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A PwC IPO Centre publication

Global IPO Watch Q4 2018

PwC provides independent guidance to companies in the process of going public and to already listed companies in assessing their position in the equity capital markets.

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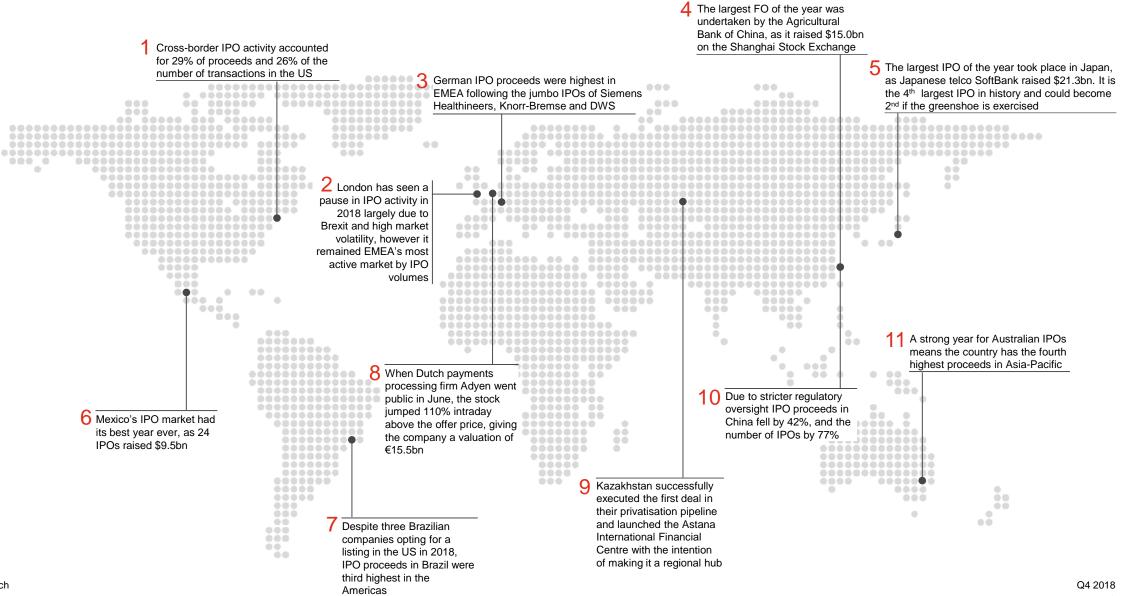
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Basis of preparation

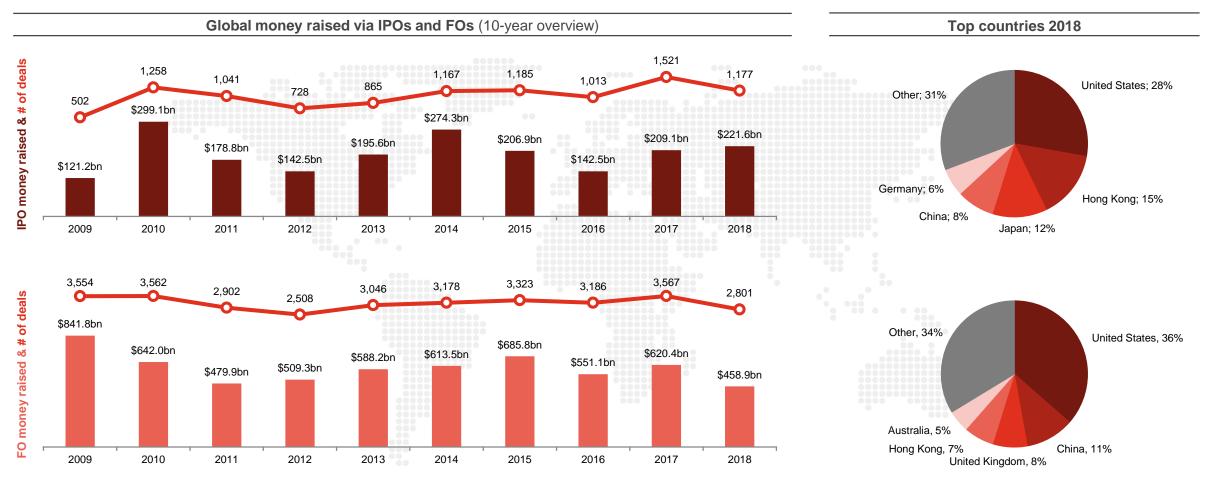
The **Global IPO Watch** analyses IPO and FO trends on a quarterly basis, both at a global and regional level. It is based on data extracted from Dealogic, whereby only transactions with a minimum of \$5 million money raised have been included. Transaction proceeds include the overallotment option (if exercised). The data excludes PIPO's and transactions on Over-The-Counter exchanges. In case IPOs or FOs take place on two or more exchanges, the full amount of money raised is attributed to all exchanges. The same applies to countries and regions. This does not apply to two exchanges within the same country or two countries within the same region. Country indicates the company's country of domicile. Industry classification is based on the FTSE Russell Industry Classification Benchmark. Index performance is based on pricing data extracted from Bloomberg.

IPO and FO highlights



Global money raised via IPOs and FOs

As a result of a few jumbo IPOs, 2018 IPO proceeds outpaced those in recent years even as volatility returned on equity markets

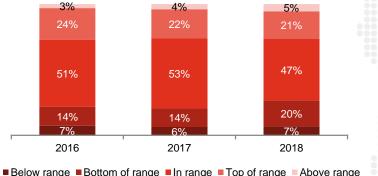


Note: Top countries have been selected based on money raised in 2018. Source: Dealogic as of 31 December 2018

Overview of global IPO and FO activity

The last few months of 2018 proved to be poor for equity markets due to political instability and higher interest rates in the US

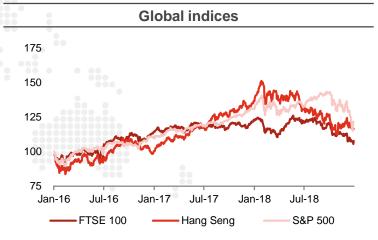
	Global IPO	and FO activ	ity			
	2016	2017	2018	Q4 2016	Q4 2017	Q4 2018
IPO activity						
Number of IPOs	1,013	1,521	1,177	373	439	284
% sponsor-backed	9.7%	9.3%	7.6%	7.2%	9.8%	3.5%
Money raised	\$142.5bn	\$209.1bn	\$221.6bn	\$54.5bn	\$67.7bn	\$56.1bn
% sponsor-backed	22.9%	22.7%	14.1%	19.8%	21.1%	5.4%
Advanced metrics						
Free float %	31.3%	31.9%	32.2%	30.1%	31.5%	31.3%
Overallotment exercised (%) ¹	25.3%	25.2%	31.5%	19.6%	26.3%	24.5%
% secondary shares	15.1%	14.6%	13.6%	13.2%	17.6%	11.6%
FO activity		•••••••••••••••••••••••••••••••••••••••				
Number of FOs	3,186	3,567	2,801	868	1,008	527
Money raised	\$551.1bn	\$620.4bn	\$458.9bn	\$126.1bn	\$144.5bn	\$68.4br
2 IPO pricing dynamics	****	3	Post-IPO p	erformance	(median)	





In Q4 2018, 284 IPOs raised \$56.1bn. This represents a decrease of 17% in terms of proceeds and a 35% drop in the number of deals compared to last year. For the year as a whole, IPO proceeds increased by 6% even as the number of transactions fell by 23%.

- Pricing was more volatile in 2018, as the share of transactions pricing within their initial pricing range dropped to a multi-year low.
- 3 The post-IPO performance of 2018 IPOs is lower than in 2017 as equity markets fell and the share of historically outperforming Chinese IPOs dropped.



1) Overallotment exercised (%) presents the percentage of IPOs in which the overallotment option has been exercised (either fully or partially).

Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'. Source: Dealogic, Bloomberg as of 31 December 2018 Q4 2018 5

Leading transactions 2018

SoftBank's IPO was the largest of the year with proceeds of \$21.3bn, and is potentially the second largest in history (if the overallotment option is exercised)

