

China 5G Sector

Defensive play with upside potential

China has made great establishment in 5G infrastructure during the past years: 1) with 1.4mn 5G base stations (“BTS”) installed at the year-end of 2021 and 2) ~800mn 5G user base, the world’s largest. Looking forward, we believe China telco’s capex will grow 3.5% YoY but 5G-related capex will be lower. This has sent the share price of the supply chain in low sentiment. We maintain HOLD on China Tower (788 HK) but are still positive on ZTE (763 HK, BUY) with its potential share gain. For telcos (China Mobile (941 HK, NR)/ China Telecom (728 HK, NR)/China Unicom (762 HK, NR), the stocks may be more attractive given less exposure to geopolitical tensions and higher dividend yields.

- **China telco’s capex to grow 3.5% YoY and 5G-related capex to decline slightly by 3.1% YoY.** Although the market is worried that there will be a sharp decline in domestic 5G’s investments, China has reiterated its commitment to building the world’s most extensive stand-alone 5G network in the 14th five-year plan. In 2022, the total telco’s capex is estimated to grow 3.5% YoY but 5G-related capex will be slightly lower, mainly due to de-spec trend in 5G BTS deployment.
- **Telco’s H shares have high dividend yields.** Looking forward, China Mobile/China Telecom have announced to increase dividend payout ratio, from 60% to 70% within three years. China Telecom’s board has also declared interim dividend from 2022 onward. As China telcos are returning to A shares, we believe these stocks will be a safe play for investors, with less impact from geopolitical tensions and high dividend yields.
- **China telecom equipment providers are under pressure due to lower 5G-related capex, but ZTE will outperform with share gain.** China telecom equipment providers are key beneficiaries during the 5G roll-out. But the growth momentum for 5G investment is easing. An average of 516k 5G BTS is expected to be deployed throughout 2023-25E vs. 640k/650k/670k in 2020-2022E. Despite the mitigated 5G-related capex headwind, we think **ZTE will outperform its peers**, with carrier revenue growth exceeding the telco’s capex growth (6.1% vs. 3.5%) due to share gain.
- **Headwind for China Tower is likely to persist, as the service contract with the telco will be renewed at the year-end.** We see telco’s expenses for China Tower’s services have accounted for a smaller % of telco’s total COGS (3-7% decline for the three telcos). Headwind is likely to persist considering the service contract will be renewed at the end of this year, which could result a continuous declining expenses ratio for telco to pay China Tower’s services.

Valuation Table

Name	Ticker	Rating	Mkt Cap (US\$ mn)	TP (LC)	P/E (x) FY22E	ROE (%) FY22E	Div. Yield FY22E
ZTE	763 HK	BUY	16,148	29.65	8.3	13.4	1.0
China Tower	788 HK	HOLD	24,502	1.01	14.7	4.6	4.4
China Mobile	941 HK	NR	144,449	-	11.1	10.1	8.3
China Telecom	728 HK	NR	50,877	-	12.2	6.5	8.3
China Unicom	762 HK	NR	16,506	-	15.2	4.7	7.8

Source: Company data, CMBIGM estimates

OUTPERFORM
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China Technology Sector

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2. China Tower (788 HK) – Core tower business to grow at slower pace; Maintain HOLD – 4 May 2021

Contents

China 5G deployment review	3
1.4mn 5G BTS installed by the year-end 2021	3
~800mn 5G subscribers, the world's largest 5G user base	3
China telco's capex outlook.....	4
Telco's 2022E capex: overall a bit higher but 5G slightly lower.....	4
Higher Investment allocation to industrial digitalization/IDC/cloud resources ..	5
China telecom operators	6
Growing revenue with stable profitability; less impact from geopolitical	
tensions	6
Attractive dividend stocks with increasing payout ratio.....	7
China telecom equipment providers	8
Telecom equipment are key beneficiaries during 5G roll-out.....	8
ZTE will outperform its peers with share gain.....	8
China tower	9
Valuation.....	10

