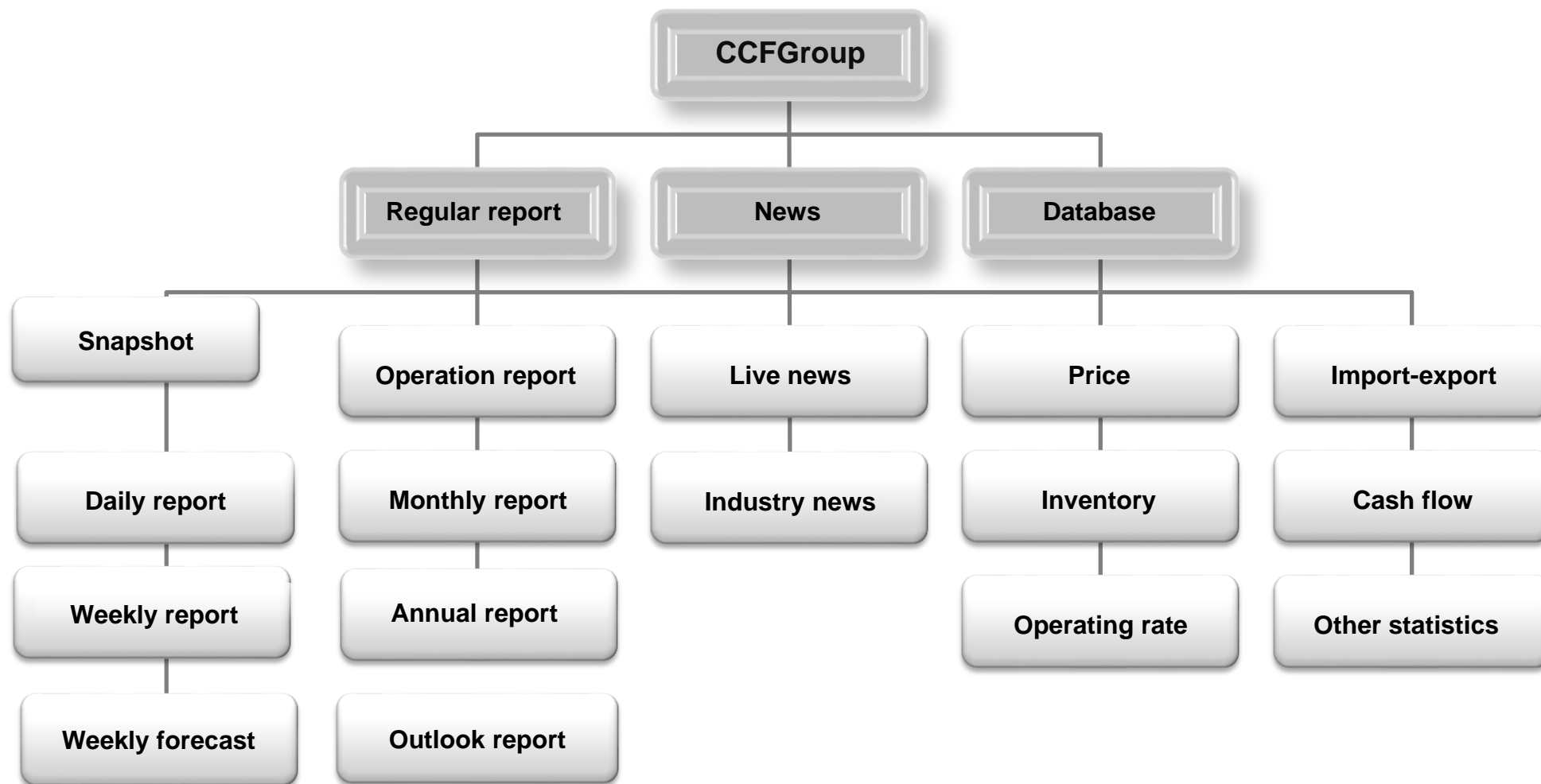




# PTA industry chain and market outlook

CCFG Group | Diana Yu



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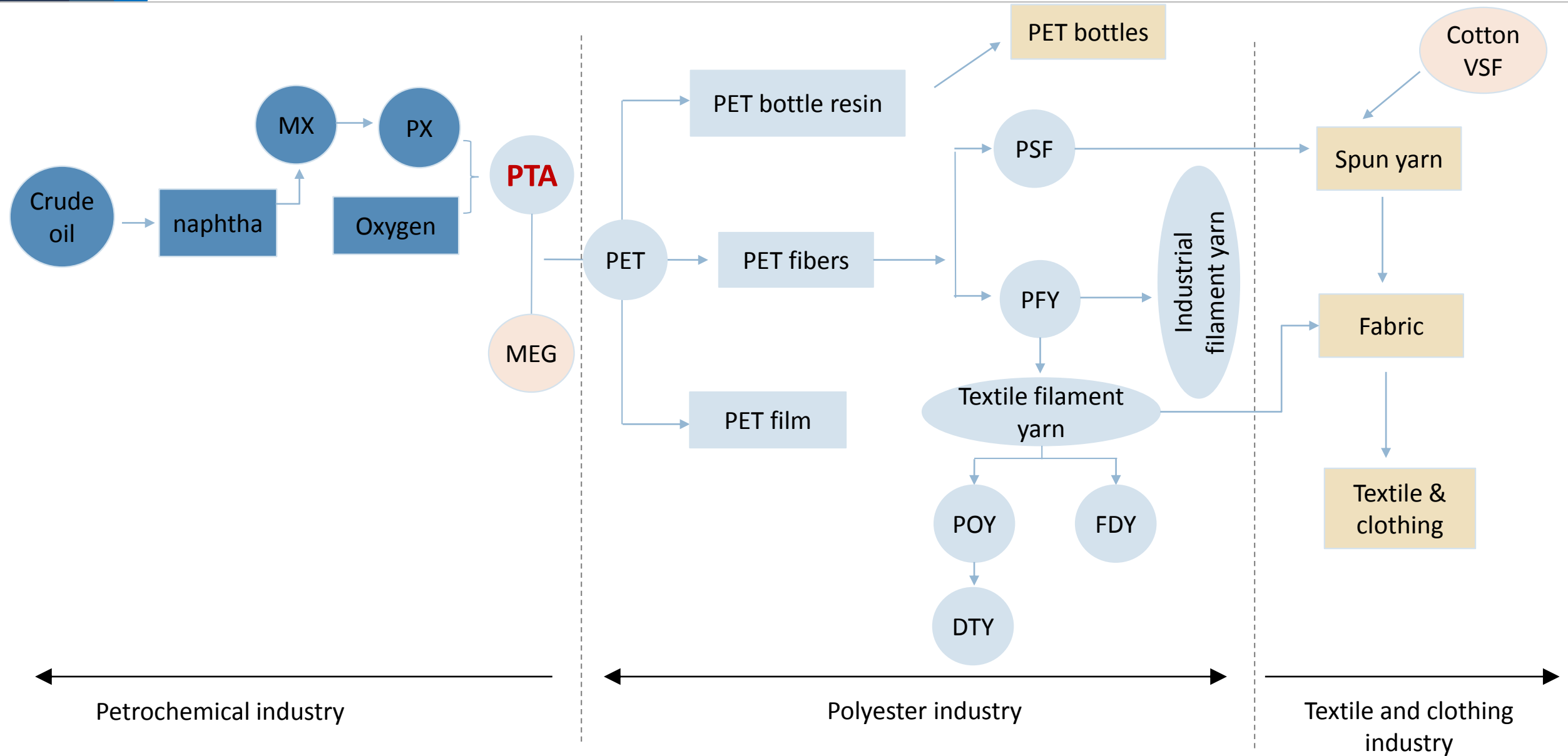
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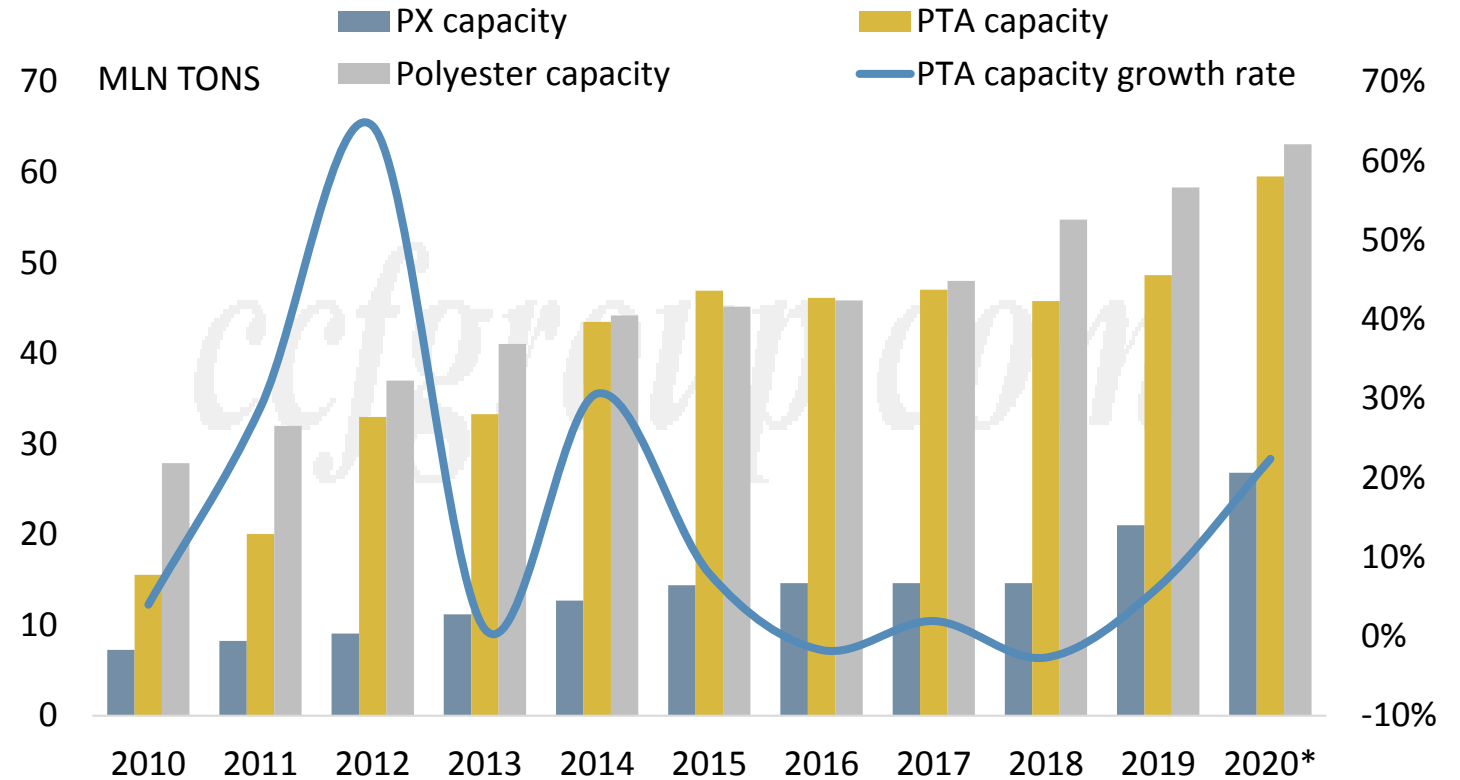
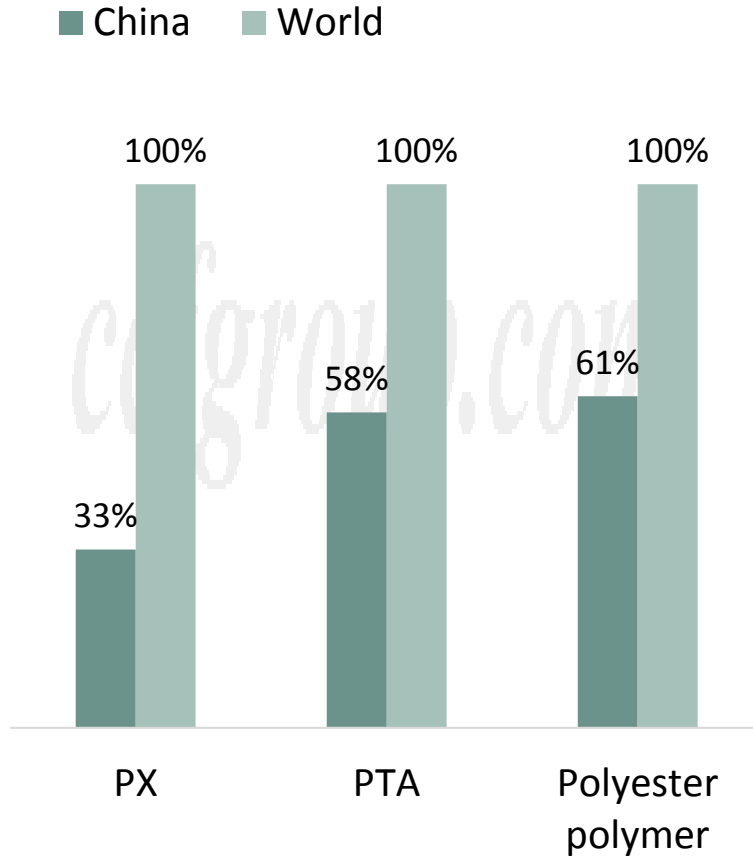
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# PTA INDUSTRY CHAIN

# PTA industry chain

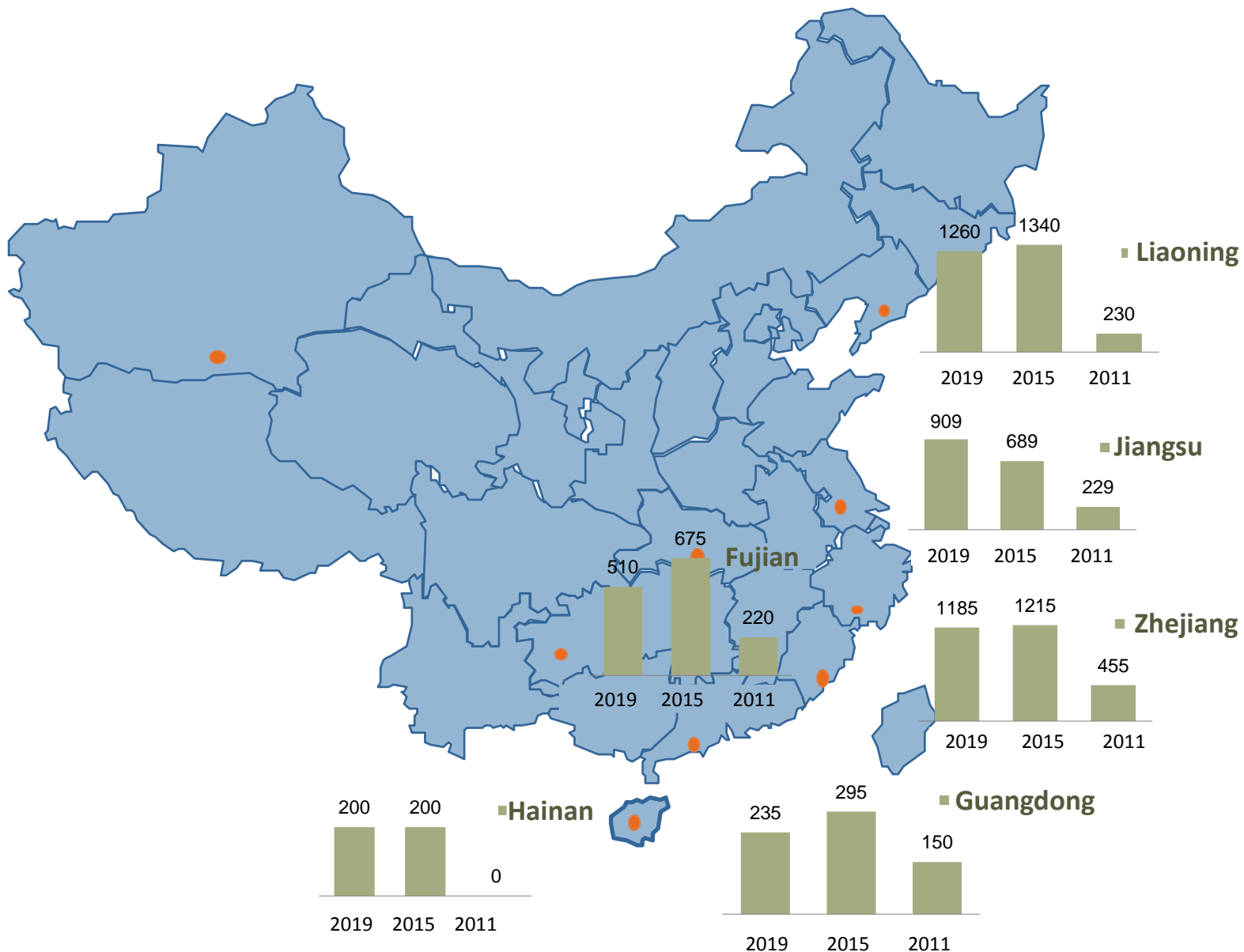


# China: World's largest producer and consumer of PTA

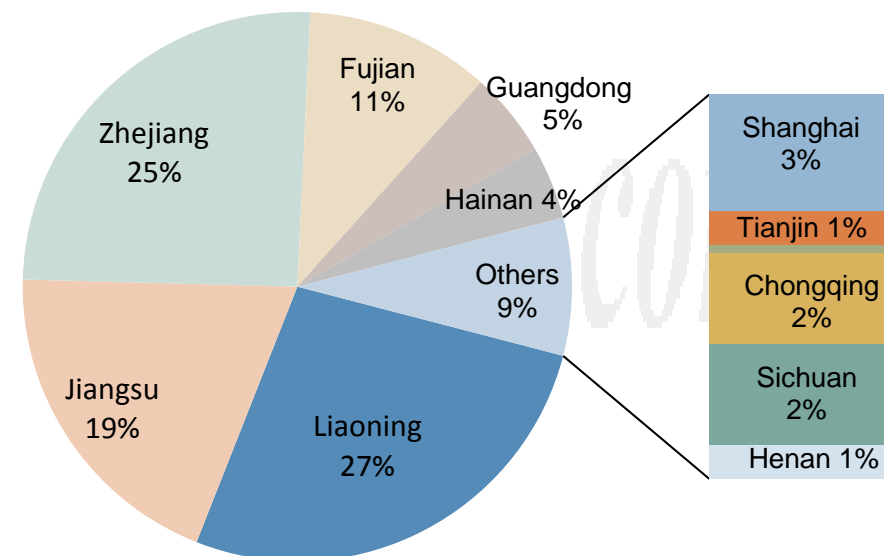


By the end of 2019, China's PTA capacity reached 48.98 million tons, the polyester capacity is 58.32 million tons. PX is highly relying on import, but the import volume may drastically reduce in the next 5 years.

