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GPoC 2019
Global Powers of Construction

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Introduction

Global Powers of Construction reviews the outlook of the construction industry worldwide and analyzes the strategies and performance of the most representative listed global construction groups in 2019.

We are pleased to present the third edition of Global Powers of Construction, a publication in which we identify, list and outline the world's major listed construction groups and provide insights in terms of macroeconomic expectations and innovation trends within the industry. The data included in this edition of GPoC is the product of a comprehensive review of different external sources, such as annual company reports, Euroconstruct, the European Commission, the International Monetary Fund, the World Bank, Forbes and ENR reports. The analysis has also benefited from comments and suggestions by Deloitte professionals from different countries.

As in previous editions, this publication includes an analysis of the current macroeconomic outlook and expectations for coming years in the global construction industry. During the last three years the construction market grew at a moderate pace but the slight deceleration noted in 2019 combined with the outbreak of the COVID-19 pandemic, have negatively impacted forecasts for 2020 and have increased uncertainty levels for the

subsequent years. Nevertheless, global need for infrastructure over the next 30 years is still huge, since only 25% of the infrastructure required for 2050¹ exists today.

This edition also analyzes the main financial indicators of the major players within the industry. Performance in terms of revenue, market capitalization, international presence, diversification, profitability, indebtedness and other financial ratios are examined throughout this publication. In 2019 the aggregate sales and market capitalization of the Top 100 GPoC rose by 5% and 4% respectively (see Figure 1.1). However, as of 31 March 2020 the market value of our GPoC had generally shrank as a result of the unprecedented economic conditions created by the COVID-19 pandemic (see Figure 2.2).

Regarding our analysis of internationalisation and diversification strategies, we have assessed the current levels reached by the Top 30 main industry players on the global market. In 2019 international and non-construction sales remained in line with 2018 and

represented around 19% and 20% of total sales, respectively. We have also identified the leading players in non-construction activities such as concessions, engineering and services, and their main financial information has been compared with that of our GPoC.

In addition, we include 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. In terms of digitalization, the groups analysed have made inroads into the digital world, but very few have been able to scale beyond certain pilot projects.

We hope that you find our GPoC 2019 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 about any of the topics covered.

Ranking of listed global construction companies

Total revenue obtained by the GPoC increase by 5% in 2019, with only 10 groups recording double-digit increases. As in prior years, Chinese companies dominate the Top 100 ranking in terms of revenue, representing 44% of the total.

The Top 100 listed construction companies contain many Chinese, Japanese, US and UK companies. All these countries have more than 10 groups in the ranking.

The total revenue obtained by the GPoC in 2019 (Figure 1.1) amounted to USD 1,462 trillion, 5% higher than in 2018. By geographical areas, the largest companies in terms of revenue are based in China,

Europe (particularly France and Spain), Japan, the United States and South Korea; these companies account for 44%, 24%, 13%, 9% and 6% of total sales, respectively (Figure 1.2). Among the Top 100 GPoC, over

Figure 1.1: Top 100 Global Construction Companies by Country

Country	Number of companies in the top 100	2019 Sales (USD million)	% change 2018-2019	% change in local currency 2018-2019	2019 market capitalization (USD million)	% change 2018-2019	% change in local currency 2018-2019
AUSTRALIA	1	11,830	(8%)	(0%)	5,104	(40%)	(37%)
AUSTRIA	2	23,003	(3%)	2%	4,069	13%	16%
BELGIUM	1	4,058	(6%)	(0%)	2,766	10%	13%
BRAZIL	1	1,536	4%	12%	2,380	70%	75%
CANADA	2	9,779	(5%)	(3%)	4,871	(27%)	(31%)
CHINA	12	643,423	11%	16%	106,323	(12%)	(13%)
DENMARK	1	2,032	5%	11%	611	(15%)	(9%)
FINLAND	1	3,797	(13%)	(8%)	1,397	14%	16%
FRANCE	3	117,173	3%	9%	94,652	34%	37%
GERMANY	1	1,647	(12%)	(7%)	291	(58%)	(57%)
GREECE	3	6,176	9%	15%	2,857	44%	47%
INDIA	1	5,246	(7%)	(2%)	28,031	(1%)	6%
ISRAEL	1	2,028	25%	25%	1,618	87%	87%
ITALY	1	5,968	(7%)	(2%)	1,608	101%	105%
JAPAN	15	190,608	6%	6%	92,084	(15%)	(12%)
MEXICO	1	5,324	6%	6%	6,710	3%	(1%)
NETHERLANDS	3	17,296	(0%)	5%	2,976	32%	35%
NORWAY	1	4,156	(5%)	3%	1,837	23%	24%
PORTUGAL	1	3,188	(4%)	1%	499	14%	16%
SOUTH KOREA	7	83,182	(10%)	(5%)	27,164	(12%)	(9%)
SPAIN	6	73,544	(0%)	5%	47,035	23%	26%
SWEDEN	4	31,785	(7%)	1%	16,098	35%	34%
SWITZERLAND	1	4,459	(0%)	2%	750	21%	19%
TAIWAN	1	1,884	(11%)	(9%)	971	(12%)	(14%)
THAILAND	1	2,004	7%	3%	264	(24%)	(30%)
TURKEY	2	4,466	(17%)	10%	6,596	14%	28%
U.A.E.	2	5,304	(7%)	(15%)	987	(36%)	(53%)
UK	11	52,742	(2%)	2%	43,961	13%	12%
USA	13	130,197	2%	2%	93,027	23%	23%
TOTAL	100	1,461,841	5%	(2%)	597,537	4%	3%

Source: Global Powers of Construction (GPoC) 2019. (July 2020). Bloomberg and company financials.



half of the companies recorded an increase in sales (as reported in US dollars) and ten were able to achieve double-digit increases. On the contrary, thirteen companies reported revenue contractions of more than 10%.

As regards the GPoCs' stock market performance, total value increased from USD 572,955 million to USD 597,537 million (4%). The significant market capitalization growth observed in Europe and the United States (more than 20%) was almost offset by the double-digit downturn experienced by Chinese and Japanese groups (Figure 1.1). Chinese companies' performance in the stock markets started to be affected by the outbreak of the COVID-19 in Wuhan in December 2019.

As in previous years, China State Construction Engineering, which reported over USD 200,000 million of revenues in 2019, leads the ranking. The podium, which was completed by the Chinese companies China Railway Group and China Railway Construction, accounts for approximately 31% of our GPoCs' total revenue (Figure 1.2).

By number of companies, Europe has the largest presence in the industry with 40 groups included in the Top 100 ranking. Aggregate sales remained stable from the previous year, amounting to USD 350,094 million, while market capitalization rose sharply, by 26%. In terms of revenue, Vinci, ACS and Bouygues, which are ranked in 5th, 7th and 8th position, respectively, represent the largest European construction companies (Figure 1.2). It is worthy of note that the French company Vinci, which reported about half of the sales obtained by the Chinese giants, leads the market capitalization ranking of the Top 100 GPoC companies (Figure 2.1).

Japan took second place in the ranking by number of companies (15). Aggregate sales increased by 6% to USD 190,608 million (Figure 1.1). The largest Japanese companies, Daiwa House Industry and Sekisui House, placed in 9th and 16th position, respectively, mainly focus on homebuilding.

With 13 companies included in the Top 100 ranking, the United States has an extensive presence within the industry (Figure 1.1).

Total revenue grew slightly (2%), while market capitalization jumped by 23%. The largest US companies, Lennar and AECOM, are ranked in 12th and 15th position with sales of over USD 20,000 million each (Figure 1.2).

The South Korean presence in the ranking is headed by Samsung C&T, Doosan and Hyundai E&C, all of which are among the Top 30 companies in terms of revenue. 2019 was a tough year for South Korean companies: both aggregate sales and market capitalization decreased, by 10% and 12%, respectively.

The remaining members of the ranking are medium-sized companies located in areas such as India, Australia, Canada, United Arab Emirates, Turkey and Mexico. Aggregate sales represent approximately 4% of the GPoCs' total revenue. Among these companies, 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 2019	Company	Country	2019 Sales (USD million)	% change 2018-2019 (a)	% change in local currency 2018-2019 (a)	2019 market capitalization (USD million)	% change 2018-2019	% change in local currency 2018-2019
1	CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD. (CSCEC)	CHINA	205,531	13%	18%	33,213	(3%)	(1%)
2	CHINA RAILWAY GROUP LTD. (CREC)	CHINA	123,165	10%	15%	15,173	(27%)	(26%)
3	CHINA RAILWAY CONSTRUCTION CORP. LTD. (CRCC)	CHINA	120,214	9%	14%	14,871	(21%)	(30%)
4	CHINA COMMUNICATIONS CONSTRUCTION GROUP LTD. (CCCC)	CHINA	79,984	8%	13%	13,186	(14%)	(13%)
5	VINCI	FRANCE	53,792	5%	10%	67,271	36%	39%
6	METALLURGICAL CORPORATION OF CHINA LTD (MCC)	CHINA	49,020	12%	17%	4,656	(6%)	(5%)
7	ACS. ACTIVIDADES DE CONSTRUCCION Y SERVICIOS. S.A. (ACS)	SPAIN	43,712	1%	7%	12,141	2%	4%
8	BOUYGUES	FRANCE	42,459	1%	7%	16,156	21%	23%
9	DAIWA HOUSE INDUSTRY CO.	JAPAN	37,368	9%	9%	21,088	(18%)	(14%)
10	SHANGHAI CONSTRUCTION GROUP (SCG)	CHINA	29,747	15%	20%	4,519	15%	17%
11	SAMSUNG C&T CORP.	SOUTH KOREA	26,387	(7%)	(1%)	15,356	(1%)	3%
12	LENNAR CORP.	USA	22,260	8%	8%	18,843	36%	36%
13	EIFFAGE. S.A.	FRANCE	20,922	5%	11%	11,225	39%	42%
14	LARSEN & TOUBRO LTD. (L&T)	INDIA	20,182	9%	18%	28,031	(1%)	6%
15	AECOM	USA	20,173	0%	0%	5,915	15%	15%
16	SEKISUI HOUSE	JAPAN	19,596	1%	0%	10,282	(18%)	(14%)
17	FLUOR CORP. (b)	USA	19,167	0%	0%	2,646	(41%)	(41%)
18	OBAYASHI CORP.	JAPAN	18,395	7%	7%	7,217	(8%)	(4%)
19	SKANSKA AB	SWEDEN	18,270	(8%)	1%	9,317	43%	53%
20	KAJIMA CORP.	JAPAN	17,805	8%	8%	7,655	(21%)	(17%)
21	DR HORTON	USA	17,593	9%	9%	19,420	22%	22%
22	STRABAG	AUSTRIA	17,540	(2%)	3%	3,572	19%	21%
23	DOOSAN	SOUTH KOREA	15,900	(6%)	0%	823	(45%)	(43%)
24	CHINA FORTUNE LAND DEVELOPMENT (CFLD)	CHINA	15,230	20%	26%	12,279	12%	14%
25	SHIMIZU CORP.	JAPAN	15,015	9%	10%	6,814	(3%)	1%
26	TAISEI CORP.	JAPAN	14,888	4%	4%	10,121	(11%)	(7%)
27	HYUNDAI ENGINEERING & CONSTRUCTION CO. LTD. (HDEC)	SOUTH KOREA	14,821	(3%)	3%	4,078	(25%)	(23%)
28	DAITO TRUST CONSTRUCTION	JAPAN	14,350	2%	2%	10,098	(22%)	(19%)
29	JACOBS ENGINEERING	USA	12,738	(15%)	(15%)	12,051	11%	11%
30	IIDA GROUP HOLDINGS	JAPAN	12,130	1%	1%	5,220	(3%)	1%
31	LENLEASE	AUSTRALIA	11,830	(8%)	0%	5,104	(40%)	(37%)
32	SUMITOMO FORESTRY	JAPAN	11,804	7%	7%	2,517	(14%)	(10%)
33	BALFOUR BEATTY	UK	10,732	3%	8%	2,391	9%	5%
34	PULTEGROUP	USA	10,213	0%	0%	10,485	46%	46%
35	GS ENGINEERING & CONSTRUCTION	SOUTH KOREA	8,935	(25%)	(21%)	2,135	(31%)	(28%)
36	DAELIM INDUSTRIAL CO. LTD.	SOUTH KOREA	8,321	(1%)	5%	2,727	(15%)	(17%)
37	ROYAL BAM GROUP NV	NETHERLANDS	8,070	(5%)	0%	824	5%	7%
38	ACCIONA	SPAIN	8,049	(9%)	(4%)	5,778	19%	22%
39	HASEKO	JAPAN	8,035	9%	10%	3,737	(18%)	(14%)
40	SICHUAN ROAD AND BRIDGE GROUP CO. LTD.	CHINA	7,632	26%	32%	1,742	1%	2%
41	VOLKERWESSELS	NETHERLANDS	7,435	6%	12%	1,972	56%	59%
42	DAEWOO ENGINEERING & CONSTRUCTION CO.	SOUTH KOREA	7,421	(23%)	(18%)	1,686	(15%)	(12%)
43	NVR	USA	7,221	3%	3%	13,835	59%	59%
44	SNC-LAVALIN INC.	CANADA	7,171	(8%)	(6%)	4,051	(32%)	(35%)
45	TOLL BROTHERS	USA	7,080	(1%)	(1%)	5,605	14%	14%
46	FOMENTO DE CONSTRUCCIONES Y CONTRATAS. S.A.	SPAIN	7,026	(1%)	5%	4,810	(5%)	(3%)
47	FERROVIAL	SPAIN	6,777	0%	6%	22,266	49%	52%
48	BARRATT DEVELOPMENTS PLC	UK	6,167	(6%)	(2%)	7,393	7%	12%
49	NCC AB	SWEDEN	6,156	(7%)	2%	1,759	5%	10%
50	SALINI IMPREGILO SPA	ITALY	5,968	(7%)	(2%)	1,608	101%	105%
51	HEBEI CONSTRUCTION GROUP CORPORATION LTD.	CHINA	5,946	(16%)	(12%)	1,095	22%	23%
52	KIER GROUP PLC	UK	5,799	(5%)	(1%)	219	(82%)	(82%)
53	PEAB AB	SWEDEN	5,709	(5%)	3%	2,958	23%	30%

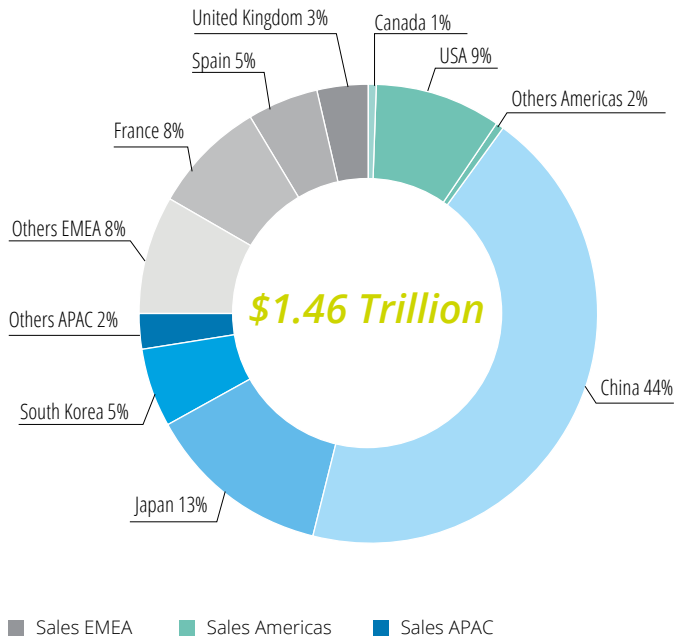
Rank 2019	Company	Country	2019 Sales (USD million)	% change 2018-2019 (a)	% change in local currency 2018-2019 (a)	2019 market capitalization (USD million)	% change 2018-2019	% change in local currency 2018-2019
54	TAYLOR WIMPEY PLC	UK	5,543	2%	6%	8,421	48%	42%
55	PORR AG	AUSTRIA	5,463	(7%)	(2%)	497	(13%)	(11%)
56	GRUPO CARSO	MEXICO	5,324	6%	6%	6,710	3%	(1%)
57	PENTA-OCEAN CONSTRUCTION CO. LTD.	JAPAN	4,888	3%	3%	1,322	(37%)	(34%)
58	SACYR. S.A.	SPAIN	4,667	4%	10%	1,699	54%	57%
59	PERSIMMON PLC	UK	4,660	(7%)	(2%)	11,391	46%	40%
60	TODA CORP.	JAPAN	4,603	19%	19%	1,882	(15%)	(12%)
61	IMPLENIA AG	SWITZERLAND	4,459	0%	2%	750	21%	19%
62	TUTOR PERINI CORP.	USA	4,451	0%	0%	647	(19%)	(19%)
63	MAEDA CORP.	JAPAN	4,438	5%	5%	1,677	(25%)	(22%)
64	VEIDEKKE ASA	NORWAY	4,156	(5%)	3%	1,837	23%	24%
65	BELLWAY PLC	UK	4,139	4%	9%	4,468	(5%)	2%
66	CFE	BELGIUM	4,058	(6%)	0%	2,766	10%	13%
67	SUMITOMO MITSUI CONSTRUCTION CO. LTD.	JAPAN	4,047	7%	8%	1,118	16%	21%
68	MORGAN SINDALL PLC	UK	3,921	(1%)	3%	977	60%	54%
69	BERKELEY GROUPS HOLDINGS	UK	3,860	7%	9%	6,866	(8%)	(8%)
70	YIT OYJ	FINLAND	3,797	(13%)	(8%)	1,397	14%	16%
71	SINOMA INTERNATIONAL ENGINEERING CO. LTD.	CHINA	3,528	8%	13%	1,739	26%	27%
72	GALLIFORD TRY PLC	UK	3,508	(10%)	(8%)	889	(31%)	(28%)
73	GRANITE CONSTRUCTION INC.	USA	3,318	0%	0%	1,889	0%	0%
74	OBRASCON HUARTE LAIN. S.A.	SPAIN	3,313	(3%)	2%	341	59%	63%
75	HAZAMA ANDO CORP.	JAPAN	3,246	(5%)	(5%)	1,336	(5%)	(1%)
76	MOTA ENGIL SGPS	PORTUGAL	3,188	(4%)	1%	499	14%	16%
77	ORASCOM CONSTRUCTION LTD.	U.A.E.	3,184	6%	6%	724	(6%)	(6%)
78	PRIMORIS SERVICES CORP.	USA	3,106	6%	6%	1,082	12%	12%
79	KELLER GROUP PLC	UK	2,937	(1%)	3%	717	58%	52%
80	AECON GROUP INC.	CANADA	2,608	3%	6%	820	5%	0%
81	TEKFEN HOLDING AS	TURKEY	2,573	3%	20%	1,201	(17%)	(7%)
82	MYTILINEOS HOLDINGS	GREECE	2,526	40%	48%	1,569	32%	34%
83	ARABTEC HOLDING PJSC	U.A.E.	2,120	(21%)	(21%)	263	(66%)	(66%)
84	PER AARSLEFF HOLDING	DENMARK	2,032	(5%)	11%	611	(15%)	(9%)
85	ELECTRA LTD.	ISRAEL	2,028	25%	25%	1,618	87%	87%
86	ITALIAN-THAI DEVELOPMENT PUBLIC CO. LTD.	THAILAND	2,004	7%	3%	264	(24%)	(30%)
87	ENKA INSAAT VE SANAYI AS	TURKEY	1,893	(34%)	(34%)	5,395	25%	40%
88	CTCI CORP.	TAIWAN	1,884	(11%)	(9%)	971	(12%)	(14%)
89	OCEANWIDE HOLDINGS	CHINA	1,877	(4%)	1%	3,395	(4%)	(6%)
90	HEIJMANS NV	NETHERLANDS	1,791	(4%)	1%	180	(8%)	(6%)
91	JM AB	SWEDEN	1,650	(11%)	(3%)	2,064	52%	60%
92	BAUER AG	GERMANY	1,647	(12%)	(7%)	291	(58%)	(57%)
93	FULLSHARE HOLDING LIMITED	CHINA	1,616	4%	8%	455	(90%)	(91%)
94	COSTAIN GROUP PLC	UK	1,476	(24%)	(21%)	229	(47%)	(49%)
95	MRV ENGENHARIA	BRAZIL	1,536	4%	12%	2,380	70%	75%
96	INFRASTRUCTURE & ENERGY ALTERNATIVES INC..	USA	1,460	87%	87%	66	(64%)	(64%)
97	ELLAKTOR SA	GREECE	1,426	(35%)	(31%)	409	66%	70%
98	MATRIX SERVICE CO.	USA	1,417	26%	26%	543	10%	10%
99	HANJIN HEAVY INDUSTRIES & CONSTRUCTION CO. LTD.	SOUTH KOREA	1,397	(10%)	(4%)	359	127%	137%
100	GEK TERNA	GREECE	1,294	(22%)	(18%)	879	63%	66%
TOTAL			1,416,841	4%	12%	597,537	4%	3%

Source: Global Powers of Construction (GPoC) 2019. (July 2020).
Bloomberg and company financials.

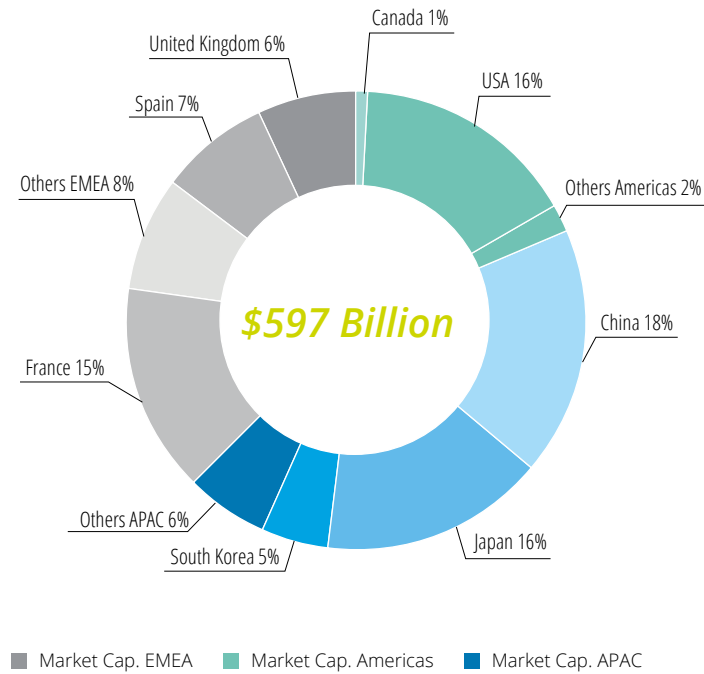
a) % variation is calculated over total sales included in 2018's financial statements, without considering any subsequent restatement.
b) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.
To understand how the Top 100 GPoC ranking by sales was drawn up, please refer to the methodology note on page 50.