China 5G deployment review

1.4mn 5G BTS installed by the year-end 2021

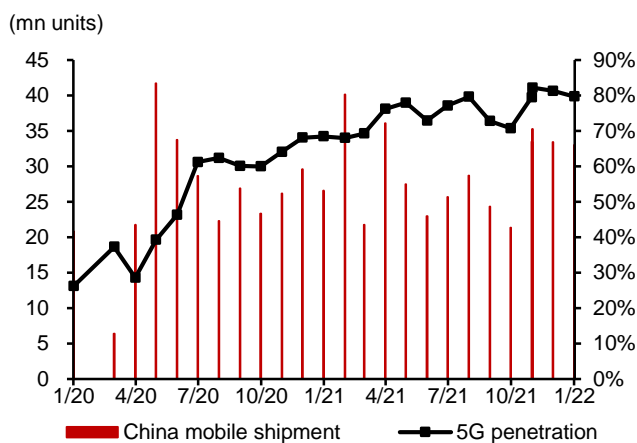
China has installed 1.4mn 5G base stations (“BTS”) at the year-end of 2021. The pace of 5G BTS deployment was steady (640k/650k in 2020/21), but 2021’s number was lower than supply chain’s prior expectations as 28k 700MHz 5G BTS was rearranged into 2022.

Currently, China 5G infrastructure has reached significant milestone, with “*continuous (5G network) coverage in urban districts, counties, towns and villages, and effective coverage in certain key areas, developed villages, key buildings and venues*”, according to the telecom operators.

~800mn 5G subscribers, the world’s largest 5G user base

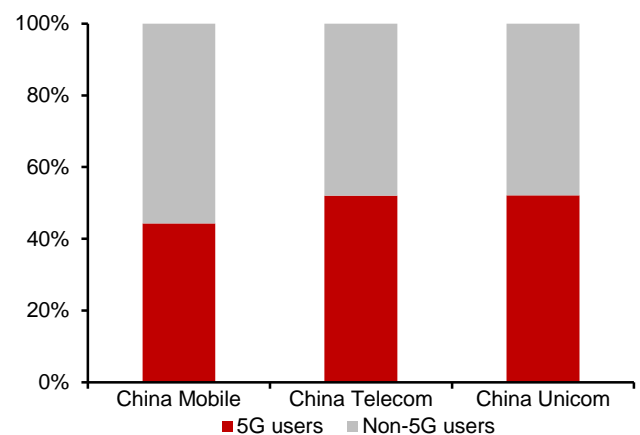
China has the world’s largest 5G user base, nearly 800mn as of Feb 2022. The penetration rates of 5G subscribers of China Mobile/China Telecom/China Unicom were 44%/54%/50%¹, steadily increasing since the roll-out of commercial 5G services. We believe the trend will continue, given 75-80% of new smartphones sold were 5G models for the last twelve months, based on CAICT’s statistics.

Figure 1: 76% penetration rate for China 5G smartphone in 02/2022 (based on monthly shipment)



Source: CAICT, CMBIGM estimates

Figure 2: Telco’s 5G subscribers accounted for 44-54% user share in Feb 2020 (02/2022)¹



Source: Company data, CMBIGM estimates

¹ Latest data for China Unicom was of 31 Jan 2022, before statistical method adjustment.

China telco's capex outlook

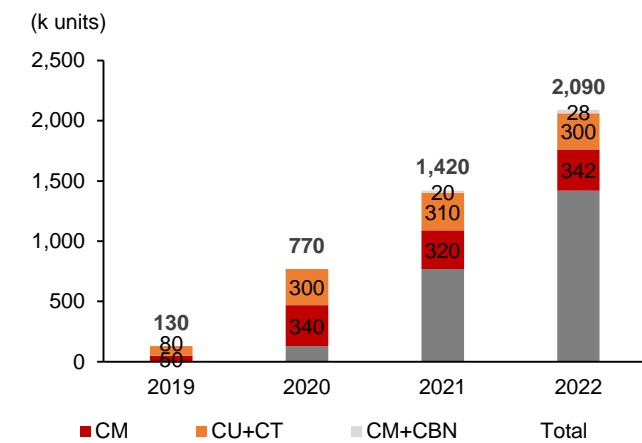
Telco's 2022E capex: overall a bit higher but 5G slightly lower

Although the market is worried that there will be a sharp decline in domestic 5G's investments, China has reiterated its commitment to building the world's most extensive stand-alone 5G network in the 14th five-year plan. And it is truly necessary as "nearly half of China's 5G subscribers still use 4G networks and about 40% of the new 5G subscribers added in 2021 still use 4G phones", according to Digitimes.

