



Global Investment Research

The Goldman Sachs Group, Inc.

GS Monthly China Industrial Indicators

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Key readings of the month

- **July data points slid, indicating a weak demand amid sporadic Covid resurgence and muted metal processing demand caused by property slowdown:** China industrial robot production -9% yoy/-17% mom in Jul (vs +3% yoy/+26% mom in Jun); China machine tool production volume -15% yoy/0% mom in Jul (vs -12% yoy/0% mom in Jun). Manufacturing FAI +8% yoy in Jul (vs. +10% in Jun), with the slowing down mainly led by basic materials and electronics & electricals. Jan-Jul high-tech manufacturing FAI stayed resilient at +23% yoy vs +24% yoy in 6M22.
- **At the company level, industrial automation order growth slowed** with Inovance seeing low double digit order growth in July, and LeaderDrive guiding a flattish qoq order trend into 3Q. **Laser sub-sector was even weaker in our view;** per Raycus, June orders saw 40-50% sequential recovery vs May mostly driven by pent-up restocking demand, but restocking demand didn't sustain into July-Aug (seeing 20% mom decline vs. Jun, flat to minor decline vs. the 2Q low base with lockdown impact). Friendless lowered full-year low/mid power laser control segment revenue guidance (to flat vs +20% yoy at the beginning of the year and +10% yoy for GSe). **With that said, we see bright spots, especially in energy storage space with 2H22-2023 outlook looking particularly positive:** Envicool management noted strong yoy growth of the overall order backlog into 2H22 (esp. energy storage cooling and data center cooling), with strong growth in contract liabilities (+58%/+163% yoy in 1Q22/2Q22) indicating a strong rebound in 2H22-1H23; Kstar energy storage recorded revenue at ~Rmb191mn (2H22 guidance: Rmb508~Rmb609mn ESS revenue with ~80% from Europe), management is positive on strong demand in Europe and the US in 2022-23E.
- **July saw continued strong performance in EV/battery and ESS, but lack luster in other end markets:**
 - **Electric vehicles:** Jul China EV sales/production +119%/+117% yoy (vs. +133%/+138% in Jun); Jul passenger hybrid EV/passenger PEV/commercial EV sales +170%/+120%/93% yoy, +13%/-4%/+4% mom;
 - **Li-battery:** Jul China EV battery shipment grew +114% yoy (vs. +143% yoy in Jun);
 - **Autos:** Jul passenger vehicle retail sales/production +20%/+42% yoy (vs. +23%/+46% in Jun), passenger vehicle sales +0% yoy in Jul (vs. +2% in Jun).
 - **ESS:** Completed tendered capacity in Jul was +432% mom to 5.1GWh (vs. +602% mom in Jun) contributed by 31 completed tenders vs. average 6 per month during 1H22, bringing Jan-Jul 2022 total completed tendered capacity +155% vs. full-year 2021;
 - **Integrated circuit:** IC import value in China was -3% yoy/-4% mom in Jul (vs. -5% yoy/+11% mom in Jun); IC production units in China -12% yoy/-6% mom in Jul (vs. -4% yoy/+5% mom in Jun);
 - **Construction machinery:** China excavator sales -3% yoy in Jul vs. -10% yoy in Jun;
 - **Railway FAI:** Jul railway/road FAI growth posted -5%/0% yoy (vs. -4%/0% yoy in Jun);
 - **Air-conditioners:** Jun residential air-conditioner production -17% yoy (vs. May +1% yoy); Jun residential air-conditioner sales -14% yoy (vs. May -2% yoy);
 - **Smartphones:** Jun China domestic smartphone shipment +9% yoy (vs. -9% in May); 5G smartphone shipments in China: 23.3mn units in Jun (vs. 17.7mn units in May);
- **Raw materials cost pressure eased:** Iron ore: -35% ytd yoy, -24% from Apr peak; Copper: -1% ytd yoy, -25% from Mar peak; Aluminum: +10% ytd yoy, -23% from Mar peak; Brent oil: +56% ytd yoy, -23% from Apr peak

Summary of our ratings

Company	Ticker	PCY	Last closing price	12m-Target price	+/-%	Rating	Mkt Cap (USD bn)	P/E			P/B			EV/EBITDA			ROE			CROCI		
								2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
FA/Robot																						
Shenzhen Inovance	300124.SZ	CNY	63.06	92.9	47%	Buy*	23.4	45.8x	37.8x	30.0x	10.3x	8.7x	7.2x	60.1x	39.8x	31.4x	26%	24%	26%	32%	28%	29%
Estun Automation	002747.SZ	CNY	25.66	26.4	3%	Buy	3.3	182.7x	93.1x	57.7x	8.6x	8.1x	7.4x	133.8x	62.8x	42.5x	5%	8%	12%	18%	8%	10%
Leaderdrive	688017.SS	CNY	181.12	121.9	-33%	Buy	4.5	160.8x	132.8x	103.5x	16.6x	15.3x	13.8x	90.2x	127.9x	95.5x	11%	12%	14%	16%	21%	20%
Siasun Robot	300024.SZ	CNY	12.51	5.1	-59%	Sell	2.9	n.m.	94.7x	99.1x	4.7x	4.5x	4.3x	n.m.	n.m.	n.m.	-13%	5%	4%	0%	7%	6%
Median					-15%		3.9	160.8x	93.9x	78.4x	9.5x	8.4x	7.3x	90.2x	62.8x	42.5x	8%	10%	13%	16%	15%	15%
Laser																						
Friendess Electronic	688188.SS	CNY	226.18	309.3	37%	Buy	4.7	57.7x	53.7x	41.3x	10.6x	7.3x	6.6x	72.5x	50.5x	38.8x	20%	16%	17%	46%	63%	45%
Han's Laser	002008.SZ	CNY	34.49	43.7	27%	Buy	5.5	18.5x	18.7x	15.7x	3.2x	2.0x	2.0x	19.5x	15.1x	12.5x	18%	14%	13%	15%	18%	17%
Ravcus	300747.SZ	CNY	30.29	30.90	2%	Neutral	2.5	35.9x	66.2x	39.5x	5.7x	5.3x	4.8x	49.0x	60.6x	36.8x	16%	8%	12%	25%	9%	15%
Median					27%		4.7	35.9x	53.7x	39.5x	5.7x	5.3x	4.8x	49.0x	50.5x	36.8x	18%	14%	13%	25%	18%	17%
Machine vision																						
OPT Machine Vision	688686.SS	CNY	281.10	321.1	14%	Buy	3.4	76.5x	56.8x	43.4x	9.2x	8.3x	7.3x	100.6x	54.9x	40.5x	13%	15%	18%	20%	18%	20%
Infrared & sensors																						
Raylton Technology	688002.SS	CNY	50.50	60.8	20%	Buy	3.3	49.1x	46.8x	34.1x	6.4x	5.7x	5.0x	88.4x	45.6x	32.8x	14%	12%	15%	29%	16%	16%
Dall Technology	002214.SZ	CNY	16.00	15.1	-6%	Neutral	1.4	55.2x	37.7x	26.3x	3.8x	3.5x	3.2x	116.4x	67.1x	42.8x	9%	10%	13%	11%	11%	13%
Cubic Sensor & Instrument	688665.SS	CNY	163.58	157.3	-4%	Neutral	1.7	61.0x	52.3x	37.6x	13.6x	11.9x	9.9x	40.1x	48.5x	32.9x	34%	24%	29%	66%	42%	41%
Median					-4%		1.7	55.2x	46.8x	34.1x	6.4x	5.7x	5.0x	88.4x	48.5x	32.9x	14%	12%	15%	29%	16%	16%
FA component platform																						
Yiheda Automation	301029.SZ	CNY	69.34	96.5	39%	Buy*	4.9	83.1x	56.0x	40.7x	14.7x	12.4x	10.2x	77.5x	45.4x	33.1x	22%	24%	28%	37%	37%	28%
Production software																						
Supcon Tech	688777.SS	CNY	83.69	88.1	5%	Neutral	6.1	71.5x	56.1x	45.9x	9.2x	8.2x	7.3x	99.4x	72.0x	57.3x	14%	15%	17%	21%	20%	22%
Median					5%		6.1	71.5x	56.1x	45.9x	9.2x	8.2x	7.3x	99.4x	72.0x	57.3x	14%	15%	17%	21%	20%	22%
Battery equipment																						
Lead Intelligent	300450.SZ	CNY	57.86	81.8	41%	Buy	12.1	57.1x	32.7x	19.7x	9.6x	7.9x	6.2x	52.8x	30.5x	17.6x	21%	26%	35%	35%	74%	47%
HangKe Technology	688006.SS	CNY	74.00	90.9	23%	Buy	4.4	126.9x	44.7x	26.8x	10.6x	9.1x	7.3x	122.0x	39.1x	22.6x	9%	22%	30%	47%	46%	50%
Median					32%		8.3	92.0x	38.7x	23.3x	10.1x	8.5x	6.8x	87.4x	34.8x	20.1x	15%	24%	33%	41%	60%	49%
Electrification																						
Sanhua Intelligent Control	002050.SZ	CNY	31.06	29.0	-7%	Neutral	16.6	66.2x	54.6x	41.0x	10.0x	9.2x	8.2x	37.7x	38.3x	30.4x	16%	17%	21%	18%	17%	19%
Hongfa Technology	600885.SS	CNY	39.53	53.7	36%	Buy	6.1	38.8x	32.0x	26.7x	6.3x	5.5x	4.8x	22.2x	16.3x	13.7x	13%	14%	14%	20%	20%	21%
Envicool	002837.SZ	CNY	32.20	37.0	15%	Buy	2.1	66.4x	46.9x	33.3x	7.5x	6.7x	5.8x	33.7x	41.9x	30.2x	13%	15%	19%	18%	17%	19%
Kstar	002518.SZ	CNY	34.38	38.2	11%	Buy	3.0	53.7x	40.0x	27.2x	6.5x	5.9x	5.0x	27.8x	35.1x	24.1x	13%	15%	20%	15%	17%	20%
Kehua	002335.SZ	CNY	41.35	39.7	-4%	Buy	2.8	43.5x	42.0x	33.1x	5.4x	4.8x	4.3x	16.7x	22.1x	18.7x	12%	12%	13%	17%	15%	15%
AVIC Jonhon	002179.SZ	CNY	63.62	68.5	5%	Neutral	14.6	49.2x	40.8x	34.0x	6.6x	5.8x	5.1x	35.4x	31.8x	26.2x	15%	14%	15%	26%	19%	24%
Faratronic	600563.SS	CNY	198.08	213.4	8%	Neutral	6.6	53.7x	45.8x	36.0x	13.0x	11.1x	9.4x	36.0x	37.2x	29.3x	26%	26%	26%	28%	31%	31%
Median					8%		5.1	53.7x	42.0x	33.3x	6.6x	5.9x	5.1x	30.7x	35.1x	26.2x	13%	15%	19%	18%	17%	20%
Business service																						
Pony Testing	300887.SZ	CNY	43.66	47.4	9%	Buy	1.9	48.9x	39.1x	30.2x	5.3x	3.6x	3.3x	21.1x	22.0x	19.2x	11%	12%	11%	24%	8%	14%
Centre Testing	300012.SZ	CNY	20.73	27.6	33%	Buy	5.1	46.5x	37.9x	30.7x	7.8x	6.6x	5.6x	43.4x	24.8x	20.0x	18%	18%	19%	25%	21%	21%
Median					21%		3.5	47.7x	38.5x	30.4x	6.6x	5.1x	4.5x	32.3x	23.4x	19.6x	15%	15%	15%	24%	15%	17%
Optical module																						
Innolight	300308.SZ	CNY	33.70	42.9	27%	Neutral	4.0	27.9x	27.4x	22.8x	2.3x	2.2x	2.0x	19.8x	17.1x	14.9x	9%	8%	9%	16%	11%	12%
Accelink	002281.SZ	CNY	19.74	17.5	-11%	Sell	2.1	24.3x	25.4x	24.3x	2.5x	2.3x	2.2x	14.8x	11.9x	11.4x	11%	9%	9%	22%	17%	15%
Median					8%		3.0	26.1x	26.4x	23.6x	2.4x	2.3x	2.1x	17.3x	14.5x	13.2x	10%	9%	9%	20%	14%	14%
Power tools																						
Techntronic	0669.HK	HKD	95.00	113.5	19%	Buy	22.2	20.2x	19.1x	17.3x	4.7x	4.1x	3.5x	20.5x	12.2x	10.6x	25%	23%	22%	26%	23%	24%
PIMM																						
Haitian Intl.	1882.HK	HKD	17.98	19.4	8%	Sell	3.7	8.1x	9.4x	8.6x	1.5x	1.4x	1.3x	9.3x	6.5x	5.7x	20%	16%	15%	17%	12%	12%
Rolling stock																						
CRSC	3969.HK	HKD	2.46	3.1	26%	Neutral	3.3	6.8x	6.3x	5.5x	0.5x	0.5x	0.5x	1.8x	-0.1x	-0.8x	7%	8%	8%	18%	18%	13%
CRSC	688009.SS	CNY	4.43	5.3	20%	Neutral	7.0	14.3x	13.2x	11.5x	1.1x	1.0x	1.0x	9.4x	5.2x	3.9x	7%	8%	8%	13%	28%	30%
Times Electric	3898.HK	HKD	35.95	38.1	6%	Neutral	6.5	21.7x	18.2x	15.7x	1.3x	1.3x	1.2x	23.0x	18.6x	15.9x	7%	7%	8%	8%	7%	7%
CRRC Corp.	1766.HK	HKD	2.88	3.0	4%	Sell	10.5	6.2x	6.6x	6.4x	0.5x	0.5x	0.4x	5.9x	5.2x	4.6x	7%	5%	5%	10%	9%	9%
CRRC Corp.	601766.SS	CNY	4.99	4.3	-14%	Sell	21.3	12.5x	13.8x	12.9x	1.0x	0.9x	0.9x	11.2x	9.7x	8.7x	7%	5%	5%	10%	9%	9%
Median					6%		7.0	12.5x	13.2x	11.5x	1.0x	0.9x	0.9x	9.4x	5.2x	4.6x	7%	7%	8%	10%	9%	9%

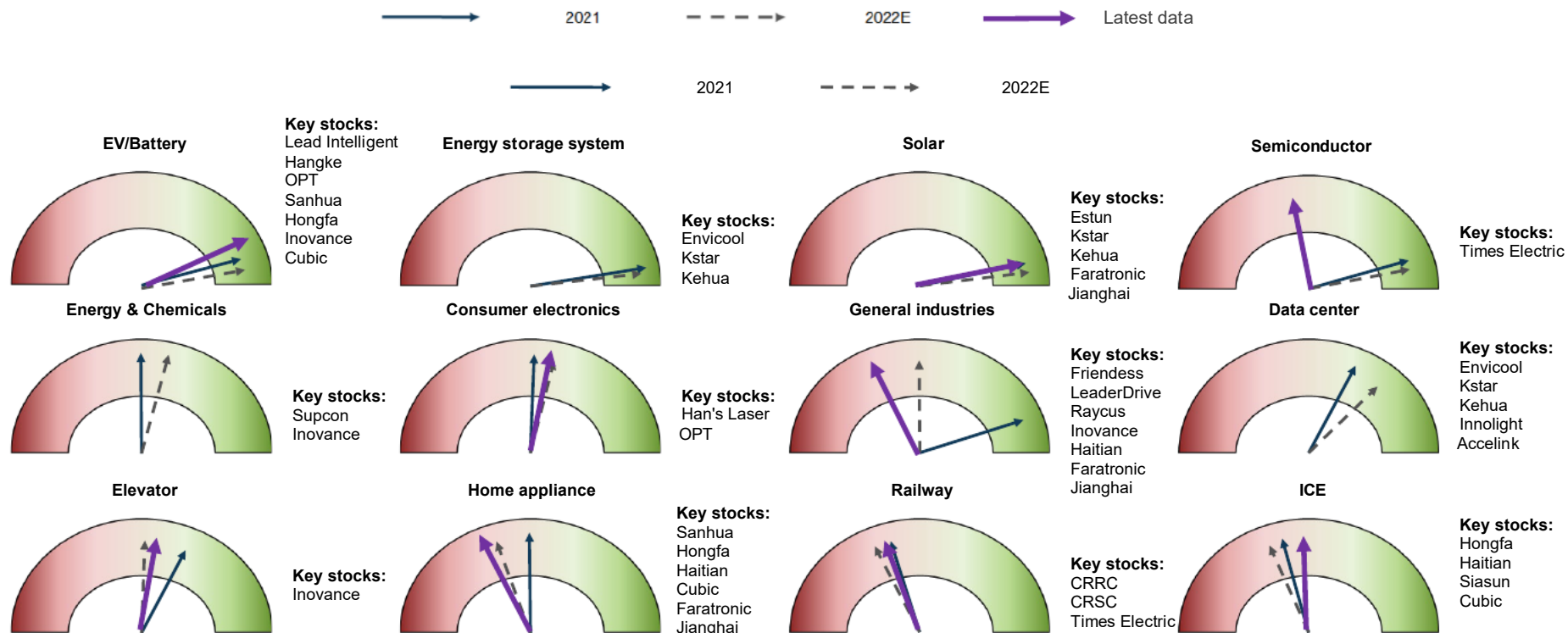
Note:

(1) Based on last closing price of Aug. 12th, 2022

(2) * denotes the stock is on our regional Conviction List

Source: Datastream, Goldman Sachs Global Investment Research, Gao Hua Securities Research.