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

Sales



Market capitalization



Top 30 GPoC – ranking by market capitalization

In 2019 our GPoC reported a strong overall performance in the stock markets despite the uncertainties surrounding the commercial tensions between the United States and China, the discussions on the final terms of Brexit and the persistent political and economic crises in the Middle East and Latin America, among other factors. Nevertheless, the unpredictable outbreak of COVID-19 did impact the market value of the main Chinese groups at the end of 2019; for the rest of the regions, market prices have suffered drops at the end of first quarter of 2020.

The aggregate market capitalization of the companies in our ranking increased by 8% in 2019 to USD 459,175 million (Figure 2.1). In terms of the geographical distribution,

Japan is the country with most companies on the list (seven), while both the US and China are represented by five companies. It should also be noted that ten European

groups are included in this ranking. Eleven companies reported increases of more than 20% while market value fell at fourteen groups within the list.

Figure 2.1: Top 30 Global Construction Companies by Market Capitalization

Rank	Company	Country	2019 market capitalization (USD million)	2018 market capitalization (USD million)	% change	% change in local currency
1	VINCI	FRANCE	67,271	49,299	36%	39%
2	CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD. (CSCEC)	CHINA	33,213	34,102	(3%)	(1%)
3	LARSEN & TOUBRO LTD. (L&T)	INDIA	28,031	28,202	(1%)	6%
4	FERROVIAL	SPAIN	22,266	14,964	49%	52%
5	DAIWA HOUSE INDUSTRY CO.	JAPAN	21,088	25,659	(18%)	(14%)
6	DR HORTON	USA	19,420	15,871	22%	22%
7	LENNAR CORP.	USA	18,843	13,855	36%	36%
8	BOUYGUES	FRANCE	16,156	13,365	21%	23%
9	SAMSUNG C&T CORP.	SOUTH KOREA	15,356	15,488	(1%)	3%
10	CHINA RAILWAY GROUP LTD. (CREC)	CHINA	15,173	20,796	(27%)	(28%)
11	CHINA RAILWAY CONSTRUCTION CORP. LTD. (CRCC)	CHINA	14,871	18,829	(21%)	(30%)
12	NVR	USA	13,835	8,719	59%	59%
13	CHINA COMMUNICATIONS CONSTRUCTION GROUP LTD. (CCCC)	CHINA	13,186	15,282	(14%)	(13%)
14	CHINA FORTUNE LAND DEVELOPMENT (CFLD)	CHINA	12,279	10,933	12%	14%
15	ACS, ACTIVIDADES DE CONSTRUCCION Y SERVICIOS, S.A. (ACS)	SPAIN	12,141	11,941	2%	4%
16	JACOBS ENGINEERING	USA	12,051	10,880	11%	11%
17	PERSIMMON PLC	UK	11,391	7,802	46%	40%
18	EIFFAGE, S.A.	FRANCE	11,225	8,075	39%	42%
19	PULTEGROUP	USA	10,485	7,202	46%	46%
20	SEKISUI HOUSE	JAPAN	10,282	12,608	(18%)	(14%)
21	TAISEI CORP.	JAPAN	10,121	11,401	(11%)	(7%)
22	DAITO TRUST CONSTRUCTION	JAPAN	10,098	12,970	(22%)	(19%)
23	SKANSKA AB	SWEDEN	9,317	6,506	43%	53%
24	TAYLOR WIMPEY PLC	UK	8,421	5,693	48%	42%
25	KAJIMA CORP.	JAPAN	7,655	9,644	(21%)	(17%)
26	BARRATT DEVELOPMENTS PLC	UK	7,393	6,887	7%	12%
27	OBAYASHI CORP.	JAPAN	7,217	7,866	(8%)	(4%)
28	BERKELEY GROUPS HOLDINGS	UK	6,866	7,445	(8%)	(8%)
29	SHIMIZU CORP.	JAPAN	6,814	7,024	(3%)	1%
30	GRUPO CARSO	MEXICO	6,710	6,509	3%	(1%)
TOTAL			459,175	425,815	8%	4%

Source: Global Powers of Construction (GPoC) 2019. (July 2020).
Bloomberg

In aggregate terms, the performance of our GPOC in the stock markets was robust in 2019, but a more in-depth analysis by geographical area is included below:

Asian companies

Chinese and Japanese companies experienced significant contractions compared to 2018, with overall aggregate market capitalization decreases of 11% and 16%, respectively. Among the Chinese companies, only China Fortune Land Development saw an increase in its market capitalization during the year, while China Railway Group reported the largest reduction in relative terms (27%). None of the Japanese groups analyzed increased its market value in 2019.

Finally, Larsen & Toubro, ranked in 14th position in terms of total sales, continues to be one of the Top 3 most valuable companies within our GPOC.

European companies

The total market value of the European groups increased by 33%, 5% below the rise in the STOXX Europe 600 Construction

& Materials (38%). Except for Berkeley Groups Holdings, all the European groups experienced increases in their market capitalization in 2019.

It is worth noting the 49% growth achieved by the Spanish Ferroviario group (the performance of which was one of the best recorded by companies in the Spanish IBEX 35 index in 2019) and the 48% achieved by Taylor Wimpey, a company not ranked in the Top 30 in 2018.

The three French companies included in the ranking obtained increases above 20%, in line with the growth recorded by the CAC 40 index, the highest since 2007. Vinci, which achieved the highest increase in absolute terms (USD 18,000 million approximately), has strengthened its position as the top construction company in terms of market value, doubling the gap with its closest rival China State Construction Engineering.

US companies

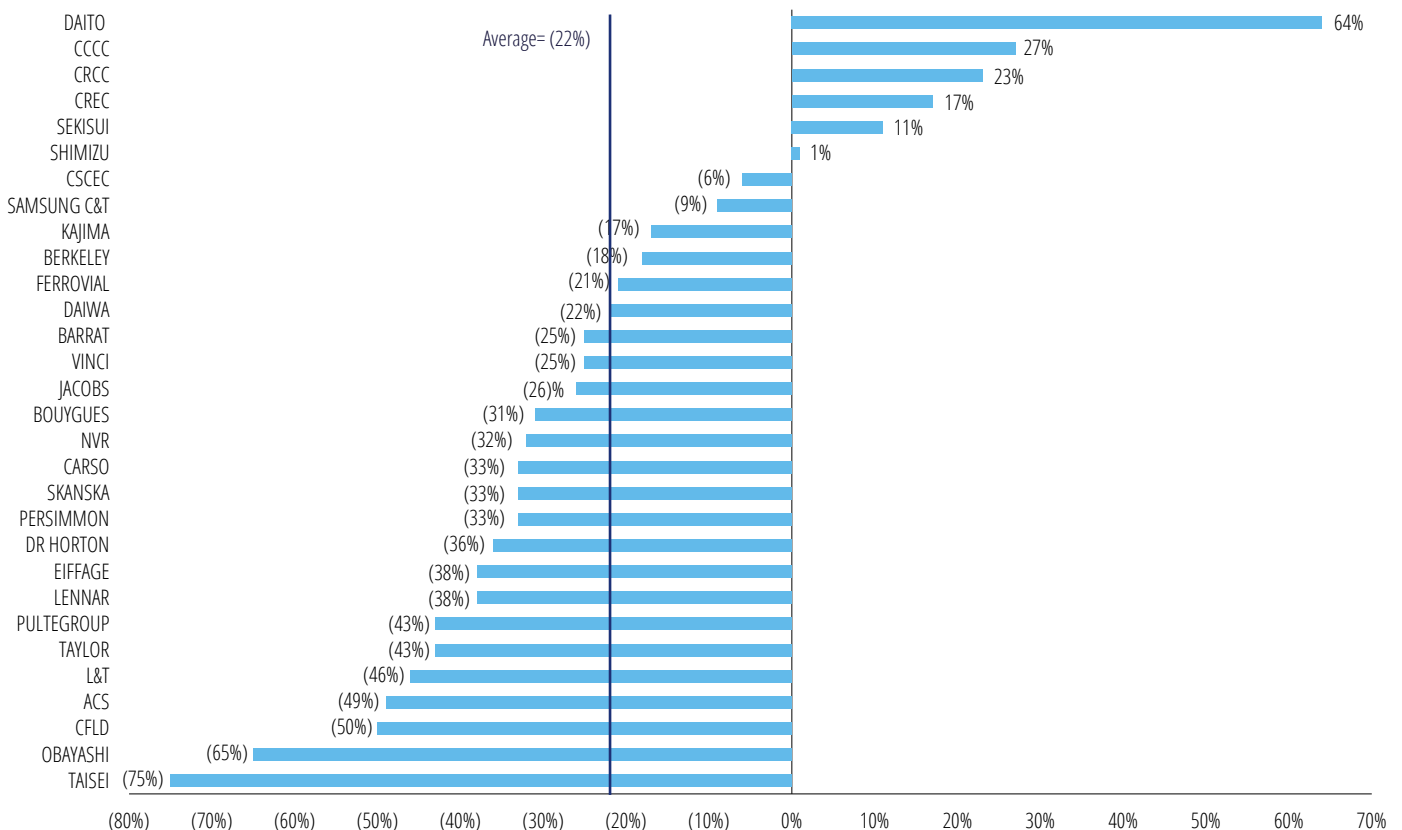
US groups recorded a 32% increase in their market capitalization. While DR Horton and

Lennar lead the US ranking, as in 2018, NVR is the company that reported the highest increase in percentage terms, jumping to 12th position from 20th in 2018.

In this scenario, the aggregate market capitalization of our Top 30 GPOC at the end of 2019 was far above the figures reported in the middle of the financial crisis that started in 2008. Almost all the companies recorded market value increases in that period, with China Fortune Land Development and Lennar leading the ranking (in relative terms).

Nevertheless, the outbreak of COVID-19 has had a profound impact on the stock markets. From December 2019 to March 2020, the aggregate market capitalization of the companies in our ranking went down by 22% (Figure 2.2). Only six groups (all of them from Asia) saw their market price increase in the first quarter of 2020. A partial recovery is expected by 2021, assuming that the pandemic is under control by the second half of 2020.

Figure 2.2: Market Capitalization change FY 2019 vs March 2020



Source: Global Powers of Construction (GPOC) 2019. (July 2020). Bloomberg

Top 30 GPoC – ranking by international sales

In 2019 our GPoC obtained around 19% of total revenue outside their respective domestic markets, which highlights the companies' efforts to seek growth opportunities abroad.



As described in the “Outlook for the construction industry” section, global economic prospects became uncertain as a result of the outbreak of the COVID-19 pandemic.

The global economy is projected to contract by 3% in 2020 and rebound by 5.8% in 2021 if the pandemic recedes in the second half of 2020². Also, current forecasted growth for the construction industry in 2020 is estimated at 0.5%, but figures will vary across regions depending on the efforts and policies that governments implement. In emerging regions, a 2% fall is expected in 2020 before a rebound to 5% in 2021, while advanced economies will see a contraction of 1.5% in 2020 followed by a 2% increase in 2021³.

In this context, those companies that developed internationalization strategies in the past and do not have a significant reliance on their domestic markets are in a good position to compete in an international marketplace that, in the short term, may become even more competitive than it used to be.

As in previous years, in 2019 our GPoC obtained around 19% of total revenue outside their respective domestic markets, which highlights the companies' efforts to seek growth opportunities abroad. Excluding the Chinese and Japanese groups under analysis, which have a lower international footprint (international income represents 7% and 8% of their total sales, respectively), most companies

achieved higher internationalization levels. By geographical area, the most internationalized companies are the European groups (55%), followed by the US-based GPOC (20%). ACS remained the largest international contractor among our GPOC (86% of total income obtained outside its home market). Other European groups, Vinci, Bouygues and Skanska as

well as the Chinese firm CSCEC, complete the Top 5 International contractors (Figure 3.1). Similarly, South Korean companies, which in recent years have focused on exploring new markets, including North America and Europe, have increased their international presence to 42%.

Figure 3.1: Top 30 Global Construction Companies by 2019 International and Domestic Sales

Rank	Company	Country	International sales (USD million)	Domestic sales (USD million)	International sales as % of total sales
1	ACS	SPAIN	37,647	6,066	86%
2	VINCI	FRANCE	24,343	29,449	45%
3	BOUYGUES	FRANCE	17,332	25,127	41%
4	CSCEC	CHINA	15,059	190,472	7%
5	SKANSKA	SWEDEN	14,215	4,055	78%
6	CCCC	CHINA	13,856	66,128	17%
7	FLUOR (a)	USA	10,861	8,306	57%
8	DOOSAN	SOUTH KOREA	9,580	6,320	60%
9	STRABAG	AUSTRIA	9,124	8,415	52%
10	SAMSUNG C&T	SOUTH KOREA	8,534	17,853	32%
11	CREC	CHINA	6,525	116,640	5%
12	L&T	INDIA	6,456	13,725	32%
13	HDEC	SOUTH KOREA	5,927	8,894	40%
14	CRCC	CHINA	5,153	115,061	4%
15	EIFFAGE	FRANCE	5,061	15,861	24%
16	OBAYASHI	JAPAN	4,235	14,160	23%
17	KAJIMA	JAPAN	4,124	13,681	23%
18	AECOM	USA	3,982	16,191	20%
19	JACOBS	USA	3,731	9,007	29%
20	MCC	CHINA	3,326	45,694	7%
21	SEKISUI	JAPAN	2,231	17,365	11%
22	TAISEI	JAPAN	1,489	13,400	10%
23	SCG	CHINA	886	28,861	3%
24	CFLD	CHINA	755	14,474	5%
25	SHIMIZU	JAPAN	618	14,397	4%
26	LENNAR	USA	149	22,111	1%
27	DAIWA	JAPAN	-	37,368	0%
28	DR HORTON	USA	-	17,593	0%
29	DAITO	JAPAN	-	14,350	0%
30	IIDA	JAPAN	-	12,130	0%
TOTAL			215,199	923,154	19%

Source: Global Powers of Construction (GPOC) 2019. (July 2020). Bloomberg and company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Outlook for the construction industry

Global economic prospects became uncertain as a result of the outbreak of the COVID-19 pandemic. The global economy is projected to contract by 3% in 2020 and rebound by 5.8% the year after, assuming the pandemic fades in the second half of 2020. Nevertheless, the construction industry remains resilient, as it is one of the few industries that can still operate, and is expected to grow by 0.5% in 2020.

Infrastructure investment is a key enabler of both productivity and quality of life and is crucially important for the most advanced economies, but also for those at the initial stages of development, as it provides them with the essential services – from energy, water, and telecommunications to social infrastructure such as hospitals, schools and parks. The construction industry has a direct impact on the global economy, as it connects us to education and social opportunities and supports health, safety and security. It also has an important correlation with other sectors, which means its impact on GDP and economic development goes far beyond the direct contribution made by construction activities.

The COVID-19 pandemic is inflicting high and rising human costs worldwide. Protecting lives and allowing healthcare systems to cope has required isolation, lockdowns, and widespread closures to slow the spread of the virus. The health crisis is therefore having a severe impact on economic activity. The global economy is projected to contract by 3% in 2020 and rebound by 5.8% in 2021, assuming that the pandemic fades in the second half of 2020⁴.

Prior to the outbreak of the COVID-19 crisis, the pace of expansion in the construction industry was set to rise by 3.6% in 2020⁴, with estimated revenue of USD 15 trillion by 2024⁵. However, even though construction has been one of the few activities that has continued

to function to some extent during the months of lockdown, the industry is expected to slow down in the short term as governments face rising deficits and residential and commercial projects are adversely affected by unemployment and GDP growth. Budget deficits will be impacted by government spending to address the COVID-19 pandemic, making it more difficult to publicly finance infrastructure. Policies that facilitate private project investment will become even more important for sustaining the build-up of quality infrastructure.

The current estimate for growth in the construction industry in 2020 has been downgraded to 0.5%⁶, but figures will vary across regions. In emerging regions, a 2% decrease is expected in 2020, before a rebound to 5% in 2021, while advanced economies will record a contraction of 1.5% in 2020, followed by a 2% expansion in 2021⁶. In any case, the economic consequences of the COVID-19 crisis depend on factors that interact in ways that are hard to predict, such as the pathway of the pandemic, the intensity and the effectiveness of containment efforts and the repercussions of the tightening in global financial market conditions, among others.

As the outlook for the global construction industry will depend on the efforts and policies adopted by governments around the globe, we include a more in-depth analysis by geographical area below:

The Americas

When analyzing the economic growth of the continent and the 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

Real GDP in the US rose by 2.3% in 2019, while a 5.9% contraction is expected for 2020 as a result of the COVID-19 crisis⁷. Similarly, total engineering and construction spending for the US is forecast to fall by 1% in 2020⁸. Recovery, which would need to be reinforced by public investment, will not start before late 2020 as the disease is brought under control. In this connection, it is remarkable that President Trump has announced a USD 2 trillion infrastructure package in response to the impact of COVID-19⁹, reviving a 2016 campaign pledge to ramp up construction projects.

Canada's real GDP, which has grown by 1.6% over the last two years, is expected to contract by 6.2% in 2020⁷. In line with the US, recovery is not expected until late 2020 or even 2021. The Canadian construction industry has always been an important driver of the Canadian economy, representing about 6.8% of Canada's GDP and employing about 5.8% of the active population in 2019¹⁰. However, the infrastructure deficit in Canada is significant and addressing this gap presents an opportunity to revive the economy after COVID-19. In the

rebuilding efforts, the federal government should embrace investments in public infrastructure and services to help the economy and workers get back on track. Also, the Canada Infrastructure Bank, which was founded a few years ago to transform the way infrastructure is planned, financed and delivered, can play a critical role in supporting such recovery.

Latin America

While Central America and the Caribbean reported growth in GDP in 2019⁷ (2.4% and 3.3%, respectively), South America, on average, was flat. The world economic slowdown and disruption in supply chains, the decline in commodity prices, the contraction in tourism, and the sharp tightening of global financial conditions, brought activity to a halt in many South American countries.

In 2020, the region's GDP is expected to fall by 2%-5%. Recovery will take place in 2021 (forecast growth of 3%-4%). By country, Paraguay reports the smoothest forecasted impact for 2020 (a 1% contraction) while Chile is projected to record the highest GDP growth in 2021 (5.3%). Venezuela is the only country with negative projections for 2020 and 2021 (-15% and -5%)⁷.

Unemployment will grow significantly in 2020 and decline in 2021, but unfortunately the employment rates reached in 2019 will not be achieved until 2022 or even 2023¹¹.

Before the COVID-19 pandemic, 2.3% growth was expected in Latin America's construction industry by 2020, as a result of increasing construction activity, especially in Brazil. However, with the emergence of the virus and its rapid spread across the world, together with plummeting commodity prices, the region's construction output is now expected to contract by 4.1% in 2020⁶.

Europe

In recent years, the European economy has maintained a path of steady and moderate growth, with a GDP increase of 1.6% in 2019⁷. However, the materialization of external risks, such as escalating trade tensions, a further slowdown in growth in the euro area, prolonged political

uncertainty and the rapid spread of the coronavirus, led the forecast of growth to fall abruptly in 2020 and to become significantly more moderate in 2021. A 6.6% GDP contraction is expected for 2020 with a 4.5% projected recovery for 2021⁷. A more in-depth analysis by region reflects a similar trend:

- Regarding the euro area, after a 1.2% increase in 2019, a 7.5% decrease is projected for 2020 while a 4.7% expansion is envisaged for 2021. Only small markets such as Luxembourg and Malta expect contraction rates below 5% for 2020. On the other hand, only the Netherlands and Finland will report growth rates below 4% in 2021⁷. Also, in 2020 and 2021 unemployment will remain above the figures reached in 2019 (7.6%)¹¹.
- The impact on the GDP of other developed countries such as the United Kingdom, Switzerland, Sweden and Denmark is expected to be similar to that of the euro area, but it is worth noting that unemployment rates will remain below average.
- In Central Europe's emerging countries, such as Poland, Romania, Hungary, Serbia and Croatia, the impacts of the COVID-19 crisis on the economy are expected to be smoother, but in any case unemployment rates will remain above average.

Against this backdrop, the European construction sector, which generates about 9% of GDP in the European Union and provides 18 million direct jobs⁶, is beginning to weaken. In 2019 the building construction production in the EU-27 fell by 2.8%, while civil engineering rose by 0.4% in comparison with 2018. By country, the largest decreases in production in construction were observed in Belgium (6.5%), Spain (6.2%) and Poland (5.5%). On the other hand, the highest increases were recorded in Romania (23.1%), Czechia (6.2%), Slovenia and Sweden (both 2.9%)¹². In the period from 2020 to 2022 the construction sector is expected to face a decline in average annual growth rates that will not be recovered in the short and medium term.

Asia

The outlook for the Asia-Pacific region presents several differences between countries. While GDP in China and India rose by 6.1% and 4.2% in 2019⁷, other countries such as Japan remained flat in comparison to 2018.

Since the Chinese economy was the first to be affected by COVID-19, it seems that it will also recover faster. GDP is expected to grow by approximately 1.2% in 2020 and to further accelerate in 2021⁷ (9.2%). The Chinese government, which historically has reacted to economic problems by increasing infrastructure investment, has issued plans to kick-off new projects and speed up existing ones. Major cities and provinces, including Beijing, Shanghai and Fujian, have released investment plans and "major infrastructure" projects totaling 33.83 trillion yuan (USD 4.8 trillion) for 2020¹⁴.

India's GDP, which rose by around 4% in 2019, is expected to grow by 1.9% in 2020⁷ and to keep its strength over the coming years. In 2019 the Indian government introduced fiscal policy changes to incentivize private investment and job growth, with a focus on economic recovery and sustained growth, taking every possible initiative to boost the construction sector, which employs 12%¹⁵ of the nation's working population.

Japan's economic growth (0.7%) in 2019 was driven by strong gains in public sector investment and housing. Nevertheless, forecasts for Japan show the same trend as the European and American countries, with an expected fall in GDP of 5.2% in 2020 followed by a quickening of 3.0% in 2021⁷. Government efforts to revitalize the economy by focusing on infrastructure development are expected to provide momentum to growth in the construction industry.

GDP in ASEAN countries (Malaysia, Indonesia, Vietnam, Thailand and the Philippines) is also expected to decline, but at a more moderate pace. This contraction will be offset by moderate growth in other countries such as Bangladesh, Bhutan, Cambodia, Myanmar and Nepal. In this connection, expansion over the

forecast period for these countries will be supported by the government’s focus on the development of the countries’ transportation, energy and utilities infrastructure.