The total telco's capex is estimated to grow 3.5% YoY this year but 5G-related capex will be slightly lower (-3.1% YoY). This is mainly due to de-spec trend in 5G BTS deployment. Higher frequency base stations (4.9GHz and 3.5GHz) were built at the beginning to achieve sufficient network coverage in urban areas and high value indoor areas, while 2.6GHz, 2.1GHz and 700MHz base stations were added later to facilitate in other areas.

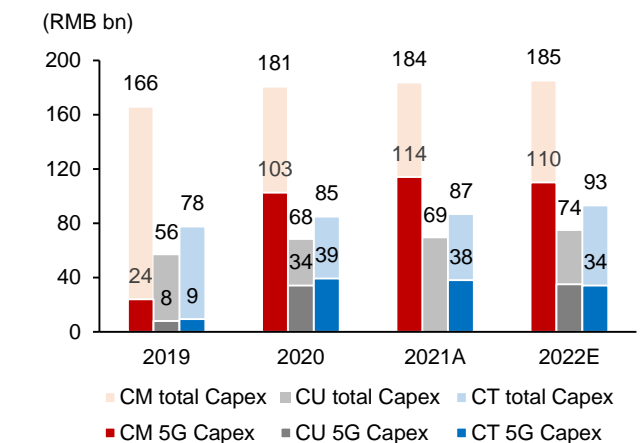
Looking forward, 3.64mn 5G BTS will be built by 2025. The calculation is based on MIIT's plan that the number of 5G base stations per 10k people will reach 26 by 2025 (vs. 5 in 2021). The telcos have announced a cumulative of 670k 5G BTS will be added in 2022, which means an average of 516k 5G BTS to be deployed throughout 2023-25E.

Figure 3: 5G deployment status: 2020/21/22E 5G BTS new-add are 640k/650k/670k



Source: Company data, CMBIGM estimates

Figure 4: 2022E Telco's total capex to grow 3.5% YoY and 5G-related capex to decline 3.1% YoY



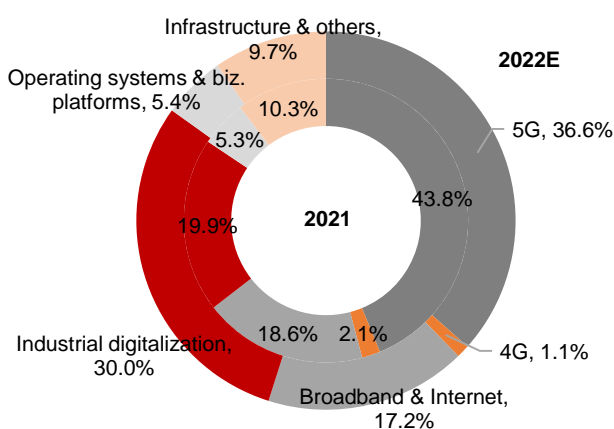
Source: Company data, CMBIGM estimates

Higher Investment allocation to industrial digitalization/IDC/cloud resources

Thanks to telco’s promotional efforts on 5G infrastructure establishment over the past two and half years, China has achieved 5G network coverage in all cities, counties and certain developed towns nationwide through co-build and co-share strategy.

