



Pulp market outlook: short-term cycles & long-term trends

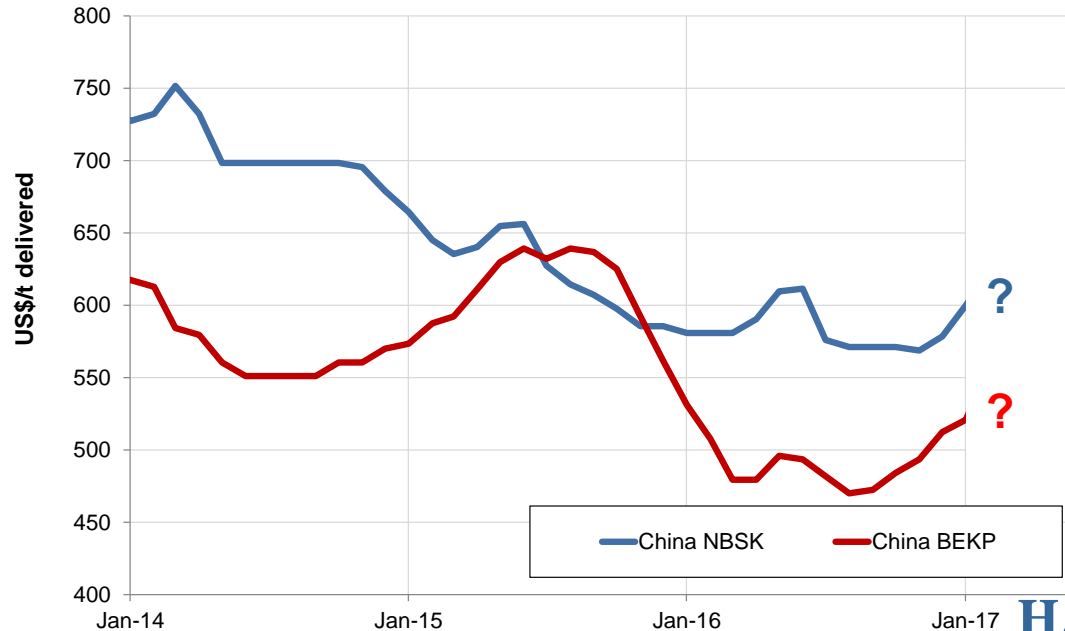
AIAC meeting, Milan, 8th June 2017

Pulp markets troughed in 2016...



- Price differential restored, both softwood and hardwood trade close to “marginal cost”....
 - Limited downside for prices
- But strong capacity growth & slowing of China’s economy
 - Sustained recovery seemed unlikely in the absence of permanent capacity shuts

China
Net NBSK prices vs. NET BEKP prices



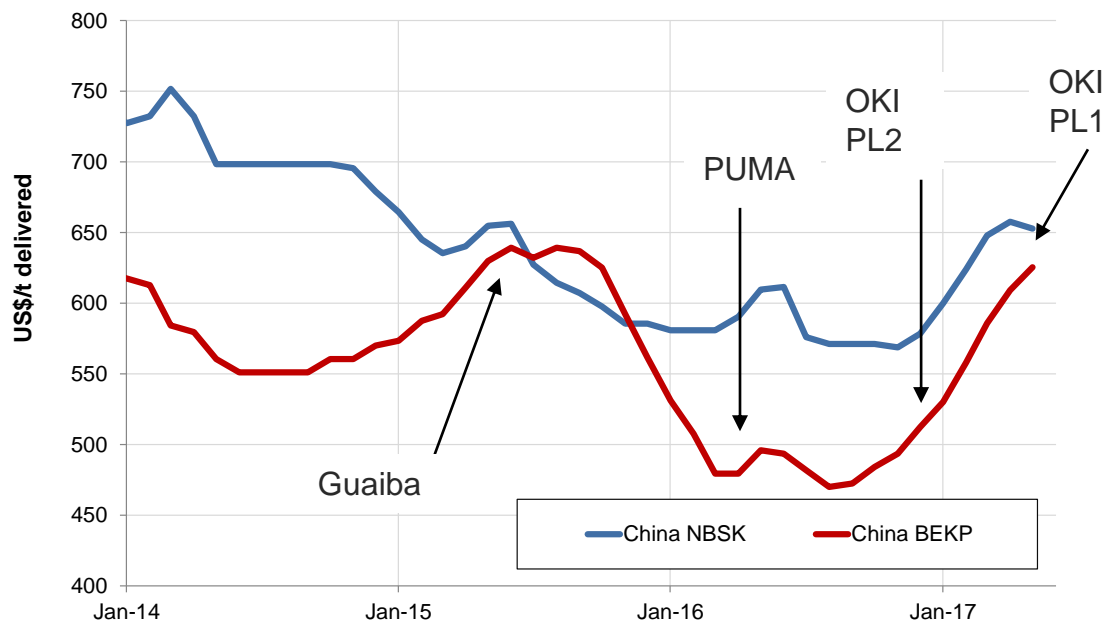
...With little warning of the imminent rally to come



- In the event, net BHKP prices in China have rocketed by \$150/t from \$480 in October to \$630 in May.
- NBSK prices rose from \$570 to \$670.
- Prices in Europe and N America lagged China significantly and a significant discount in net prices emerged, which only started to narrow in April.

