively). Historically, construction groups have diversified their portfolio, providing non-construction services to the same construction customers or performing activities included in the infrastructure life cycle. This allows construction groups to increase synergies and harness their competitive advantages and knowledge of the sector. In our Top 30 GPoC strategies article, we classified certain groups under the categories of "Domestic conglomerates" and "International conglomerates", since they had a strong presence in other industries. The non-construction activities performed by these groups usually provide higher profitability, shorter life cycles and more recurrent revenue. However, there seems to be a correlation between the performance of other activities and the company's indebtedness, as non-construction activity usually requires

Figure 7.1: Top 30 GPoC EBIT (%) / Non-construction revenues (%)



The graph above identifies the groups through three main colours, according to each group's core business. The red companies are those whose main business is civil engineering and construction, the yellow are diversified companies that carry on other businesses and the orange are companies that are considered to be homebuilders.

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Company financials.

higher investment levels than construction activity, which historically has been a less capital-intensive sector.

The graph above identifies the groups through three main colours, according to each group's core business. The red companies are those whose main business is civil engineering and construction, the yellow are diversified companies that carry on other businesses and the orange are companies that are considered to be homebuilders.

Non-construction sales of our Top 30 GPoC represent 22% of total revenue, slightly below the 23% posted in 2017.

Highly diversified companies

The most diversified companies make up the first grouping: Fluor, Doosan, Jacobs, AECOM and Samsung. What these groups have in common is that they all recorded over 55% of their revenue from non-construction activities, while their EBIT/sales ratio is below 7%. In 2018 Fluor recorded operating losses in Construction, attributable to charges from a gas-fired power plant project that contributed to the lower margin. AECOM recorded lower operating income in the oil and gas sector. Jacobs Engineering's profitability was negatively affected by the acquisition and integration costs of CH2M, an international provider of engineering, construction and technical services. On the other hand, Samsung's operating profit slightly improved with respect to the 2017 figure, due to the better results of the Engineering and Construction segment.

Four companies with high diversification percentages of over 45% make up the second grouping. This includes Sekisui, Daito, Eiffage and Larsen & Toubro, which recorded greater profitability than the previous group, obtaining an average operating margin of 10%. Among these companies, Larsen & Toubro recorded one of the highest profitability figures (10.3% EBIT/sales ratio in 2018, compared with 8.7% in 2017). This increase in profits is partly explained by the implementation of a five-year strategic plan from 2017 to 2021 that includes moderating capital expenditure, divestments of non-core businesses and reduced involvement in asset-heavy businesses.

Less diversified companies

An additional grouping includes companies that obtained more than 60% of their revenue from construction activities. In turn, we split this category into two large subgroups: those with narrow margins, composed mainly of "pure" construction companies, and those with greater profitability, composed mainly of homebuilders.

The fifteen companies included in the first group recorded operating profitability below 10%. On average, these groups recorded an EBIT/revenue ratio of 5%, with 15% of their sales corresponding to non-construction activities.

Meanwhile, six companies are included in the last grouping, with an average 11% of revenue from non-construction activities and the strongest profitability reflected in an average 12% operating profit to sales ratio. Among these groups, CFLD is clearly an outlier with an operating profit to sales ratio of 21%. This improved performance is explained by a strong increase of 83% in revenue obtained outside the Beijing area, especially in the Hangzhou, Nanjing, Zhengzhou, Wuhan and Hefei metropolitan areas.

An analysis of the diversification strategies adopted by our GPoC shows that other