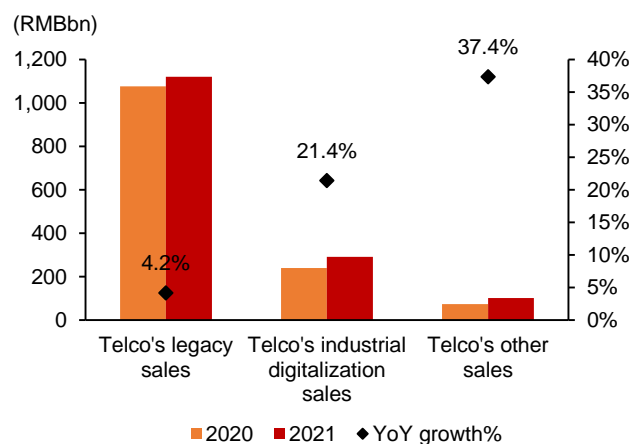
With such significant progress in 5G infrastructure establishment, we see telco has increased their investment allocation to industrial digitalization/IDC/cloud resources this year, capturing higher growth opportunities. For example, China Telecom planned to take 30.0% of its total capex budget to industrial digitalization in 2022 (vs. 19.9% for 2021), representing a 62% YoY growth.

Figure 5: 30% of Telecom’s 2022E capex will be invested in industrial digitalization (vs. 20% in 2021)



Source: Company data, CMBIGM estimates

Figure 6: Telco’s service revenue from Industrial digitalization business to drive future growth



Source: Company data, CMBIGM estimates

In 2021, the sales from telco’s legacy business (including individual and family business, such as mobile, broadband, etc.) grew at 4.2% YoY, while industrial digitalization sales grew 21.4% YoY. We expect the industrial digitalization/IDC/cloud-related business will be a key driver in the following years with increasing capex allocations.

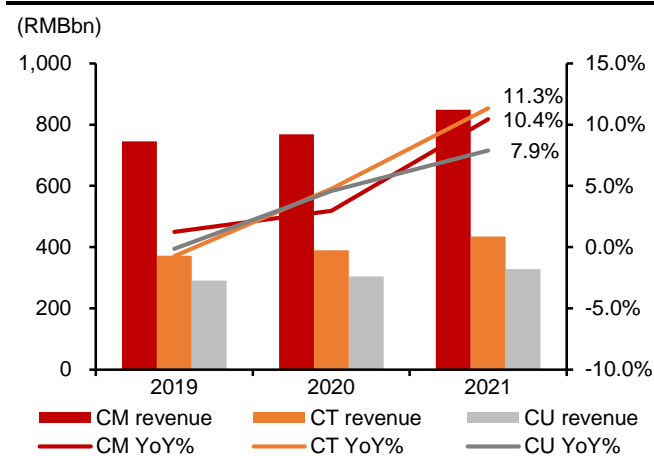
China telecom operators

As China Mobile (941HK, NR) and China Telecom (728HK, NR) are returning to A shares, we believe China telco will be a safe play for investors, with less impact from geopolitical tensions and high dividend yields.

Growing revenue with stable profitability; less impact from geopolitical tensions

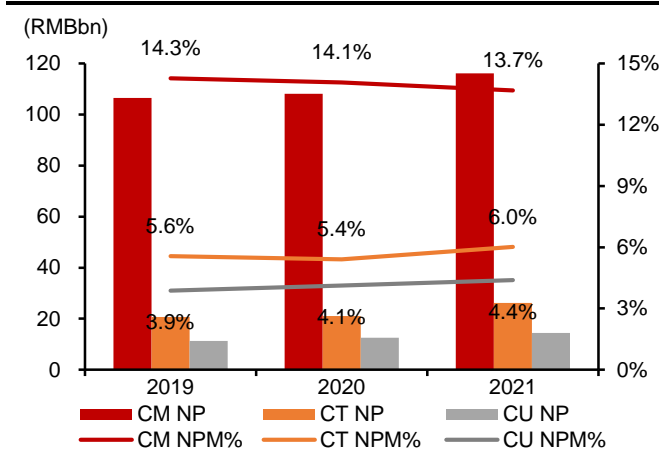
China Telecom operators have delivered good revenue growth and maintained stable profitability in 2021. FY21 revenue grew 10.4%/11.3%/7.9% YoY for China Mobile/China Telecom/China Unicom and NPM were 13.7%/6.0%/4.4% respectively.