Barometers for our key end markets



Comments on monthly order trend

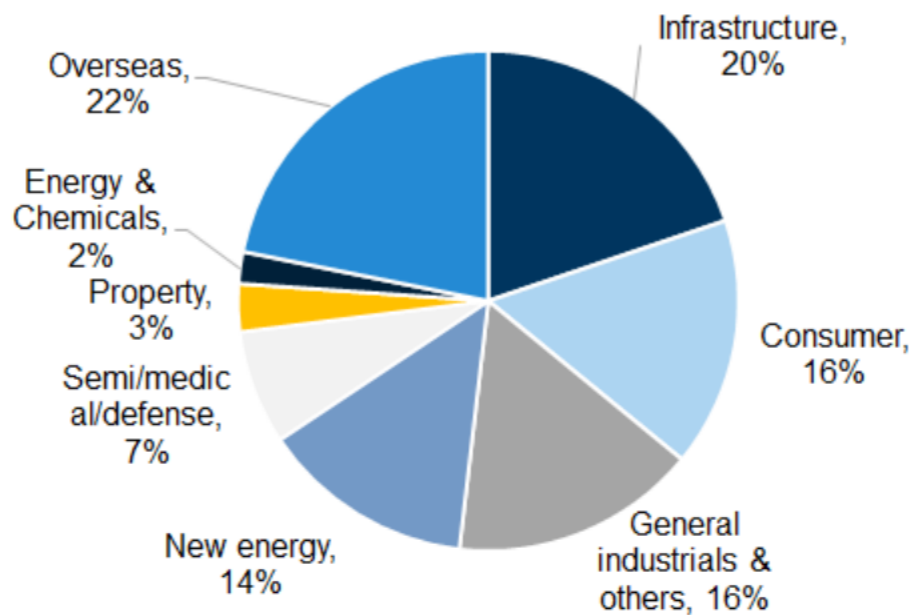
Company	Ticker	HQ	Main production base	Comments on Jul operations	Jul Trend
FA/Robot					
Shenzhen Inovance	300124.SZ	Shenzhen	Suzhou	Industrial automation segment saw LDD order growth in Jul, elevator component decline further narrowed, EV component segment saw order growth slowed from previous high	↓
Estun Automation	002747.SZ	Nanjing	Nanjing	Industrial robot maintained on track while other segments appears relatively weak	↓
Leaderdrive	688017.SS	Suzhou	Suzhou	flatish qq order trend into 3Q with c. 2months' lead time	→
Siasun Robot	300024.SZ	Shenyang	Shenyang		
Laser					
Friendess Electronic	688188.SS	Shanghai	Shanghai	Positive customer feedback in July and August so far and guided gradual recovery in 3Q and 4Q, but revised down 2022E low/mid power control system outlook from year beginning target of 20% to now a flat revenue	→
Han's Laser	002008.SZ	Shenzhen	Shenzhen	Seemingly not a very meaningful pick in Jul for high power equipment segment while battery equipment tendering from CATL is still not firm'd yet, though likely to be placed sometime in 2H	→
Raycus	300747.SZ	Wuhan	Wuhan	Jul-Aug appears weak partly due to hot weather, Jul total firm order may have declined by c. 20% vs Jun	↓
Machine vision					
OPT Machine Vision	688686.SS	Dongguan	Dongguan		
Infrared & sensors					
Raytron Technology	688002.SS	Yantai	Yantai	1) Domestic special equipment product orders are seeing significant pick-up since May-June 2022 with some delivery pressure in 2H22 (2H22 guidance: at least flat yoy revenue in 2022, implying at least ~Rmb363mn sales in 2H22E); 2) overseas hunting business sees sustainable and robust growth with 1H12 revenue +78% yoy (2H22 guidance: at least ~Rmb500mn with stable GPM at ~50%)	↑
Dali Technology	002214.SZ	Hangzhou	Hangzhou	Received a major order of infrared thermal imaging cameras from a domestic special equipment customer in July with a contract value of Rmb139mn (accounting for 17% of 2021 revenue)	↑
Cubic Sensor & Instrument	688665.SS	Wuhan	Wuhan	1) Automotive air-quality: received 2 orders of CO2 sensors and AQM air-quality sensors from an EV OEM customer on Aug 2, with a total contract value of Rmb116mn and a contract period of 5 years; 2) Engine emission control: signed ODM contracts with multiple customers, supplying to one auto OEM; 3) Smart metering: Achieved in house production of ultrasonic detectors (the core component of ultrasonic gas sensors) in 1H22	↑
FA component platform					
Yiheda Automation	301029.SZ	Dongguan	Dongguan		
Production software					
Supcon Tech	688777.SS	Hangzhou	Hangzhou	2Q revenue reached Rmb1,686mn, +53% yoy/+72% qoq, +22% above GSe, quite an acceleration vs 2021 revenue yoy of 43%. Implied 2Q net profit would be Rmb254mn, +44% yoy, +14% above GSe. We view the strong topline performance likely due to its favorable end-market exposure and its production base in Hangzhou and thus largely intact from Shanghai lock-down as well as supply chain impact in 2Q22. The chemical and petrochemical end markets' capex outlook remains strong this year and Supcon continues to gain market share, expand its product offerings (into industrial software and instruments) in our view.	
Battery equipment					
Lead Intelligent	300450.SZ	Wuxi	Wuxi		
HangKe Technology	688006.SS	Hangzhou	Hangzhou	1) 1H22 order acquisition progress came overall above expectation (previous order guidance of Rmb7bn); 2) 2Q22 recognized GPM likely to maintain stable vs 1Q22; 3) GPM for 1H22 orders witnessed strong recovery as expected with c.50% GPM for overseas order and 35%-45% for domestic order.	↑

Company	Ticker	HQ	Main production base	Comments on Jul operations	Jul Trend
Electrification					
Sanhua Intelligent Control	002050.SZ	Hangzhou	Hangzhou/ Xinchang	Sanhua reported 2Q22 revenue/net income of Rmb5,356mn/550mn (+26%/+19% yoy), +12%/+16% vs GHe on: 1) better-than-expected order delivery on auto thermal management products mainly in June; 2) solid progress of refrigeration components business (including c.6% as ESS revenue now, mainly from Tesla megapack); 3) continued inflow of orders previously placed with Dun'an (Sanhua's competitor). On the margin side, 2022 GP/OP/NP margins arrived at 25%/13%/10%, -1.8pp/-0.4pp/-0.6pp yoy, but improved sequentially and +1.5pp/+2.1pp/+0.4pp vs GHe.	↑
Hongfa Technology	600885.SS	Xiamen	Xiamen	Management noted strong yoy growth of the overall order backlog into 2H22 (esp. energy storage cooling and data center cooling), with strong growth in contract liabilities (+58%/+163% yoy in 1Q22/2Q22) indicating a strong rebound in 2H22-1H23; 1H22 GPM was 28.8% (+1.1ppt hot) mainly on improving CRAC margin and rising overseas contribution (2H22E guidance: Management is confident of continued margin improvement going forward)	↑
Envicool	002837.SZ	Shenzhen	Shenzhen		
Kstar	002518.SZ	Shenzhen	Shenzhen	1) Energy storage recorded revenue at ~Rmb191mn (2H22 guidance: Rmb508~Rmb609mn ESS revenue with ~80% from Europe), management is positive on strong demand in Europe and the US in 2022-23E; 2) Data center product revenue +7% yoy and management guides 10%-15% yoy growth in the next several years	↓
Kehua	002335.SZ	Zhangzhou	Zhangzhou	1) Utility-scale ESS: Kehua announced on Jul 25 signing a contract to provide turkey ESS to TBEA, a power transformer producer and transmission & renewable energy project developer, with a total contract size of Rmb230.7mn; 2) Residential ESS: Management guides ~Rmb20mn-30mn from overseas residential ESS in 2022E	↑
Faratronc	600563.SS	Xiamen	Xiamen	No response yet	
Jianghai	002484.SZ	Nantong	Inner Mongolia	No response yet	
AVIC Jonhon	002179.SZ	Luoyang	Luoyang		
Business service					
Pony Testing	300887.SZ	Beijing	Shanghai/Beijing/Wuhan/ Xian/Qingdao	Company reported 1H22 revenue/EBIT/net profit at Rmb1,684mn/175mn/91mn (+128%/+785%/+244% yoy) with Rmb670mn Covid-related tests revenue, excluding which core revenue increased by 37% yoy. GPM/OP/NP/M printed at 34.3%/10.4%/5.4% (-8pp/-9pp/+2pp yoy) mainly as Covid tests commanded lower GPM/NP/M at 25%/+3% vs. 43%/15% same period last year. Implied 2Q22 revenue/net income were Rmb1,150mn/85mn, +169%/+24% yoy, +12%/+1% vs. GHe, with corresponding GPM/OP/NP/M coming in at 33%/13%/7% (-19pp/-3pp/-9pp yoy), -12pp/+6pp/-1pp vs. GHe. Excluding Covid tests impact, Pony's 2Q22 OP/M was actually better than expected, offset by a credit impairment loss of Rmb84mn, which resulted in an in-line bottom line performance. The company guided full year Rmb3bn+ revenue/Rmb300mn+ net profit, in line with GHe of Rmb3.5bn/Rmb320mn respectively.	→
Centre Testing	300012.SZ	Shenzhen	Shenzhen/Shanghai/Guangzhou/Suzhou/Hangzhou/Tianjin etc	The company pre-announced 1H22 net profit in the range of Rmb355mn-365mn (+18% to +21% yoy), implying 2Q22 net profit of Rmb235mn-245mn vs. GSe of Rmb205mn, showing resilience despite the lock-down impact. Capacity utilization for its Shanghai lab has already been recovered back to normal levels by end-June.	↑
Optical module					
Innolight	300308.SZ	Suzhou	Suzhou	Received all 3Q22 orders and part of 4Q22 orders by July 11, which are largely in line with management expectation; secured relatively large wallet share for major overseas customers' 800G product orders; current annual production capacity is over 7mn units; Thai factory: several major overseas customers are inspecting the factory, after which the Thai factory will begin volume production of 400G/200G products	→
Accellink	002281.SZ	Wuhan	Wuhan	n.a.	→
Power tools					
Techtronic	0669.HK	Hongkong	Dongguan/China, Vietnam, US, Mexico	In our latest check with a major motor control supplier (more on Milwaukee side than Ryobi) for TTI, the supplier did not see any disruption in order placement from TTI which targeted c.10% full year order growth (in dollar terms) at the beginning of the year.	→
PIPM					
Haitian Intl.	1882.HK	Ningbo	Ningbo		
Rolling stock					
CRSC	3969.HK	Beijing	Beijing		
CRSC	688009.SS	Beijing	Beijing		
Times Electric	3898.HK	Zhuzhou	Zhuzhou		
CRRC Corp.	1766.HK	Beijing	Changchun/Qingdao/Tangshan		
CRRC Corp.	601766.SS	Beijing	nDalian/Nanjing/Zhuzhou		

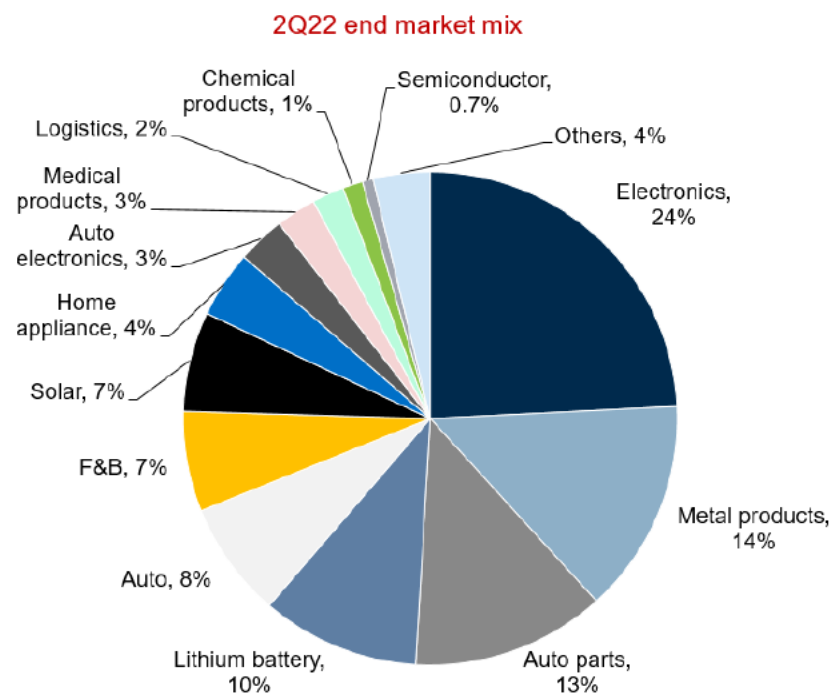
Source: Company data.

Our coverage and industrial robot industry breakdown by end-market

China Industrial Tech sector average 2022E revenue breakdown by key end-market



China industrial robot 2Q22 sales vol breakdown by end-market



Note: Consumer includes consumer electronics, ICE, PCB, FPD, textile, food & beverage, and 50% of home appliances; infrastructure includes power, environment, railway, telco, and data center; property includes elevator, building materials and 50% of home appliance; new energy includes EV/battery, energy storage system, and solar.