Figure 7.2: Top 30 GPoC sector presence

Company	Construction	Real Estate Development	Concessions	Industrial & Services	Services	Energy	Telecom	Other activities
CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD. (CSCEC)	✓✓✓	✓✓	✘	✓✓	✘	✘	✘	✘
CHINA RAILWAY GROUP LTD. (CREC)	✓✓✓	✓	✘	✓	✘	✘	✘	✓
CHINA RAILWAY CONSTRUCTION CORP. LTD. (CRCC)	✓✓✓	✓	✘	✓	✘	✘	✘	✓
CHINA COMMUNICATIONS CONSTRUCTION COMPANY LTD. (CCCC)	✓✓✓	✘	✓✓	✓	✘	✓	✘	✓
VINCI	✓✓✓	✓✓	✓✓✓	✓✓✓	✘	✓✓	✘	✘
METALLURGICAL CORPORATION OF CHINA LTD (MCC)	✓✓✓	✓✓	✘	✘	✘	✓	✘	✓
ACS, ACTIVIDADES DE CONSTRUCCION Y SERVICIOS SA (ACS)	✓✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✘	✓✓✓
BOUYGUES	✓✓✓	✓✓✓	✓✓	✓✓	✘	✓✓	✓✓✓	✓✓
DAIWA HOUSE INDUSTRY CO.	✓✓✓	✓✓✓	✘	✘	✘	✓	✘	✓
SAMSUNG C&T CORP.	✓✓✓	✓	✘	✓✓✓	✘	✓	✓	✓
SHANGHAI CONSTRUCTION GROUP (SCG)	✓✓✓	✓	✘	✓	✘	✘	✘	✘
LENNAR CORP.	✓✓✓	✓✓✓	✘	✘	✘	✓	✘	✓
AECOM	✓✓✓	✓	✓	✓✓✓	✘	✘	✘	✓✓
EIFFAGE SA	✓✓✓	✓✓	✓✓✓	✓✓✓	✘	✘	✘	✘
SKANSKA AB	✓✓✓	✓✓✓	✘	✓✓✓	✘	✘	✘	✘
SEKISUI HOUSE	✓✓✓	✓✓✓	✘	✘	✘	✘	✘	✓
FLUOR CORP.	✓✓✓	✘	✘	✓✓✓	✘	✓✓✓	✘	✓
STRABAG	✓✓✓	✓✓	✓✓	✓✓	✘	✓	✘	✓
LARSEN & TOUBRO LTD. (L&T)	✓✓✓	✘	✘	✓✓	✘	✓	✘	✓
OBAYASHI CORP.	✓✓✓	✓	✓	✘	✘	✘	✘	✘
DOOSAN	✓✓✓	✘	✘	✓	✘	✓	✘	✓
KAJIMA CORP.	✓✓✓	✓	✘	✘	✘	✘	✘	✘
DR HORTON, USA	✓✓✓	✓✓✓	✘	✘	✘	✘	✘	✘
HYUNDAI ENGINEERING & CONSTRUCTION CO. LTD. (HDEC)	✓✓✓	✘	✓	✓✓	✘	✘	✘	✘
JACOBS ENGINEERING	✓✓✓	✘	✘	✓✓✓	✓✓	✓		✓
TAISEI CORP.	✓✓✓	✓	✘	✘	✘	✘	✘	✘
DAITO TRUST CONSTRUCTION	✓✓✓	✓✓✓	✘	✘	✘	✘	✘	✓
SHIMIZU CORP.	✓✓✓	✓	✘	✘	✘	✘	✘	✘
CHINA FORTUNE LAND DEVELOPMENT (CFLD)	✓✓✓	✓✓✓	✘	✘	✘	✘	✘	✘
LENDLEASE	✓✓✓	✓	✘	✘	✘	✘	✘	✓

✓✓✓ Special focus ✓✓ Significant presence ✓ Limited presence ✘ No presence or residual presence

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Company financials.

than Construction, the segments into which our GPoC have diversified the most are Real Estate Development, Waste Management, Facility Management and Concessions.

In order to examine the specialists in these activities, we have identified the main listed players in each of the sectors mentioned: Concessions, Engineering & Industrial and Services, focused on Waste Management and Facility Management. Based on the financial information for these groups and the nature of the activities performed, the following ideas may be drawn:

Concessions

This sector is characterised by strong capital investment requirements to build infrastructure in order to meet current needs and demand, especially in emerging economies. Following the global financial crisis, governments are still adjusting their budget expenditures, but over recent years public expenditure has been slowly recovering.

Due to low government spending, numerous public-private partnerships between government agencies and private groups have been launched to finance and develop significant projects. These partnerships are mostly present in the construction of roads, hospitals and water infrastructure. As long as government expenditure continues to be limited, these partnerships could become more relevant and extend to different projects and other industries.