China

Net NBSK prices vs. NET BEKP prices

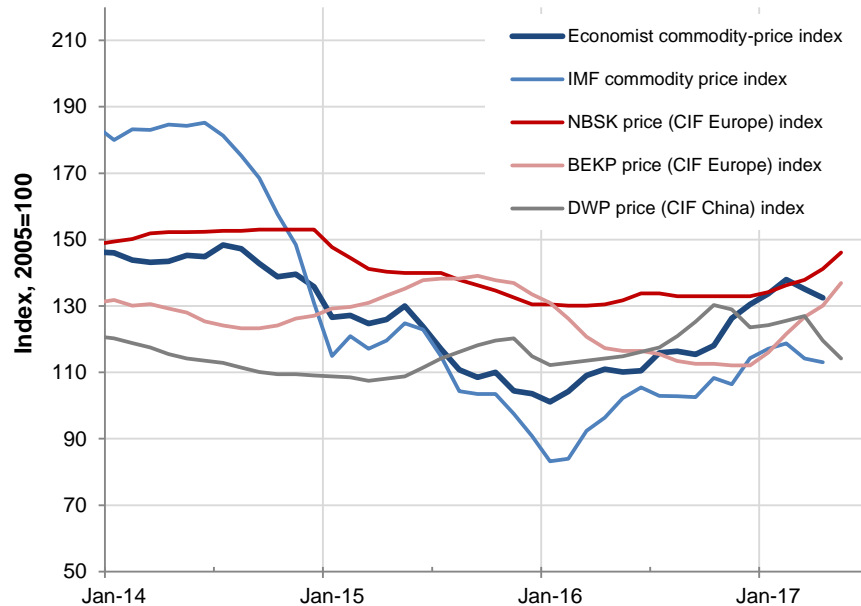


No mill closures since late 2015

What happened ??



Pulp prices v commodity indices



Source: Hawkins Wright, IMF, The Economist

Once again, pulp prices lag the commodity cycle by several months

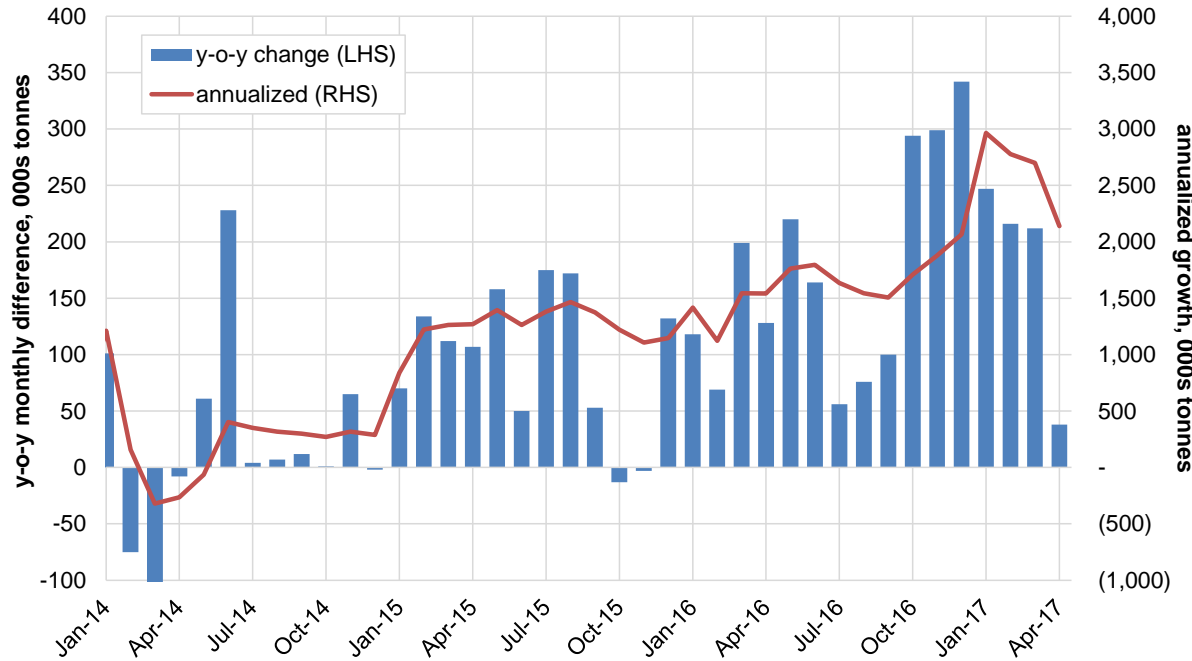
- But in short, Chinese demand has been exceptionally strong and production much weaker than expected.
- Let's start with demand...

Chinese demand boomed from October to March



- Over six months from October to March, Chinese pulp demand increased by 1.6 million tonnes = **3.2 million tonnes annualised (left chart)**.
 - “Trend” growth is 1.2 million tpa

World-20 BCP shipments to China Y-o-v growth



This was never sustainable, and indeed PPC estimates growth slowed dramatically in April.