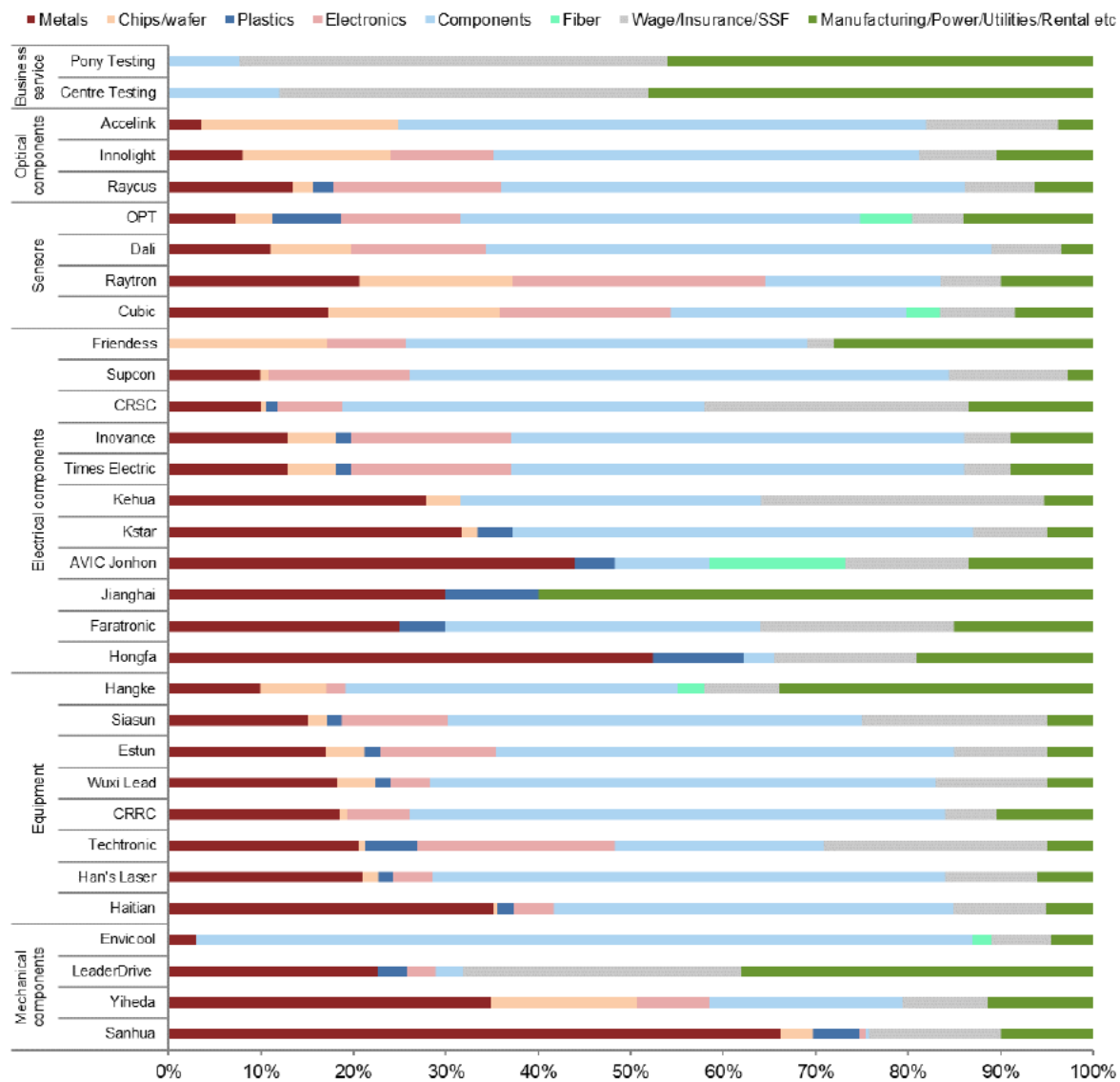


2022E revenue breakdown by end-market/geography for our coverage

Sub-sector	Robot/Automation			Laser	Machine vision	Infrared/sensors			Optical modules		FA component e-distributor	Production software	Battery equipment		Electrification								Business service		Power tools	PIMM	Rolling stock		
	Company	Estun	Inovance			Friendess	OPT	Raytron	Dali	Cubic			Innolight	Accelink	Yiheda	Supcon	Lead Intelligent	Hangke	Sanhua	Hongfa	AVIC Jonhon	Kehua	Kstar	Envicool			Faratronic	Jianghai	Centre Testing
Ticker	002747.SZ	300124.SZ	688188.SS	688686.SS	688002.SS	002214.SZ	688665.SS	300308.SZ	002281.SZ	301029.SZ	688777.SS	300450.SZ	688006.SS	002050.SZ	600885.SS	002179.SZ	002335.SZ	002518.SZ	002837.SZ	600563.SS	002484.SZ	300012.SZ	300887.SZ	0669.HK	1882.HK	1766.HK	3898.HK	3969.HK	
China exposure																													
Semiconductor	--	--	--	4%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6%	--
Battery	5%	5%	--	29%	--	--	--	--	--	16%	--	74%	62%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Energy storage system	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5%	--	15%	--	--	--	--	--	--	--	--	--	--
EV	4%	15%	--	3%	--	--	5%	--	--	5%	--	--	--	10%	6%	12%	--	1%	3%	28%	2%	--	--	--	5%	--	4%	--	
Solar	10%	--	--	3%	--	--	--	--	--	4%	--	10%	--	--	--	--	3%	8%	--	19%	7%	--	--	--	--	--	--	--	--
Consumer electronics	8%	5%	11%	45%	0%	1%	--	--	--	23%	--	6%	--	--	2%	1%	--	--	--	--	--	--	5%	--	10%	--	--	--	
Energy & Chemicals	--	8%	--	--	--	--	--	--	--	--	50%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4%	2%	--	
Power	--	--	--	--	8%	14%	--	--	--	--	6%	--	--	--	20%	--	--	--	--	--	4%	--	--	--	--	13%	--	--	
Environment	--	--	--	--	--	--	6%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28%	28%	--	--	--	--	--	
Healthcare & Pharma	--	--	--	1%	--	--	9%	--	--	--	4%	--	--	--	--	--	--	--	--	--	--	5%	24%	--	5%	--	--	--	
Aerospace & Defense	4%	--	2%	--	18%	71%	--	--	--	--	--	--	--	--	1%	55%	--	--	--	--	--	--	--	--	--	--	--	--	
Railway	--	3%	2%	--	--	--	--	--	--	--	--	--	--	--	1%	1%	--	--	5%	--	--	--	--	0%	--	55%	78%	72%	
Telco	--	--	--	--	--	--	--	5%	26%	--	--	--	--	--	2%	11%	4%	4%	11%	--	--	--	--	--	--	--	--	--	
Data center	--	--	--	--	--	--	--	20%	41%	--	--	--	--	--	--	6%	59%	33%	50%	--	--	--	--	--	--	--	--	--	
ICE	2%	3%	3%	1%	--	--	7%	--	--	5%	--	--	--	1%	10%	--	--	--	--	--	--	5%	5%	--	10%	2%	--	--	
PCB	2%	2%	11%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
FPD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Textile	--	3%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Food & Beverage	4%	2%	--	1%	--	--	--	--	--	--	4%	--	--	--	--	--	--	--	--	--	--	22%	32%	--	5%	--	--	--	
Elevator	--	30%	2%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Home appliance	4%	3%	4%	--	--	--	47%	--	--	--	--	--	--	11%	15%	--	--	--	--	5%	13%	--	--	--	10%	--	--	--	
General industries	12%	8%	60%	--	--	--	10%	--	--	47%	1%	--	--	12%	2%	--	--	--	--	18%	34%	30%	5%	--	10%	--	--	--	
Construction & Municipal	--	3%	4%	--	--	--	--	--	--	--	2%	--	--	--	3%	--	--	--	--	--	--	--	--	0%	10%	--	--	25%	
Building materials	--	1%	--	--	--	--	--	--	--	--	1%	--	--	--	--	--	--	--	--	--	--	--	--	0%	5%	--	--	--	
Others	0%	6%	2%	4%	25%	8%	--	--	--	--	29%	--	--	6%	0%	7%	21%	21%	3%	--	10%	6%	1%	2%	0%	16%	5%	--	
Ex-China exposure																													
Oversea-DM	45%	4%	0%	5%	49%	6%	0%	75%	33%	0%	0%	10%	38%	53%	25%	3%	9%	13%	30%	30%	0%	0%	92%	13%	0%	0%	0%	0%	
US	--	--	--	--	19%	--	--	75%	16%	--	--	18%	--	38%	--	--	--	--	--	--	--	--	--	77%	3%	--	--	--	
EU	45%	4%	0%	--	31%	--	--	--	16%	--	--	10%	20%	15%	--	--	9%	--	--	--	--	--	15%	10%	--	--	--	--	
Oversea-EM	0%	0%	0%	5%	0%	0%	16%	0%	0%	0%	4%	0%	0%	7%	13%	4%	9%	23%	0%	0%	0%	5%	0%	6%	17%	10%	5%	3%	
Total overseas exposure	45%	4%	0%	10%	49%	6%	16%	75%	33%	0%	4%	10%	38%	60%	38%	7%	9%	32%	13%	30%	30%	5%	0%	98%	30%	10%	5%	3%	

Source: NBS, Gao Hua Securities Research, Goldman Sachs Global Investment Research.

COGS breakdown for our coverage

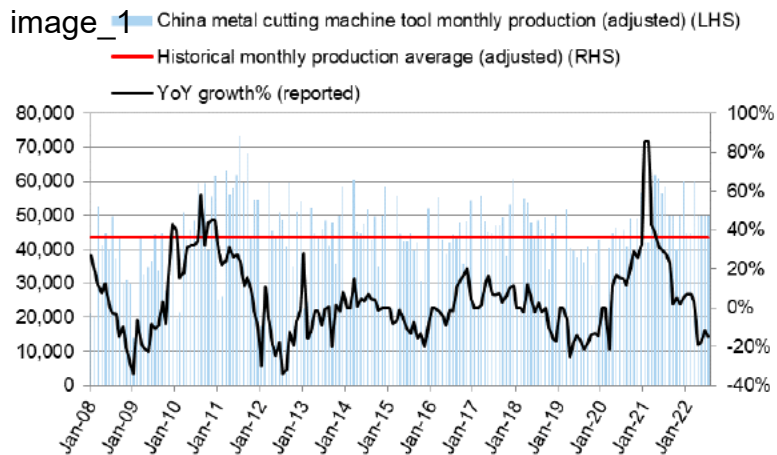


Source: Company data, Gao Hua Securities Research

Industrial automation

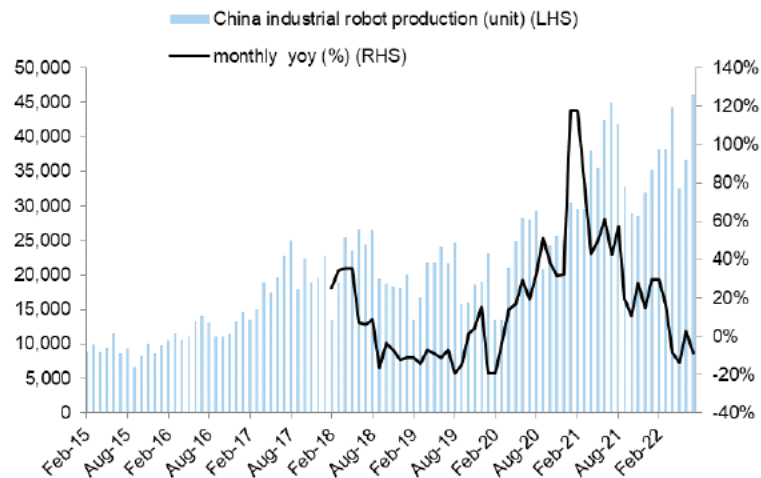


China machine tool production -15% yoy/0% mom in Jul (vs. -12% yoy/0% mom in Jun)



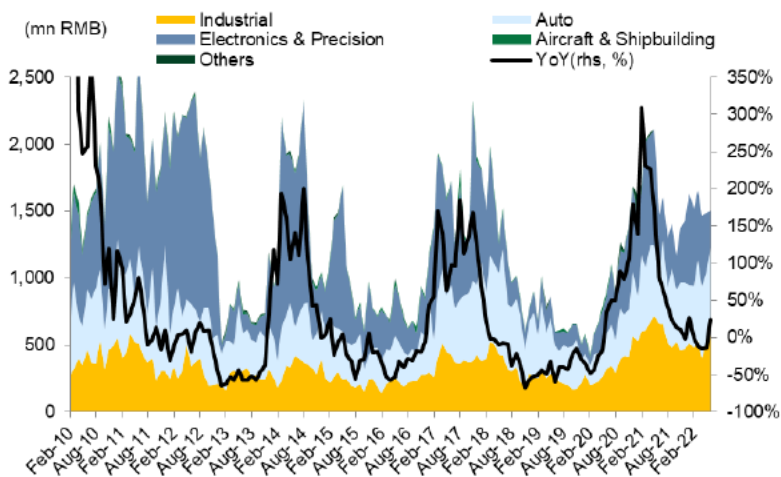
Update to Jul

China industrial robot production -9% yoy/-17% mom in Jun (vs. +3% yoy/+26% mom in Jun)



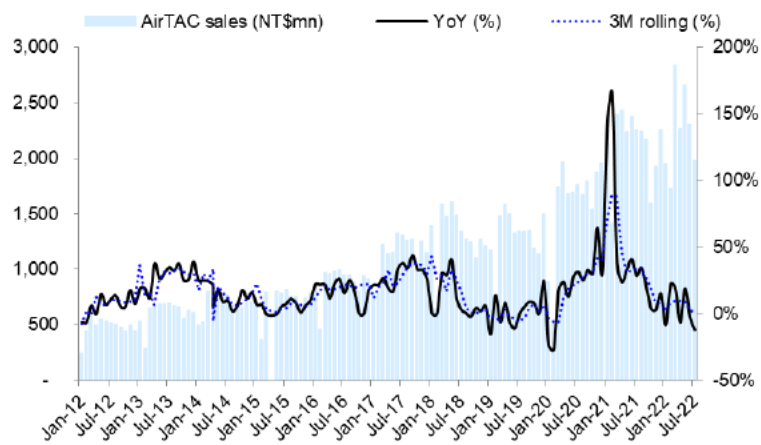
Update to Jul

Japan machine tool total export order +6% yoy in Jul and export to China orders +24% yoy in Jun



Updated to Jul

Airtac posted Jul total sales -12% yoy/-14% mom (vs. -3% yoy/-13% mom in Jun)



Update to Jul

Source: Japan Machine Tool Builder Association, NBS, Company data

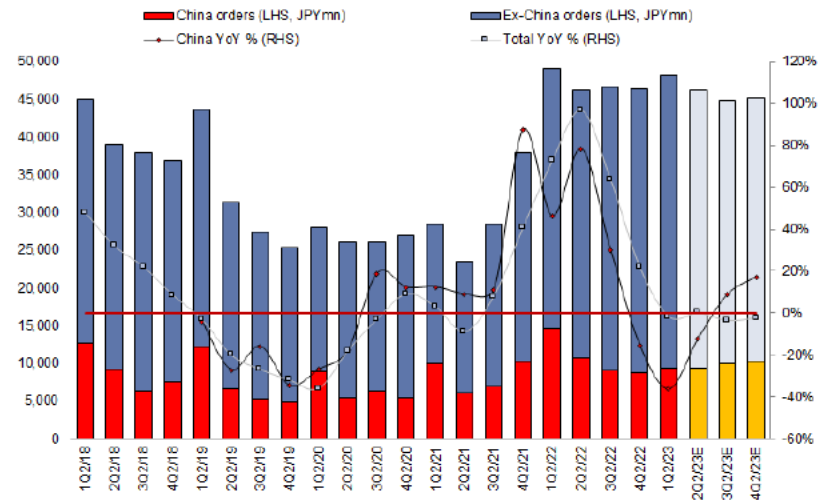
Industrial automation: cross-read from Japan

Okuma China Mar China order +8% yoy/+10% mom (Vs. +25%yoy/-7% mom in Feb)



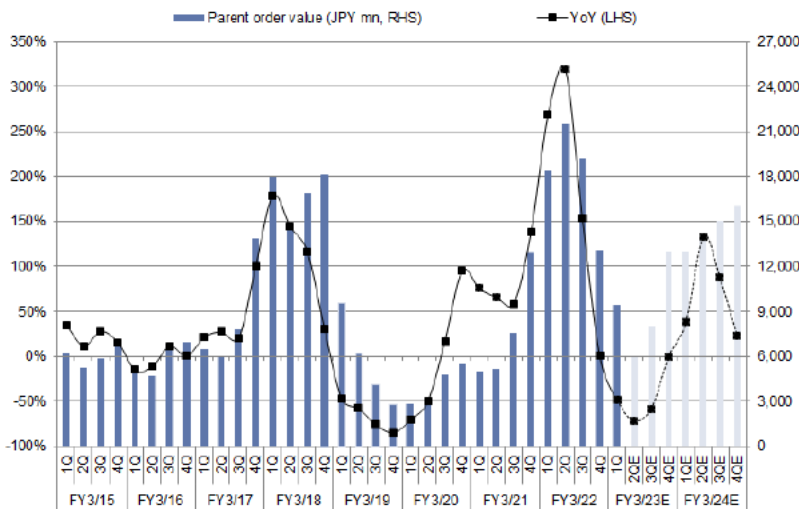
Update to Mar

Yaskawa servo motor 1Q2/23 order -36% yoy



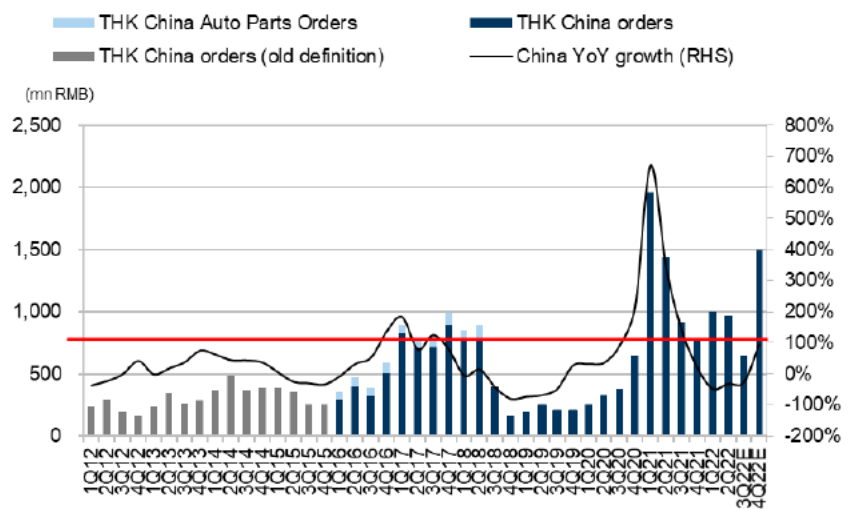
Update to May

HDS Apr-Jun order -48% yoy/-39% qoq



Update to Jun

THK China orders Apr-Jun -33% yoy/-3% qoq



Update to Jun

Note: For Japanese companies, FY quarters may vary with actual calendar years: Yaskawa FY1Q=March-May, Harmonic Drive FY1Q=Apr-Jun, THK FY1Q = Jan-Mar