We have identified the following leading groups in the concessions industry, ranked by their total sales:

- Atlantia is a global player that manages and develops most Italian motorways, as well as highways and toll roads in other countries such as Brazil, Chile, India and Poland. 2018 was an eventful year for the company, with the subsidiary Austrade per l'Italia suffering the fatal collapse of the Morandi road bridge in Genoa. From a financial perspective, the group acquired 50% of the Spanish group Abertis with the objective of expanding its international presence. The group is operational in 22 countries and manages over 14,000 km of toll motorway, as well as the Fiumicino and Ciampino airports in Italy and airports in France, handling over 60 million passengers per year. The Italian company reported close to USD 8,200 million in revenue in 2018. The company has a net debt/(net debt + equity) ratio of 70%, in line with the average ratio for the companies analysed in this section that require high levels of investment.

- NWS Holdings is one of the leading infrastructure players in China, operating over 97 projects distributed over three main segments: Infrastructure, Services and Transport. The company carries on its activities across different regions throughout China. The Infrastructure division experienced robust growth in 2018. The Roads segment, included under Infrastructure, encompasses 15 projects across China, with over 700 km of roads. The Environment area includes 72 projects in 45 regions. The Logistics segment has a handling capacity of 16.5 million TEU (Twenty-foot Equivalent Unit) per year for rail container terminals and port projects. In addition, NWS owns more than 110 commercial aircraft for lease. Through its subsidiary SUEZ NWS limited, the company won the Dafa hazardous waste treatment project in Kaohsiung, Taiwan, with an annual capacity of 29,200 tonnes. The company reported sales of USD 5.4 billion, but the lowest operating income to sales percentage, at 14.6%. This reduced profit figure is due to the company's diversification into other businesses, such as services, transportation and others.

- In operation since 1996, Transurban is an integrated transport company that engages mainly in the development, operation, maintenance and financing of toll road assets, as well as the management of customer and

Figure 7.3: Leading Concessions groups

Company	Country	Sales ($ m)	EBIT ($ m)	EBIT/ Sales %	EBITDA ($ m)	EBITDA/ Sales %	Market cap 2018 ($ m)	Market cap 2017 ($ m)	Variation %	Net debt ($ m)	Equity ($ m)	Net debt/ (Net debt+Equity)	Net debt /EBITDA
Atlantia SpA	Italy	8,165	2,648	32.4%	4,448	54.5%	16,927	25,877	(34.6%)	43,454	18,710	69.9%	9.8
NWS Holdings	China	5,400	788	14.6%	1,012	18.7%	6,744	7,651	(11.8%)	5,317	7,575	41.2%	5.3
Transurban	Australia	2,556	758	29.7%	1,278	50.0%	16,693	18,670	(10.6%)	10,549	5,006	67.8%	8.3
John Laing	UK	530	414	78.1%	414	78.2%	2,077	1,459	42.3%	77	2,025	3.6%	0.2
Total Concession		**16,651**	**4,609**	**27.7%**	**7,153**	**43.0%**	**42,440**	**53,656**	**(20.9%)**	**59,396**	**33,316**	**64.1%**	**8.3**

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloomberg and company financials.

government relationships. The group operates mainly in various regions across Australia, the most representative being Melbourne, Sydney and Brisbane. The company is starting its overseas expansion with asset investments in North America (the 95 Express Lanes and 495 Express Lanes in West Virginia) and the A25 motorway in Canada. Most of the group's revenue comes from toll income, particularly from Sydney and Melbourne through the CityLink motorway, West Gate Tunnel, Lane Cove Tunnel and Cross City Tunnel, among other toll roads. In this sense, the revenue increase of 12% is explained by an 8% toll rise together with improved performance in other businesses. In terms of financial performance, the group recorded a 50% EBITDA/sales ratio, in line with the average of the other comparable companies. The company's net debt/(net debt + equity) ratio of 68% is also consistent with the average of the remaining companies analysed.

- John Laing is a British international originator, active investor and manager of greenfield infrastructure projects. The company has not been involved in building and construction since the sale of its Construction division in 2001. Overall, the company has invested in over 140 projects. The group's main operation is investment in public-private partnership (PPP) and renewable energy projects. In association with Fluor and Aberdeen Asset Management, the company has participated in the construction of a new commuter rail line in Denver, with approximate investment of USD 2.2 billion and the award of a 34-year term to operate the concession. The company has also invested in several renewable energy plants: the 255 MW Sunraysia Solar Farm, the Finley Solar Farm in Australia and the 175 MW solar project in New South Wales, amongst others. The company reported high EBIT/sales and EBITDA/sales ratios, since it is an active investor and manager but not a developer.

