

10
YEARS
2008-2018
东证期货

衍生无限未来

橡胶基本面解析和跨市套利探讨 Analysis of rubber fundamentals and cross-market arbitrage

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东方证券
ORIENT SECURITIES

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Rubber futures cross-market arbitrage background

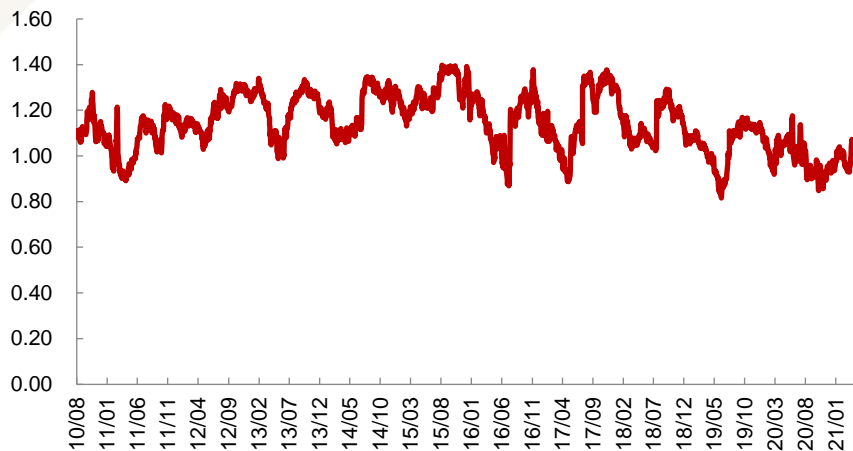
	INE	SGX
Product	TSR20	TSR20
Contract Size	10 tons per lot	5 tons per lot
Trading Hours	9:00 a.m.-11:30 a.m., 1:30 p.m.–3:00 p.m., and other hours stipulated by INE	7:55-18:00 (Singapore Time)
Contract Months	Jan., Feb., Mar. Apr., May, Jun., Jul., Aug., Sept., Oct., Nov., Dec.	Twelve consecutive months starting from the current month. The next contract month is added after the previous one expires
Price Increment	RMB 5 per ton	US\$ 0.1 cent per kilo
Price Quotation	RMB per ton	US\$ cent per kilo
Last Trading Day	The 15 th day of the delivery month (postponed accordingly if the 15 th falls on a national holiday or weekend; INE will adjust last trading days accordingly.)	Last trading day of the month before the delivery month
Delivery Unit	10 tons (delivered in 10.08 tons)	20.16 tons
Deliverable Grades	Products of registered brands of TSR20 rubber approved by INE	Manufactured by SICOM-approved factories with ingredients from Hevea Braziliensis trees, with packing meeting SICOM's standards for contractible film packing
Method of Delivery	Spot goods delivery, bonded delivery, warehouse delivery	Up to the buyers. Deliveries can take place in warehouses or at the ports of embarkation based on FOB terms
Delivery Points	Delivery warehouses designated by INE	Ports of embarkation are decided by the seller, unless the buyer chooses Port of Singapore. Designated ports include Singapore, Klang, Penang, Palembang, Surabaya, Belawan, Bangkok and Laem Chabang
Delivery Dates	Five consecutive trading days following the last trading day	Anytime within the delivery month, but no earlier than the 10 th business day of the month. Specific time is decided by the method of delivery and the time when the delivery orders are given

Rubber futures cross-market arbitrage background

	SHFE	SGX
Product	RSS3, SCRWF	RSS3
Contract Unit	10 tons per lot	5 tons per lot
Trading Hours	9:00 a.m.-11:30 a.m., 1:30 p.m.–3:00 p.m., and other hours stipulated by SHFE	7:55-18:00 (Singapore Time)
Contract Months	Jan., Mar. Apr., May, Jun., Jul., Aug., Sept., Oct., Nov.	Twelve consecutive months starting from the current month. The next contract month is added after the previous one expires
Price Increment	RMB 5 per ton	US\$ 0.1 cent per kilo
Price Quotation	RMB per ton (quote price not including tax)	US\$ cent per kilo
Delivery Unit	10 tons	20 tons or multiples
Deliverable Grades	1. SCRWF rubbers subject to the standard of GB/T8081-2008; 2. Imported RSS3 rubbers subject to the International Standards of Quality and Packing for Natural Rubber Grades (the Green Book) (1979 Version)	RSS3 rubbers with quality and packing meeting the “Green Book” standards developed by the International Rubber Quality and Packing Conference
Method of Delivery	Spot goods delivery, warehouse delivery	Up to the buyers. Deliveries can take place in warehouses or in the ports of embarkation based on FOB terms
Delivery Points	Delivery warehouses designated by SHFE	Ports of embarkation are decided by the seller, unless the buyer chooses Port of Singapore. Designated ports include Singapore, Klang, Penang, Palembang, Surabaya, Belawan, Bangkok and Laem Chabang
Delivery Dates	Five consecutive trading days following the last trading day	Anytime since the 8th trading day of the delivery month

