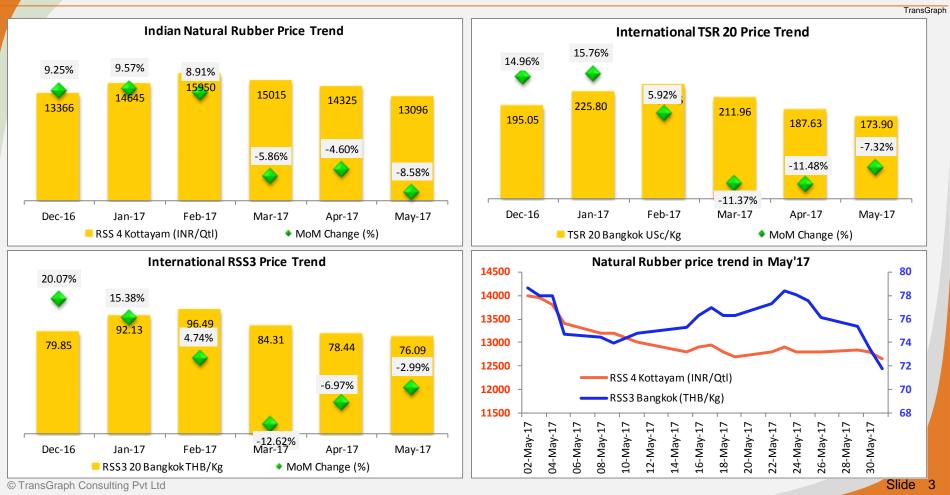


## Medium term Outlook on Rubber

June 2017



#### **Market Recap**



### **Price trend summary and market developments**

- Indian NR prices continued the declining trend for third consecutive month in May pressurized by weakness in international prices and growing concerns about narrowing import price parity (domestic – import NR price) resulting in higher imports.
- International NR spot prices declined further in May as the concerns about additional supplies expected in market due to the end of dry wintering season and Thailand entering the seasonal higher production starting from June. Further, improving output levels in Vietnam and higher exports from Indonesia also added to pressure on prices, pushing them to six month lows.
- IMD had revised its rainfall forecast for 2017 Southwest monsoon to 98% of Long Period Average from 96% of LPA earlier due to the positive IOD signals. Further, IMD has also forecasted that Southern India would receive 99% of LPA rains.
- At the policy front, rumours about Central government repealing the Rubber Act which gives the organization Indian Rubber Board statutory body status raised concerns in the market. Further, exclusion of Rubber from the proposed Plantations Export Development Agency (PEDA) has also added to the uncertainty.
- Additionally, Ministry of Agriculture rejecting the proposal to take over the Rubber Board activities as well as the downsizing of the regional Rubber offices from 26 to 14 including the Kottayam region office which has most of the small stake holders plantations resulted in confusion in the markets.
- At the international front, International Rubber consortium (comprising of Thailand, Indonesia and Malaysia) will be meeting on June 17 18 in order to discuss about measures to support NR prices in the wake of recent sharp fall. IRCo nations will be considering the export curb measures in order to support prices.

## **Critical price drivers - Global**

	1 mon	th	2-3 mo	nths
Price driver	Weight %	Score (1-5)	Weight %	Score (1-5)
ANRPC production growth	20%	3	20%	1
Major suppliers export growth	10%	3	10%	2
Chinese NR imports	10%	3	10%	3
Global automobile sector performance	10%	3	10%	4
Manufacturing activity in major consuming countries	10%	4	10%	4
Chinese demand outlook	15%	3	15%	4
EU, Japan and US demand outlook	10%	3	10%	4
Global NR stock levels	15%	3	15%	2
Total indexed score:	3.10	)	2.80	D

## **Critical price drivers - India**

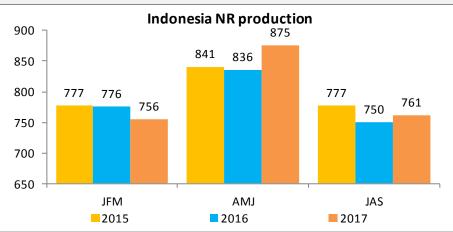
	1 mon	th	2-3 mo	3 months				
Price driver	Weight %	Score (1-5)	Weight %	Score (1-5)				
Drop in domestic NR production	15%	4	15%	5				
Import price parity	10%	3	10%	2				
Automobile sector growth	10%	3	10%	4				
Domestic NR consumption	15%	4	15%	4				
Block rubber supply – demand scenario	10%	4	10%	4				
Sheet rubber supply – demand scenario	10%	3	10%	4				
NR supply demand gap	20%	4	20%	3				
ISNR – RSS price spread	10%	3	10%	4				
Total indexed score:	3.60	•	3.75	5				
Index score (1-5, 3:Neutral, 1&2:bearish, 4&5:bullish)	Index score (1-5, 3:Neutral, 1&2:bearish, 4&5:bullish)							

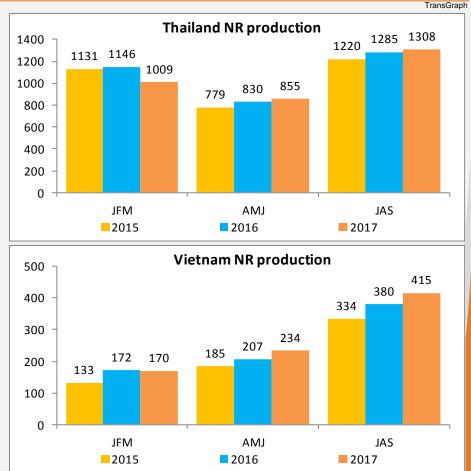
## **Global Rubber Dynamics**



# NR production in Thailand to remain lower while output in Indonesia and Vietnam are expected to improve

- Due to the favorable weather conditions, Thailand NR output is anticipated to rise sharply in the next quarter by 52.9% to 1.31 million tons from an estimated 0.85 million tons during the second quarter.
- Meanwhile, NR production in Indonesia is expected to decline gradually in the next quarter as the higher rainfall is likely to lower the tapping activity, offsetting some of the production growth in ANRPC.