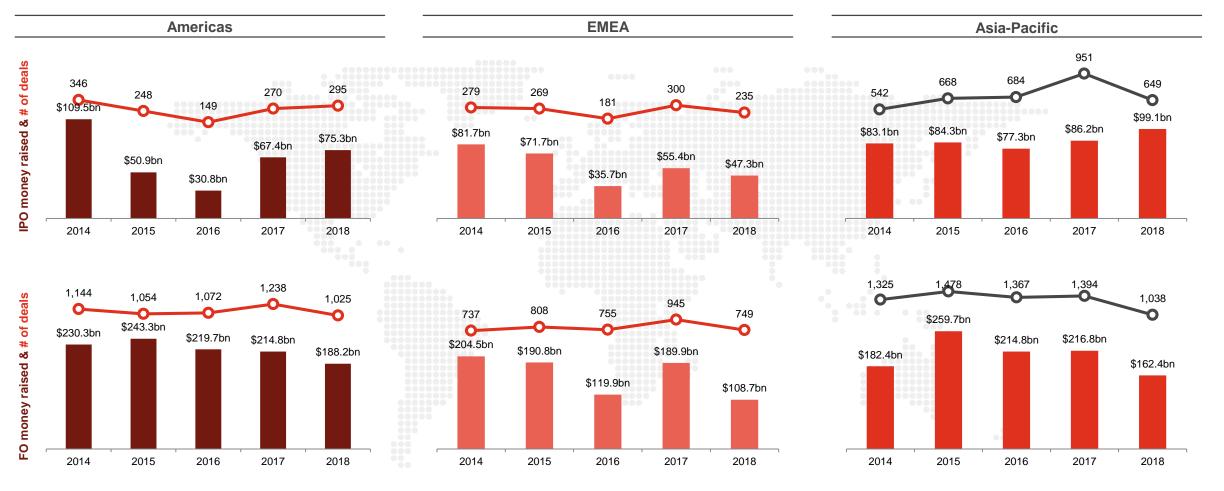
				Top 10 la	argest IPOs 2018	3							
Pricing date	Issuer name	Issuer country	Sector	Exchange	Filing range	Offer price	Pricing	Money raised	Free float	Secondary shares (%)	P 1-day	erforman 1-month	ce Curre
10-Dec-18	SoftBank		Telecommunications	Tokyo SE	1,500.00 - 1,500.00	1,500.00	In range	\$21.3bn	33.5%	100.0%	-14.5%	N/A	-9.5%
1-Aug-18	China Tower		Technology	HKEX	1.26 - 1.58	1.26	Bottom of range	\$7.5bn	27.1%	0.0%	0.0%	-8.7%	17.5%
29-Jun-18	Xiaomi		Technology	HKEX	17.00 - 22.00	17.00	Bottom of range	\$5.4bn	11.2%	34.2%	-1.2%	0.8%	-24.0
15-Mar-18	Siemens Healthineers		Health Care	Deutsche Börse	26.00 - 31.00	28.00	In range	\$5.2bn	15.0%	100.0%	7.9%	16.2%	30.5%
10-Oct-18	Knorr-Bremse		Consumer Goods	Deutsche Börse	72.00 - 87.00	80.00	In range	\$4.4bn	29.8%	100.0%	2.1%	5.2%	-1.7%
23-May-18	Foxconn Industrial Internet		Technology	Shanghai SE	N/A	13.77	N/A	\$4.3bn	10.0%	0.0%	44.0%	25.1%	-15.8%
13-Sep-18	Meituan Dianping		Consumer Services	HKEX	60.00 - 72.00	69.00	In range	\$4.2bn	8.7%	0.0%	5.3%	-20.3%	-36.4%
9-May-18	AXA Equitable		Financials	NYSE	24.00 - 27.00	20.00	Below range	\$3.2bn	28.1%	100.0%	1.7%	5.3%	-16.9%
14-Sep-18	Fideicomiso CIB/3057	.	Financials	Mexican SE	1,910.20 - 1,910.20	1,910.20	In range	\$3.0bn	N/A	0.0%	N/A	N/A	N/A
23-Jan-18	PagSeguro Digital	<u></u>	Industrials	NYSE	17.50 - 20.50	21.50	Above range	\$2.6bn	38.0%	46.3%	35.8%	50.6%	-12.99
		000		Top 10 I	argest FOs 2018								
Pricing date	Issuer name	Issuer country	Sector	Exchange	Filing range	Off pri	Deal	Туре	Money raised	Secondary shares (%)	P 1-day	erforman 1-month	ce Currer
4-Jul-18	Agricultural Bank of China	*	Financials	Shanghai SE	N/A	3.9	97 FO - Cas	h Placing	\$15.0bn	0.0%	-15.4%	-11.1%	-2.0%
22-Mar-18	Tencent	*	Technology	HKEX	439.40 - 439.4			ated Bookbuild	\$9.8bn	100.0%	3.7%	-1.2%	-20.2%
20-Jun-18	Baver	• • • • • • • • •	Health Care	Deutsche Börse				hts Offer	\$7.0bn	0.0%	19.0%	13.6%	-5.5%
		<u></u>		NYSE	77.51 - 77.51	é concentra de	.00 FO - Accelera		\$4.8bn	100.0%	9.1%	13.4%	10.7%
10-Apr-18	Hilton Worldwide		Consumer Services										
10-Apr-18 11-Sep-18	Hilton Worldwide Yahoo Japan	•	Consumer Services Technology						\$4.3bn	100.0%	2.5%	N/A	15.5%
11-Sep-18	Yahoo Japan	•	Technology	Tokyo SE	353.00 - 360.0	0 354	I.00 FO - Accelera	ated Bookbuild	\$4.3bn \$3.3bn	100.0%	2.5% -1.9%	N/A -7.6%	
5-Jun-18	Yahoo Japan Royal Bank of Scotland	•	Technology Financials	Tokyo SE LSE	353.00 - 360.0 2.81 - 2.81	0 354	I.00 FO - Accelera 71 FO - Accelera	ated Bookbuild ated Bookbuild	\$3.3bn	100.0%	-1.9%	-7.6%	15.5% -7.8% -4.2%
11-Sep-18 5-Jun-18 8-May-18	Yahoo Japan Royal Bank of Scotland Canadian Natural Resources	• * **	Technology Financials Oil & Gas	Tokyo SE LSE NYSE	353.00 - 360.0 2.81 - 2.81 35.11 - 35.11	00 354 2.7 34.	I.00FO - Accelera71FO - Accelera.10FO - Bo	ated Bookbuild ated Bookbuild ught Deal	\$3.3bn \$3.3bn	100.0% 100.0%	-1.9% 0.5%	-7.6% -0.6%	-7.8% -4.2%
11-Sep-18 5-Jun-18	Yahoo Japan Royal Bank of Scotland	•	Technology Financials	Tokyo SE LSE	353.00 - 360.0 2.81 - 2.81	00354 2.7 34. 5107	I.00FO - Accelera71FO - Accelera.10FO - Bo.00FO - Accelera	ated Bookbuild ated Bookbuild	\$3.3bn	100.0%	-1.9%	-7.6%	-7.8%

Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'. Source: Dealogic, Bloomberg as of 31 December 2018

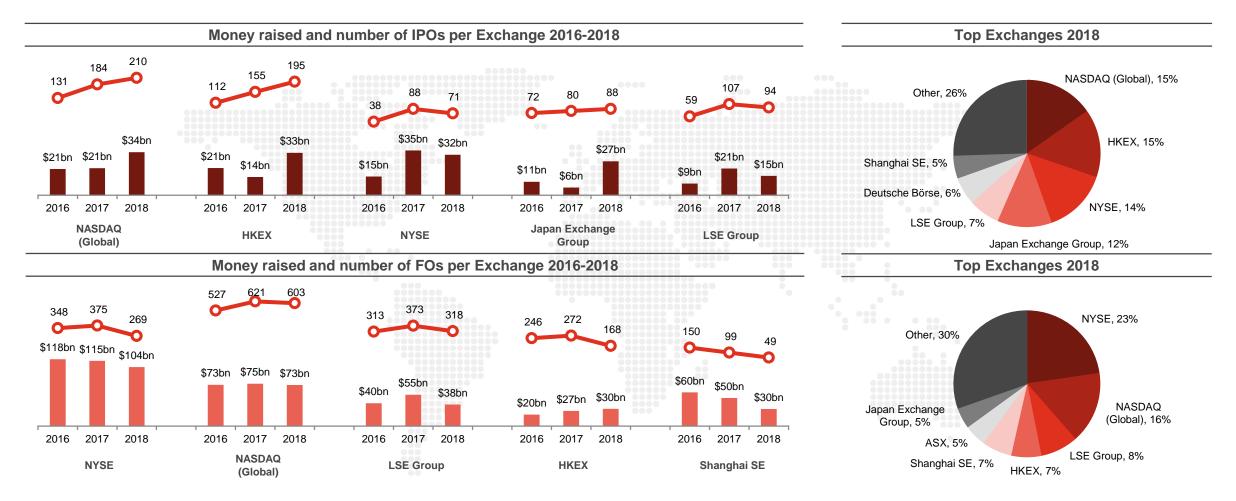
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IPO and FO activity per region

Asia-Pacific was the most active region for IPOs, and in terms of FO activity, all three regions recorded a fall in 2018, both in terms of proceeds and deal numbers

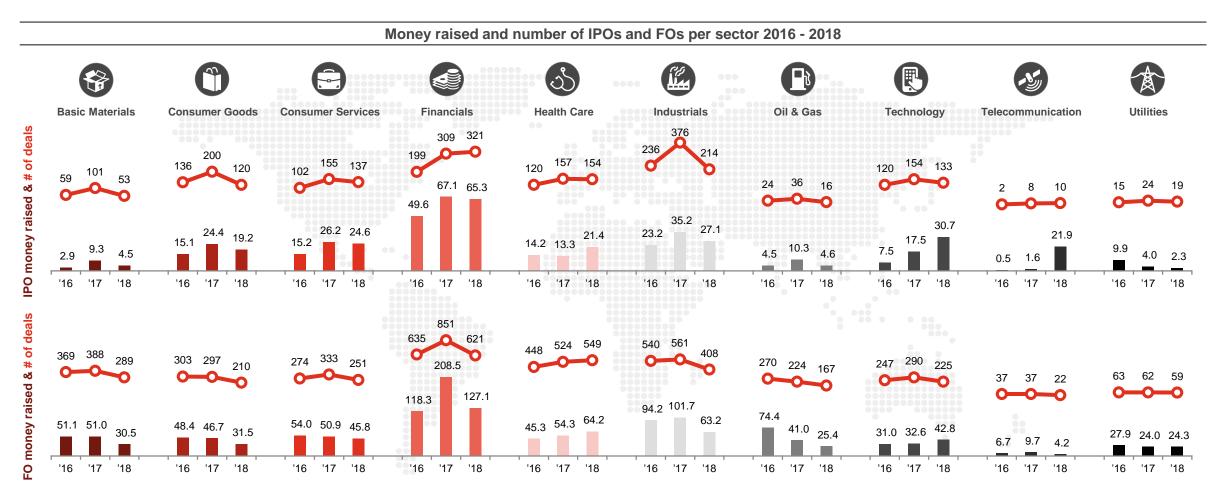


Top exchanges globally based on money raised in 2018 Despite a 23% drop in the number of IPOs globally in 2018, three out of the five most active exchanges recorded an increase in the number of transactions