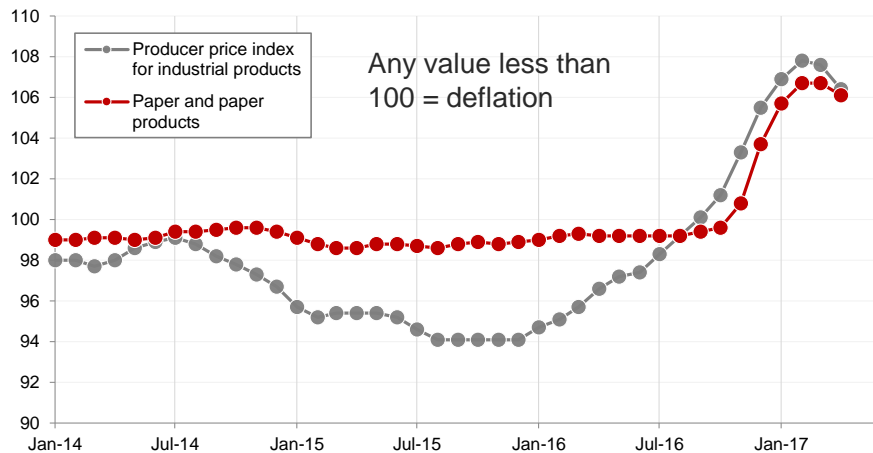
Source: *PPPC*

China buying cycle is a macro-economic phenomenon

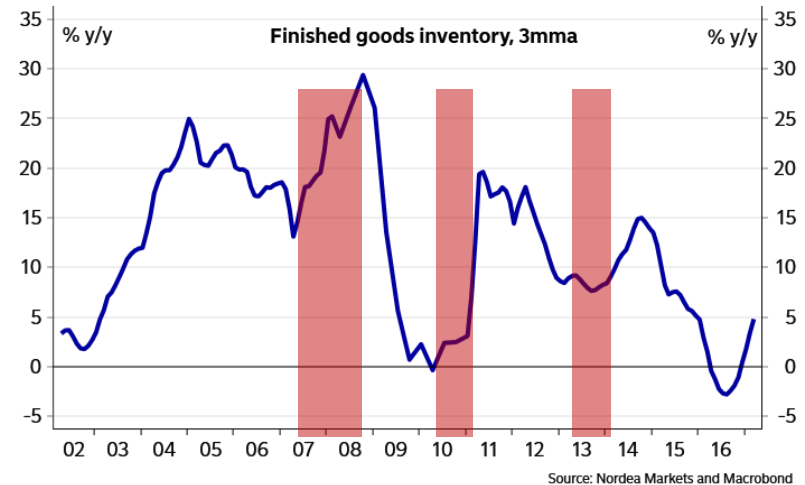


- China reversed a 3 year deflationary cycle through a combination of weaker currency, supply side reforms, and monetary and fiscal stimulus in Q1 2016.
- Producer price inflation (PPI) hit 8 percent in February, encouraging inventory build.
- **Paper prices are no exception, rising by \$100-250/t depending on the grade. Larger Chinese paper mills run full for the first time in many years, higher profitability.**

Chinese PPI (Producer Price Index)
(January 2016=100)



Source: National Bureau of Stats



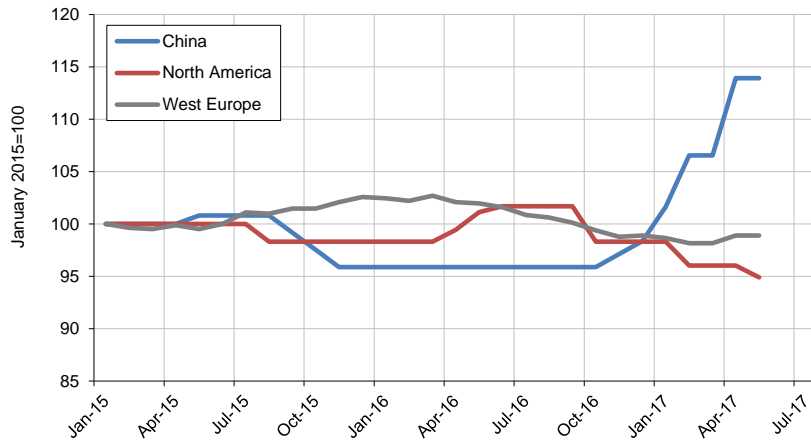
Source: Nordea Markets and Macrobond

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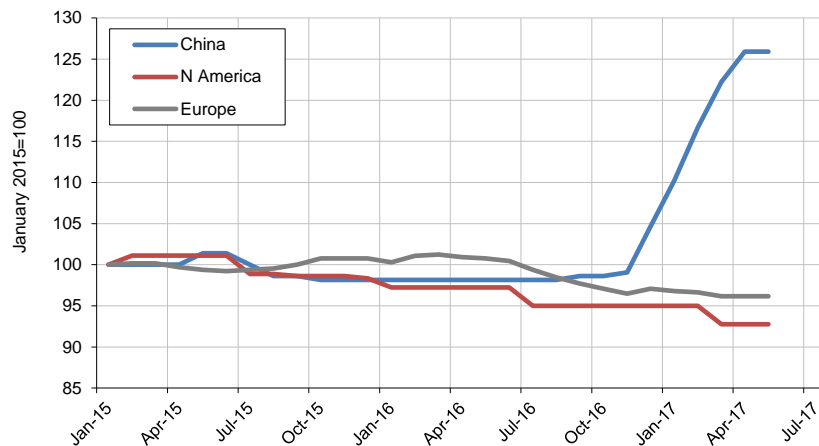
Chinese paper prices



Uncoated paper prices, by region



Coated paper prices, by region



- Price hikes have been achieved in absence of acceleration in underlying demand – graphic paper sector is restructuring and consolidating.
- Similar price rallies were experienced by packaging board grades (both recycled and virgin based).
- Tissue prices have increased more modestly, with jumbo rolls rising around \$70/t. As a result, higher pulp prices (which have increased by \$140 since September) have eaten into margins, and operating rates are estimated at 80-90%.
- However, underlying tissue demand continues to grow strongly, and will remain the main driver of imported wood pulp in the years to come.