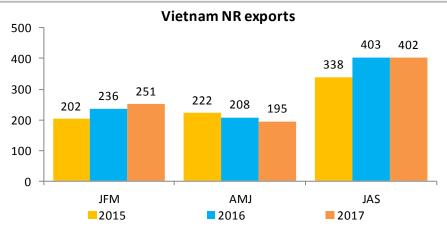


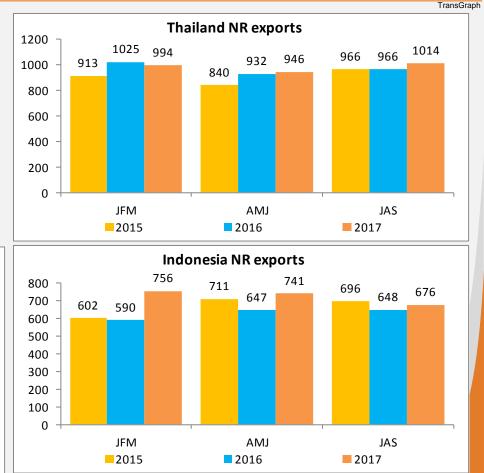


© TransGraph Consulting Pvt Ltd

#### **NR** Exports overview

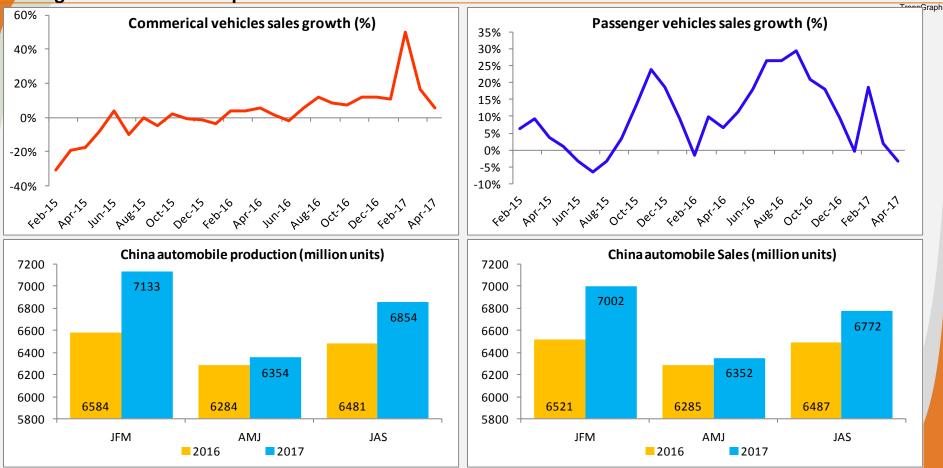
- Aftermath of the floods in Thailand, lower NR stocks in the region has kept the NR exports under check in the past two quarters. However, with production expected to pick up, NR exports are likely to grow at faster rate in the coming quarter.
- On the other hand, Indonesia's NR exports are likely to decline marginally compared to past year and previous quarter as the NR output is likely to decline in the coming months.





© TransGraph Consulting Pvt Ltd

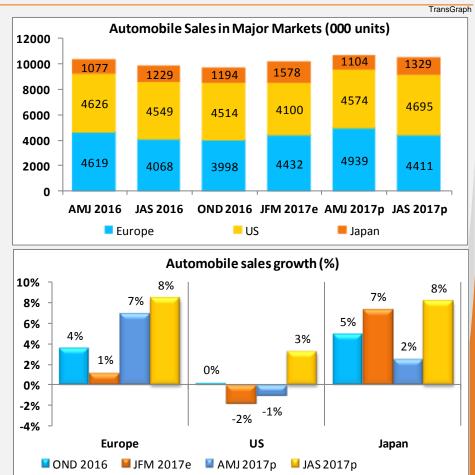
Strong growth in China commercial vehicle sales to drive to automobile production higher while the passenger vehicles sales expected to rebound due to seasonal demand in JAS 2017 in the medium term



Slide 10

**Recovery** in US and Japanese sales along with stronger growth in China and EU to keep automobile sales growth prospects bright in the medium term

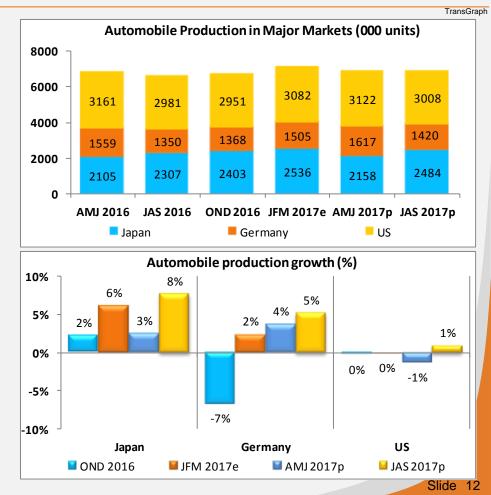
- China's auto sales are likely to grow at a faster pace in the upcoming quarter supported by improved manufacturing sector growth and continued fiscal support by the government.
- After the weak growth in the past few months, US auto sales are expected to witness gradual recovery in coming months during the summer season.
- Meanwhile, robust growth momentum at the European front is likely to continue in to the third quarter due to availability of cheap finance and increasing consumer spending.
- Recovery in Japanese auto sales aided by the revival in Japanese economic growth supported by rise in exports likely to keep the sales growth stronger in the coming quarter.



