

# China 5G Sector

## Expect telecom names continue to show strength in broad market weakness

We regard the domestic telecom sector as a defensive play amid macro-economic pressure, consumer weakness, rising uncertainties, etc. We expect China telcos to be the most favorable defensive picks with ample FCF, high dividend yield and potential share repo opportunities. China Mobile's (600941 CH/941 HK) share price grew 12.5%/8.3% YTD. The investors' appetite seems to confirm our previous prediction "Good compound returns (dividends, share repo) in an environment of uncertainty will become more valued by investors." ("China TMT Hardware barometer" – 30 May 2022/ [Link](#))

In this report, we review domestic and overseas capex historical growth and share our view on the outlook. We expect telecom vendors like ZTE (763 HK) will continue to be the key beneficiary of global telecom spending and gain share in both RAN and non-RAN market. Maintain BUY, but lowered the TP to HK\$25, due to lack of 5G catalysts. Telecom infrastructure builder, China Tower (788 HK), will renew the tower lease contract with China telcos in 2H22. However, given its weak bargaining power, we maintain HOLD with unchanged TP of HK\$1.01.

- **Current domestic 5G deployment status review and near-term outlook.** ~454k 5G BTS were added during the first seven months of 2022, suggesting ~72.5% of telcos' full-year target has been met. In August, the tender results of next round 5G BTS deployment have been announced finally. **We think the delayed 5G BTS tender may weigh on the supply chain's 3Q22 sales, especially for PCB suppliers**, such as Shennan's (002916 CH, HOLD) and Shengyi Electronics (688183 CH, NR). Shennan telecom PCB accounted for 50%-60% of its PCB segment sales and Shengyi electronics' telecom/datacenter PCB accounted for the majority of the Company's sales.
- **Domestic telcos' capex outlook and impacts.** China telcos' capex intensity peaked in 2020 at 22.7%, and then declined by 1.7% in 2021. **We expect the trend will continue, but 2023E capex should remain stable.** The decline in 5G capex will offset by investments in higher growth area, considering stalled mobile ARPU growth. Vendors like **ZTE will continue to be the key beneficiary with share gain** (in both RAN and non-RAN market).
- **Overseas telecom capex review and outlook.** We tracked global telecom capex based on 93 telecommunication network operators' (TNO) data. Asian TNO's capex reduced in 1H22 after mass investment in 5G network (i.e., China and South Korea) in the past years. Looking forward, other deploying countries, such as Thailand and Indonesia, will invest in 5G network. Americas TNOs spending increased in the last twelve months, mainly due to resumed 5G projects and impacts from Sino-US tension. For European TNOs, the capital intensity is the highest. However, the outlook is gloomy, given their economic pressure.
- **Our coverage.** We expect **ZTE (763 HK)** will continue to outperform its peers with share gain story. However, dragged by the lack of 5G deployment catalysts, we **lowered the TP to HK\$25. Maintain BUY. China Tower (788 HK)** will renew the contract with China telcos in 2H22. Given the Company's weaker bargaining power, we expect the main business growth will be limited. **Maintain HOLD, with unchanged TP of HK\$1.01.**

**OUTPERFORM**  
(Maintain)

### China Technology Sector

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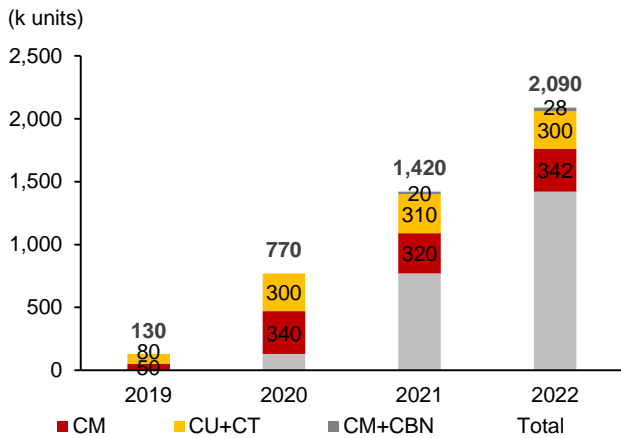
1. "China Tech Update: China TMT Hardware barometer" – 30 May 2022 ([Link](#))
2. "China 5G Sector: Defensive play with upside potential" – 4 May 2022 ([Link](#))

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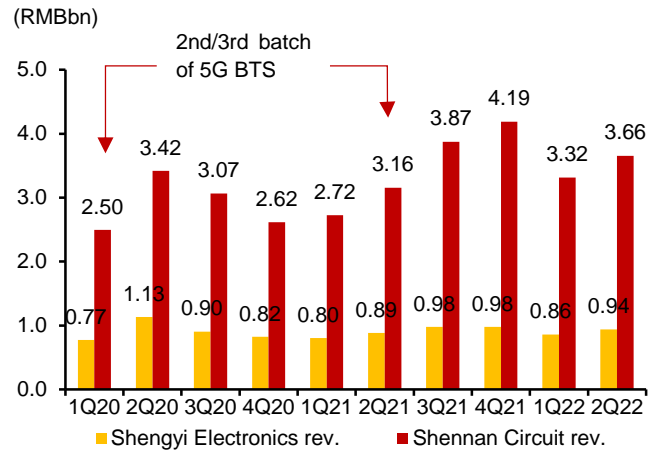
## Section Title: Focus Charts

**Figure 1: 80% of this year's deployment has been completed**



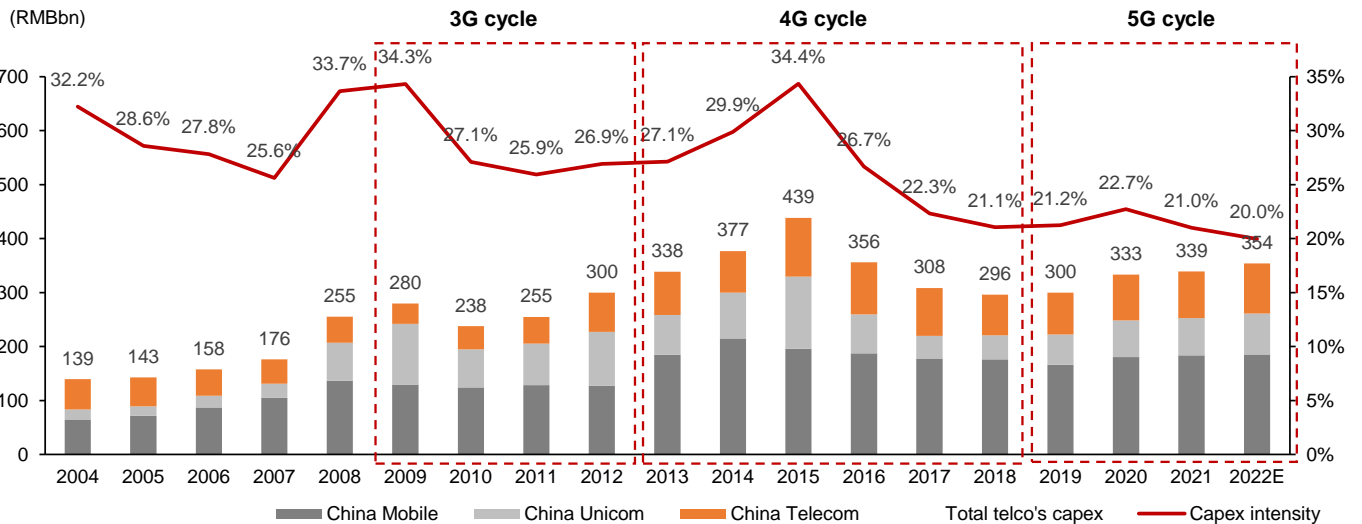
Source: Company data, CMBIGM estimates

**Figure 2: Delayed 5G BTS deployment in China may weigh on supply chain's 3Q22 sales**



Source: Company data, CMBIGM estimates

**Figure 3: 2022E China telco's capex intensity ratio showed downward trend**



Source: Company data, CMBIGM estimates  
Note: capex intensity ratio = capex / revenue

**Figure 4: Global telecom capex review**

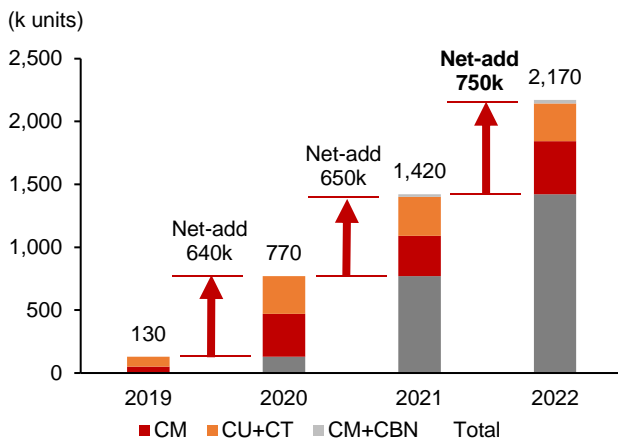
Global telecom capex (US\$bn)	1H18	2H18	1H19	2H19	1H20	2H20	1H21	2H21	1H22
<b>Asia (32 TNOs)</b>	51.7	57.2	54.4	57.8	52.6	53.9	51.8	63.4	49.5
YoY%			5.3%	0.9%	-3.3%	-6.7%	-1.5%	17.7%	-4.5%
<b>Capex intensity (%)</b>	<b>15.6%</b>	<b>18.3%</b>	<b>17.3%</b>	<b>19.3%</b>	<b>17.8%</b>	<b>17.2%</b>	<b>15.6%</b>	<b>19.4%</b>	<b>14.7%</b>
<b>Americas (27 TNOs)</b>	44.8	47.3	44.2	47.1	42.8	44.9	43.7	52.8	51.1
YoY%			-1.5%	-0.4%	-3.1%	-4.7%	2.1%	17.6%	17.0%
<b>Capex intensity (%)</b>	<b>13.4%</b>	<b>13.1%</b>	<b>12.5%</b>	<b>12.9%</b>	<b>12.5%</b>	<b>12.3%</b>	<b>12.1%</b>	<b>14.3%</b>	<b>14.4%</b>
<b>Europe (20 TNOs)</b>	31.7	29.7	31.2	30.6	27.7	35.2	35.3	33.3	33.5
YoY%			-1.4%	3.0%	-11.4%	15.0%	27.4%	-5.4%	-5.0%
<b>Capex intensity (%)</b>	<b>16.0%</b>	<b>15.0%</b>	<b>16.4%</b>	<b>15.8%</b>	<b>14.6%</b>	<b>16.6%</b>	<b>16.9%</b>	<b>15.9%</b>	<b>16.9%</b>
<b>MEA (14 TNOs)</b>	4.9	7.1	5.1	8.1	5.0	7.3	4.9	6.4	5.2
YoY%			3.1%	14.5%	-0.1%	-10.0%	-3.5%	-12.6%	7.3%
<b>Capex intensity (%)</b>	<b>13.2%</b>	<b>18.3%</b>	<b>13.2%</b>	<b>20.6%</b>	<b>13.1%</b>	<b>18.0%</b>	<b>12.0%</b>	<b>15.1%</b>	<b>12.5%</b>