Oceania

Australia’s real GDP amounted to USD 1,450 billion in 2019, up 1.8% on 2018. As a result of the COVID-19 crisis, a contraction of 6.7% is expected for 2020, which will be recovered in 2021⁷. In terms of the construction industry, the residential sector has been expanding rapidly in recent years, but the consequent oversupply of residential buildings, as well as tighter lending conditions, will hamper the sector in the coming years. As regards civil engineering work and other major projects, development will be driven by government plans to invest USD 100¹⁶ billion in transport infrastructure across

the country over the next 10 years through its rolling infrastructure plan, a substantial component of which is part of the Infrastructure Investment Program.

GDP predictions for New Zealand are in line with those for Australia. The economic contribution of the construction industry towards New Zealand GDP has been increasing steadily since 2014. Construction industry grew by 3% in 2019 to USD 9.9 billion. The New Zealand Infrastructure Commission -Te Waihanga, an independent infrastructure body, is working with central and local governments and the private sector to support a coordinated response to the impact of COVID-19 across the construction sector.

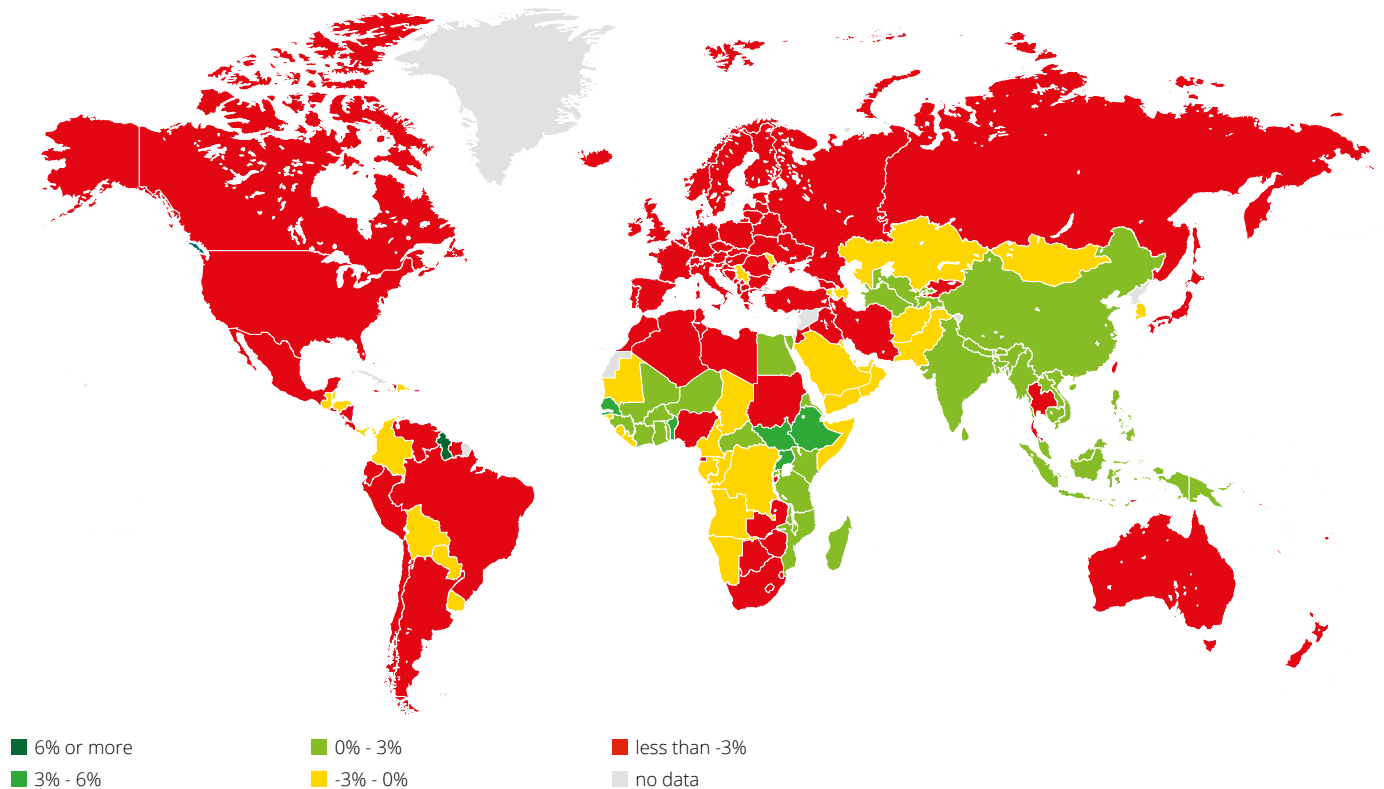
Africa and the Middle East

GDP in the Middle East and North Africa (MENA), which remained steady

in 2019, is projected to fall by 3.3 %⁷ in 2020 before returning to growth in 2021 (4.2%), as threats from the virus recede and global policy efforts spur recovery. In the construction industry, most MENA countries have been involved in massive public spending on infrastructure in recent years, especially after the boom in oil, which constitutes the primary source of income in the region. The implementation of new infrastructure projects remains directly linked to government spending, and thus revenues from oil, which is currently trading at low levels.

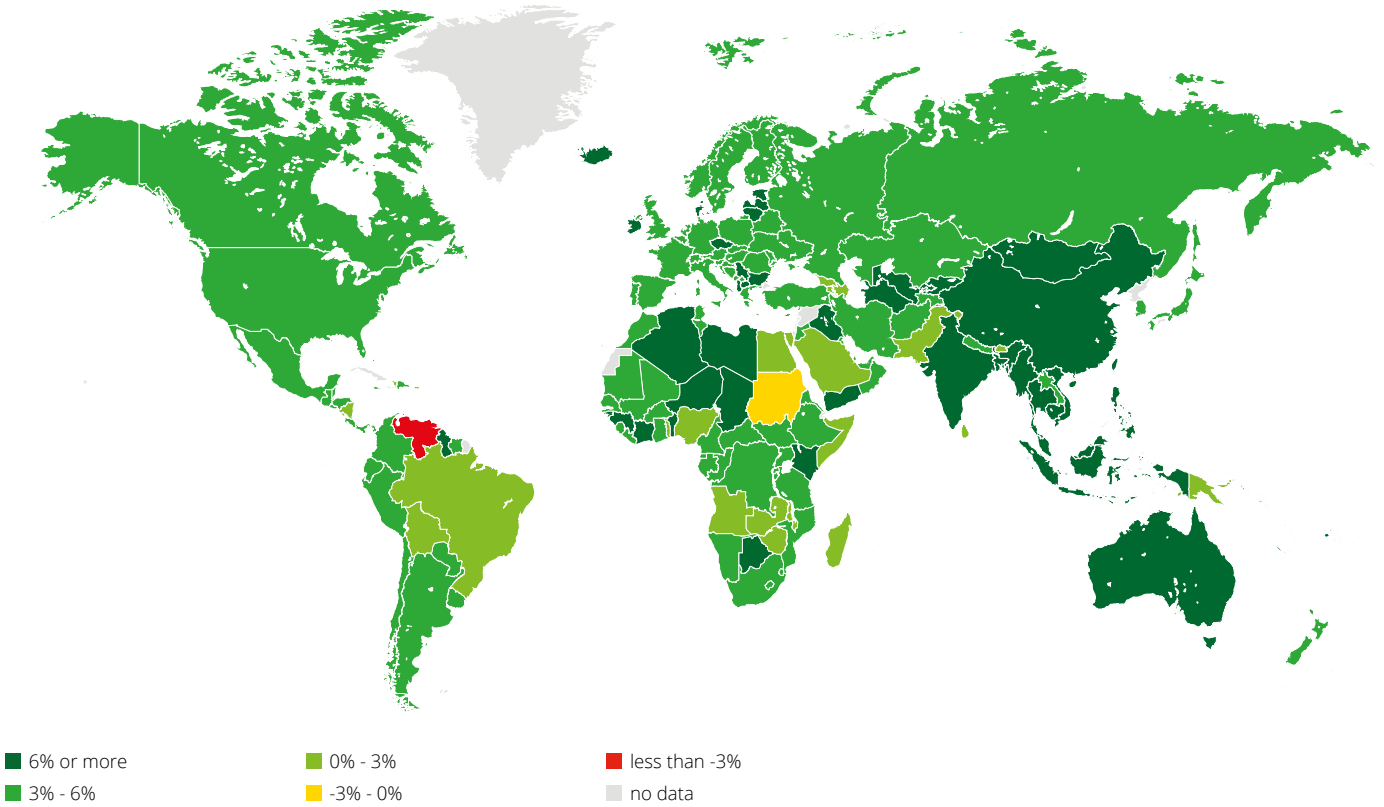
The economy in sub-Saharan Africa, which continued to perform reasonably well in 2019, with a GDP growth of approximately 3%, will contract slightly in 2020 (1.6%). Recovery will take place in 2021, when GDP growth of 4.1%⁷ is expected.

Real GDP growth (Annual percentage change, 2020)



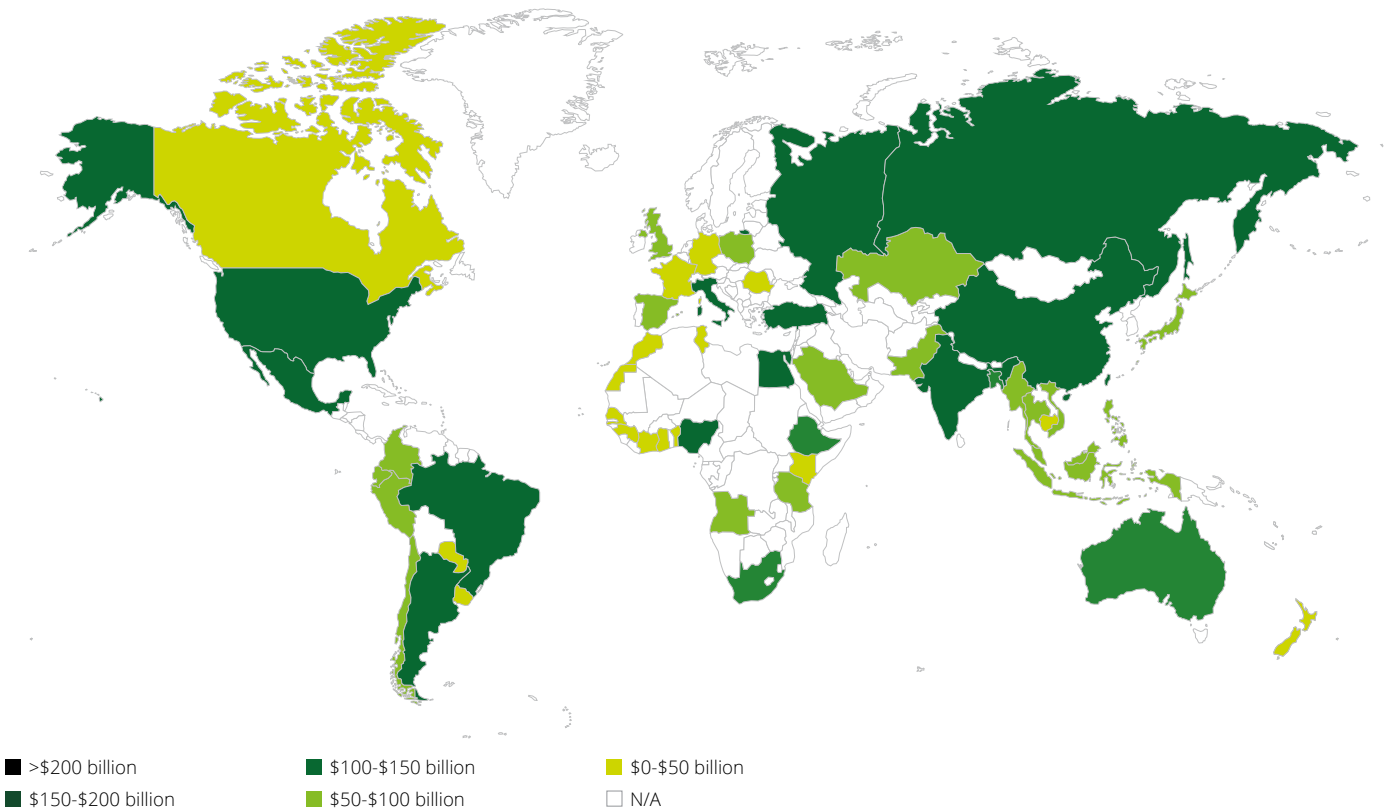
© IMF, 2020, Source World Economic Outlook (April 2020)

Real GDP growth (Annual percentage change, 2021)



© IMF, 2020, Source World Economic Outlook (April 2020)

Total forecast infrastructure investment gaps



Source: Global Infrastructure Outlook. Global Infrastructure Hub.

Shaping the future

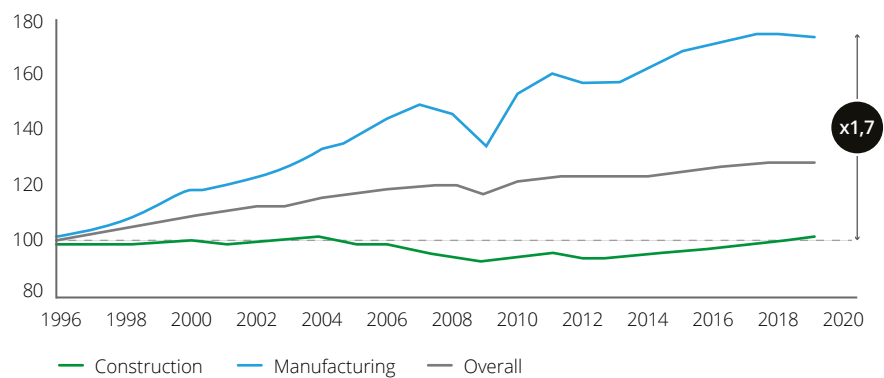
Over recent decades, the global economy has experienced disruption from technological development and innovation. Many industries have made great advances by adopting new technologies that increase efficiency and productivity, but the construction sector is still lagging behind.

The construction business has generally been considered a traditional industry with limited appetite for innovation. While other industries have progressed significantly in the last 25 years, construction remains a slow adopter of new technologies and innovation and a result is the economic sector with the lowest productivity gains over recent decades.

Nevertheless, the first ever debate is currently under way on whether the traditional approach should evolve towards a more industrialized and digitalized approach. As a result, construction companies are making inroads into the digital world, but very few have yet been able to scale beyond certain pilot projects, facing three major roadblocks: i) non-digitized processes jeopardize the ability to access consistent and ready-to-use data (paper-based documentation); ii) project execution is decentralized and deployment depends on the project managers; and iii) each project is perceived as unique.

Digital and advanced technologies such as artificial intelligence and advanced analytics have the potential to realize value throughout the project lifecycle: i) design, bidding and financing; ii) procurement and construction; iii) operations and asset management; and iv) business model reinvention/transformation. As projects start becoming data rich, their successful delivery becomes increasingly linked to the management of data, and traditional management methods and techniques are expected to change. Projects that are early adopters of integrated technology solutions will be able to make more robust decisions through the use of

Standardized labor productivity growth (28 EU countries)
Various industries; 1996-2019



Source: OECD; Monitor Deloitte analysis

analytics and deliver significant benefits from automation, thereby leading to better project outcomes, as well as asset performance improvements. 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.

Other technologies such as the full development of 3-D printing for building modules and components could also have a disruptive impact on the construction industry. Along the same lines, BIM (Building Information Modeling) technology is changing the way assets are built and is considered a platform to centralize design, modeling, planning and execution. BIM is now in use across most major projects and

is even mandated on certain governmental projects.

Augmented and virtual reality can be used in design engineering for large construction projects and also in identifying the most suitable execution/construction delivery methods. Construction companies could also benefit from robots and autonomous rovers to reduce the need for humans to conduct site inspections and to automate repetitive tasks like bricklaying. Using drones for remote surveillance and inspection of construction 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.

While investments in digital and advanced technologies can generate value, success is not about simply acquiring and integrating new technology, but also developing an organizational strategy and culture that integrate an insight-driven approach to key decisions, processes and business

models in a way that enables the company to make investments at the right time and for the right reasons. Only with the broader integration of people, processes, data and technology will the productivity of the industry be truly disrupted.

Some of the key areas of application of the technological innovations described above are listed below:

Processes and operations

The construction industry does have some intrinsic characteristics that make it a structurally difficult business and obstruct attempts at change. Its traditionally low margins, combined with increasing project complexity, unbalanced risk allocation between the construction companies and its clients, supply chain constraints and fierce competition from Asian companies, put extra pressure on the industry's profitability. In this context, it is essential for contractors to be proactive in managing processes and operations and to "industrialize" construction activity. Some of the internal and external challenges that are currently under discussion relate to the following factors:

- Contracting and contract management: In view of the competitive position indicated previously and the increasing complexity of the projects, as we have already stated it is essential to be proactive in project management and achieve improvements in supply chain integration and management, and in the simplification and digitalization of constructive and support processes, which are key aspects for improving the margins of the companies in the industry.

However, if there is a factor that has negatively influenced the industry's margins in recent years, it is inadequate risk management in the bidding phases and in subsequent project performance. It is essential to control risks in bidding processes and ensure that the projects have adequate profitability and risk

distribution between customer and constructor. The industry's competitive dynamics in recent years have given rise to inadequate risk assumption on the part of construction firms which, in addition to reducing margins, in most cases results in delays, cost overruns and the projects becoming the subject of litigation.

The companies in the industry, as well as properly analysing whether the distribution of risks between the customer and constructor is adequate, must allocate prices to the risks they are assuming and avoid assuming those risks which conceptually correspond to

the customer. An inadequate distribution of project risks between the customer and the contractor usually gives rise to problems for both parties. In this regard, recently customers seem to have begun to understand the problems that they themselves are frequently caused by this inadequate assumption of risks by construction firms; along these lines, note should be made of the growing trend, especially in English-speaking countries, towards construction contracts with a better risk distribution, such as alliance and cost-plus contracts, or those with limited bonuses or penalties based on the achievement of cost objectives.



- Historical construction risks typically arise from the design and bidding phase (inaccurate cost estimates, overly optimistic timelines, etc). Artificial Intelligence (AI) and Advanced Analytics (AA) can assist in the design review process (e.g. layout optimization), bidding process (e.g. predictive models of evolution of raw material prices) and post-mortem analysis (e.g. natural language processing to identify comparable work consignments) by analyzing vast amounts of internal unstructured data (e.g. bidding documents) and external data (e.g. commodity prices) to provide insights from previous projects. In doing so, construction companies can generate more accurate estimates, reducing budgets and timeline deviations by an estimated 10-20% and engineering hours by 10-30%.
- Supply chain: in order to achieve productivity improvements, companies must 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. Companies may aim to become a platform business to integrate different services from different suppliers and capture their operational data. This platform could match owners, contractors and subcontractors in a more efficient way. An agile and interconnected supply chain could respond flexibly and promptly to changes in the external environment, thereby contributing to increased productivity.
- Construction productivity is heavily dependent on workforce skills. The development and implementation of new technology should be driven by the real needs of the company's workforce. The industry must move beyond traditional sources of talent to identify new valuable profiles. Both construction companies and workers need to continuously stay up to date and be trained to use the latest equipment and digital tools. Companies should establish training programs and specialize workers in core skills that

are currently underdeveloped. This new culture, together with new digital technologies, can make industry office jobs more productive and attractive.

The redefinition of processes and operations is highly linked to industry digitalization. Industry leaders can define a new vision, map a comprehensive digital blueprint and work towards realigning their business models to reflect the opportunities that technology brings.

Construction materials

The materials used in construction are closely related to productivity, since they can have a significant impact on construction costs and on the quality and sustainability of the assets. Examples of recently developed innovative construction materials are as follows:

- New building materials, such as self-healing concrete, aerogels and nanomaterials, as well as innovative construction approaches, such as 3-D printing, can lower costs and speed up construction while improving quality and safety. The increasing pressure of green construction is also encouraging the development of new construction materials. As a result, a selection of both structural and non-structural alternative materials is being developed for high-end and affordable projects. This would revolutionize productivity, but the limited track record of these innovations still discourages construction companies from introducing them in the business cycle.
- Also, construction companies are gradually moving towards standardization, modularization and prefabrication of components to drive efficiencies and overcome schedule overruns. Modularization is expected to improve productivity and margins for contractors, while standardization is driving improvements in quality and shortening project schedules.
- These strategies innovations, along with new advanced technologies, will have a positive impact on the industry's productivity in terms of costs, time and certainty over outcomes that could be achieved.

- The increasing pressure of green construction is also encouraging the development of new construction materials. As a result, a selection of both structural and non-structural alternative materials is being developed for high-end and affordable projects. This would revolutionize productivity, but the limited track record of these innovations still discourages construction companies from introducing them in the business cycle.

Internationalization

Traditionally, construction has been a local business in which local relationships and resources are paramount. Although construction companies tend to obtain higher margins in their domestic markets, in recent decades major listed construction groups have sought growth opportunities abroad. In this context, GPoC companies obtained 19% of their total income from abroad in 2019.

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 whether the best strategy is to cooperate with local firms (joint ventures) or pursue mergers and acquisitions. In addition, the type of project must also be considered, as it may differ between markets. Developed economies may call for asset maintenance or upgrades, while emerging countries require the development of completely new infrastructure assets.

The traditional decentralization of project execution is even higher on those contracts carried out beyond domestic markets thus integrated solutions for controlling and capturing key project data across various data sets (for example, cost, schedule, risk and change) are essential for creating a "live" single source of the "truth". The firms that are able to adapt their business models to new markets and environments will prove to be the winners.

Compliance, ethics and transparency

The increasing importance that stakeholders (primarily investors) place on ethics and transparency matters has given rise to the implementation of policies

and procedures that ensure regulatory compliance. Nowadays, investors do not just take the financial profitability of their investments into account when considering their investment parameters, but rather other variables have gained importance, including social, environmental and regulatory compliance variables. Meeting compliance and transparency standards has become an obligatory requirement when it comes to winning major infrastructure projects and is one of the sustainability pillars of construction companies.

From the bidding phase, many parties are involved in a project and, therefore, their conduct must be aligned in order to properly respond to the ethical dilemmas that may arise. Proper analysis and monitoring of the regulatory compliance of venturers, subcontractors and all those who participate in the supply chain are key to reducing reputational risks and inefficiencies, since a failure in one link in the supply chain will undoubtedly affect the entire project. For these reasons, both public and private construction project developers increasingly require construction companies to have compliance risk management systems in place.

In response to these requirements, infrastructure companies are investing time and resources to address regulatory compliance, not only in a reactive way in order to ensure compliance in the various regulatory areas, but also by integrating that compliance in the daily management of the organization to bolster a culture of compliance and mitigate reputational risks. Accordingly, a large proportion of infrastructure companies have opted to follow the ISO 19600 international standard, which is an international benchmark guide for implementing a regulatory compliance management system, as well as ISO 37001, which provides a guide for establishing anti-bribery management systems. These systems also enable companies to respond to the demands of regulators, which constantly emphasize that having compliance policies, rules and procedures in place is not enough, but rather companies must ensure that the requirements are met, are incorporated





in their daily management and that, therefore, the compliance measures are truly effective.