Slide 11

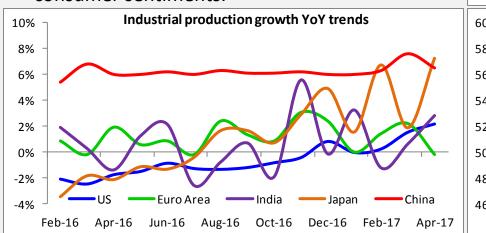
#### Japanese auto production in recovery mode after extended slump

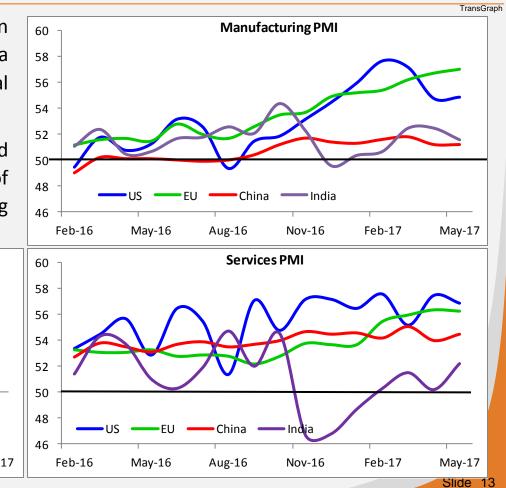
- Japanese auto production is expected to continue the recovery trend in the medium term aided by government's stimulus measures to infuse liquidity in market and higher export demand.
- Further, Chinese production is expected to grow at a stronger pace at amid better than expected sales and inventory replenishing after buoyant sales in the last two quarters of 2016.
- Meanwhile, after the sluggish growth in the past three quarters US auto production is expected to witness moderate rebound in the next quarter supported by increasing sales and bright sales prospects due to improving wages, consumer confidence and declining unemployment in the coming quarters.



#### Improvement in Manufacturing activity around the globe to aid demand growth sentiments

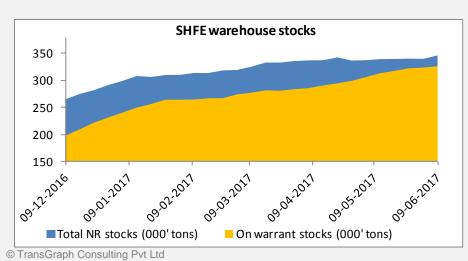
- Continued improvement witnessed in manufacturing PMI in US, Euro Zone and China and steady rise in US and Indian industrial production.
- Sharp revival in Indian manufacturing and service PMIs as the adverse impact of demonetization wanes aiding in supporting consumer sentiments.

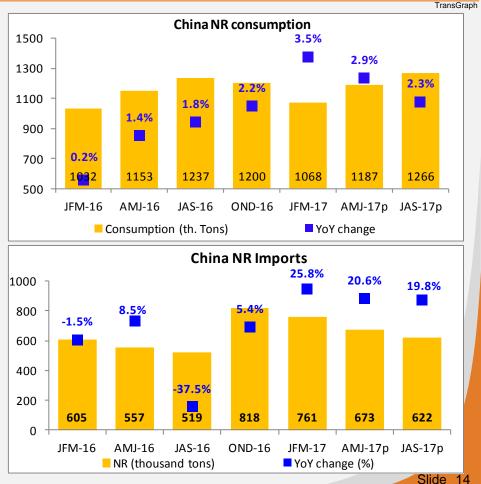




## China consumption moving forward looks bright amid higher YoY growth in the coming quarter while higher inventories remain a concern

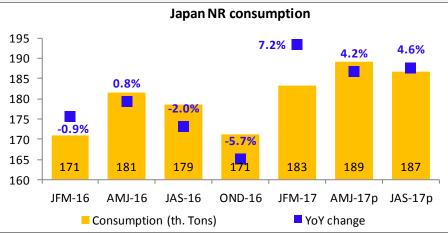
- China NR Consumption expected to increase to the tune 2.3% in JAS quarter compared to same time last year and about 6.6% higher compared to an estimated 1.18 million tons demand in AMJ'17 aided by recovery in auto production and improving manufacturing sector activity.
- Further, China's imports are likely to decline by 7.6% in the coming quarter compared to an estimated 673 thousand ton imports during AMJ 2017 as the inventories levels continue to remain high.

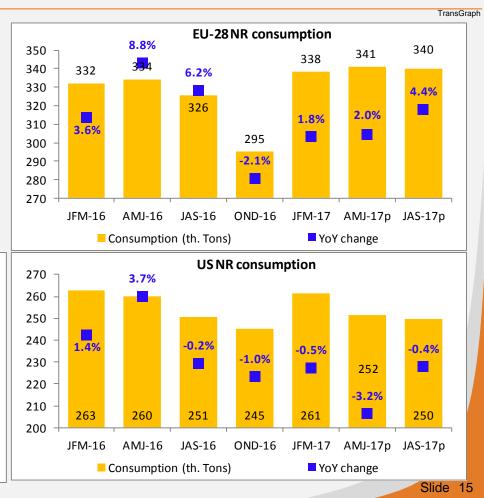




#### NR consumption overview of other major consumers

- Buoyed by the robust growth in automobile sector, NR consumption in EU region is expected to increase at faster pace in the current and next quarters.
- Further, recovery in Japanese auto production is expected to keep the growth momentum growing in the coming quarter offsetting the weak growth in US NR consumption.





© TransGraph Consulting Pvt Ltd

## **Quarterly Thailand NR Balance Sheet**

Attribute	AMJ-16	JAS-16	OND-16	JFM-17e	AMJ-17p	JAS-17p			
Production	0.83	1.28	1.24	1.01	0.86	1.31			
Imports	0.01	0.01	0.01	0.01	0.01	0.01			
Exports	0.93	0.97	0.97	0.99	0.95	1.01			
Consumption	0.17	0.16	0.16	0.17	0.17	0.17			
Supply – Demand Balance     -0.26     0.17     0.12     -0.15     -0.25     0									
All units in million tons; Source: ANRPC, IRSG, TG estimates									

- Tightness in the Thailand market due to lower production during the first two quarters resulting in decline of stocks shall ease in coming quarter amid increase in NR output.
- Further, higher exports amid pick up in demand likely to keep supply demand balance relatively narrow in the next quarter.