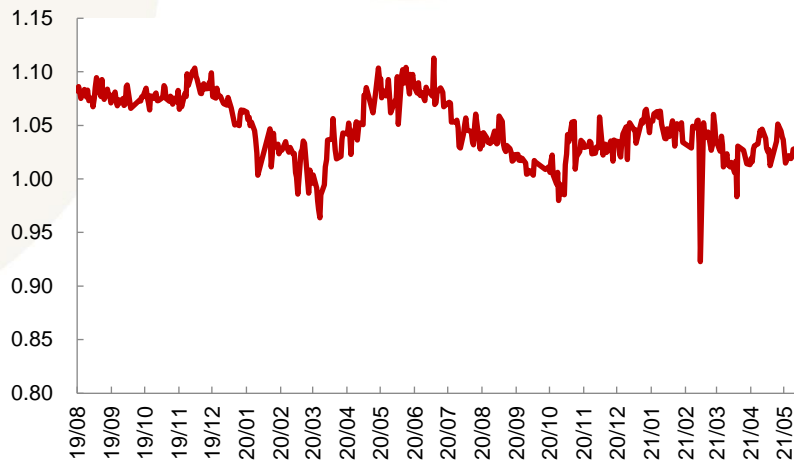
- ◆ Cross-market arbitrages are based on the theory of imports and exports of spot goods. When there is a mismatch between the prices of two locations, related merchants will seek profits through imports and exports. The following large amount of shipments will quickly rebalance the prices of these two locations ;
- ◆ In the long run, given the same or similar underlying commodities, futures contracts in different exchanges show strong correlations.

Closing prices of dominant RSS3 futures contracts



Take RSS3 futures contracts as an example, closing prices of dominant contracts of RSS3 futures between SHFE and SGX show high correlation coefficients(0.96) since January 2011

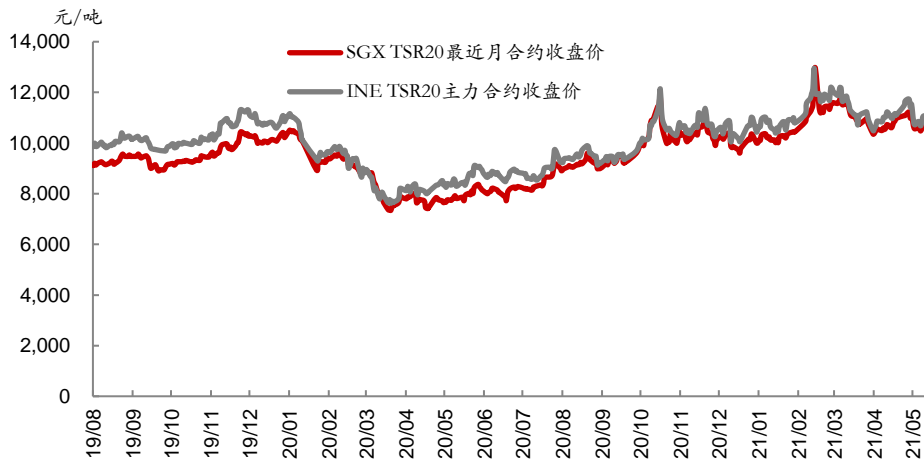
Closing prices of dominant TSR20 futures contracts



Closing prices of dominant contracts of TSR20 futures between SHFE and SGX also show high correlation coefficients(0.95) since August 2019.