Source: Bloomberg, CMBIGM estimates

## Delayed domestic 5G BTS tender may weigh on supply chain's 3Q22 sales

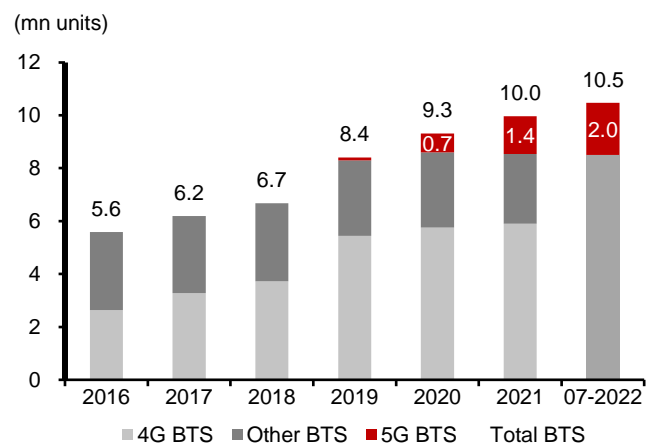
In 1H22, China telcos have built over 430k 5G BTS (250k from China Mobile and 180k from China Unicom/China Telecom). Their full-year plan is to build 750k 5G BTS in 2022, 100k higher than our previous estimate as China Mobile has revised their target lately. According to MIIT, 114k 5G BTS were added during July, suggesting ~72.5% of telcos' 2022's target has been fulfilled by the end of Jul 2022.

**Figure 5: China telcos plan to add 750k 5G BTS in 2022 (vs. 640k/650k in 2020/21)**



Source: Company data, CMBIGM estimates

**Figure 6: 544k 5G BTS added during Jan-Jul 2022, suggesting 72.5% of target has been fulfilled**



Source: MIIT, CMBIGM estimates

In August, the tender results of next round 5G BTS deployment have been announced finally. Huawei, ZTE, Ericsson, Datang Mobile and Nokia were the winners of China Mobile's 200k 5G BTS tender (including 2.6GHz and 4.9GHz 5G BTS). We believe the shares among the winners are similar of previous rounds, with Huawei and ZTE took the most shares.

**Looking forward, the delayed 5G BTS tender and softening capex growth may weigh on the supply chain's 3Q22 sales, especially for PCB suppliers.** The 2nd and 3rd rounds were announced in Mar 2020 and Jun/Jul 2021. The supply chain recorded higher quarterly sales in the following quarters after the tender announcements.

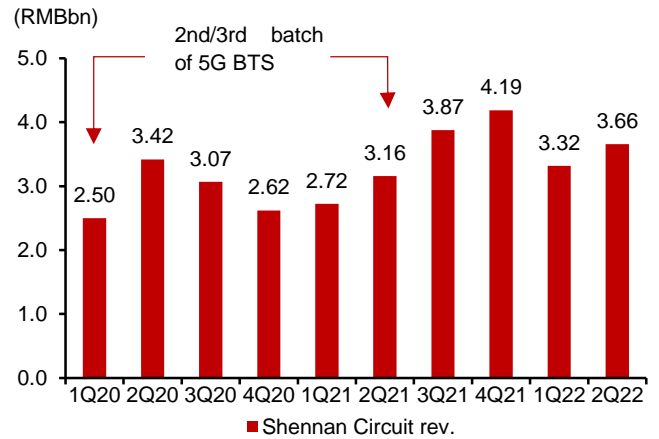
For example, Shennan's (002916 CH, HOLD) telecom PCB accounted for 50%-60% of its PCB segment sales (~31%-38% of total revenue). The Company's 2Q20 and 3Q21 revenues grew 36.9% QoQ and 22.8% QoQ. Shengyi electronics' (688183 CH, NR) telecom/datacenter PCB accounted for the majority of the Company's sales. The Company's 2Q20 and 3Q21 revenue grew 46.9% QoQ and 10.4% QoQ. We expect **Shennan and Shengyi electronics' 3Q22 sales are likely to experience YoY decline, due to delayed 5G deployment and high base in 3Q21.**

**Figure 7: 2nd and 3rd batch of 5G BTS tender announced in 1Q20 and 2Q21**

Month	Telco	Announcement
2020/03	China Mobile	230k 5G BTS tender announcement
2020/03	China Unicom, China Telecom	250k 5G BTS tender announcement
2021/06	China Mobile	480k 5G BTS (700MHz) tender announcement
2021/07	China Unicom, China Telecom	242k 5G BTS (2.1GHz) tender announcement
2022/08	China Mobile	200k 5G BTS (2.6GHz/4.9GHz) tender announcement

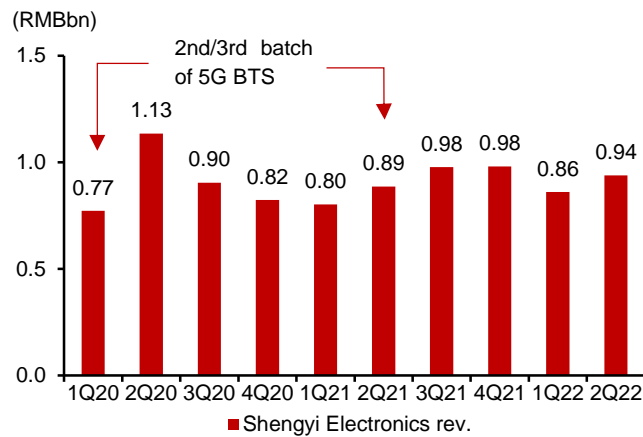
Source: C114, CMBIS estimates

**Figure 8: Delayed 5G BTS deployment in China may weigh on supply chain's 3Q22 sales (Shennan)**



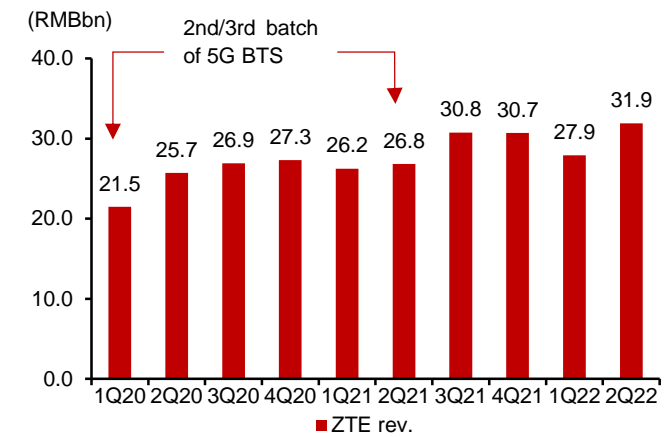
Source: Company data, CMBIGM estimates

**Figure 9: Delayed 5G BTS deployment in China may weigh on supply chain's 3Q22 sales (Shengyi Elec.)**



Source: Company data, CMBIGM estimates

**Figure 10: Milder impact from delayed domestic 5G BTS deployment for ZTE**



Source: Company data, CMBIGM estimates

For telecom equipment provider, ZTE (763 HK) is also seasonality affected by domestic 5G deployment. However, the impact from delayed 5G deployment is expected to be milder, thanks to broader offerings including non-RAN carrier sales, consumer products, government/enterprises business and overseas exposures.

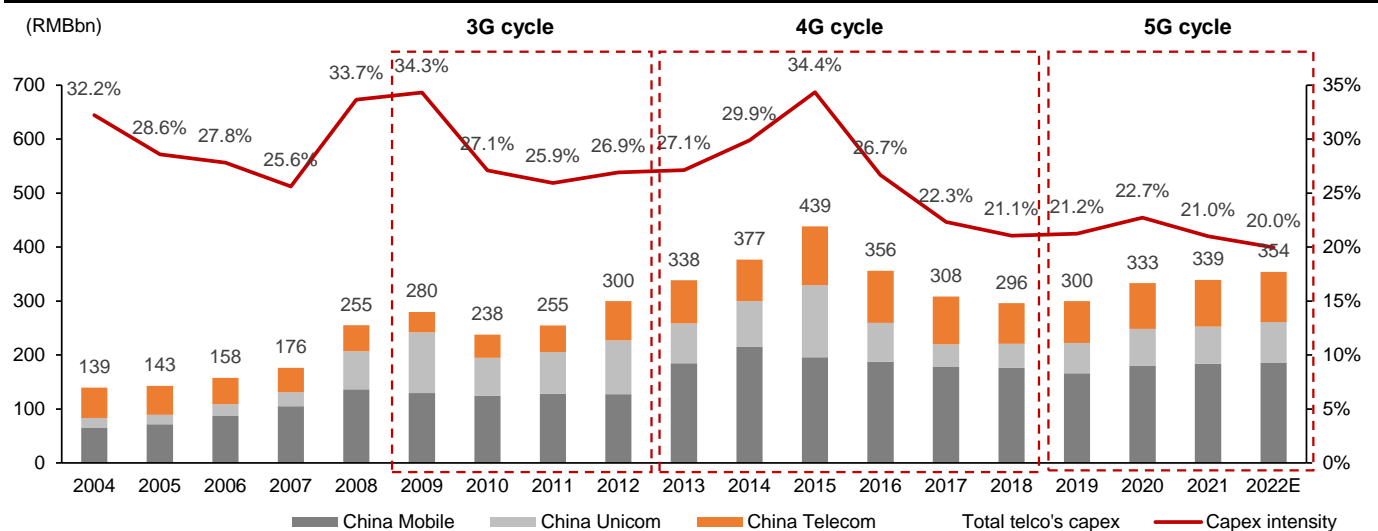
## China telcos' capex is likely to remain stable; while investment focus is shifting

### China telcos' capex intensity to continue downward trend

During the mass investment in 5G network, **China telcos' Capex intensity ratio (capex over revenue) peaked at 2020**, reaching 22.7%. In 2021, the ratio declined by 1.7%, mainly due to 1) telcos' higher revenue growth (10.2% YoY) and 2) lower growth in capital spending (1.9% YoY).