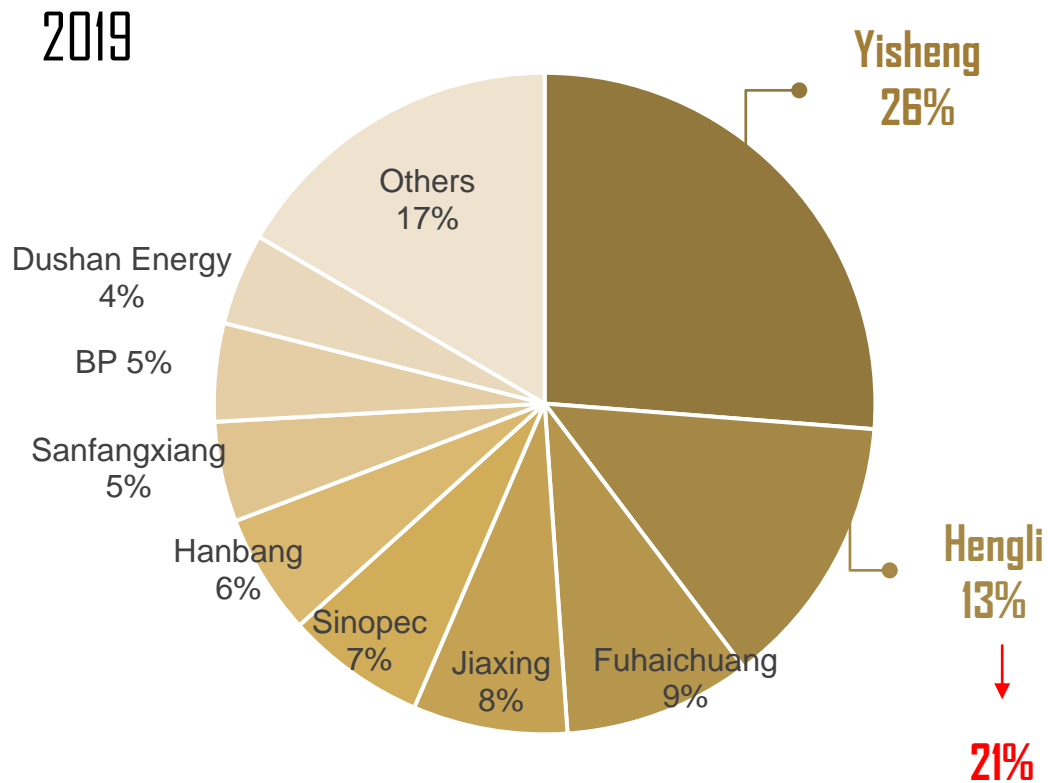
# PTA capacity distribution in China



PTA capacity in Liaoning, Zhejiang, Jiangsu provinces accounts for **71%**



# Major PTA producers in China



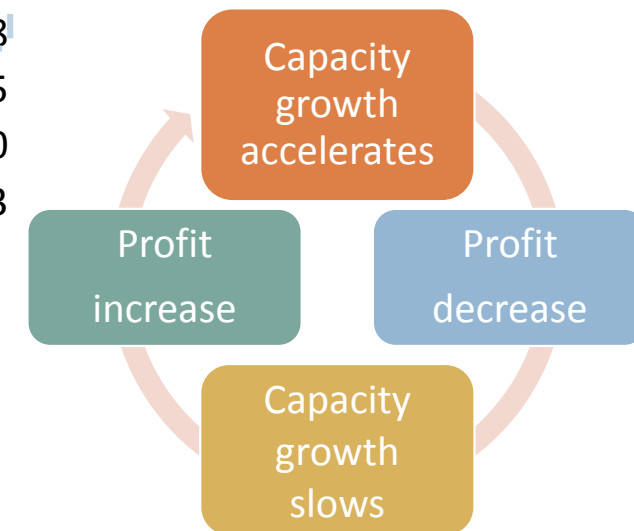
Company	Capacity (kt/year)
Yisheng Petrochemical	12850
Hengli Petrochemical	6600 → 11600
Fuhaihuang	4500
Jiaxing Petrochemical	3700
Sinopec	3355
Hanbang Petrochemical	2900
Sanfangxiang	2400
BP Zhuhai	2350
Dushan Energy	2200
Honggang Petrochemical	1500
Reignwood	1400
FCFC Ningbo	1200
Sichuan Nengtou	1000
Pengwei Petrochemical	900
OPSC	750
Liwan Polyester	700
Jialong Petrochemical	600
PetroChina Urumqi	75

China's PTA capacity mainly belongs to the private enterprises such as Yisheng and Hengli.



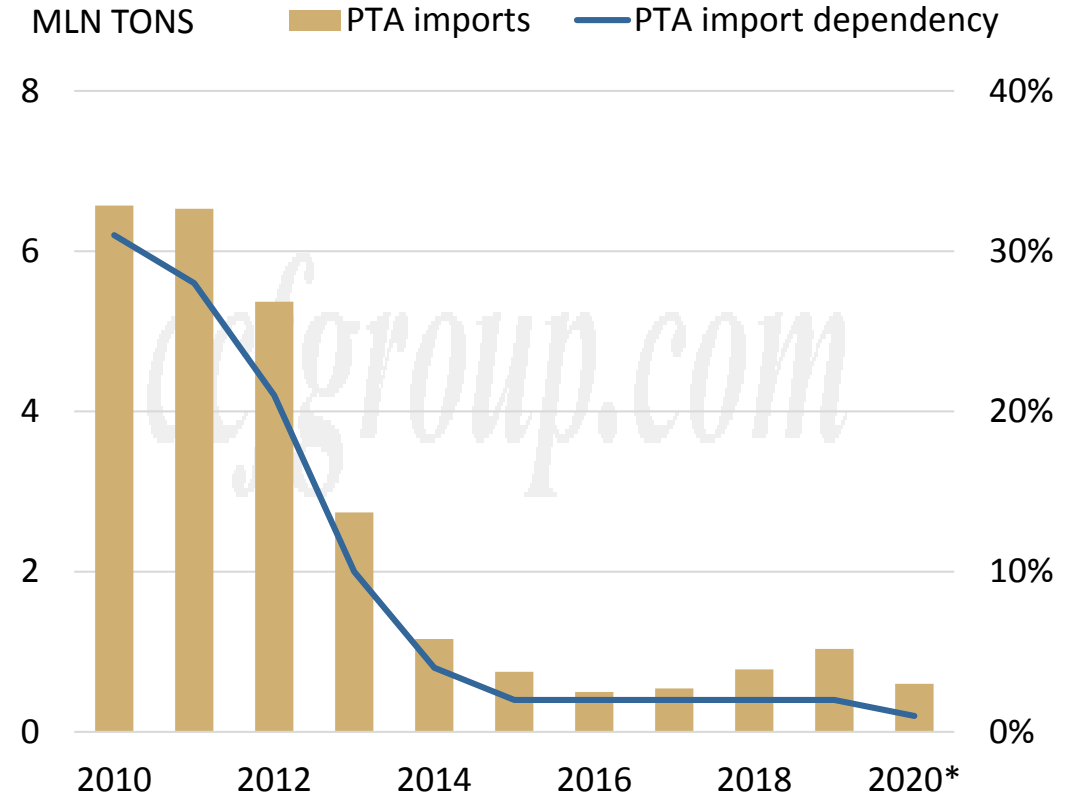
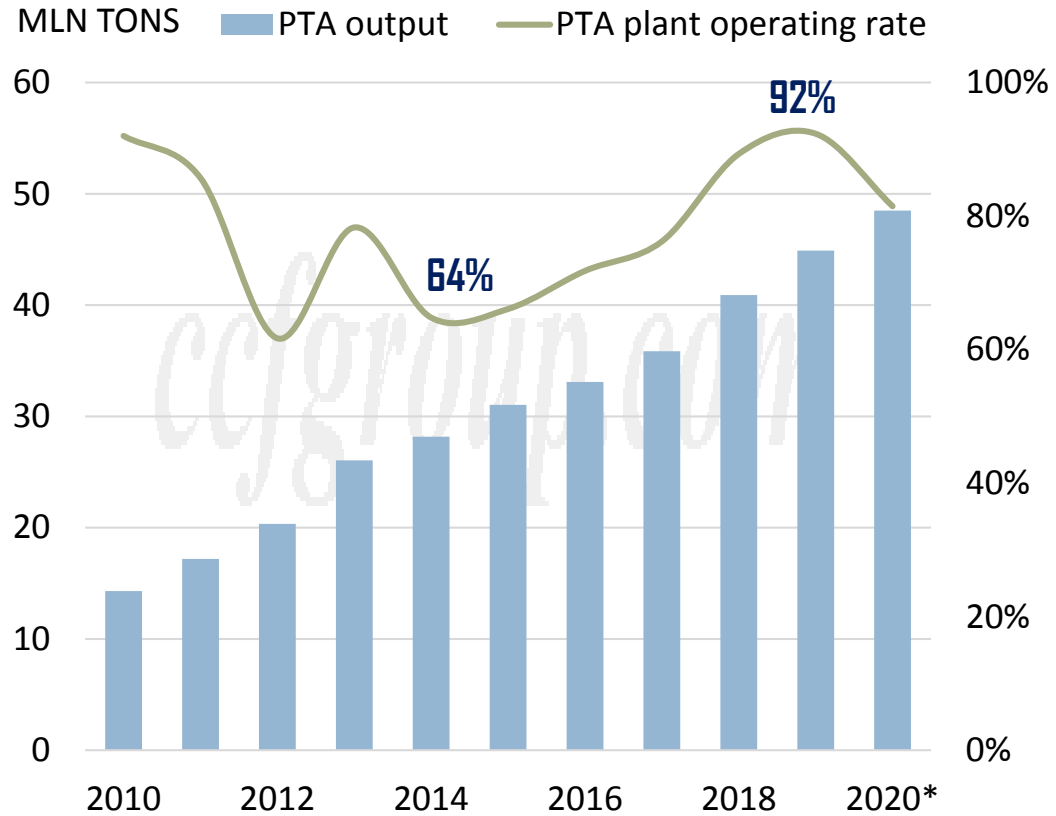
## Capacity growth and profit

	PX capacity growth	PX-NAP	PTA capacity growth	PTA-PX	Polyester capacity growth	POY cash flow
2010	0%	340	4%	2334	5%	1070
2011	14%	625	29%	1942	15%	1063
2012	10%	578	64%	736	16%	268
2013	23%	577	1%	565	11%	111
2014	14%	362	31%	483	8%	359
2015	13%	353	8%	447	2%	-6
2016	0%	396	-2%	438	2%	58
2017	2%	358	2%	620	5%	385
2018	0%	452	7%	1006	11%	490
2019	44%	432	6%	1218	3%	293



▽ The time spread between changes in processing margin and capacity growth is about 1-2 years.

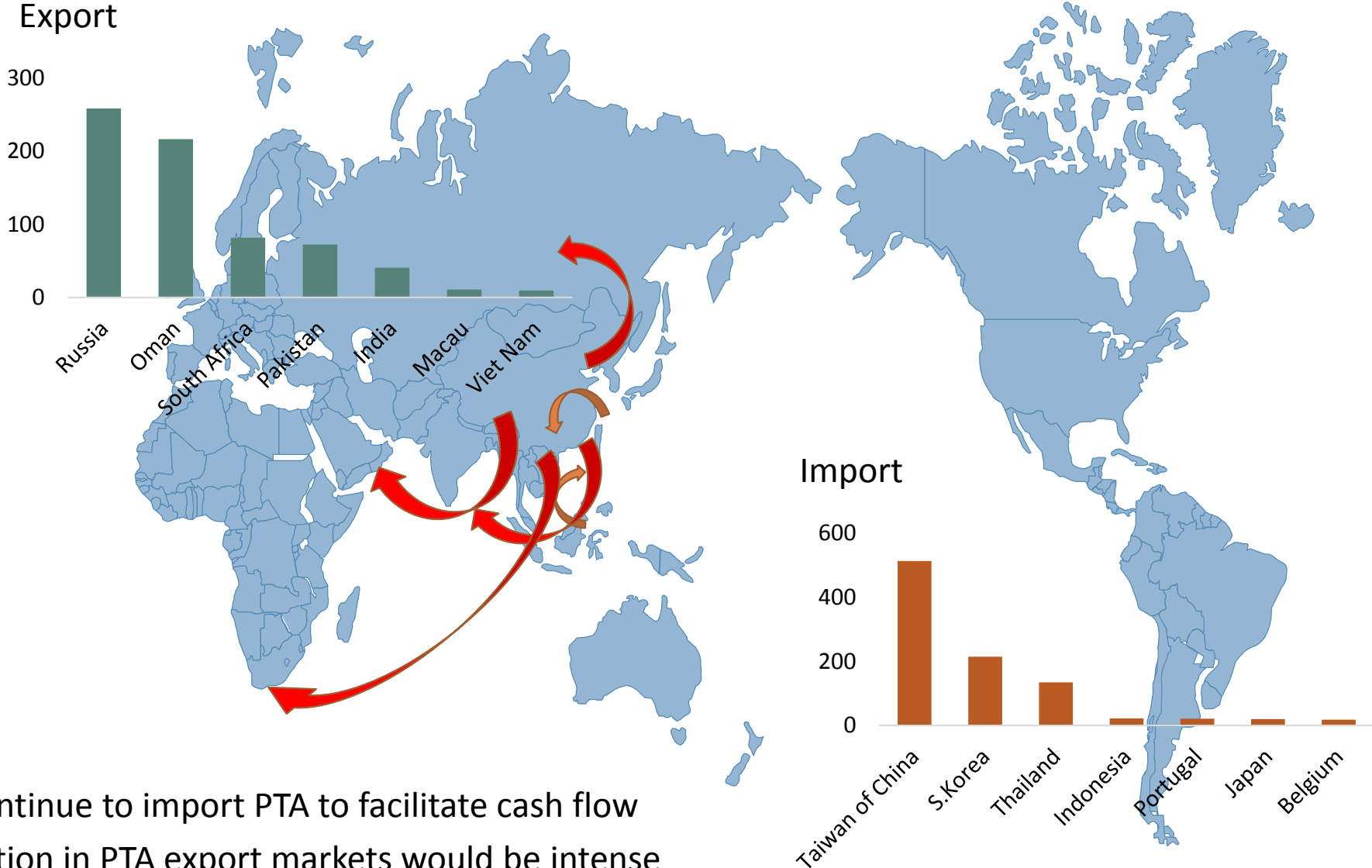
▽ PX and PTA industry is in the expansion cycle, profit margin is expected to reduce in the next 2-3 years.



▽ PTA output grows steadily in China, increased to 44.9 million tons in 2019

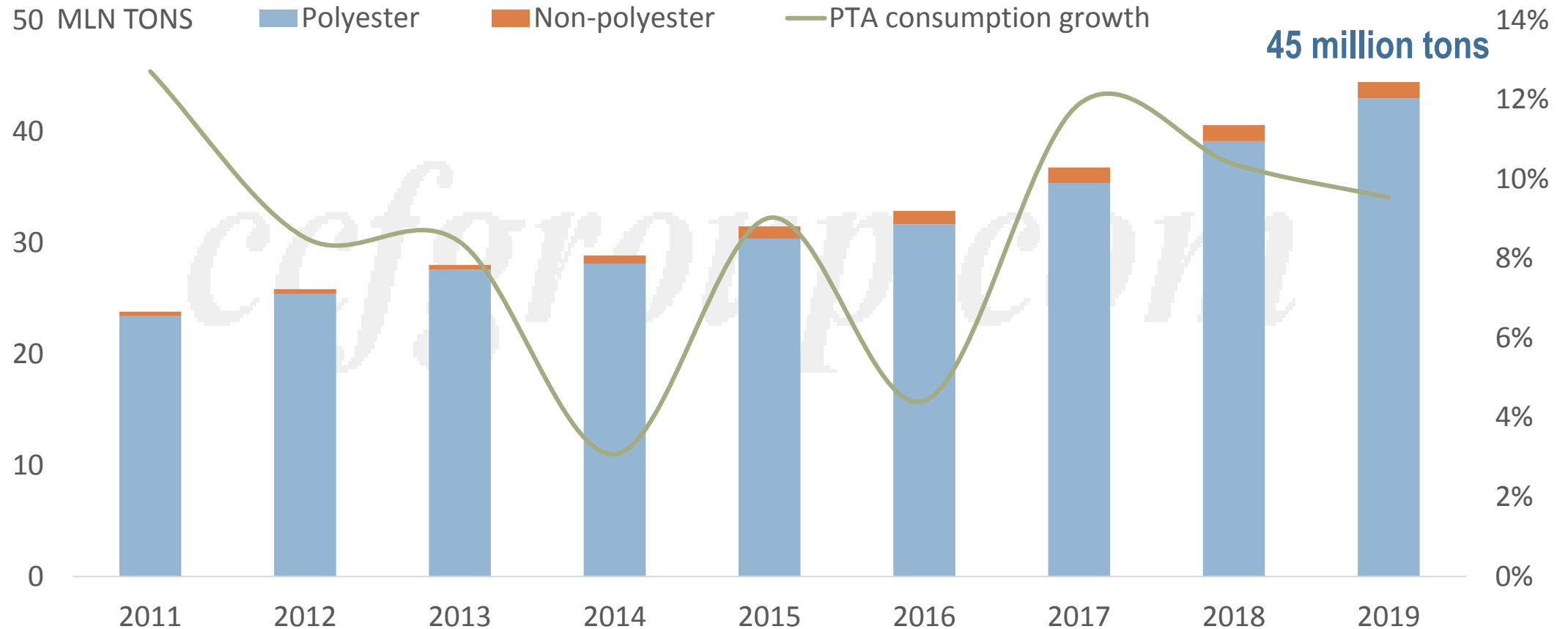
▽ The import dependence declines to 2% in 2019.