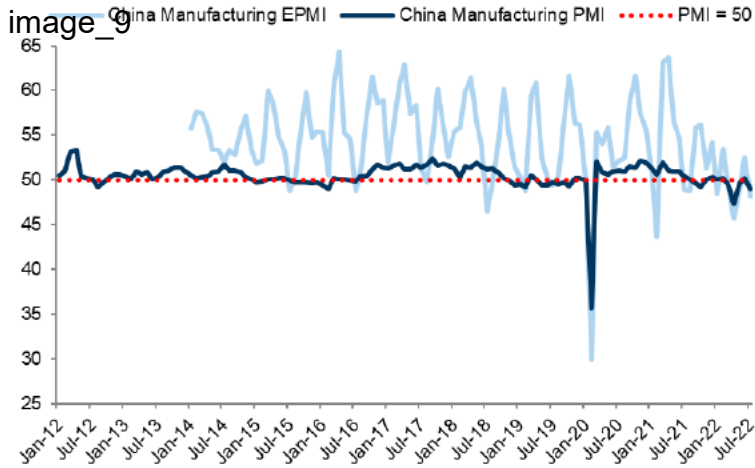
Source: Company data, Goldman Sachs Global Investment Research.

Macro



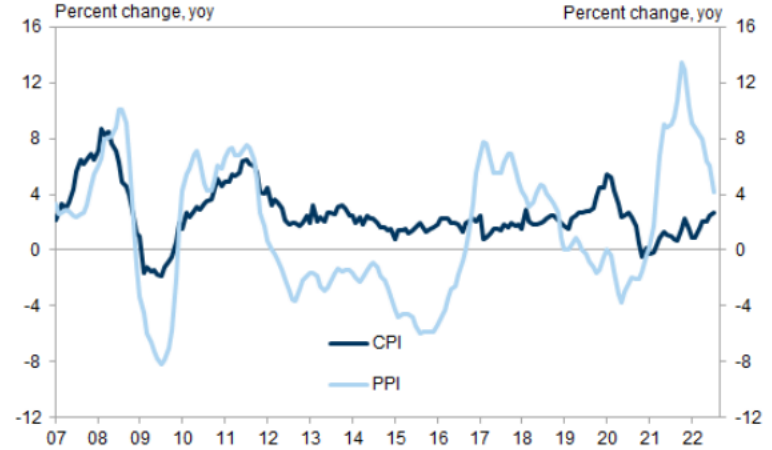
Manufacturing PMI, PPI, FAI

China manufacturing PMI dropped to 49.0 in Jul vs. 50.2 in Jun



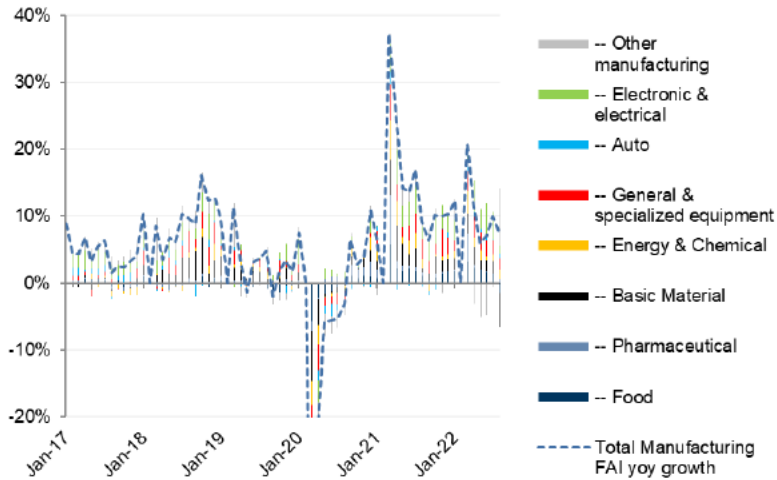
Update to Jul

China's CPI inflation rose to +2.7% yoy in Jul due to food price and PPI inflation fell to +4.2% yoy in Jul



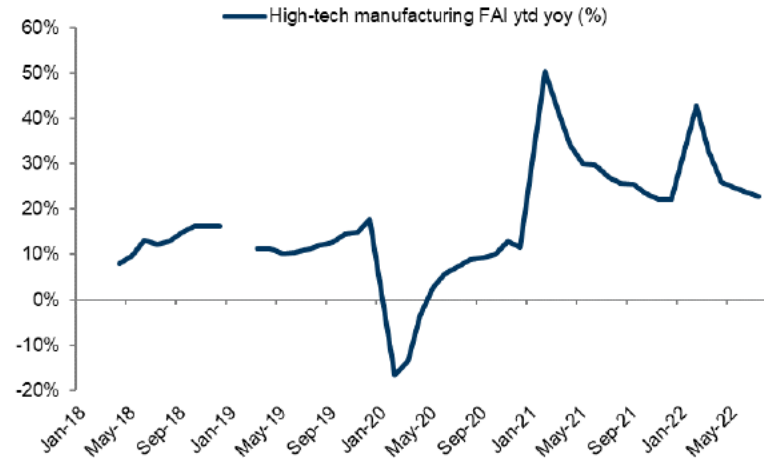
Update to Jul

Manufacturing FAI +8% yoy in Jul, slowing from Jun



Update to Jul

Jan-Jul high-tech manufacturing FAI grew +23% yoy

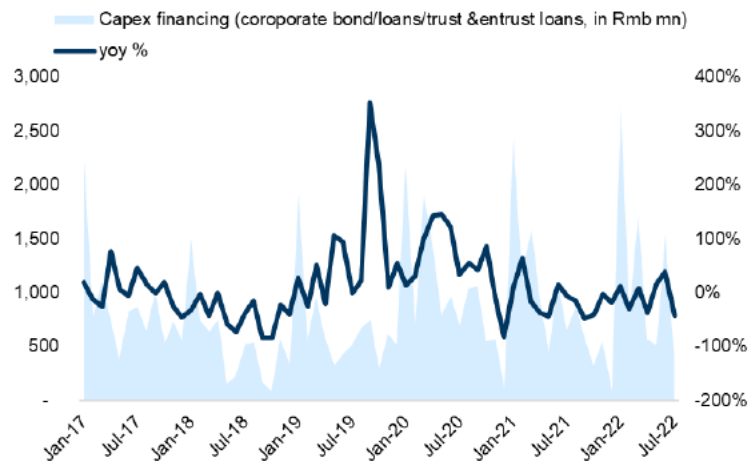


Update to Jul

Source: NBS, WIND, PBOC

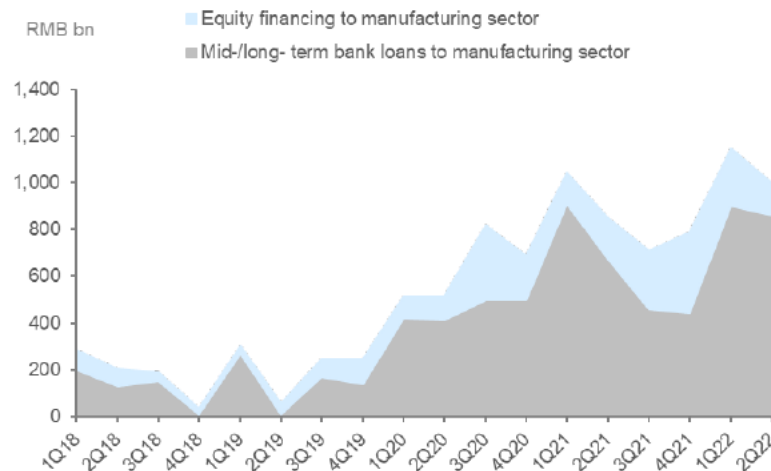
Capex financing

Capex financing new addition -43% yoy/-76% mom in Jul (vs. +38% yoy/+203% mom in Jun)



Update to Jul

Public equity financing to manufacturing sector -21% yoy in 2Q22 vs. +86% yoy in 1Q22



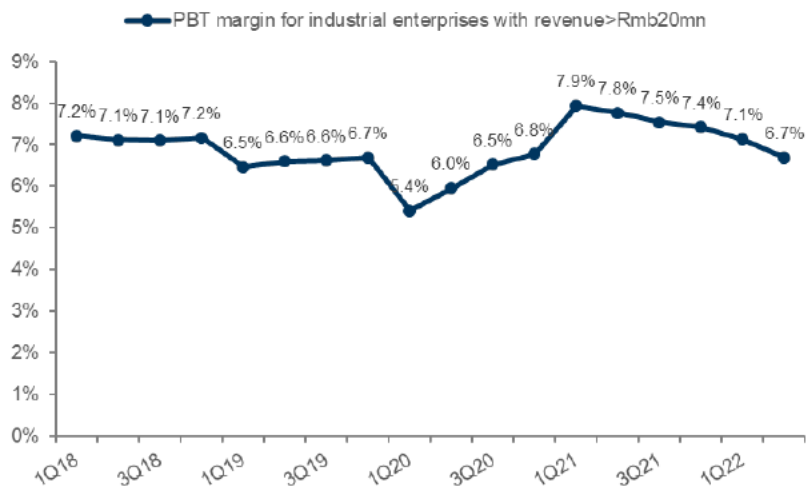
Update to 2Q22

Note: Capex financing includes entrusted loans, trust loans, corporate bonds, and medium to long term loans for non-financial institutions.

Source: NBS, WIND, PBOC

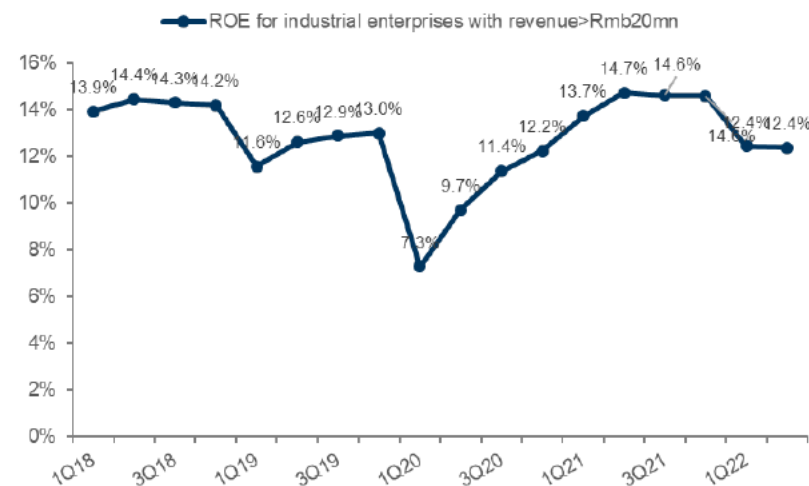
Profitability/ROE and confidence of industrials enterprises (with revenue size >Rmb20mn)

PBT margin for industrial enterprises with revenue > Rmb20mn was 6.7% in 2Q22 vs. 7.1% in 1Q22



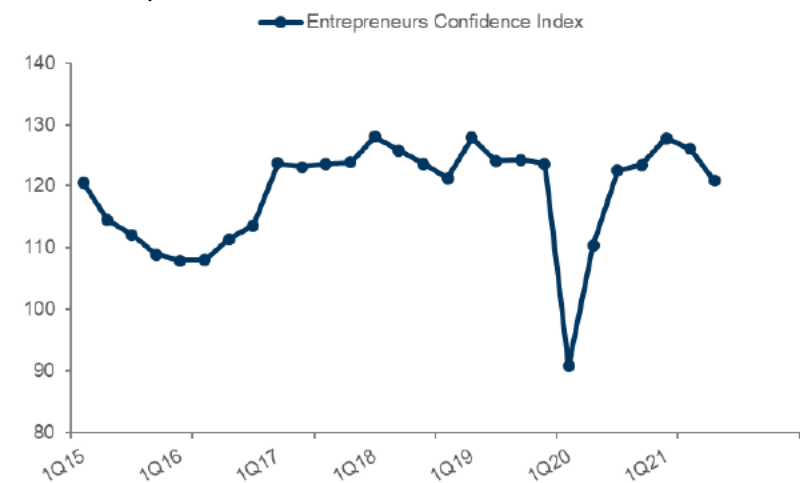
Update to 2Q22

ROE for industrial enterprises with revenue > Rmb20mn was 12.4% in 2Q22 vs. 14.6% in 1Q22



Update to 2Q22

Entrepreneurs Confidence Index at 120.9 in 3Q21 vs. 126 in 2Q21

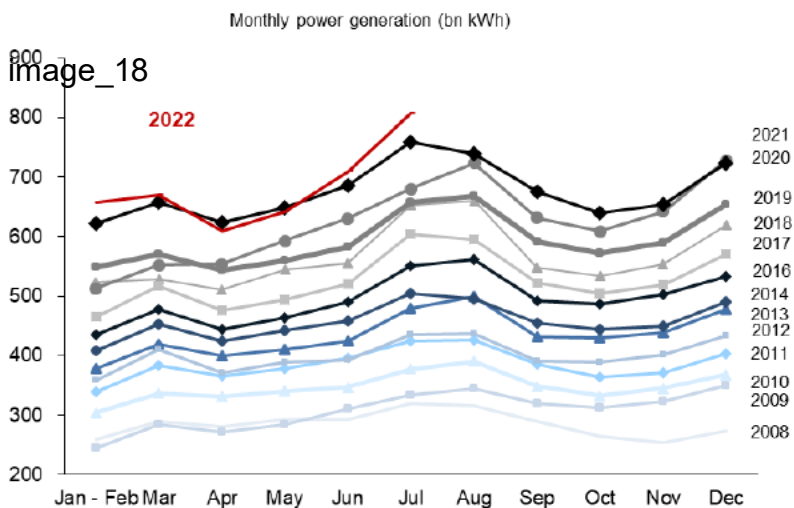


Update to 3Q21

Source: Wind

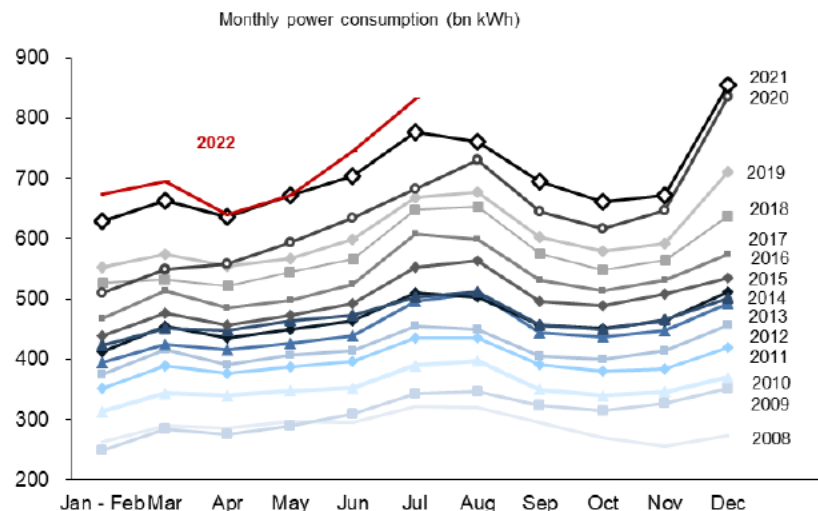
Electricity, steel and cement production