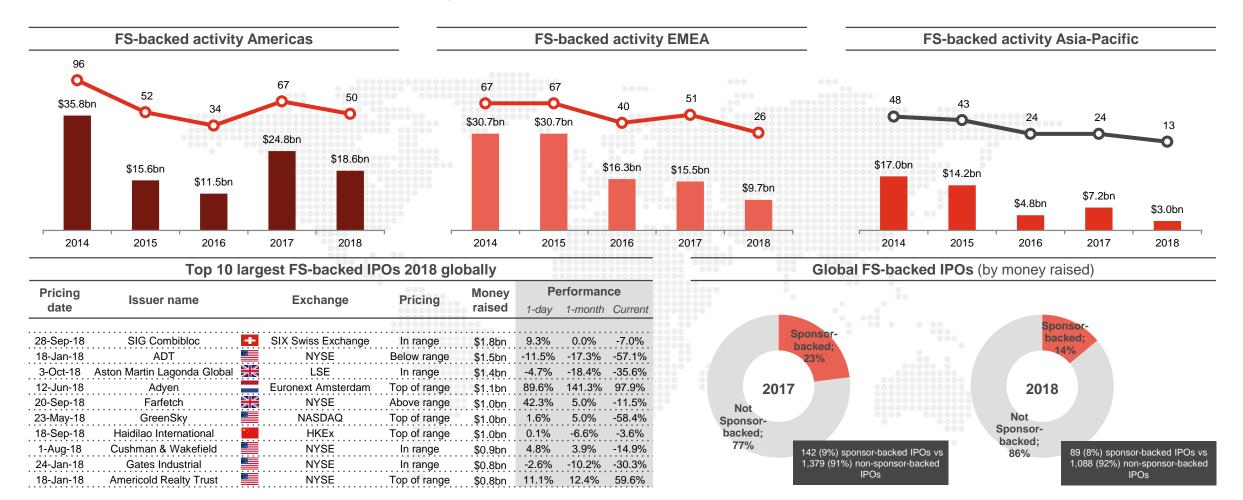
Global IPO and FO activity per sector

The Technology sector ends 2018 with the 2nd highest IPO proceeds, with 2019 potentially being the year of the 'unicorn' with some major deals in the US pipeline



Financial sponsor-backed IPO activity globally

FS-backed IPO activity is subdued, falling both in absolute terms and as a share of total IPO activity across all regions



Global IPO Watch

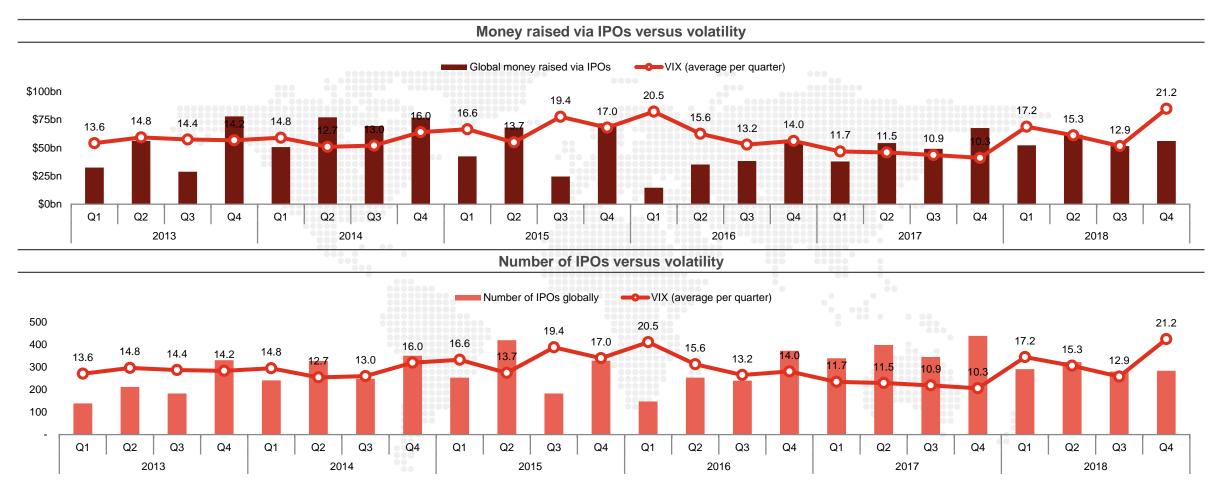
Note: Financial sponsor-backed has been abbreviated to FS-backed for practical sake. IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'.

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Source: Dealogic, as of 31 December 2018

Volatility versus IPO activity

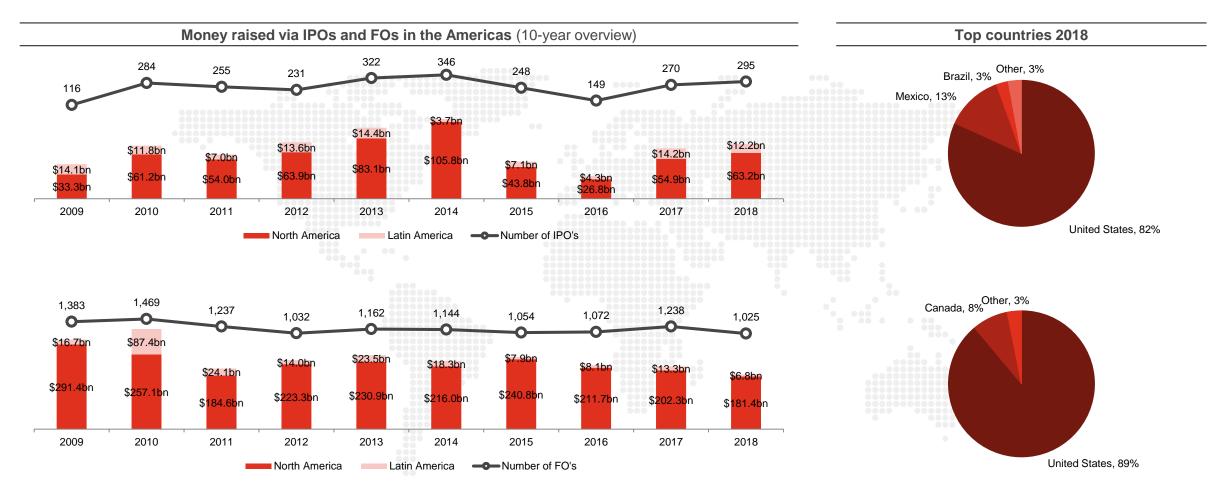
Volatility reached a multi-year high in Q4 2018, due to tightening monetary policy combined with trade tensions and political uncertainty



Americas

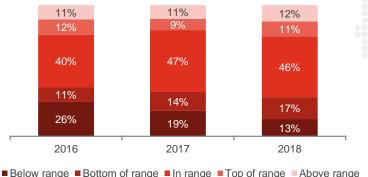


Money raised via IPOs and FOs in the Americas IPO and FO activity diverged in 2018, both in terms of proceeds and the number of transactions



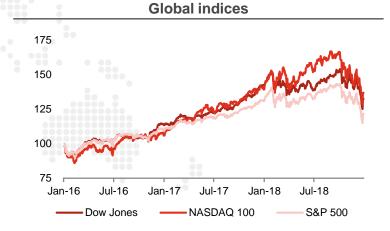
Overview of IPO and FO activity in the Americas The Americas experienced a weak fourth quarter in an otherwise good year

	IPO and FO activ	vity in the Am	nericas			
	2016	2017	2018	Q4 2016	Q4 2017	Q4 2018
IPO activity						
Number of IPOs	149	270	295	- 48	85	59
% sponsor-backed	22.8%	24.8%	16.9%	22.9%	18.8%	10.2%
Money raised	\$30.8bn	\$67.4bn	\$75.3bn	\$11.6bn	\$20.0bn	\$11.2bn
% sponsor-backed	37.2%	36.7%	24.7%	45.1%	18.7%	11.9%
Advanced metrics						
Free float %	33.6%	37.2%	36.8%	34.7%	35.5%	39.9%
Overallotment exercised (%) ¹	72.8%	75.4%	72.6%	68.4%	75.0%	66.0%
% secondary shares	8.2%	10.2%	5.9%	8.9%	12.3%	3.2%
FO activity						
Number of FOs	1,072	1,238	1,025	300	316	187
Money raised	\$219.7bn	\$214.8bn	\$188.2bn	\$48.8bn	\$44.6bn	\$30.0bn
2 IPO pricing dynam	ics	3	Post-IPO p	erformance	(median)	





- In Q4 2018, 59 IPOs raised \$11.2bn. This represents a decrease of 44% in terms of proceeds and 31% in the number of deals compared to last year. For the year as a whole however, IPO proceeds increased by 12% and the number of deals by 9%.
- 2 The share of IPOs pricing at the bottom or below their initial pricing range has decreased in the Americas, in a sign of continued investor appetite.
- Obspite being negative, the current post-IPO performance for 2018 IPOs in the Americas is highest of the three regions.



1) Overallotment exercised (%) presents the percentage of IPOs in which the overallotment option has been exercised (either fully or partially).

Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'.