# PTA import and export



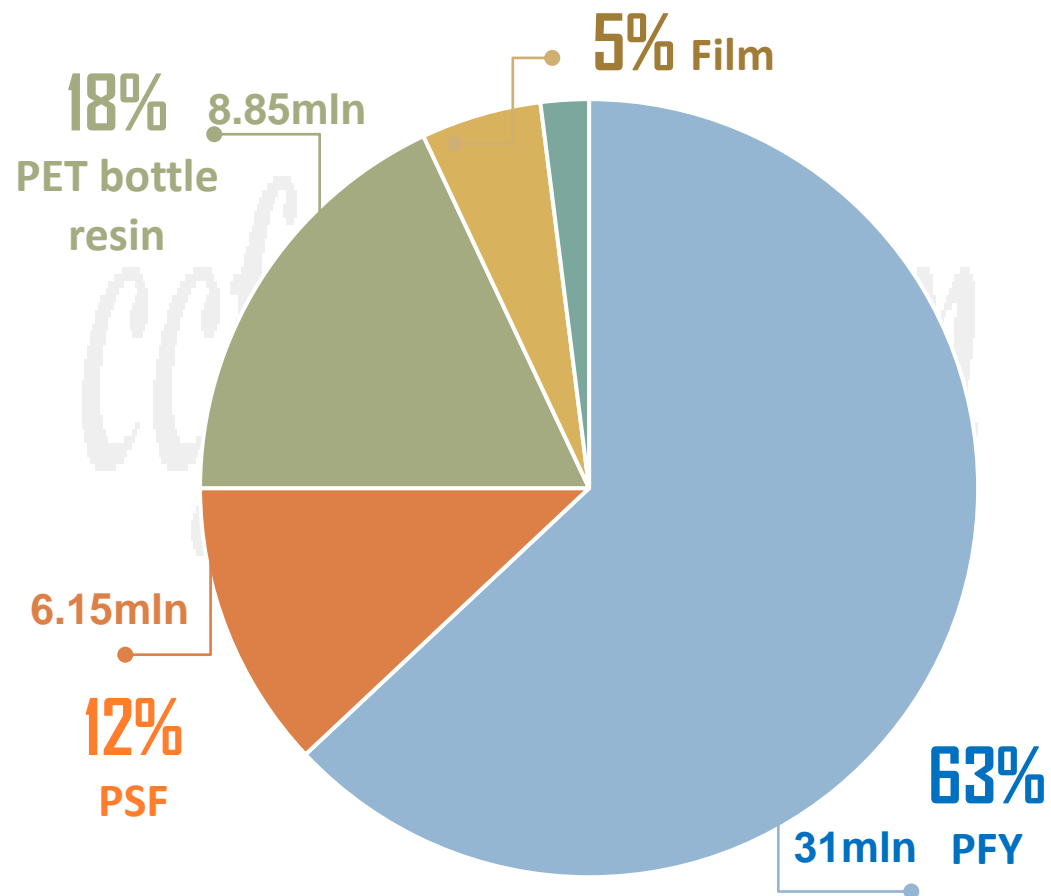
- ▽ China will continue to import PTA to facilitate cash flow
- ▽ The competition in PTA export markets would be intense

# PTA consumption in China

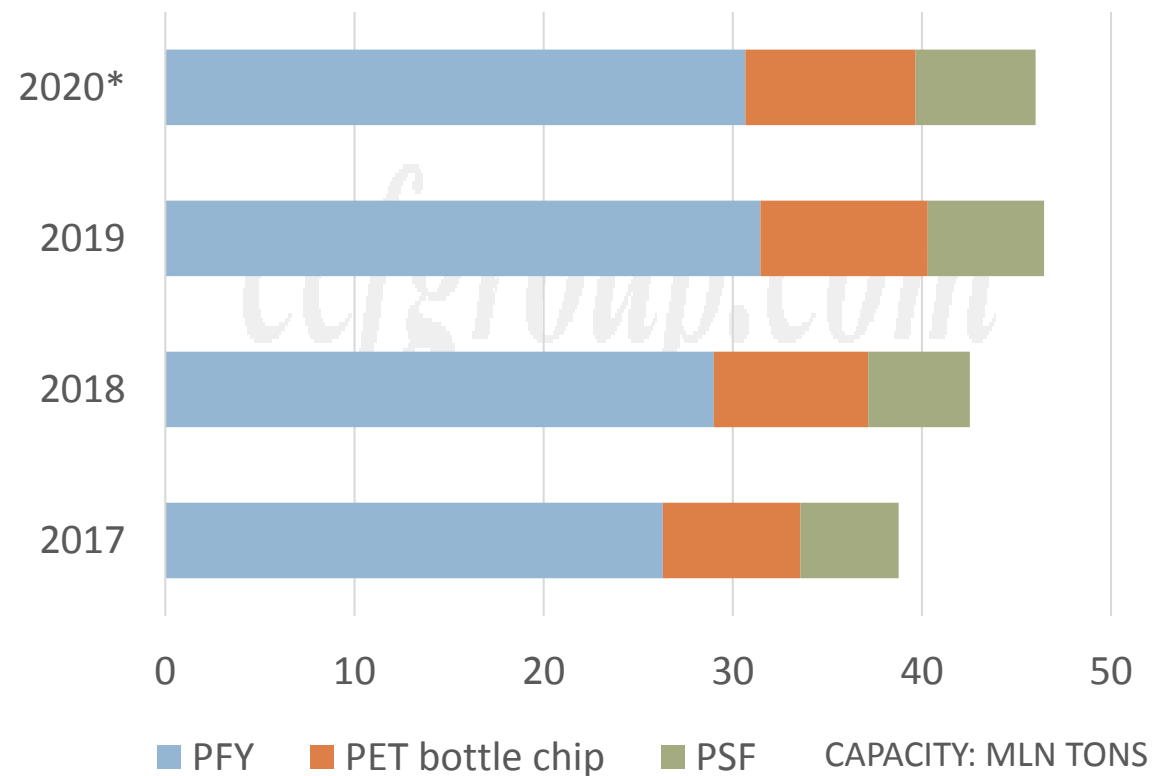


PTA consumption shows a steady upward trend in China with growth rate at the range of 5-10%. In 2019, the PTA consumption totals 45 million tons.

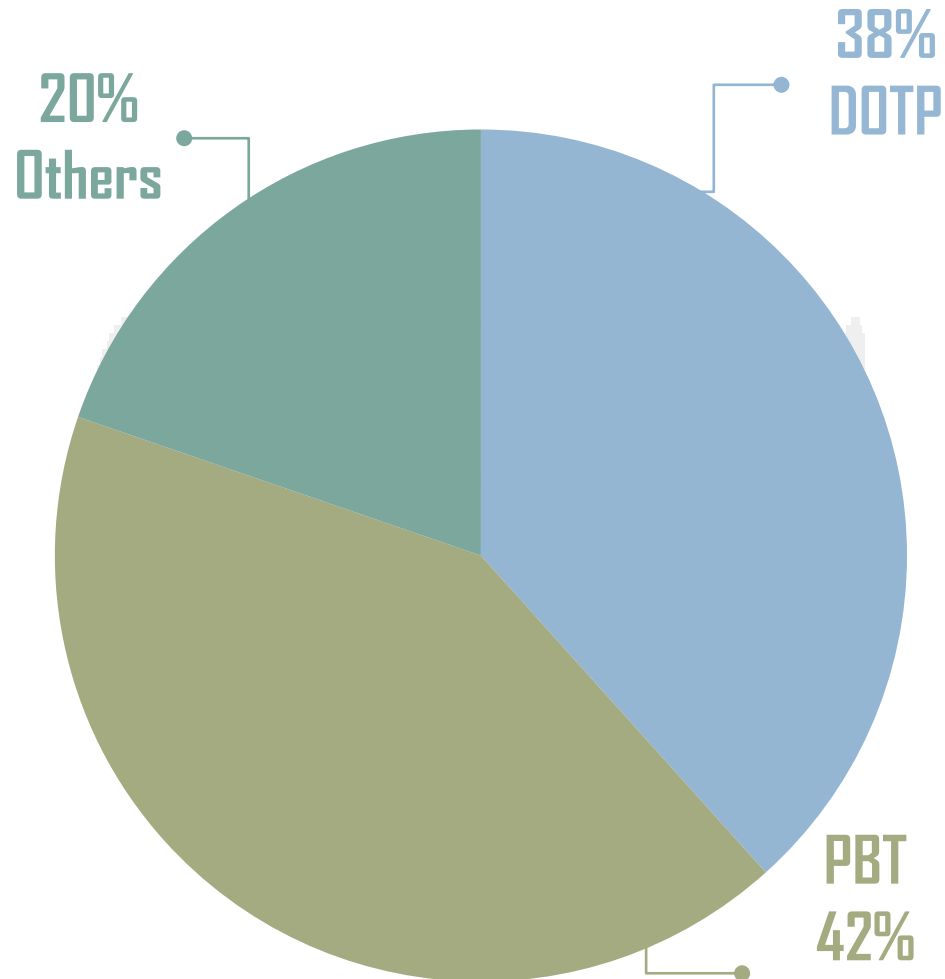
## Polyester segment



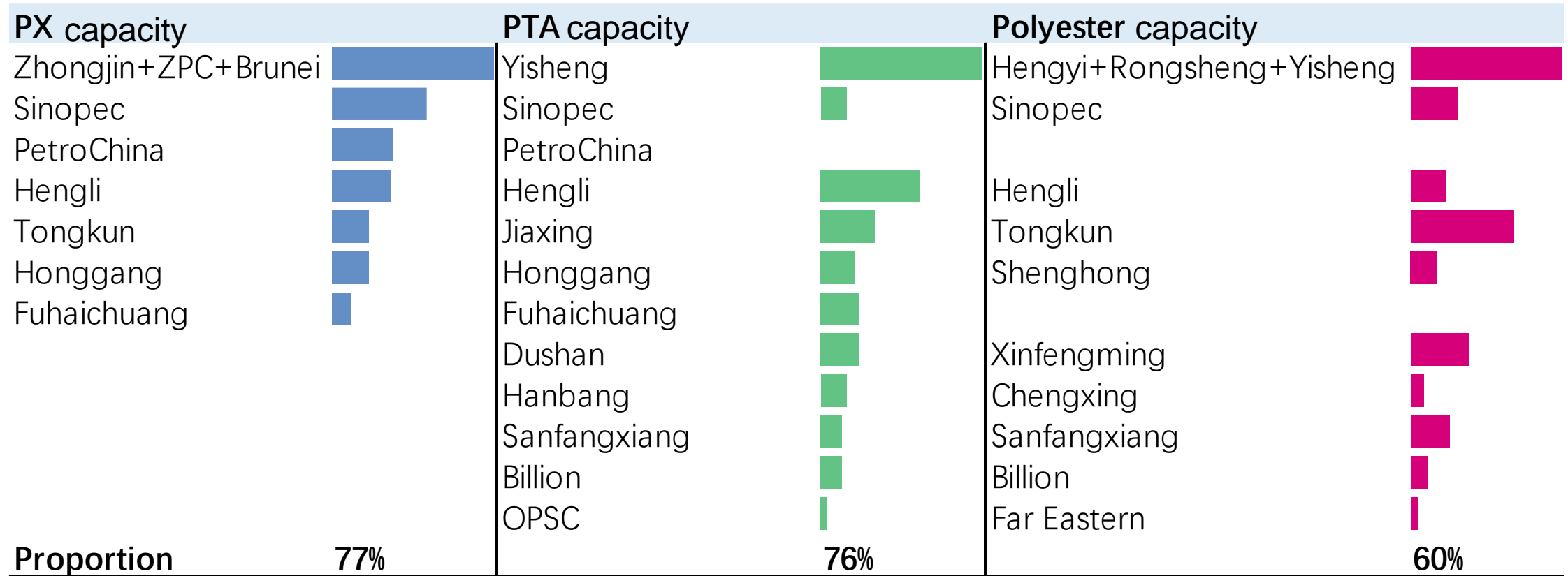
## Polyester capacity growth by segments



## Non-polyester segment



- DOTP environmentally friendly plasticizer (terephthalic acid diester), unit consumption of 0.43.
- PBT (polybutylene terephthalate), the unit consumption is 0.76. ( automobiles, mechanical equipment, precision instrument parts, electronic appliances and textiles )
- Others include PTT (polytrimethylene terephthalate) and unsaturated polyester (UPR powder coating).



- ▽ Many Chinese PTA and polyester producers are moving upstream;
- ▽ PTA industrial chain will develop from single product competition to comprehensive competition
- ▽ The discursive power to market quotations will be expanded

2

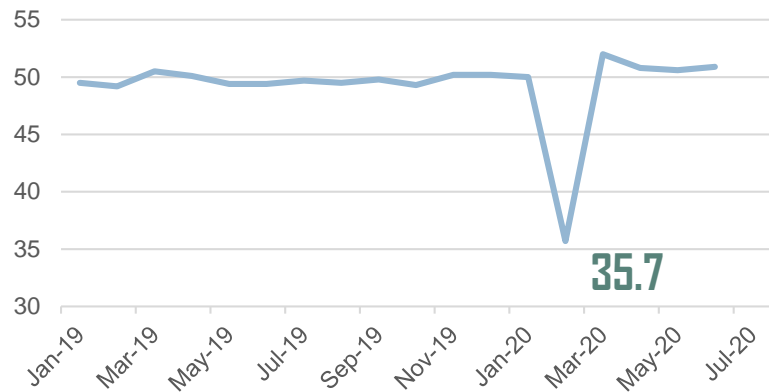
**PTA MARKET IN  
COVID-19 CRISIS**



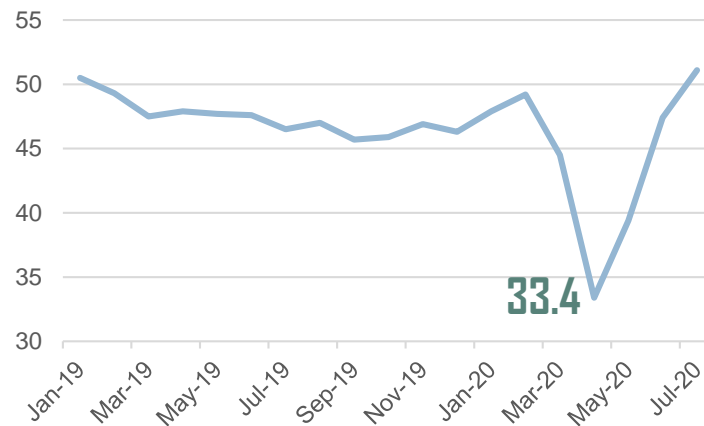
# Supply and demand shocks in coronavirus