Jul electricity generation +6% yoy vs. +3% yoy in Jun



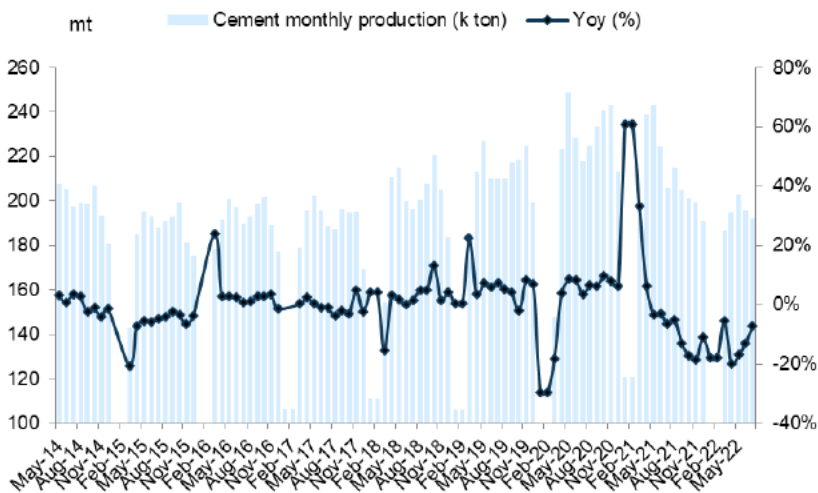
Update to Jul

Jul power consumption +6% yoy (vs. +5% yoy in Jun)



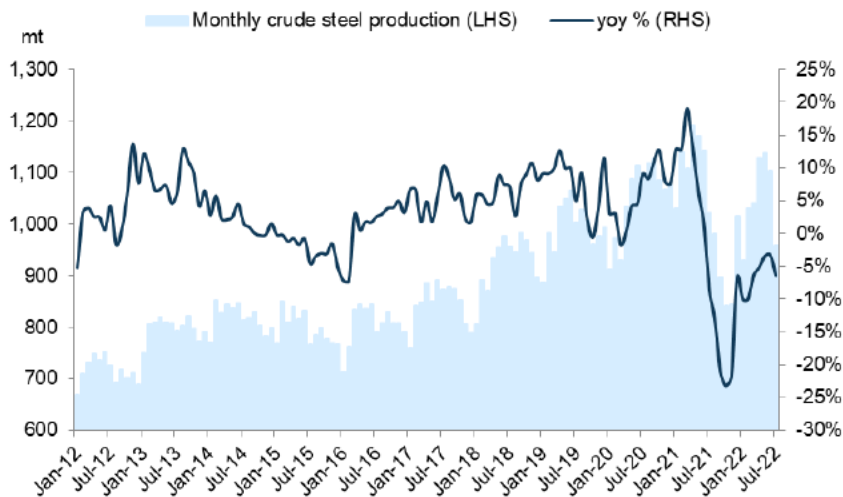
Update to Jul

Jul cement production: -7% yoy vs. -13% yoy in Jun



Update to Jul

Jul steel production: -6% yoy vs. -3% yoy in Jun



Update to Jul

Source: NBS, WIND

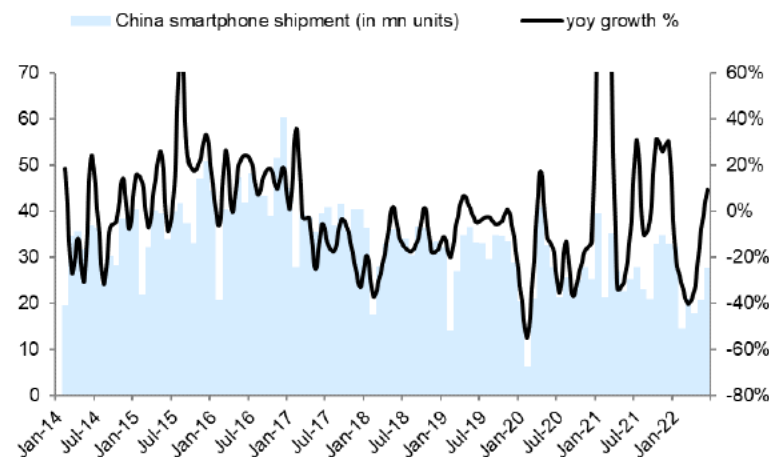
Consumer

Jul passenger vehicle retail sales/production +20%/+42% yoy (vs. +23%/+46% in Jun)



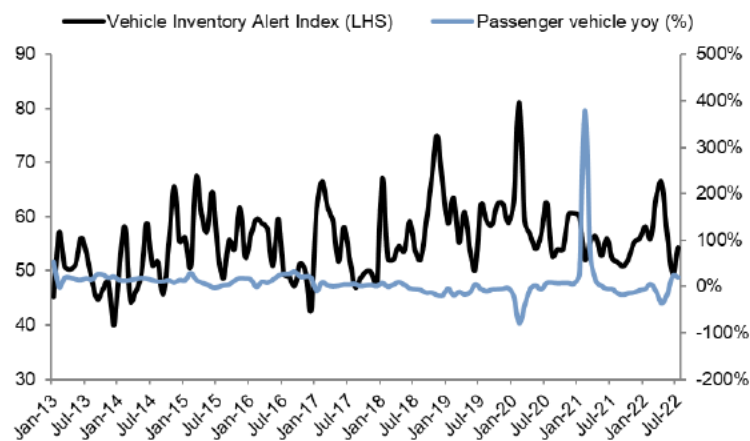
Update to Jul

Jun China domestic smartphone shipment +9% yoy (vs. -9% in May)



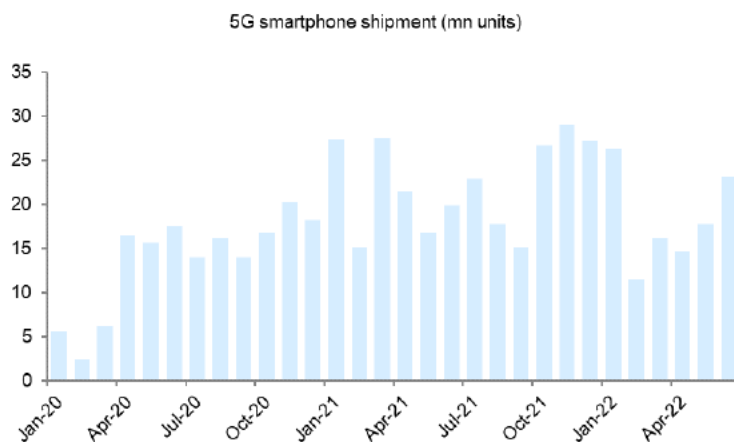
Update to Jun

Jul vehicle inventory alert index (VIA) at 54.4 (vs. Jun = 49.5)



Update to Jul

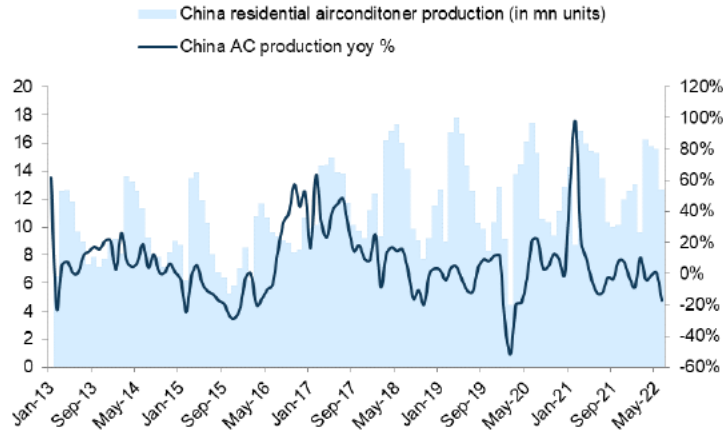
5G smartphone shipments in China: 23.0mn units in Jun (vs. 17.7mn units in May)



Update to Jun

Source: Goldman Sachs Global Investment Research, NBS, WIND, CPCA, China Automobile Dealers Association, MIIT

Jun residential air-conditioner production -17% yoy (vs. May +1% yoy)



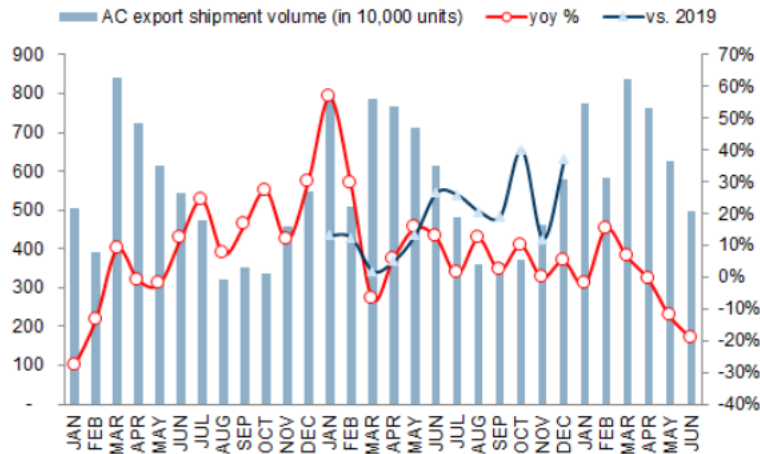
Update to Jun

Jun residential air-conditioner sales -14% yoy (vs. May -2% yoy)



Update to Jun

AC export volume dropped to -17% yoy in Jun (vs -12% yoy in May)



Update to Jun

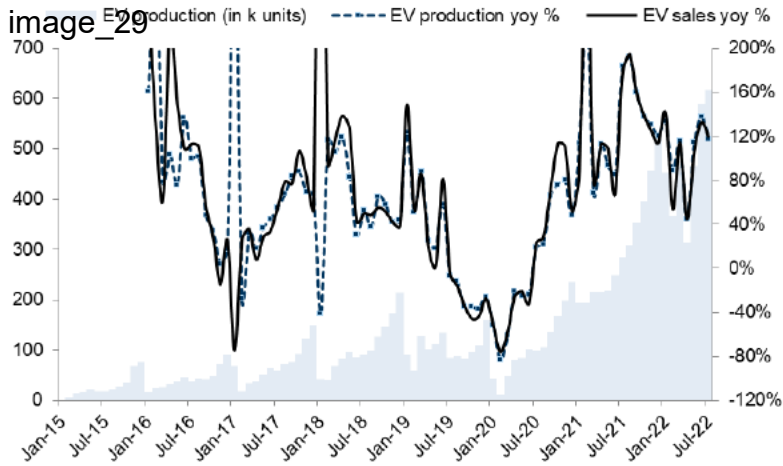
Source: NBS, Soufun, MIIT, China IOL, Goldman Sachs Global Investment Research

Note: For elevator production data, we distributed March accumulative data evenly over three months, Jan-March.

New energy

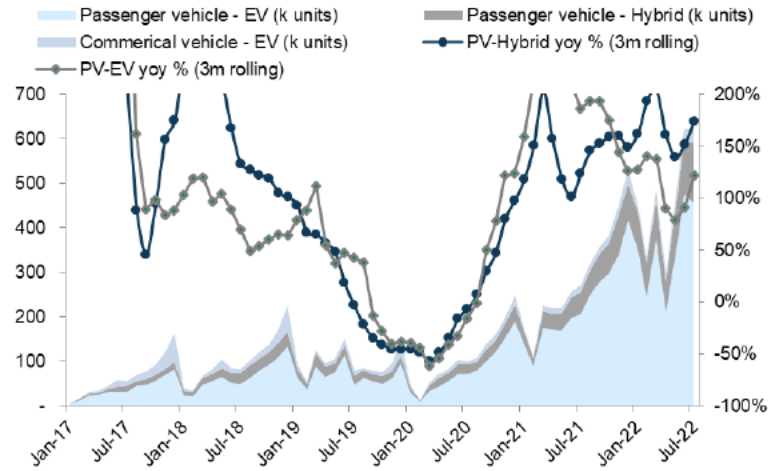


Jul China EV sales/production +119%/+117% yoy (vs. +133%/+138% in Jun)



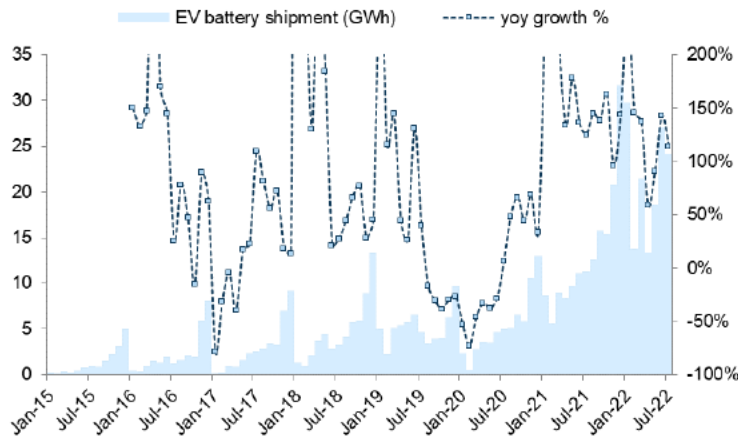
Update to Jul

Jul passenger hybrid EV/passenger PEV/commercial EV sales +170%/+120%/93% yoy



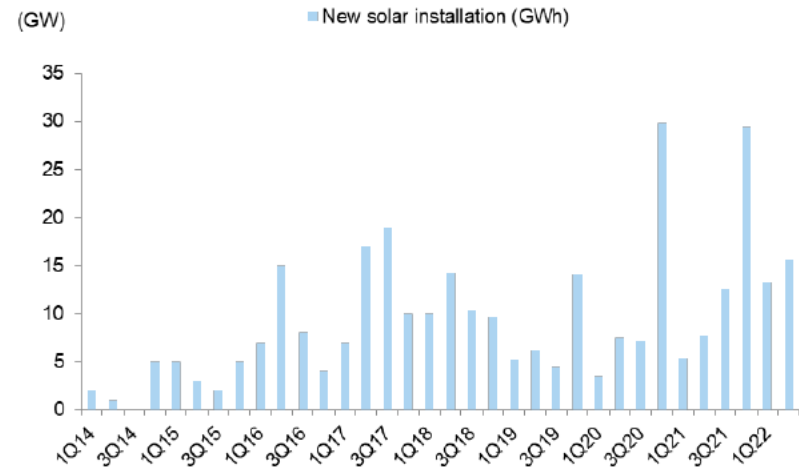
Update to Jul

Jul China EV battery shipment grew +114% yoy (vs. +143% yoy in Jun)



Update to Jul

2Q22 solar module new installation grew +103% yoy

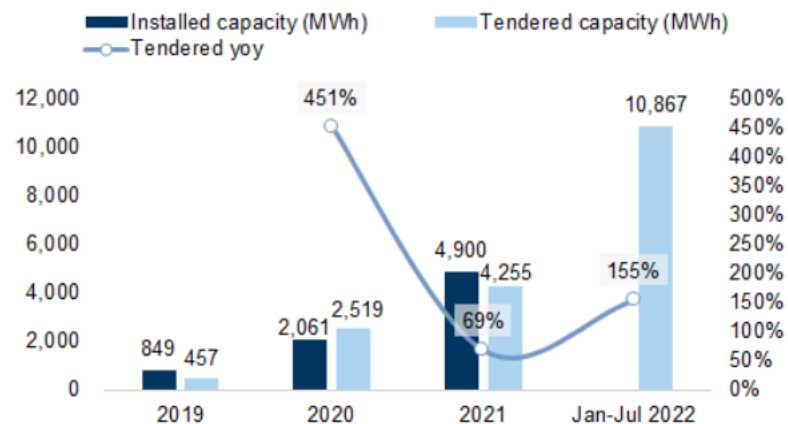


Update to Jun

Source: CAAM, GGII, NEA, NBS, MIIT, WIND

Energy storage system (ESS)