Figure 7: FY21 revenue grew 10.4%/11.3%/7.9% YoY for China Mobile/China Telecom/China Unicom



Source: Company data, CMBIGM estimates

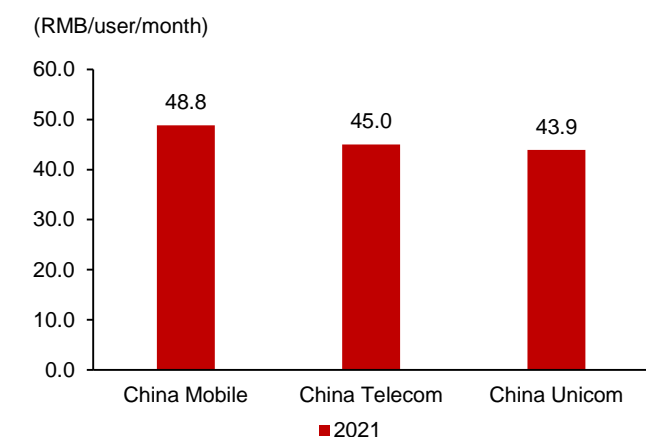
Figure 8: FY21 NPM were 13.7%/6.0%/4.4% for China Mobile/China Telecom/China Unicom



Source: Company data, CMBIGM estimates

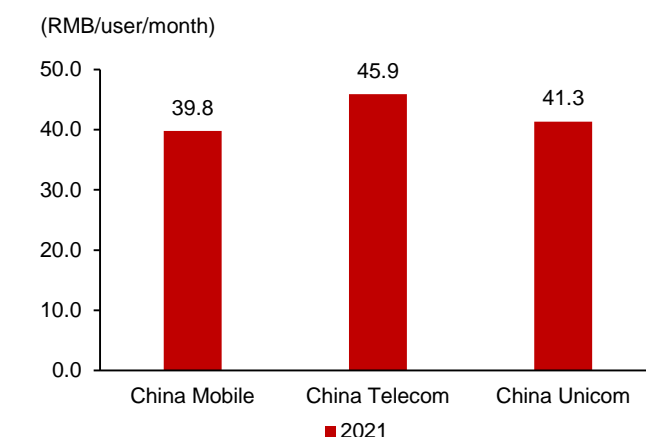
Telco's monthly mobile ARPU improved slightly to reach RMB48.8/RMB45.0/RMB43.9 per subscriber (China Mobile/China Telecom/China Unicom). China Mobile's 5G ARPU lead the race, with RMB82.8 per 5G subscriber. China Telecom's 5G ARPU declined to RMB53.3 from RMB65.6, due to intense competition to gain market share.

Figure 9: Mobile ARPU analysis



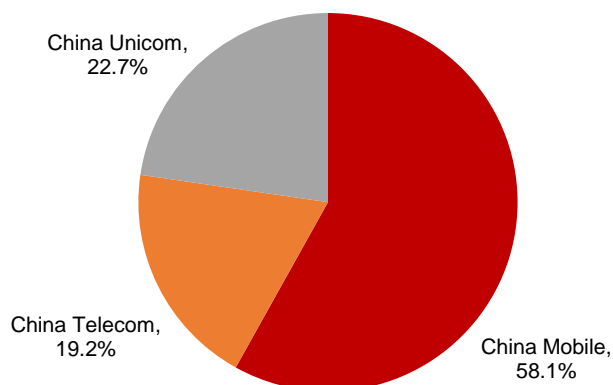
Source: Company data, CMBIGM estimates

Figure 10: Broadband ARPU analysis



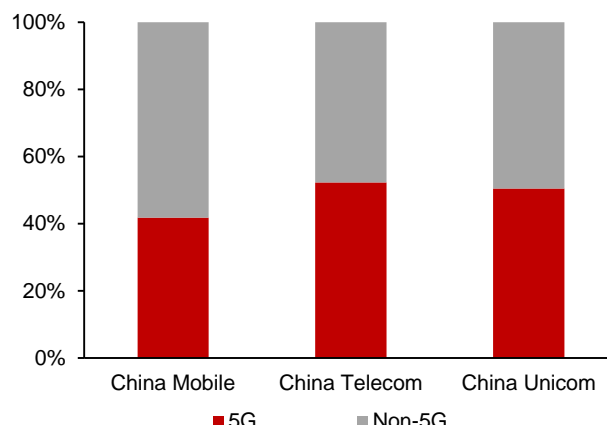
Source: Company data as of Jan-2022, CMBIGM estimates