Concession activity is characterised by stable cash flows and high EBITDA margins, as well as high debt levels required to develop new infrastructure projects. As a result, concession companies tend to have high net debt to equity ratios in comparison with Engineering & Industrial and Services groups.

Vinci and Eiffage, the Top 30 GPoC companies with the strongest presence within the concession business, reported net debt to EBITDA ratios of 2.3 and 3.9, respectively, as compared with the average ratio of 8.3 calculated for the four concessions competitors analysed. Other GPoC with a significant presence in the concession business are ACS, Strabag, China Communications Construction Company LTD. (CCCC) of China.

Energy & Industrial

The companies included in this sector cover a diverse range of services, ranging from design and development to the construction, maintenance and operation of energy, industrial and mobility infrastructures. This market is dominated by highly specialised companies from China, the United Kingdom and Japan:

- Power Construction Corporation of China, also referred to as Powerchina, is one of the largest comprehensive solution providers for investment and financing, planning design, engineering construction and operation management for hydraulic and hydropower projects and infrastructure. In addition, it also undertakes functions such as national planning and reviews of hydropower, wind power, solar power and other clean energy and new energy sources. The company, set up in 2011, is wholly state-owned and was founded through the merger and acquisition of 14 regional electric power survey and design, engineering and equipment manufacturing companies. The company has developed the Yangtze Three Gorges Project, the largest hydropower plant in the world with a capacity of 22,500

Figure 7.4: Leading Energy & Industrial groups

Company	Country	Sales ($ m)	EBIT ($ m)	EBIT/ Sales %	EBITDA ($ m)	EBITDA/ Sales %	Market cap 2018 ($ m)	Market cap 2017 ($ m)	Variation %	Net debt ($ m)	Equity ($ m)	Net debt/ (Net debt+Equity)	Net debt /EBITDA
Power Construction Corporation of China	China	44,587	1,907	4.3%	2,239	5.0%	10,909	16,976	(35.7%)	42,906	7,947	84.4%	19.2
China Energy Engineering Group, Co. Ltd.	China	33,898	1,767	5.2%	1,968	5.8%	3,795	5,380	(29.5%)	6,264	13,841	31.2%	3.2
TechnipFMC plc	UK	12,600	(742)	(5.9%)	(65)	(0.5%)	8,821	14,562	(39.4%)	(1,013)	10,432	(10.8%)	15.6
Petrofac Ltd.	UK	5,829	61	1.0%	202	3.5%	2,048	2,343	(12.6%)	390	1,009	27.9%	1.9
JGC Corporation	Japan	6,525	194	3.0%	261	4.0%	5,497	4,386	25.3%	(1,203)	3,747	(47.3%)	(4.6)
Total Energy & Industrial		**103,439**	**3,186**	**3.1%**	**4,605**	**4.5%**	**31,068**	**43,647**	**(28.8%)**	**47,344**	**36,976**	**54.1%**	**10.3**

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloomberg and company financials.

MW and which is now fully operational. The EPC (Engineering, Procurement and Construction) segment is the most relevant segment, with projects such as the Shikalbaha Peaking Power Plant in Bangladesh, the Gomal Zam Dam in Pakistan and the Palito Thermal Power Plant in Venezuela, among others. Powerchina recorded a 5% EBITDA/sales ratio, which is higher than the peer group's 4.5% average. However, this company recorded the highest net debt due to the large scale of the projects under way and their significant capital requirements.

- China Energy Engineering Group Co, Ltd is a large group offering holistic solutions and full chain services in the energy, infrastructure and real estate sectors mainly in China. Since its incorporation, the company has won more than 600 science and technology awards at state and provincial levels. Major projects awarded in the year were the Kaliwa Dam in the Philippines, the Nam Dinh Phase I Coal-fired Power Plant in Vietnam and the wind power plant in Ukraine. Despite these international wins, the company's strength remains in China, where it developed the Xiong'an New Area, military civilian integration, the protection of the Yangtze River and the Guangdon-Hong Kong-Macao Greater Bay Area. The company reported the highest EBIT/sales and EBITDA/sales ratios at 5.2% and 5.8%, respectively.