- ◆ In the short run, the main factors impacting the rubber futures prices at the three main futures exchanges may be different (e.g. differences in supply and demand fundamentals, exchange rates, tax (VAT, tariff) changes, policies (warehousing and custom policy changes, industry policy changes), etc.), causing temporary divergence in prices of different exchanges, which creates an opportunity for cross-market arbitrages;
- ◆ If the pricing spread returns to a normal range, the arbitrageurs can close the positions with hedging as they see fit. If the prices do not converge after a long time or the spread widens due to unexpected reasons, then the arbitrageurs can lock in profits through deliveries;
- ◆ Cross-market arbitrages have relatively small risks and relatively stable profits. This method is suitable for institute investors with considerable funds.

- ◆ From the perspectives of trade flows and arbitrage directions, cross-market arbitrages can be divided into cash-and-carry arbitrages and reverse cash-and-carry arbitrages. If the trade flow and arbitrage direction show the same direction, then the arbitrage is cash-and-carry cross-market arbitrage, otherwise it is reverse cash-and-carry cross-market arbitrage. One example of cash-and-carry cross-market arbitrage is taking a long position of TSR20 futures contracts on SGX while shorting TSR20 futures contracts on INE.
- ◆ China is a big consumer of TSR20 rubbers but produces very small amount of such products, which are far from meeting its own demands. Therefore, China relies heavily on imports of TSR20 rubbers. China's bonded warehouses of TSR20 rubbers are mainly set up in places with heavy demand of TSR20 rubbers, while FOB ports for SGX to deliver TSR20 rubbers are mainly located in main producing countries. Therefore, the cross-market arbitrage will naturally be cash-and-carry arbitrage, which means INE's TSR20 futures will put SGX's TSR20 futures at constant contango.



Rubber futures cross-market arbitrage operation

- ◆ To calculate a reasonable arbitrage spread, two methods are usually adopted. One is simulated deliveries, while the other is analysis of historical spreads.
- ◆ For products that have been listed for a long time, the historical spread method can be directly used.



➤ In the past few years, the price ratio of SHFE rubber against SGX RSS3 usually started to weaken in the fourth quarter of a year, and the weakening trend usually lasted until the first half of the following year.

➤ This phenomenon is mainly due to the widespread application of the non-standard arbitrage in China. Arbitrageurs usually sell on the futures to establish arbitrage positions in the fourth quarter, which will cause much selling pressure on domestic rubber futures prices. Consequently, the price difference between spot and futures will gradually narrow and arbitrageurs will stand to make profits by reversing their positions, and the price ratio will also return to normal.

- ◆ Since INE's TSR20 futures contract has been listed for a short time, it is only suitable to use simulated delivery method

基于模拟交割法的跨市套利

Cross-market arbitrage based on simulated delivery method

- 可交割品 Deliverable Grades
- 交易时间 Trading Hours
- 交割地点 Delivery Points
- 交割单位 Delivery Unit
- 有效期 Period of Valid
- 交割相关费用 Relevant Cost in Delivery

可交割品 Deliverable Grades

INE

- 25家注册品牌生产企业（工厂），来自泰国、印尼、马来和中国
25 approved manufactures(factories), from Thailand、Malaysia、Indonesia and China.
- 不同注册品牌之间暂不设升贴水
INE does not set up premium or discount between different registered brands.

SGX

- 137家注册品牌生产企业（工厂），来自泰国、印尼和马来
137 approved manufactures(factories), from Thailand、Malaysia、Indonesia.
- 不同注册品牌之间不设升贴水
SICOM does not set up premium or discount between different registered brands.

交易时间 Trading Hours

INE

- 上午9:00-11:30, 下午1:30-3:00 (北京时间)
- 9:00 am to 11:30 am and 1:30 pm to 3:00 pm in Beijing Time

SGX

- 7:55-18:00 (新加坡电子盘时间)
- 7:55 am to 18:00 pm in Singapore Time

INE与SICOM的交易时间有重叠, 便于进行跨市套利操作

There is an overlap between trading hours of INE and SICOM, making cross-market arbitrage possible.

交割地点 Delivery Points

INE

- INE的交割仓库设在青岛、上海、海南的保税监管场所，除海南仓库外，上述仓库周边20号胶的消费量较大。海南地区20号胶交割贴水人民币210元/吨。

Delivery warehouses are located within bonded areas in Qingdao, Shanghai and Hainan province, with heavy TSR20 consumption nearby except Hainan.

SGX

- SICOM的TSR20期货合约的交割方式取决于买货方的选择，可以在交割仓库交割，也可以按FOB条款在装载港口交割。

Delivery will be made at the Buyer's option, either on Warehouse Delivery or FOB terms at port of loading.