Figure 11: China Mobile takes the largest share in terms of total mobile users



Source: Company data as of Jan-2022, CMBIGM estimates

Figure 12: 5G package subscribers penetration rate: China Telecom > China Unicom > China Mobile

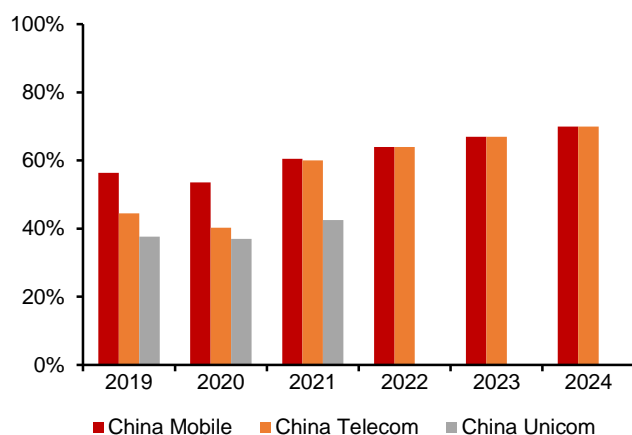


Source: Company data as of Jan-2022, CMBIGM estimates

Attractive dividend stocks with increasing payout ratio

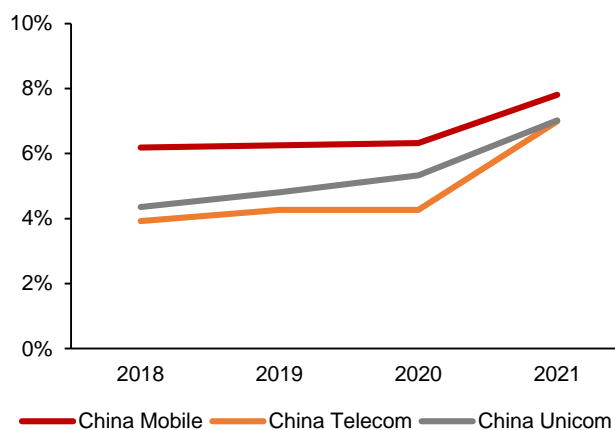
The dividend yields (H shares) for China Mobile/ China Telecom/China Unicom (961 HK, NR) were 7.8%/7.0%/7.0% as of closing price on 3 May 2022. Looking forward, China Mobile/China Telecom have announced to increase dividend payout ratio, from 60% to 70% within three years after A share offering and listing. China Telecom’s board has also declared interim dividend from 2022 onward.

Figure 13: Telco will increase dividend payout ratio during 2022E-24E



Source: Company data, CMBIGM estimates

Figure 14: Telco’s H shares have high dividend yield



Source: Company data, share price as of 03 May 2022, CMBIGM estimates

China telecom equipment providers

China has achieved significant development in its 5G infrastructure establishment. China's 5G network has covered all cities, counties and certain developed towns nationwide, with 1.4mn 5G base stations ("BTS") installed at the year-end of 2021. The pace of 5G BTS deployment was steady, 640k in 2020, 650k in 2021 and 670k planned for 2022.