#### **Quarterly Indonesia NR Balance Sheet**

Attribute	AMJ-16	JAS-16	OND-16	JFM-17	AMJ-17p	JAS-17p			
Production	0.836	0.750	0.747	0.756	0.875	0.741			
Imports	0.007	0.008	0.008	0.008	0.008	0.008			
Exports	0.647	0.648	0.687	0.703	0.691	0.676			
Consumption	0.159	0.162	0.165	0.160	0.161	0.163			
Supply – Demand Balance     0.037     -0.052     -0.098     -0.099     0.032     -0.0									
All units in million tons; Source: ANRPC, IRSG, TG estimates									

- Despite the rise in exports, higher production during first and second quarters of 2017 is expected to keep markets oversupplied in the AMJ'17 quarter.
- Moving forward, seasonal decline in production and higher YoY exports to result in tighter conditions at the international front.

© TransGraph Consulting Pvt Ltd

## **Quarterly Vietnam NR balance sheet**

Attribute	AMJ-16	JAS-16	OND-16	JFM-17	AMJ-17p	JAS-17p			
Production	0.21	0.38	0.455	0.170	0.234	0.415			
Imports	0.00	0.00	0.000	0.000	0.000	0.000			
Exports	0.21	0.40	0.390	0.250	0.251	0.402			
Consumption	0.04	0.03	0.039	0.031	0.030	0.040			
Supply – Demand Balance     -0.04     -0.06     0.026     -0.112     -0.047     -0.047									
All units in million tons; Source: ANRPC, IRSG, TG estimates									

- Vietnam's exports are expected to witness sharp rise in third quarter amid increasing demand, resulting in total exports increasing by 60% JAS compared to an estimated 251 thousand tons in AMJ 2017.
- Despite the gradual recovery in the Vietnam's production during AMJ 2017 and JAS 2017 (QoQ basis) and higher exports is likely to keep the market in deficit conditions in the medium term.

# Quarterly ANRPC regional Balance Sheet – Higher consumption growth to keep supply – demand balance on a relatively tight note

Attribute	AMJ-16	JAS-16	OND-16	JFM-17	AMJ-17p	JAS-17p			
Production	2.50	3.18	3.17	2.35	2.58	3.19			
Imports	0.95	0.96	1.31	1.08	0.97	1.05			
Exports	2.00	2.23	2.26	2.15	2.05	2.31			
Consumption	2.11	1.98	1.94	1.93	2.17	2.09			
Supply – Demand Balance     -0.66     -0.07     0.29     -0.64     -0.67     -0.									
All units in million tons; Source: ANRPC, IRSG, TG estimates									

- ANRPC production is expected to decline by 9.8% in AMJ 2017 quarter compared to JFM 2017, however about 3.2% higher compared to same quarter last year as the production in Vietnam is expected to increase gradually and Indonesia entering the peak production season.
- Further, NR production is expected to increase more sharply in the third quarter (about 24% QoQ increase) as the Thailand and Vietnam production continue to rise resulting in supply tightness easing in the third quarter despite the rise in consumption.

# Quarterly Global NR Balance Sheet – Stock replenishment expected in coming quarters owing to rise in production

Attribute	AMJ-16	JAS-16	OND-16e	JFM-17p	AMJ-17p	JAS-17p
Opening Stocks	3.05	2.45	2.62	2.88	2.51	1.81
Production	2.67	3.43	3.37	2.79	2.60	3.41
Total Supply	5.72	5.88	5.99	5.67	5.11	5.23
Consumption	3.27	3.26	3.11	3.16	3.30	3.34
Ending stocks	2.45	2.62	2.88	2.51	1.81	1.88
No of weeks of consumption	9.74	10.47	12.06	10.34	7.14	7.32
Source: IRSG, TG Estimates, All un	its in Million	tons (unles	s specified of	therwise)		

- After the sharp decline in the first quarters, NR stocks are likely to be replenished in the next quarter due to production outpacing demand.
- However, easing of higher stock burden compared to past year is likely to remain supportive in the medium term.

## **IRCo** mulling to curb exports in order to stabilize NR prices

International Rubber consortium (comprising of Thailand, Indonesia and Malaysia) general meeting held in the last month expressed concerns over sharp volatility in prices during past few weeks resulting in prices dipping to near three month lows despite the supportive fundamentals in the market.

- Despite the floods in Thailand disrupting the production during January and lower stocks available in the markets, prices have plunged due to heavy speculation in futures market resulting in prices declining to Dec 2016 levels.
- IRCo indicated in the official statement that despite tighter supply demand conditions in the market, sharp swings in prices are expected to hurt rubber producers and in regard to addressing this issue and supporting prices, three nations shall consider exports curbs.
- However, any details about the export curbs were not revealed in the statement. Going ahead, officials from Thailand, Indonesia and Malaysia are expected to meet on Jun 17 – 18, where the final decision on export curbs will be taken.
- Earlier, three nations along with Vietnam had decided to cut exports during 2016 by 615,000 tons but Thailand, Indonesia and Malaysia continued to push the volumes in to the market.
  © TransGraph Consulting Pvt Ltd

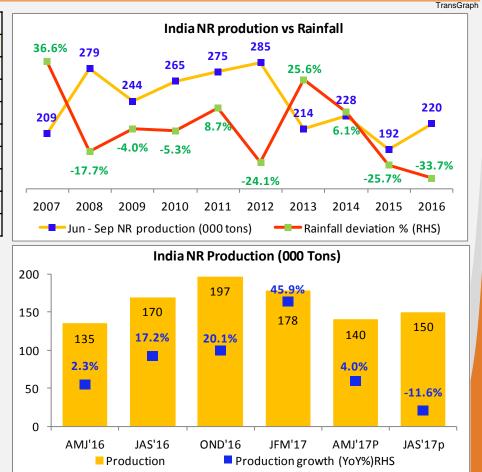
## **Indian Rubber Dynamics**



#### NR output likely to remain lower in the medium term

Major rubber belts cumulative rainfall (01-06-2017 to 13-06-2017)										
Sub-division	Actual (mm)	Normal (mm)	Departure							
КОТТҮАМ	310.4	283.7	9%							
ERNAKULAM	352.1	292.9	20%							
PATTANAMITTIA	234.4	244.9	-4%							
KANNUR	345.8	294.6	17%							
KOLLAM	229.1	212.2	8%							
IDUKKI	162.5	238.8	-32%							
MALAPPURAM	MALAPPURAM 186		-23%							
PALAKKAD	121.2	157.5	-23%							

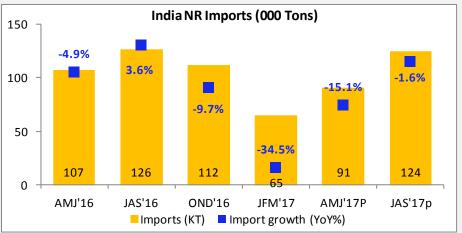
Moving forward, higher rainfall expected in Kerala this monsoon season is likely to hamper the tapping activity in the coming quarter keeping production lower compared to last year.