Source: Dealogic, Bloomberg as of 31 December 2018

Leading transactions 2018 in the Americas

The abundance of cross-border IPOs in the US remains high, accounting for 29% of proceeds and 26% of the number of IPOs

			Т	op 10 largest ll	POs 2018 in the <i>l</i>	Americas	5						
Pricing date	Issuer name	Issuer country	Sector	Exchange	Filing range	Offer price	Pricing	Money raised	Free float	Secondary shares (%)	P 1-day	erforman 1-month	
9-May-18	AXA Equitable		Financials	NYSE	24.00 - 27.00	20.00	Below range	\$3.2bn	28.1%	100.0%	1.7%	5.3%	-16.9
14-Sep-18	Fideicomiso CIB/3057		Financials	Mexican SE	1,910.20 - 1,910.20	1,910.20	In range	\$3.0bn	N/A	0.0%	N/A	N/A	N/A
23-Jan-18	PagSeguro Digital		Industrials	NYSE	17.50 - 20.50	21.50	Above range	\$2.6bn	38.0%	46.3%	35.8%	50.6%	-12.9
28-Mar-18	iQIYI		Consumer Services	NASDAQ	17.00 - 19.00	18.00	In range	\$2.4bn	19.0%	0.0%	-13.6%	-0.1%	-17.49
25-Jul-18	Pinduoduo		Consumer Services	NASDAQ	16.00 - 19.00	19.00	Top of range	\$1.7bn	8.3%	0.0%	40.5%	-9.4%	18.1%
19-Sep-18	Elanco Animal Health		Consumer Goods	NYSE	20.00 - 23.00	24.00	Above range	\$1.7bn	20.3%	0.0%	50.0%	31.7%	31.4%
23-Mar-18	Fibra E - Grupo Aeroportuario ¹		Industrials	Mexican SE	100.00 - 100.00	100.00	In range	\$1.5bn	15.4%	0.0%	0.0%	0.0%	-7.0%
18-Jan-18	ADT		Industrials	NYSE	17.00 - 19.00	14.00	Below range	\$1.5bn	14.0%	0.0%	-11.5%	-17.3%	-57.19
24-Oct-18	StoneCo	S	Industrials	NASDAQ	21.00 - 23.00	24.00	Above range	\$1.4bn	21.4%	9.7%	30.6%	-9.0%	-23.29
11-Sep-18	NIO		Consumer Goods	NYSE	6.25 - 8.25	6.26	Bottom of range	\$1.2bn	17.9%	0.0%	5.4%	14.7%	1.8%
				Fop 10 largest F	Os 2018 in the A	Americas							
Pricing date	Issuer name	Issuer country	Sector	Fop 10 largest F Exchange	FOs 2018 in the A Filing rang	Of	for	Туре	Money raised	Secondary shares (%)	P 1-day	erforman 1-month	
-			Sector	Exchange	Filing rang	e Of pri	fer Deal ice Deal		raised	shares (%)	1-day	1-month	Curre
10-Apr-18	Hilton Worldwide		Sector Consumer Services	Exchange	Filing rang 77.51 - 77.5	e Of pri 1 73.	fer Deal ice Deal .00 FO - Accelera	ated Bookbuild	s4.8bn	shares (%)	<i>1-day</i> 9.1%	1-month 13.4%	Curre -1.6%
10-Apr-18 8-May-18	Hilton Worldwide Canadian Natural Resources		Sector Consumer Services Oil & Gas	Exchange NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1	e Of pri 1 73. 1 34.	fer Deal ice Deal .00 FO - Accelera .10 FO - Bo	ated Bookbuild ught Deal	\$4.8bn \$3.3bn	shares (%) 100.0% 100.0%	1-day 9.1% 0.5%	1-month 13.4% -0.6%	Curre -1.6% -29.2
10-Apr-18 8-May-18 4-Jan-18	Hilton Worldwide Canadian Natural Resources Sempra Energy		Sector Consumer Services Oil & Gas Utilities	Exchange NYSE NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1 105.35 - 105.	e Of pri 1 73. 1 34. 35 107	fer iceDeal.00FO - Accelera.10FO - Bou7.00FO - Accelera	ated Bookbuild ught Deal ated Bookbuild	raised \$4.8bn \$3.3bn \$2.9bn	shares (%) 100.0% 100.0% 0.0%	<u>1-day</u> 9.1% 0.5% 1.4%	<u>1-month</u> 13.4% -0.6% -1.3%	Curre -1.6% -29.2 1.1%
10-Apr-18 8-May-18 4-Jan-18 1-May-18	Hilton Worldwide Canadian Natural Resources Sempra Energy Centene		Sector Consumer Services Oil & Gas Utilities Health Care	Exchange NYSE NYSE NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1 105.35 - 105. 110.17 - 110.	e Of pri 1 73. 1 34. 35 107 17 107	fer ice Deal .00 FO - Accelera .10 FO - Boi 7.00 FO - Accelera 7.50 FO - Accelera	ated Bookbuild ught Deal ated Bookbuild ated Bookbuild	raised \$4.8bn \$3.3bn \$2.9bn \$2.9bn	shares (%) 100.0% 0.0% 0.0%	1-day 9.1% 0.5% 1.4% 6.3%	<u>1-month</u> 13.4% -0.6% -1.3% 9.4%	Curre -1.69 -29.2' 1.19 7.39
10-Apr-18 8-May-18 4-Jan-18 1-May-18 14-Nov-18	Hilton Worldwide Canadian Natural Resources Sempra Energy Centene Baker Hughes a GE		Sector Consumer Services Oil & Gas Utilities Health Care Oil & Gas	Exchange NYSE NYSE NYSE NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1 105.35 - 105. 110.17 - 110. 23.64 - 23.64	e Of pri 1 73. 1 34. 35 107 17 107 4 23	fer ice Deal .00 FO - Accelera .10 FO - Boo 7.00 FO - Accelera 7.50 FO - Accelera .00 FO - Accelera .00 FO - Accelera	ated Bookbuild ught Deal ated Bookbuild ated Bookbuild ated Bookbuild	raised \$4.8bn \$3.3bn \$2.9bn \$2.9bn \$2.3bn	shares (%) 100.0% 100.0% 0.0% 0.0% 100.0%	1-day 9.1% 0.5% 1.4% 6.3% 0.7%	<u>1-month</u> 13.4% -0.6% -1.3% 9.4% -4.2%	Curre -1.6% -29.29 1.1% 7.3% -6.5%
10-Apr-18 8-May-18 4-Jan-18 1-May-18 14-Nov-18 25-Sep-18	Hilton Worldwide Canadian Natural Resources Sempra Energy Centene Baker Hughes a GE CenterPoint Energy		Sector Consumer Services Oil & Gas Utilities Health Care Oil & Gas Utilities	Exchange NYSE NYSE NYSE NYSE NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1 105.35 - 105. 110.17 - 110. 23.64 - 23.6 27.81 - 27.8	e Off pri 1 73 1 34 35 107 17 107 4 23 1 27	fer ice Deal .00 FO - Accelera .10 FO - Boo .00 FO - Accelera .25 FO - Accelera	ated Bookbuild ught Deal ated Bookbuild ated Bookbuild ated Bookbuild ated Bookbuild	raised \$4.8bn \$3.3bn \$2.9bn \$2.9bn \$2.3bn \$1.9bn	shares (%) 100.0% 100.0% 0.0% 100.0% 0.0%	1-day 9.1% 0.5% 1.4% 6.3% 0.7% 0.0%	1-month 13.4% -0.6% -1.3% 9.4% -4.2% 1.8%	Curre -1.69 -29.2' 1.19 7.39 -6.59 3.69
10-Apr-18 8-May-18 4-Jan-18 1-May-18 14-Nov-18 25-Sep-18 31-Jul-18	Hilton Worldwide Canadian Natural Resources Sempra Energy Centene Baker Hughes a GE CenterPoint Energy HDFC Bank		Sector Consumer Services Oil & Gas Utilities Health Care Oil & Gas Utilities Financials	Exchange NYSE NYSE NYSE NYSE NYSE NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1 105.35 - 105. 110.17 - 110. 23.64 - 23.6 27.81 - 27.8 109.65 - 109.6	e Off pri 1 73 1 34 35 107 17 107 4 23 1 27 65 104	fer ice Deal .00 FO - Accelera .10 FO - Bot 7.00 FO - Accelera .00 FO - Accelera	ated Bookbuild ught Deal ated Bookbuild ated Bookbuild ated Bookbuild ated Bookbuild ated Bookbuild	raised \$4.8bn \$3.3bn \$2.9bn \$2.9bn \$2.3bn \$1.9bn \$1.8bn	shares (%) 100.0% 100.0% 0.0% 100.0% 0.0% 0.0%	1-day 9.1% 0.5% 1.4% 6.3% 0.7% 0.0% -0.3%	1-month 13.4% -0.6% -1.3% 9.4% -4.2% 1.8% -2.6%	Curre -1.69 -29.29 1.19 7.39 -6.59 3.69 -0.49
8-May-18 4-Jan-18 1-May-18 14-Nov-18 25-Sep-18 31-Jul-18 13-Aug-18	Hilton Worldwide Canadian Natural Resources Sempra Energy Centene Baker Hughes a GE CenterPoint Energy HDFC Bank First Data		Sector Consumer Services Oil & Gas Utilities Health Care Oil & Gas Utilities Financials Industrials	Exchange NYSE NYSE NYSE NYSE NYSE NYSE NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1 105.35 - 105. 110.17 - 110. 23.64 - 23.6 27.81 - 27.8 109.65 - 109.6 24.67 - 24.6	e Off pri 1 73. 1 34. 35 107 17 107 4 23. 1 27. 65 104 7 23.	fer ice Deal .00 FO - Accelera .10 FO - Boi 7.00 FO - Accelera .50 FO - Accelera .00 FO - Accelera	ated Bookbuild ught Deal ated Bookbuild ated Bookbuild ated Bookbuild ated Bookbuild ated Bookbuild	raised \$4.8bn \$3.3bn \$2.9bn \$2.9bn \$2.3bn \$1.9bn \$1.8bn \$1.7bn	shares (%) 100.0% 100.0% 0.0% 100.0% 0.0% 0.0% 100.0%	1-day 9.1% 0.5% 1.4% 6.3% 0.7% 0.0% -0.3% 0.8%	1-month 13.4% -0.6% -1.3% 9.4% -4.2% 1.8% -2.6% 8.4%	Curre -1.6% -29.2 1.1% 7.3% -6.5% 3.6% -0.4% -28.8%
10-Apr-18 8-May-18 4-Jan-18 1-May-18 14-Nov-18 25-Sep-18 31-Jul-18	Hilton Worldwide Canadian Natural Resources Sempra Energy Centene Baker Hughes a GE CenterPoint Energy HDFC Bank	country	Sector Consumer Services Oil & Gas Utilities Health Care Oil & Gas Utilities Financials	Exchange NYSE NYSE NYSE NYSE NYSE NYSE NYSE	Filing rang 77.51 - 77.5 35.11 - 35.1 105.35 - 105. 110.17 - 110. 23.64 - 23.6 27.81 - 27.8 109.65 - 109.6	e Off pri 1 73. 1 34. 35 107 17 107 4 23. 1 27 65 104 7 23. 5 27	fer ice Deal .00 FO - Accelera .10 FO - Boi .00 FO - Accelera .00 FO - Accelera	ated Bookbuild ught Deal ated Bookbuild ated Bookbuild ated Bookbuild ated Bookbuild ated Bookbuild	raised \$4.8bn \$3.3bn \$2.9bn \$2.9bn \$2.3bn \$1.9bn \$1.8bn	shares (%) 100.0% 100.0% 0.0% 100.0% 0.0% 0.0%	1-day 9.1% 0.5% 1.4% 6.3% 0.7% 0.0% -0.3%	1-month 13.4% -0.6% -1.3% 9.4% -4.2% 1.8% -2.6%	Curre -1.6 -29.2 1.19 7.39 -6.5 3.69 -0.44 -28.8