The inflationary cycle is starting to reverse, gradually



Chinese economy remains strong in Q2, but many indicators suggest the China cycle is maturing...

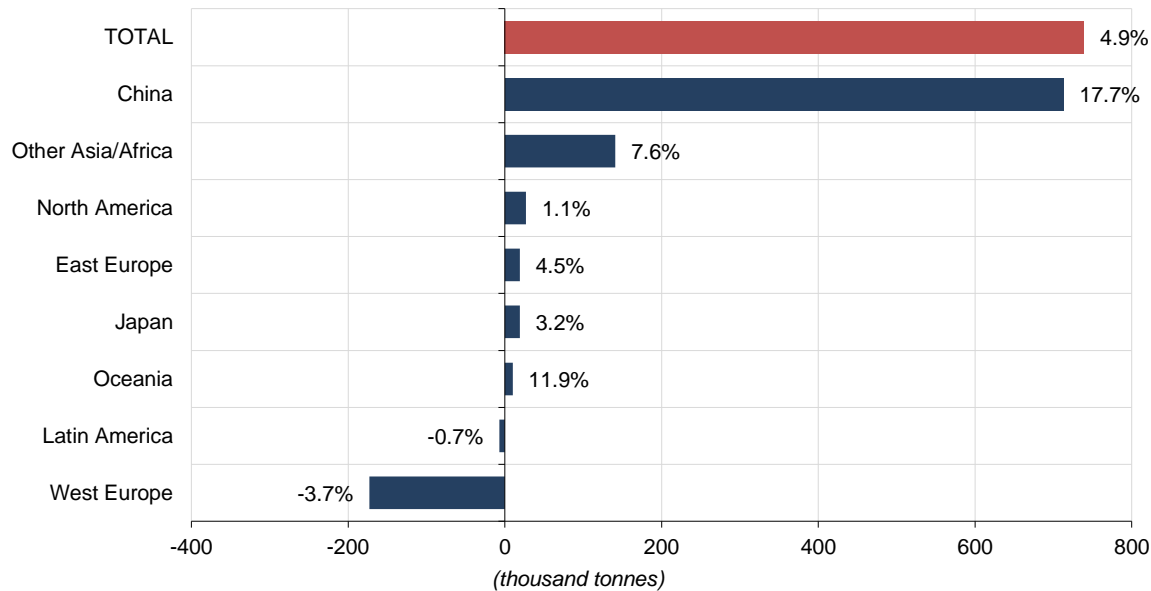
- Government is tightening monetary conditions and investment is slowing. Equity and commodity prices falling on lower expectations for second half. PPI started to fall in March and April, Caixin-Markit PMI <50 in May.
- Corrections in related sectors (dissolving pulp and viscose, recycled fibre and containerboard).
- Fine paper sector starting to weaken, as summer approaches and exported volumes are being pulled back.
- Pulp demand cooling, local rmb prices now well below the US dollar price. Softwood markets more fragile than hardwood
- Inventories not excessive in Chinese ports or paper mills, but inventories are often measured based on recent demand rather than future...

Pulp demand in other regions is fairly weak



Bleached chemical demand growth, 2017 v 2016 (Jan-Apr)

thousand tonnes and y-o-y%



Source: *PPPC*

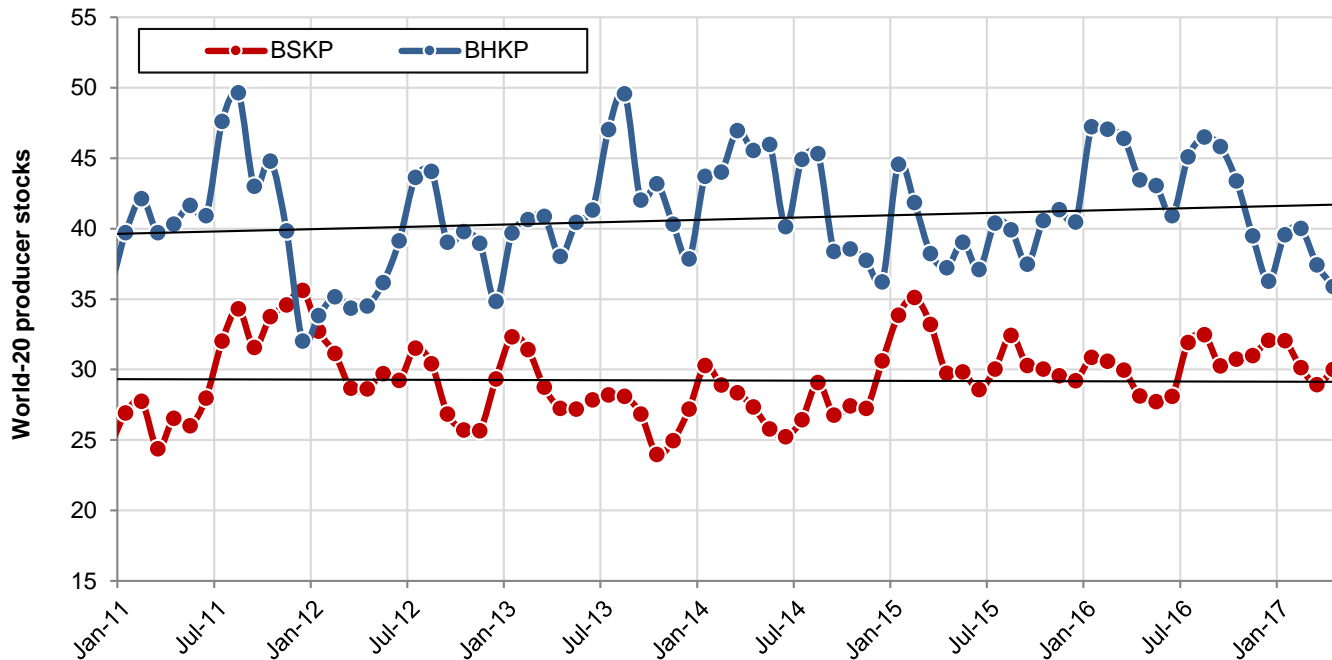
A severe pull-back in China could quickly spell trouble...