When implementing such systems, companies can take advantage of the various options offered by technology thanks to analytics, business intelligence and blockchain tools. These tools enable intelligent data analysis, providing indicators or alerts to monitor certain behaviors using the data provided by the transactional systems, or to provide digital security to certain transactions, thereby reducing human intervention. However, management systems and the most advanced technologies are not enough to avoid behavioral risks and prevent regulatory non-compliance, as it is essential to have a strongly-rooted

ethical culture that naturally enables us to live in accordance with robust values and instinctively rejects unwanted behavior.

Sustainability

In recent years, international consensus has been achieved regarding the importance of sustainable economic development. Sustainable construction is not just about ensuring that resources are being used in an efficient way, but also reducing the environmental impacts resulting from the materials used 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 to heat, cool and light the constructed assets, represent factors that are nowadays discussed and reviewed

in great detail. Sustainability is becoming a requirement rather than just an extra and firms must be able to introduce improvements in a cost-efficient way.

Although construction companies play a key role in the industry's transformation towards sustainability, other bodies also need to be proactive. Governments can play an important role by requiring potential bidders to meet sustainability criteria. Also, global organizations can help finance the investment that some green projects may demand.

Top 30 GPOC strategies: internationalization and diversification

In 2019, the international sales and non-construction revenue of our GPOC represented 19% and 20% of the related totals, respectively, slightly below 2018 levels (21% and 22% respectively). European companies continued to be the most internationalized, while US-based companies had a large presence in non-construction activities. Chinese entities remained below average in terms of internationalization and diversification.

The low operating profitability levels in the construction industry (the average construction EBIT/sales margin was 5.5% and 5.6% in 2019 and 2018, respectively) has led to a diversification of our GPOCs' portfolio of services, which provide non-construction services to the same construction customers and perform 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 2019, non-construction revenues obtained by US, European and Asian GPOC represented 36%, 21% and 18% of the related totals, respectively.

However, although geographical diversification has enabled our GPOC to take advantage of existing growth opportunities in countries with significant infrastructure needs, internationalization entails additional risks that could affect profitability and cash flows. Stricter discipline when bidding for projects, sticking to selected core project types and geographies and placing profit ahead of volume are extremely important factors in ensuring the success of international projects. In 2019, non-domestic revenues obtained by European, US and Asian GPOC represented 57%, 20% and 10% of the related totals, respectively.

In view of the varying levels of internationalization and diversification achieved by the most significant GPOC in terms of total sales, we have identified four main categories for analysis (Figure 4.1). The analysis of 2019 performance across each of these four categories is as follows:

Domestic construction groups

This segment comprises companies focused principally on construction activities in their domestic markets. More than half of our Top 30 GPOC are considered to be "Domestic construction groups". This category is dominated by Asian and US based groups:

- The seven Chinese groups included in our Top 30 GPOC are classified in this segment since 86% of their sales arise from construction activities performed mainly in their home market. Overall, international sales obtained by Chinese GPOC amounted to USD 45,560 million, but in relative terms these sales only represented 7% of aggregate income. China Communications Construction Group leads the ranking in terms of international presence (17% of total income obtained abroad, mainly in Australia and other countries in Africa and Asia) while China State Construction Engineering Corporation reached the

highest diversification among the Chinese groups (16% of total revenue obtained from non-construction activities).

- Six Japanese groups complete the Asian presence in this category. Up to 90% of total income corresponds to construction activities, with real estate construction being particularly significant. On the other hand, while international sales do not exceed 10% on average, Obayashi and Kajima were able to report an above average international presence among Japanese companies (about 23% of total sales obtained abroad, mostly in North America and Oceania).

- Turning to the US companies included in this category, D.R. Horton and Lennar obtained most of their revenue from residential building construction in their domestic market, with both companies considered "homebuilders". Non-construction activities and international business are residual. Jacobs, which was classified as a "Domestic Conglomerate" in 2018, has been reclassified to this category as a result of the divestment of the Energy, Chemicals and Resources business line. In any case, in 2019 Jacobs continued to invest in other non-construction business through the acquisition of both KeyW and the Wood

group's nuclear business, strengthening the shift to a higher margin portfolio.

The aggregate sales of the 16 companies included in the "Domestic construction groups" category amounted to USD 791,083 million, approximately 69% of total GPoC income in 2019. On average, non-construction and international revenue does not represent more than 12% of total activities.

International construction groups

This category is composed of groups with a relatively low level of diversification but focus on construction as their core business and a significant international footprint.

Except for Hyundai Engineering & Construction (HDEC), all the groups classified as "International construction groups" are European: Vinci, ACS, Bouygues, Skanska and Strabag.

Vinci obtained 45% of its total revenue outside France, mainly in other European countries, America and Africa. As in the previous year, construction activities account for 81% of total revenue, but non-construction activities, mainly concessions, have become more important as a result of acquisitions, such as a 50.01% stake on London Gatwick Airport and Portuguese airports in Lisbon and Montijo.

As in 2018, the Spanish ACS group is the company with the largest international presence among the Top 30 GPoC. In 2019, its international sales rose by 6.5% and represented more than 85% of total income. Major markets for the group are North America, Europe and Australia. Non-construction businesses accounted for 21% of total revenue.

Considered one of the most diversified European GPoC, Bouygues still obtains more than 70% of its total income from construction activities. International revenues are mainly obtained from construction activities in Europe, North America and the Asia-Pacific area. Significant acquisitions and divestments were made in 2019 that could affect diversification and internationalization levels in the coming years: Colas acquired

a part of Skanska's operations in Poland while TF1 and Bouygues Telecom acquired De Mensen, Reel One, Keyyo and Nerim and divested itself of 13% of Alstom.

Skanska and Strabag complete the European representation in this category. Of all the companies in the Top 30 GPoC, Skanska is the second most active internationally, thanks to its strong presence in the US and in other European countries such as the UK and Norway.

Hyundai Engineering & Construction (HDEC) is the only non-European company in this group, and it is the most diversified company in the category, its internationalization and diversification remained in line with the previous year, at 40% and 34%, respectively.

In 2019 the six groups classified as "International construction groups" obtained 17% of our Top 30's aggregate sales. The average diversification and internationalization levels were 20% and 60%, respectively.

Domestic conglomerates

"Domestic conglomerates" includes those diversified groups that have focused their main activities on their home markets. These companies are characterized by high levels of diversification, as they provide various non-construction services to their customers. This category contains six groups: Samsung C&T, Sekisui, AECOM, Eiffage, Larsen & Toubro and Daito.

Samsung C&T Corporation is a diversified South Korean company that obtained 62% of its sales from non-construction business. Its Trading and Investment segment, which focuses on trading industrial commodities and organizing projects in the fields of infrastructure, renewable energy and power plants, is growing every year, now representing 45% of total sales and being the most profitable segment for the company. International sales remained at the same level as the previous year in relative terms.

In 2019 AECOM achieved diversification and internationalization levels of 61% and 20% respectively. Non-construction activities remained the same as in 2018,

the most significant of which was the Design and Consulting Services business line. However, the company's international presence was reduced as a result of the decrease in activity reported in Europe, the Middle East and Africa, despite growth achieved in the Americas.

Eiffage still obtains almost 76% of its total income in France. Due to the strong position of its Concessions and Energy division, which accounted for 41% of total revenue in 2019, the French group is classified as a "Domestic conglomerate".

Sekisui House and Daito, both of which have been labeled as homebuilders, have attained significant levels of diversification. Non-construction businesses, including most notably real estate activities, account for 69% and 62%, respectively.

Due to its diversification into various lines of businesses such as technology and financial services, automation and heavy engineering, Larsen and Toubro obtained almost 50% of total revenue from non-construction activities. Its international presence remained stable at 32% with the Middle East and the United States as the most significant markets.

Total revenue recorded by these groups amounted to USD 121,610 million, representing 11% of the total sales of the Top 30 GPoC in 2019.

International conglomerates

Groups with significantly diversified portfolios and a strong international presence compose the "International conglomerates" category. As in 2018, among our GPoC Top 30 ranking by sales, only two groups were classified as international conglomerates: Doosan and Fluor Corporation.

Fluor Corporation is the most widely diversified group in our GPoC. Over the last few years the company has boosted its Energy & Chemicals business, which accounts for a significant portion of its total revenues. In addition, in 2019 the international backlog remained strong, suggesting that the company will continue to expand its presence overseas.

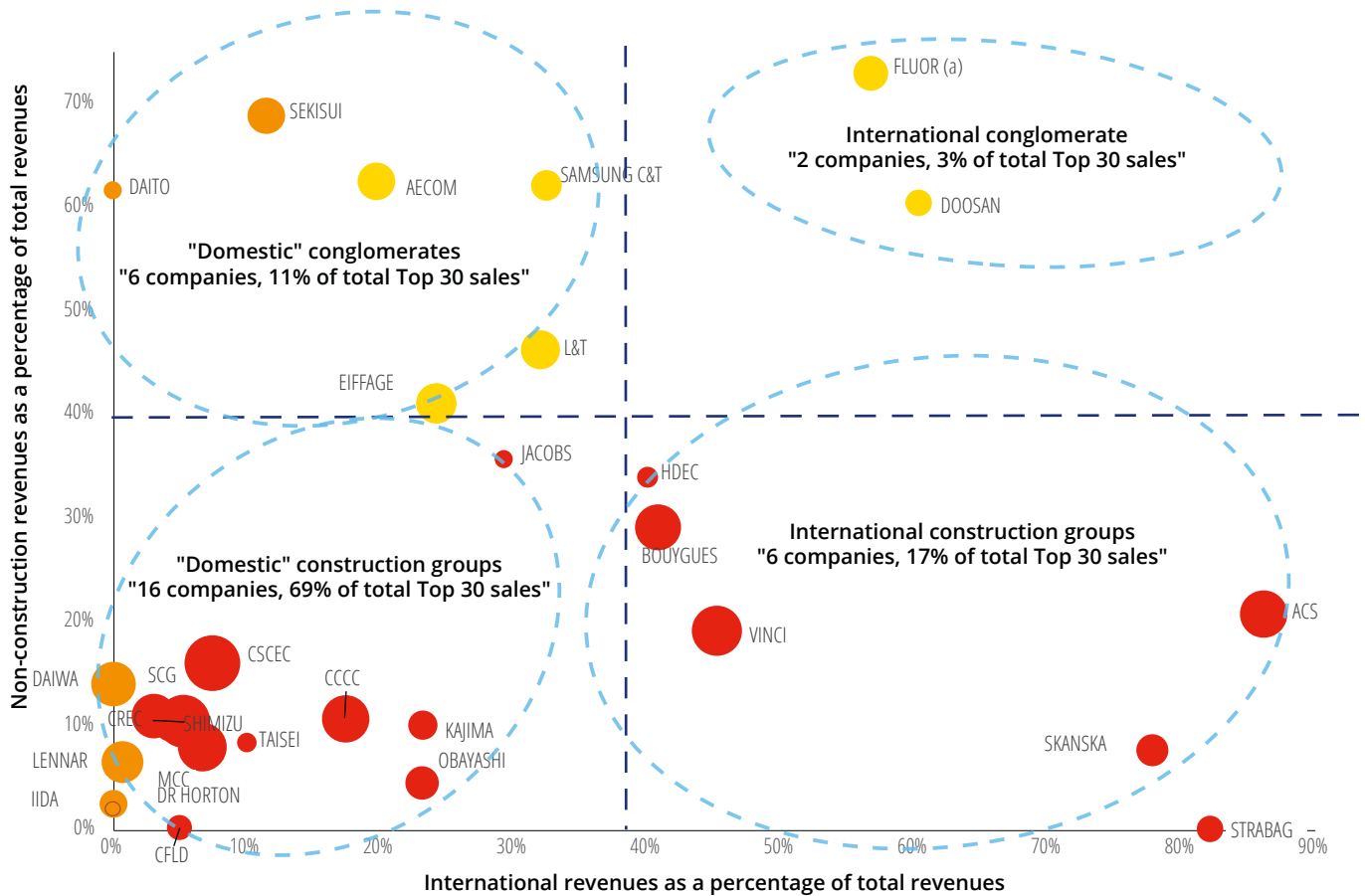
The levels of diversification and internationalization achieved by the South Korean company Doosan increased slightly from 2018, to around 60%. Its significant presence in America and Asia (sales rose by 34% and 18%, respectively) together with its strong performance in technology development and product innovation services led the company to be considered an “international conglomerate”.

Total sales recorded by the groups included in this category amounted to USD 35,067 million in 2019 and represented only 3% of the total revenue of our Top 30 GPoC.

The low number of companies classified as international conglomerates within the GPoC Top 30 ranking by sales is explained by the fact that most groups that would fall into this category are medium-size (mainly European) companies. When considering the Top 50 companies of our ranking, it is possible to identify groups that reported internationalization and diversification levels exceeding 40%. Fomento de Construcciones y Contratas (FCC) is considered an international conglomerate as a result of the strong position of its water and environmental

services in Europe. Along the same lines, the Spanish group Acciona obtains more than 50% of its total revenue from energy, services and water activities performed in Europe and other OECD countries. Lastly, Ferrovial was previously also classified as an international conglomerate, but the upcoming sale of its services business will significantly reduce its non-construction revenue and international presence.

Figure 4.1: Top 30 GPoC Strategies



The graph above identifies the groups using three main colors for each group's core business. The companies shown in red are those whose main business is civil engineering and construction; the companies shown in yellow are diversified companies that carry on other businesses and the companies shown in orange are companies that are considered to be homebuilders.

Source: Global Powers of Construction (GPoC) 2019. (July 2020).

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Financial performance of the GPoC 2019

The financial performance of the Top 30 GPoC was uneven in 2019. While operating profits improved, net debt rose by 12%. On average, US- and Europe-based entities reported stronger financial results than those of Asian GPoC. The impact of the COVID-19 pandemic on financial results will not be visible until 2020 half-year results are released.

Financial performance among Top 30 GPoC varied according to the nationality and activities developed by the entities reviewed (Figure 5.0). As a result, the analysis of the aggregate ratios shows the following highlights:

- An analysis by country shows that profitability in terms of EBIT and net income is higher among the US- and Europe-based companies, while dividend yield, as reported by Asian GPoC, at 7.0%, was the highest among the groups analyzed. In terms of debt, the diversified portfolio of businesses achieved by US and European companies has led to higher net debt levels, but it has also

turned into higher EBITDA. Among the countries analyzed, only Asian GPoC are trading at a discount in the stock markets. Lastly, European companies obtained the highest ROE (14.4%), almost three and four percentage points above Asian and US entities, respectively.

- An aggregate analysis of the four categories identified in the article (Top 30 GPoC Strategies: internationalization and diversification) shows that all the groups reported similar net income figures, except for “International conglomerates”, which recorded the lowest profitability levels. Regarding debt as a percentage of the capital structure, “Domestic” and

“International” conglomerates reported the highest ratios, as non-construction activities usually require significant capital investments. It is also worth noting that “Domestic conglomerates” and “International construction groups” seem to be listed at a premium on the stock markets. Finally, those companies focusing on construction activities achieved the highest ROE in 2019.

A more in-depth analysis by company of the financial ratios and indicators summarized above allows us to draw the following conclusions:

Figure 5.0: Top 30 GPoC Financial Ratios

Types	EBIT/ Sales	Net Income/ Sales	Net Debt/ Net Debt Equity	Net Debt/ Market Cap	Market Cap/ Book Value	EV/ EBITDA	Net Debt/ EBITDA	Capex / Sales	Dividend Yield	ROE
Domestic conglomerates	6.7%	3.9%	35.2%	0.4	1.5	11.0	3.1	2.2%	2.8%	8.9%
International construction groups	6.8%	3.8%	28.9%	0.2	2.1	6.8	1.2	3.6%	3.7%	13.6%
Domestic Construction groups	5.9%	3.9%	31.6%	0.7	0.9	6.0	2.4	2.3%	7.0%	12.8%
International conglomerates	4.5%	1.7%	32.2%	1.2	0.4	3.2	1.8	3.1%	7.7%	7.0%
TOTAL 2019	6.2%	3.8%	31.8%	0.5	1.1	6.7	2.2	2.5%	5.2%	12.2%
ASIAN COMPANIES	5.9%	3.7%	28.8%	0.7	0.9	6.1	2.4	2.4%	7.0%	11.9%
US COMPANIES	6.3%	4.7%	42.0%	0.2	1.5	10.5	1.8	0.8%	0.9%	10.9%
EUROPEAN COMPANIES	7.3%	3.9%	40.7%	0.4	2.2	6.9	1.7	3.9%	3.9%	14.4%

EBIT margin

Based on the figures obtained in 2019 and 2018 (Figure 5.1), the following conclusions may be drawn:

- EBIT from construction activities represents 5.5% of sales, while operating profitability from non-construction activities averaged 8.9%, resulting in a combined average EBIT margin of 6.2%, slightly higher than in 2018. Margins have been continuously increasing since 2016 (Figure 5.2).
- Companies focusing on homebuilding tend to have higher margins. The six companies that could be classified as “homebuilders” are: Sekisui, Daiwa, D.R. Horton, Lennar, Daito and Lida. Excluding “homebuilders”, average sales from construction activities stood at 4.8% (ten basis point below the 2018 figure).
- China Fortune Development, whose main activity is real estate development, leads the ranking of profitability from construction activities. By region, despite a significant fall in 2019, US companies still reported the highest construction EBIT margin (7.2%). Asian and European companies’ figures remained in line with those of 2018.
- The company with the highest non-construction EBIT margin is the American housebuilder D.R. Horton, with 49%. Its

non-construction activities consist mainly of financial services, but this business only represents 2.5% of the company's revenue. Vinci is positioned in second place (44%) due to the importance of its concession business sector. In addition to Vinci, the strong performance of Skanska (28%) and Eiffage (22%) in non-construction business contributed to making the European GPoC the most profitable.

- None of the Top 30 GPoC reported operating losses in 2019. Nevertheless, Daiwa House and China State Construction Engineering reported operating losses from non-construction activities in 2019.



Figure 5.1: Top 30 GPoC EBIT/Sales

Company	EBIT* / Sales					
	Construction activities		Other activities		Total	
	2019	2018	2019	2018	2019	2018
CHINA FORTUNE LAND DEVELOPMENT (CFLD)	21.7%	0.0%	0.0%	0.0%	21.4%	21.3%
DAITO TRUST CONSTRUCTION	15.7%	17.4%	3.2%	1.8%	8.0%	8.1%
SEKISUI HOUSE (a)	15.4%	13.9%	5.7%	7.2%	8.8%	9.1%
LENNAR CORP. (a)	12.0%	11.8%	18.6%	13.9%	12.5%	12.0%
DR HORTON (a)	11.1%	12.5%	48.6%	27.5%	12.1%	12.8%
DAIWA HOUSE INDUSTRY CO. (a)	10.9%	9.9%	(2.7%)	4.5%	9.0%	9.1%
TAISEI CORP. (a)	9.3%	11.6%	9.0%	10.0%	9.3%	11.5%
LARSEN & TOUBRO LTD. (L&T)	7.8%	9.1%	15.1%	11.7%	11.2%	10.3%
CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD. (CSCEC)	7.6%	8.2%	(2.7%)	(5.4%)	5.9%	6.0%
SHIMIZU CORP.	7.5%	8.0%	10.1%	8.0%	7.8%	8.0%
OBAYASHI CORP.	7.3%	7.0%	14.1%	14.0%	7.6%	7.3%
IIDA GROUP HOLDINGS (a)	7.3%	7.9%	2.9%	1.7%	7.2%	7.8%
KAJIMA CORP.	6.8%	8.2%	11.3%	12.6%	7.2%	8.6%
CHINA COMMUNICATIONS CONSTRUCTION GROUP LTD. (CCCC)	5.8%	6.4%	9.6%	9.8%	6.2%	6.8%
AVERAGE	5.5%	5.6%	8.9%	8.0%	6.2%	6.1%
SAMSUNG C&T CORP.	4.6%	6.4%	1.7%	1.7%	2.8%	3.5%
JACOBS ENGINEERING	4.6%	7.8%	0.6%	1.9%	3.2%	4.3%
VINCI	4.3%	4.1%	44.5%	45.5%	11.9%	11.5%
ACS, ACTIVIDADES DE CONSTRUCCION Y SERVICIOS, S.A. (ACS)	3.9%	4.2%	11.5%	7.5%	5.4%	4.9%
STRABAG	3.8%	3.7%	5.3%	4.5%	3.8%	3.7%
DOOSAN	3.2%	9.8%	9.2%	4.0%	6.8%	6.6%
EIFFAGE, S.A.	3.1%	3.2%	21.6%	21.4%	10.7%	11.0%
CHINA RAILWAY GROUP LTD. (CREC)	2.7%	2.6%	18.6%	12.4%	4.4%	3.9%
SKANSKA AB	2.4%	0.7%	27.5%	32.9%	4.3%	3.3%
METALLURGICAL CORPORATION OF CHINA LTD (MCC)	2.1%	2.1%	10.4%	14.3%	2.8%	3.4%
BOUYGUES	2.0%	2.7%	10.3%	10.6%	4.4%	5.0%
CHINA RAILWAY CONSTRUCTION CORP. LTD. (CRCC)	1.9%	1.8%	12.1%	13.4%	3.3%	3.5%
FLUOR CORP. (b)	(0.3%)	(0.3%)	3.5%	3.5%	2.5%	2.5%
AECOM	(6.5%)	(1.3%)	4.4%	4.6%	0.2%	2.2%
AVERAGE, ASIAN COMPANIES	5.9%	5.9%	6.1%	5.3%	5.9%	5.8%
AVERAGE, US COMPANIES	7.2%	8.4%	4.7%	4.2%	6.3%	6.7%
AVERAGE EUROPEAN, COMPANIES	3.4%	3.3%	21.9%	20.9%	7.3%	7.0%
AVERAGE EXCLUDING HOMEBUILDERS	4.8%	4.9%	9.6%	8.3%	5.7%	5.6%

Source: Global Powers of Construction (GPoC) 2019. (July 2020).