- TechnipFMC is a UK global energy service company that provides solutions for the production and transformation of hydrocarbons. The three main business segments are Subsea, Onshore/Offshore and Surface Technologies. The Subsea segment engages in production systems that are placed on the seafloor and are used to control the flow of crude oil and natural gas from the reservoirs to the production facility. The company operates a fleet of 18 vessels. This segment also works to improve the uptime, costs and recovery of subsea production chains. The Onshore/Offshore segment offers a range of design and development services to customers spanning the value chain in larger EPC projects. The Surface

Technologies segment designs and manufactures production systems to extract crude oil and natural gas. These include high-pressure valves, flow lines and pumps in stimulation activities for oilfield service companies, as well as fracking systems and production and separation in the extraction process. The company recorded negative EBIT (USD 742 million), explained mainly by the USD 1,592 million impairment charges recorded in the Subsea segment in relation to goodwill and certain company vessels.

- Petrofac is an international service provider to the oil and gas production and processing industry, listed on the London Stock Exchange. The company's three divisions are Engineering & Construction (E&C), Engineering & Production Services (EPS) and Integrated Energy Services (IES). E&C is the largest segment, representing over 70% of the company's revenue. In the first half of 2018 the company was awarded contracts for the operation of Alrar and Reggane gas plants. Projects in Kuwait include the Lower Fars Heavy Oil, Manifold Group Trunkline and KNPC Clean Fuels projects. The most significant project at USD 1.25 billion is the Rabab Harweel Integrated Project in Oman, which will encompass gathering systems, sour gas processing facilities and injection systems. It is worth noting that the company reported one of the lowest net debt/EBITDA ratios at 1.9.

- Since 1928, JGC has executed 20,000 projects worldwide for the construction of plants and facilities serving a wide range of purposes, mainly in the oil and gas industries. The group also provides non-ferrous metal plants, pharmaceutical plants, hospitals and environmental facilities. The company is listed on the Tokyo Stock Exchange. In 2018 the construction of the LNG (liquefied natural gas) Canada project, which is expected to be active in 2025, was officially approved. The engineering and overall supervision of the project was awarded to a joint venture between JGC and Fluor Corporation, a group included in our Top 30 GpoC. The company's sales are evenly distributed: 30% come from Asia, 20% from Oceania, 25% from Africa and the Middle East and 22% from Europe and North America. At the end of March 2018, the company presented negative net debt.

The companies included in our Top 30 GPoC that operate in the Engineering & Industrial business, that include Vinci, ACS, Samsung C&T and Eiffage among others, have similar features and share comparable risks. The construction EBIT/Sales ratio of our GPoC was 5.5%, slightly higher than the average 3.1% achieved by their competitors. Similarly, the net debt/(net debt + equity) ratio of our GPoC was 29.6%, slightly lower than the competitors' average of 54.1%.

Services

With regard to services operations and given the wide range of services performed by major listed global players, we have selected those activities that most closely align with the types of services that our GPoC normally provide as part of their business portfolio. We understand these to be Waste Management and Facility Management services. For both subgroups we have identified the leading players, the data on which is analysed below.

The **Water & Waste Management** sector is focused on the treatment, collection, recycling and management of different types of waste. These services are usually outsourced by municipal entities.

- Veolia is one of the key players in the environmental services industry and offers a complete range of solutions for the management of water, waste and energy worldwide. The company is included in the Euronext Paris CAC 40 Index, with market cap of USD 11,373 million at the end of 2018. Veolia's mission is to optimise resources that are becoming increasingly scarce around the world. In 2018 the company recorded revenue of USD 30,590 million, segmented as follows: 42% from Water, 37% from Waste and 21% from Energy. Despite having the highest revenue in 2018 among the competitors, Veolia recorded the lowest operating profitability at 6.2%, well below the 10.9% waste management average.