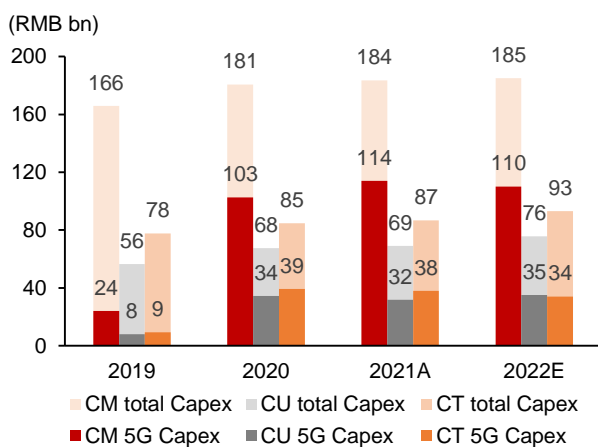
For 2022, China telcos' capex is budgeted to grow 4.3% YoY (5G capex to decrease 2.6% YoY). **We expect China telcos' capex may remain stable; however, the capex intensity is likely to continue the downward trend based on higher topline growth** (10.7% YoY growth for telco's revenue in 1H22).

**Figure 11: 2022E China telcos' capex intensity ratio showed downward trend**



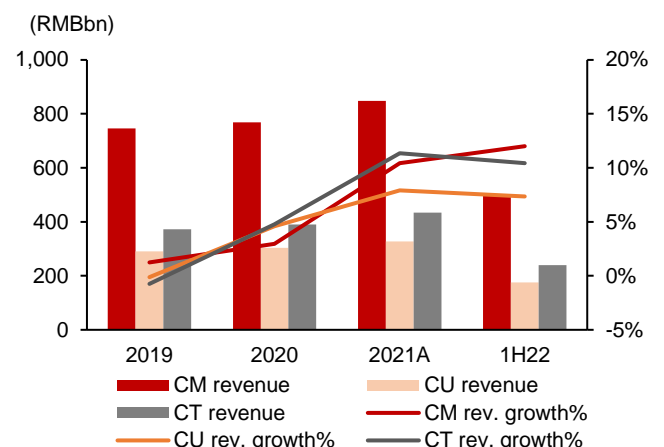
Source: Company data, CMBIGM estimates  
 Note: capex intensity ratio = capex / revenue

**Figure 12: 2022E China telcos' capex to grow 4.3% YoY and 5G-related capex to decline 2.6% YoY**



Source: Company data, CMBIGM estimates

**Figure 13: China telcos' revenue grew 10.7% YoY during 1H22**



Source: Company data, CMBIGM estimates

## China telcos' capex is likely to remain stable; while investment focus is shifting

We believe **China telcos' capex is likely to remain stable, while 5G capex will count for a less % going forward.** It is mainly due to 1) significant milestone in 5G coverage, 2) de-spec trend in 5G BTS deployment and 3) stalled mobile ARPU growth driving investment allocation focus to higher growth markets.

### ■ Significant milestone in 5G coverage and de-spec trend in 5G BTS deployment

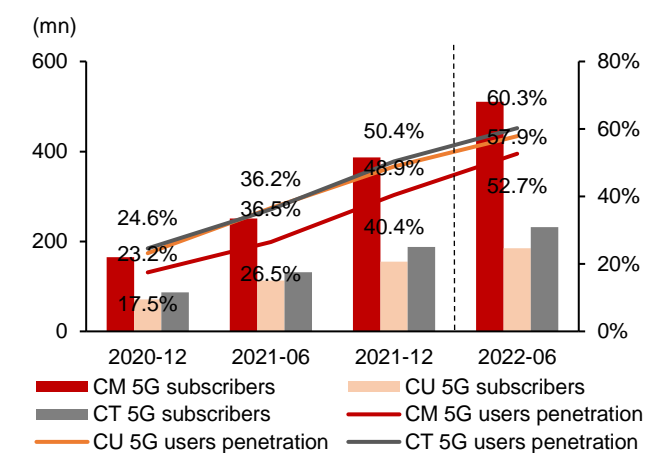
Currently, China 5G infrastructure has reached a significant milestone, with “*continuous (5G network) coverage in urban districts, counties, towns and villages, and effective coverage in certain key areas, developed villages, key buildings and venues*”, according to the telecom operators. Higher frequency 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 other areas. We estimate **an average of ~490k 5G BTS to be deployed throughout 2023-25E (vs. 640k/650k/750k 5G BTS in 2020/21/22E).** In total, 3.64mn 5G BTS will be built by 2025 to achieve the goal that per 10k people will share 26 5G BTS (vs. 5 in 2021).

### ■ Stalled mobile ARPU growth driving investment allocation focus to higher growth markets

**China telcos' mobile ARPU showed stalled growth, not reflecting the favorable user mix.** For example, China Mobile's mobile ARPU was RMB52.3 and China Telecom's mobile ARPU was RMB46.0 in 1H22, showing 0.2% and 0.7% YoY growth (vs. 3% and 2% YoY growth in 2021). On the other hand, total 5G subscribers grew significantly at 87% YoY or 27% HoH, reaching 928mn as of 30 Jun 2022. Meanwhile, 5G users penetration kept improving to 50%-60%, suggesting a favorable user mix.

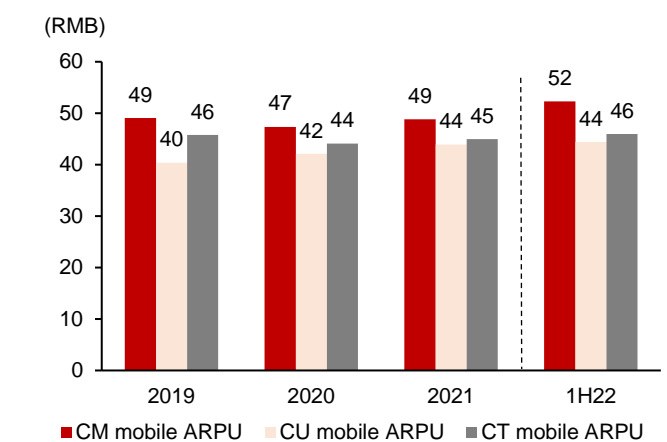
We believe **the stalled mobile ARPU growth is largely due to telcos' aggressive promotions for 5G packages, which means lowering rate to boost 5G subscribers.** Among the 928mn of 5G subscribers, only 552mn (60%) consumers have purchased 5G-model handsets, according to MIIT. We believe the majority of the remaining 40% have switched to 5G package because of lowered rate, which explains the flattish trend of telcos' mobile ARPUs.

**Figure 14: China telco's 5G subscribers grew significantly**



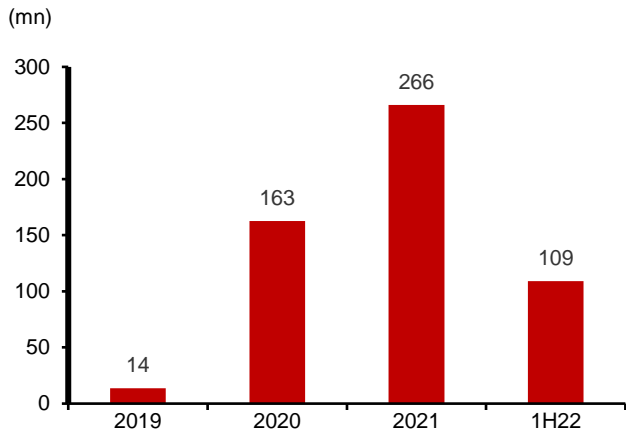
Source: Company data, CMBIGM estimates

**Figure 15: China telco's mobile ARPU growth stalled in 1H22**



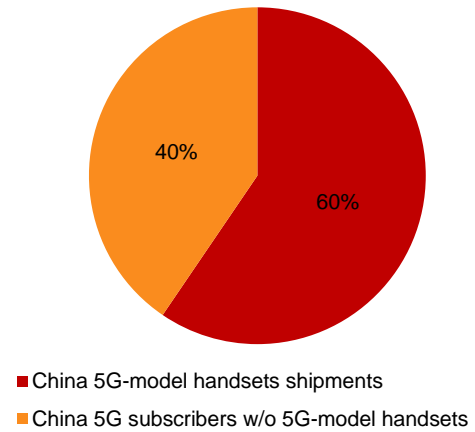
Source: Company data, CMBIGM estimates

**Figure 16: Only 552mn consumers have purchased 5G-model handsets (vs. 928mn 5G subscribers)**



Source: MIIT, CMBIGM estimates

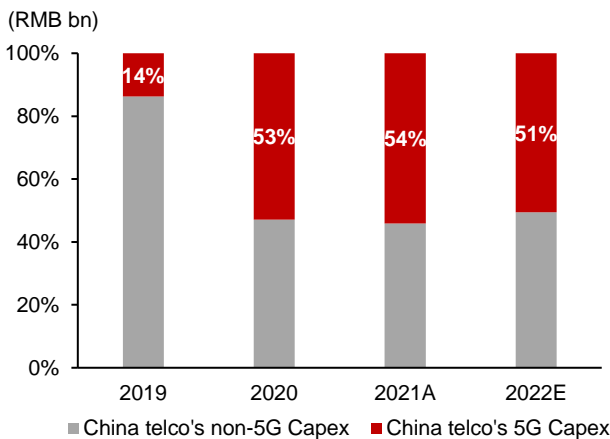
**Figure 17: 40% of the 5G subscribers do not own a 5G-model handset as of Jun 2022**