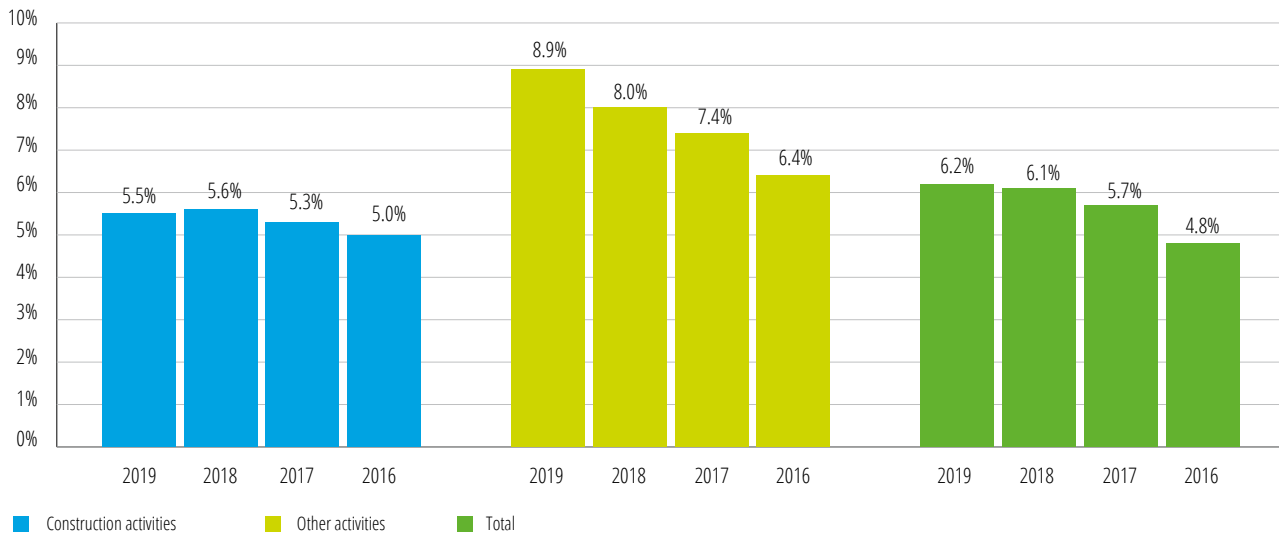
Company financials.

a) Lennar, IIDA, D.R. Horton, Daiwa, Daito and Sekisui are considered to be homebuilders.

b) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Shanghai Construction Group and Hyundai E&C have not been included in the analysis since these companies do not disclose construction EBIT from other activities.

Figure 5.2: Top 30 GPoC EBIT Margin



Net income attributable

The analysis of the net income obtained by the Top 30 GPoC in 2019 (Figure 5.3) enables us to reach the following conclusions:

- Average profit increased in 2019, with total income of USD 46,278, 17% higher than the profit recorded in 2018. As a percentage of total sales, average net income margin increased slightly, accounting for 3.8% of the total revenue obtained by the Top 30 GPoC.
- US based companies recorded the highest profitability by geographical area (4.7%). The fall posted by AECOM was offset by the good performance of D.R. Horton and Lennar, both of which reported net income/sales ratios of over 8%. European and Asian entities reported figures in line with 2018.
- China State Construction Engineering Corporation, which is ranked 1st in terms of total revenue, continues to be the group with the highest net income in absolute terms, but it recorded a below-average net income/sales margin in 2019 (3%). China Fortune Land Development (CFLD), ranked in 24th position by total sales, continued to be the group with the highest profitability. The Top 3 is completed by the American companies D.R. Horton and Lennar. Vinci, ranked in 5th position, is the leading European group.

Figure 5.3: Top 30 GPoC Net income as a percentage of total sales

Company	Net Income* / Total Sales	
	2019	2018
CFLD	13.9%	14.0%
DR HORTON	9.2%	9.1%
LENNAR	8.3%	8.2%
TAISEI	6.8%	8.0%
VINCI	6.8%	6.9%
JACOBS	6.7%	1.1%
L&T	6.3%	6.3%
SHIMIZU	6.0%	5.6%
SEKISUI	6.0%	6.2%
DAIWA	5.7%	6.2%
KAJIMA	5.6%	6.9%
DAITO	5.6%	5.6%
OBAYASHI	5.5%	4.9%
IIDA	4.9%	5.2%
CCCC	4.7%	3.5%
EIFFAGE	3.9%	3.7%
AVERAGE	3.8%	3.7%
SKANSKA	3.5%	2.7%
SAMSUNG C&T	3.4%	5.5%
BOUYGUES	3.1%	3.7%
CSCEC	3.0%	3.0%
CREC	2.8%	2.3%
CRCC	2.4%	2.5%
STRABAG	2.4%	2.3%
HDEC	2.4%	2.3%
DOOSAN	2.3%	(0.6%)
MCC	1.9%	2.2%
SCG	1.9%	1.2%
ACS	1.8%	2.5%
FLUOR (a)	1.2%	1.2%
AECOM	(1.3%)	0.7%
AVERAGE, ASIAN COMPANIES	3.7%	3.6%
AVERAGE, US COMPANIES	4.7%	4.0%
AVERAGE EUROPEAN, COMPANIES	3.9%	4.0%
AVERAGE EXCLUDING HOMEBUILDERS	3.8%	3.3%

Source: Global Powers of Construction (GPoC) 2019. (July 2020).

(*) The net income figures reported by these groups are the net income attributable to the group

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Only one company from our Top 30 recognized losses in 2019.

Net debt/Net debt + Equity

The noteworthy matters arising from the analysis and representation of the net debt / (net debt +equity) ratio (Figure 5.4) were as follows:

- Aggregate shareholders’ equity and net debt both increased by 12%, resulting in a 32% net debt / (net debt +equity) ratio in 2019. This ratio has been steadily increasing since 2017.

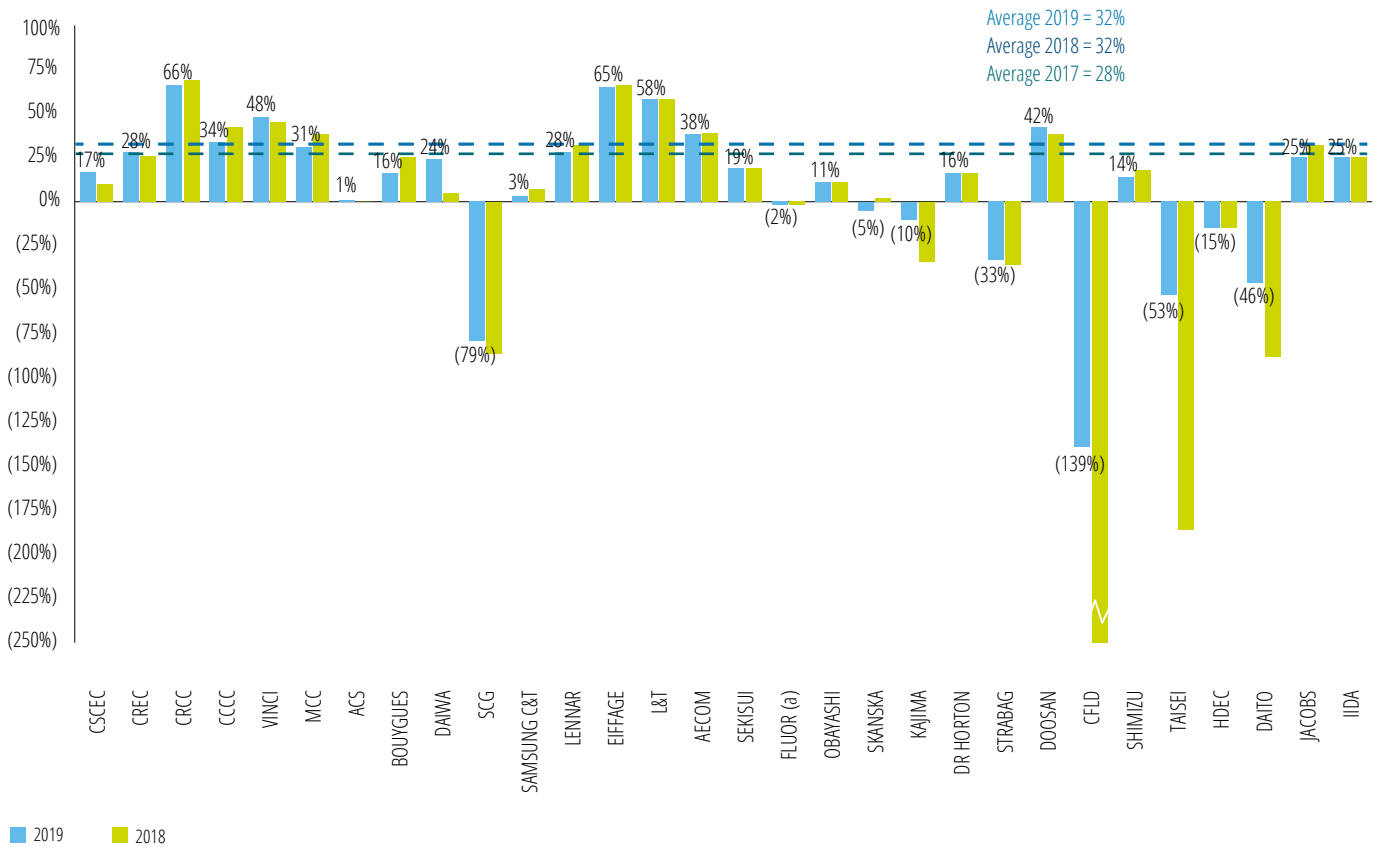
In geographical terms, Asian GPOC had below-average ratios while US and European companies reported ratios of 42% and 41% respectively.

China Railway Construction Corporation and Eiffage, recorded the highest ratios (66% and 65% respectively). Moreover, nine companies presented a net cash position in 2019 balance sheets. The company with the largest cash surplus was China Fortune Land Development (CFLD) (USD 6,153 million).

- Excluding the groups that reported cash surpluses, ACS recorded the lowest debt level, since the group has managed to reduce its net debt in recent years by divesting non-core assets. ACS’s total net debt amounted to USD 61 million in 2019 compared with USD 9,168 million back in 2010.

It seems that there is a positive correlation between diversification from construction activities and net debt/(net debt + equity) ratio, as can be observed in Figure 5.5. The most diversified GPOC companies (more

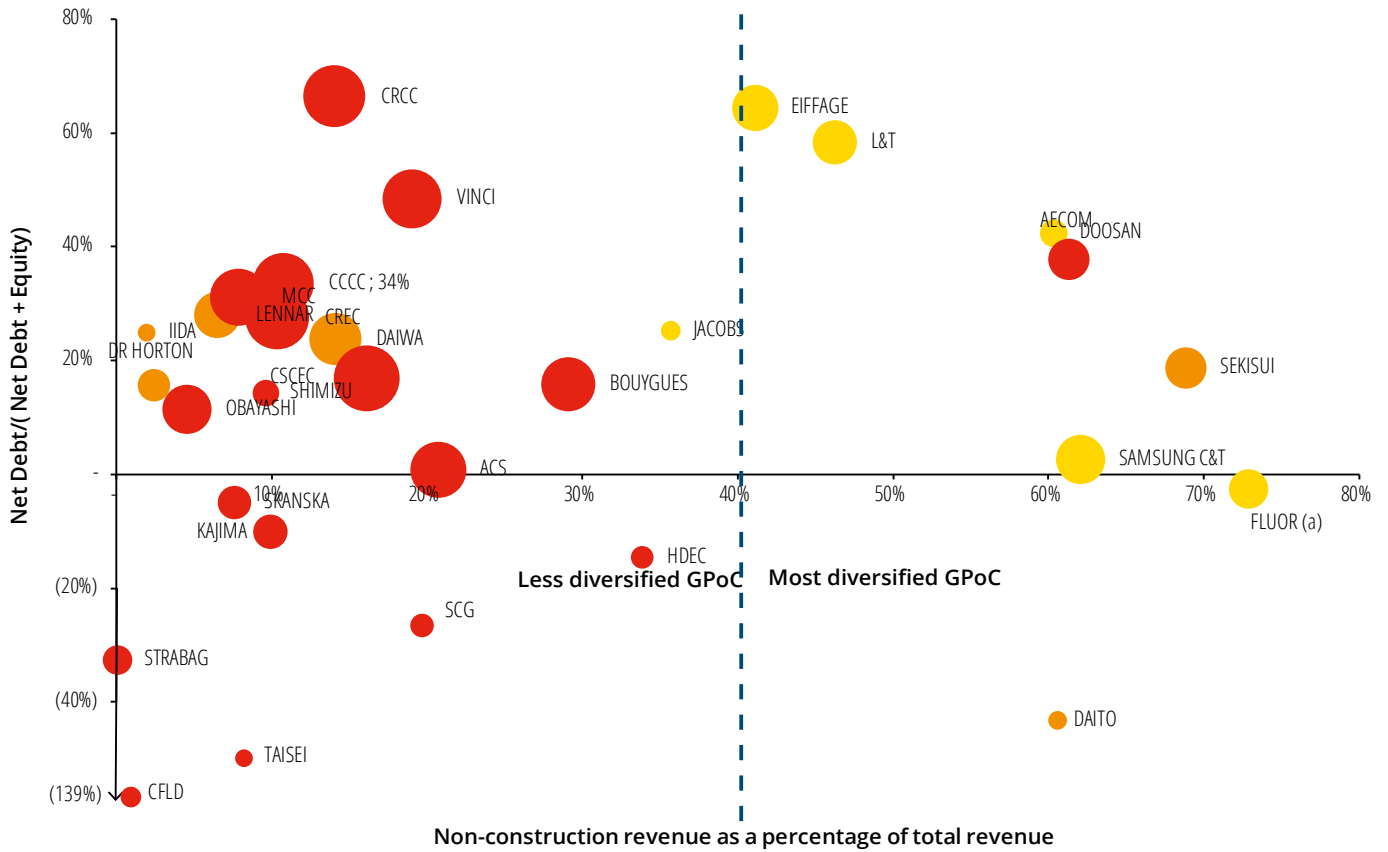
Figure 5.4: Top 30 GPOC, Net debt/(Net debt + Equity)



Source: Global Powers of Construction (GPOC) 2019. (July 2020). Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Figure 5.5: Top 30 GPoC, Non-construction revenue as a percentage of net debt (net debt + equity)



Source: Global Powers of Construction (GPoC) 2019. (July 2020).

Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.



than 40% of their revenue comes from non-construction services) reported an average net debt/(net debt + equity) ratio of 34.8%, almost four percentage points above the ratio presented by the least diversified companies.

While aggregate net debt grew by 12%, market value remained stable. As a result, the average net debt to market capitalization ratio worsened in 2019.

Net debt/Market capitalization

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

- Aggregate net debt grew by 12% in 2019, while aggregate market value remained very similar to the previous year. As a result, the net debt to market

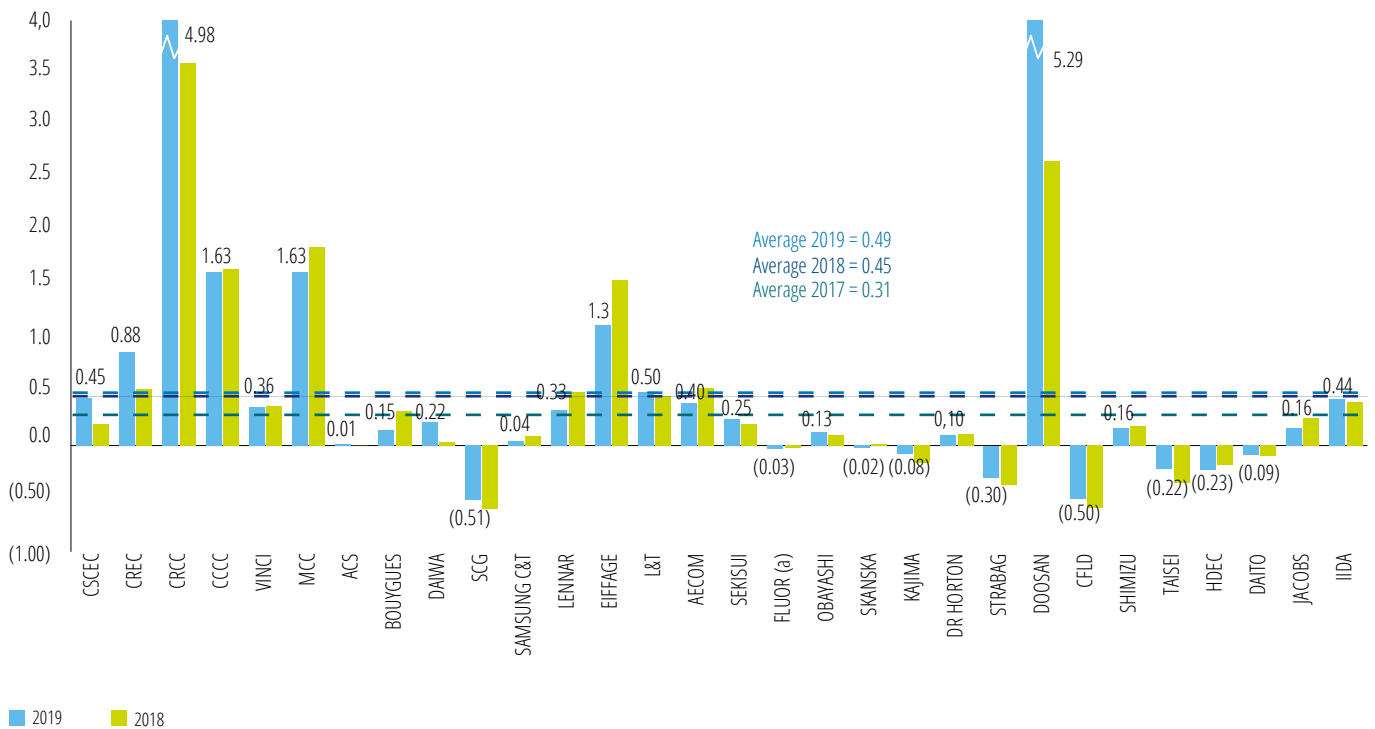
capitalization ratio worsened from 0.45 to 0.50. The ratio has been worsening since 2017.

- Nine companies obtained negative ratios due to the net cash positions they reported at the end of 2019. Sixteen GPoC reported ratios of between 1 and

0, while five groups (four of them from Asian companies) recorded higher net debt than market value.

- The ratios reported by Doosan and China Railway Construction jumped to 5.29 (2.68 in 2018) and 4.98 (3.60 in 2018), respectively, due to the combined

Figure 5.6: Top 30 GpoC Net debt/Market capitalization



Source: Global Powers of Construction (GPoC) 2019. (July 2020). Bloomberg and company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

effect of higher debt and lower market capitalization. At the other end of the spectrum, Shanghai Construction Group recorded the lowest ratio, thanks to the group's net cash position. In addition, Eiffage managed to reduce its net debt to market capitalization ratio by 0.4 points to 1.13 as a result of its strong performance in the stock markets.

Market capitalization/Book value

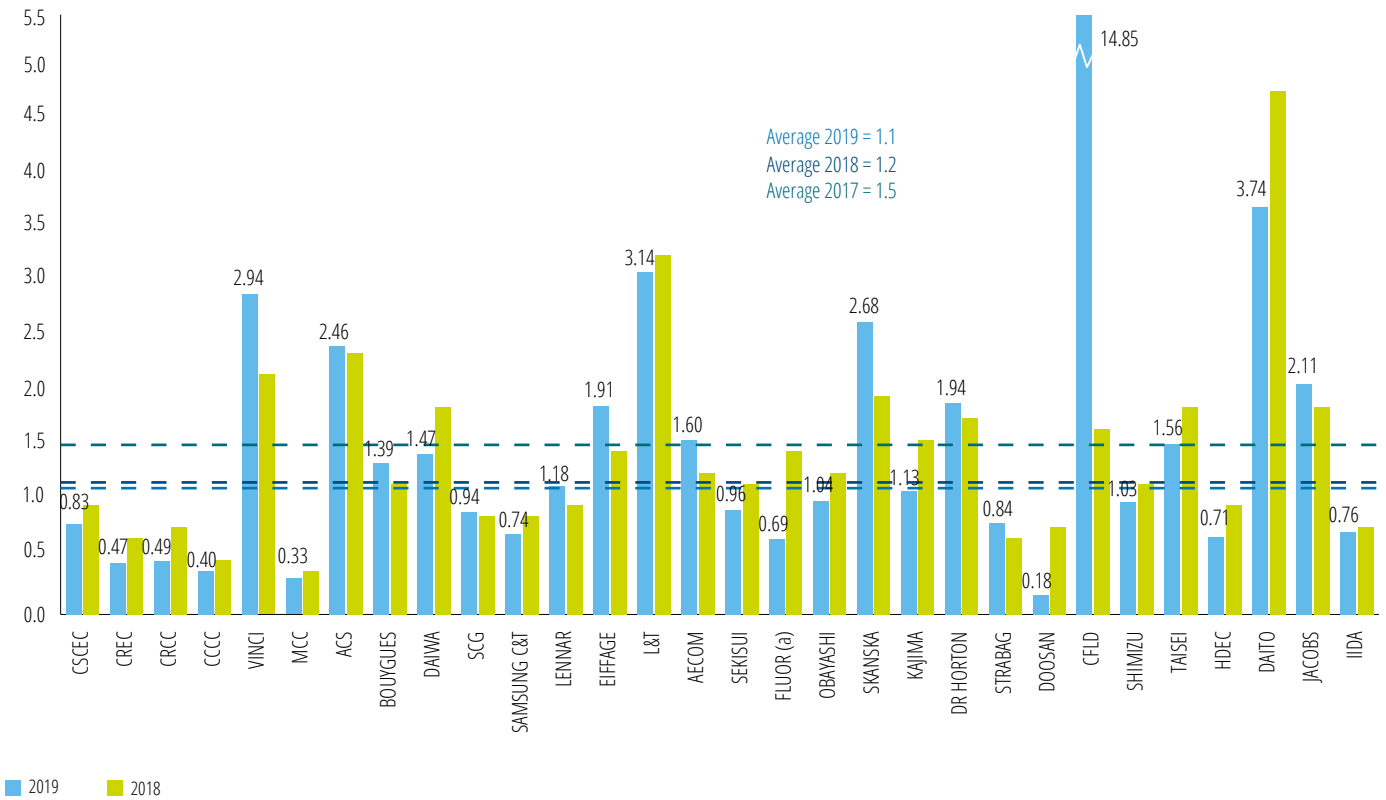
The analysis of the market capitalization to book value ratio (Figure 5.7) enables us to draw the following conclusions:

Since 2017, book value has increased by 21%, while market capitalization has fallen by 9%, resulting in a 0.4 reduction in this ratio to 1.1 in the period under review.

The Chinese firm CFLD still heads the ranking (14.85). The Top 5 is completed by Daito Trust (3.74), L&T (3.14), Vinci (2.94) and Skanska (2.68).

Thirteen groups are trading at a discount to book value. Of these, the lowest ratios were reported by Doosan (0.18), Metallurgical Corporation of China (0.33) and China Communications Construction Group (0.40).

Figure 5.7: Top 30 GPoC Market capitalization / Book value



Source: Global Powers of Construction (GPoC) 2019. (July 2020). Bloomberg and company financials.