Telecom equipment are key beneficiaries during 5G roll-out

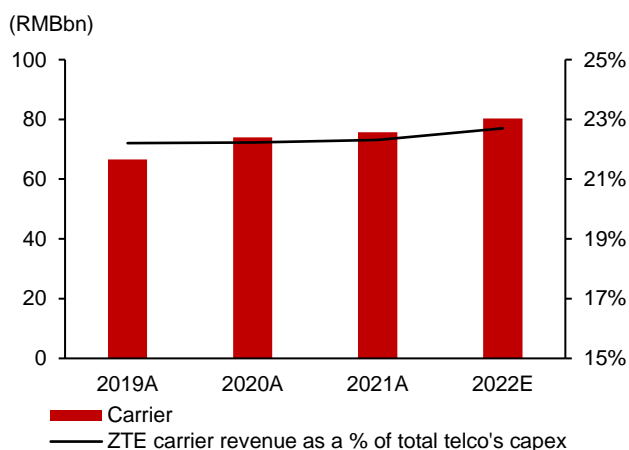
China telecom equipment providers are key beneficiaries during the 5G roll-out. But the growth momentum for 5G investment is easing due to de-spec 5G BTS and lowered 5G-related capex budget. According to ZTE's latest annual report, its carrier business (telecom related) grew only 2.3% YoY in 2021 (vs. 16.7%/11.2% YoY in 2019/20), a similar rate to the overall capex growth in 2021 (3.5% YoY).

ZTE-H (763 HK, BUY)

ZTE will outperform its peers with share gain

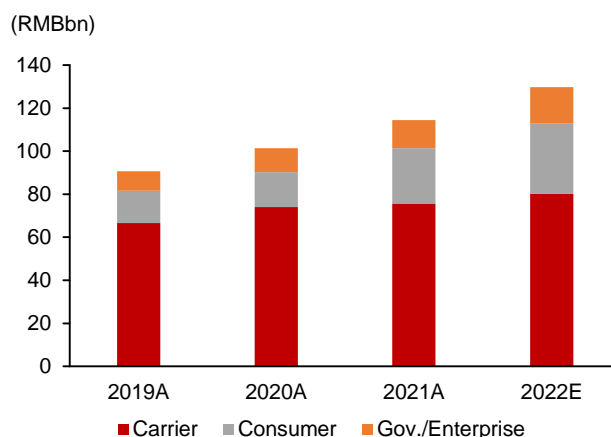
As the telco has lowered 5G-related capex, telecom supply chain is under pressure. However, we think ZTE (763 HK, BUY) will outperform its peers. We believe ZTE's carrier revenue growth should exceed the telco's capex growth (6.1% vs. 3.5%), given the Company is expected to have share gain in both 5G BTS market and other telecom-related markets. We estimate ZTE's share in 5G BTS deployment will increase to 35% in 2022 vs. 33% in 2021 and 31% in 2020. The Company's current share in domestic telecom market is ~22%. Despite slower growth in carrier segment, ZTE's overall revenue is expected to grow at 13.3% YoY in 2022, mainly driven by consumer business and government/enterprise business.

Figure 15: ZTE's carrier revenue to gain share in telco's capex



Source: Company data, CMBIGM estimates

Figure 16: ZTE revenue to grow at 13.3% YoY in 2022, but carrier revenue to grow at slower pace



Source: Company data, CMBIGM estimates

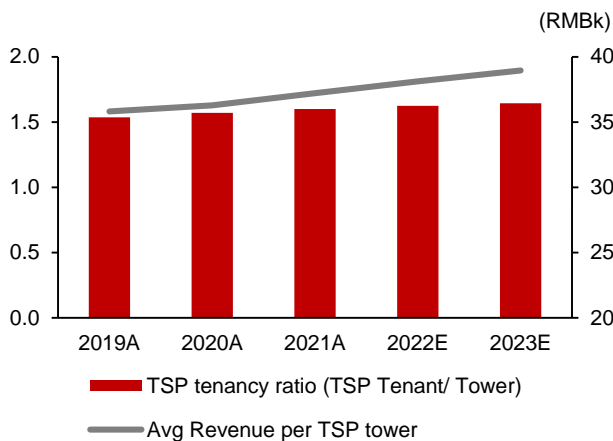
China Tower (788 HK, HOLD)

China Tower (788 HK, HOLD) maintained steady growth in the past years. Revenue grew 6.4%/6.1%/6.8% YoY during 2019-2021. Core tower business accounted for 88% of total FY21 revenue. By segment, revenue for core tower business remain almost flat, with low single-digit growth (3.4% YoY), while revenue of the other segments grew at a much higher rate (23.0%/35.2%/121.5% YoY for DAS/TSSAI/energy).