## MANUFACTURING PMI

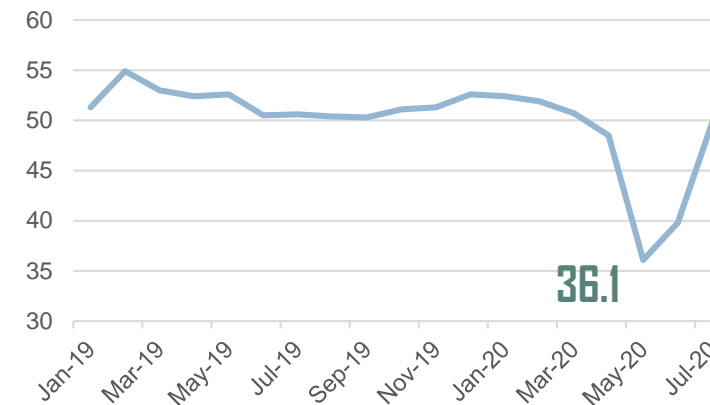
China



EU

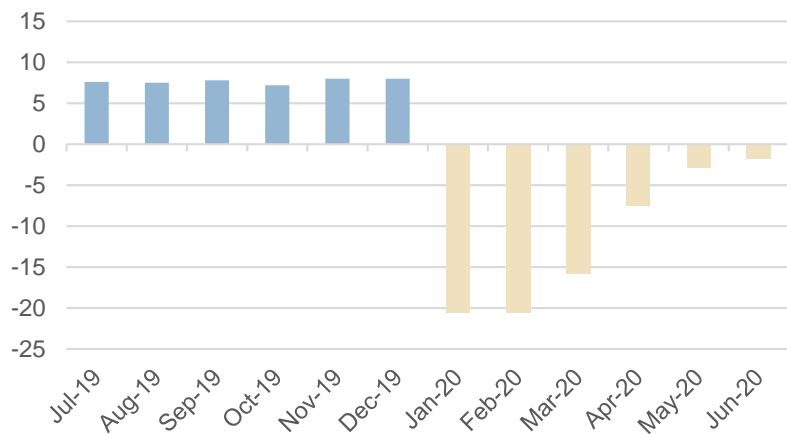


US

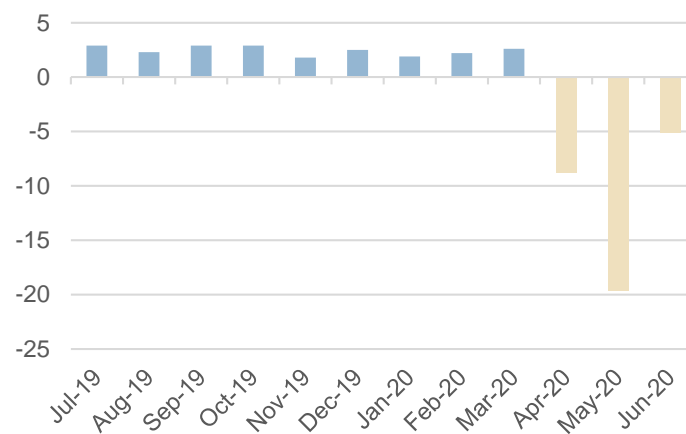


## RETAIL SALES GROWTH

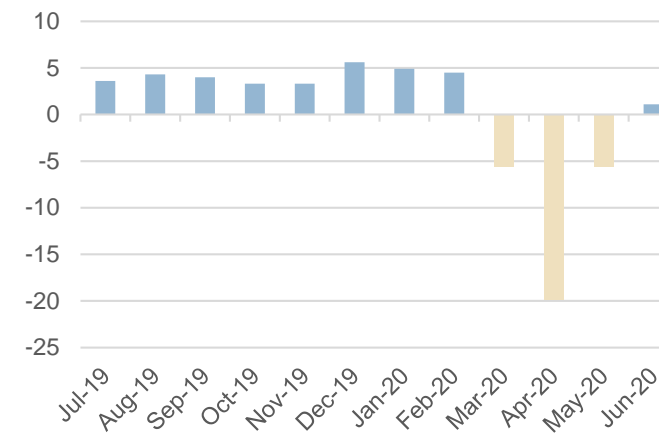
China



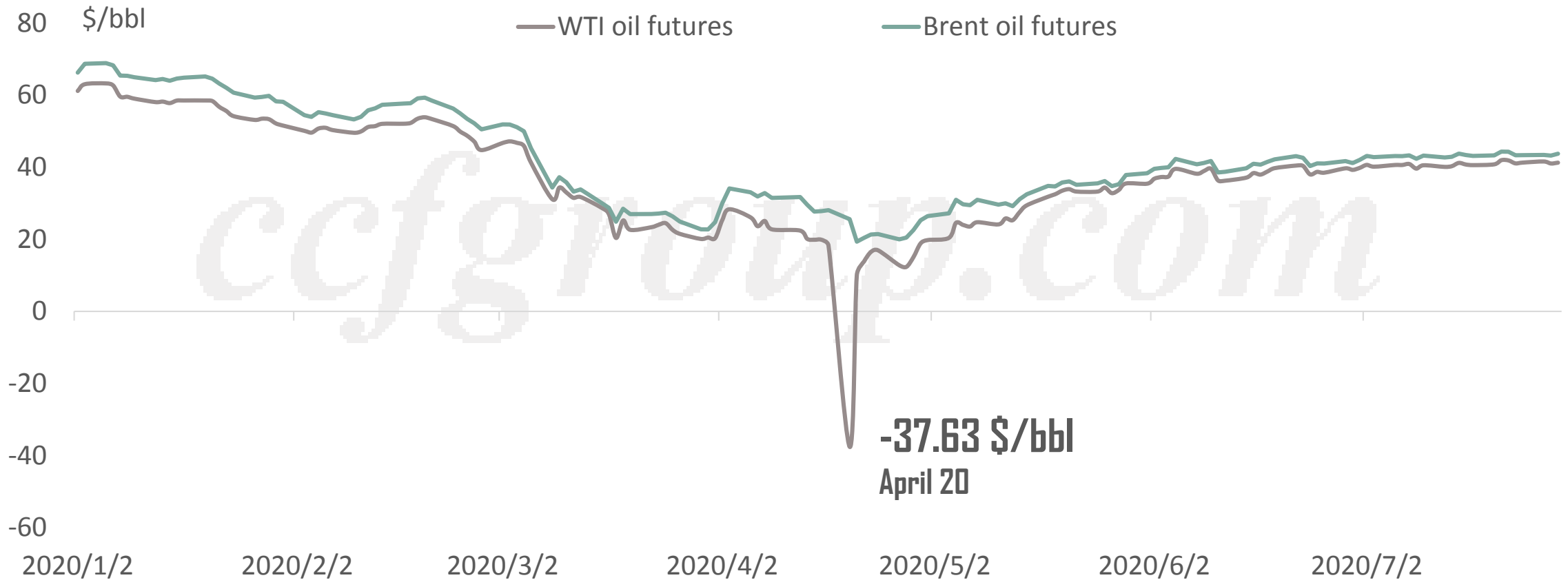
EU



US



# Slump in crude oil



During the decline of crude oil from January to April, the profit of downstream products expanded.

Crude oil rebounded from May to June, and the downstream products slowly followed up.

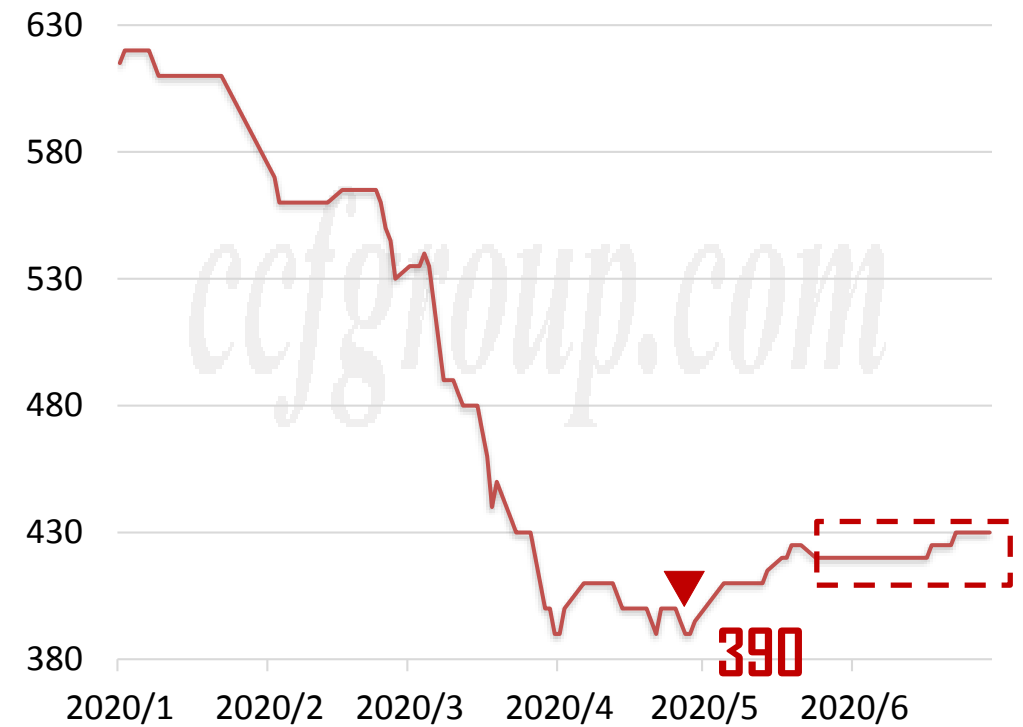
# PTA prices hit 20-year low

### China domestic PTA



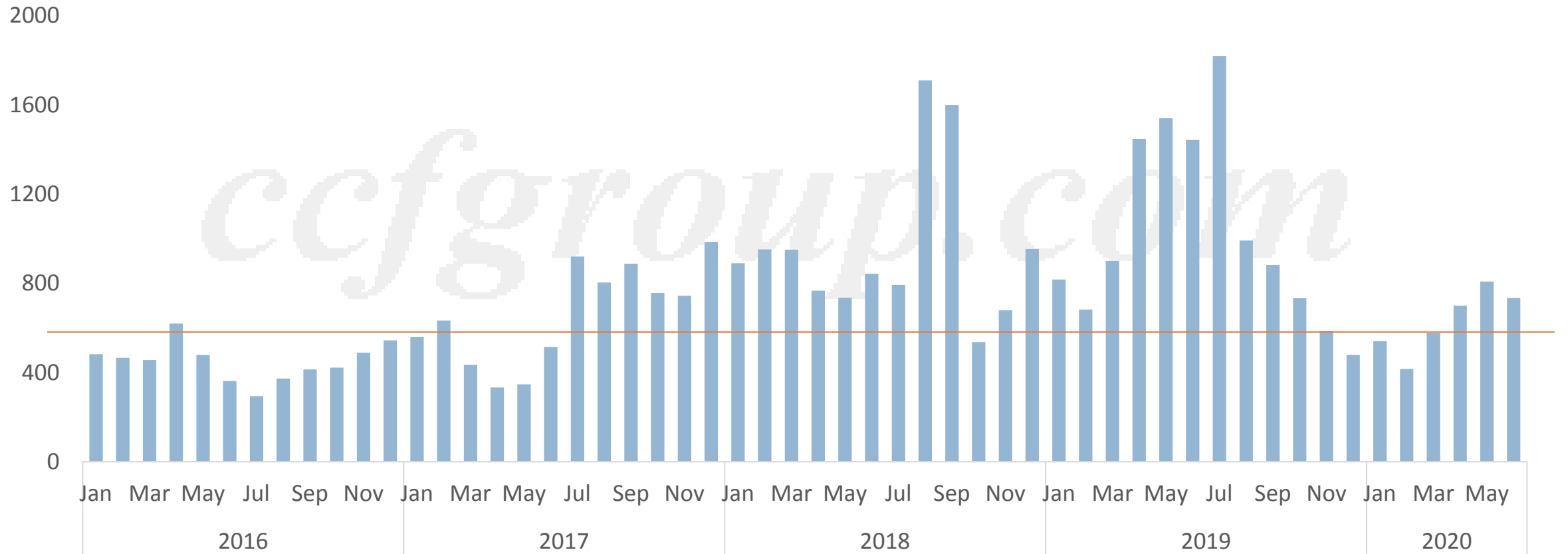
UNIT: YUAN/MT

### CFR China PTA



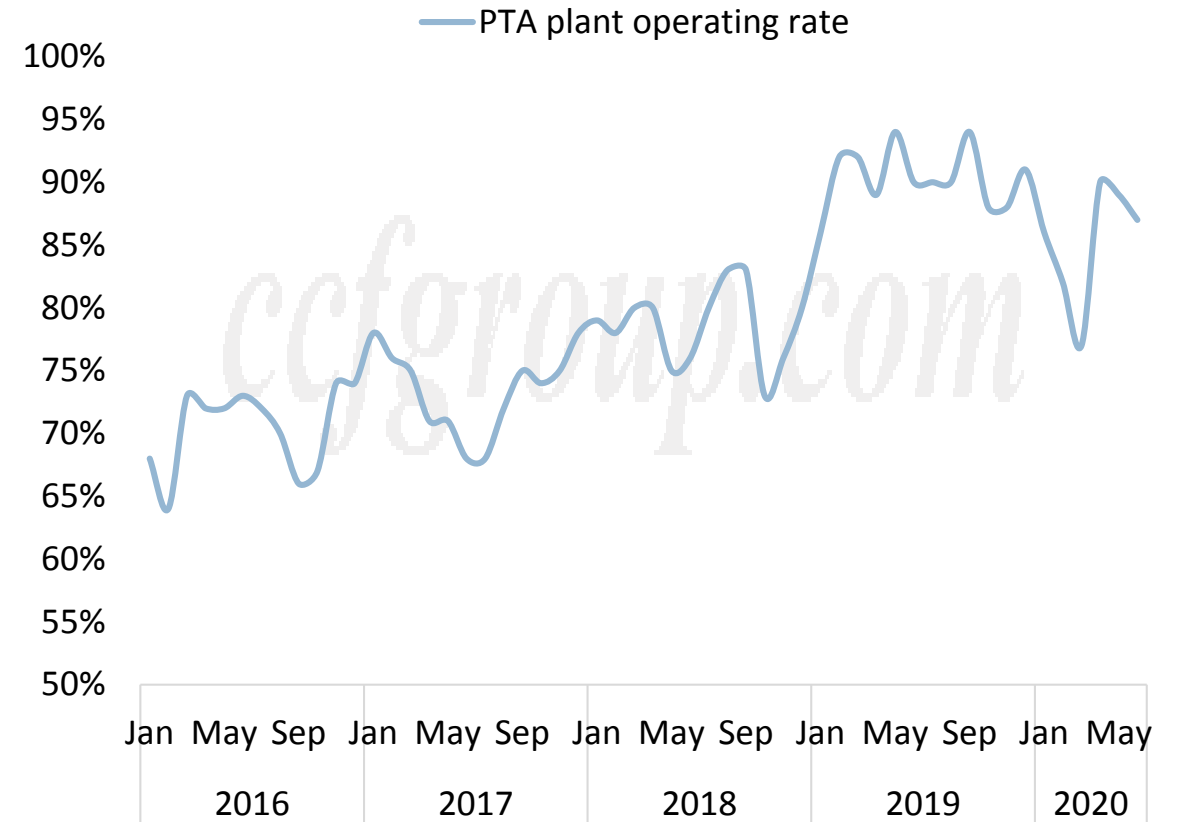
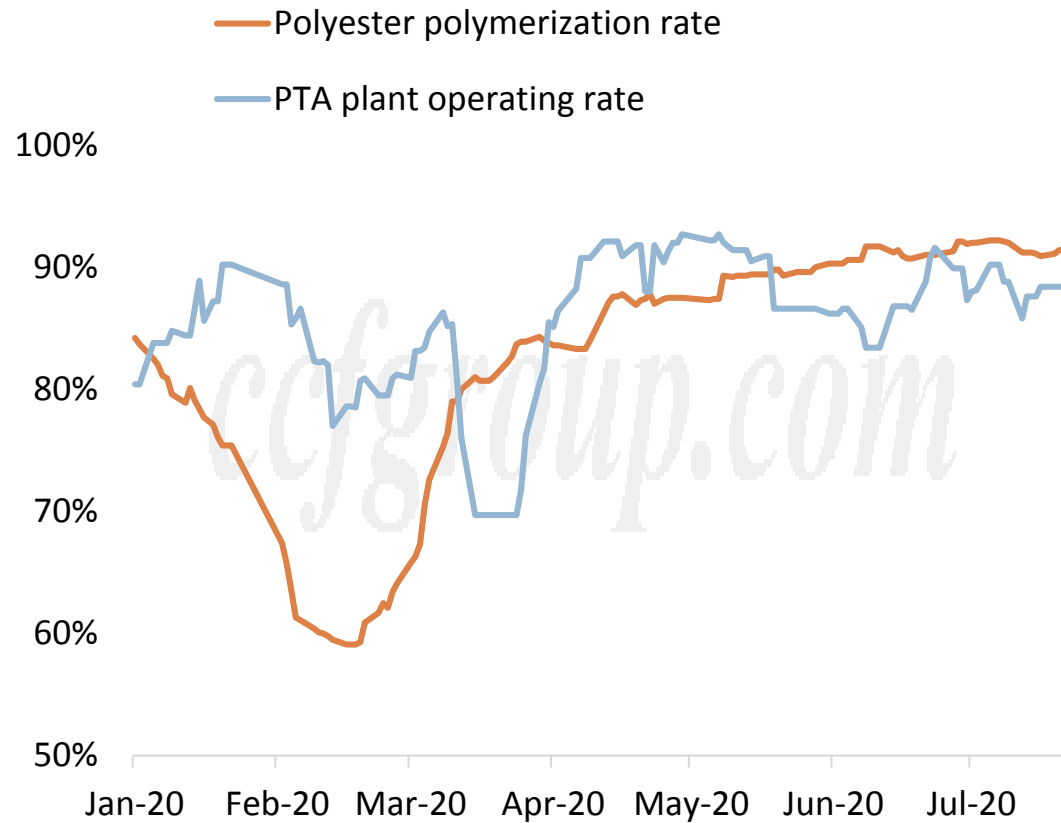
UNIT:\$/MT

## PTA processing margin



In H2 2020, the average processing margin of PTA was 630yuan/mt. In Q1, PX-PTA spread once fell to 400yuan/mt and quickly expanded to 600-1000yuan/mt in Q2.

# PTA plant operating rate keeps high



In H1 2020, the average operating rate of PTA plants was around 85%, down 5% y-o-y

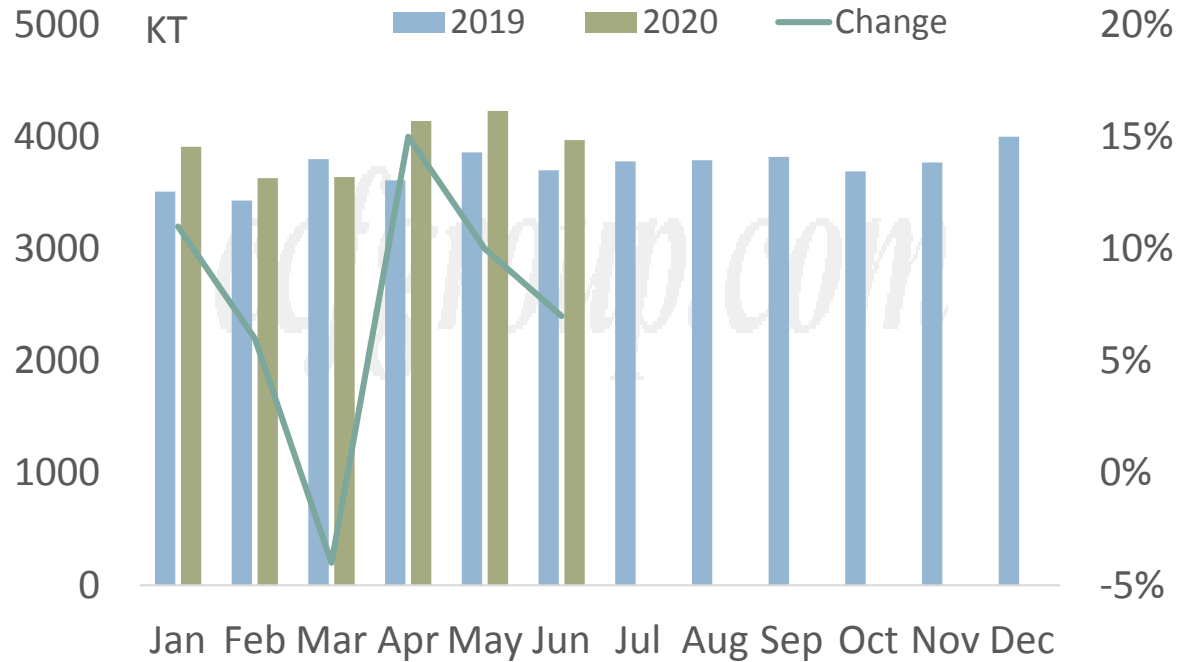
PTA plant operating rate actually has kept at relatively high level since 2018 on high processing margin.