Meanwhile, pulp supply remains very tight...



- Producers are struggling to catch up with the unexpected surge in demand. Many are well sold into the summer, hardwood stocks close to record lows.
 - Partly seasonal

World-20 Producer inventories, days of supply



Source: PPPC, Pulpwatch

Source: PPPC

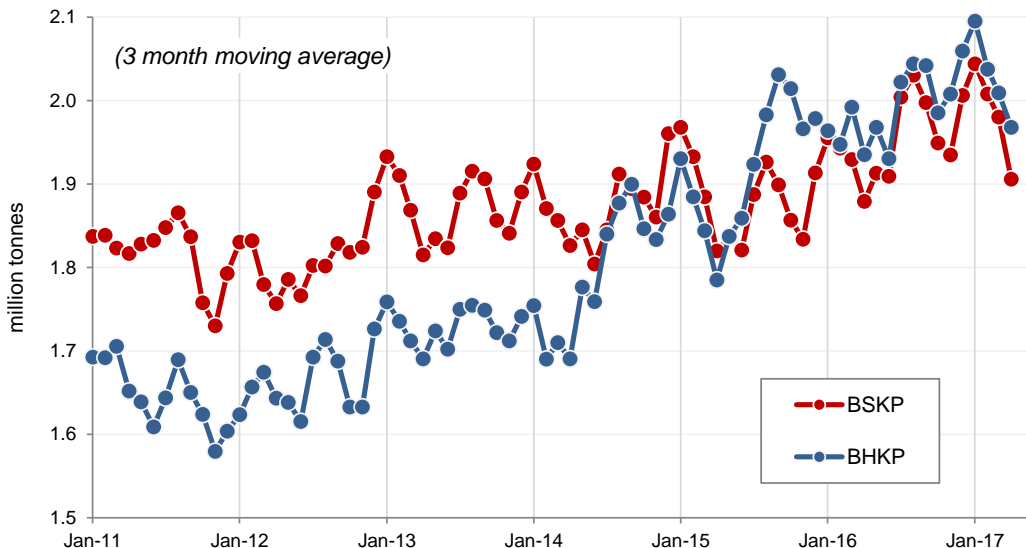
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Production



- Within the reporting sample, production weaker than expected as new capacities take time to ramp up and other mills face specific mechanical problems.
- There is a lot going on outside the sample, in China and Indonesia. We estimate APRIL has withdrawn around 0.8 million tonnes of BHKP through integration and conversion to dissolving.
- Meanwhile, APP has yet to increase sales following the start of line 2 in mid-December. Line 1 has recently started tests, but group surplus may not become apparent until August.

World-20 bleached chemical pulp production



Source: PPPC



Assumptions

- Line 2 to start in June
- Regular sales to commence in July, at first 65kt/month rising to 100kt a month by year end.
- APP talks about “value based growth”, but difficult to know the full picture.



Indonesian fibre challenges:

- Pest and disease
- Peat land's subsidence
- Regular and catastrophic fire
- Declining yields?

Short-term summary



- Further hardwood price hikes in China have been proposed, but resistance is mounting.
 - narrowing differential with BSKP should not be ignored based on recent experience.
- In contrast, net prices in Europe are still playing catch-up. Prices may continue to rise in June particularly if the euro strengthens further.
- Most acknowledge a slow-down in the second half, but much depends on an increasingly unpredictable supply-side.
 - New capacities of Fibria (BEKP) and Metsa Fibre (NBSK) are due by Q4 but will not have much impact this year.
 - However, a number of recent additions have yet to reach their potential.

Longer-term trends - demand

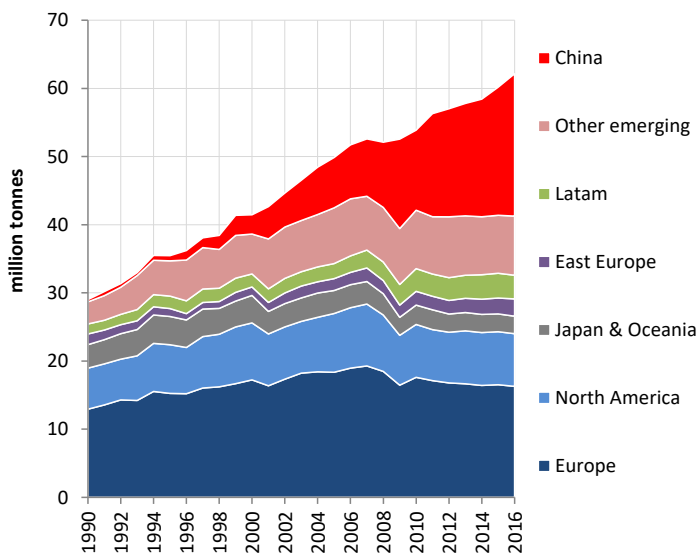


- Despite the maturity of the global paper industry, structural changes will continue to promote **market pulp demand**
 - Tissue and hygiene sectors are fairly immune to aging population and technological change.
 - Renewable packaging demand remains positive.
 - Declining graphic paper consumption removes a key feedstock for certain non-integrated paper (tissue and packaging) mills.
 - Viscose demand, whilst still relative small, is gaining in momentum.