Key operational data:

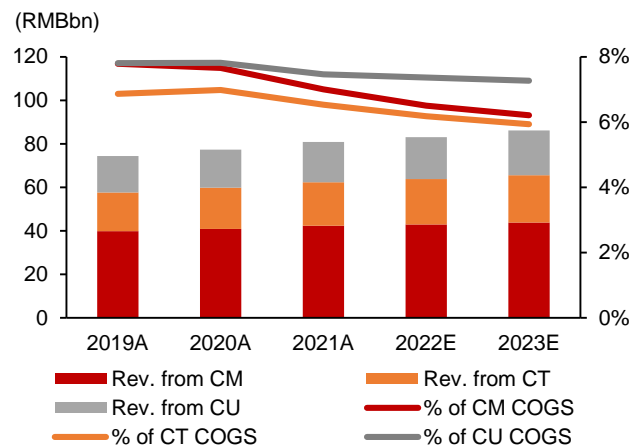
- The number of total tenants increased to 3.46mn in 2021 (2.9% YoY), including 3.26mn telecom tower tenants (2.7% YoY) and 199k TSSAI tenants (7.0% YoY). DAS covered area increased to 499mn sq m (22.9%).
- Avg. revenue per telecom tenants increased to RMB23.3k, with 0.7% YoY growth.
- Avg. revenue per TSSAI tenants increased to RMB20.4k, with 26.3% YoY growth.
- Avg. revenue per DAS covered area remained the same, with 0.1% YoY growth.

Figure 17: Operational data to steadily improved, but with low single-digit growth



Source: Company data, CMBIGM estimates

Figure 18: China tower's revenue accounted for a smaller % in telco's COGS (2021-23E)



Source: Company data, CMBIGM estimates

We see telco's expenses for China Tower's services have accounted for a smaller percentage of telco's total COGS (7%/5%/3% decline for China Mobile/China Telecom/China Unicom). We expect the headwind will persist given 1) telco's incentive to improve profitability, 2) telco's plan to increase dividend payout ratio and 3) a possible lower leasing fee from telcos as the service contract will be renewed at the end of this year. According to Bloomberg, "the last pricing agreement reduced its leasing fees to 10% above its overhead for 2018-22, down from 15% in 2017." We expect the overall 2022-23E revenue growth for China Tower will be 6.2% and 5.2%.

Valuation

Figure 19: Telecommunications Equipment providers

Company	Ticker	Price (LC)	TP	Mkt. Cap (US\$ mn)	P/E (x)		ROE (%)		Dividend Yield	
					FY22E	FY23E	FY22E	FY23E	FY22E	FY23E
Telecommunication operators										
China Mobile	600941 CH	64.96	NA	144,449	11.1	10.3	10.1	10.1	8.3	9.5
China Telecom	601728 CH	3.89	NA	50,877	12.2	10.8	6.5	7.0	8.3	9.9
China Unicom	600050 CH	3.52	NA	16,506	15.2	13.4	4.7	5.0	7.8	9.2
AT&T	T US	19.12	NA	136,880	7.3	7.4	11.9	11.1	7.3	6.4
Verizon	VZ US	46.23	NA	194,150	8.6	8.2	25.2	22.8	5.5	5.6
T-Mobile	TMUS US	126.40	NA	158,452	44.5	20.5	4.8	11.9	-	-
				Average	16.5	11.8	10.6	11.3	6.2	6.8
				Median	11.7	10.5	8.3	10.6	7.6	7.8
Telecommunication equipment suppliers										
ZTE	763 HK	16.84	29.65	16,148	8.3	7.1	13.4	13.7	1.0	1.0
Ericsson	ERIC US	8.07	NA	27,001	10.6	9.4	20.8	20.9	3.3	3.6
Nokia	NOK US	5.13	NA	29,222	11.7	10.7	11.7	11.9	1.7	2.2
				Average	10.2	9.1	15.3	15.5	2.0	2.3
				Median	10.6	9.4	13.4	13.7	1.7	2.2

Source: Bloomberg, CMBIGM estimates

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