Source: MIIT, Company data, CMBIGM estimates

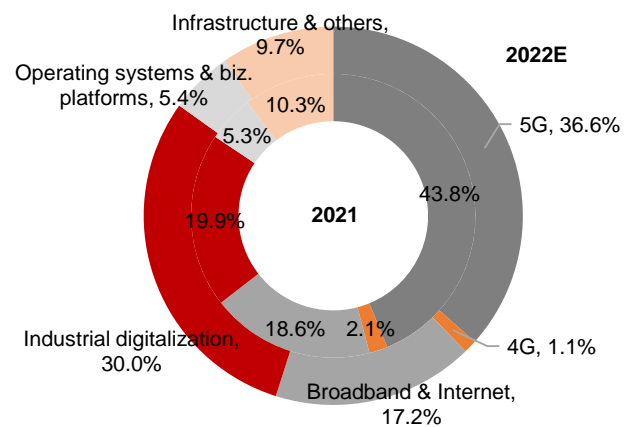
The rate cut on 5G package offering seems to have negative impacts on China telco's financial performance in the short term. To keep the growth momentum, China telcos have incentives to invest in higher growth markets. We notice that China Telecom has already planned to take 30.0% of its total capex budget to industrial digitalization in 2022 (vs. 19.9% for 2021), representing 62% YoY growth. Looking forward, greater spending is likely to be invested in industrial digitalization/IDC/cloud resources, capturing greater growth opportunities and offsetting the decline in 5G capex. Therefore, we expect China telcos' capex to remain stable in 2023E.

**Figure 18: 5G capex will count for a less % going forward**



Source: Company data, CMBIGM estimates

**Figure 19: Greater allocation of telco's capex to be invested in industrial digitalization (China Telecom)**



Source: Company data, CMBIGM estimates



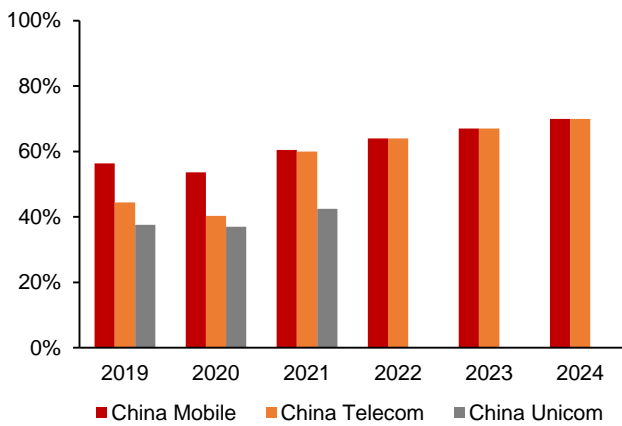
## Impact on domestic telecom sector

### ■ China telcos

**China telcos' free cash flow is likely to improve** with stable revenue growth (1H22: 10.7% YoY) and downward capex intensity trend, **making China telco as defensive play with high dividend yield and potential share repo opportunities.**

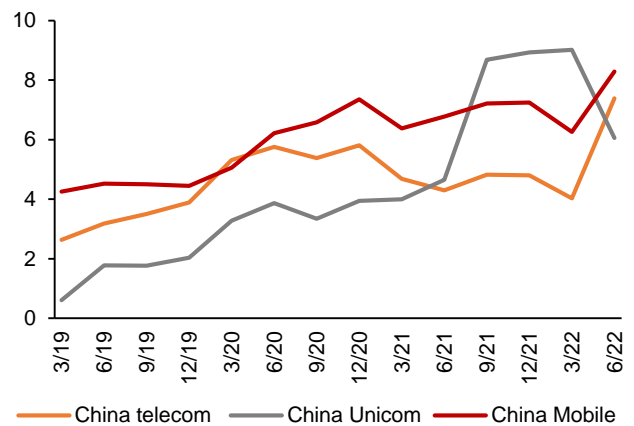
China Mobile/China Telecom have already announced to increase dividend payout ratio, from 60% to 70% within three years after A share offering and listing. China Telecom's board has also declared interim dividend from 2022 onward. Meanwhile, China Mobile repurchased HK\$866mn in Feb 2022.

**Figure 20: Telco will increase dividend payout ratio during 2022E-24E**



Source: Company data, CMBIGM estimates

**Figure 21: China telcos' dividend yields remain high**



Source: Bloomberg, CMBIGM estimates

### ■ Domestic vendors

As the mass investment of China 5G network has passed, the market concerns that the revenue growth of telecom equipment suppliers may slow down. However, **we think the overall impact from easing 5G investment is limited, given the total telcos' capex should remain stable.**

As China telcos are shifting investment to higher growth markets, such as industrial digitalization, they still need telecom equipment (i.e., servers). ZTE (763 HK) ranked top in server procurement tenders of domestic carriers and financial clients. **We expect ZTE will continue to deliver double-digit revenue growth in the following years.**

## Global telecom capex review

We tracked global telecom capex trend based on 93 telecommunication network operators' (TNO) data, including 32 from Asia, 27 from Americas, 20 from Europe and 14 from MEA areas.

Figure 22: Global telecom capex review

Global telecom capex	1H18	2H18	1H19	2H19	1H20	2H20	1H21	2H21	1H22
<i>(US\$bn)</i>									
Asia (32 TNOs)	51.7	57.2	54.4	57.8	52.6	53.9	51.8	63.4	49.5
YoY%			5.3%	0.9%	-3.3%	-6.7%	-1.5%	17.7%	-4.5%
Capex intensity (%)	15.6%	18.3%	17.3%	19.3%	17.8%	17.2%	15.6%	19.4%	14.7%
Americas (27 TNOs)	44.8	47.3	44.2	47.1	42.8	44.9	43.7	52.8	51.1
YoY%			-1.5%	-0.4%	-3.1%	-4.7%	2.1%	17.6%	17.0%
Capex intensity (%)	13.4%	13.1%	12.5%	12.9%	12.5%	12.3%	12.1%	14.3%	14.4%
Europe (20 TNOs)	31.7	29.7	31.2	30.6	27.7	35.2	35.3	33.3	33.5
YoY%			-1.4%	3.0%	-11.4%	15.0%	27.4%	-5.4%	-5.0%
Capex intensity (%)	16.0%	15.0%	16.4%	15.8%	14.6%	16.6%	16.9%	15.9%	16.9%
MEA (14 TNOs)	4.9	7.1	5.1	8.1	5.0	7.3	4.9	6.4	5.2
YoY%			3.1%	14.5%	-0.1%	-10.0%	-3.5%	-12.6%	7.3%
Capex intensity (%)	13.2%	18.3%	13.2%	20.6%	13.1%	18.0%	12.0%	15.1%	12.5%
<b>Total</b>	133.1	141.4	134.9	143.6	128.1	141.3	135.7	155.9	139.4
YoY%			1.3%	1.6%	-5.0%	-1.6%	5.9%	10.3%	2.7%
Capex intensity (%)	14.8%	15.5%	15.0%	16.0%	14.8%	15.2%	14.4%	16.5%	15.0%

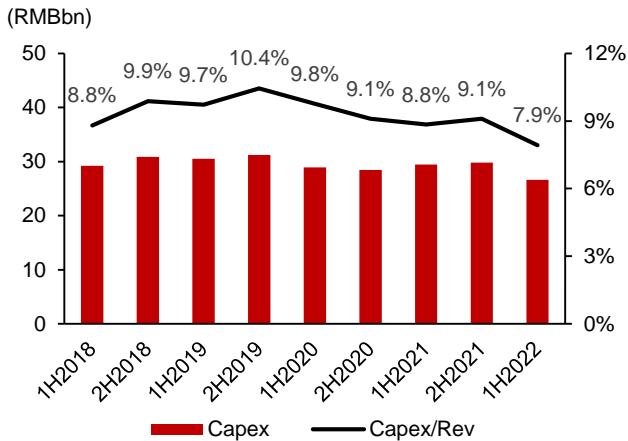
Source: Bloomberg, CMBIGM estimates

The Asian TNO's capex usually depends on operators' coverage plan. To establish 5G network coverage, we see Asian TNO lead the capital spending in recent years. However, their capex has reduced in 1H22. Looking forward, we expect the other developing countries will start to invest in 5G network, for example, Thailand and Indonesia. However, countries like China and South Korea may not have 5G capex increase, given 1) they have passed the initial 5G investment period and 2) the benefits of adopting 5G network has diminished among first adopters (i.e., stalled growth of mobile ARPU).

Americas TNO spendings increased in the last twelve months, mainly due to resumed 5G projects (delayed by COVID) and impacts from Sino-US tension (leaving less choices of networks vendors for telcos).

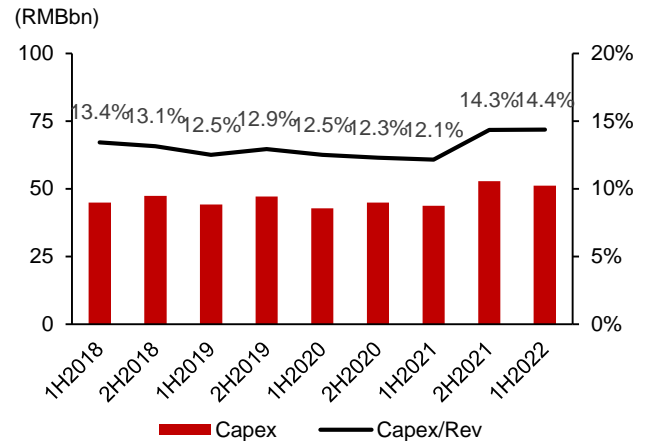
The capital intensity of European TNO is still the highest, as a result of slowdown in revenue growth. However, the outlook for their capex is gloomy, given their economic pressure.