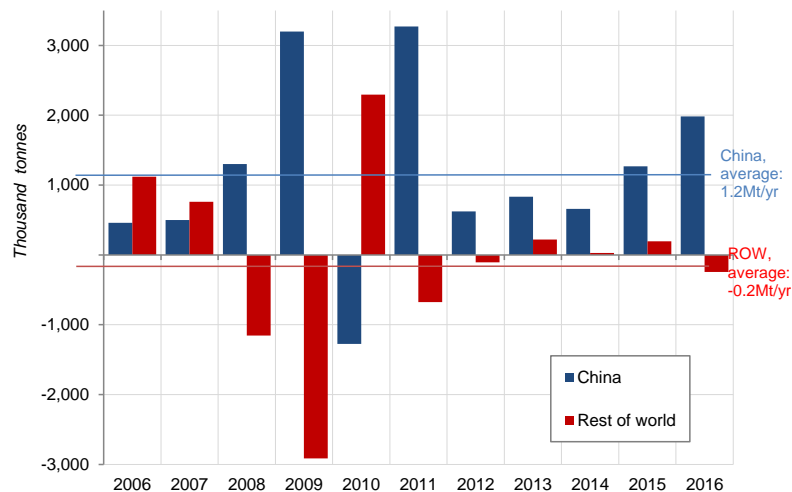
Demand - reliance on China is increasing....



Total market pulp demand, by region



Year on year growth in market pulp demand, China v ROW



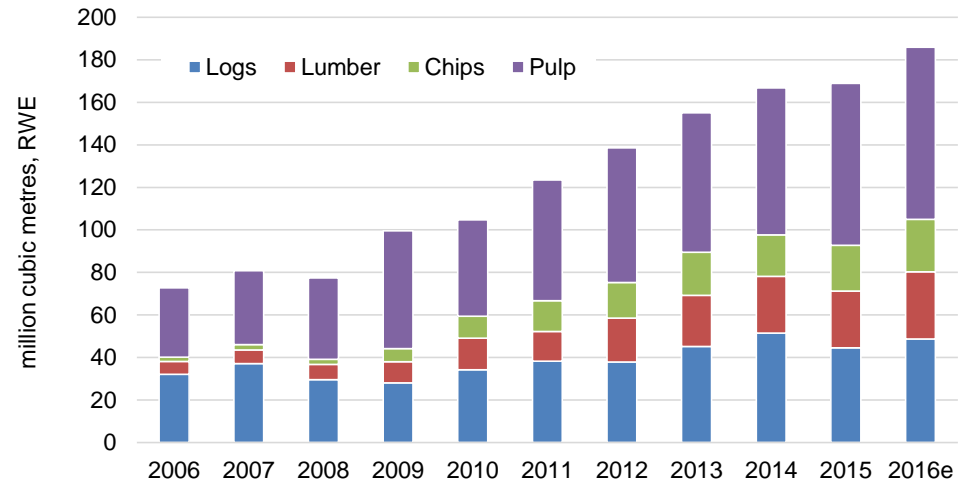
- Recent acceleration in Chinese demand is encouraging in light of slower GDP.
- Economy transitioning to consumption
- Increasingly strict environmental regulations are also accelerating the process of substitution of non-wood and recycled fibres from smaller Chinese enterprises. However, these are “one-off” gains, not to be repeated.

...for all fibre suppliers



- China's wood deficit has increased by around 115 million m³ over the past ten years
- Since 2006 China accounts for
 - 235% growth in global P&B production
 - 115% growth in global market pulp demand
 - 107% growth in HW chip demand
 - 91% growth in dissolving pulp demand

China's wood imports

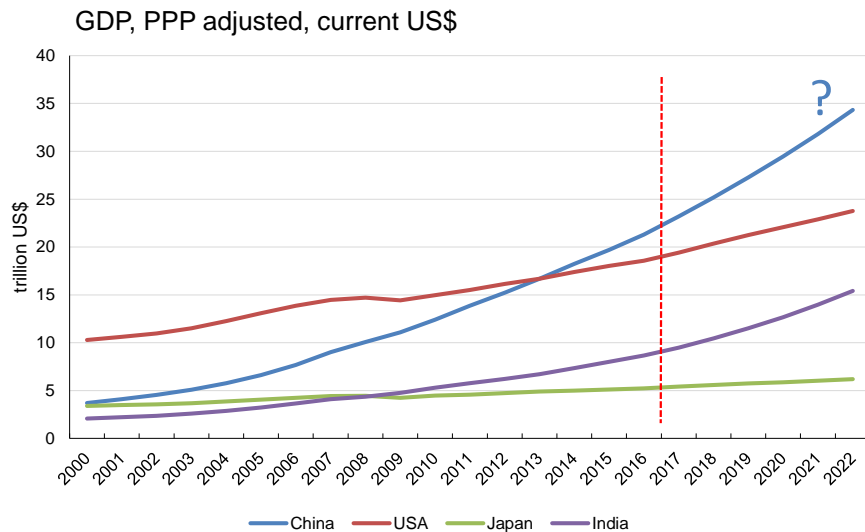




China scenarios

Any long term projections are therefore heavily dependent on assumptions regarding the development of the Chinese economy.