SGX TSR20 Rubber Futures Contract

FOB港口	升贴水	FOB ports of loading	Premium and Discount
新加坡港	平水	Port of Singapore	Nil
巴生港	贴水1.5美分/公斤	Port of Klang	a discount of 1.5 US cents / kg
檳城港	贴水1.5美分/公斤	Port of Penang	a discount of 1.5 US cents / kg
曼谷港	贴水1.5美分/公斤	Port of Bangkok	a discount of 1.5 US cents / kg
林查班港	贴水1.5美分/公斤	Port of Laem Chabang	a discount of 1.5 US cents / kg
勿拉湾港	贴水2.0美分/公斤	Port of Belawan	a discount of 2.0 US cents / kg
泗水港	贴水2.0美分/公斤	Port of Surabaya	a discount of 2.0 US cents / kg
巴邻旁港	贴水2.5美分/公斤	Port of Palembang	a discount of 2.5 US cents / kg
仓库交割	升水1.5美分/公斤	Warehouse Delivery	a premium of 1.5 US cent / kg

交割单位 Delivery Unit

INE

- 名义上是10吨，实际交割结算时是10.08吨
10 tons nominally, 10.08 tons in actual delivery

SGX

- 20.16公吨
20.16 metric tons

有效期 Period of Valid

INE

- 用于实物交割的20号胶应自生产日期起90天内入库，逾期不得制作成标准仓单
Any TSR20 for physical delivery shall be loaded in within ninety (90) days of the date of manufacturing, after which no standard warrant shall be issued for such TSR 20.

SGX

- 没有明文规定，按行业惯例，通常是自生产日期起3-6个月内的20号胶用于交割
No clear rules in writing, usually 3 to 6 months from manufacturing, which has been an industry practice.

INE 20号胶交割相关费用

Relevant Cost in the INE TSR20 Delivery

交割费 Delivery Fee	4元/吨 4 yuan per ton
仓储费（交割货位） Storage Fee(Standard Warrant)	1.5元/吨/天 1.5 yuan per ton per day
仓储费（非交割货位） Storage Fee(Spot Good)	0.7元/吨/天 0.7 yuan per ton per day
入库费/出库费 Warehouse In/Out Fee	30元/吨 30 yuan per ton
质检费 Inspection Fee	1600元/百吨 1600 yuan per hundred tons
化验取样搬倒费 Porterage Fee for inspection	700元/百吨 700 yuan per hundred tons
清关费 Customs Clearance Fee	110元/吨 110 yuan per ton