**Figure 23: Asian (excluding China Mainland) telecom network operators' capex (29 TNOs)**



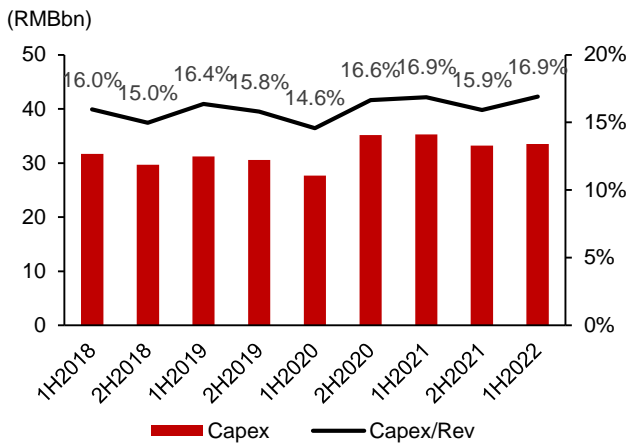
Source: Bloomberg, CMBIGM estimates

**Figure 24: 27 America telecom network operators' capex (27 TNOs)**



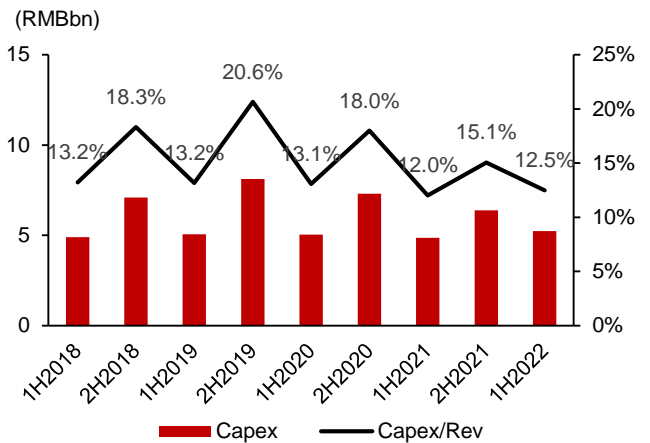
Source: Bloomberg, CMBIGM estimates

**Figure 25: 20 European telecom network operators' capex (20 TNOs)**



Source: Bloomberg, CMBIGM estimates

**Figure 26: 14 MEA telecom network operators' capex (14 TNOs)**



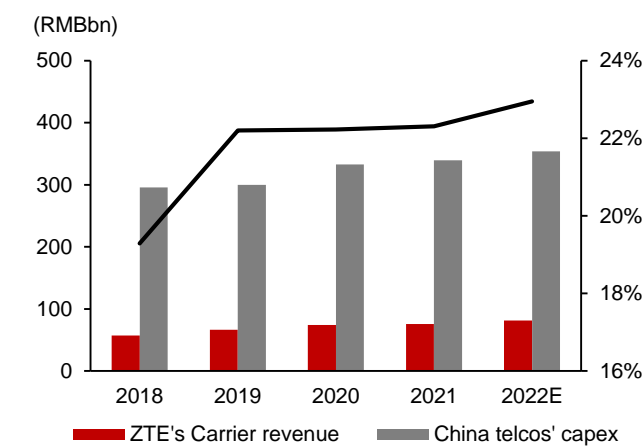
Source: Bloomberg, CMBIGM estimates

## Network vendor – ZTE (763 HK)

We expect ZTE's revenue to grow 12.2% YoY in 2022 and remain double-digit growth over the next two years as the Company is the key beneficiary of telcos' deployment of network coverage and industrial digitalization. GPM will improve to 36.1% in 2022 (vs. 35.2% in 2021) and will reduce to 35%/34.7% in 2023E/24E, mainly due to higher growth in non-carrier business. The decline in GPM will be offset by improvement in operations.

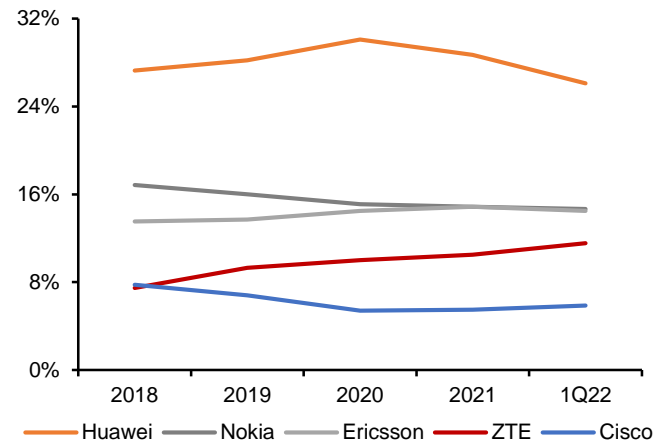
According to Dell'Oro, ZTE's overall shares in telecom market has increased to 12% in 1Q22 (vs. 8% in 2018). We expected the Company will continue to outperform its peers with share gain story. However, lack of 5G deployment catalysts, we lowered the TP to HK\$25, based on 11.4x FY23E P/E, close to 2-year average forward P/E. Maintain BUY.

**Figure 27: ZTE is gaining share in domestic telecom market**



Source: Company data, CMBIGM estimates

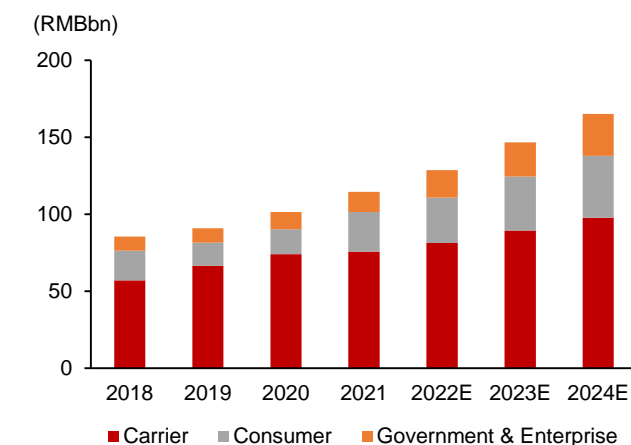
**Figure 28: ZTE is gaining share in global telecom market also increase: 12% in 1Q22 (vs. 8% in 2018)**



Source: Dell'Oro Group, CMBIGM estimates

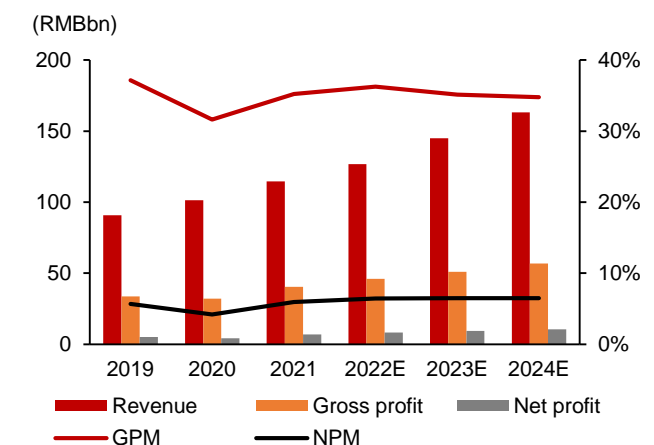
By segment, we expect carrier business' revenue to grow at 7.3% YoY. Domestic and overseas sales will have similar growth. For domestic carrier business, although domestic 5G capex spending may continue to fall, ZTE leads in other domestic non-RAN markets (i.e., server). For overseas markets, Asian countries will continue to deploy 5G network coverage, such as Thailand and Indonesia. Meanwhile, demand for FTTx will also drive overseas revenue, given many Asian countries still have low FTTH/B penetration rates.