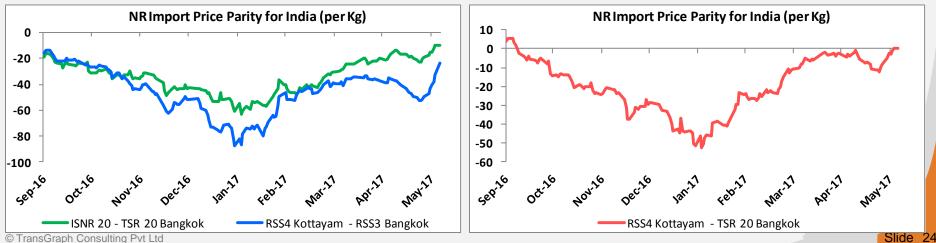


Slide 23

#### Narrowing import price parity to result in rise of imports in coming quarters

- Due to the sharp rise in international prices during Dec-16 to Mar-17, import parity (Domestic – international prices) had widened drastically resulting decline in import volumes.
- Going ahead, with the narrowing of prices due to the relatively firm trend expected in domestic prices imports are expected gradually increase in the medium term.

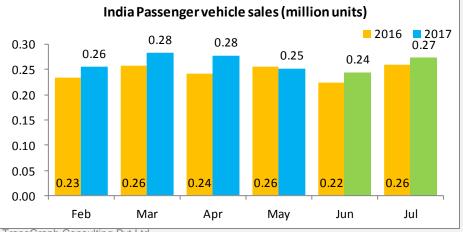


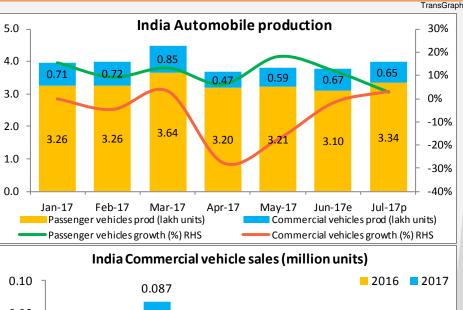


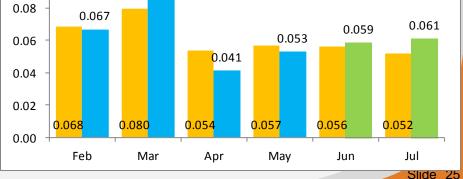
#### Passenger and commercial vehicle sales to grow at faster rate in the medium term



Going ahead, with automobile sales growth is expected to gradually pick in the medium term due to economic activity aiding in boosting sales and BS IV compliant commercial vehicle production catching up with demand, NR demand growth prospects from auto sector in the medium term are expected to bright.





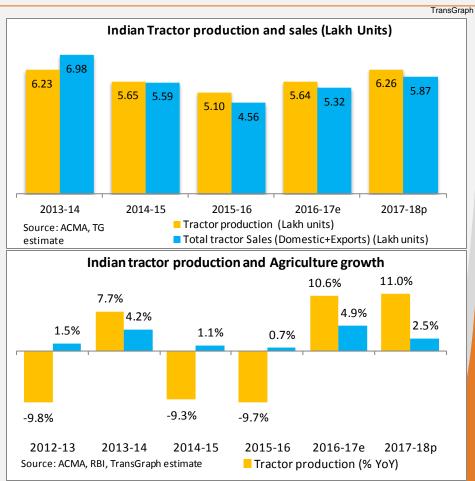


© TransGraph Consulting Pvt Ltd

#### **Tractor sector overview**

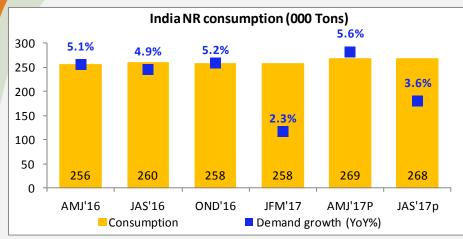
Going ahead, expectations better than normal rainfall and seasonal higher sales during Aug – Oct months is likely to result in higher offtake from the market in the coming days, which is expected to remain supportive to prices in the medium term.

FY'18 cumulative tractor sales										
Period	Apr-May 2016	Apr-May 2017	Growth rate (%)							
M&M	42852	49656	15.9%							
Escorts	9379	11646	24.2%							

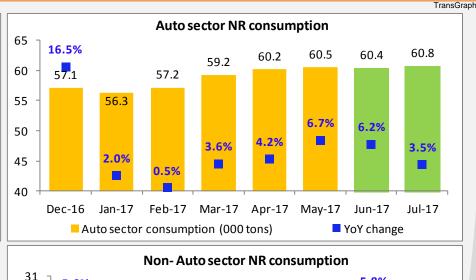


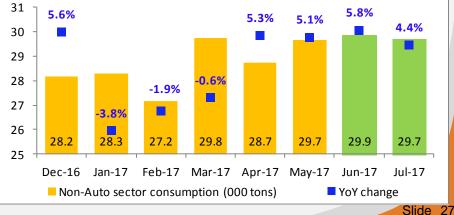
Slide 26

## India's NR consumption likely to witness strong growth in AMJ quarter



- Buoyed by the strong growth in auto sector production and improving manufacturing sector activity is expected to keep consumption growth higher in the medium term.
- Expectations of lower production in the monsoon season starting from June is expected result in stockpiling by tyre manufacturing companies in the coming month.