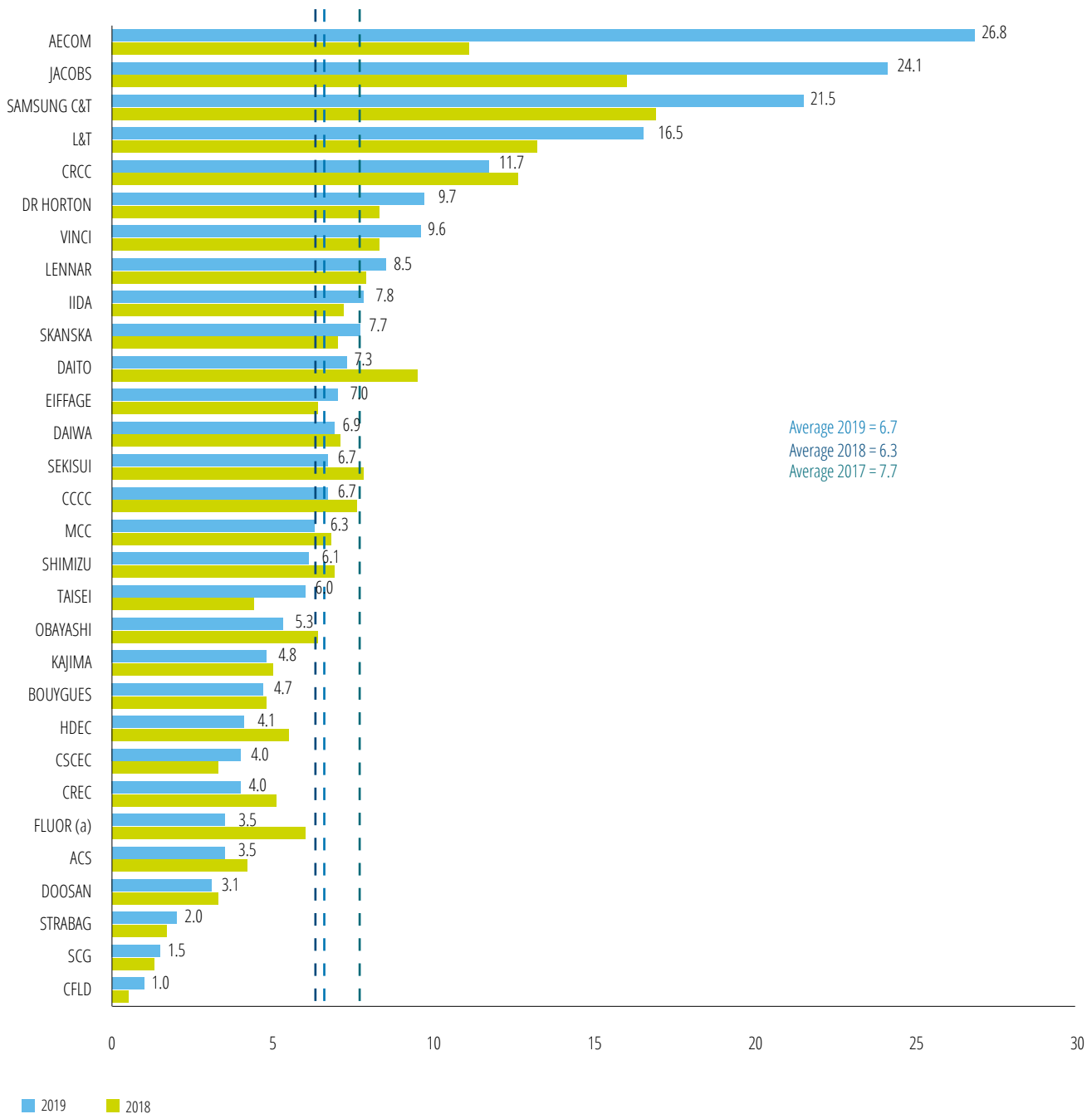
a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Enterprise value/EBITDA improved from 6.3 in 2018 to 6.7 in 2019 as a result of a 7.5% increase in enterprise value in the year.

Enterprise value/EBITDA

The average Enterprise Value/EBITDA multiple (Figure 5.8) increased from 6.3 in 2018 to 6.7 in 2019 as a result of a 7.5% increase in enterprise value that was partially offset by a 1.2% growth in EBITDA. Eleven groups reported ratios below 5, fourteen entities had ratios of between 5 and 10 and five GPoC had ratios exceeding 10.

Figure 5.8: Top 30 GPoC Enterprise value / EBITDA



Source: Global Powers of Construction (GPoC) 2019. (July 2020).
Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

By geographical area, US companies recorded enterprise value/EBITDA ratios of 10.5, much higher than the 6.7 reached in Europe and the 6.1 posted by Asian companies.

Net debt / EBITDA

The average net debt/EBITDA ratio (Figure 5.9) has been steadily increasing since 2017. In 2019, it reached 2.2, compared to 2.0 in 2018.

In 2019, the highest ratios were reported by China Railway Construction Corporation (9.8), AECOM (7.6) and Larsen & Toubro (5.5).

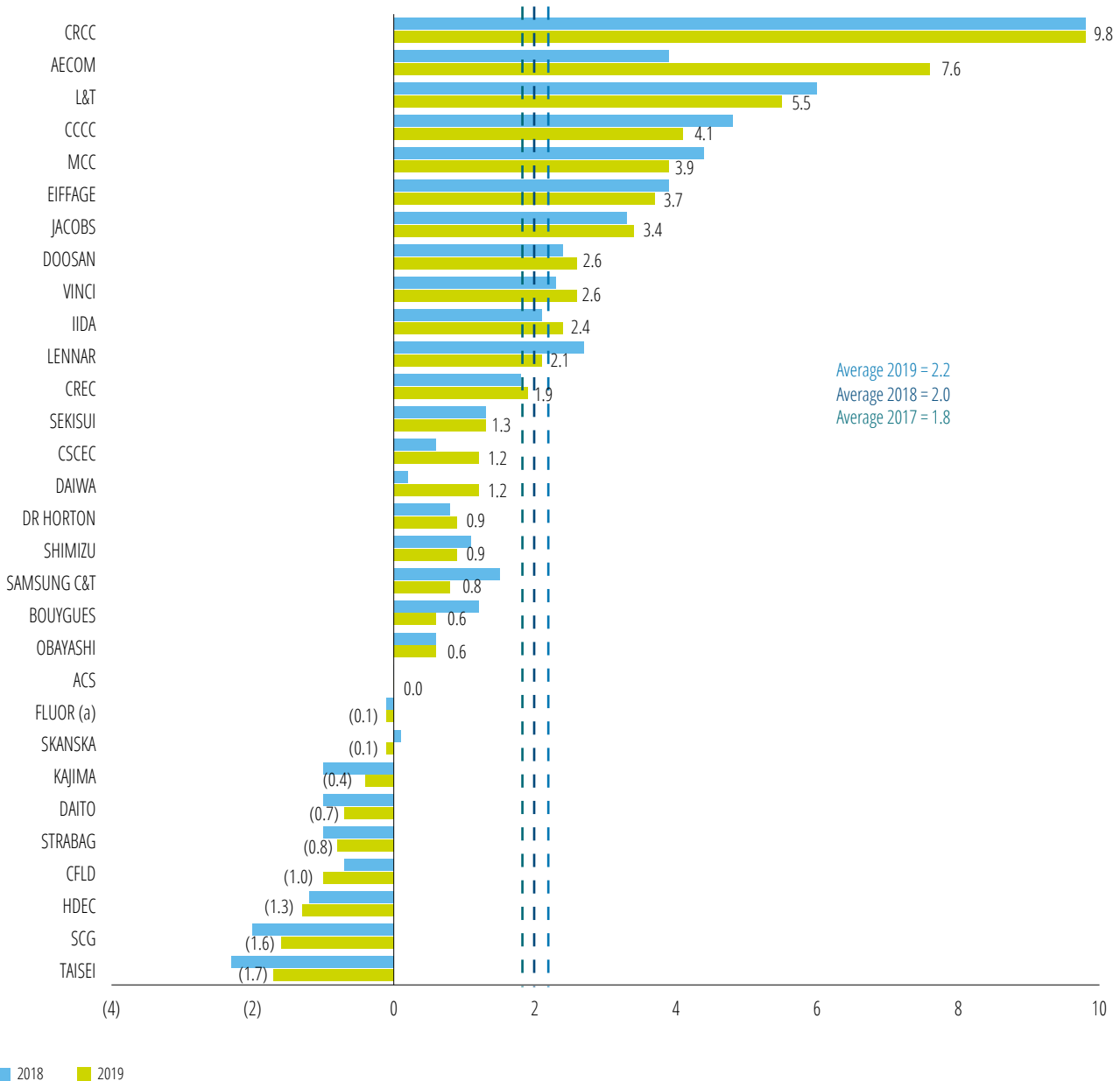
At the other end of the spectrum, nine groups achieved ratios below zero as a result of the cash surpluses reported at the end of the year. None of the entities under review obtained negative EBITDA in 2019.

Except for Iida Group, all entities considered as homebuilders recorded below-average ratios, since this business activity needs less investment than civil construction work.

Capital expenditure/Sales

The Top 30 GPoC's average capital expenditure/sales ratio was 2.5% in 2019, lower than the 3.1% recorded in 2018 (Figure 5.10).

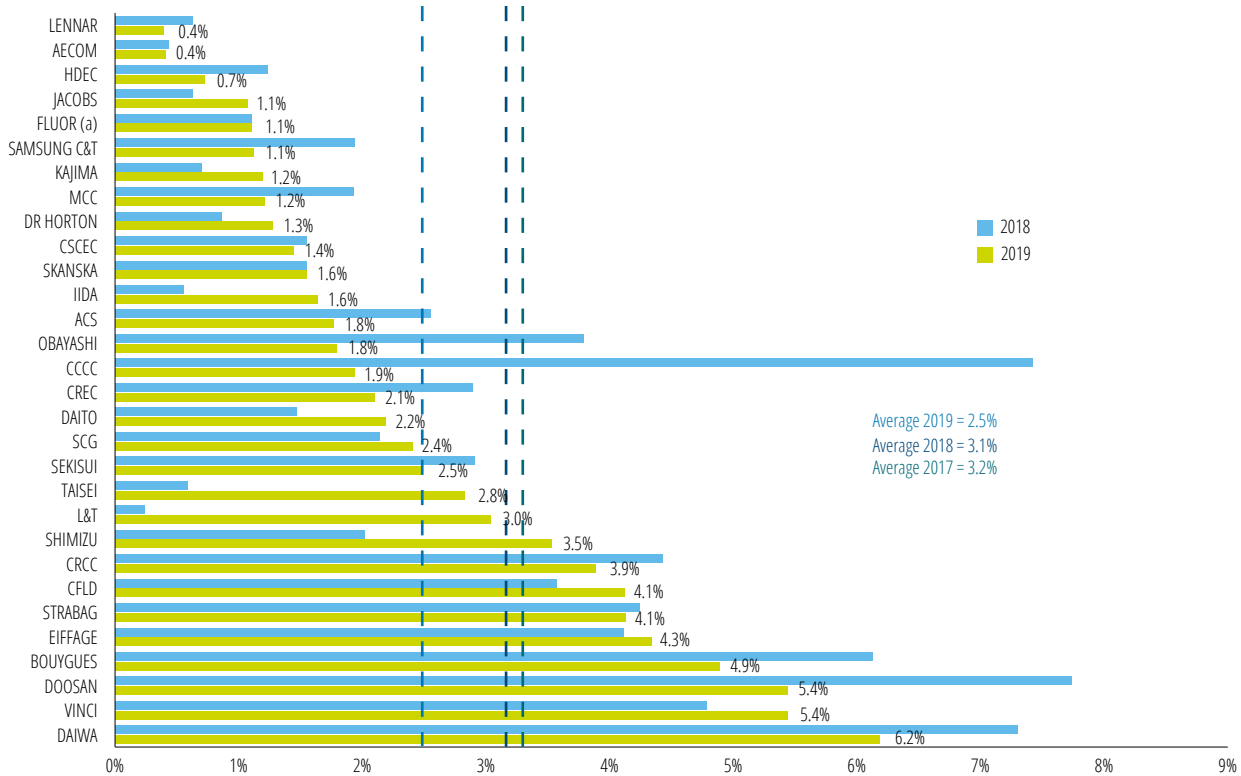
Figure 5.9: Top 30 GPoC Net Debt / EBITDA



Source: Global Powers of Construction (GPoC) 2019. (July 2020). Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Figure 5.10: Top 30 GPoC Capital expenditure / Sales



Source: Global Powers of Construction (GPoC) 2019. (July 2020).
Company financials.

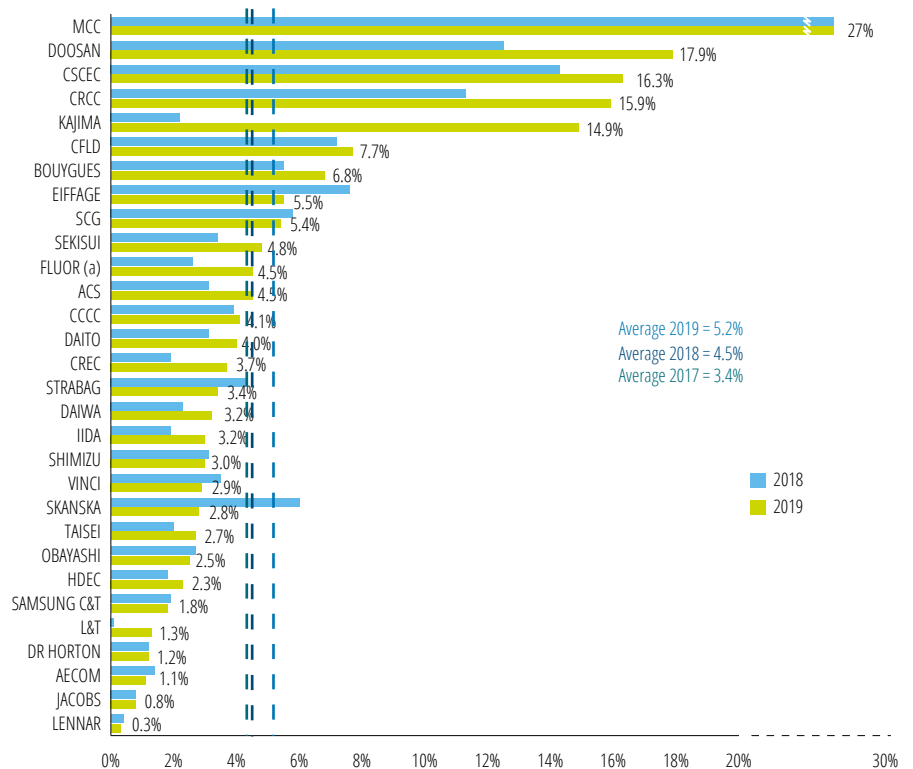
a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

These ratios are low since the construction business does not generally require significant levels of capital expenditure as construction contracts are generally financed through down payments. Capital expenditure requirements are traditionally higher in more diversified groups, since certain non-construction activities such as concessions and real estate are more capital intensive. Accordingly, there is a large presence of French groups among the Top 5, as they have been able to diversify the traditional construction business into other activities such as concessions or telecommunications.

Dividend yield

In 2019, the Top 30 GPoC companies reported an average dividend yield of 5.2%, significantly above the 2018 figure (Figure 5.11).

Figure 5.11: Top 30 GPoC Dividend Yield



Source: Global Powers of Construction (GPoC) 2019. (July 2020)

Bloomberg and company financials..

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

The Top 3 is dominated by Asian companies. Metallurgical Corporation of China, Doosan and China State Construction Engineering all reported dividend yields above 15%. Conversely, Lennar and Jacobs reported ratios below 1% in both 2019 and 2018.

Return on Equity (ROE)

Average ROE (Figure 5.12) for the Top 30 GPoC fell slightly in 2019, although it is still considerably above the 2017 level. Fifteen

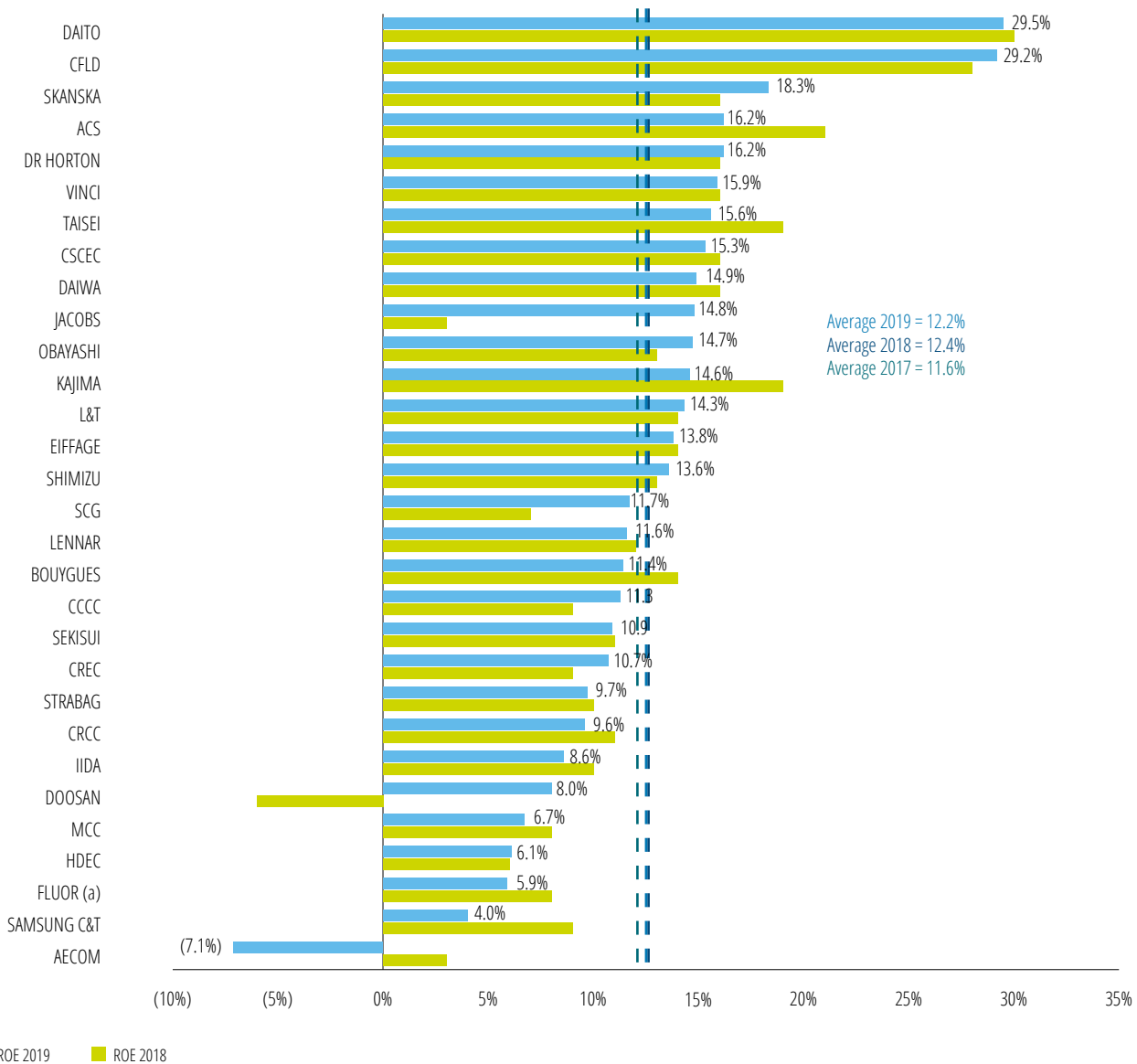
groups reported above-average ROE, meanwhile only one company obtained net losses in 2019.

In geographical terms, it is remarkable that while Chinese and European groups reported aggregate ROE of 13.7 and 13.6, respectively, US-based entities' ROE was below average (11.7).

In addition, since their businesses are less capital intensive, it seems that

pure construction groups (including homebuilders) have higher ROE than conglomerates, in view of the fact that the Top 3 is made up of Daito Trust Construction, China Fortune Land Development and Skanska.

Figure 5.12: Top 30 GPoC Return on Equity



Source: Deloitte. Global Powers of Construction (GPoC) 2019. (July 2020). Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

International presence of our GPOC

The uncertainty of the global economic forecast and the significant infrastructure needs in certain regions are the main drivers of the international expansion of our GPOC. Highly internationalized companies have been able to reduce and diversify risk stemming from the crisis.

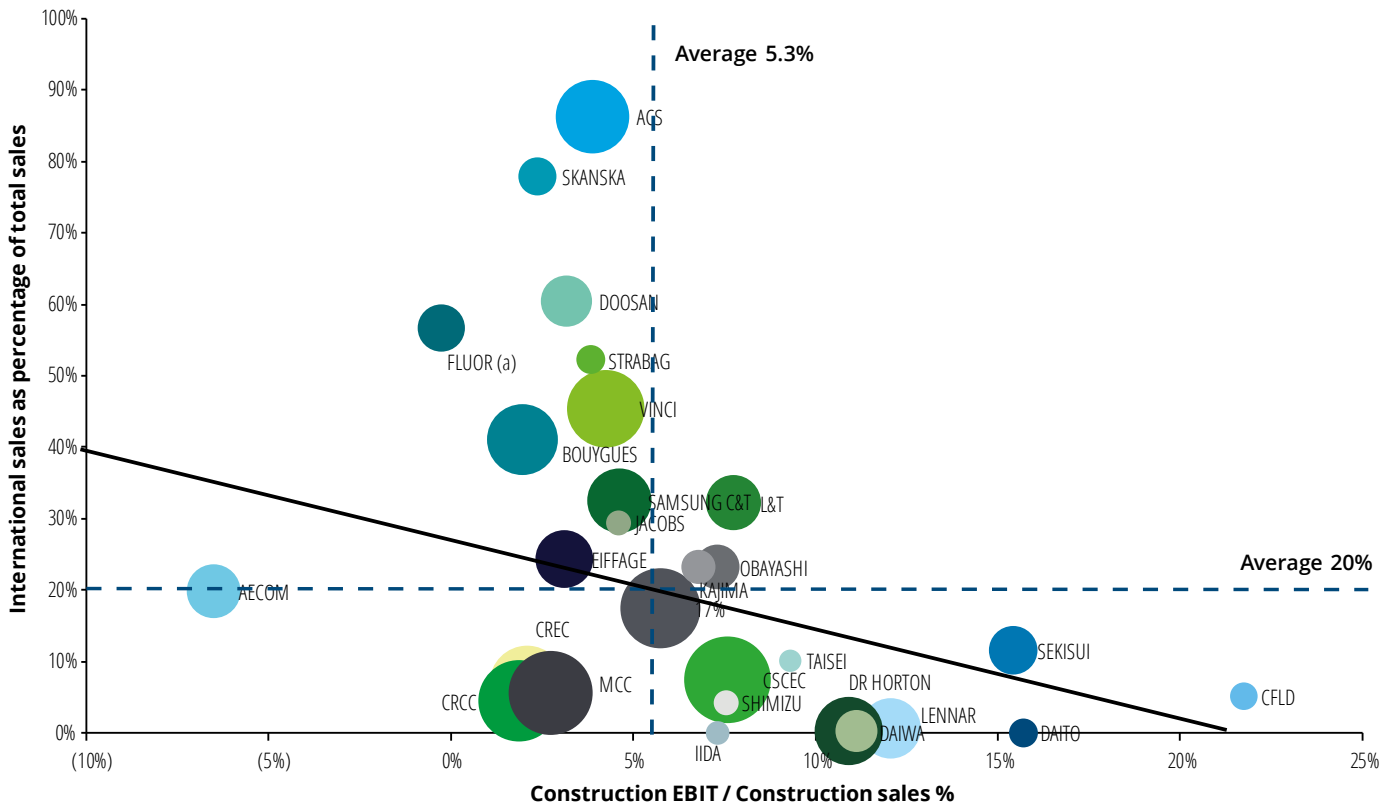
Over the last few years, there has been a clear trend for construction companies to expand into international markets. This process has been led by European companies, although in recent years Chinese and Korean companies have used significant acquisitions to expand their presence not only in Asia, but also in Europe and the Americas.