**Figure 29: ZTE revenue forecast by segment**

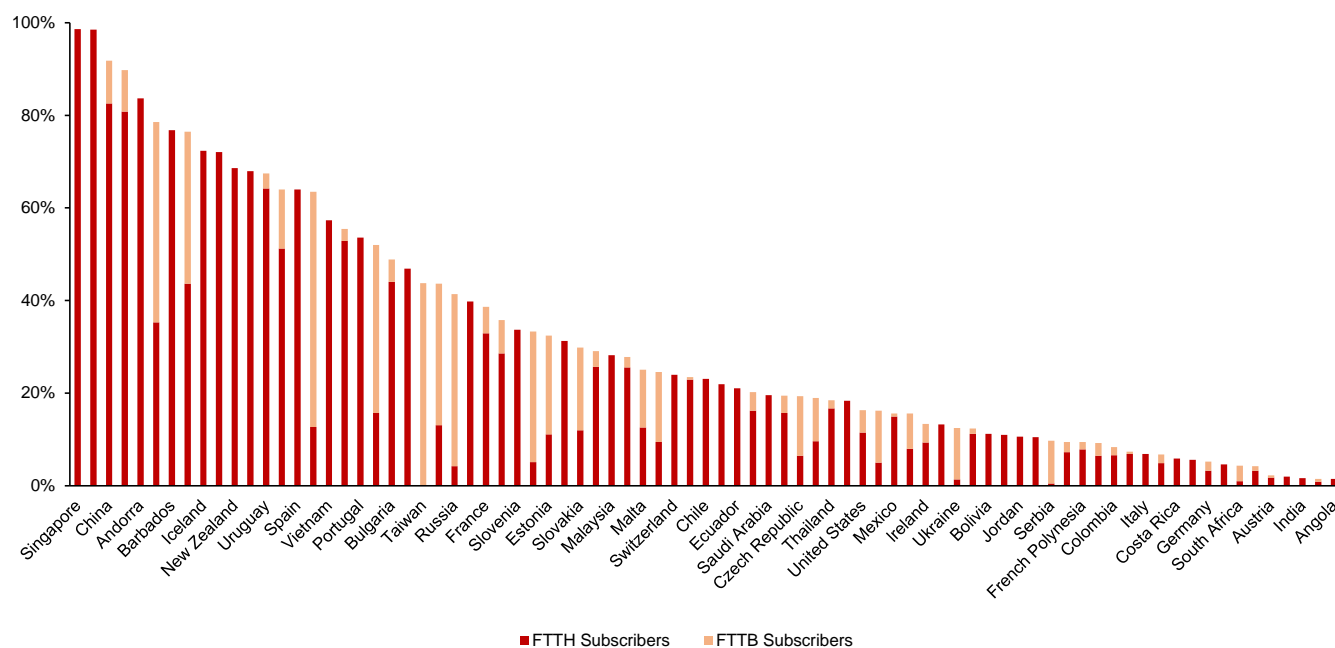


Source: Company data, CMBIGM estimates

**Figure 30: ZTE's profitability to remain stable**



Source: Company data, CMBIGM estimates

**Figure 31: Many Asian countries' FTTH/B penetration rates were still low (Dec 2020)**


Source: Company data, CMBIGM estimates

**Figure 32: Earnings revision**

US\$ mn	New			Old			Diff (%)		
	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E
Revenue	126,748	144,923	163,260	129,803	146,400	163,351	-2%	-1%	0%
Gross Profit	45,954	50,883	56,736	46,196	51,526	57,112	-1%	-1%	-1%
Operating Profit	9,557	11,024	12,413	9,740	11,286	12,719	-2%	-2%	-2%
Net profit	8,145	9,396	10,580	7,845	9,096	10,253	4%	3%	3%
EPS (US\$ cents)	1.72	1.97	2.18	1.72	1.98	2.11	0%	0%	3%
Gross Margin	36.3%	35.1%	34.8%	35.6%	35.2%	35.0%	0.7 ppt	-0.1 ppt	-0.2 ppt
Operating Margin	7.5%	7.6%	7.6%	7.5%	7.7%	7.8%	0 ppt	-0.1 ppt	-0.2 ppt
Net Margin	6.4%	6.5%	6.5%	6.0%	6.2%	6.3%	0.4 ppt	0.3 ppt	0.2 ppt

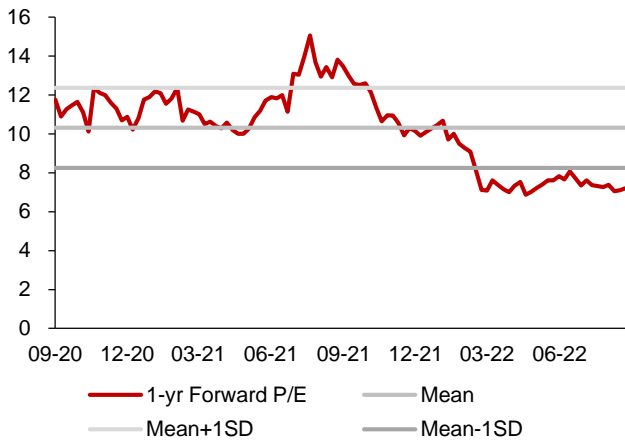
Source: Company data, CMBIGM estimates

**Figure 33: CMBIGM estimates vs consensus**

US\$ mn	CMBIGM			Consensus			Diff (%)		
	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E
Revenue	126,748	144,923	163,260	129,526	145,018	160,281	-2%	0%	2%
Gross Profit	45,954	50,883	56,736	46,538	51,546	56,192	-1%	-1%	1%
Operating Profit	9,557	11,024	12,413	9,390	10,699	12,102	2%	3%	3%
Net profit	8,145	9,396	10,580	8,255	9,295	10,291	-1%	1%	3%
EPS (US\$ cents)	1.72	1.97	2.18	1.79	2.02	2.23	-4%	-3%	-2%
Gross Margin	36.3%	35.1%	34.8%	35.9%	35.5%	35.1%	0.3 ppt	-0.4 ppt	-0.3 ppt
Operating Margin	7.5%	7.6%	7.6%	7.2%	7.4%	7.6%	0.3 ppt	0.2 ppt	0.1 ppt
Net Margin	6.4%	6.5%	6.5%	6.4%	6.4%	6.4%	0.1 ppt	0.1 ppt	0.1 ppt

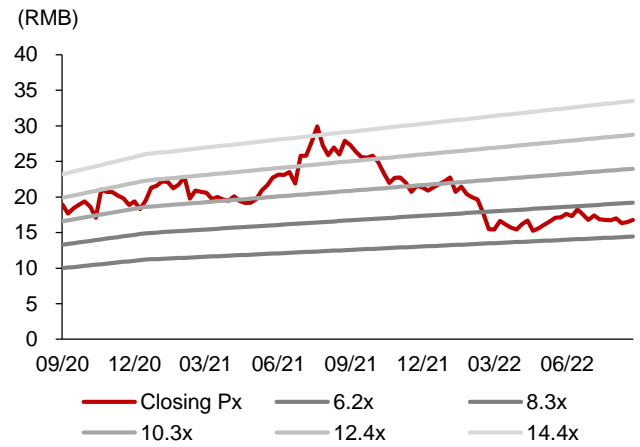
Source: Company data, CMBIGM estimates

**Figure 34: 12M forward P/E chart**



Source: Company data, CMBIGM estimates

**Figure 35: 12M forward P/E band**

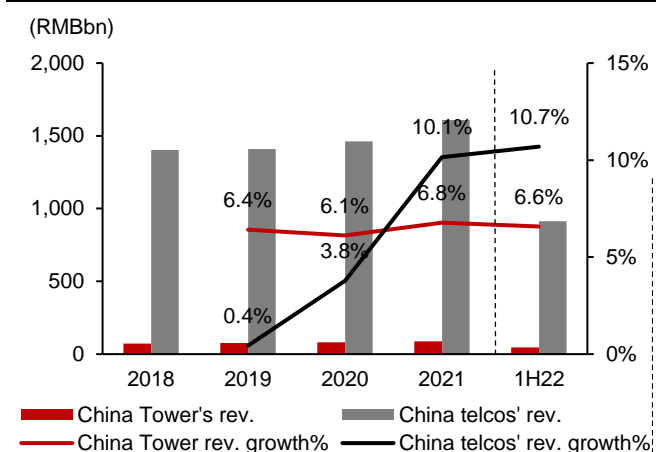


Source: Company data, CMBIGM estimates

## Network infrastructure builder – China Tower (788 HK)

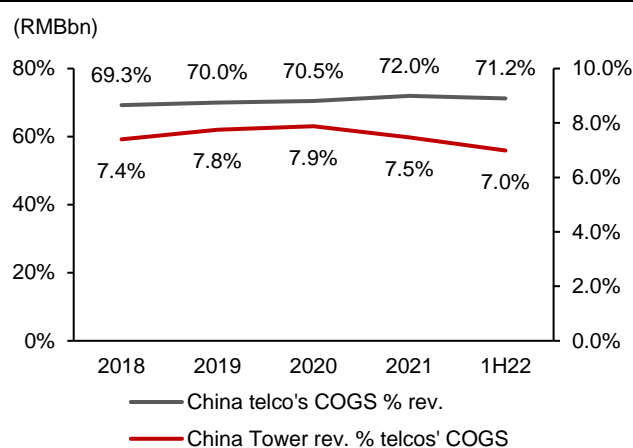
China Tower's revenue growth remained stable during the past years. Looking forward, we expect 2022-23E revenue to grow at mid-single-digit rate. Although we expect non-tower business to deliver double-digit growth, its revenue contribution will be only 14% in FY22E. We forecast core business to grow at 2.9%/2.5% YoY, a slower pace considering telco have stronger incentive to lift profitability and potential plan to increase dividend payout ratio. Next catalyst for China Tower will be the telco's service contract renewal, which could result in a declining expenses ratio for telco to pay for China Tower's services. Maintain HOLD, with unchanged TP of HK\$1.01. The valuation equals to 2.7x EV/EBITDA, which is 1SD below 2-year forward EV/EBITDA multiple.

**Figure 36: China Tower delivered stable growth over the past years**



Source: Company data, CMBIGM estimates

**Figure 37: China Tower's revenue accounted for 7% of total China telcos' COGS (1H22)**



Source: Dell'Oro Group, CMBIGM estimates

**Figure 38: Revenue breakdown**

Revenue breakdown (RMBmn)	2019A	2020A	2021A	2022E	2023E	2024E
<b>Tower business</b>	<b>71,406</b>	<b>73,371</b>	<b>75,857</b>	<b>78,468</b>	<b>80,720</b>	<b>82,866</b>
YoY%	4.1%	2.8%	3.4%	3.4%	2.9%	2.7%
<b>DAS business</b>	<b>2,658</b>	<b>3,528</b>	<b>4,340</b>	<b>4,995</b>	<b>5,500</b>	<b>5,780</b>
YoY%	46.1%	32.7%	23.0%	15.1%	10.1%	5.1%
<b>TSSAI &amp; energy</b>	<b>2,080</b>	<b>3,939</b>	<b>6,131</b>	<b>8,222</b>	<b>10,283</b>	<b>12,074</b>
YoY%	70.2%	89.4%	55.6%	34.1%	25.1%	17.4%
TSSAI business	1,887	3,004	4,060	5,116	6,089	6,832
YoY%	na	59.2%	35.2%	26.0%	19.0%	12.2%
Energy operations	193	935	2,071	3,107	4,194	5,242
YoY%	na	384.5%	121.5%	50.0%	35.0%	25.0%
Others	284	261	257	257	257	257
YoY%	56.9%	-8.1%	-1.5%	0.0%	0.0%	0.0%
<b>Total</b>	<b>76,428</b>	<b>81,099</b>	<b>86,585</b>	<b>91,942</b>	<b>96,760</b>	<b>100,977</b>
YoY%	6.4%	6.1%	6.8%	6.2%	5.2%	4.4%