SGX and INE TSR20 futures cross-market arbitrage profit

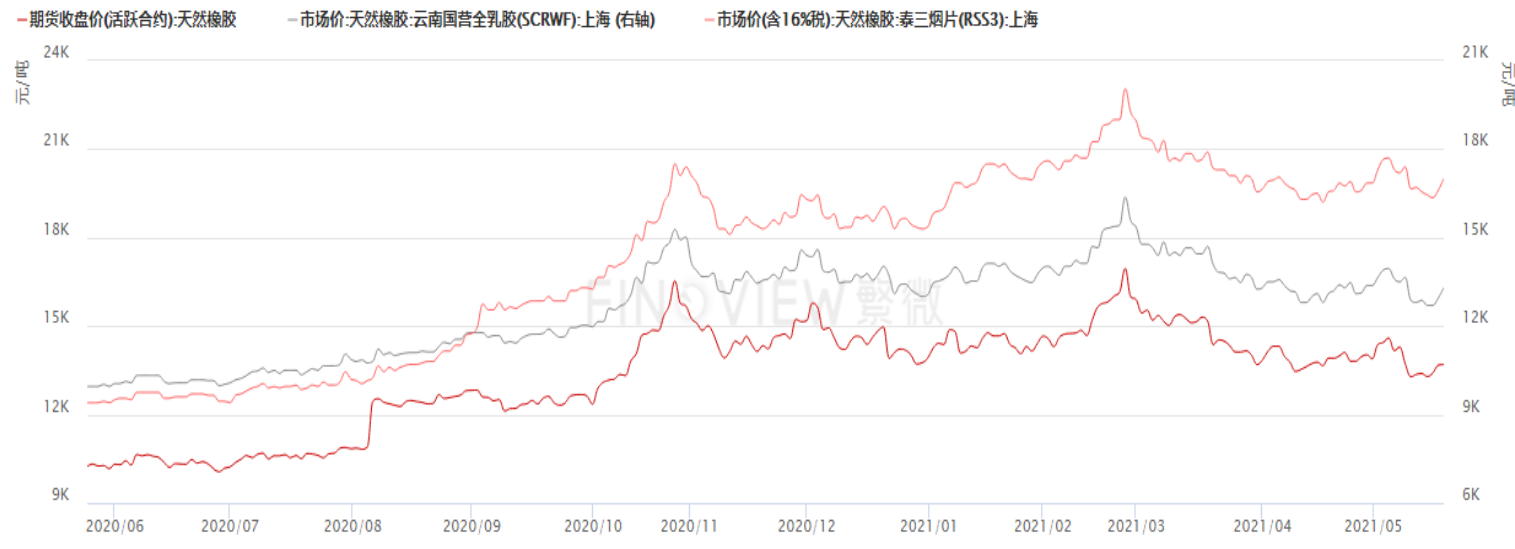


Import price of TSR20 from SGX in RMB = [(SGX futures price (US\$ cent per kilo) * 10 + SGX premium or discount at specific delivery point) + shipping costs] * USD/RMB exchange rate + relevant cost in the INE TSR20 delivery + cost of capital + premium or discount at INE bonded warehouses

If the import price of TSR20 from SGX in RMB is lower than INE's TSR20 futures, cash-and-carry cross-market arbitrage can be considered.

Noted: In practice, one may need to consider other expenses when calculating the cost

沪胶期现货价格走势



◆ 3月以来橡胶期价较高点回调较多，本轮下跌主要有几方面原因。

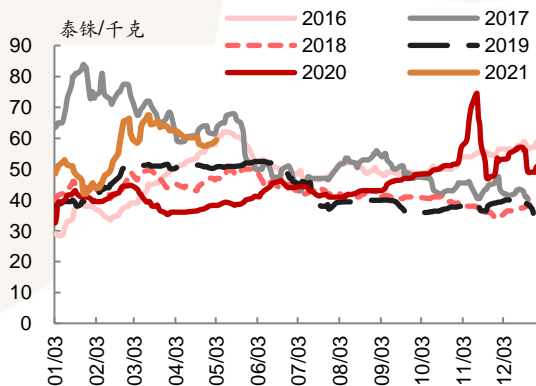
- ◆ 首先：今年国内产区在开割前天气状况较好，加上现货价格处于高位，2月底开始市场即存在对今年国内产区提前开割的预期，3月初云南产区确有小范围的试割，国产胶供应提前放量的预期对胶价构成了一定打压。
- ◆ 其次：3月中旬欧洲地区疫情出现反弹，部分国家封锁措施再度收紧，市场此前对外需复苏的乐观预期受到打压，欧洲复苏进程放缓也引发了市场对橡胶需求端的担忧情绪。此外，3月以来轮胎厂家内销订单也有一定程度的转弱，主要是节后在轮胎厂家连续发布涨价函的刺激下，2月中下旬轮胎代理商和终端零售大量囤货，库存水平偏高，3月开始进入库存消耗阶段，继续进货意愿不强。受内外需两端的影响，3月中旬以来，轮胎厂家出货较前期放缓，厂家库存开始累积，需求边际转弱是胶价走弱的重要原因。

- ◆ 再次：由于沪胶本身也包含了很强的金融属性，3月以来伴随着市场风险偏好的回落，橡胶期价跌幅超出现货，沪胶非标套利价差从2月份3000元/吨以上的高位迅速收窄，到3月下旬价差只有1500元/吨左右，非标套利价差的快速收窄使得大量去年上半年入场的非标套利盘得以解套，近期套利盘大量平仓，导致现货市场出现踩踏式的集中卖出现象。
- ◆ 其他因素：4月中旬泰国橡胶局传出抛储消息，泰国之前历次抛储均对当时盘面构成一定打压；印度日本疫情加重加剧了市场对外需的担忧情绪；
- ◆ 宏观因素：金融委会议首次提到关注大宗商品价格走势，对多头心态造成了比较大的冲击。