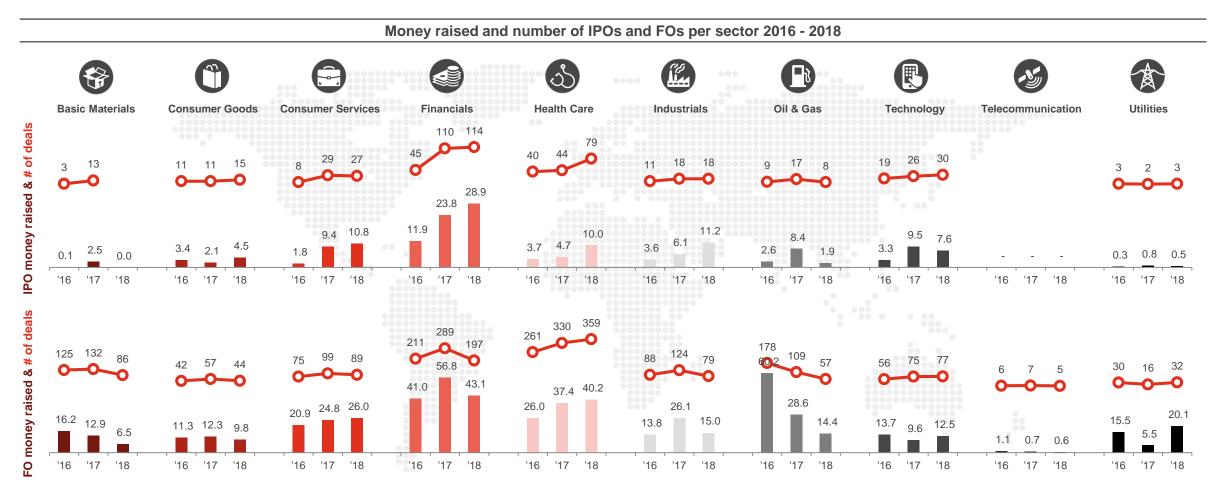
1) Fibra E – Grupo Aeroportuario de la Ciudad de Mexico

Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'. Source: Dealogic, Bloomberg as of 31 December 2018

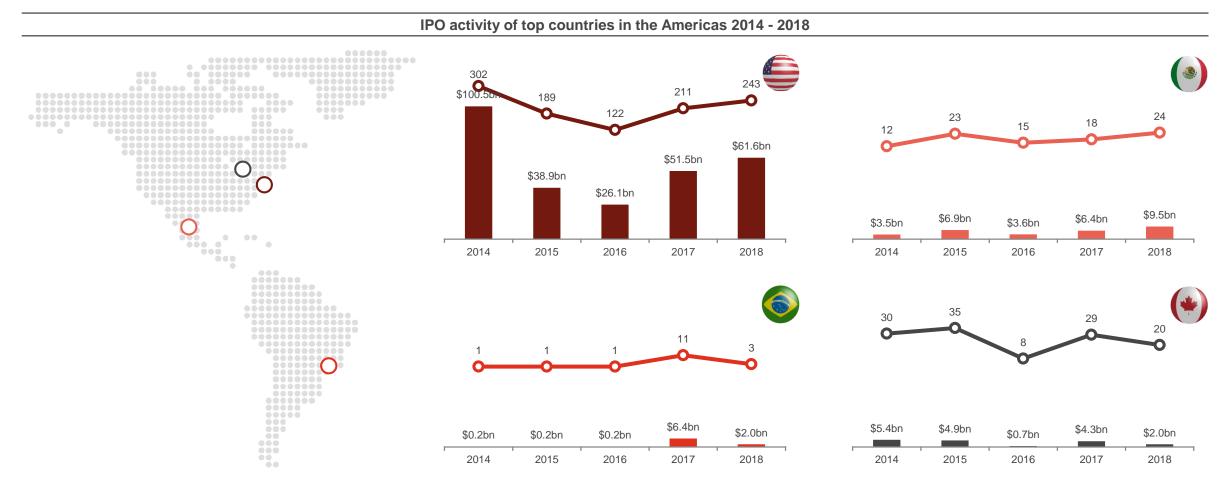
15

IPO and FO activity per sector in the Americas

Financials accounted for 38% of proceeds 39% of the number of IPOs, primarily driven by a high number of SPACs listing in 2018



Top countries in terms of IPO activity in the Americas IPO activity in the US was highest since 2014, and in Mexico activity levels even reached an all-time record high



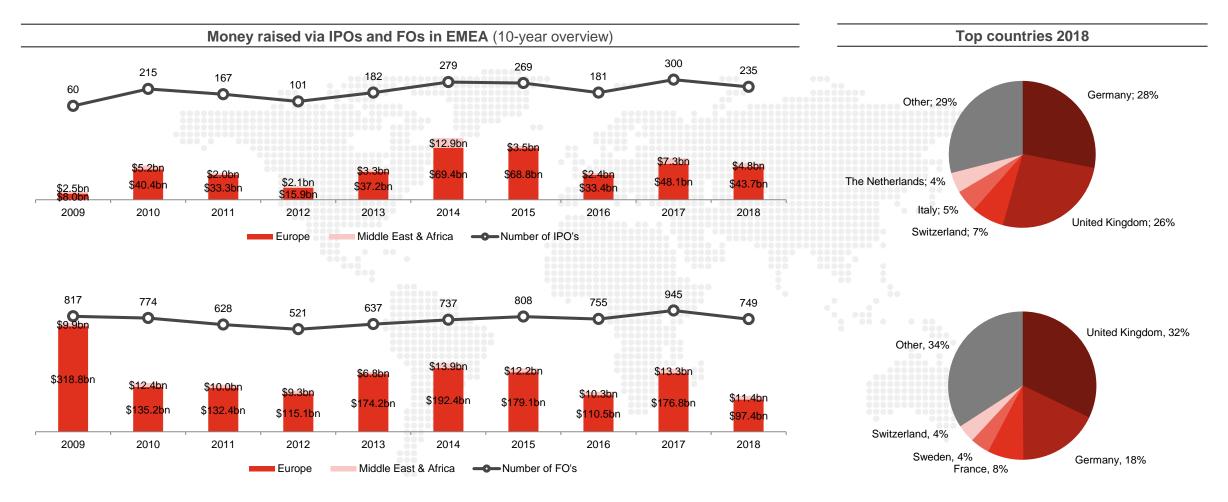
Note: Top countries have been selected based on money raised in 2018. Source: Dealogic as of 31 December 2018

EMEA



Money raised via IPOs and FOs in EMEA

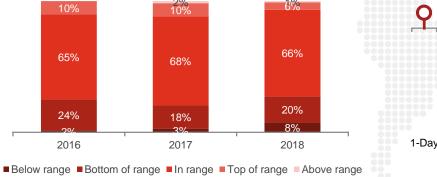
Germany took over the lead in terms of IPO proceeds, despite the United Kingdom continuing to dominate in terms of IPO numbers



Overview of IPO and FO activity in EMEA

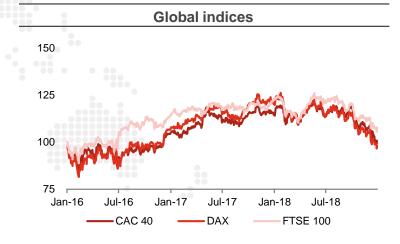
Equity markets in EMEA suffered early-on from global geopolitical uncertainty and finished the year in negative territory

	2016	2017	2018	Q4 2016	Q4 2017	Q4 2018
IPO activity						
Number of IPOs	181	300	235	- 59	93	53
% sponsor-backed	22.1%	17.0%	11.1%	11.9%	20.4%	5.7%
Money raised	\$35.7bn	\$55.4bn	\$47.3bn	\$12.6bn	\$18.6bn	\$12.9br
% sponsor-backed	45.6%	28.0%	20.5%	27.5%	40.3%	11.7%
Advanced metrics						
Free float %	38.9%	43.5%	40.5%	36.1%	39.5%	35.1%
Overallotment exercised (%) ¹	29.5%	26.4%	25.6%	21.1%	23.0%	21.7%
% secondary shares	36.8%	32.9%	29.2%	33.4%	35.0%	26.4%
FO activity		•••••••••••••••••••••••••••••••••••••••				
Number of FOs	755	945	749	228	261	157
Money raised	\$119.9bn	\$189.9bn	\$108.7bn	\$29.8bn	\$33.8bn	\$16.4br
3 IPO pricing dynamics		• •	Post-IPO p	erformance	(median)	





- In Q4 2018, 53 IPOs raised \$12.9bn. This represents a drop of 31% in terms of proceeds and 43% in terms of the number of deals compared to last year. For the year as a whole, IPO proceeds decreased by 15% and the number of transactions by 22%.
- **2** FO activity also suffered, as proceeds fell 43% and the number of deals 21% in 2018.
- The share of IPOs pricing at the bottom or below their initial pricing range was the highest in years.
- Post-IPO performance in EMEA was lowest of the three regions.