Source: Company data, CMBIGM estimates

Figure 39: Operational data

Operational data (RMBk)	2019A	2020A	2021A	2022E	2023E	2024E
<b>Tower data</b>						
Tower tenants (k)	3,063.0	3,175.0	3,260.0	3,325.2	3,375.1	3408.8
YoY%	8.0%	3.7%	2.7%	2.0%	1.5%	1.0%
Tower No. (k)	1,994.0	2,023.0	2,038.0	2,048.2	2,054.3	2057.4
YoY%	3.6%	1.5%	0.7%	0.5%	0.3%	0.2%
TSP tenancy ratio (TSP Tenant/ Tower)	1.54	1.57	1.60	1.62	1.64	1.66
YoY%	4.2%	2.2%	1.9%	1.5%	1.2%	0.8%
Avg Revenue per TSP tenant	23.3	23.1	23.3	23.6	23.9	24.3
YoY%	-3.6%	-0.9%	0.7%	1.4%	1.4%	1.6%
Avg Revenue per TSP tower	35.8	36.3	37.2	38.3	39.3	40.3
YoY%	0.5%	1.3%	2.6%	2.9%	2.6%	2.5%
<b>TSSAI data</b>						
TSSAI tenants (k)	176.0	186.0	199.0	209.0	216.3	220.6
YoY%	25.1%	5.7%	7.0%	5.0%	3.5%	2.0%
Tower No. (k)	1,994.0	2,023.0	2,038.0	2,048.2	2,054.3	2,057.4
YoY%	3.6%	1.5%	0.7%	0.5%	0.3%	0.2%
TSSAI tenancy ratio (TSSAI Tenant/ Tower)	0.09	0.09	0.10	0.10	0.11	0.11
YoY%	20.8%	4.2%	6.2%	4.5%	3.2%	1.8%
Avg Revenue per TSP tenant	10.7	16.2	20.4	24.5	28.2	31.0
YoY%	23.4%	50.6%	26.3%	20.0%	15.0%	10%
Avg Revenue per TSP tower	0.9	1.5	2.0	2.5	3.0	3.3
YoY%	49.1%	56.9%	34.2%	25.4%	18.7%	12.0%
<b>DAS data</b>						
Covered area (mn sqm)	257.0	406.0	499.0	573.9	631.2	662.8
YoY%	76.0%	58.0%	22.9%	15.0%	10.0%	5.0%
Avg Revenue per covered area	10.3	8.7	8.7	8.7	8.7	8.7
YoY%	-17.0%	-16.0%	0.1%	0.1%	0.1%	0.1%

Source: Company data, CMBIGM estimates

Figure 40: Earnings revision

US\$ mn	New			Old			Diff (%)		
	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E
Revenue	91,942	96,760	100,977	91,942	96,760	100,977	0%	0%	0%
Gross Profit	67,349	70,868	73,962	67,349	70,868	73,962	0%	0%	0%
Operating Profit	14,256	15,157	15,573	14,726	16,162	17,229	-3%	-6%	-10%
Net profit	8,620	9,990	11,032	8,858	10,432	11,836	-3%	-4%	-7%
EPS (US\$ cents)	0.05	0.06	0.06	0.05	0.06	0.07	-3%	-4%	-7%
Gross Margin	73.3%	73.2%	73.2%	73.3%	73.2%	73.2%	0 ppt	0 ppt	0 ppt
Operating Margin	9.4%	10.3%	10.9%	9.6%	10.8%	11.7%	-0.3 ppt	-0.5 ppt	-0.8 ppt
Net Margin	91,942	96,760	100,977	91,942	96,760	100,977	0%	0%	0%

Source: Company data, CMBIGM estimates

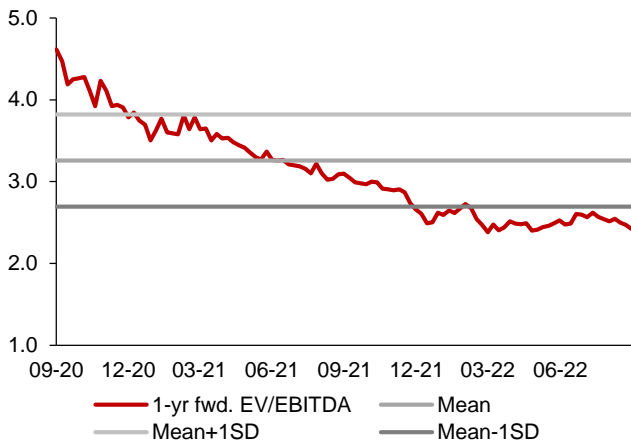
Figure 41: CMBIGM estimates vs consensus

US\$ mn	CMBIGM			Consensus			Diff (%)		
	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E	FY22E	FY23E	FY24E
Revenue	91,942	96,760	100,977	92,345	96,487	100,668	0%	0%	0%
Gross Profit	67,349	70,868	73,962	66,065	68,440	71,045	2%	4%	4%
Operating Profit	14,256	15,157	15,573	14,811	15,850	17,707	-4%	-4%	-12%
Net profit	8,620	9,990	11,032	8,713	9,788	11,280	-1%	2%	-2%
EPS (US\$ cents)	0.05	0.06	0.06	0.05	0.05	0.06	-2%	4%	2%
Gross Margin	73.3%	73.2%	73.2%	71.5%	70.9%	70.6%	1.7 ppt	2.3 ppt	2.7 ppt
Operating Margin	15.5%	15.7%	15.4%	16.0%	16.4%	17.6%	-0.5 ppt	-0.8 ppt	-2.2 ppt
Net Margin	9.4%	10.3%	10.9%	9.4%	10.1%	11.2%	-0.1 ppt	0.2 ppt	-0.3 ppt

Source: Company data, CMBIGM estimates

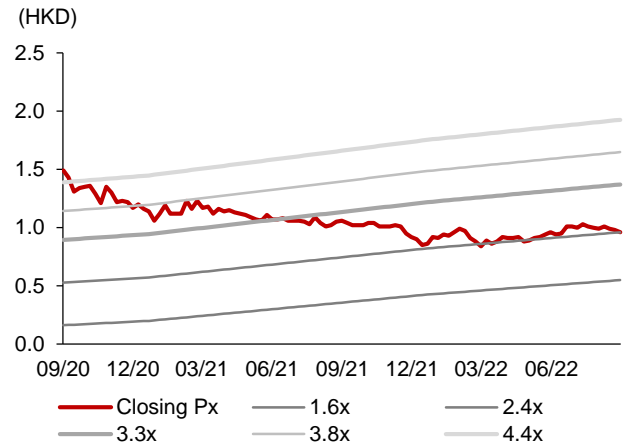


**Figure 42: 12M forward EV/EBITDA chart**



Source: Company data, CMBIGM estimates

**Figure 43: 12M forward EV/EBITDA band**



Source: Company data, CMBIGM estimates

## Financial Summary – ZTE (763 HK)

### Income statement

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Revenue</b>	<b>101,451</b>	<b>114,522</b>	<b>126,748</b>	<b>144,923</b>	<b>163,260</b>
Cost of sales	(69,379)	(74,160)	(80,794)	(94,040)	(106,52)
<b>Gross profit</b>	<b>32,071</b>	<b>40,362</b>	<b>45,954</b>	<b>50,883</b>	<b>56,736</b>
Selling exp	(7,579)	(8,733)	(9,487)	(10,702)	(12,056)
Admin exp	(4,995)	(5,445)	(5,604)	(6,262)	(7,055)
R&D exp	(14,797)	(18,804)	(21,498)	(24,436)	(27,528)
Finance costs	(421)	(963)	(558)	854	1,145
Other operating exp.	1,191	2,259	749	687	1,171
<b>Operating profit</b>	<b>5,471</b>	<b>8,676</b>	<b>9,557</b>	<b>11,024</b>	<b>12,413</b>
Other non-oper exp.	(407)	(177)	(105)	(120)	(135)
<b>Pre-tax profit</b>	<b>5,064</b>	<b>8,499</b>	<b>9,452</b>	<b>10,904</b>	<b>12,279</b>
Income tax expense	(342)	(1,463)	(1,627)	(1,877)	(2,114)
Minority interests	(446)	(223)	320	369	415
<b>Net profit to shareholders</b>	<b>4,260</b>	<b>6,813</b>	<b>8,145</b>	<b>9,396</b>	<b>10,580</b>

### Cash flow summary

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Net profit</b>	4,722	7,036	7,825	9,027	10,165
Depreciation/amortization	1,465	1,671	1,690	1,708	1,749
Change in working capital	(1,965)	2,615	1,665	(9,456)	(1,876)
Others	6,011	4,401	9,331	6,953	4,865
<b>Net cash from operating</b>	<b>10,233</b>	<b>15,724</b>	<b>20,511</b>	<b>8,232</b>	<b>14,903</b>
Capex	(6,472)	(5,686)	(3,927)	(4,304)	(4,577)
Other	(610)	(4,906)	2,994	1,419	1,563
<b>Net cash from investing</b>	<b>(7,082)</b>	<b>(10,592)</b>	<b>(933)</b>	<b>(2,886)</b>	<b>(3,014)</b>
Share issuance	14,167	538	0	77	1,950
Dividend paid	(2,951)	(2,618)	(2,652)	(2,774)	(2,748)
Other	(11,505)	4,859	6,398	(1,418)	(213)
<b>Net cash from financing</b>	<b>(290)</b>	<b>2,779</b>	<b>3,746</b>	<b>(4,116)</b>	<b>(1,011)</b>
<b>Net change in cash</b>	<b>2,861</b>	<b>7,910</b>	<b>23,324</b>	<b>1,230</b>	<b>10,878</b>
Cash at beginning of the year	28,506	31,403	39,071	62,394	63,625
Exchange difference	37	(242)	0	0	0
<b>Cash at the end of the year</b>	<b>31,403</b>	<b>39,071</b>	<b>62,394</b>	<b>63,625</b>	<b>74,502</b>