Annual installed vs. tendered capacity in China



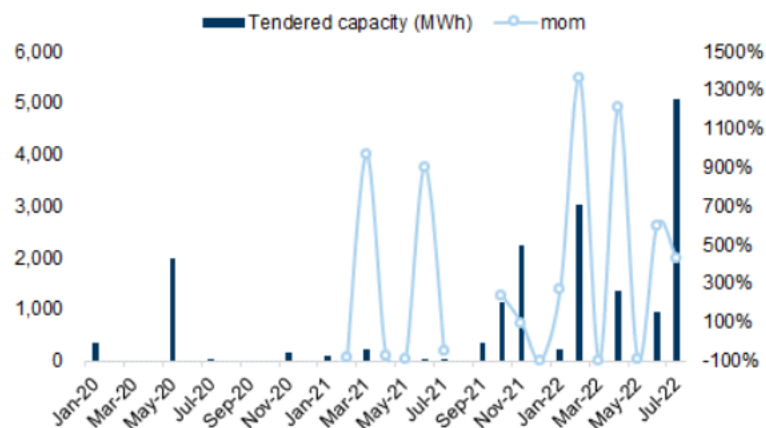
Update to July

Monthly number of tenders +417% mom in Jul (vs. +20% mom in Jun)



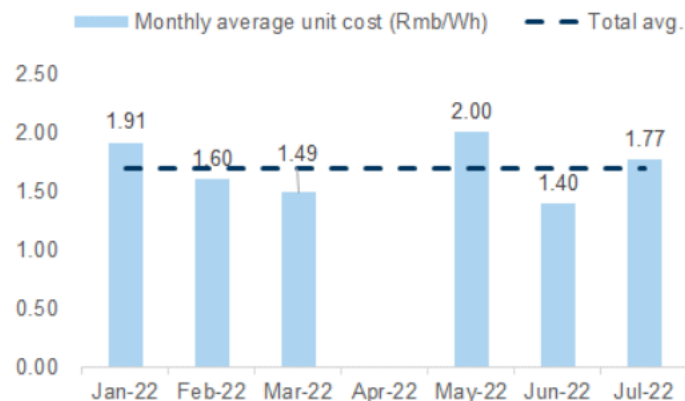
Update to July

Monthly tendered capacity +432% mom in Jul (vs. +602% in Jun)



Update to July

Monthly avg. unit cost in July was Rmb1.77/Wh, vs. avg. Rmb1.70/Wh over Jan-July 2022

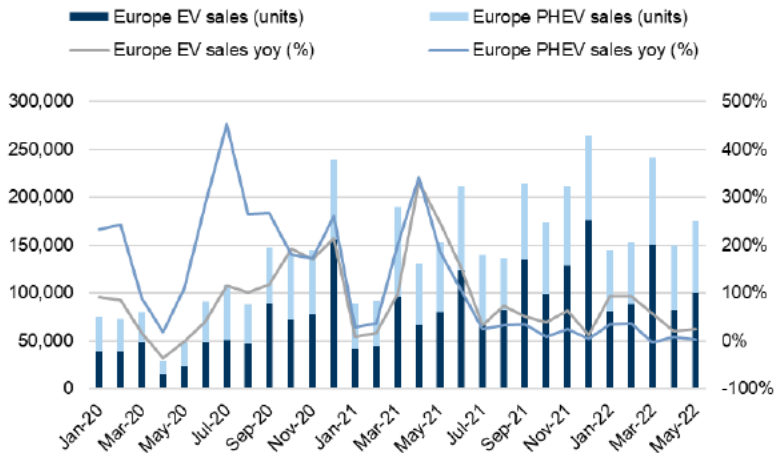


Update to July

Source: CPCA, JADA, Autodata, Goldman Sachs Global Investment Research

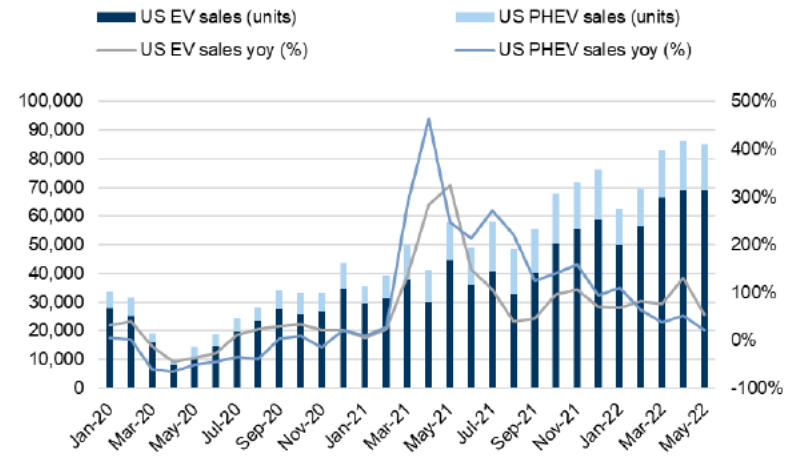
Global EV sales trend

xEV sales trend in Europe (% , units)



Update to May

xEV sales trend in US (% , units)



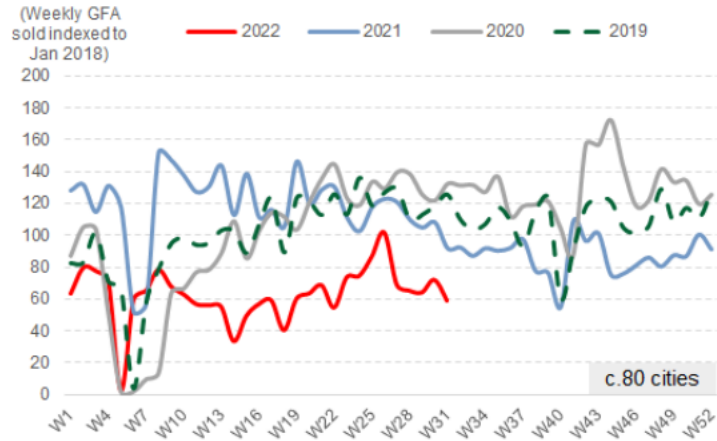
Update to May

Source: CPCA, JADA, Autodata, Goldman Sachs Global Investment Research

Property

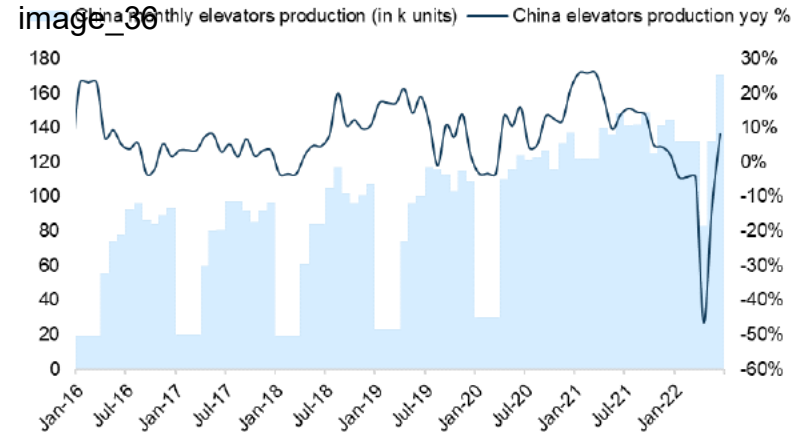


China primary 80 cities property GFA transaction volume



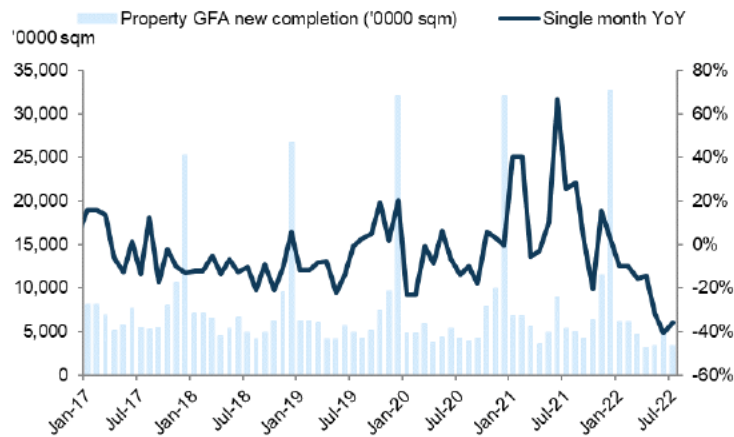
Update to Jul

Jun elevator production +8% yoy (vs. May -13% yoy)



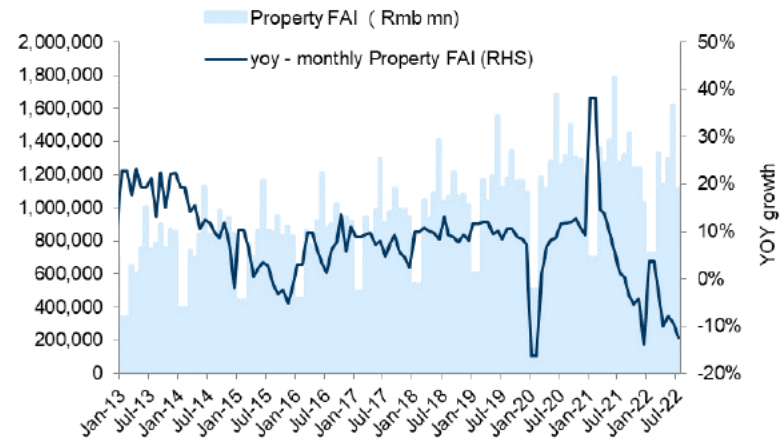
Update to Jun

Property monthly GFA new completion: -36% yoy in Jul vs. -41% yoy in Jun)



Update to Jul

Property FAI: -12% yoy in Jul vs. -9% yoy in Jun



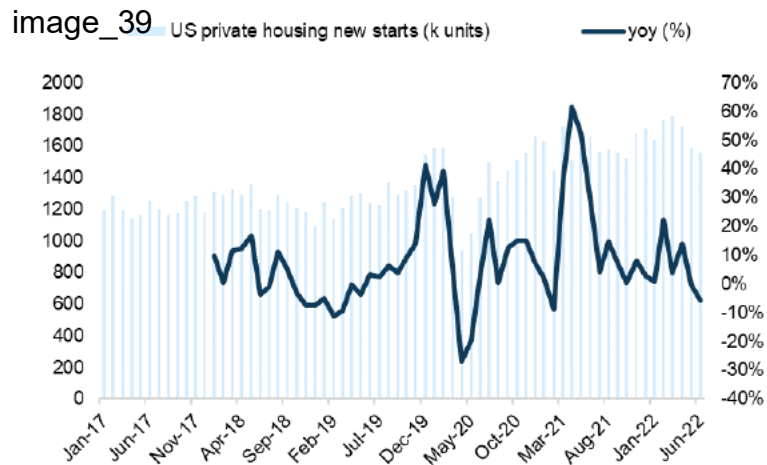
Update to Jul

Source: NBS, Soufun, MIIT, China IOL, Goldman Sachs Global Investment Research

Note: For elevator production data, we distributed March accumulative data evenly over three months, Jan-March.



US private housing new starts arrived at -6% yoy in Jun (vs. -3% yoy in May)



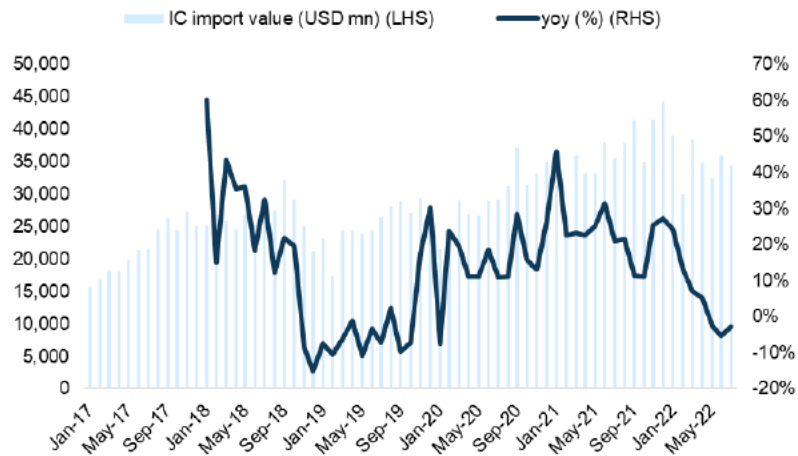
Update to Jun

Source: NBS, Soufun, MIIT, China IOL, Goldman Sachs Global Investment Research

Note: For elevator production data, we distributed March accumulative data evenly over three months, Jan-March.

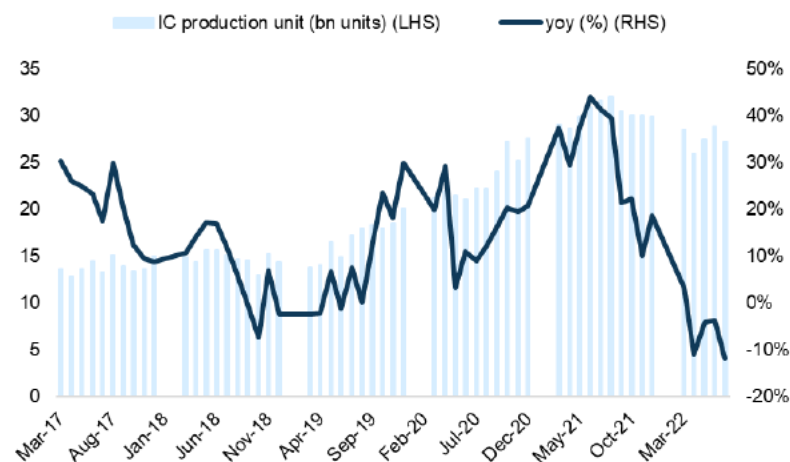
Semiconductor

IC import value in China was -3% yoy/-4% mom in Jul (vs. -5% yoy/+11% mom in Jun)



Update to Jul

IC production units in China -12% yoy/-6% mom in Jul (vs. -4% yoy/+5% mom in Jun)

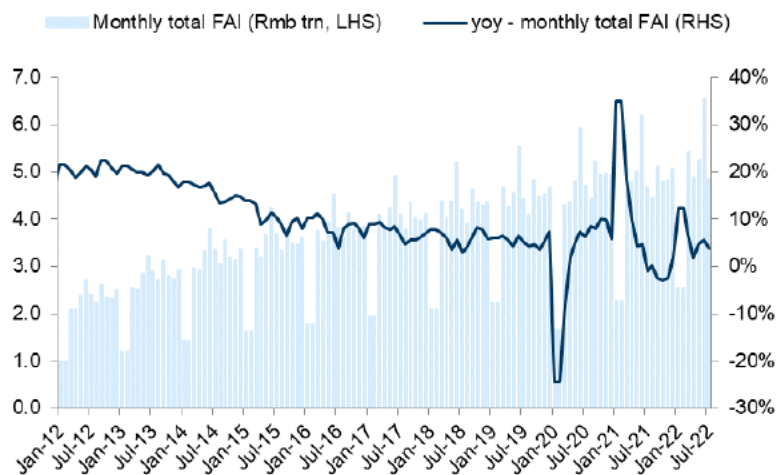


Update to Jul

Infrastructure

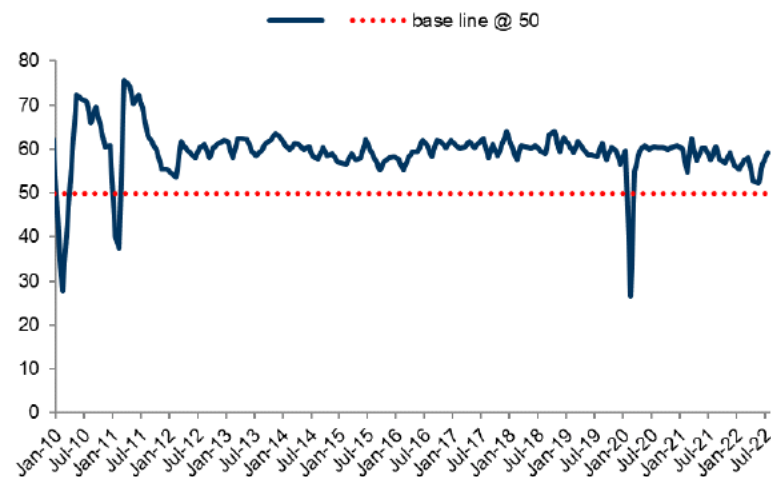


Headline FAI growth +4% yoy in Jul vs. +6% yoy in Jun



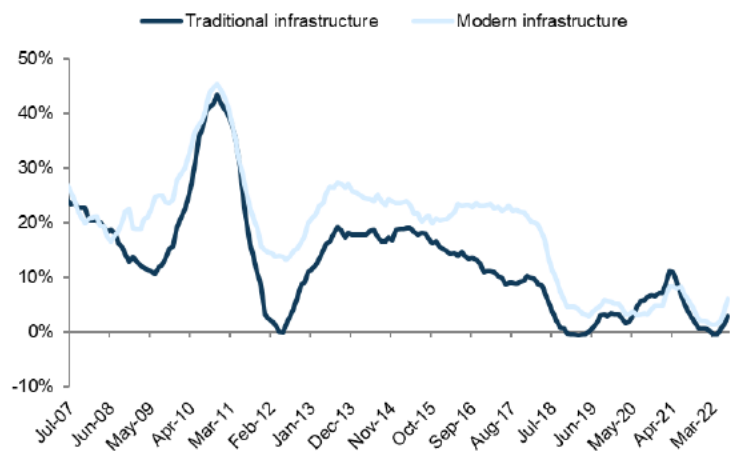
Update to Jul

China Construction PMI (Jul = 59.2 vs. Jun = 56.6)