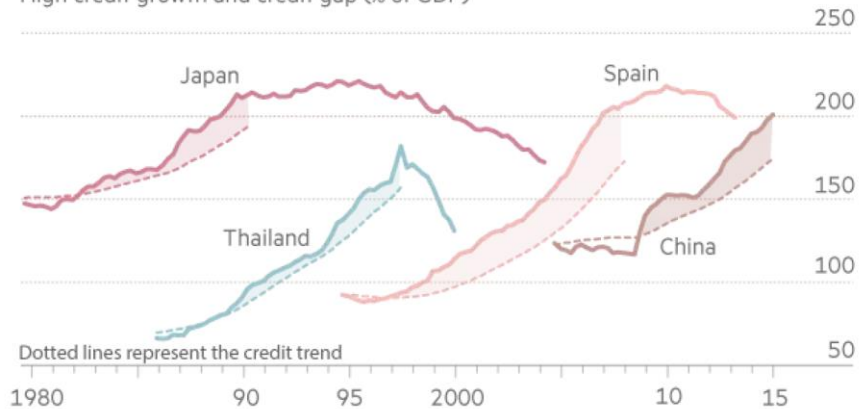
China has overtaken USA as the leading global economy in PPP adjusted terms, but in doing so has accumulated debt of over 255% of GDP. At current trajectory (with GDP target of 6% pa), debt is expected to reach 300% by 2019. This model of growth is not sustainable, however, there are divergent views regarding the next stage in China's economic development.



Source: IMF database, April 2017

Debt soars

High credit growth and credit gap (% of GDP)



Sources: BIS; IMF staff calculations

Source: Martin Wolf in the FT, 12th April 2017

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Longer-term trends



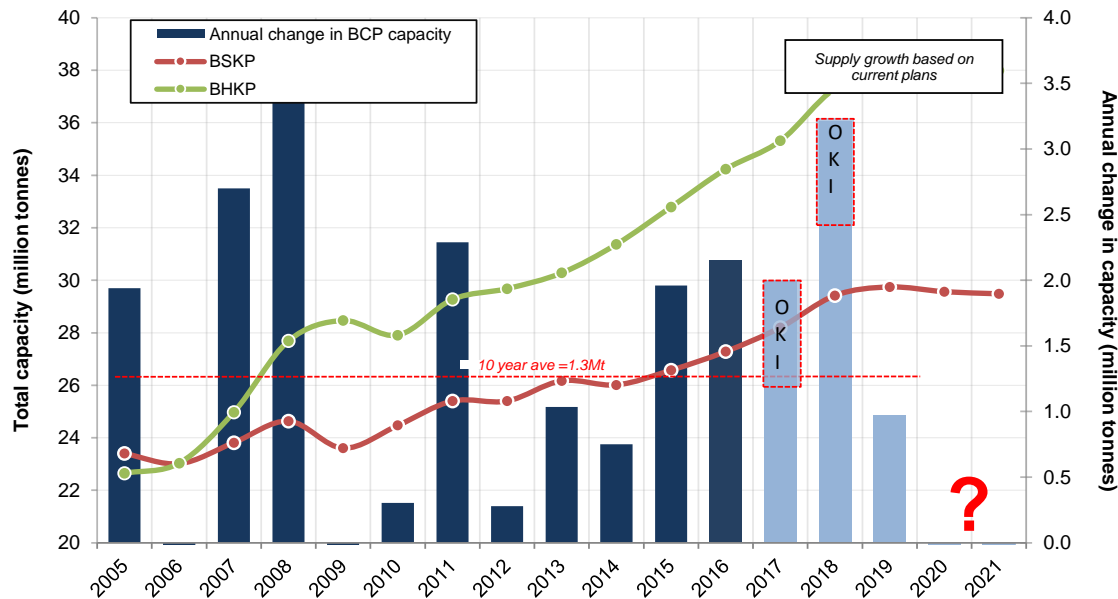
- The wave of investment in new capacity has yet to reach its potential, implying some challenges in 2018.
- However, beyond 2019 there are few confirmed projects.
- Furthermore, major question marks hang over hardwood chip supplies to China and Japan from 2020 and beyond.

Market pulp capacity growth to peak in 2018



Market pulp capacity set to experience 4 years above trend, regardless of OKI assumption (ours is highlighted in red below)

Market pulp capacity growth: BSKP and BHKP, net of any conversions/integration



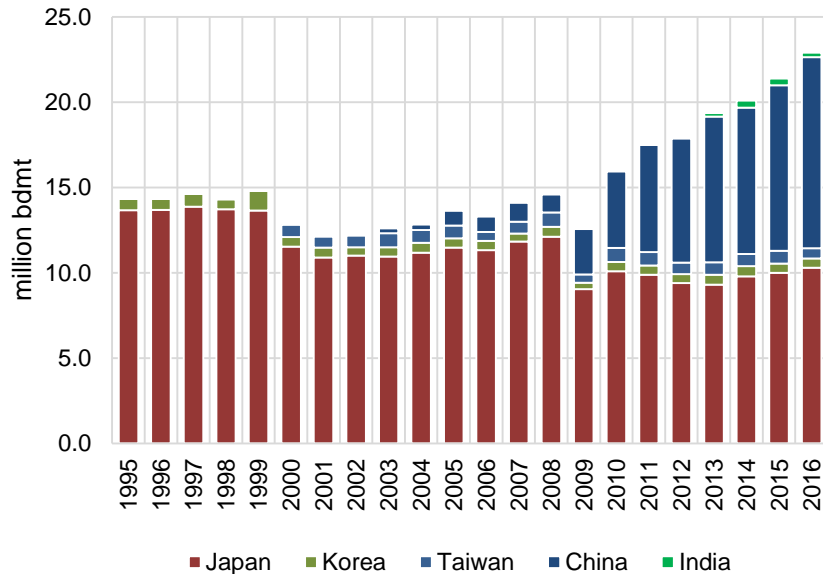
Source: Hawkins Wright

Capacity growth of 2016 has yet to be fully realised, meaning production may surge higher over the second half of 2017 and 2018. A number of unconfirmed projects exist, but without firm schedules. Arauco's MAPA has recently received approval from Chilean Supreme Court, now awaiting board approval