- With sales of over USD 20 billion in 2018, Suez Environment is one of the main players in water and waste management. The Water activities cover solutions for the integrity of the value chain including optimisation and water pumping, treatment, storage and distribution, among others. In the Waste Management segment, the group handles collection, treatment, soil remediation, dismantling and disassembly of treatment plants. The company is carrying out several significant international projects, such as the removal of pollution at the Metaleurop Nord site in France, the Delta Electricity power plant in Australia and the Shanghai Chemical Industry Park. In line with our French GPoC, the group saw

Figure 7.5: Leading Waste Management groups

Company	Country	Sales ($ m)	EBIT ($ m)	EBIT/ Sales %	EBITDA ($ m)	EBITDA/ Sales %	Market cap 2018 ($ m)	Market cap 2017 ($ m)	Variation %	Net debt ($ m)	Equity ($ m)	Net debt/ (Net debt+Equity)	Net debt /EBITDA
Veolia Environnement	France	30,590	1,894	6.2%	4,005	13.1%	11,373	14,116	(19.4%)	11,168	8,184	57.7%	2.8
Suez Envionnement	France	20,461	1,576	7.7%	3,268	16.0%	8,158	10,901	(25.2%)	10,258	10,302	49.9%	3.1
Waste Management INC.	USA	14,914	2,789	18.7%	4,266	28.6%	37,730	37,395	0.9%	9,965	6,276	61.4%	2.3
Republic Services INC.	USA	10,041	1,736	17.3%	2,769	27.6%	23,249	22,426	3.7%	3,339	7,930	29.6%	1.2
Waste Connections, Inc.	USA	4,923	832	16.9%	1,566	31.8%	19,571	18,754	4.4%	3,856	6,460	37.4%	2.5
Total Waste Management		**80,929**	**8,827**	**10.9%**	**15,873**	**19.6%**	**100,081**	**103,592**	**(3.4%)**	**38,586**	**39,153**	**49.6%**	**2.4**

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019). Bloomberg and company financials.

its market capitalisation drop by 25% in 2018.

- Waste Management, Inc, listed on the NYSE (New York Stock Exchange), is the market leader in providing environmental solutions in North America. The company operates over 252 landfill sites and receives over 115,972 tonnes of solid waste. The group has a strong competitive advantage since it owns the largest network of landfills, transfer stations and recycling industry facilities. The Solid Waste segment is responsible for most of the company's revenue since the company does not operate in other segments such as water treatment. In line with its US peers, its market capitalisation increased between 5% and 10% with USD 37,730 million at year-end.

- Republic Services is the second-largest provider of non-hazardous solid waste collection, transfer, disposal, recycling and energy services in the United States. Also listed on the NYSE, the group is a close competitor of Waste Management. The company provides recycling and waste solutions to over 14 million customers, mostly to local municipalities in over 41 American states and Puerto Rico. In its fiscal year 2018, the company dedicated USD 200 million to acquisitions to increase its network and volume. In addition, the company also entered into certain public-private partnerships, which include the waste and recycling operations and facilities of municipal and other government bodies (this strategy has also been followed by the concession companies analysed). The strong free cash flows generated in recent years explain why it is the company with the lowest net debt and the lowest net debt to EBITDA ratio, which was 1.2 in 2018.

- Waste Connections is the third main player in non-hazardous solid waste collection and other services in North America, completing the top three for American waste companies. The group provides collection services to residential, commercial, municipal and industrial customers. It also provides landfill disposal services at infrastructure owned by municipalities that grant permits for the company to operate. The company invested USD 1.6 billion in acquisitions, acquiring over 20 companies. The largest company acquired was American Disposal Services, with an estimated USD 175 million in annual revenue. In terms of financial performance, the American group reported the largest EBITDA/sales ratio at over 30%, due to increases in E&P activity and price-led organic solid waste growth.

On average, the Waste Management sector reported higher profitability than the Facility Management sector, with EBIT/sales ratios of 10.9% and 5.8%, respectively. In line with the French GPoC, Veolia and Suez recorded decreases in their market capitalisation and had below-average profitability ratios. On the other hand, the US groups included in our analysis recorded higher profitably and increases in their market capitalisation. Some of the Top 30 GPoC that operate in this sector are ACS and Jacobs Engineering.

Facility Management includes companies that provide support services for the various organisations they serve; this usually includes private companies, schools, sports centres and various government sites.

- Compass Group is a company specialised in food services in the facility management sector. At 30 September 2018, the company was ranked 20th in the FTSE 100 Index, improving on its 25th position recorded in 2017. The company provides services in over 50 different countries and served more than 5.5 billion meals in 2018. The company recorded USD 31,277 million, with 59% of revenue obtained in North America, 25% in Europe and 16% in other regions. Although the company's core business is the provision of food services to businesses and industries, educational entities, and healthcare, sports and leisure facilities, it also provides facility management services such as hospital cleaning, reception services and school and university management services, among others. Compass Group has the largest market capitalisation at USD 35,371 million, almost doubling that of Sodexo, and reported a year-on-year increase of 5.5%.