# New PTA and polyester capacity

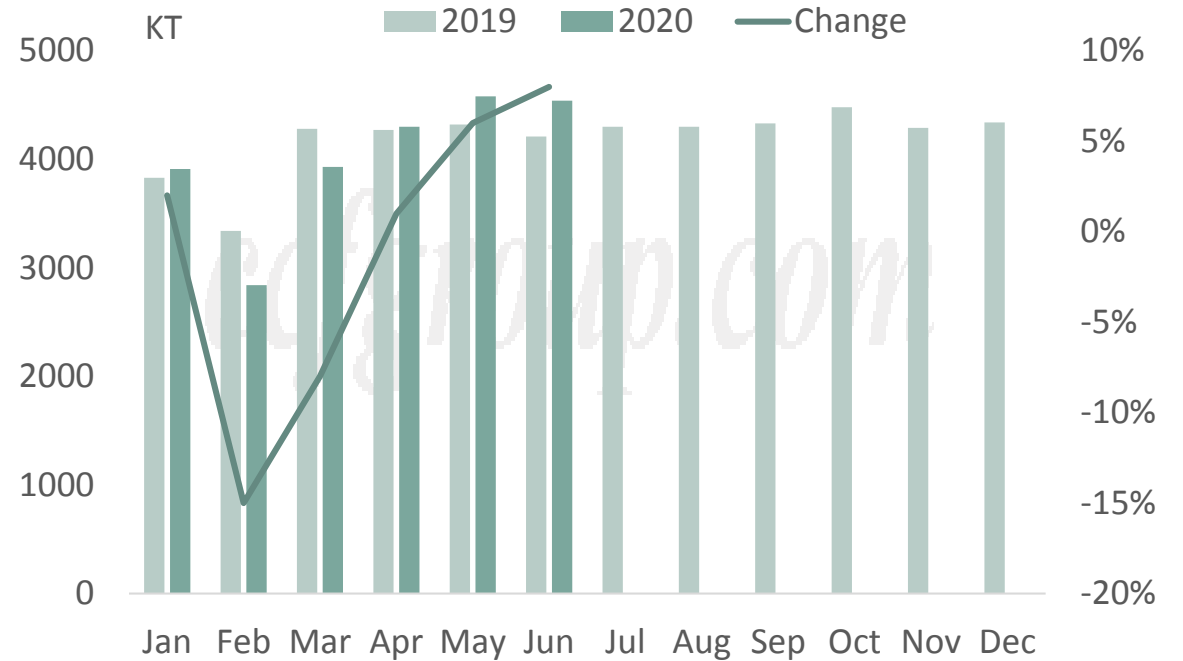
Country	Producer	Capacity (kta)	Location	Startup
China	Zhongtai Chemical	1200	Xinjiang	Jan-20
China	Hengli Petrochemical IV	2500	Liaoning	Jan-20
China	Hengli Petrochemical V	1250 (1250)	Liaoning	Jun-20 (Jul-20)
	<b>Total</b>	<b>6200</b>		
China	<b>Polyester new capacity</b>	<b>2780</b>		<b>By Jun 2020</b>

China's PTA capacity expanded to 54.83 million tons/year, with a growth rate of 12.7% by July 2020. About 2.78 million tons polyester units were put into operation in H1 2020.

## PTA output



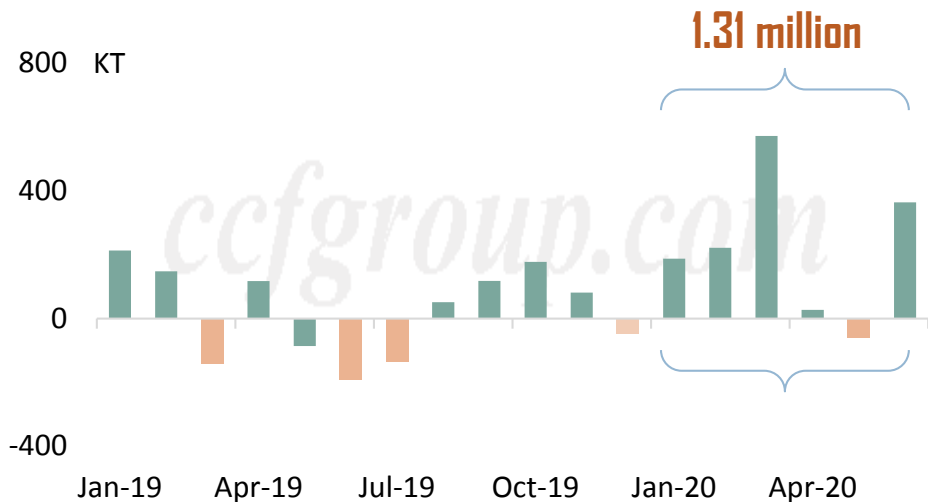
## Polyester output



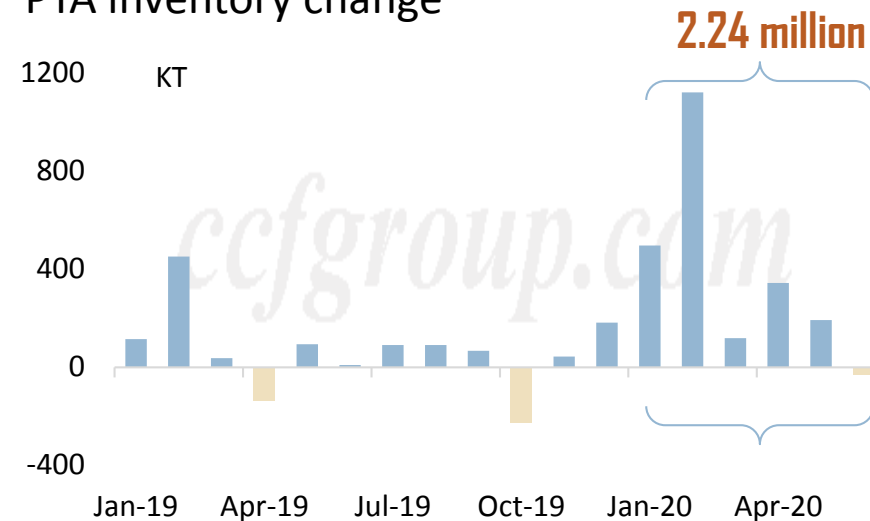
In H1 2020, PTA output increased by 7% year-on-year to 23.52 million tons

Polyester output decreased by 0.5% year-on-year to 24.1 million tons.

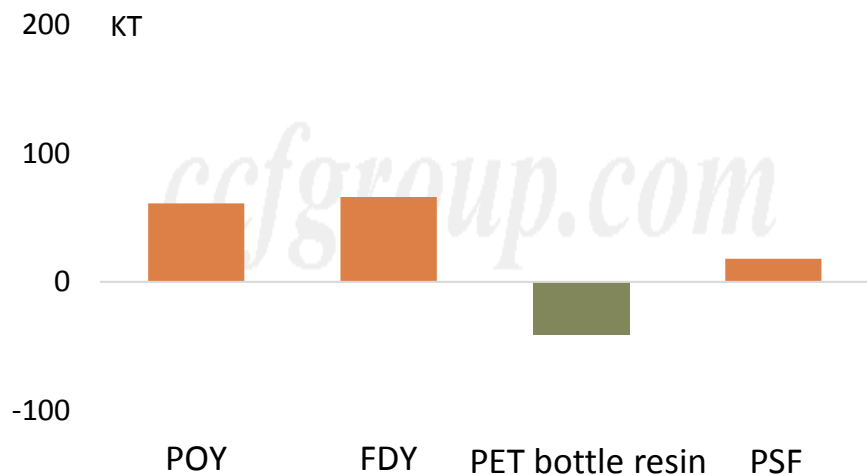
### PX inventory change



### PTA inventory change



### Polyester plant inventory change

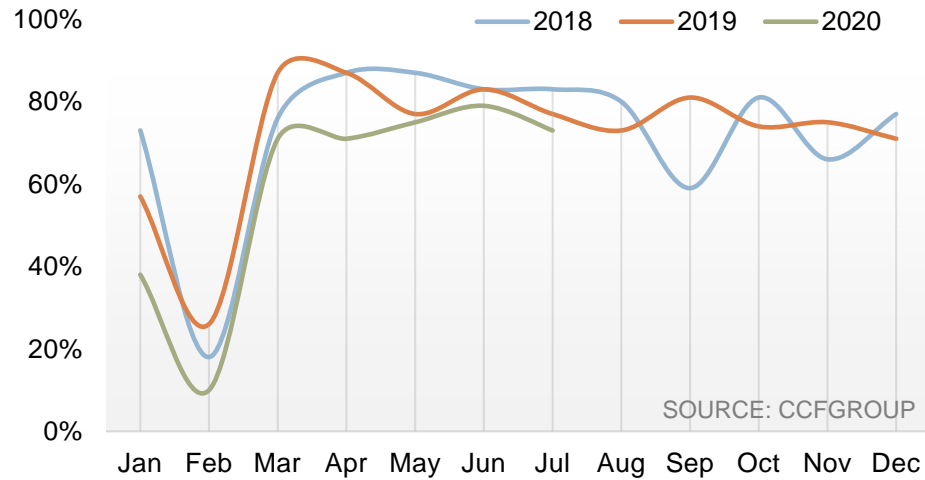


PX and PTA inventory greatly increased in H1 2020.

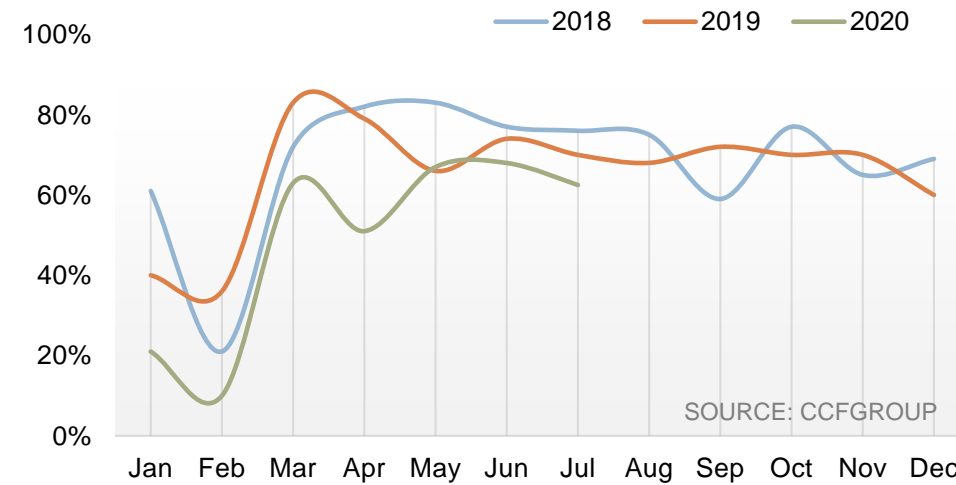
Relying on-low price and loose monetary, the polyester product stock has transferred to downstream mills



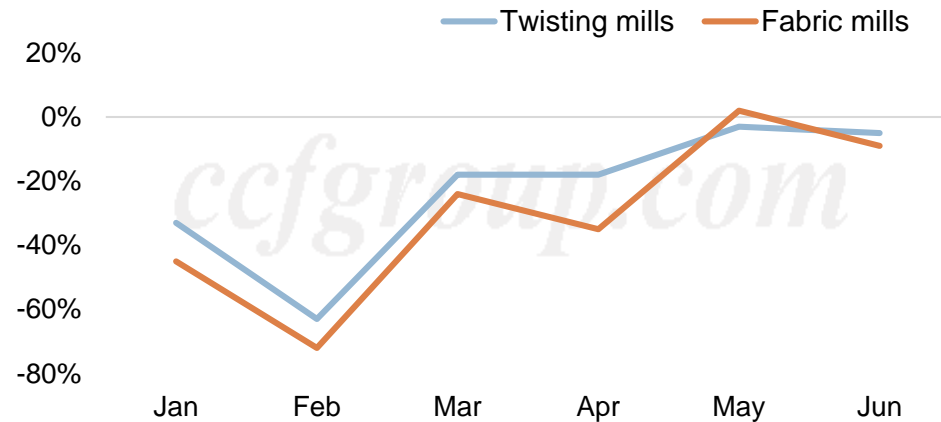
### Operation of twisting mills



### Operation of fabric mills

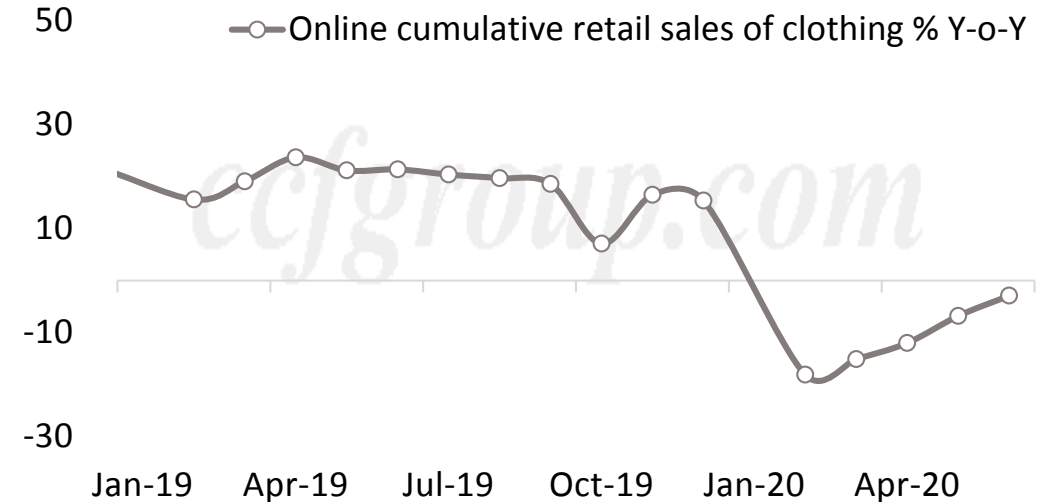
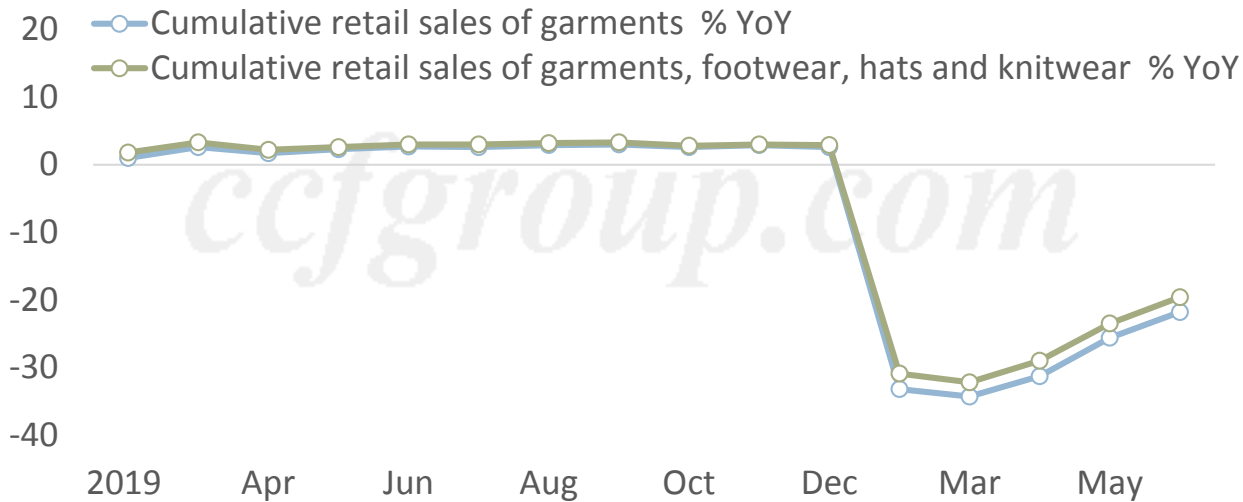


### Operating rate % Y-o-Y

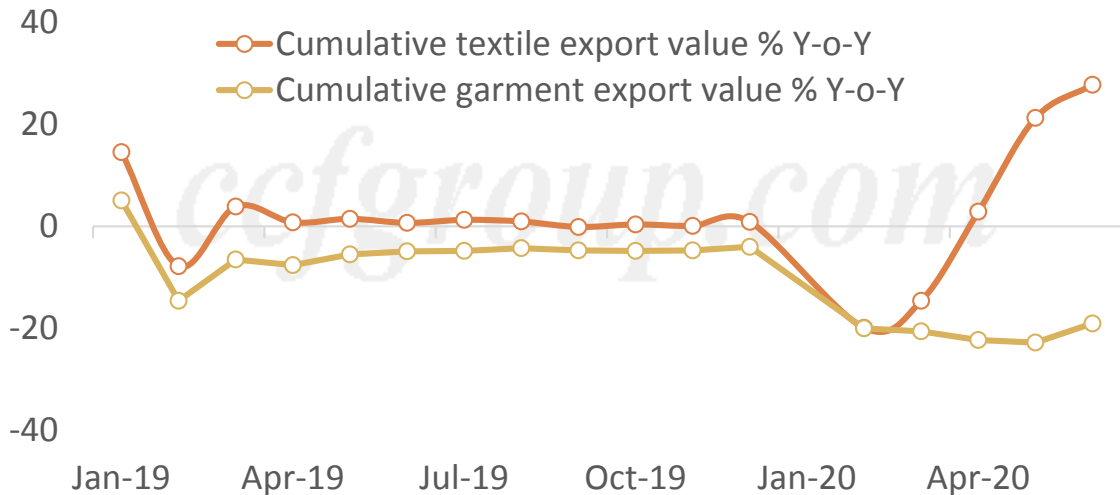


In H1 2020, the average operating rate of texturing and fabric mills fell by 16% and 12% year-on-year, respectively.

## Domestic retail sales



## Export market



The total retail sales of garments, footwear, hats and knitwear in H1, 2020 declined by 19.6% Y-o-Y. The online retail sales of clothing slipped by 2.9% .

The textile export value increased by 27.8% y-o-y, and garment export value fell by 19.4%.

3

# MARKET OUTLOOK

## Overseas market



30% orders before the autumn and end-2020 shopping season cancelled



To sell some spring stocks in autumn.