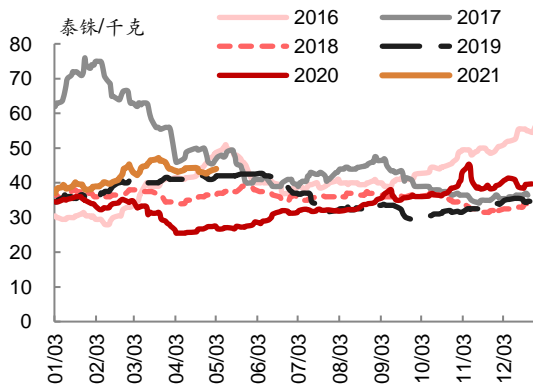
沪胶05合约-泰标混合胶价差



泰国中央市场原料胶水价格

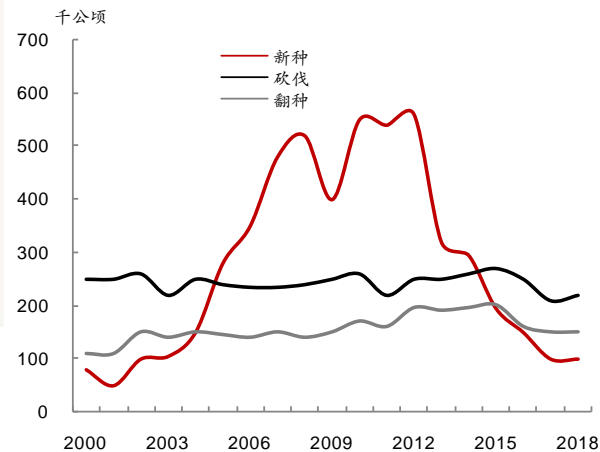


泰国中央市场原料杯胶价格

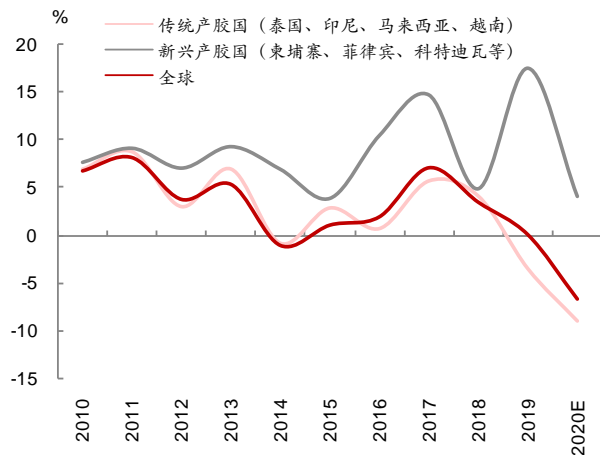


- ◆ 目前海外主产区已经陆续开割，当前原料价格处于高位、胶农不缺乏割胶积极性，在不出现极端天气的情况下，供给端预计正常放量。

主产国种植、翻新、砍伐情况

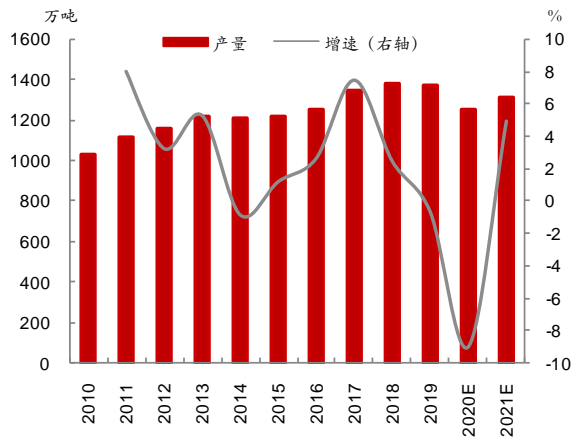


传统产胶国VS新兴产胶国天胶产量增速



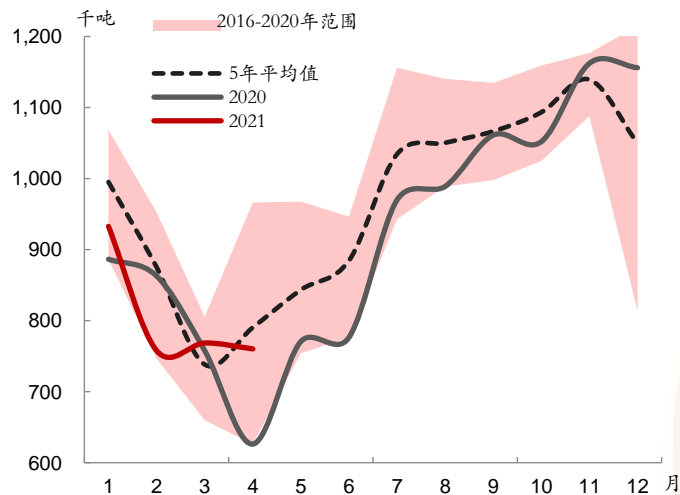
- ◆ 05-12年间新增种植了大量橡胶树，从而造成12-20年间全球天胶新增产能处于加速释放期；
- ◆ 12年之后，由于胶价开始步入熊市周期，价格跌势下，加上主产国开始对新种采取一定控制措施，橡胶新增种植面积开始大幅下降；
- ◆ 从橡胶树生长周期的角度，20年之后，全球天胶新增产能将度过加速释放期，而产能绝对水平的下降预计要到2024-2027年间。

全球天胶产量预测

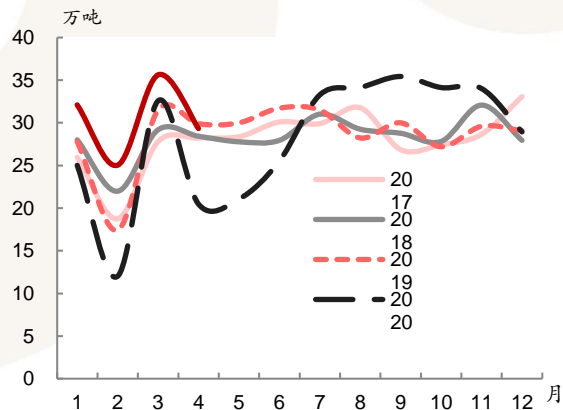


- 目前的原料价格足够调动胶农的割胶积极性；
- 产能绝对水平尚不会出现拐点；
- ◆ 从季节性角度，全球天胶主产区二季度产量季节性偏低。