- With over 460,000 employees worldwide, Sodexo provides a variety of facility and onsite services to organisations that are customised to different customer needs. The company's revenue by client segment is as follows: 51% from business & administrations, 24% from health care & senior and 21% from education. In

Figure 7.6: Leading Facility Management groups

Company	Country	Sales ($ m)	EBIT ($ m)	EBIT/ Sales %	EBITDA ($ m)	EBITDA/ Sales %	Market cap 2018 ($ m)	Market cap 2017 ($ m)	Variation %	Net debt ($ m)	Equity ($ m)	Net debt/ (Net debt+Equity)	Net debt /EBITDA
Compass Group	UK	31,277	2,343	7.5%	3,016	9.6%	35,371	33,535	5.5%	4,510	3,446	56.7%	1.5
Sodexo	France	24,319	1,188	4.9%	1,566	6.4%	15,145	17,310	(12.5%)	1,467	3,823	27.7%	0.9
Aramark	USA	15,790	826	5.2%	1,422	9.0%	10,615	9,974	6.4%	7,029	3,030	69.9%	4.9
ISS A/S	Denmark	11,657	669	5.7%	767	6.6%	5,157	7,147	(27.8%)	1,651	1,955	45.8%	2.2
G4S PLC	UK	10,025	338	3.4%	614	6.1%	3,895	5,603	(30.5%)	1,988	999	66.6%	3.2
Total Facility Management		**93,068**	**5,364**	**5.8%**	**7,385**	**7.9%**	**70,183**	**73,568**	**(4.6%)**	**16,645**	**13,254**	**55.7%**	**2.3**

Source: Deloitte. Global Powers of Construction (GPOC) 2018. (July 2019).
Bloomberg and company financials.

addition to the split by customer, services can also be divided into On-site Services (where Sodexo acts as a principal or agent of the service) and Benefits and Rewards Services, which include mainly commissions from clients and affiliates. In 2018 the group expanded its Sports & Leisure segment by acquiring Centerplate and The Good Eating Company in the United Kingdom, FoodChéri in France and the Singapore-based Kim Yew. Sodexo recorded the lowest net debt of the Facility Management companies, reporting net debt/(net debt + equity) of 27.7% and net debt/EBITDA of 0.9.

- Listed on the NYSE, Aramark is a global provider of food, facilities and uniform services to education, healthcare, business & industry and sports & leisure clients. The company was founded in 1959 and has expanded its business through organic growth and several acquisitions in recent years. In 2018 the company bought Avendra, a North American hospitality service provider. The food and support services originated close to 80% of revenue, while the uniform segment only accounted for approximately 10%. The uniform segment provides design, sourcing, manufacturing, delivery, cleaning and maintenance services on a contract basis. Aramark holds second position in the North America uniform services market.

- ISS is a Facility Service company founded in Denmark in 1901. It provides cleaning, support, property management, catering, security and other facility management services. 70% of the group's sales come from Northern and Continental Europe, and its second-most significant region is Asia and Pacific. In 2018 the company secured and retained the following customers: UBS, Nordea, PostNord Swisscom and hospitals in Turkey, Australia and the UK. It expects to maintain its positive performance based on the outlook for 2019, with 4% forecast growth.

- G4S is the world's leader in providing integrated security solutions and cash services for different companies. Secure solutions reported close to 85% of the company's revenue from its operations in over 90 countries and on 6 continents. On the other hand, cash solutions is the first or second market leader in most of the markets in which the company operates. At the end of 2018, G4S announced that the board was considering a possible spin-off of this segment from the rest of the group. The group reported the lowest profitability levels of the Facility Management companies due to the singularity of its activities.

The Facility Management segment can be characterised by low margins but high volume and recurrence of contracts. All of the companies analysed recorded positive EBIT and EBITDA; however, neither of these figures exceeded 10% of the companies' sales in each case. Aggregate market capitalisation decreased by 4.6% to USD 70,183 million, explained by the decreases posted by European companies. ACS and Skanska are some of the Top 30 GPoC that operate in this sector.