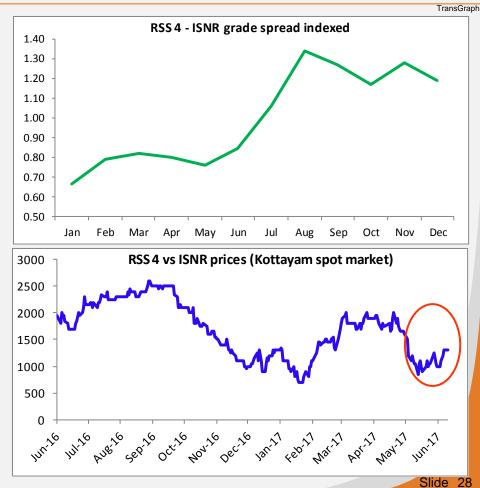




## **RSS 4** – ISNR price spread indicating upside correction in RSS prices

After hovering near INR 1800 per Qntl, price spread between RSS – ISNR has corrected to back to historical normal levels of INR 1100 per Qntl in the past month due to sharp correction in RSS prices.

- While the RSS 4 prices have declined sharply during the past month, ISNR grade prices have fallen at the relatively slower rate.
- Going ahead, seasonally price spread between RSS and ISNR grade is seen increasing starting from June as the RSS prices strengthen more compared to ISNR grade due to higher demand and lower production during monsoon season.



#### Indian Block Rubber Supply and demand – tightness to persist in the next few months despite the gradual rise in imports

	Block Rubber Supply – Demand dynamics										
Month	Production	Consumption	Imports	Total Supply	Supply – Consumption	Cumulative stock change					
Jul-16	6.84	38.39	32.53	39.37	1.0	1.60					
Aug-16	7.03	39.20	38.98	46.01	6.8	8.40					
Sep-16	7.30	39.40	29.71	37.01	-2.4	6.02					
Oct-16	9.12	40.45	34.80	43.92	3.5	9.48					
Nov-16	9.34	41.26	33.76	43.10	1.8	11.32					
Dec-16	11.37	37.58	19.06	30.43	-7.1	4.18					
Jan-17	11.22	35.34	18.91	30.13	-5.2	-1.03					
Feb-17	8.58	35.44	12.01	20.59	-14.9	-15.88					
Mar-17	7.78	37.82	18.64	26.42	-11.4	-27.27					
Apr-17	7.56	37.74	18.19	25.75	-12.0	-11.99					
May-17	6.54	37.64	23.85	30.39	-7.3	-19.24					
Jun-17	6.45	39.19	30.36	36.81	-2.4	-21.62					
Jul-17	6.31	39.61	28.37	34.68	-4.9	-26.55					
All units in	thousand tons										

 Going ahead, lower production and strong demand at the domestic front is likely to keep markets tighter despite the rise in imports in the coming months supporting the price sentiments.

# Indian Sheet Rubber Supply and demand – Lower production and strong consumption growth to aid in reducing the stock build in the previous quarters.

	Sheet Rubber Supply – Demand dynamics										
Month	Production	Consumption	onsumption Imports Total Supply Supply – Consumption		Cumulative stock change in FY'17						
Jul-16	37.69	41.38	8.58	46.27	4.9	-5.28					
Aug-16	41.39	38.81	9.83	51.21	12.4	7.13					
Sep-16	42.90	35.17	7.61	50.51	15.3	22.47					
Oct-16	42.88	34.71	8.41	51.29	16.6	39.05					
Nov-16	45.56	37.25	8.57	54.13	16.9	55.93					
Dec-16	48.04	38.67	4.41	52.45	13.8	69.71					
Jan-17	49.51	40.50	4.52	54.03	13.5	83.25					
Feb-17	42.29	42.41	3.07	45.36	2.9	86.19					
Mar-17	39.85	44.54	5.85	45.70	1.2	87.35					
Apr-17	32.74	44.16	5.04	37.78	-6.4	-6.38					
May-17	32.25	44.95	5.46	37.71	-7.2	-13.62					
Jun-17	32.49	43.22	6.22	38.71	-4.5	-18.13					
Jul-17	29.46	42.29	8.14	37.60	-4.7	-22.82					
All units in	thousand tons	-			•	-					

 Going ahead, due to the lower production during the monsoon season and increase in consumption in coming months is anticipated to keep the tightness intact in the medium term.

#### **Quarterly Balance Sheet – India**

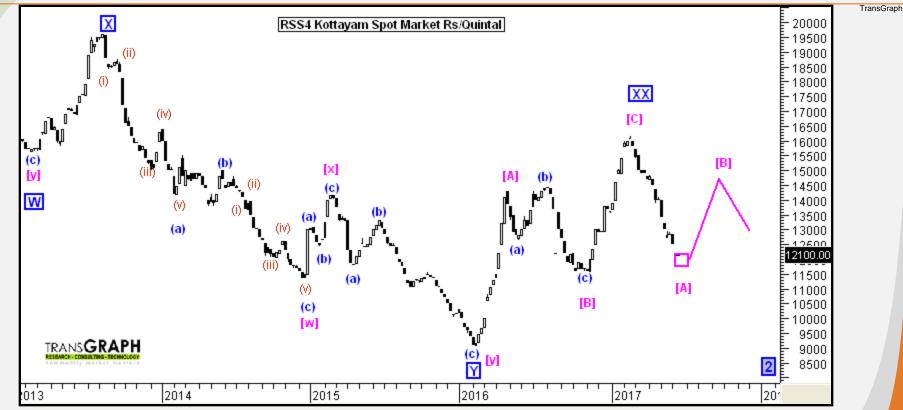
Attribute (thousand tons)	AMJ-16	JAS-16	OND-16	JFM-17e	AMJ-17p	JAS-17p
Production	135	170	197	178	140	150
Imports	107	126	112	65	91	124
Total Supply	242	296	309	243	231	275
Consumption	256	260	258	258	269	268
Exports	0.23	0.24	0.69	0.88	0.65	0.41
Total Demand	256	260	259	259	270	269
Production – Consumption Balance	-121	-90	-61	-80	-129	-118
Supply – Demand Balance	-13.7	36.4	50.4	-15.7	-38.6	5.7

- Lower supply growth due to decline in imports and lower yields expected to bring down the carry over stocks and increase tightness in the market in AMJ quarter.
- However, improving yields after the rainfall and higher imports (YoY basis) to result in supply demand gap widening by the end of next quarter.