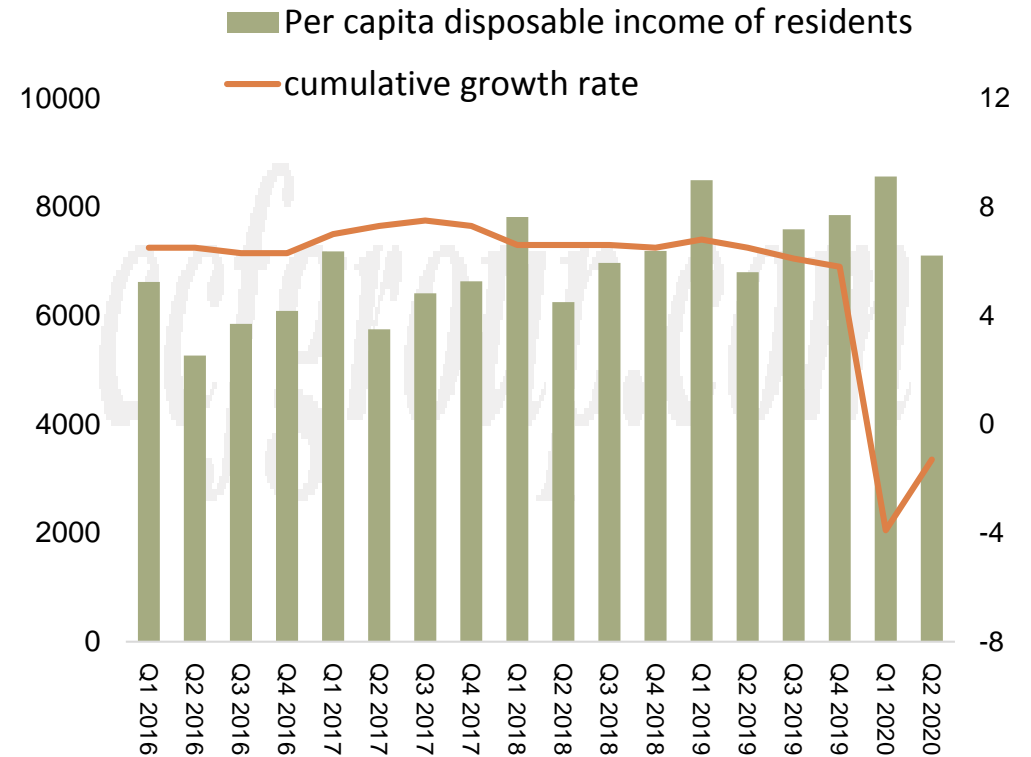


Two-thirds of autumn orders cancelled



To sell some stock of basic items in autumn.

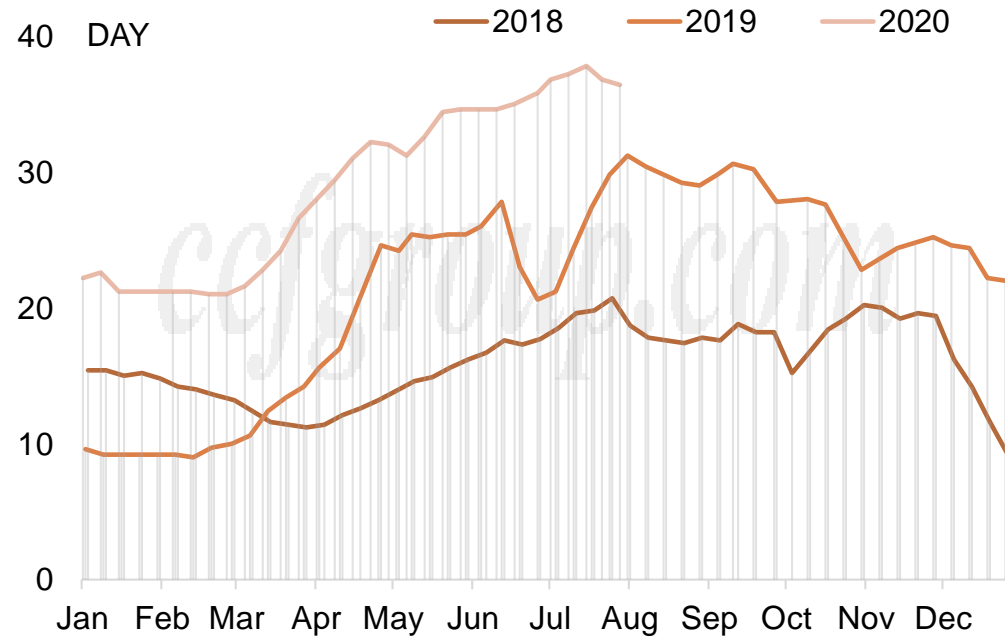
## Domestic market



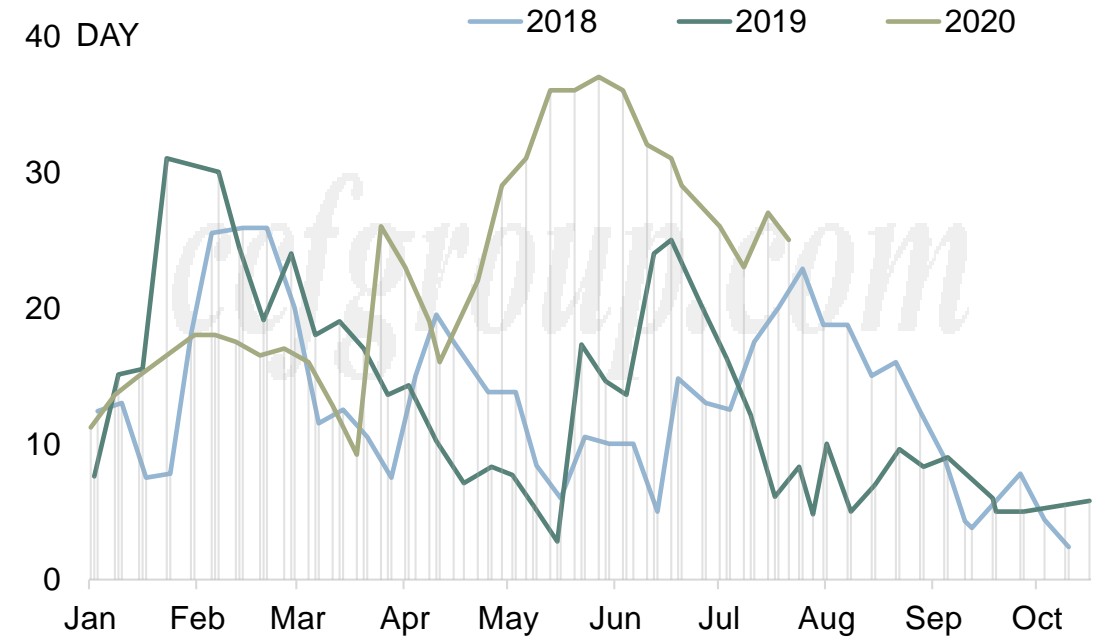
In Q3, apparel export may slightly improve from Q2, but will be difficult to recover from the same period of last year.

Decline in disposable income in China may have a great impact on apparel consumption.

## FABRIC STOCK OF FABRIC MILLS



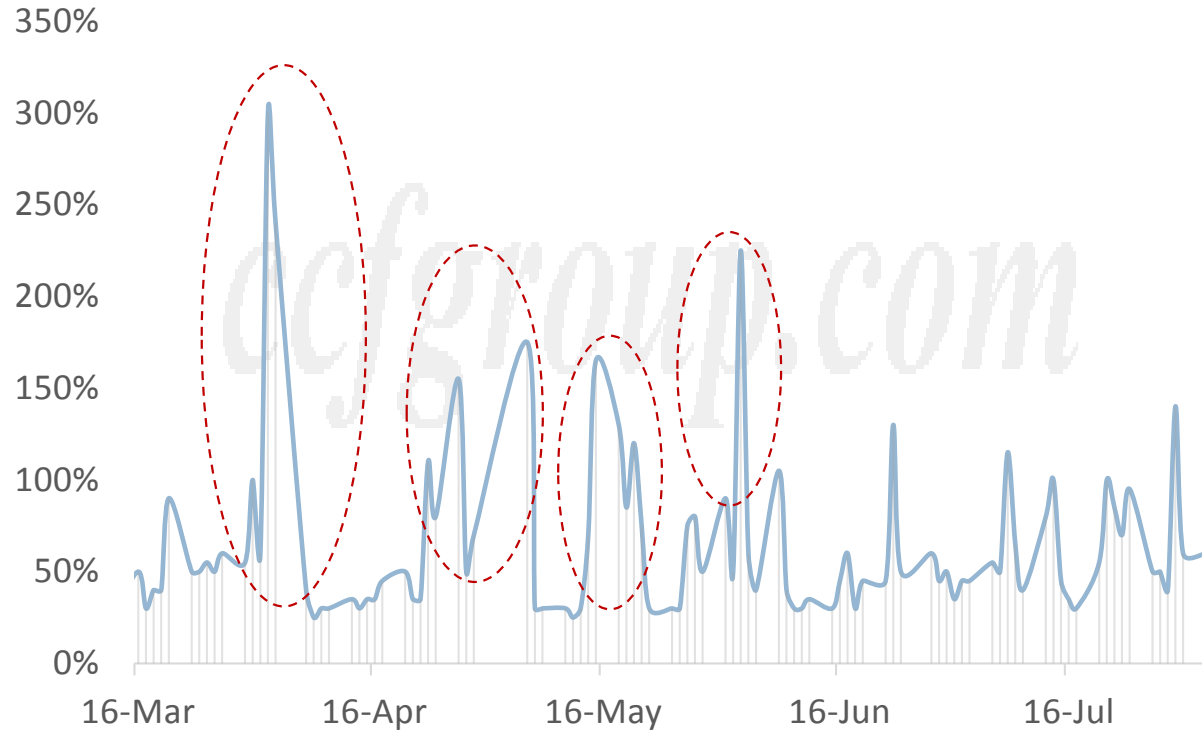
## FEEDSTOCK OF FABRIC MILLS



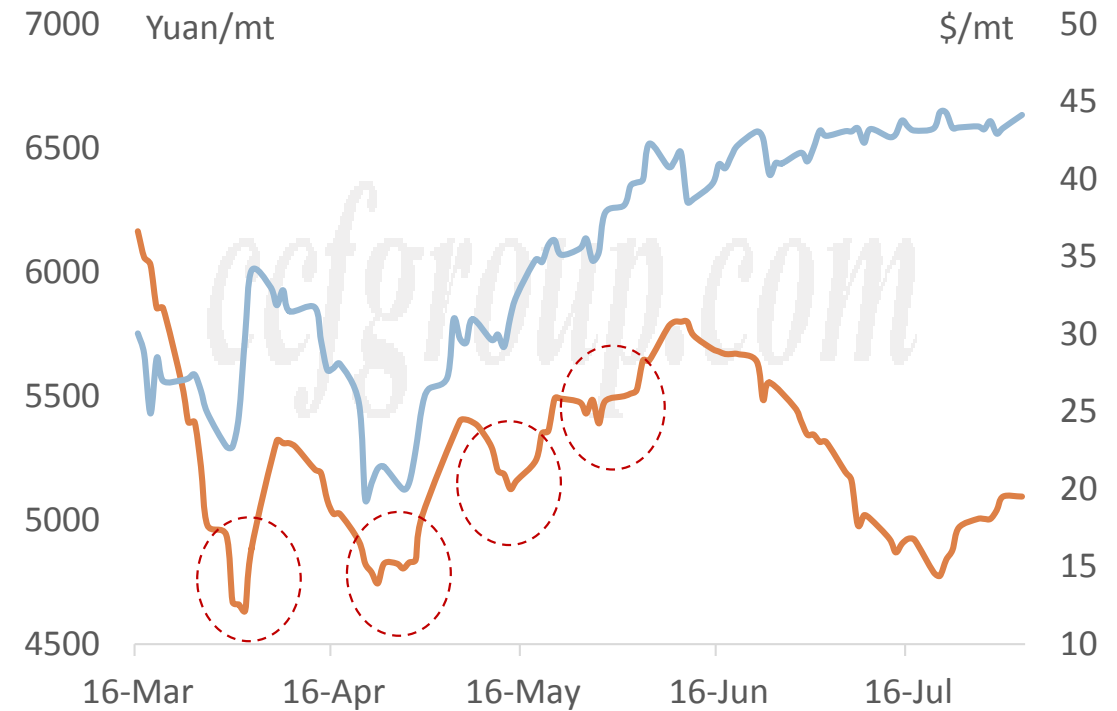
By the end of July, the fabric stock of fabric mills piled up to 37 days

But the feedstock inventory of fabric mills dropped evidently to around 25 days.

## PFY sales ratio



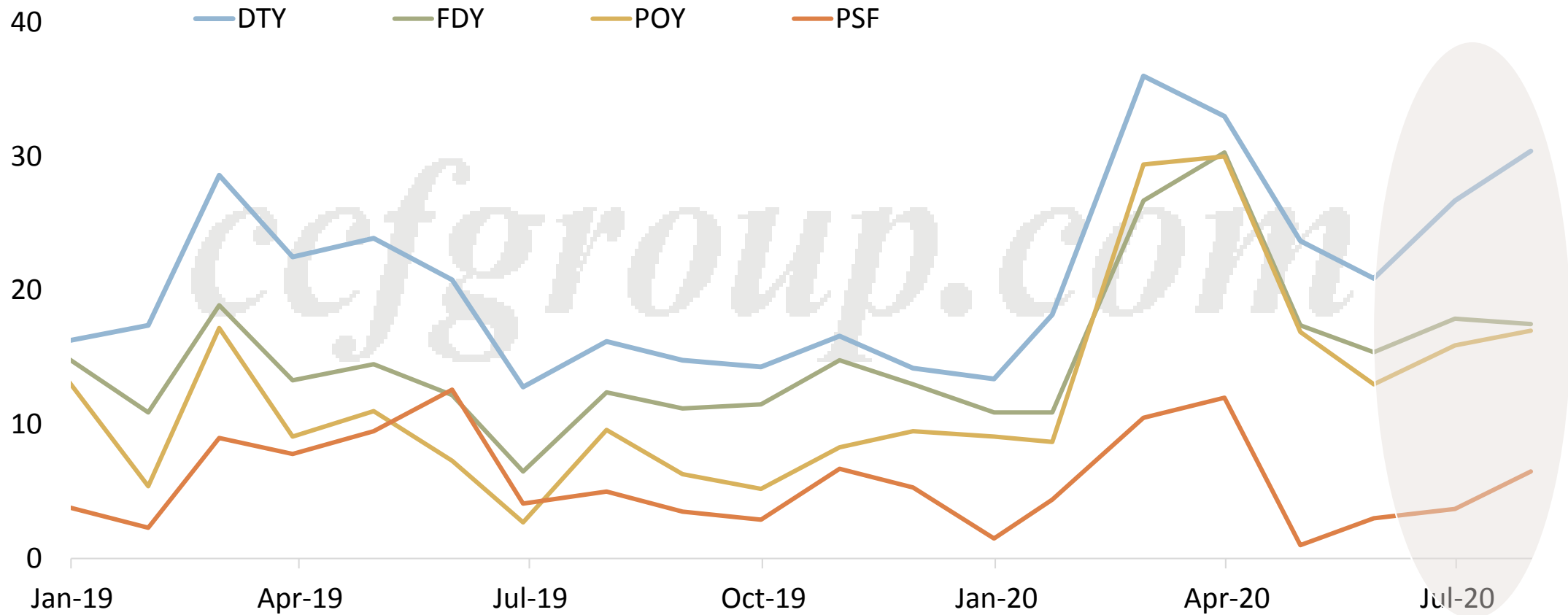
## POY — Brent oil spot



In H1 2020, polyester downstream mills waited for dip-buying opportunities

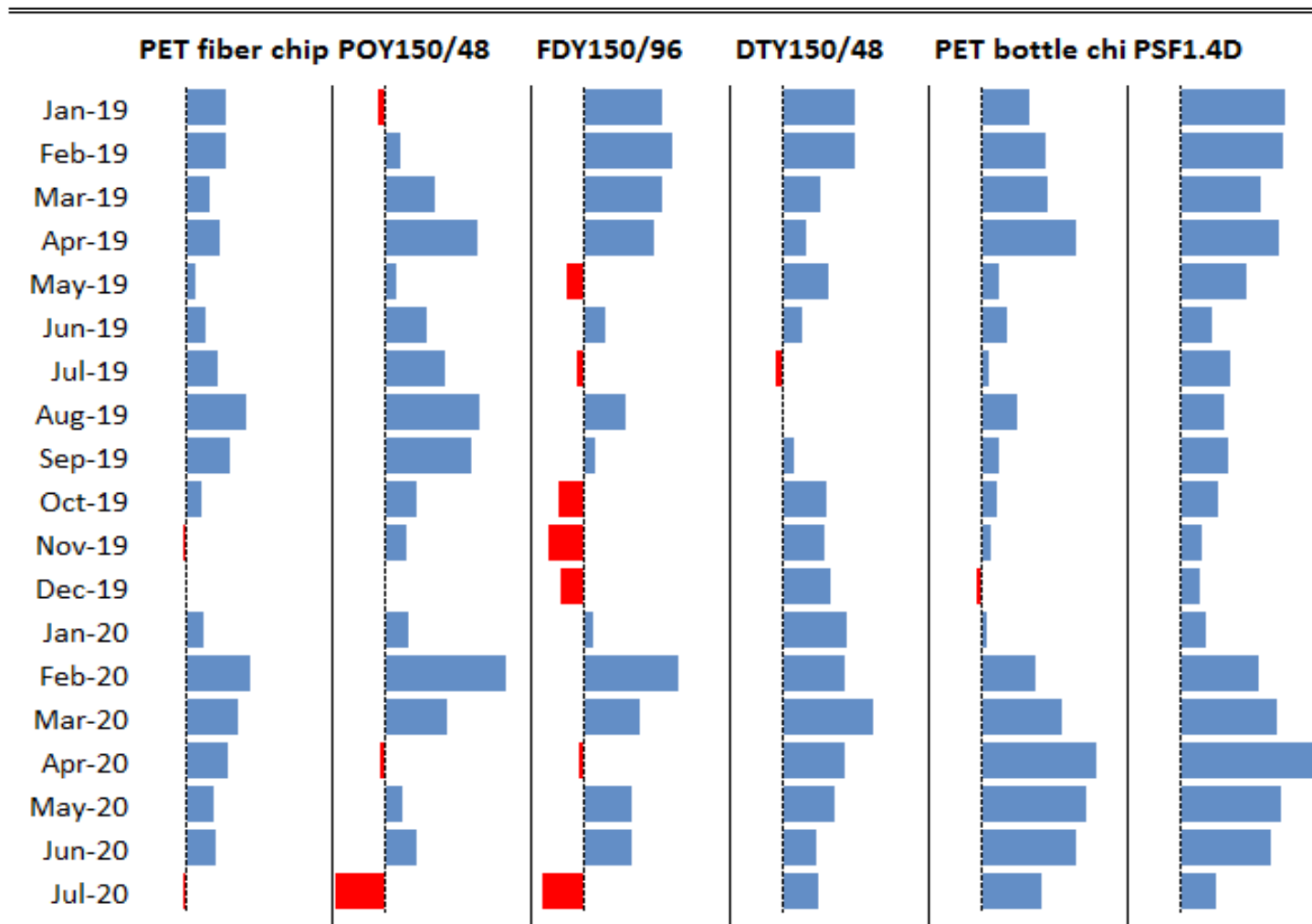
The speculative buying may apparently weaken on high fabric inventory and tightened capital

# Polyester product inventory increases



The inventory of polyester filament yarns and staple fibers of polyester plants rose to a medium level this year.