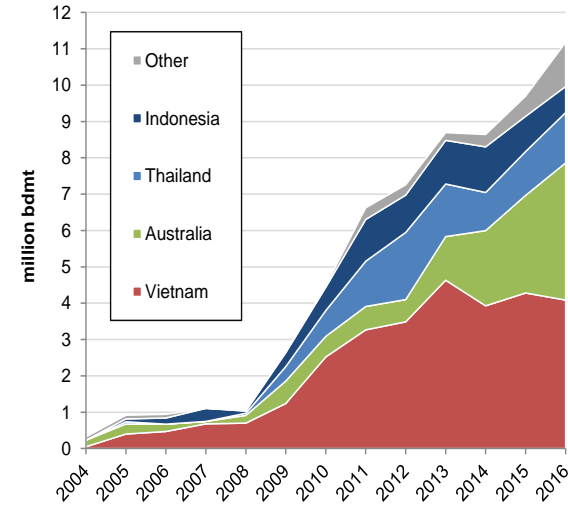


China accounts for all growth in Asian hardwood chip demand

Asian hardwood chip imports



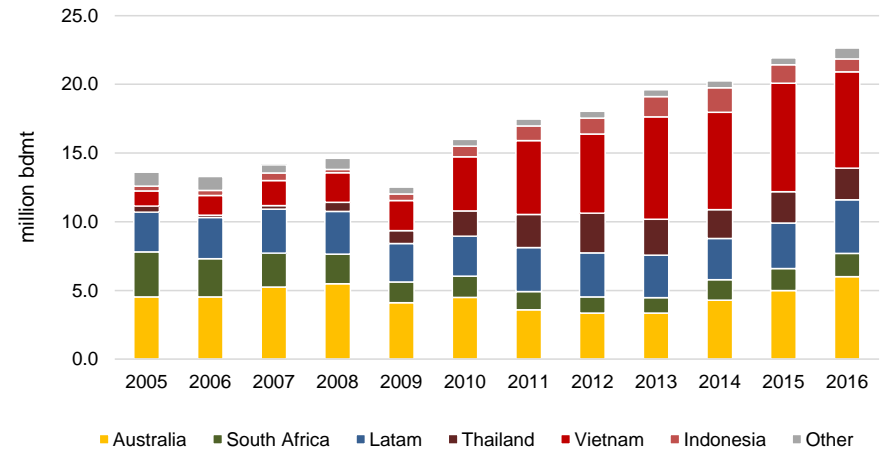
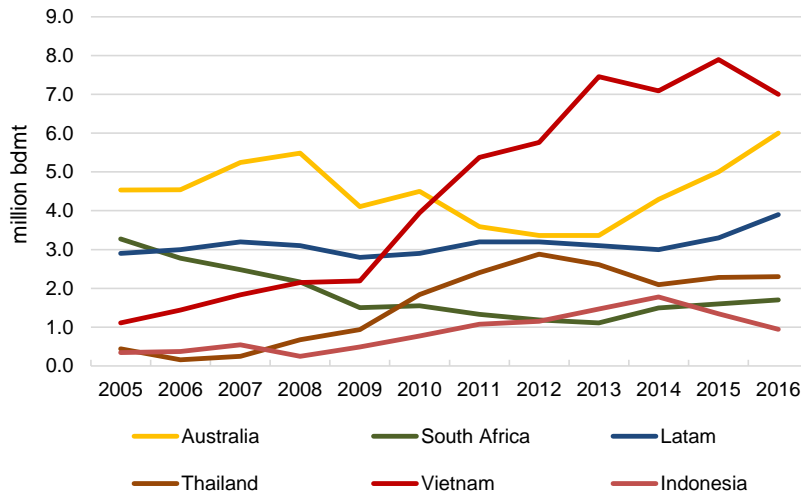
Chinese hardwood chip imports, by origin



Source: Customs data

- Lack of affordable pulp wood in China forces growth in pulp production to rely on imported chips
- China has surpassed Japan as the leading wood chip consumer, but the model is different
- Chinese companies are developing supply chains and reducing dependence on Vietnam. They are following Japan towards total integration.

Woodchip suppliers to Pacific Rim, 2005-2016



- Indonesia & OKI
- Vietnamese supply peaked and may shrink due to 2% export tax and over-cutting last year (as farmers tried to avoid some tax), and possibly declining chip prices. Government encourages plywood, MDF, furniture & pulp (Vietracimex)
- Some Australian plantation leases are not being renewed as land is repurposed.
- Chilean supply unlikely to rise much further (especially if MAPA is approved), and is vulnerable to rising freight costs. Brazil & Uruguay more focussed towards Europe.

Conclusion: lower availability of woodchips threatens competitive position of Asian pulp mills, and may promote demand for market pulp in the longer term