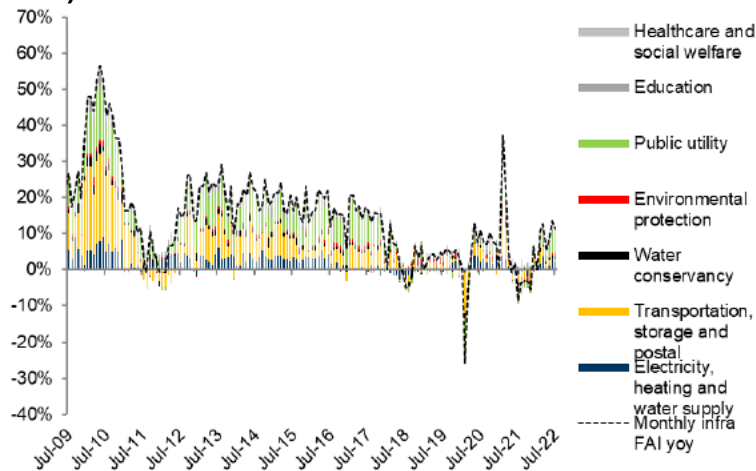
Update to Jul

Traditional and modern infrastructure FAI posted 12m rolling +3.0% yoy and +6.2% yoy in Jul



Update to Jul

Jul Infrastructure FAI growth +11.3% yoy (vs. +13.4% yoy in Jun)



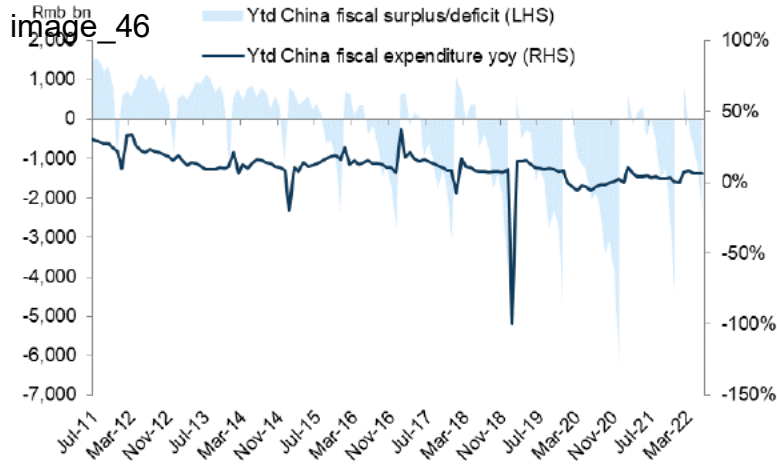
Update to Jul

Note: 1) traditional infrastructure: Electricity, heating and water supply + railway + road + other transportation, storage and postal + water conservancy 2) modern infrastructure: environmental protection, public utility, education, healthcare and social welfare

Source: NBS, WIND, China Ministry of Commerce, Goldman Sachs Global Investment Research, Gao Hua Securities Research.

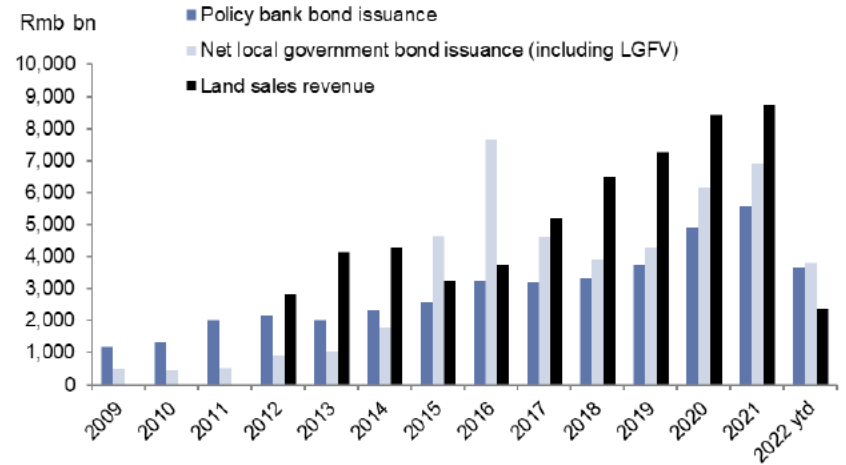
Government fiscal spending

Government expenditure posted +5.9% yoy in Jun vs. +5.9% yoy in May



Update to Jun

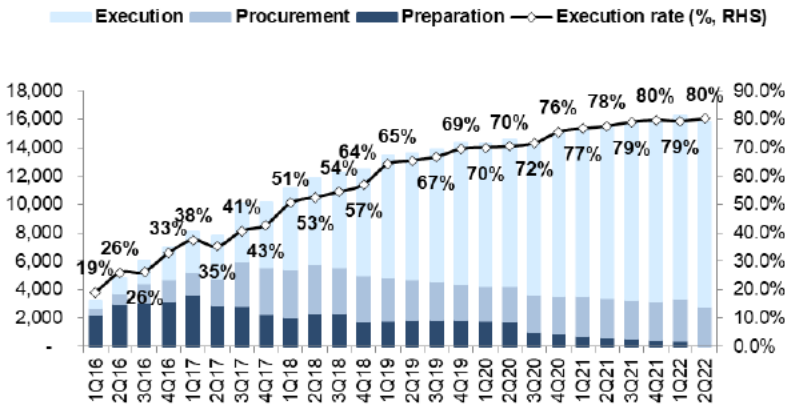
Policy bank/local government bond issuance



Update to Aug

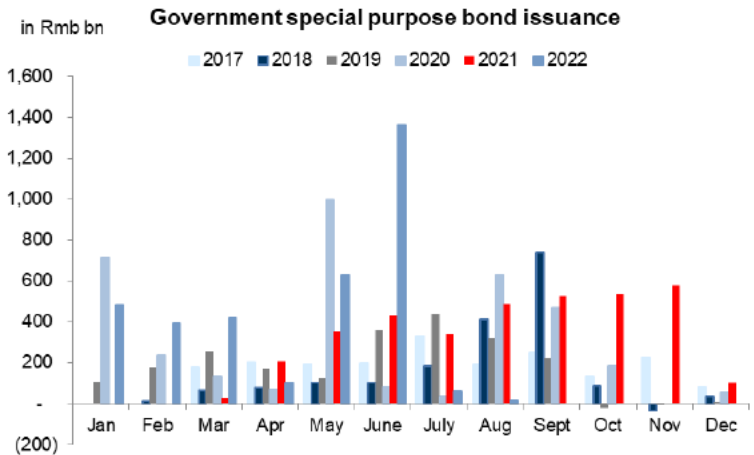
PPP project execution rate at 80% in 2Q22

Total PPP projects investment (RMB bn)



Update to 2Q22

Special local government bond issuance new addition by month

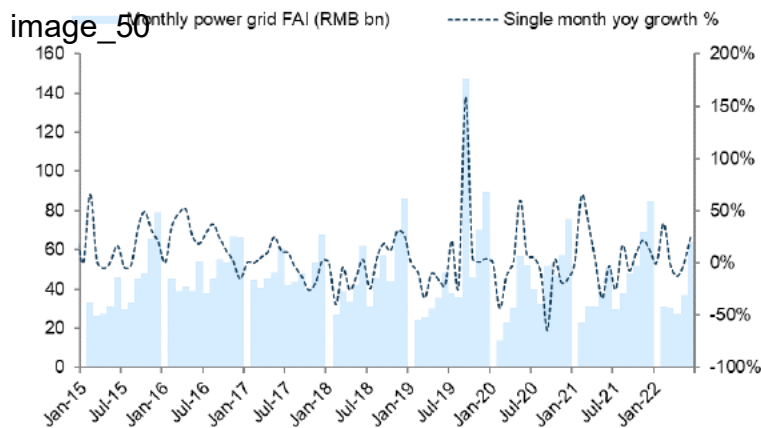


Update to Aug

Source: NBS, WIND, China PPP center, Ministry of Finance, Gao Hua Securities Research, Goldman Sachs Global Investment Research, government rev/spending update at around 25th of the next consecutive month.

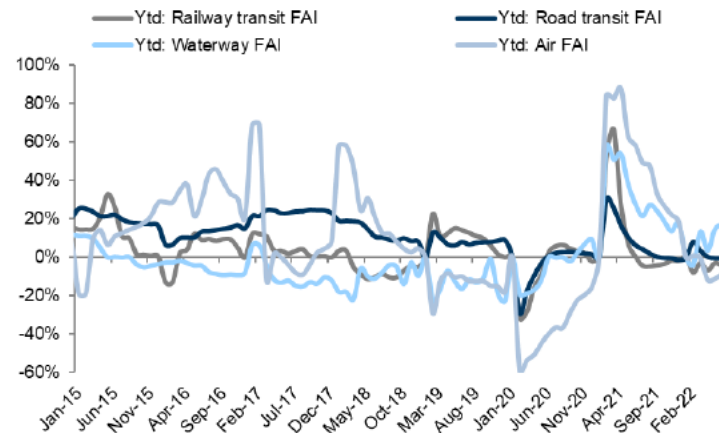


Jun total power grid investment +26% yoy (vs. -1% yoy in May)



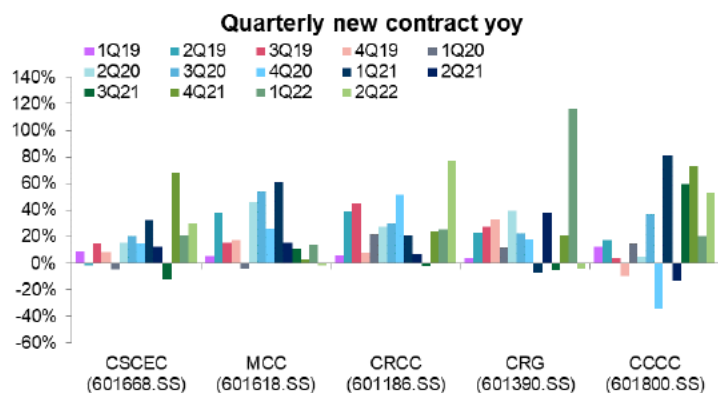
Update to Jun

Jul railway/road FAI growth posted -5%/0% yoy (vs. -4%/0% yoy in Jun)



Update to Jul

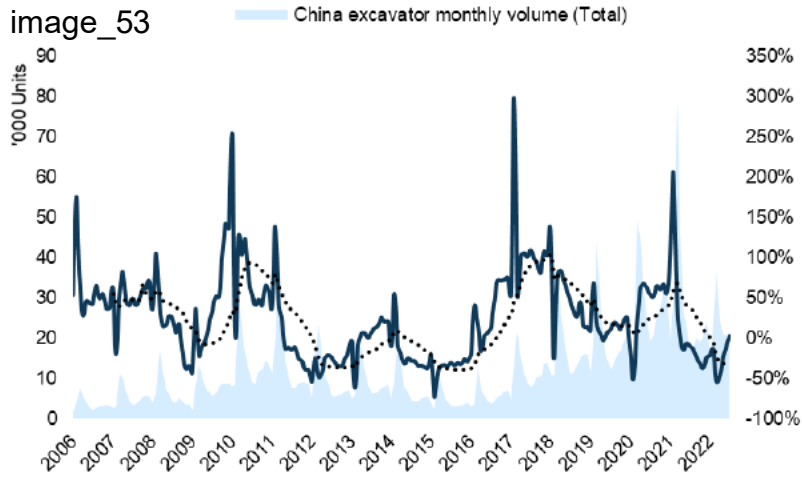
China Infrastructure construction companies CSCEC/MCC/CRCC/CRG/CCCC saw new contract +53%/+4%/+77%/+2%/+30% yoy in 2Q22



Note: Using infra construction new contract for CRCC/CRG/CCCC/CRG's 2016 new orders includes PPP new orders not classified under infra segment.

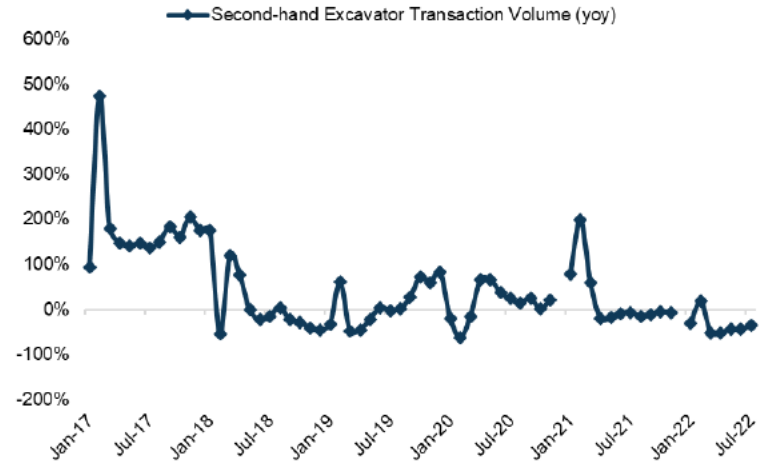
Update to 2Q22

China excavator sales +3% yoy in Jul vs. -10% yoy in Jun



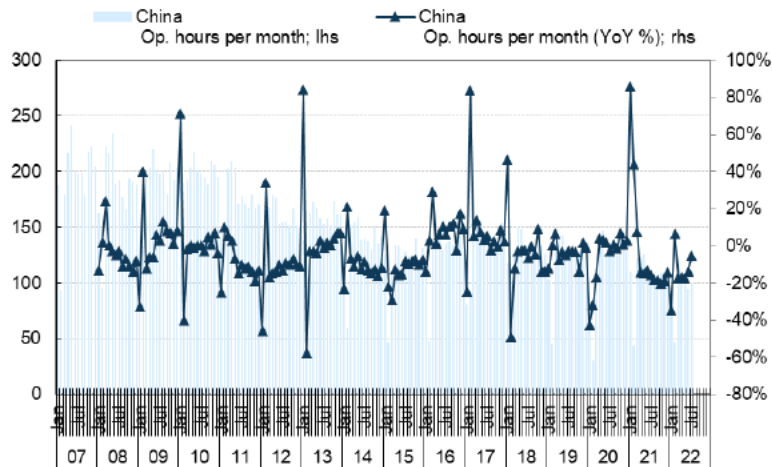
Update to Jul

Second-hand excavator transaction volume recorded a -35% yoy in Jul (vs. -45% yoy in Jun)