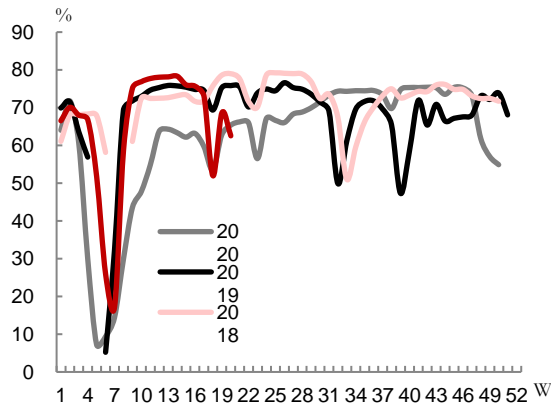
全球天胶二季度产量偏低



我国卡客车胎出口量



我国全钢胎开工率



- ◆ 我国轮胎需求结构中，40%以上的轮胎用于出口，轮胎出口业务主要取决于海外需求复苏情况；
- ◆ 去年7月份之后随着海外需求的复苏，我国轮胎产业链全面复工复产叠加性价比高的优势开始凸显，国外轮胎补货订单流向中国市场，我国轮胎出口订单开始回暖，去年7月以来轮胎出口量甚至高于往年同期。
- ◆ 今年3月中旬欧洲疫情爆发，部分国家采取封锁措施；4月印度疫情爆发且尚未得到有效控制，持续引发市场对外需复苏的担忧情绪；

- ◆ 供给端：近期海外主产区在陆续开割，由于当前天气状况比较正常，加上原料价格处于高位，预计后期产出会正常放量。值得注意的是，近期东南亚国家疫情形势有所恶化，国内封锁措施有所收紧，居民出行受到一定限制，这种情况下，需要关注后市是否会因劳动力短缺而导致割胶受到影响；
- ◆ 需求端：欧洲大部分国家的解封计划在稳步推进，后期需求有望复苏向上，但是目前印度疫情所引发的市场担忧情绪仍未消退；内需替换胎市场表现一般，无明显增量；
- ◆ 前期在多重利空的打压下，胶价大幅下挫，目前利空因素已经基本反应在价格中。近日期现价差明显收窄，空头套利盘进一步打压的动能不足。在没有新的利空因素出现的情况下，短期胶价进一步下行空间有限，但同时也缺乏明显的上行驱动力；
- ◆ 从全年来看，21年将呈供需双增格局。在全球历史高库存问题没有得到有效解决的情况下，橡胶市场仍不具备大牛市基础。