## **Technical Analysis**



#### Technical outlook on RSS4 Kottayam



Rubber RSS4 kottayam: Prices are seen trending lower after placing primary wave [XX]. Currently prices are in a intermediate wave-[A] within an primary wave-[Y]. Hence going forward prices are likely to hold above support at INR 11500 and trade higher towards INR 14500 to 15000 in the coming months.

Note:- Prices breaching below INR 11000 shall open the chances of further dip towards INR 10000.

© TransGraph Consulting Pvt Ltd

#### Price outlook summary

TransGraph

Indian Natural rubber prices are likely to hold above support at INR 11500 and trade higher towards INR 14500 to 15000 in the coming months.

Market	Jun 14, 2017	Price range	Direction
RSS4 Kottayam Spot, INR/Qtl	12100	11800 – 15000	Prices are likely to hold above support at INR 11500 and trade higher towards INR 14500 to 15000 in the coming months.

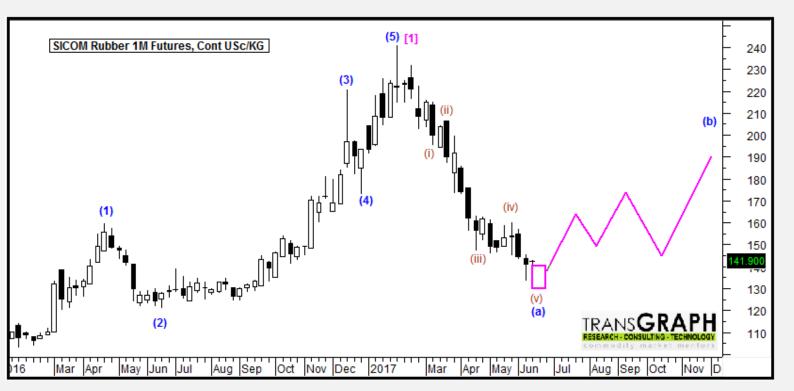
#### **Technical outlook on TOCOM Rubber (JPY/Kg)**



TOCOM RSS3 futures prices are consistently weakened from the Feb'17 high of JPY 366 and are making lower lows. From Elliott wave perspective prices after the conclusion of Intermediate wave 1 at the said high are unfolding a downside corrective phase. The first leg of correction as minor wave a is on the verge of conclusion. Hence prices are likely to stay mixed in the zone of JPY 170-190 and gradually scale up towards JPY 240 in the coming months.

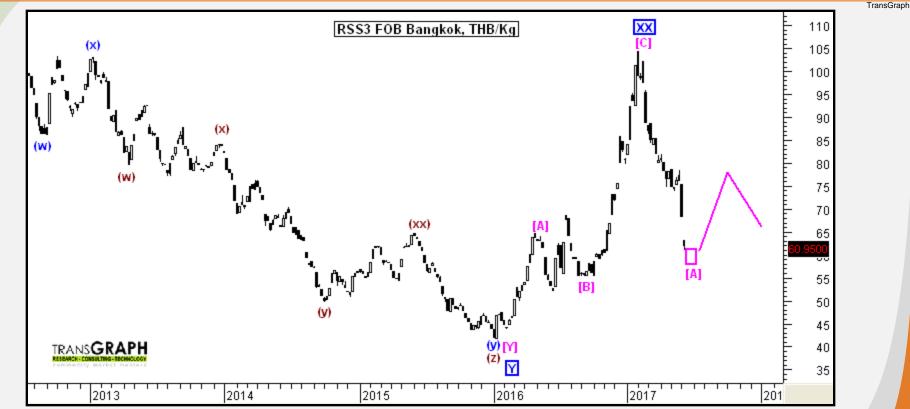
**Note:- Prices breaching below JPY 180 shall open the chances of further dip towards JPY 150.** © TransGraph Consulting Pvt Ltd

#### **Technical outlook on SICOM Rubber**



SICOM TSR20 futures prices are on the verge of concluding the minor wave-(a) of a broad correction unfolding since Feb'17 high of USc 241. Moving ahead prices are likely to find support in the zone of Usc 130 to USc 120 and witness a recovery towards USc 170 in the coming months.

#### **Technical outlook on RSS3 Bangkok**

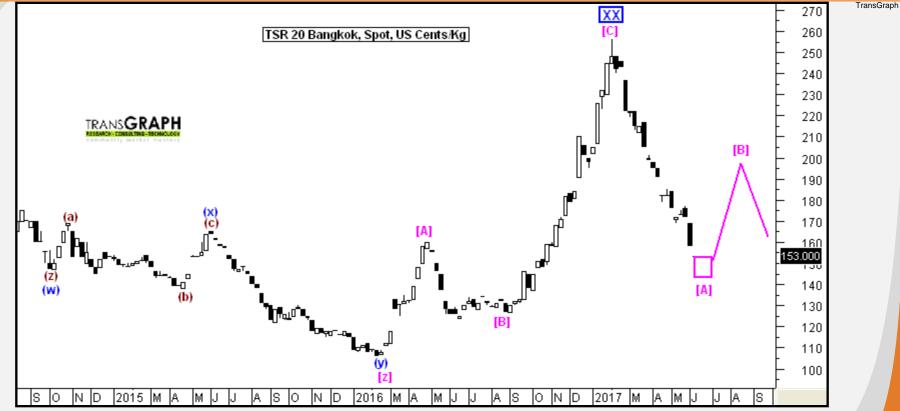


Rubber RSS3 Bangkok: Prices turned lower sharply after finding resistance at THB 105 in the month of Jan'17 placing intermediate wave-A, going forward prices are likely to find support in the zone of THB 55 and turn higher again in the coming months.