1) Overallotment exercised (%) presents the percentage of IPOs in which the overallotment option has been exercised (either fully or partially).

Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'.

Source: Dealogic, Bloomberg as of 31 December 2018

Leading transactions 2018 in EMEA

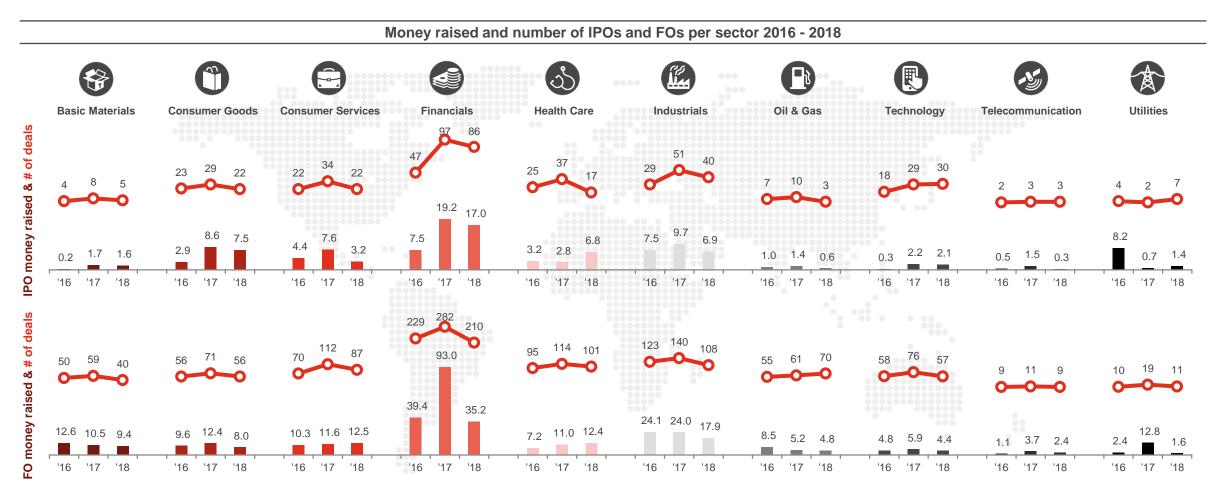
Knorr-Bremse, the German manufacturer of braking systems, undertook the largest IPO of Q4 2018 in EMEA, raising over \$4.4bn on Deutsche Börse

				Top 10 largest	IPOs 2018 in E	MEA							
Pricing date	Issuer name	Issuer	Sector	Exchange	Filing range	Offer	Pricing	Money	Free	Secondary		erforman	
0		country	***************			price		raised	float	shares (%)	1-day	1-month	Currer
15-Mar-18	Siemens Healthineers		Health Care	Deutsche Börse	26.00 - 31.00	28.00	In range	\$5.2bn	15.0%	100.0%	7.9%	16.2%	30.5%
10-Oct-18	Knorr-Bremse		Consumer Goods	Deutsche Börse	72.00 - 87.00	80.00	In range	\$4.4bn	29.8%	100.0%	2.1%	5.2%	-1.7%
28-Sep-18	SIG Combibloc	· · · · · • • • · · · · ·	Industrials	SIX Swiss Exchange	10.50 - 13.50	11.25	In range	\$1.8bn	47.4%	20.5%	9.3%	0.0%	-7.0%
22-Mar-18	DWS		Financials	Deutsche Börse	30.00 - 36.00	32.50	In range	\$1.6bn	20.5%	100.0%	1.8%	-4.5%	-28.19
3-Oct-18	Aston Martin Lagonda Global		Consumer Goods	LSE	17.50 - 22.50	19.00	In range	\$1.4bn	25.1%	100.0%	-4.7%	-18.4%	-35.69
12-Jun-18	Adyen		Industrials	Euronext Amsterdam	220.00 - 240.00	240.00	Top of range	\$1.1bn	13.4%	100.0%	89.6%	141.3%	97.9%
17-Oct-18	Smithson Investment Trust		Financials	LSE	10.00 - 10.00	10.00	In range	\$1.1bn	0.0%	0.0%	2.0%	3.7%	0.0%
21-Mar-18	ELKEM		Basic Materials	Oslo Børs	29.00 - 35.00	29.00	Bottom of range	\$0.9bn	41.8%	19.2%	-4.1%	7.2%	-23.59
3-May-18	CEVA Logistics		Industrials	SIX Swiss Exchange	27.50 - 52.50	27.50	Bottom of range	\$0.8bn	72.2%	0.0%	-5.8%	-7.9%	8.6%
4-May-18	Vivo Energy		Consumer Services	JSE ; LSE	1.55 - 1.80	1.65	In range	\$0.8bn	30.5%	100.0%	4.6%	3.0%	-24.29
			•	Top 10 larges	t FOs 2018 in El	MEA							
Pricing date	Issuer name	Issuer country	Sector	Exchange	Filing range	Off pric	i Deal	Туре	Money raised	Secondary shares (%)	P 1-day	erforman 1-month	-
20-Jun-18	Bayer		Health Care	Deutsche Börse	81.00 - 81.00	81.(00 FO - Ric	hts Offer	\$7.0bn	0.0%	19.0%	13.6%	-25.29
5-Jun-18	Roval Bank of Scotland		Financials	LSE	2.81 - 2.81	2.7		ated Bookbuild	\$3.3bn	100.0%	-1.9%	-7.6%	-20.0%
4-May-18	Covestro		Basic Materials	Deutsche Börse	76.48 - 76.48			ated Bookbuild	\$2.6bn	100.0%	-1.3%	4.6%	-42.89
20-Feb-18	Cineworld		Consumer Services		1.57 - 1.57	1.5		(Rump) ; RO	\$2.5bn	0.0%	53.4%	51.7%	67.6%
11-Jan-18	Covestro		Basic Materials	Deutsche Börse	88.46 - 88.46			ated Bookbuild	\$2.2bn	100.0%	2.6%	-3.0%	-49.9
13-Sep-18	Adyen		Industrials	Euronext Amsterdan				ated Bookbuild	\$1.9bn	100.0%	-3.0%	-14.4%	-29.1
	Safran		Industrials	Euronext Paris	120.40 - 120.40			ated Bookbuild	\$1.4bn	100.0%	-1.0%	-5.5%	-11.99
2-001-10		· · · · · · · · · · · · · · · · · · ·		Dubai FM	3.11 - 3.11	3.1		hts Offer	\$1.4bn	0.0%	66.9%	59.5%	60.8%
2-Oct-18 11-Jun-18	Dubai Islamic Bank	8	Financials	Dubarrivi	0.11-0.11								
	Dubai Islamic Bank DS Smith		Industrials	LSE	3.50 - 3.50	3.5		(Rump) ; RO	\$1.4bn	0.0%	43.7%	45.1%	-14.5%

Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'. Source: Dealogic, Bloomberg as of 31 December 2018

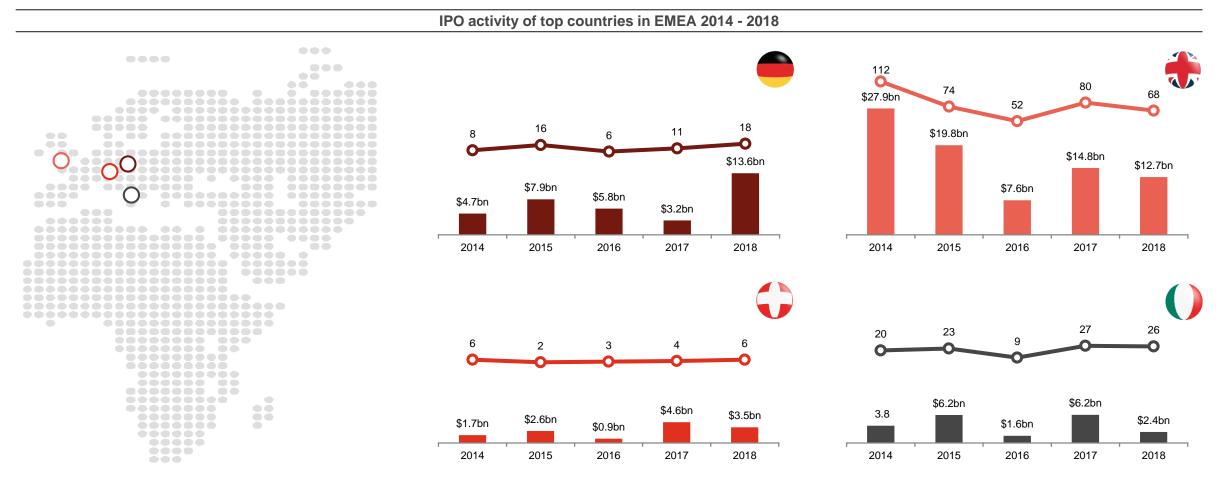
IPO and FO activity per sector in EMEA

As the Health Care sector accounted for the largest IPO and FO of the year in EMEA, proceeds for both markets displayed a strong uptick