Since construction groups operate in an increasingly complex and competitive environment, one of the pillars that will contribute to sustainable and profitable growth is the reinforcement of their leadership in the infrastructure sector through internationalization. In addition, in the current situation stemming from the COVID-19 pandemic, highly

internationalized companies have been able to reduce and diversify risks since the impacts of the crisis on the construction industry have varied in different regions.

However, the internationalization strategy involves some specific risks that could result in even narrower margins in the sector. The low profitability of many global

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



Shanghai Construction and Hyundai Engineering have not been included in the analysis since they do not disclose their international revenues.

Source: Global Powers of Construction (GPOC) 2019. (July 2020).
Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

construction companies is a consequence of the competitive dynamic in which the industry is immersed: The low barriers to entry in most countries, combined with a significant overcapacity, are strangling the construction business of some of our GPoC.

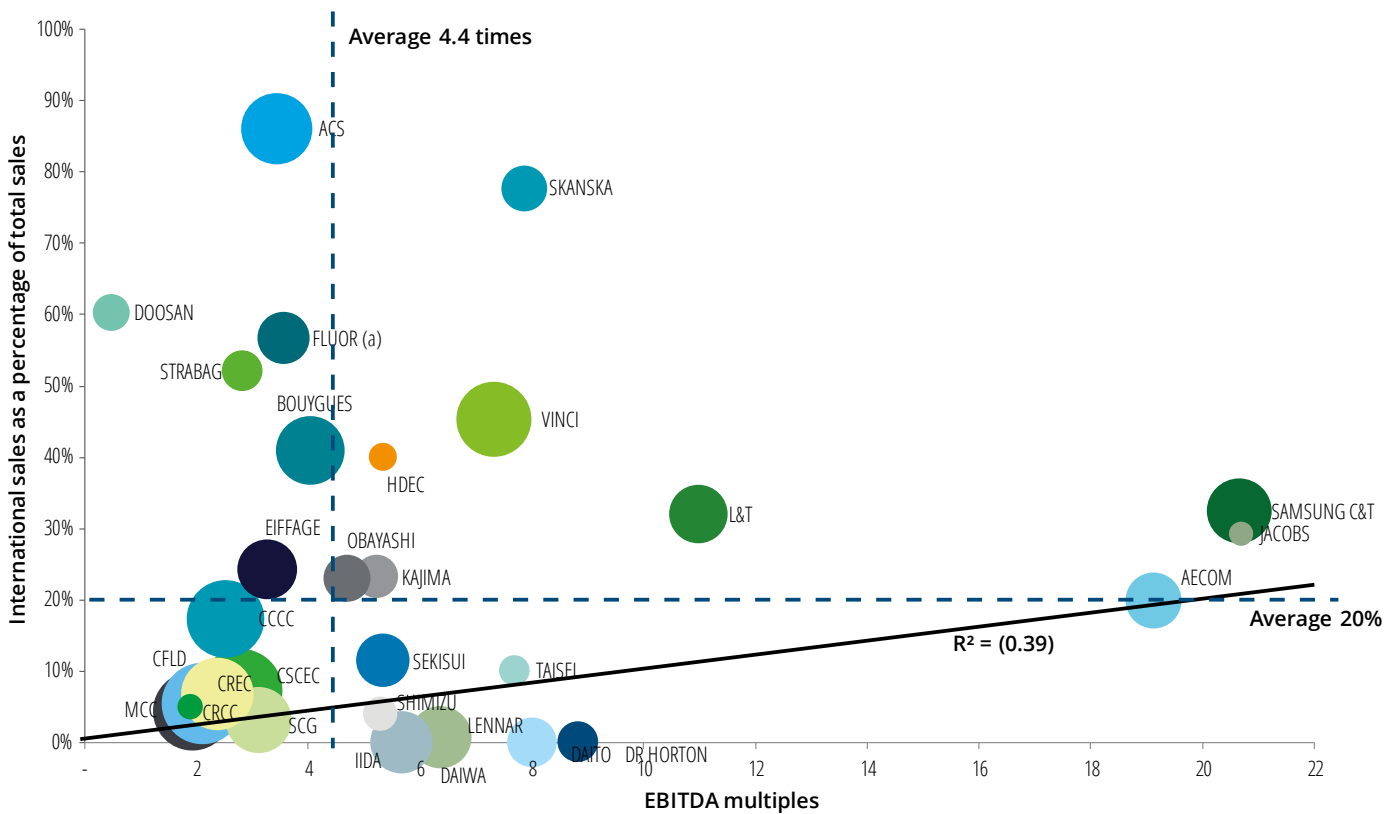
The results of the internationalization process have been mixed, and many groups have found it difficult to adapt their business models to foreign markets, but in any case, the international presence of our GPoC is expected to continue broadening in the coming years as demand in domestic markets is not always enough to cover the supply of construction services.

Based on our analysis of the level of internationalization and construction margins achieved by our Top 30 GPoC (Figure 6.1), there seems to be an inverse correlation between the two figures. The groups with a higher level of internationalization tend to obtain lower EBIT margins in their construction business. As can be observed in Figure 6.1, the overall average construction EBIT margin in 2019 was 5.3%, while the average construction margin for the companies with levels of internationalization above 70%, such as ACS and Skanska, was 3.3%. Not a single group with international sales levels above 40% reported above average EBIT margins in 2019. On the

other hand, Daito and Taisei, groups with internationalization levels around 10%, recorded average construction margins of 15% and 9%, respectively. 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, a business that usually reports higher profits than civil construction work.

When comparing the level of internationalization and the EBITDA multiple valuation achieved by our Top 30 GPoC, it is possible to identify a slight positive correlation between both variables but there are still notable exceptions to this trend. The highly internationalized

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



Source: Global Powers of Construction (GPoC) 2019. (July 2020).

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

ACS and Strabag were not able to attain above average EBITDA multiples, which is partially explained by the considerable importance of the construction business at these companies. On the other hand, multinational groups such as Vinci obtained an EBITDA multiple of 7.1 due, among other factors, to the contribution of certain non-construction activities such as concessions. Therefore, it could be assumed that a greater international presence does not necessarily lead to a higher market value. Finally, it should be noted that Samsung C&T and Jacobs Engineering obtained the highest EBITDA multiples among our GPoC due to the importance of other non-construction activities.

As previously mentioned, our Top 30 GPoC 2019 companies have a global presence and, as in previous years, they obtained about 20% of their revenue abroad. A summary of the presence of our GPoC by region (excluding the companies operating only in their domestic markets) is as follows:

The Americas

The presence of the Top 30 GPoC 2019 in the Americas is led by two European Groups, ACS and Skanska:

- ACS is once again the most international contractor among our GPoC, obtaining 86% of its total sales abroad (Figure 3.1). Activities in the US and Canada are headed by subsidiaries such as Dragados, Turner and Flatiron, which mainly focus on construction activities. The Group has also an extensive presence in other countries in the region, such as Mexico, Brazil and Peru, through its industrial services division. In 2019 income from North and South America saw double-digit growth and represented 49.6% and 5.6% of ACS's total sales, respectively.
- Skanska obtained about 42% of its sales in the US, which represents Skanska's single largest market. The Group's presence in the US is focused on construction activities, but other business lines are also expanding their operations in the country. The Commercial Property Development

business expanded its activities in the US to Los Angeles by acquiring a site in Beverly Hills that forms part of the 9000 Wilshire office project. The Group's position in the US for the coming years is supported by a USD 10,000 million backlog, which represents 53% of its total order book.

Middle East, Asia and Oceania

The South Korean groups Samsung C&T Corporation, Doosan and Hyundai Engineering and Construction Group had the strongest presence in 2019, while ACS is the one non-Asian company to have a significant presence in the area:

- Samsung C&T Corporation reported revenue of USD 6,356 million in the region, up 3% on 2018. The company has a large and varied portfolio of impressive construction achievements in the area like three of the world's tallest skyscrapers: Burj Khalifa, Petronas Twin Towers, and the Taipei 101. It is also participating in other large infrastructure projects throughout the region such as the Riyadh Metro in Saudi Arabia or the Fujairah F3 Combined Cycle Power Plant in the UAE, a recently-awarded contract for more than USD 1,000 million.
- Doosan posted revenue of USD 3,687 million in the region. In the last few years Doosan has laid the groundwork for expansion by winning large-scale projects in the Middle East, India and Southeast Asia. Doosan's operations in Asia are carried out mainly through subsidiaries such as Doosan Power Systems India, which is a major domestic player in the power sector, and Doosan VINA, which specializes in the manufacture of heavy industrial equipment in Vietnam.
- Hyundai Engineering and Construction Group is a Seoul-based general construction company and a subsidiary of the South Korean Hyundai Motor Group. In 2019 more than 19% of its sales were obtained in this region. The company's highlight in 2019 was the USD 2.7 billion contract it was awarded to build a gas and crude oil-processing facility in Saudi Arabia.

- ACS mainly operates in the region through CIMIC, an Australian-based listed subsidiary. Financial results in the area in 2019 were severely impacted by the decision to exit operations in the Middle East in order to focus resources on growth opportunities in core markets. However, the backlog in Oceania was strengthened with new contracts such as the Cross River Rail project, a PPP agreement for the financing, design, construction and operation of the 10-kilometer-long new metro line in Brisbane (Australia).

Africa

Even though construction projects on the continent are getting bigger and more complex, the presence of our GPoC is still limited. According to our analysis, Hyundai Engineering and Construction Group and the French entities Bouygues and Vinci lead the presence in the area:

- As in Asia/Oceania, Hyundai Engineering and Construction Group also has a strong presence in Africa, a market that accounted for about 20% of its total sales in 2019. The most important event of the year was the award of a USD 730 million contract to build a combined thermal power plant in Algeria.
- Bouygues, as in the previous year, posted revenue of USD 1,150 million in Africa, 3% of total income. Among other projects, the company is currently working on line 3 of the Cairo Metro (Egypt), upmarket building projects in Morocco, and the renovation of Antananarivo and Nosy Be airports in Madagascar.
- As Bouygues did, Vinci obtained 3% of its sales on the African continent. Vinci Construction's subsidiary in Africa, Sogea-Satom, continued to expand in Morocco and East and West Africa. In road works, the main projects included the Lena-Tibati and Olama-Bingambo highways in Cameroon, and the expressway connecting Niamey international airport with the city center (Niger). In non-residential construction, the flagship achievement was the construction of the 20,000-seat Yamoussoukro stadium in Ivory Coast. In 2019 the company was

also active in work on water treatment plants and pipelines designed to improve access to drinking water in Uganda, Republic of Congo, Senegal and Mali. Lastly, mention must be made of the buoyant activity reported in West Africa by Vinci Energies, with large projects in Senegal (contract to reinforce the national electricity transmission and distribution grid) and Ivory Coast (electrification of 28 municipalities).

is expected to continue in the coming years as a result of the significance of its European backlog (95%). In 2019, the company reported growth in its home market of Austria and in transportation infrastructure in Poland, Hungary and the Czech Republic, which more than compensated for the loss of a key German client in property and facility services. The company's performance in its other European markets was mixed.

firm is expanding its business in Germany after acquiring the local construction company THG Baugesellschaft GmbH.

Europe

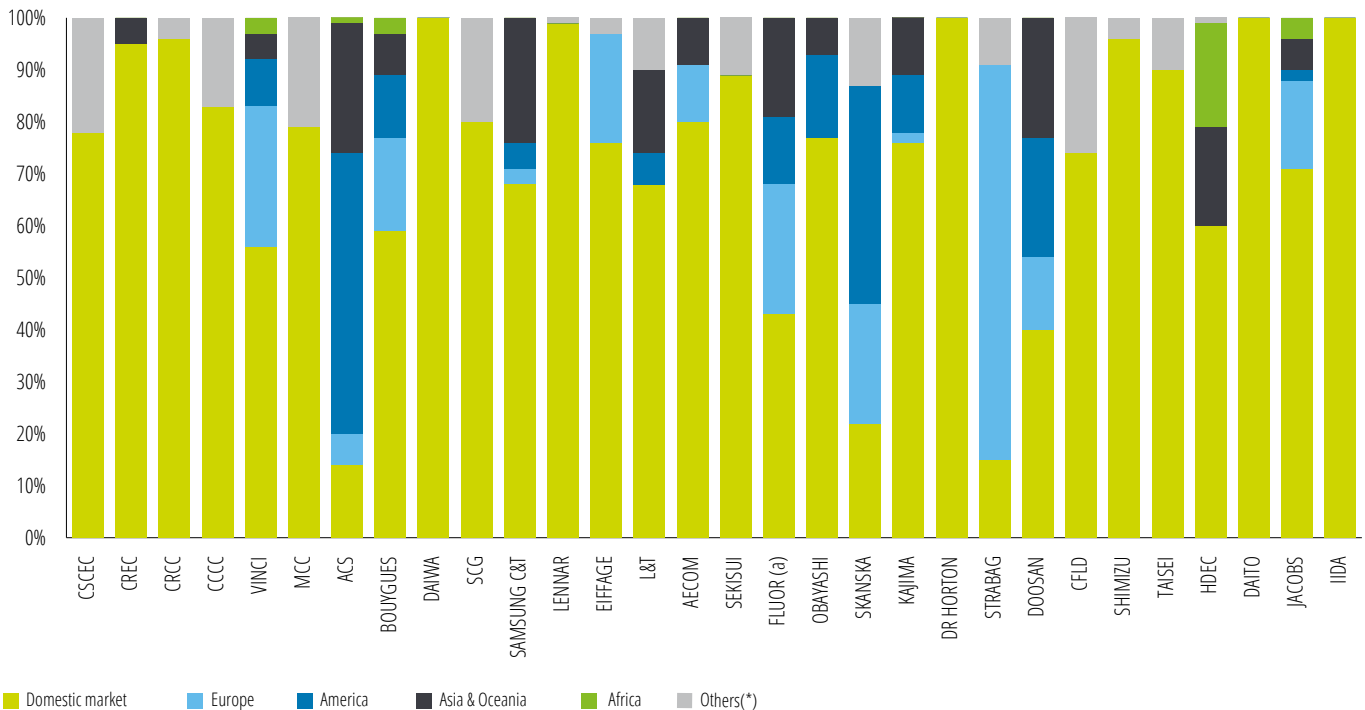
Strabag, Vinci and Fluor lead the presence of our Top 30 GPoC in Europe, with 79%, 27% and 25% of total income, respectively, originating in this region:

- Strabag made almost all its sales in the area. Although the group is attempting to expand its businesses around the globe, the presence outside Europe is still limited and only represents about 5% of total income. This trend

- In 2019 Vinci obtained revenue USD 14,670 million in Europe (excluding France). The company's most important markets in Europe are the UK and Germany. Ringway, the Group's British subsidiary, is a major player in long-term road maintenance contracts. VINCI Energies, an electrical engineering and installation company, ranks among the top players in Germany, where it has a strong position. In addition, through Eurovia's railway work subsidiary ETF, the

- Fluor performs a significant number of contracts in Europe, particularly in the Netherlands. In 2019 the company, in a joint venture with HOCHTIEF and Heijmans, began the Zuidasdok project for the widening and partial tunneling of the A10 South ring road and the redevelopment of Amsterdam-Zuid Station. Fluor has also presence in other European countries such as Spain, where it is performing a contract for engineering, procurement services, and construction management services of the grassroots LNG terminal for Enagás on the north coast.

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: Global Powers of Construction (GPoC) 2019. (July 2020). Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019's financial statements have not yet been issued.

Diversification of the GPoC 2019

Most construction groups have diversified their portfolio to enable them to carry out activities throughout the entire infrastructure cycle by increasing synergies and harnessing their competitive advantages and knowledge of the sector, resulting in higher profitability. South Korea-, India- and US-based companies recorded the highest diversification levels, all over 35%.

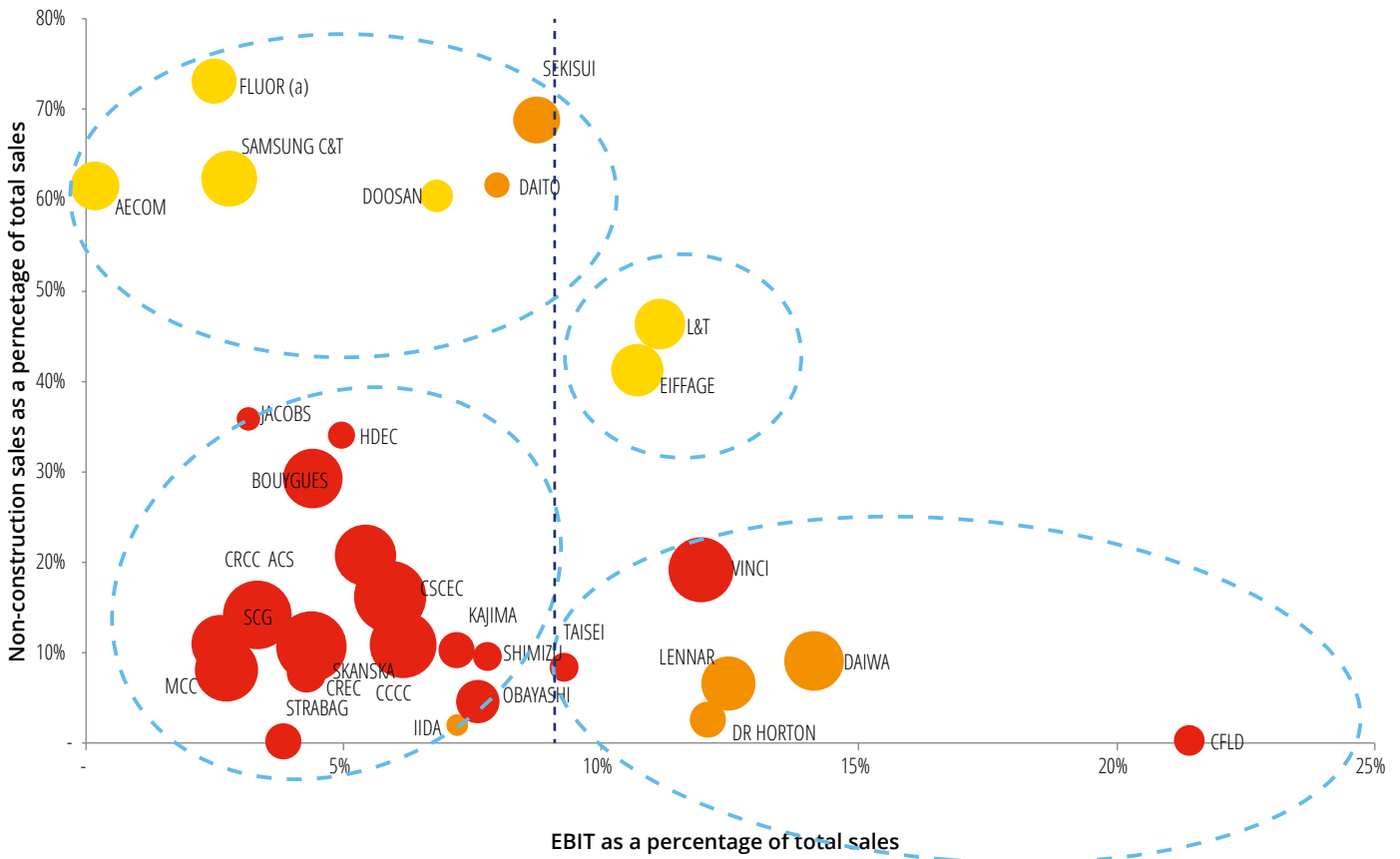
Construction margins are traditionally lower than in other interrelated businesses, while operating risks are higher. As a result, most construction groups have diversified their portfolio to perform activities throughout the entire infrastructure cycle. This allows construction groups to increase synergies and harness their competitive advantages and knowledge of the sector, resulting in higher profitability.

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 (with more than 40% of total income arising from non-construction activities). These businesses are characterized by higher operating margins, shorter life cycles and more recurrent

revenue. However, it should be pointed out that higher diversification usually leads to greater indebtedness as construction is traditionally a sector of low capital intensive intensity.

The graph below identifies the groups through three main colors, according to each group’s core business. The red companies are those whose main business

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



Source: Deloitte. Global Powers of Construction (GPoC) 2019. (July 2020).
Company financials.

a) The Fluor Corporation figures refer to the year ended 31 December 2018, since 2019’s financial statements have not yet been issued.



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.

The GPoC's non-construction sales represent 20% of total revenue, two percentage points down on 2018. Despite the fact that there seems to be a slight direct correlation between the degree of diversification and the margins achieved, a more in-depth analysis based on the level of diversification achieved gives rise to the following conclusions:

Highly diversified companies

The first group is represented by L&T and Eiffage. Both companies reported almost 11% operating profitability and over 40% of their revenue comes from non-construction activities, in line with 2018. Although infrastructure continued to be L&T's main activity, other businesses such as heavy engineering and realty performed particularly well during the year. Along the same lines, Eiffage reported above-average operating profitability due mainly to the strong performance of the concession segment. On the other hand, L&T and Eiffage obtained a net debt to equity ratio of 58% and 65%, respectively, significantly higher than the Top 30 GPoC average (32%).

The two homebuilders that achieved high diversification levels are Daito and Sekisui. Both entities obtained above-average operating profitability (8%, in line with 2018), but it should be considered that home building traditionally reports higher profits than civil construction work.

Fluor, Doosan, AECOM and Samsung make up the third grouping. These groups obtained a significant portion of their total sales from non-construction activities, but operating profitability was slightly below 3% (6% excluding construction activities). No companies obtained operating losses in 2019 but aggregate figures are affected by the significant impairment losses recognized by AECOM on the goodwill that arose as part of prior years' acquisitions. Doosan and Samsung reported EBIT/Sales ratios in line with 2018.