## POLYESTER PRODUCT CASH FLOW

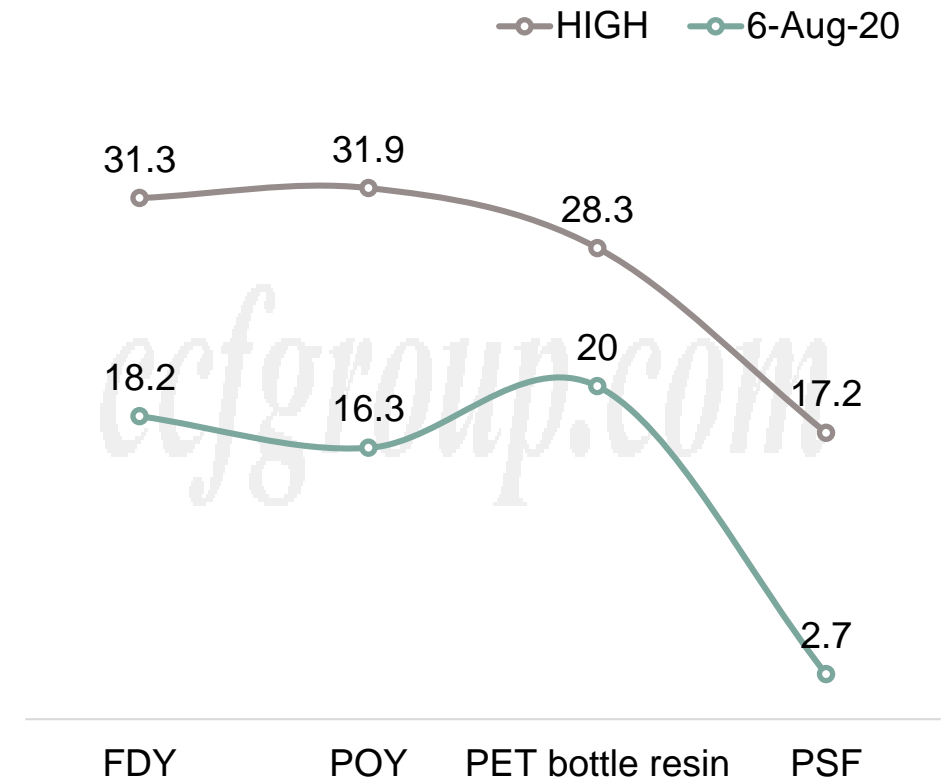
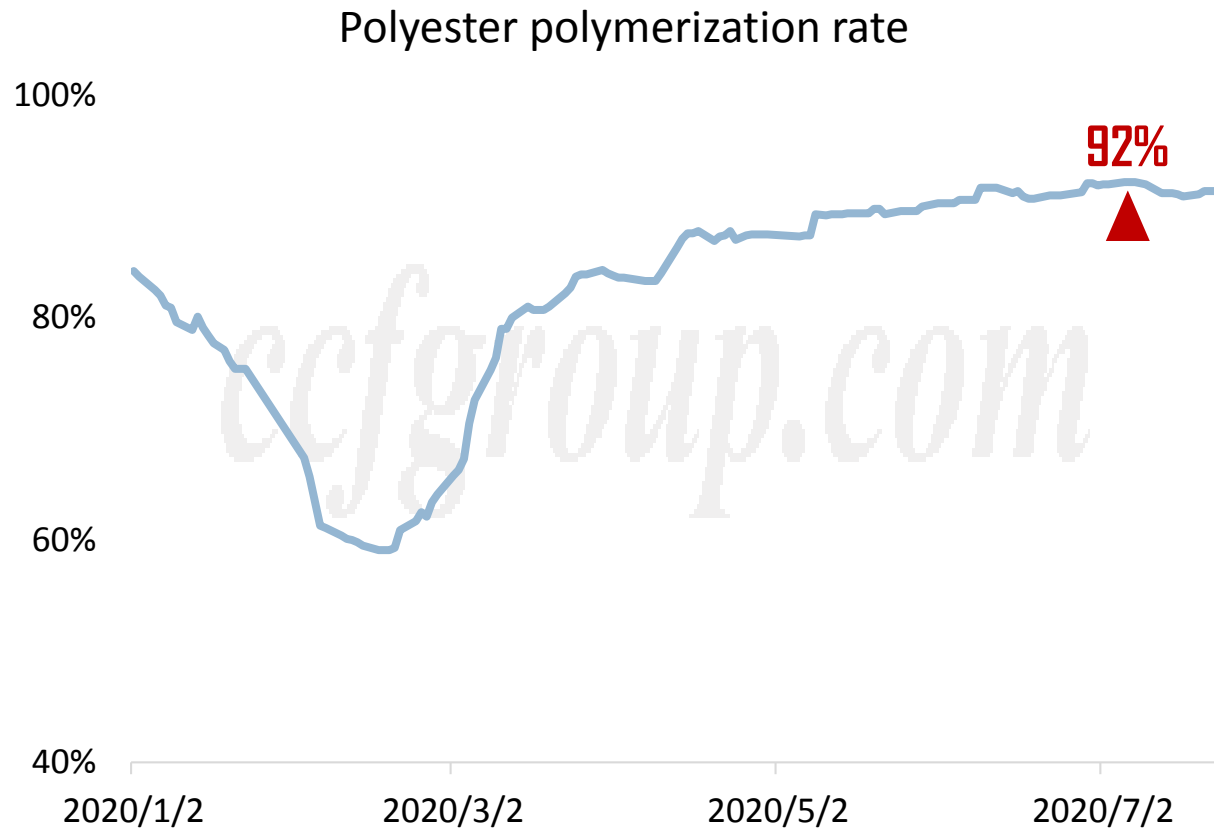


The cash flow of polyester products has been compressed, particularly the polyester filament yarn

The loss of POY and FDY expanded quickly since July.

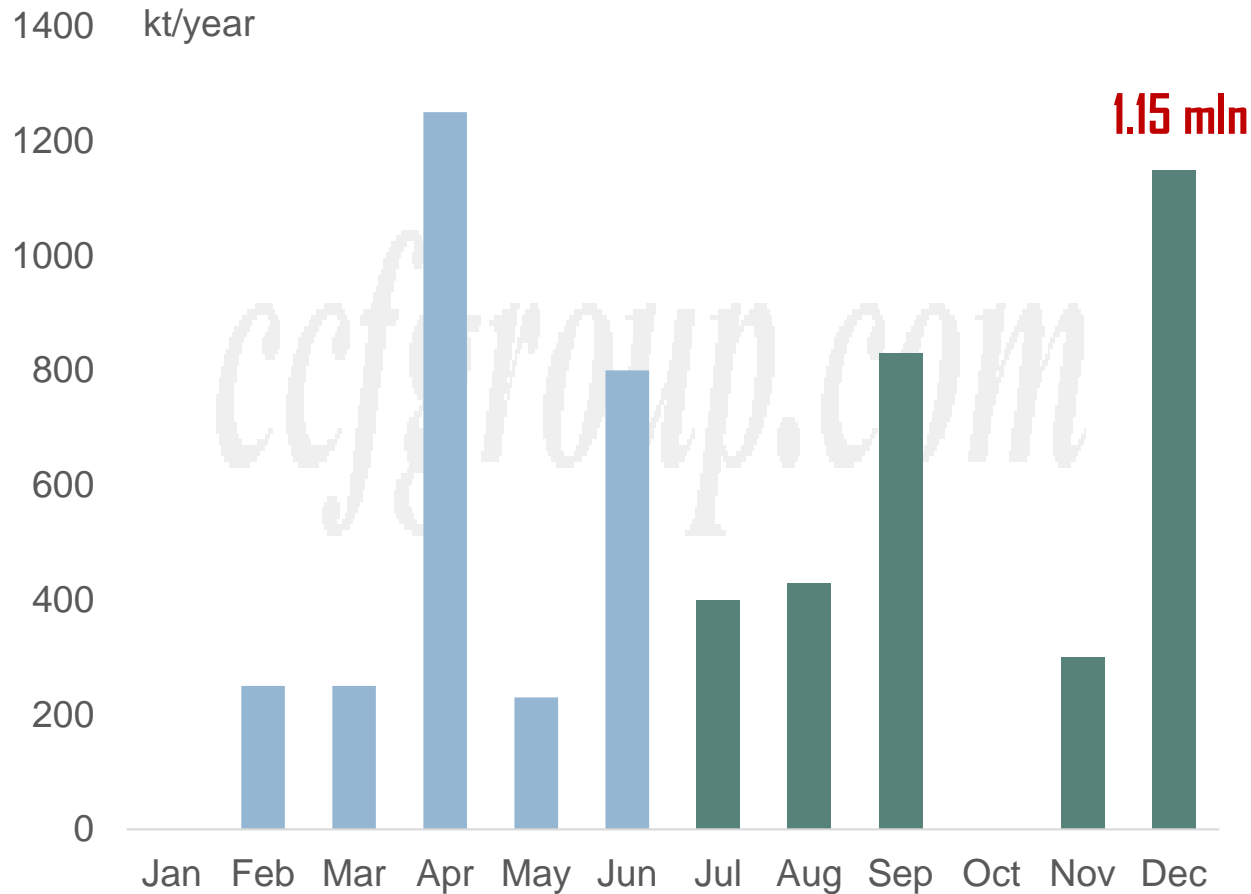


# Polyester polymerization rate into downtrend

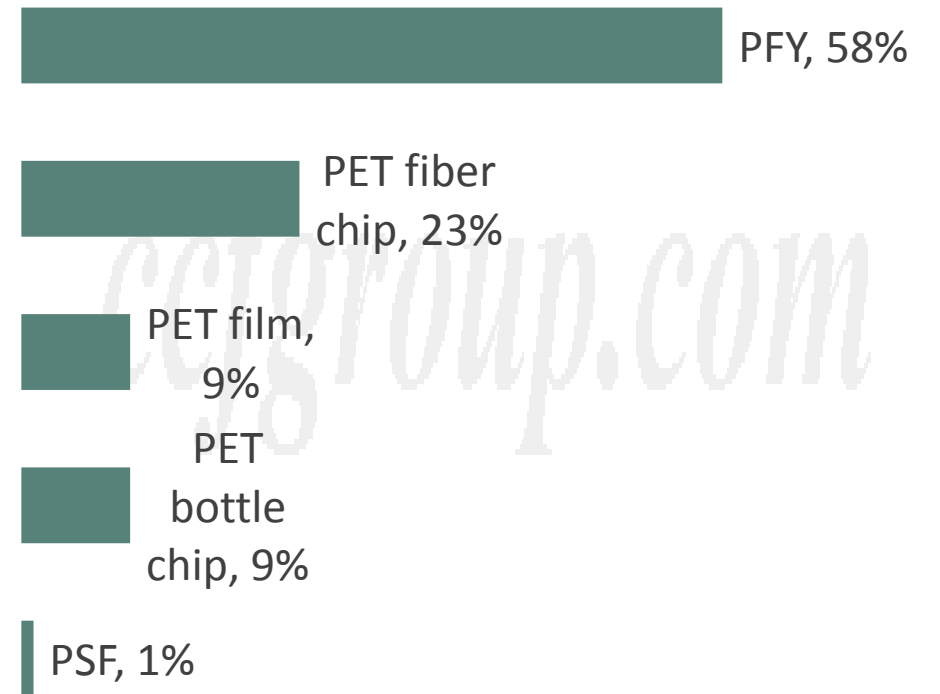


Polyester plants cut production in face of the operational pressure, but the overall operating rate is down mildly  
The polyester polymerization rate has reached the yearly high, but it is unlikely to drop significantly later.

# New polyester capacity to start



New capacity by products in H2 2020



In H2 2020, about 3.1 million tons/year polyester units are scheduled to start

The effective new capacity is estimated to be 2 million tons and the additional output is estimated at 650kt.

# New PTA capacity to start

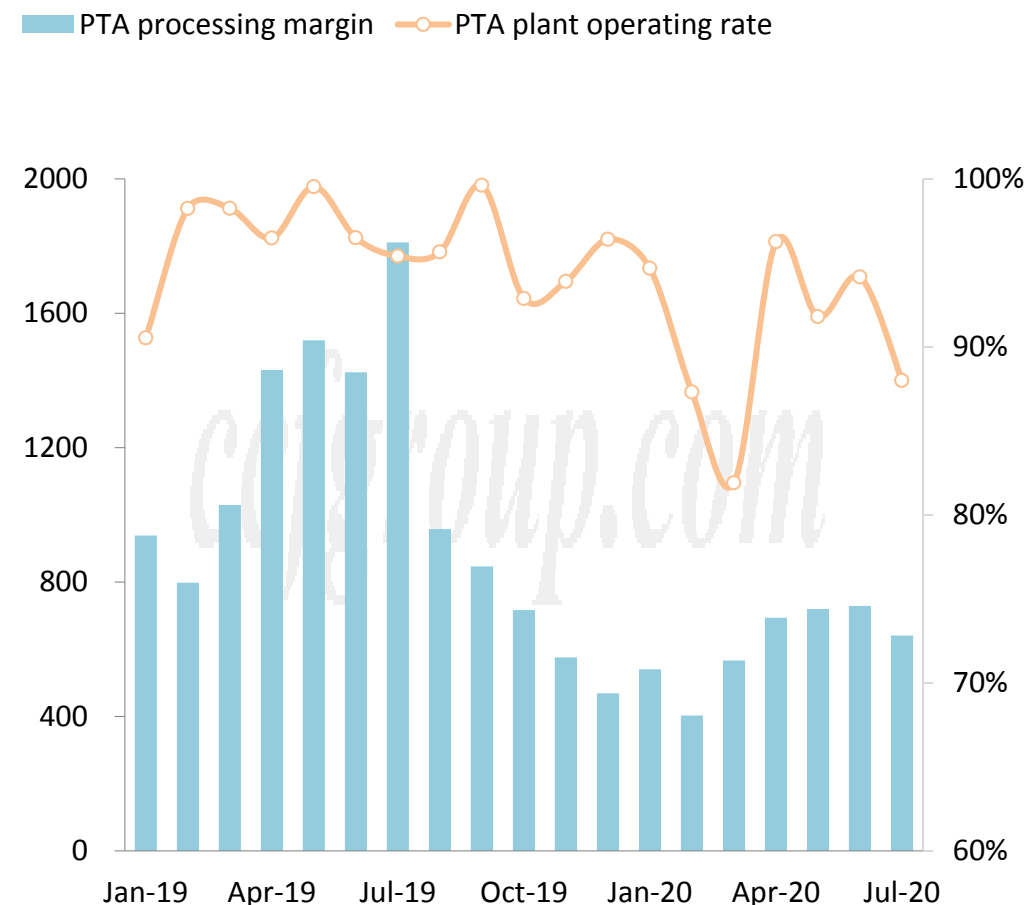
	Capacity (kta)	Location	Startup
Zhongtai Chemical	1200	Xinjiang	Jan 2020
Hengli Phase IV	2500	Liaoning	Jan 2020
Hengli Phase V	2500	Liaoning	Jun 2020
Xinfengming Phase II	2200	Zhejiang	Oct 2020
Fujian Billion	2500	Fujian	Q4 2020
2020 total	10900		
Honggang Petrochemical	2400	Jiangsu	Q1 2021
Yisheng New Materials Phase 1	3000	Zhejiang	Q1 2021
Yisheng New Materials Phase 2	3000	Zhejiang	Q3 2021
2021 total	8400		

PTA capacity is estimated to reach 67.93 million tons, a year-on-year growth of 22% in 2020

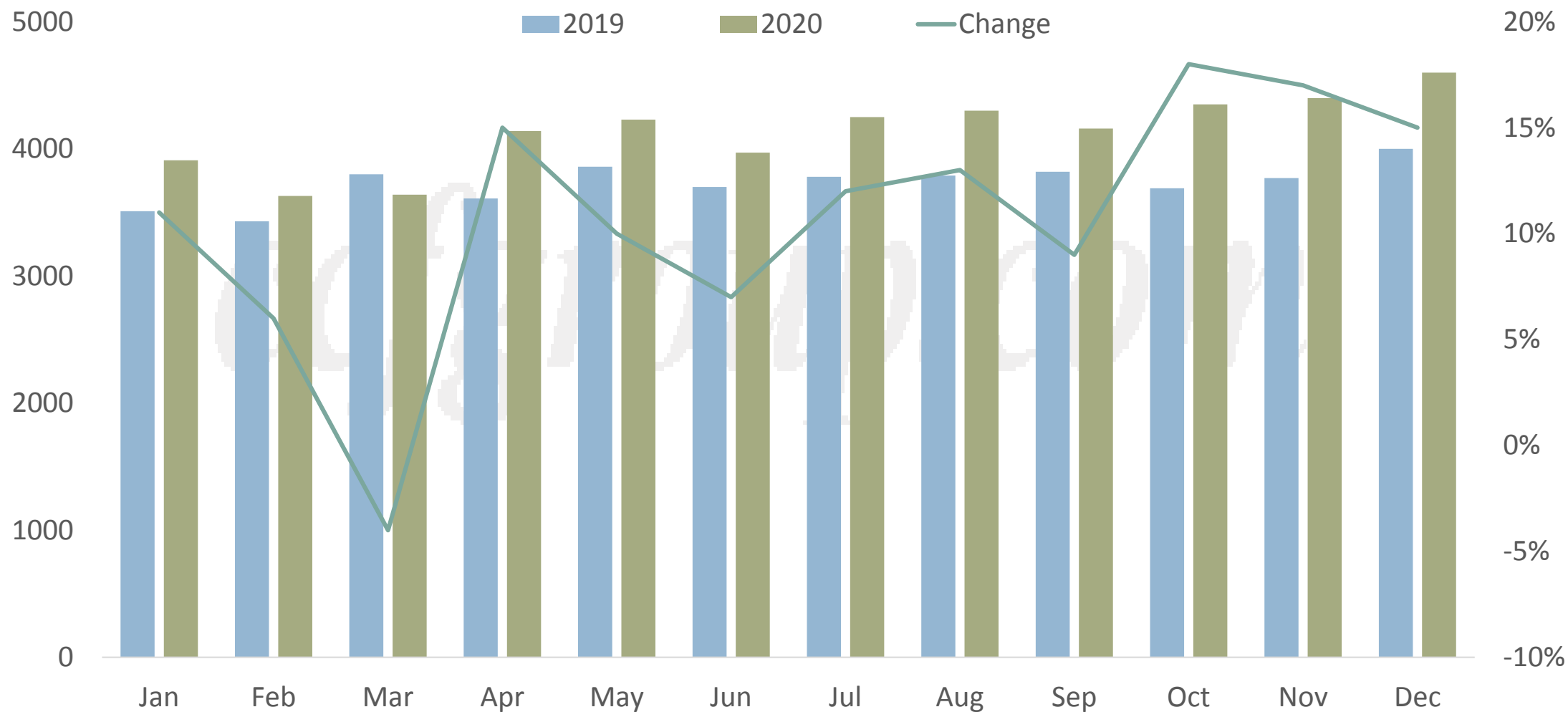
# Turnaround plans of PTA plants

PTA	Producer	Capacity (kt/year)	Time
New plants	Hengli	2500	start in end Jun and early Jul
	Xinfengming	2200	to start in Sep-Oct
	Billion	2500	to start in end 2020 or early 2021
	Shenghong	2400	to start in end 2020 or early 2021
	<b>Total</b>	<b>9800</b>	
T/A	Jiaxing Petrochemical	2200	2-week T/A in Jul
	Luoyang Petrochemical	325	40-day T/A from Jul 27
	Yangzi Petrochemical	600	2-week T/A from Aug 6
	Sanfangxiang	1200	30+day T/A from Aug 1
	FCFC Ningbo	1200	2-week T/A from Aug 2
	Reignwood	1400	2-week T/A in mid Aug
	Zhongtai	1200	2-week T/A from end Aug
	Yizheng	650	2-week T/A in Sep
	Fuhaichuang	4500	2 or 3-week T/A in Sep
	Nengtou	1000	2-week T/A in Sep
	Honggang	1500	T/A plan in Oct
	Hengli #1	2200	T/A plan in Oct
	Hengli #2	2200	T/A plan in Oct
	OPSC	750	15-day T/A in Oct
	Yisheng Hainan	2000	T/A plan delays
	Yisheng Ningbo	2200	T/A plan in Jul delays
	<b>Total</b>	<b>25125</b>	