Top countries in terms of IPO activity in EMEA

At \$13.6bn, German IPO proceeds are at an 18-year high, driven by the jumbo IPOs of Knorr-Bremse, Siemens Healthineers and DWS

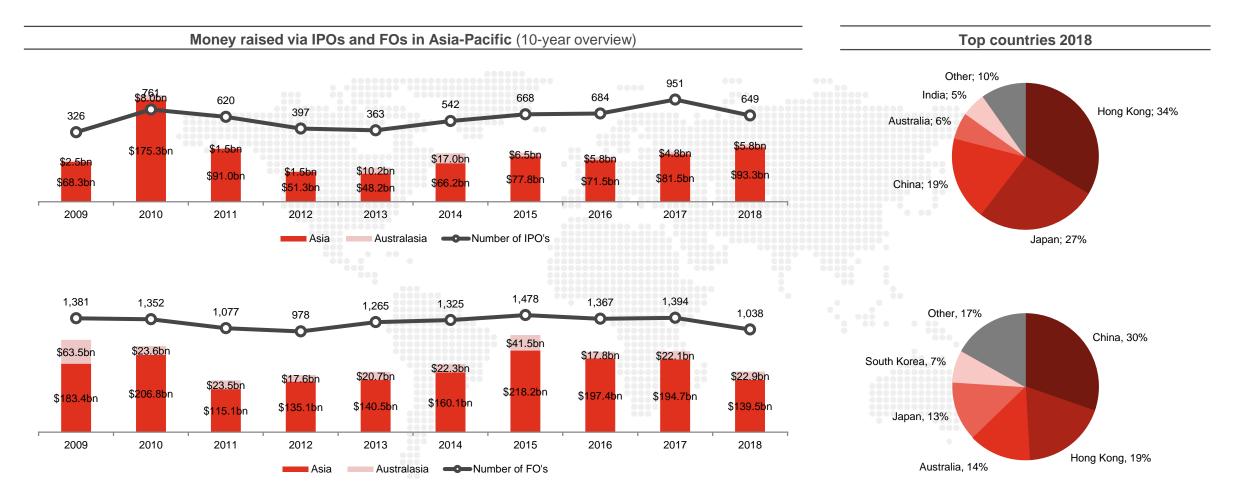


Note: Top countries have been selected based on money raised in 2018. Source: Dealogic as of 31 December 2018

Asia-Pacific



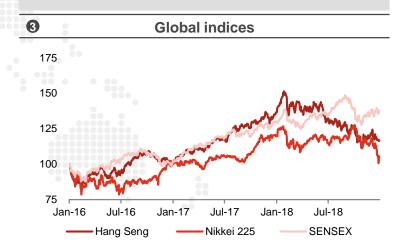
Money raised via IPOs and FOs in Asia-Pacific Following the SoftBank IPO, Japan overtakes China in terms of IPO proceeds



Overview of IPO and FO activity in Asia-Pacific In 2018 IPO proceeds rose by 15% whereas the number of deals was down by 32%

	2016	2017	2018	Q4 2016	Q4 2017	Q4 2018
PO activity						
Number of IPOs	684	951	649	266	261	172
% sponsor-backed	3.5%	2.5%	2.0%	3.4%	3.1%	0.6%
Money raised	\$77.3bn	\$86.2bn	\$99.1bn	\$30.2bn	\$29.1bn	\$32.0br
% sponsor-backed	6.2%	8.4%	3.0%	6.9%	10.4%	0.6%
Advanced metrics						
Free float %	28.9%	27.3%	27.5%	28.2%	27.8%	27.8%
Dverallotment exercised (%) ¹	15.6%	12.6%	16.6%	12.2%	13.7%	13.0%
% secondary shares	10.9%	10.1%	11.5%	9.5%	13.1%	9.9%
FO activity		••••••	•••••••••••••••••••••••••••••••••••••••			
Number of FOs	1,367	1.394	1,038		438	184
Aoney raised	\$214.8bn	\$216.8bn	\$162.4bn	\$47.6bn	\$66.8bn	\$22.0br
IPO pricing dynamics	****	•	Post-IPO p	erformance	(median)	
<u></u>			74.3%	74.6%	68.0%	
2%2%	3%		0	0	56.0%	
32% 33%	32%	44.0%	T	Teeseeee	Ŷ	
		O				
500/	40%					
50% 50%	4070	10.4%	8.9%	8.1%	6.0%	4.40/
					0.070	4.1%
						0
13% 120/	21%					
13% 3% 2%	21% 3%					

- In Q4 2018, 172 IPOs raised \$32.0bn, representing an increase of 10% in terms of proceeds but a 34% drop in the number of deals in 2018. Proceeds rose mainly because of the jumbo SoftBank IPO. A large privatisation wave in Vietnam can support IPO activity in the region in the years to come.
- In terms of FOs, both proceeds and the number of transactions fell in 2018.
- Indian stock indices shrugged off the global downward trend, as the SENSEX closed the year in positive territory.



1) Overallotment exercised (%) presents the percentage of IPOs in which the overallotment option has been exercised (either fully or partially).

Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'.

Source: Dealogic, Bloomberg as of 31 December 2018

Leading transactions 2018 in Asia-Pacific

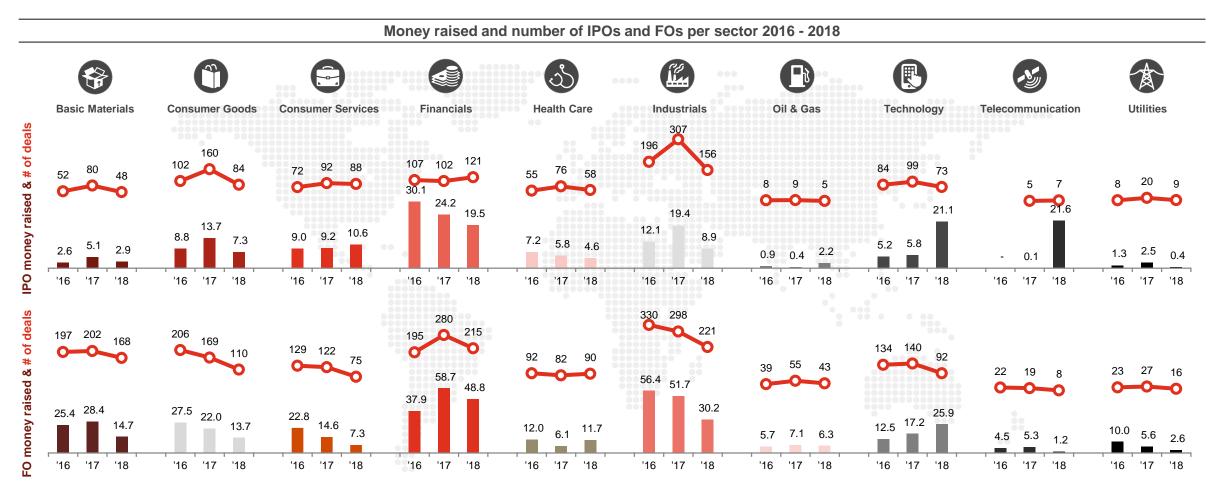
The three largest global IPOs of the year took place in Asia-Pacific, and together accounted for 35% of IPO proceeds in the region