Less diversified companies

This grouping includes companies that obtained more than 60% of their revenue from construction activities. In addition, 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 first subgroup includes 17 companies. Average profitability was 5% and non-construction revenue represented less

than 15%. The Top 3 in terms of EBIT/Sales ratio is formed by the Japanese entities Shimizu, Obayashi and Kajima which mainly provide construction services to the local market, an activity that traditionally reports higher profits than overseas work. The average net debt to equity ratio of the 17 entities included in this category was 31.9%, significantly lower than other diversified groups such as L&T and Eiffage.

The last category is represented by five entities which are focused on construction activities (representing about 90% of total income) but still obtained operating profitability of approximately 12%. As we have already mentioned, Daiwa, Lennar and D.R. Horton performed well in terms of profitability since home building traditionally reports higher profits than civil construction work. Vinci still has a large construction business, but the concession segment makes a significant contribution to the entity's results. Finally, CFLD is clearly an outlier with an operating profit to sales ratio of 21%.

According to our analysis of the diversification strategies adopted by our GPoC apart from Construction, the segments into which our GPoC have diversified the most are Real Estate Development, Waste Management, Facility Management and Concessions.

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 GROUP LTD. (CCCC)	✓✓✓	✗	✓✓	✓	✗	✓	✗	✓
VINCI	✓✓✓	✓✓	✓✓✓	✓✓✓	✗	✓✓	✗	✗
METALLURGICAL CORPORATION OF CHINA LTD (MCC)	✓✓✓	✓✓	✗	✗	✗	✓	✗	✓
ACS, ACTIVIDADES DE CONSTRUCCION Y SERVICIOS SA (ACS)	✓✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✗	✓✓✓
BOUYGUES	✓✓✓	✓✓✓	✓✓	✓✓	✗	✓✓	✓✓✓	✓✓
DAIWA HOUSE INDUSTRY CO.	✓✓✓	✓✓✓	✗	✗	✗	✓	✗	✓
SHANGHAI CONSTRUCTION GROUP (SCG)	✓✓✓	✓	✗	✓	✗	✗	✗	✗
SAMSUNG C&T CORP.	✓✓✓	✓	✗	✓✓✓	✗	✓	✓	✓
LENNAR CORP.	✓✓✓	✓✓✓	✗	✗	✗	✓	✗	✓
EIFFAGE SA	✓✓✓	✓✓	✓✓✓	✓✓✓	✗	✗	✗	✗
LARSEN & TOUBRO LTD. (L&T)	✓✓✓	✗	✗	✓✓	✗	✓	✗	✓
AECOM	✓✓✓	✓	✓	✓✓✓	✗	✗	✗	✓✓
SEKISUI HOUSE	✓✓✓	✓✓✓	✗	✗	✗	✗	✗	✓
FLUOR CORP.	✓✓✓	✗	✗	✓✓✓	✗	✓✓✓	✗	✓
OBAYASHI CORP.	✓✓✓	✓	✓	✗	✗	✗	✗	✗
SKANSKA AB	✓✓✓	✓✓✓	✗	✓✓✓	✗	✗	✗	✗
KAJIMA CORP.	✓✓✓	✓	✗	✗	✗	✗	✗	✗
DR HORTON	✓✓✓	✓✓✓	✗	✗	✗	✗	✗	✗
STRABAG	✓✓✓	✓✓	✓✓	✓✓	✗	✓	✗	✓
DOOSAN	✓✓✓	✗	✗	✓	✗	✓✓	✗	✓✓
CHINA FORTUNE LAND DEVELOPMENT (CFLD)	✓✓✓	✓✓✓	✗	✗	✗	✗	✗	✗
SHIMIZU CORP.	✓✓✓	✓	✗	✗	✗	✗	✗	✗
TAISEI CORP.	✓✓✓	✓	✗	✗	✗	✗	✗	✗
HYUNDAI ENGINEERING & CONSTRUCTION CO. LTD. (HDEC)	✓✓✓	✗	✓	✓✓	✗	✓	✗	✗
DAITO TRUST CONSTRUCTION	✓✓✓	✓✓✓	✗	✗	✗	✗	✗	✗
JACOBS ENGINEERING	✓✓✓	✗	✗	✓✓✓	✓✓	✗	✗	✓
IIDA GROUP HOLDINGS	✓✓✓	✓✓	✗	✗	✗	✗	✗	✓

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

Source: Global Powers of Construction (GPoC) 2019. (July 2020).
Company financials.

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 conclusions may be drawn:

Concessions

This sector is characterized by the strong capital investment requirements to build infrastructure. Numerous public-private partnerships between government agencies and private groups were launched in recent years 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, and considering that in the short and medium term public funds are expected to be redirected to social recovery as a result of the COVID-19 outbreak, these partnerships could become even more significant.

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

- **Atlantia** is an international player that manages most Italian motorways as well as toll roads in countries such as Brazil, Chile and India. With over 31,000

employees, the group is operational in 24 countries and manages over 15,000 km of toll motorway, as well as the Fiumicino and Ciampino airports in Italy and other airports in France, handling over 64 million passengers per year. Since 2018 the company has held a significant stake in Abertis, a Spain-based leader in the concession sector. In terms of revenue, Atlantia is by far the largest group included in our ranking, but this leadership has not been translated to the stock markets. Market capitalization grew significantly in 2019 to USD 19,110 million, but still remains below that of Transurban.

- **NWS Holdings** is one of the leading infrastructure players in China, headquartered and listed in Hong Kong. The core businesses of the company include toll roads, commercial aircraft leasing and construction. The road segment operates in over 15 projects across China, operating over 700 km. The aircraft segment managed and owned more than 220 planes for leasing. In 2018 NWS expanded its toll roads business through the acquisition of a 30% interest in the Suiyuenan Expressway in Hubei and a 40% stake in the Sui-Yue Expressway in Hunan. Also, in July 2019 the company secured the concession rights to operate the Changliu Expressway in Hunan, expanding the number of infrastructure assets managed. NWS Holdings has

been a pioneer of the PPP (public-private partnership) model in China, with over 70 water and waste projects in more than 30 cities through China. In terms of financial performance, it should be noted that net debt has been reduced since 2015 to almost zero in 2019. This reduction resulted mainly from proceeds from the issuance of perpetual capital securities, operating cash inflows and significant dividends received.

- **Transurban** is a road and concession operator specialized in urban toll roads mostly in Australia and North America. In 2019 the company made progress across its various business segments, with an 18% increase in toll roads revenue. Its main operations are located in Sydney and Melbourne through the CityLink motorway, West Gate Tunnel, Lane Cove Tunnel and Cross City Tunnel, among other toll roads. Transurban is the most valuable company of the groups reviewed and its market capitalization jumped by 65.6% to USD 27,644 million during the year. This strong performance is partially explained by low volatility in terms of traffic, CPI-based toll increases in concession contracts and a low risk profile, since road operation is conventional and during construction the risks are mostly assumed by the main contractor.
- **John Laing** is a British investor, originator and concession operator which is listed

Figure 7.3: Leading Concessions groups

Company	Country	Sales (USD million)	EBIT (USD million)	EBIT / Sales %	EBITDA (USD million)	EBITDA / Sales %	2019 Market cap	% change 2018-2019	Net debt (USD million)	Equity (USD million)	Net debt / (Net debt + Equity)	Net debt / EBITDA
Atlantia	Italy	13,483	1,931	14.3%	8,351	61.9%	19,110	12.9%	41,422	16,811	71.1%	5.0
NWS Holdings	China	3,618	358	9.9%	558	15.4%	8,042	19.2%	3	7,330	0.0%	0.0
Transurban	Australia	2,980	716	24.0%	1,428	47.9%	27,644	65.6%	11,768	1,479	88.8%	8.2
John Laing	UK	2,256	143	6.3%	144	6.4%	2,166	4.3%	310	2,200	12.4%	2.2
Total Concessions		8,853	1,217	13.7%	2,130	24.1%	37,852	48.4%	12,082	11,009	52.3%	5.7

Source: Global Powers of Construction (GPoC) 2019. (July 2020). Bloomberg and company financials.

on the London Stock Exchange and operates in a range of international markets including the UK, Europe, Asia Pacific and North America. In 2019 the company expanded operations to Latin America through the acquisition of a 30% interest in Ruta del Cacao, a PPP project in Colombia that is currently under construction. In addition, the company has recently invested in several renewable energy plants: the 255 MW Sunraysia Solar Farm, the Finley Solar Farm in Australia and a 175 MW solar project in New South Wales, amongst others. In 2019 net debt rose to USD 310 million due to the investment obligations undertaken, but remains below average.

The concession business is characterized 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 higher 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 in the concession business, reported net debt to equity ratios of 48% and 65%, respectively, as compared with the average ratio of 53% calculated for the concession competitors analyzed. Other GPoC with a significant presence in the concession business are ACS, Strabag,

China Communications Construction and Metallurgical Corporation of China.

Engineering & Energy

The companies included in this sector cover a diverse range of services, from construction project design and consulting to the maintenance and operation of energy, industrial and mobility infrastructures. This market is dominated by highly specialized Asian firms, mostly from China:

- **Power Construction Corporation of China**, also referred to as PowerChina, is one of the largest comprehensive solution providers for 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 green energies. The Yangtze Three Gorges, the largest hydropower plant in the world with a capacity of 22,500 MW, is one of the flagship projects developed by the company in recent years. Total revenue exceeded USD 50,000 million while EBIT and EBITDA performed above average as a percentage of sales. On the other hand, market value decreased by 13% to USD 9,440 million, in line with the performance reported in the stock markets by other Chinese groups included in our GPoC Top 100 ranking.

- **China Aluminum International Engineering**, also referred to as CHALIECO, is a Chinese engineering firm established in 2003 to carry out engineering projects, including business project development, design and consulting. Engineering and construction contracting made up 68% of the company's revenue in 2019. Other relevant segments are equipment manufacturing and design and consultancy. 2019 represented a rather difficult year in the company's history since EBIT and EBITDA performed quite below average. Nevertheless, the recently implemented reforms and its expansion to new markets, while closely monitoring project risks, will lead to sustainable and healthy growth in the future.

- **China Energy Engineering Corporation** is a large group offering complete solutions and full chain services in the energy, infrastructure and real estate sectors across China. Since its incorporation, the company has won more than 800 science and technology awards at the state and provincial level. Jointly with Power Construction Corporation of China, the company was involved in the construction of the Yangtze Three Gorges hydropower plant. In 2019 the company reported the highest EBIT to sales ratio of the groups reviewed.

Figure 7.4: Leading Engineering & Energy groups

Company	Country	Sales (USD million)	EBIT (USD million)	EBIT / Sales %	EBITDA (USD million)	EBITDA / Sales %	2019 Market cap	% change 2018-2019	Net debt (USD million)	Equity (USD million)	Net debt / (Net debt + Equity)	Net debt / EBITDA
Power Construction Corp. of China	China	50,334	1,750	3.5%	4,474	8.9%	9,440	(13.5%)	35,780	15,447	69.8%	8.0
China Aluminum International Engineering Corp. LTD	China	44,961	327	0.7%	1,138	2.5%	961	20.6%	1,838	15,395	10.7%	1.6
China Energy Engineering Corp. LTD.	China	35,797	2,277	6.4%	3,062	8.6%	3,623	(4.5%)	8,339	16,273	33.9%	2.7
TechnipFMC PLC	UK	17,131	(1,816)	(10.6%)	2,368	13.8%	9,586	8.7%	(321)	10,197	(3.3%)	(0.1)
JGC Corporation	Japan	5,589	210	3.8%	803	14.4%	3,351	(39.0%)	(933)	3,815	(32.4%)	(1.2)
Total Energy and Industrial		153,812	2,748	1.8%	11,845	7.7%	26,961	(9.6%)	44,703	61,128	42.2%	3.8

Source: Global Powers of Construction (GPoC) 2019. (July 2020). Bloomberg and company financials.

- **TechnipFMC** is a British public limited global energy service company that provides solutions for the production and transformation of hydrocarbons. The three main business segments of the firm 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 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. Among the groups analyzed, only Technip reported operating losses in 2019 as a result of the impairment losses recognized in the Subsea segment.
- **JGC** has executed around 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. In 2019 the company performed well in terms of operating profitability. In addition, it reported a cash surplus at the end of the year. Nevertheless, its market capitalization decreased to USD 3,351 million, in line with the performance of other Japanese groups included in our GPoC Top 100 ranking.

The companies included in this ranking do not differ substantially from the Top 30 GPoC firms. Most of these firms have similar business models and comparable risks.

Services

This segment may be the most varied in terms of the range of services provided and, therefore, we have selected the players that are most closely aligned with the services performed by the companies included in our GPoC. This category can be subdivided into two large groups: Water and Waste Management and Facility Management.



In the following figure we have identified the most significant companies involved in the **Water & Waste Management** business:

- **Veolia** is one of the largest global players in the environmental services industry. This French company is currently focused on three main segments: water, waste and energy. In 2019 the firm supplied 98 million people with drinking water, 67 million people with wastewater services and produced 45 million megawatt hours of energy. It also remained the largest player in terms of sales, but obtained below-average profitability and indebtedness ratios. Nevertheless, market capitalization grew by almost 33% to USD 15,103 million.
- The second company in terms of sales, **Suez Environment**, is also French and exclusively provides water and waste solutions. In 2019 Suez was the largest private water provider worldwide. The group's waste management segment handles collection, treatment, soil remediation and the dismantling and disassembly of treatment plants. The entity obtains about 30% of total revenue in France but it has a large presence in other European countries, as well as in America and Asia. Along the same

lines as Veolia, in 2019 the company obtained below-average profitability and indebtedness ratios. Nevertheless, its market capitalization grew by almost 15% to USD 9,360 million.

- Headquartered in Houston, Texas, **Waste Management, INC** is a NYSE listed company that provides waste management solutions across the US. It is North America's leading provider of comprehensive waste management environmental services and is the leading developer, operator and owner of landfill gas-to-energy facilities in the United States. In 2019 the company operated over 249 landfill sites, 302 transfer stations and employed close to 45,000 employees. It achieved the highest EBIT to sales ratio in the year among the companies in the Services segment (17.5%).
- **Republic Services** is the second-largest provider of non-hazardous solid waste collection, transfer, disposal, recycling and energy services in terms of revenue in the United States. The company operates in 41 states and Puerto Rico, through landfill sites, transfer centers and recycling sites. Its presence overseas is residual. In 2019 the company reported above-average ratios in terms of

profitability and indebtedness. Republic Services returned capital to shareholders amounting to USD 891 million, which includes both dividends and share repurchases. Performance in the stock market was robust in 2019, resulting in a market capitalization of USD 28,754 million (23.7% above 2018).

- **Waste Connections** is the third main player in non-hazardous solid waste collection and other services in North America. The group provides collection services to residential, commercial, industrial and municipal customers in over 42 states in the US and 6 provinces across Canada. In 2019 the company's revenue increased by 9.5% to USD 5,389 million and its EBITDA to sales ratio was 31.1%, the highest among the groups reviewed. Its stock market performance was also quite strong given the limited size of the group.

On average, the waste management sector reported higher profitability than the facility management business, but it also reported higher indebtedness ratios. In line with the French and US GPOC, the French and US firms included in the water and waste management services ranking showed market cap increases in 2019.

Figure 7.5: Leading Waste Management groups

Company	Country	Sales (USD million)	EBIT (USD million)	EBIT / Sales %	EBITDA (USD million)	EBITDA / Sales %	2019 Market cap	% change 2018-2019	Net debt (USD million)	Equity (USD million)	Net debt / (Net debt + Equity)	Net debt / EBITDA
Veolia Environnement	France	30,432	1,936	6.4%	4,502	14.8%	15,103	32.8%	11,990	7,946	60.1%	2.7
Suez Environnement	France	20,264	1,352	6.7%	3,067	15.1%	9,360	14.7%	11,398	10,428	52.2%	3.7
Waste Management INC,	USA	15,455	2,706	17.5%	4,360	28.2%	48,356	28.2%	9,937	7,070	58.4%	2.3
Republic Services INC,	USA	10,299	1,787	17.4%	2,827	27.4%	28,754	23.7%	3,948	8,121	32.7%	1.4
Waste Connections, Inc,	USA	5,389	838	15.6%	1,674	31.1%	23,959	22.4%	4,049	6,938	36.9%	2.4
Total Waste Management		81,839	8,619	10.5%	16,430	20.1%	125,532	25.4%	41,322	40,503	50.5%	2.5

Source: Deloitte. Global Powers of Construction (GPOC) 2019. (July 2020). Bloomberg and company financials.

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

- **Compass Group** is a multinational firm specialized in food and support services. The British group operates in over 50 countries and 50,000 client locations. It is a FTSE 100 listed company, ranked in 20th position in 2019. It is a highly internationalized group, since 62.4% of its revenue comes from North America, 23.3% from Europe and 14.3% from the rest of the world. In terms of type of clients, 39% of the company's revenue arises from private companies, 23% from healthcare, 18% from education and the remaining share from other clients. The British services firm increased its market capitalization by 16% in 2019, to approximately USD 40 billion. It also reported above-average profitability ratios, but indebtedness was also higher than other groups reviewed.
- The largest France-based private employer worldwide, **Sodexo**, offers a variety of facility and onsite solutions and services. In 2019 the group managed to increase revenue by 3.6% to USD 24,908 million. The distribution of revenue, by client segment, is as follows: 55% from business & public authorities, 25% from health and senior citizen care and 20% from education. In terms of profitability ratios, the company underperformed in 2019, but its net debt to equity ratio remained the lowest of the companies in
- the Services segment. Through certain recently performed acquisitions (Pronep, The Good Care, Crèches de France, etc.), the company has strengthened its position in North America, France and the UK.
- **Aramark** offers food services, facility management and uniform and career apparel to health care institutions, universities, school districts, stadiums and businesses. It operates primarily in three segments: Food and Support Services (FSS) North America, Food and Support Services (FSS) International and Uniform and Career Apparel. The company's FSS North America and FSS International segments provides food, refreshment and specialized dietary and support services, including facility maintenance and housekeeping. The Uniform segment provides rental, sale, cleaning, maintenance and delivery of personalized uniform and career apparel and other textile items. It operates primarily in North America, the United Kingdom, Germany, Chile and Ireland. 2019 revenue rose by 2.8% to USD 16,227 million and profitability ratios also performed strongly (9.1%).
- **ISS** is a facility service company headquartered in Denmark and founded in 1901. The firm provides cleaning, support, property management, catering, security and other facility management services. Europe represents the largest market (71%), while APAC and the Americas represent 17% and 11%, respectively. Organic growth of 7.1% was achieved in 2019, partially explained

by the launch of the company's largest contract to date, with Deutsche Telekom, as well as an enhanced customer retention rate of 91%. Nevertheless, in terms of profitability the company was affected by certain one-off items, as operations in some areas proved to be unsatisfactory.

- **G4S** is the world's leading global integrated security company. In 2019 the company still provided cash services but in February 2020 approved the sale of the majority of these businesses to The Brink's Company. This transaction represents an important milestone in the execution of the group's corporate strategy. The sale of these capital-intensive, conventional cash businesses enables G4S to focus on the growth of its core integrated security solutions business and further develop its Retail Technology Solutions business, while providing an opportunity to simplify and streamline the group, thus creating cost efficiency opportunities. In this context, improved profitability and indebtedness ratios are expected for 2020.

The Facility Management segment can be characterized by low margins, but a high volume and a large number of clients and recurrence of contracts. All the companies analyzed recorded positive EBIT and EBITDA; however, none of them reported over 10% for either of the ratios. Aggregate market capitalization for the companies included in this segment presented a 10% increase, resulting in a total market value of USD 77,016 billion.

Figure 7.6: Leading Facility Management groups

Company	Country	Sales (USD million)	EBIT (USD million)	EBIT / Sales %	EBITDA (USD million)	EBITDA / Sales %	2019 Market cap	% change 2018-2019	Net debt (USD million)	Equity (USD million)	Net debt / (Net debt + Equity)	Net debt / EBITDA
Compass Group	UK	32,086	2,401	7.5%	3,137	9.8%	40,893	16%	4,026	2,663	60%	1.3
Sodexo	France	24,908	1,202	4.8%	1,641	6.6%	16,541	9%	1,333	4,897	21%	0.8
Aramark	USA	16,227	891	5.5%	1,484	9.1%	10,659	0.4%	6,436	3,320	66%	4.3
ISS A/S	Denmark	11,803	384	3.3%	727	6.2%	4,437	(14%)	2,315	1,972	54%	3.2
G4S PLC	UK	9,899	185	1.9%	776	7.8%	4,486	15%	1,904	401	83%	2.5
Total Facility Management		94,924	5,063	5.3%	7,764	8.2%	77,016	10%	16,014	13,252	55%	2.1

Source: Global Powers of Construction (GPOC) 2019. (July 2020). Bloomberg and company financials.

Study methodology and data sources

Companies were included in the Top 100 Global Powers of Construction based on their total sales for 2019 (financial years ended in 2019). 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 was 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 01.01.2019 to 31.12.2019	3.67
AUD	From 01.07.2018 to 30.06.2019	1.40
BAHT	From 01.01.2019 to 31.12.2019	31.04
BRL	From 01.01.2019 to 31.12.2019	3.94
CAD	From 01.01.2019 to 31.12.2019	1.33
CHF	From 01.01.2019 to 31.12.2019	0.99
CNY	From 01.01.2019 to 31.12.2019	6.91
	31.12.2019	6.96
DKK	From 01.10.2018 to 30.09.2019	6.62
GBP	From 01.01.2019 to 31.12.2019	0.78
	From 01.05.2018 to 31.04.2019	0.77
	From 01.07.2018 to 30.06.2019	0.77
	From 01.08.2018 to 31.07.2019	0.78
INR	From 01.04.2018 to 31.03.2019	69.87
	31.03.2019	69.87
JPY	From 01.04.2018 to 31.03.2019	110.88
	31.03.2019	110.68
	From 01.02.2018 to 31.01.2019	110.24
	31.01.2019	108.84
KRW	From 01.01.2019 to 31.12.2019	1,165.80
	31.12.2019	1,155.46
KWD	From 01.01.2019 to 31.12.2019	0.33
MXN	From 01.01.2019 to 31.12.2019	19.25
NOK	From 01.01.2019 to 31.12.2019	8.80
PER	From 01.01.2019 to 31.12.2019	3.34
SEK	From 01.01.2019 to 31.12.2019	9.46
	31.12.2019	9.34
TRY	From 01.01.2019 to 31.12.2019	5.68
TWD	From 01.01.2019 to 31.12.2019	30.90
EUR	From 01.01.2019 to 31.12.2019	0.89
	31.12.2019	0.89

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

Endnotes

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