## PTA margin



# PTA output estimation

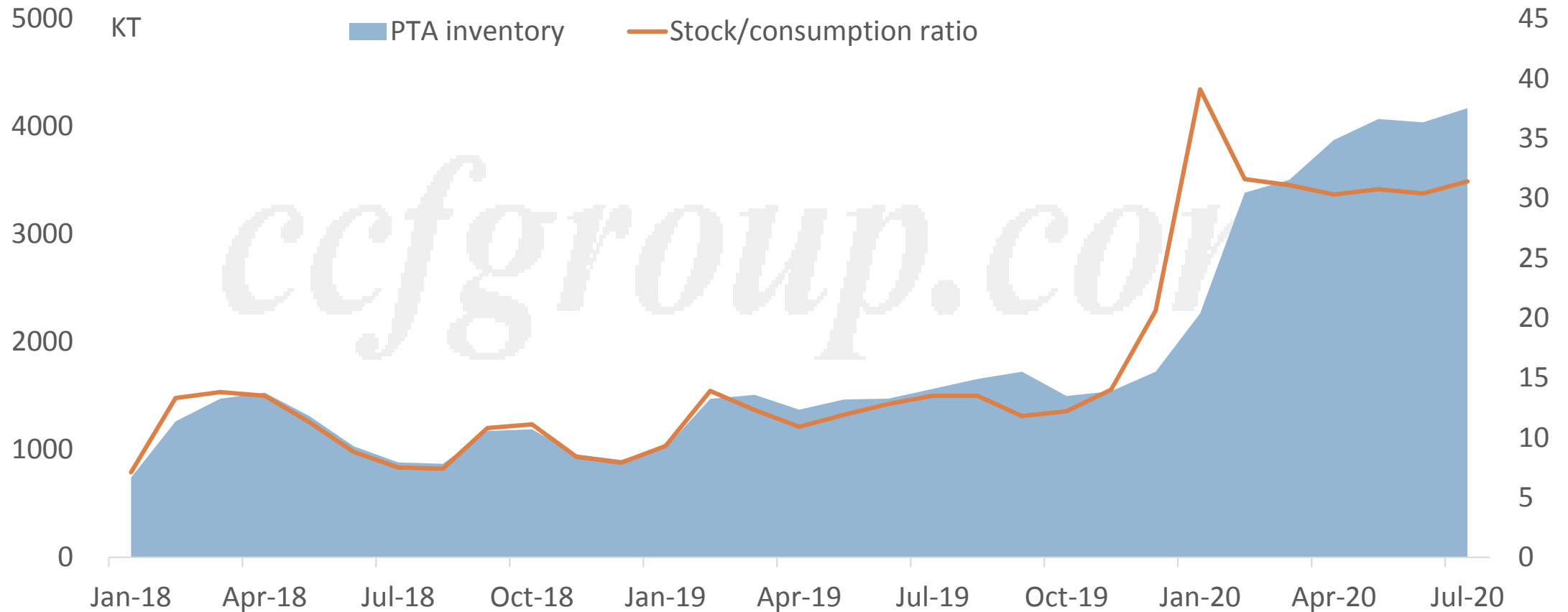


PTA output is expected to be about 26.05 million tons in H2 2020, an increase of about 2.5 million tons from H1 2020

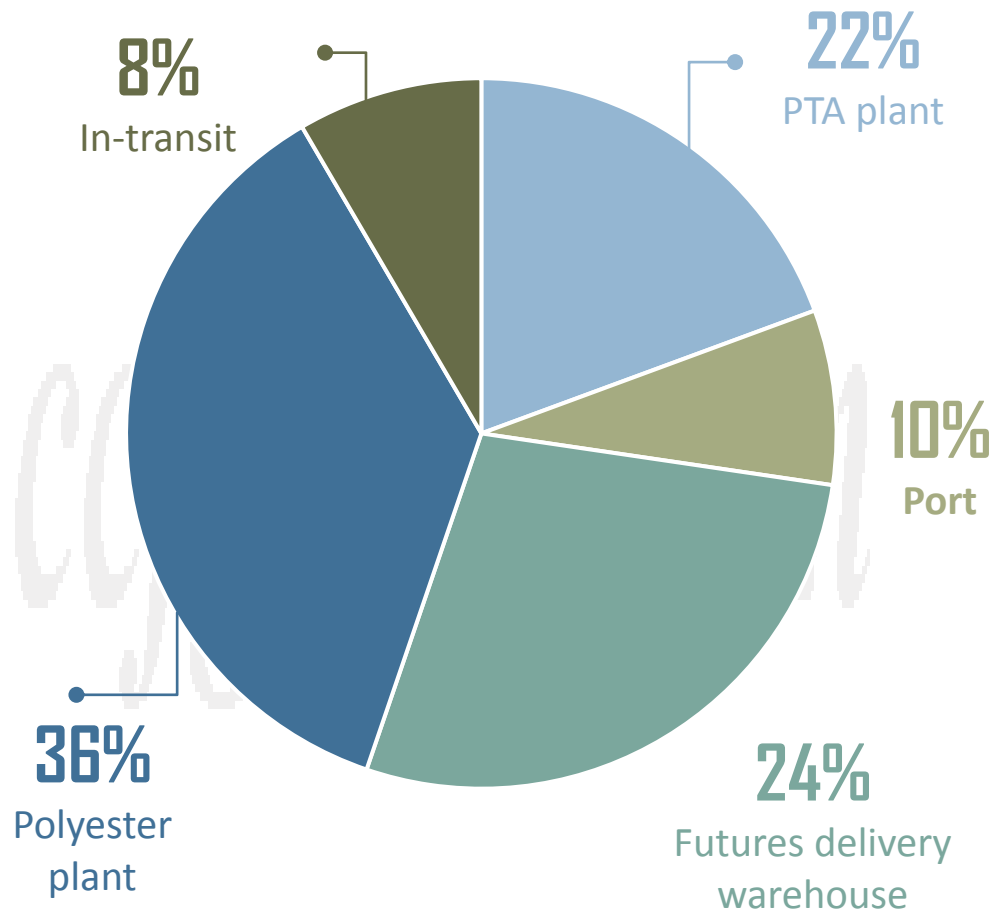
# PTA——supply and demand imbalance

Polyester output growth rate	1%	2%	3%	3.50%	4%
Polyester output in 2020	50750	51260	51760	52010	52260
H1 2020 output	24100	24100	24100	24100	24100
H2 2020 output	26650	27160	27660	27910	28160
Additional supply from new units	650	650	650	650	650
AVE O/R in H2 (capa: 61100kta)	84.40%	86.10%	87.70%	88.50%	89.30%
Demand for PTA in H2 2020	23690	24120	24550	24760	24980
PTA inventory increase	2360	1930	1500	1290	1070
monthly average inventory increase	390	320	250	210	180

# PTA inventory pressure



Existing inventory + buildup in H2 2020 + outflow of futures delivery warehouses  
In the second half of 2020, PTA inventory is estimated to increase 1.3-1.4 million tons.

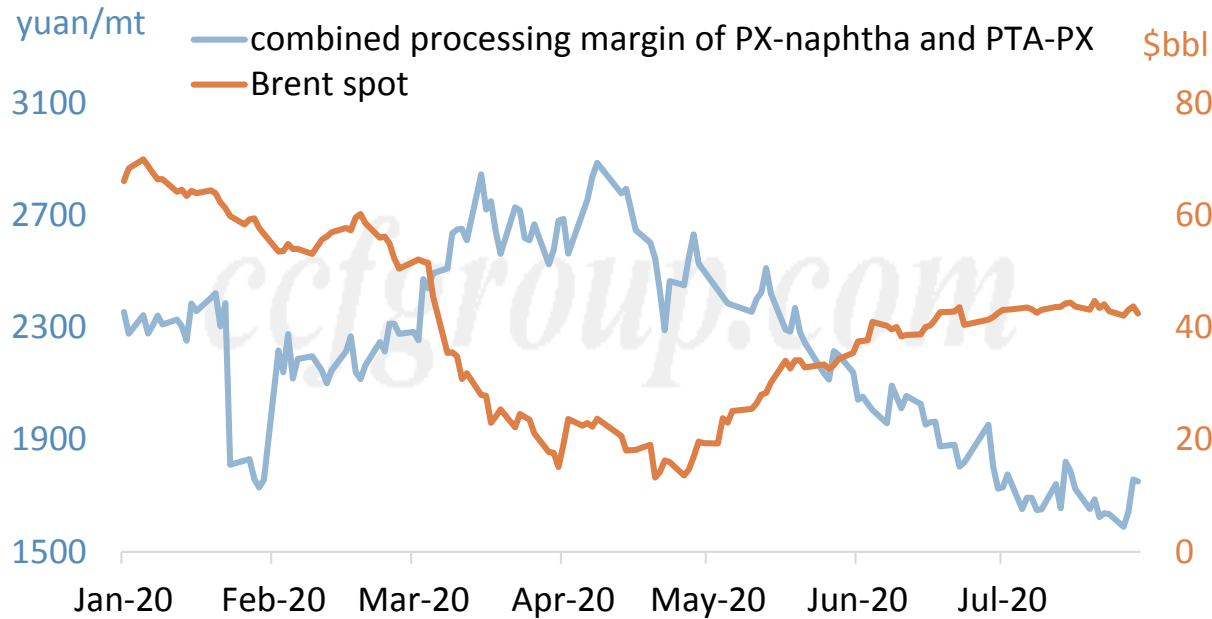


The risk-free arbitrage between September and January futures contracts, as well as the cancellation of warehouse receipts recently, alleviated the impact of intensive cancellation of September contract warehouse receipts during the delivery month.

Current PTA plant inventory is still 500,000 tons less than the peak level, which also cushions the inventory accumulation pressure



# PTA-PX spread to further compressed

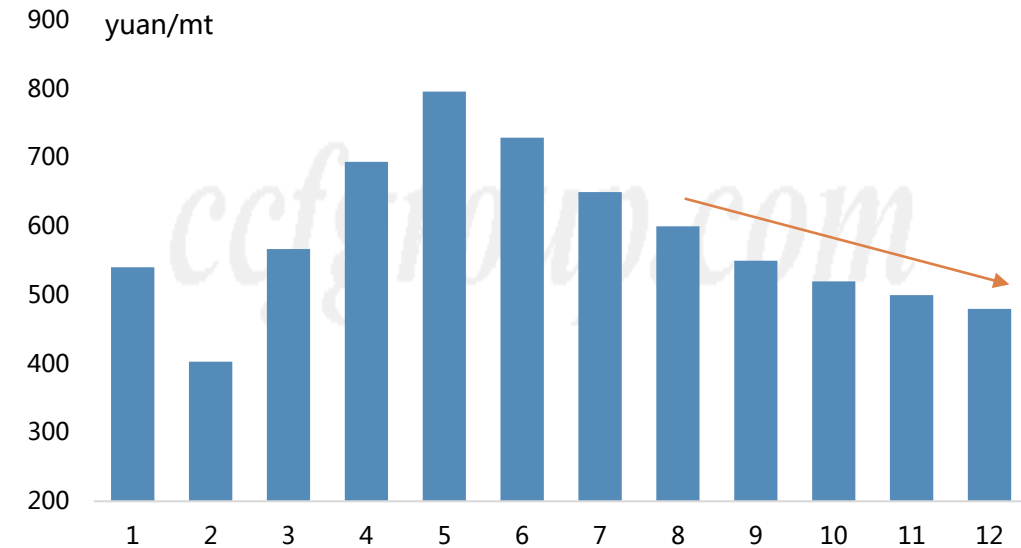


\*PX-naphtha spread (RMB)= PX-naphtha spread (USD) \* exchange rate

Combined PX and PTA margin stayed high after crude oil plunged in March-April. The PX-naphtha spread quickly narrowed, while the PTA processing margin expanded after crude oil fluctuated up.

With the support of cost, PTA prices may climb up slowly, but under high inventory, the PX/PTA margin will be suppressed.

### PTA-PX spread forecast of 2020



Brent	Naphtha (+50\$/mt)	PX (+200\$/mt)	PTA (+600yuan/mt)
20	197	397	2701
25	234	434	2897
30	271	471	3093
35	307	507	3283
40	344	544	3479
45	381	581	3675
50	418	618	3871

- We expect total polyester production in China to grow by 3.5% versus 2019.
- PTA inventory will continue to increase by 1.3-1.4 million tons in H2 2020, but the accumulation will slow down.
- PTA market pressure in Q4 will be greater as the polyester polymerization rate will be in downtrend and new PTA units are scheduled to start in Q4.
- PTA profit margin will be compressed further as the expected start of Fujian Billion and Shenghong's new PTA units may affect the procurement of polyester plants.
- The maintenance plans of PTA plants should be monitored under the changes of the processing margin.
- PTA capacity growth rate will keep at a high level in 2020-2023. The uncertainty looms large over the landscape of the global polyester chain.

- CCF RMB PTA price is The weighted average of the spot transaction prices in East China (excluding Fujian) which theoretically include all compliance transactions of mainstream and non-mainstream brands. The transaction price of delivered PTA spot is assessed after remove the freight. In the absence of transaction prices, but only basis during a trading day, the weighted average of basis of all compliant transactions plus the settlement price of the main futures contract will be used for the price assessment. In the absence of transaction prices and basis during a trading day, the offers and bids are used for price assessment.
- Unit: yuan/mt
- Product: PTA, no premium or discount on mainstream and non-mainstream brands.
- Term: ex-works China Main Ports. The transaction price of warehouse receipt is assessed after reduces 24yuan/mt of warehouse charge.
- Cargo size: 500 (+) in tons
- Delivery point: East China Main Ports (excluding Fujian) and nearby consumer markets, including Ningbo, Jiaying, Zhangjiagang, Taicang, Jiangyin, Shanghai, Changshu (excluding Lianyungang), etc.
- Timing: delivery within 5 working days
- Assessment window: 21:00-23:00 on the previous working day and 8:00-16:00 on the day. Considering the long interval during the holiday and weekend, the transaction prices of the night session before the holiday and weekend are not assessed.
- Publication: 16:00-16:30 pm in working day

- The CCF CFR China PTA price is The weighted average of the transaction prices of nearby and forward cargoes in East China (including Fujian) which theoretically includes all brands. CCFGroup gives priority to nearby cargoes, then forward cargoes. In the absence of transaction prices, the offers and bids are used for price assessment.
- Unit: \$/mt
- Term: L/C 90 days, ex-works China Main Ports (including CFR China and FOB China)
- Cargo size: 500 (+) in tons
- Delivery point: East China Main Ports (including Fujian), including Ningbo, Jiaxing, Zhangjiagang, Taicang, Jiangyin, Shanghai, Fuzhou, Quanzhou, etc .; the transactions in non-CMP warehouses are assessed with discount/premium.
- Participants: mainly polyester plants, transactions by non-polyester plants are moderately weighed.
- Assessment window: 8:00-16:45 in working day
- Publication:16:45-16:50 pm in working day

# Formula: Spread/Cash flow

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1. PTA-PX spread = RMB PTA price - 0.656*PX*1.13*1.02*exchange rate	(RMB/MT)
PTA-PX spread = PTA CFR China price - 0.656*PX	(USD/MT)
2. Ethylene based MEG = MEG CFR China price - 0.605*ethylene CFR NEA -100	(USD/MT)
Naphtha-based MEG = MEG CFR China price - 0.81*naphtha CFR Japan -150	(USD/MT)
3. PET bottle chip = PET chip (water bottle) price - 0.855*PTA-0.335*MEG-700	(RMB/MT)
PET bottle chip = PET chip (water bottle) FOB China -0.855*PTA-0.335*MEG-110	(USD/MT)
4. PFY POY = POY price - 0.855*PTA-0.335*MEG-1150	(RMB/MT)
PFY FDY = FDY price - 0.855*PTA-0.335*MEG-1550	(RMB/MT)
PFY DTY = DTY price – POY - 1200	(RMB/MT)
5. PSF = PSF price - 0.855*PTA-0.335*MEG- 980	(RMB/MT)

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# Thanks!

Contacts

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