				Top 10 largest l	POs 2018 in Asia	-Pacific							
Pricing date	Issuer name	Issuer countrv	Sector	Exchange	Filing range	Offer price	Pricing	Money raised	Free float	Secondary shares (%)	P 1-dav	erformand 1-month	
		•••	**********************	*******		000	****						
10-Dec-18	SoftBank		Telecommunications	Tokyo SE	1,500.00 - 1,500.00	1,500.00	In range	\$21.3bn	33.5%	100.0%	-14.5%	N/A	-9.5%
1-Aug-18	China Tower	•••• <mark>***</mark> ••••	Technology	HKEX	1.26 - 1.58	1.26	Bottom of range	\$7.5bn	27.1%	0.0%	0.0%	-8.7%	17.5%
29-Jun-18	Xiaomi		Technology	HKEX	17.00 - 22.00	17.00	Bottom of range	\$5.4bn	11.2%	34.2%	-1.2%	0.8%	-24.09
23-May-18	Foxconn Industrial Internet		Technology	Shanghai SE	N/A	13.77	N/A	\$4.3bn	10.0%	0.0%	44.0%	25.1%	-15.8%
13-Sep-18	Meituan Dianping		Consumer Services	HKEX	60.00 - 72.00	69.00	In range	\$4.2bn	8.7%	0.0%	5.3%	-20.3%	-36.4%
11-Jul-18	Viva Energy		Oil & Gas	ASX	2.50 - 2.65	2.50	Bottom of range	\$2.0bn	54.5%	100.0%	0.0%	-2.8%	-28.0%
19-Oct-18	Thailand Future Fund		Industrials	Thailand SE	10.00 - 10.00	10.00	In range	\$1.4bn	90.0%	0.0%	3.0%	1.0%	1.0%
7-May-18	Vinhomes		Financials	Ho Chi Minh SE	100,500 - 114,700	114,700	Top of range	\$1.3bn	10.0%	100.0%	-3.7%	1.6%	-36.0%
11-Jun-18	Mercari	•	Technology	Tokyo SE	2,700.00 - 3,000.00	3,000.00	Top of range	\$1.2bn	32.2%	55.4%	76.7%	46.3%	-38.69
26-Apr-18	Ping An HealthCare & Technology		Consumer Services	HKEX	50.80 - 54.80	54.80	Top of range	\$1.1bn	15.0%	0.0%	0.0%	-18.5%	-49.6%
				Top 10 largest l	Os 2018 in Asia	-Pacific							
		Issuer	000			Offe	r		Money	a 1	P	erformand	ce
Pricing date	Issuer name	country	Sector	Exchange	Filing range	price	Deal	Туре	raised	Secondary shares (%)	P 1-day	1-month	Currei
						price	Deal		raised	shares (%)	1-day		
4-Jul-18 22-Mar-18	Agricultural Bank of China		Financials	Exchange Shanghai SE HKEX	Filing range N/A 439.40 - 439.4	price 3.97	FO - Cast	n Placing			-	1-month	-9.3%
4-Jul-18 22-Mar-18	Agricultural Bank of China Tencent Holdings		Financials Technology	Shanghai SE		price 3.97 0 405.0	FO - Cash 0 FO - Accelerat	n Placing ted Bookbuild	s15.0bn	shares (%) 0.0%	1-day -15.4% 3.7%	1-month -11.1%	-9.3% -22.5%
4-Jul-18 22-Mar-18 11-Sep-18	Agricultural Bank of China		Financials Technology Technology	Shanghai SE HKEX	N/A 439.40 - 439.4	97700 3.97 0 405.0 0 354.0	FO - Cash FO - Cash FO - Accelerat FO - Accelerat	n Placing ted Bookbuild ted Bookbuild	raised \$15.0bn \$9.8bn	shares (%) 0.0% 100.0%	1-day -15.4%	1-month -11.1% -1.2%	-9.3% -22.5° -22.6°
4-Jul-18 22-Mar-18 11-Sep-18 18-Apr-18	Agricultural Bank of China Tencent Holdings Yahoo Japan		Financials Technology	Shanghai SE HKEX Tokyo SE	N/A 439.40 - 439.4 353.00 - 360.0	price 3.97 0 405.0 0 354.0 0 1,083.0	FO - Cast 0 FO - Accelerat 0 FO - Accelerat 00 FO - Fully	n Placing ted Bookbuild ted Bookbuild Marketed	raised \$15.0bn \$9.8bn \$4.3bn \$2.7bn	shares (%) 0.0% 100.0% 100.0%	1-day -15.4% 3.7% 2.5% 3.4%	1-month -11.1% -1.2% 10.2% -2.0%	-9.3% -22.5% -22.6% -53.8%
4-Jul-18 22-Mar-18 11-Sep-18	Agricultural Bank of China Tencent Holdings Yahoo Japan Renesas Electronics		Financials Technology Technology Technology	Shanghai SE HKEX Tokyo SE Tokyo SE	N/A 439.40 - 439.4 353.00 - 360.0 987.00 - 987.0	price 3.97 0 405.0 0 354.0 0 1,083.0	FO - Cash FO - Cash FO - Accelerat FO - Accelerat FO - Fully FO - ABB (Run	n Placing ted Bookbuild ted Bookbuild Marketed np); Cash; RO	raised \$15.0bn \$9.8bn \$4.3bn \$2.7bn	shares (%) 0.0% 100.0% 100.0% 100.0%	1-day -15.4% 3.7% 2.5%	<u>1-month</u> -11.1% -1.2% 10.2%	-9.3% -22.5 -22.6 -53.8 7.9%
4-Jul-18 22-Mar-18 11-Sep-18 18-Apr-18 5-Sep-18 6-Mar-18	Agricultural Bank of China Tencent Holdings Yahoo Japan Renesas Electronics Transurban		Financials Technology Technology Technology Industrials	Shanghai SE HKEX Tokyo SE Tokyo SE ASX Shenzhen SE	N/A 439.40 - 439.4 353.00 - 360.0 987.00 - 987.0 10.80 - 10.80	price 3.97 0 405.0 0 354.0 0 1,083.1 10.86	FO - Cash 0 FO - Accelerat 0 FO - Accelerat 0 FO - Accelerat 00 FO - Fully 0 FO - ABB (Run 0) FO - Cash	n Placing ted Bookbuild ted Bookbuild Marketed np); Cash; RO n Placing	raised \$15.0bn \$9.8bn \$4.3bn \$2.7bn \$2.6bn \$2.4bn	shares (%) 0.0% 100.0% 100.0% 0.0%	<u>1-day</u> -15.4% 3.7% 2.5% 3.4% 7.7%	1-month -11.1% -1.2% 10.2% -2.0% 1.5%	-9.3% -22.5% -22.6% -53.8% 7.9% -54.4%
4-Jul-18 22-Mar-18 11-Sep-18 18-Apr-18 5-Sep-18 6-Mar-18 4-Aug-18	Agricultural Bank of China Tencent Holdings Yahoo Japan Renesas Electronics Transurban Blackcow Food Huatai Securities		Financials Technology Technology Technology Industrials Consumer Goods	Shanghai SE HKEX Tokyo SE Tokyo SE ASX	N/A 439.40 - 439.4 353.00 - 360.0 987.00 - 987.0 10.80 - 10.80 N/A	price 3.97 0 405.0 0 354.0 0 1,083.0 10.8 16.70 13.05 13.05	FO - Cash FO - Accelerat FO - Accelerat FO - Accelerat FO - Accelerat FO - Fully FO - ABB (Run FO - Cash FO - Cash	n Placing ted Bookbuild ted Bookbuild Marketed np); Cash; RO n Placing n Placing	raised \$15.0bn \$9.8bn \$4.3bn \$2.7bn \$2.6bn	shares (%) 0.0% 100.0% 100.0% 0.0% 0.0%	<u>1-day</u> -15.4% 3.7% 2.5% 3.4% 7.7% -0.3% N/A	1-month -11.1% -1.2% 10.2% -2.0% 1.5% -9.2%	-9.3% -22.59 -22.69 -53.89 7.9% -54.49 24.19
22-Mar-18 11-Sep-18 18-Apr-18 5-Sep-18	Agricultural Bank of China Tencent Holdings Yahoo Japan Renesas Electronics Transurban Blackcow Food		Financials Technology Technology Technology Industrials Consumer Goods Financials	Shanghai SE HKEX Tokyo SE Tokyo SE ASX Shenzhen SE Shanghai SE	N/A 439.40 - 439.4 353.00 - 360.0 987.00 - 987.0 10.80 - 10.80 N/A N/A	price 3.97 0 405.0 0 354.0 0 1,083. 10.8 16.7 13.05 4.84	FO - Cash 0 FO - Accelerat 0 FO - Accelerat 0 FO - Accelerat 00 FO - Fully 0 FO - ABB (Run 0 FO - Cash 5 FO - Cash FO - Cash	n Placing ted Bookbuild ted Bookbuild Marketed np); Cash; RO n Placing n Placing n Placing	raised \$15.0bn \$9.8bn \$4.3bn \$2.7bn \$2.6bn \$2.4bn \$2.1bn	shares (%) 0.0% 100.0% 100.0% 0.0% 0.0% 0.0%	1-day -15.4% 3.7% 2.5% 3.4% 7.7% -0.3%	1-month -11.1% -1.2% 10.2% -2.0% 1.5% -9.2% 18.5%	Curren -9.3% -22.59 -22.69 -53.89 7.9% -54.49 24.19 -15.99 3.6%

1) Digital Telecommunications Infrastructure Fund. Note: IPOs are classified as 'In Range' if the IPO is priced in the middle 50% of the price range. The top and bottom 25% are classified as 'Top of Range' and 'Bottom of Range'. Source: Dealogic. Bloomberg as of 31 December 2018

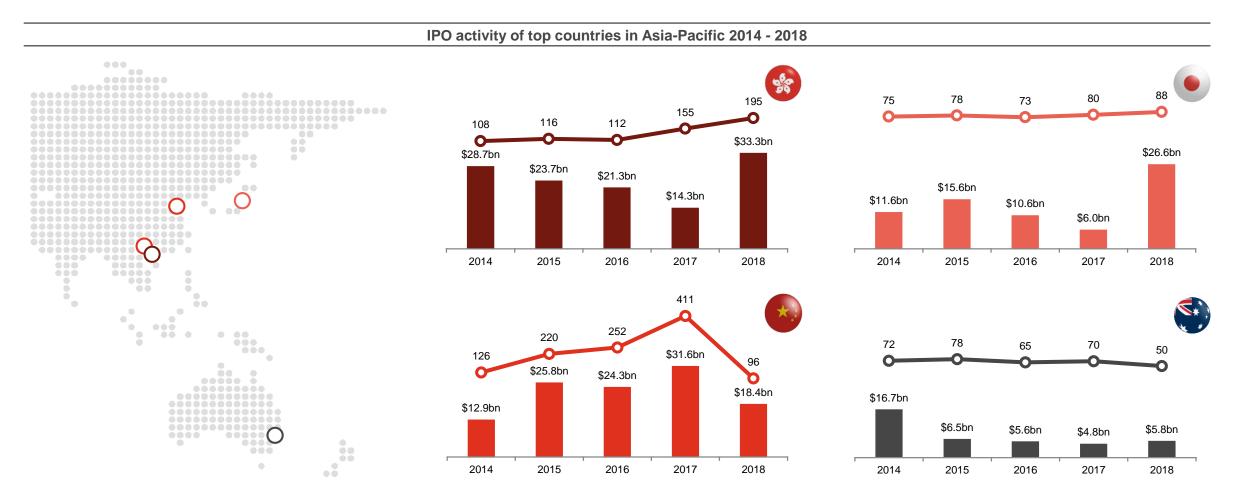
IPO and FO activity per sector in Asia-Pacific

Industrials remains the most active sector in terms of number of IPOs, but a small number of Telecommunication IPOs raised most proceeds



Top countries in terms of IPO activity in Asia-Pacific

A stricter regulatory oversight (and trade tensions to some extent) are depressing activity on China's IPO market



Note: Top countries have been selected based on money raised in 2018. Source: Dealogic as of 31 December 2018

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