#### Note:- Prices breaching below THB 55 shall open the chances of further extension towards THB 40.

© TransGraph Consulting Pvt Ltd

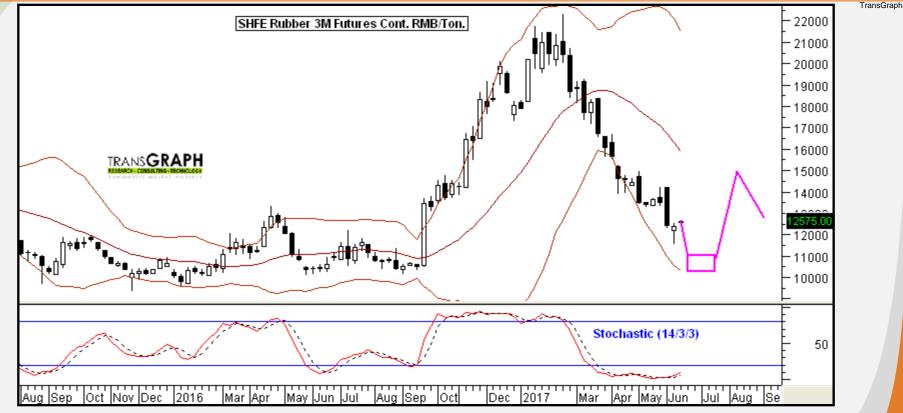
#### **Technical outlook on TSR-20 Bangkok**



Rubber TSR-20 Bangkok spot prices placed an intermediate wave-c top at Usc 255 and are currently in a intermediate corrective-A, going ahead prices are likely to find support in the zone of Usc 140 and trade higher again towards Usc 200 in the coming months. Note:- Prices breaching below Usc 140 shall open the chances of further dip towards INR 110.

© TransGraph Consulting Pvt Ltd

#### **Technical outlook on SHFE Rubber**



SHFE Rubber 3M futures are at halt after finding resistance at RMB 20,000 while momentum oscillators like ADX setup is showing an exhaustion in the momentum. Going ahead prices are likely to find support at RMB 10500 and trade higher again in the coming months.

Note:- Prices breaching below RMB 10500 shall open the chances of further dip towards INR 9500. © TransGraph Consulting Pvt Ltd

#### **Price outlook summary**

TransGraph					
Market	June 14, 2017	Price range	Direction		
TOCOM RSS 3 Futures Cont, JPY/Kg	186.90	170– 240	Prices are likely to find support near JPY 170 and trade higher towards JPY 240 in the coming months		
SICOM TSR 20 Futures Cont, USc/Kg	141.90	120 – 170	Prices are likely to find support in the zone of Usc 130 to 120 and trade higher towards Usc 170 in the coming months		
RSS3 Bangkok spot, THB/Kg	60.95	55 – 80	Prices are likely to find support in the zone of THB 55 and turn higher again in the coming months.		
TSR 20 Bangkok Spot, USc/Kg	153.00	140 – 200	Prices are likely to find support in the zone of Usc 140 and trade higher again towards Usc 200 in the coming months.		
SHFE Rubber 6M futures cont, RMB/Ton.	12575	10500– 15000	Prices are likely to find support at RMB 10500 and trade higher again in the coming months.		





#### Thanking you for your attention.

Talk to us on: +91-40-46619999

Schedule an interaction: Click here

2

Research Queries: services@transgraph.com Sales: mktg@transgraph.com TransRisk software: demo@transgraph.com

#### More info: www.transgraph.com | www.transrisk.net





#### **TransGraph Consulting Private Limited**

6C/A, Melange Towers, Sy.No.80-84, Hitech City, Hyderabad - 500081, India

#### LEGAL INFORMATION

This document is the whole property of TransGraph Consulting Private Limited, Hyderabad, India (hereafter "TransGraph"). The following acts are strictly prohibited: Reproduction and/or forwarding for sale or any other uses

Posting on any communication medium Transmittal via the Internet

#### Terms of usage

Upon receipt of this document either directly or indirectly, it is understood that the user will and must fully comply with the other terms and conditions of TransGraph. By accepting this document the user agrees to be bound by the foregoing limitations.

This publication is prepared by TransGraph and protected by copyright laws. Unless otherwise noted in the Service Agreement, the entire contents of this publication are copyrighted by TransGraph, and may not be reproduced, stored in another retrieval system, posted on any communication medium, or transmitted in any form or by any means without prior written consent of TransGraph. Unauthorized reproduction or distribution of this publication, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent necessary to protect the rights of TransGraph.

The information and opinions contained in this report have been obtained from sources TransGraph believed to be reliable, but no representation or warranty, express or implied, is made that such information is accurate or complete and it should not be relied upon as such.

This report does not constitute a prospectus or other offering document or an offer or solicitation to buy or sell any assets (commodities, currencies, etc) or other investment. Information and opinions contained in the report are published for the assistance of recipients, but are not to be relied upon as authoritative or taken in substitution for the exercise of judgment by any recipient; they are subject to change without any notice and not intended to provide the sole basis of any evaluation of the instruments discussed herein. Any views expressed reflect the current views of the analysts, which do not necessarily correspond to the opinions of TransGraph or its affiliates. Opinions expressed may differ from views set out in other documents, including research, published by TransGraph.

Any reference to past performance should not be taken as an indication of future performance. No member in the public related to TransGraph accepts any liability whatsoever for any direct or consequential loss arising from any use of material contained in this report.

#### Analyst Certification

Each analyst responsible for the preparation of this report certifies that (i) all views expressed in this report accurately, reflect the analyst's views about any and all of the factors and assets (commodities, currencies, etc) named in this report, and (ii) no part of the analyst's compensation is directly or indirectly, related to the execution of the specific recommendations or views expressed herein.

Copyright © TransGraph Consulting Private Limited, Hyderabad, India.