### Balance sheet

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Current assets</b>	<b>106,977</b>	<b>127,871</b>	<b>147,523</b>	<b>162,153</b>	<b>169,944</b>
Cash & equivalents	35,660	50,713	73,239	74,470	85,347
Account receivables	15,891	17,509	17,216	20,900	20,250
Inventory	33,689	36,317	34,516	42,777	38,940
Prepayment	322	607	577	624	723
Other current assets	21,415	22,725	21,974	23,383	24,683
<b>Non-current assets</b>	<b>43,658</b>	<b>40,892</b>	<b>39,710</b>	<b>39,242</b>	<b>38,362</b>
PPE	11,914	11,437	10,977	10,775	10,619
Deferred tax assets	3,437	3,195	3,531	3,798	3,929
Other non-current assets	28,307	26,261	25,202	24,669	23,814
<b>Total assets</b>	<b>150,635</b>	<b>168,763</b>	<b>187,233</b>	<b>201,394</b>	<b>208,305</b>
<b>Current liabilities</b>	<b>74,395</b>	<b>78,685</b>	<b>86,035</b>	<b>89,415</b>	<b>81,346</b>
ST borrowings	10,559	8,947	7,908	4,468	731
Account payables	14,998	16,102	21,009	22,598	23,373
Tax payable	0	0	0	0	0
Other current liabilities	48,838	53,637	57,118	62,348	57,242
<b>Non-current liabilities</b>	<b>30,117</b>	<b>36,791</b>	<b>41,012</b>	<b>43,636</b>	<b>47,454</b>
LT borrowings	22,614	29,908	33,045	35,067	38,591
Deferred tax liability	134	150	2,866	3,082	3,188
Other non-current liabilities	7,369	6,732	5,101	5,487	5,675
<b>Total liabilities</b>	<b>104,512</b>	<b>115,476</b>	<b>127,047</b>	<b>133,051</b>	<b>128,800</b>
Share capital	4,613	4,731	4,731	4,769	4,860
Reserve	23,276	25,360	25,360	25,398	27,257
Retained earnings	14,824	20,651	27,799	36,168	45,703
Other	583	740	810	891	982
Minority interest	2,826	1,806	1,486	1,117	702
<b>Total equity</b>	<b>46,123</b>	<b>53,288</b>	<b>60,186</b>	<b>68,343</b>	<b>79,505</b>
<b>Total liabilities and equity</b>	<b>150,635</b>	<b>168,763</b>	<b>187,233</b>	<b>201,394</b>	<b>208,305</b>

### Key ratios

YE 31 Dec	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Revenue mix</b>					
Carrier business	73	66	64	62	60
Consumer business	16	22	23	24	25
Gov. and enterprise	11	11	13	14	15
<b>Growth (%)</b>					
Revenue	11.8%	12.9%	10.7%	14.3%	12.7%
Gross profit	-4.9%	25.8%	13.9%	10.7%	11.5%
Operating profit	-27.6%	58.6%	10.2%	15.3%	12.6%
Net profit	-17.3%	59.9%	19.6%	15.4%	12.6%
<b>Profit &amp; loss ratio (%)</b>					
Gross margin	31.6%	35.2%	36.3%	35.1%	34.8%
Operating margin	5.4%	7.6%	7.5%	7.6%	7.6%
Net profit margin	4.2%	5.9%	6.4%	6.5%	6.5%
<b>Balance sheet ratio</b>					
Net debt/total equity (%)	Net cash	Net cash	Net cash	Net cash	Net cash
Current ratio (x)	1.4	1.6	1.7	1.8	2.1
Receivable turnover days	64	53	50	48	46
Inventory turnover days	(161)	(172)	(160)	(150)	(140)
Payable turnover days	(93)	(96)	(90)	(75)	(60)
<b>Profitability (%)</b>					
ROE	9.8%	13.2%	13.9%	14.0%	13.4%
ROA	2.8%	4.0%	4.4%	4.7%	5.1%
<b>Per share data (RMB)</b>					
EPS	0.92	1.47	1.72	1.97	2.18
DPS	0.20	0.20	0.20	0.20	0.20
BPS	9.35	10.88	12.41	14.10	16.21

Source: Company data, CMBIGM estimates

## Financial Summar – China Tower (788 HK)

### Income statement

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Revenue</b>	<b>81,099</b>	<b>86,585</b>	<b>91,942</b>	<b>96,760</b>	<b>100,977</b>
Selling exp	(4,627)	(5,161)	(5,480)	(5,767)	(6,019)
Admin exp	(5,805)	(5,796)	(6,063)	(6,380)	(6,658)
R&D exp	(6,115)	(6,875)	(7,300)	(7,683)	(8,018)
Finance costs	(3,923)	(3,723)	(3,305)	(2,418)	(1,489)
Other operating exp.	89,557	95,105	99,833	103,851	107,589
<b>Operating profit</b>	<b>12,012</b>	<b>13,035</b>	<b>14,256</b>	<b>15,157</b>	<b>15,573</b>
Other non-oper exp.	(3,605)	(3,420)	(2,963)	(2,069)	(1,120)
<b>Pre-tax profit</b>	<b>8,407</b>	<b>9,615</b>	<b>11,293</b>	<b>13,088</b>	<b>14,453</b>
Income tax expense	(1,980)	(2,287)	(2,673)	(3,098)	(3,421)
Minority interests	(1)	(1)			
<b>Net profit to shareholders</b>	<b>6,428</b>	<b>7,329</b>	<b>8,620</b>	<b>9,990</b>	<b>11,032</b>

### Cash flow summary

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Net profit</b>	8,407	9,615	8,620	9,990	11,032
Depreciation/amortization	47,515	49,982	40,895	42,527	44,309
Change in working capital	(2,814)	(6,581)	(6,270)	(5,619)	(5,101)
Others	4,440	7,487	20,391	14,711	14,430
<b>Net cash from operating</b>	<b>57,548</b>	<b>60,503</b>	<b>63,637</b>	<b>61,609</b>	<b>64,671</b>
Capex	(37,800)	(32,513)	(30,341)	(30,963)	(31,303)
Other	(97)	998	1,150	(288)	(842)
<b>Net cash from investing</b>	<b>(37,897)</b>	<b>(31,515)</b>	<b>(29,191)</b>	<b>(31,251)</b>	<b>(32,145)</b>
Share issuance	0	0	0	0	0
Dividend paid	(2,561)	(3,934)	(4,618)	(5,604)	(6,694)
Other	(18,276)	(23,626)	(22,194)	(22,996)	(24,251)
<b>Net cash from financing</b>	<b>(20,837)</b>	<b>(27,560)</b>	<b>(26,812)</b>	<b>(28,600)</b>	<b>(30,945)</b>
<b>Net change in cash</b>	<b>(1,186)</b>	<b>1,428</b>	<b>7,634</b>	<b>1,759</b>	<b>1,581</b>
Cash at beginning of the year	6,223	5,042	6,471	14,105	15,864
Exchange difference	5	1	0	0	0
<b>Cash at the end of the year</b>	<b>5,042</b>	<b>6,471</b>	<b>14,105</b>	<b>15,864</b>	<b>17,445</b>

### Balance sheet

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Current assets</b>	<b>43,204</b>	<b>48,344</b>	<b>59,700</b>	<b>63,798</b>	<b>68,361</b>
Cash & equivalents	5,042	6,471	14,105	15,864	17,445
Account receivables	30,658	34,194	39,375	41,388	44,086
Inventory	0	0	0	0	0
Prepayment	7,504	7,679	6,220	6,546	6,831
Other current assets	0	0	0	0	0
<b>Non-current assets</b>	<b>294,176</b>	<b>274,915</b>	<b>248,527</b>	<b>225,676</b>	<b>200,842</b>
PPE	231,684	221,419	201,460	182,166	160,997
Deferred tax assets	1,457	1,892	2,558	3,850	4,926
Other non-current assets	61,035	51,604	44,509	39,660	34,918
<b>Total assets</b>	<b>337,380</b>	<b>323,259</b>	<b>308,227</b>	<b>289,473</b>	<b>269,203</b>
<b>Current liabilities</b>	<b>106,635</b>	<b>76,182</b>	<b>65,667</b>	<b>42,291</b>	<b>17,656</b>
ST borrowings	61,999	37,142	26,940	7,087	-14,792
Account payables	31,460	25,264	24,910	22,807	21,457
Tax payable	0	0	0	0	0
Other current liabilities	13,176	13,776	13,817	12,397	10,991
<b>Non-current liabilities</b>	<b>44,499</b>	<b>57,723</b>	<b>49,205</b>	<b>49,440</b>	<b>49,468</b>
LT borrowings	27,121	41,572	33,674	35,434	36,981
Deferred tax liability	0	0	0	0	0
Other non-current liabilities	17,378	16,151	15,530	14,006	12,487
<b>Total liabilities</b>	<b>151,134</b>	<b>133,905</b>	<b>114,871</b>	<b>91,731</b>	<b>67,124</b>
Share capital	176,008	176,008	176,008	176,008	176,008
Reserve	0	0	0	0	0
Retained earnings	10,237	13,346	17,348	21,734	26,072
Other				0	0
Minority interest	1	0	0	0	0
<b>Total equity</b>	<b>186,246</b>	<b>189,354</b>	<b>193,356</b>	<b>197,742</b>	<b>202,080</b>
<b>Total liabilities and equity</b>	<b>337,380</b>	<b>323,259</b>	<b>308,227</b>	<b>289,473</b>	<b>269,203</b>

### Key ratios

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
<b>Revenue mix</b>					
Tower business	73,371	75,857	78,468	80,720	82,866
DAS business	3,528	4,340	4,995	5,500	5,780
TSSAI & energy	3,939	6,131	8,222	10,283	12,074
Others	261	257	257	257	257
<b>Growth (%)</b>					
Revenue	6.1%	6.8%	6.2%	5.2%	4.4%
Operating profit	6.5%	8.5%	9.4%	6.3%	2.7%
Net profit	23.1%	14.0%	17.6%	15.9%	10.4%
<b>Profit &amp; loss ratio (%)</b>					
Operating margin	14.8%	15.1%	15.5%	15.7%	15.4%
Net profit margin	7.9%	8.5%	9.4%	10.3%	10.9%
<b>Balance sheet ratio</b>					
Net debt/total equity (%)	45.1%	38.2%	24.1%	13.5%	2.3%
Current ratio (x)	0.4	0.6	0.9	1.5	3.9
Receivable turnover days	102	113	125	132	135
Inventory turnover days	0	0	0	0	0
Payable turnover days	137	120	100	90	80
<b>Profitability (%)</b>					
ROE	3.5%	3.9%	4.5%	5.1%	5.5%
ROA	1.9%	2.3%	2.8%	3.5%	4.1%
<b>Per share data (RMB)</b>					
EPS	0.04	0.04	0.05	0.06	0.06
DPS (H - share, in HKD)	0.02	0.03	0.03	0.04	0.04
BPS	1.07	1.08	1.11	1.13	1.16

Source: Company data, CMBIGM estimates

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