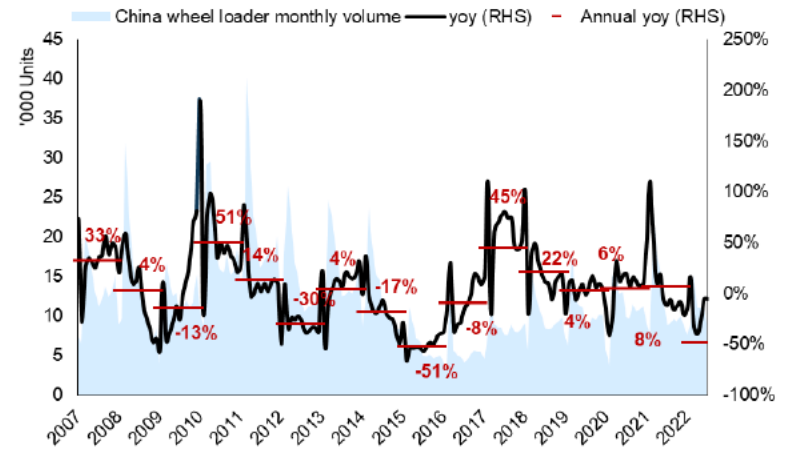
Update to Jul

Komatsu China Jul excavator utilization hours -5% yoy



Update to Jul

Wheel loader sales posted -6% yoy in Jul 2022 (2021: -12% yoy)

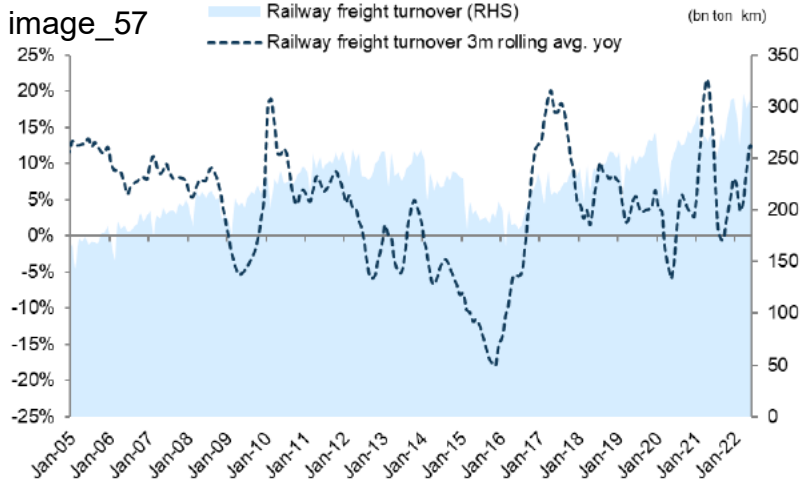


Update to Jul

Source: CCMA, Company data, NBS

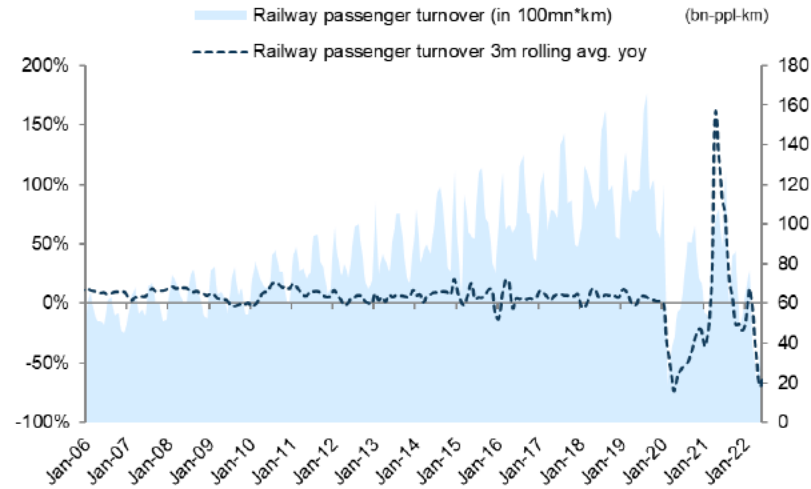
Railway freight and passenger volumes

Jul China national railway freight vol. printed +11% yoy (vs. Jun +7% yoy, +10% vs. Jul 2019)



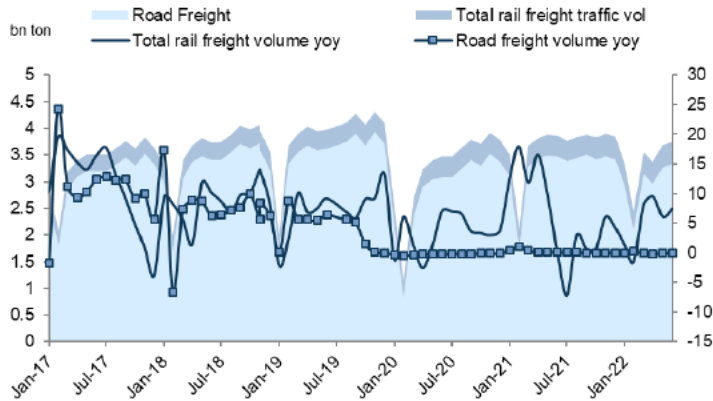
Update to Jul

Jul China railway passenger volume arrived at -28% yoy (vs. Jun -32% yoy, -59% vs. Jul 2019)



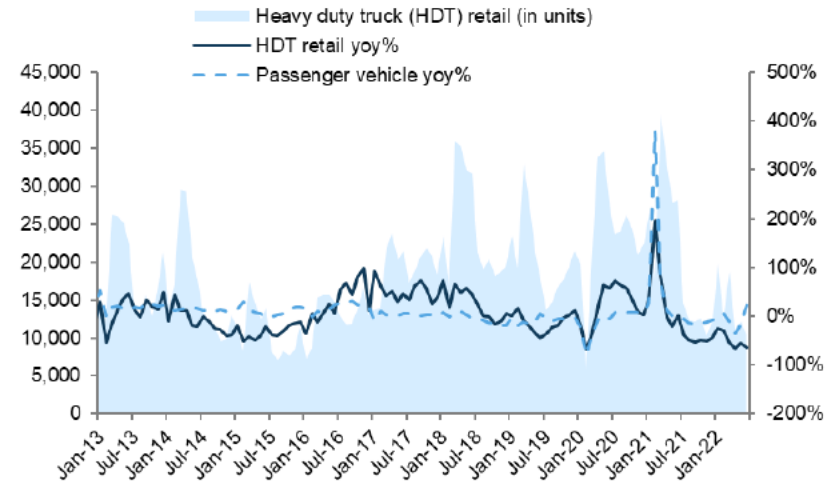
Update to Jul

Jun China highway freight rolling-3m volume printed -8% yoy, rolling-3m rail freight +8% (vs. May -8%/+8% yoy)



Update to Jun

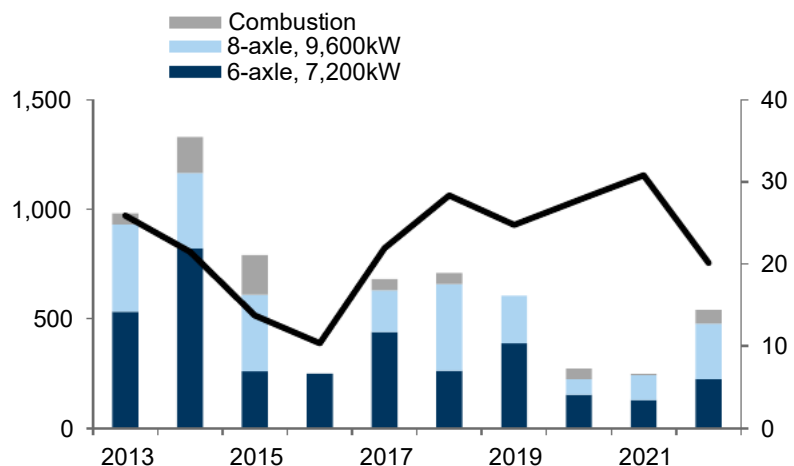
Jun heavy duty truck sales -63% yoy (vs. May -56% yoy)



Update to Jun

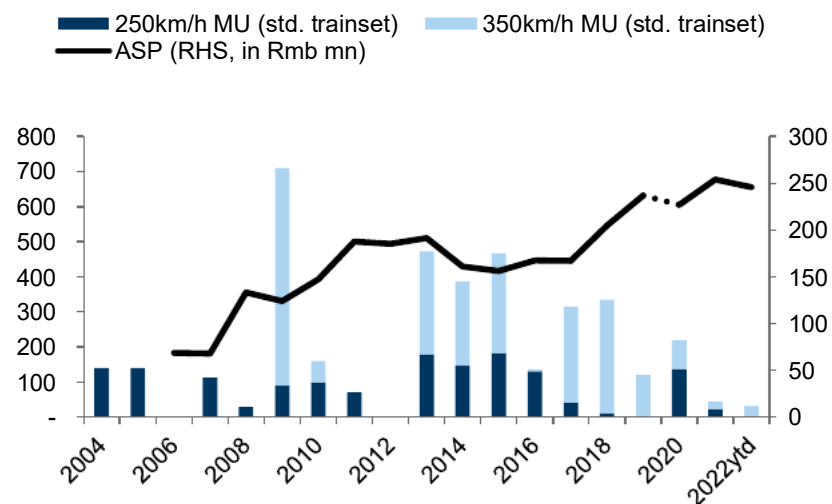
Source: NBS, CRC, Company data, Goldman Sachs Global Investment Research, Gao Hua Securities Research.

Locomotive tendering: 540 units in 2022 ytd



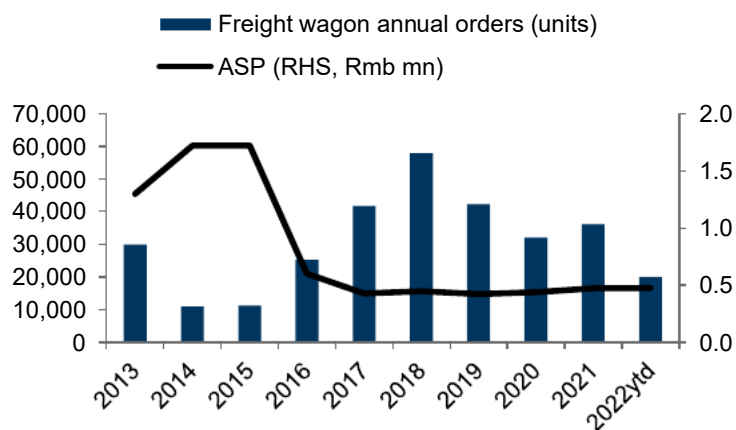
Update to Aug

Multiple Units: 32 units in 2022 ytd (2 units in Aug)



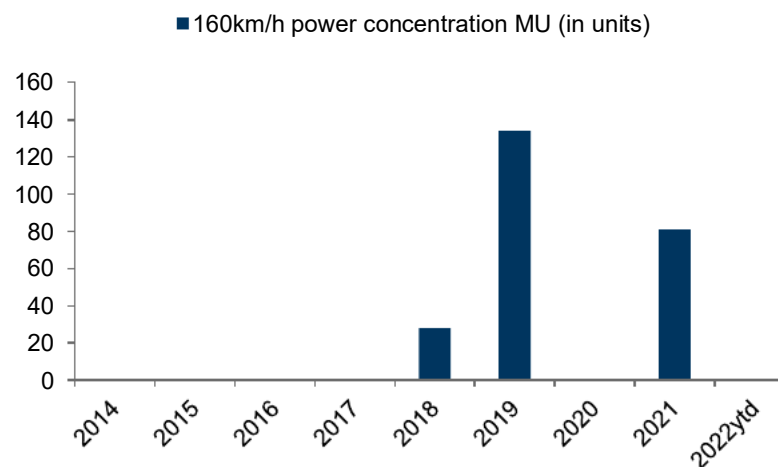
Update to Aug

Freight wagons tendering: 20,000 units in 2022 ytd



Update to Aug

160km/h power concentration MU tendering: none in 2022 ytd



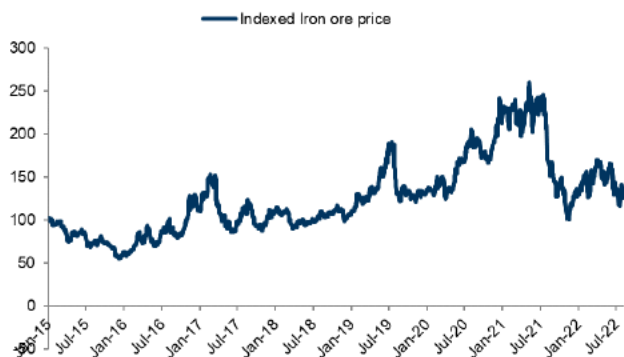
Update to Aug

Source: CRC, Company data, Gao Hua Securities Research.

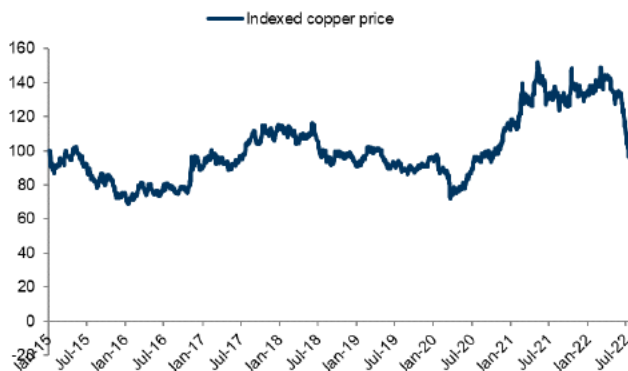
Commodity & FX

Commodity & FX price trend (as of Aug 12, 2022)

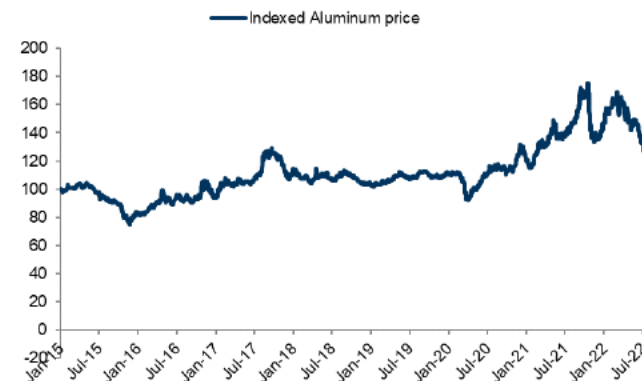
China domestic iron ore -35% 2022 ytd



LME copper price -1% 2022 ytd



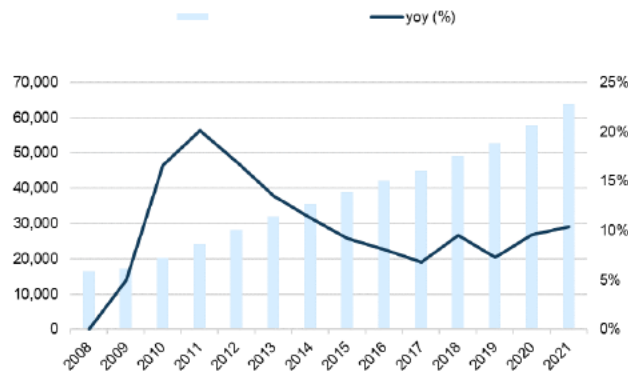
China domestic aluminum prices +10% 2022 ytd



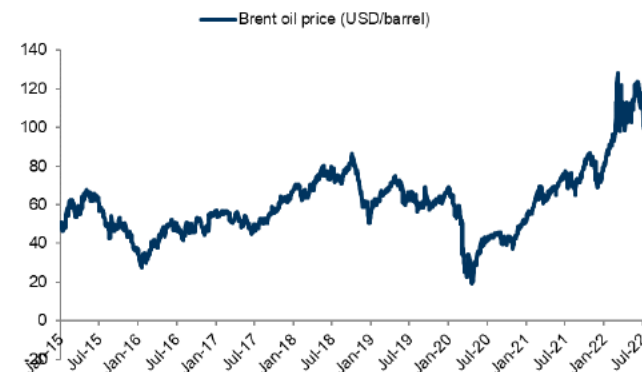
USD/CNY



China manufacturing sector wage +10% yoy in 2021 (vs. +10% yoy in 2020)



Brent oil price +56% 2022 ytd



Source: Wind, Goldman Sachs Global Investment Research

Disclosure Appendix

August 15, 2022



Reg AC

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