Real Estate

In addition to the sectors indicated above, it is worth mentioning the Real Estate sector. Although this is traditionally a very local business, it is closely related with the activities performed by our Top GPoC as we can appreciate in the analysis of their diversification strategies (Figure 9.2). The main listed players in this segment are Weyerhaeuser, American Tower, Host Hotels & Resorts, Welltower and Ventas, among others. These Top 5 Real Estate groups posted average EBIT Margin of 15% in 2018, higher than the 12% achieved from non- construction activities in our Top 30 GPoC (Figure 5.1).

Study methodology and data sources

Companies were included in the Top 100 Global Powers of Construction based on their total sales for 2018 (financial years ended in 2018). To be included in the ranking, a company must be publicly traded and the portion of revenue arising from building and civil works must be significant enough to qualify.

The Top 100 GPoC ranking by sales was prepared based on information taken from the ENR "Top 250 Global Contractors" ranking and the Forbes "Global 2000" list, filtered by "Construction Services". We have excluded from these rankings non-listed groups as well as groups whose main activity is engineering and which do not have a significant presence in the field of civil construction work. Listed entities consolidated into a larger group were also excluded from the ranking.

Several sources are consulted to prepare the GPoC publication. All the data in this edition were gathered from external sources, such as annual company reports, Euroconstruct, the European Commission, the International Monetary Fund, the World Bank, Forbes and ENR reports. The main data sources for financial and other company information are annual reports and information found in company press releases and fact sheets or on company websites.

In order to provide a common base from which to rank companies by their revenue figures, the revenue of non-US companies is converted to US dollars. Exchange rates, therefore, have an impact on the results. The average daily exchange rate corresponding to each company's fiscal year is used to convert that company's results to US dollars (see "Appendix - Exchange rates").

Group financial results are based only on companies with data. Not all items of data are available for all companies. It should also be noted that the financial information used for each company in a given year is accurate at the original date of issue of the financial report. Although a company may have restated prior year results to reflect a change in its operations or as a result of a change in accounting policy, such restatements are not reflected in this data.

This study is not an accounting report. It is intended to provide an analysis of the main financial indicators of the major players within the construction industry and reflect market dynamics and their impact on the industry over a period of time. As a result of these factors, growth rates for individual companies may not correspond to other published results.

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Appendix - Exchange rates

Currency	Date	Exchange rate
AED	From 01.01.2018 to 31.12.2018	3.673
AUD.	From 01.07.2017 to 30.06.2018	1.291
	30.06.2018	1.352
BRL	From 01.01.2018 to 31.12.2018	3.651
CAD.	From 01.01.2018 to 31.12.2018	1.296
CHF	From 01.01.2018 to 31.12.2018	0.978
	31.12.2018	0.983
CNY	From 01.01.2018 to 31.12.2018	6.609
	31.12.2018	6.876
DKK	From 01.10.2017 to 30.09.2018	6.261
	30.09.2018	6.416
GBP	From 01.01.2018 to 31.12.2018	0.749
	31.12.2018	0.784
	From 01.07.2017 to 30.06.2018	0.743
	30.06.2018	0.758
	From 01.08.2017 to 31.07.2018	0.742
	31.07.2018	0.762
	30.04.2018	0.727
ILS	From 01.01.2018 to 31.12.2018	3.595
INR	From 01.04.2017 to 31.03.2018	64.457
	31.03.2018	65.110
JPY	From 01.04.2017 to 31.03.2018	110.801
	31.03.2018	106.200
	From 01.02.2017 to 31.01.2018	111.796
	31.01.2018	109.310
KRW	From 01.01.2018 to 31.12.2018	1,099.293
	31.12.2018	1,112.850
KWD	From 01.01.2018 to 31.12.2018	0.331
MEX.	From 01.01.2018 to 31.12.2018	19.218
NOK	From 01.01.2018 to 31.12.2018	8.132
PER.	From 01.01.2018 to 31.12.2018	3.287
SEK	From 01.01.2018 to 31.12.2018	8.694
	31.12.2018	8.865
TRY.	From 01.01.2018 to 31.12.2018	4.840
TWD.	From 01.01.2018 to 31.12.2018	30.135
EUR	From 01.01.2018 to 31.12.2018	0.847
	31.12.2018	0.873

* All Exchange rates used are to convert the value of one Dolar. Fred.stlouisfed.org is the source for the exchange rates.

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