

Highlights of a strong growth market – Polyester fibers & PET

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Polyester Fibers & PET

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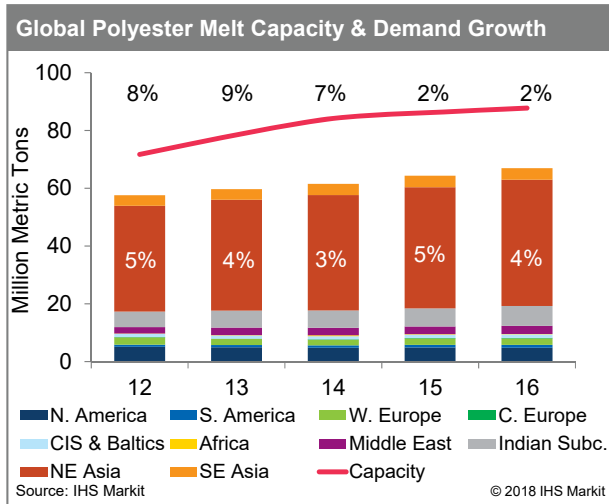
Polyester has today become an inseparable part of our daily lives, across all regions and social strata. China has dominated the growth in this industry in the past 20 years and alone accounts for more than 70% of the global market share. The textile industry is labor intensive and low wages and high productivity attracted invested in China. On the other have, bottle grade PET production costs are more or less same across the world, but the fast demand growth and easy availability of raw materials has helped drive most of the new investments into Asia.

Although bulk of the industry in now in Asia, its integration with other streams like olefins and refining means that any changes in polyester outlook continues to have global ramifications. The global integration is not only on the upstream side, but even in the downstream, PET recycling has now become a globally integrated industry, with China accounting processing almost 75% of global PET waste.

The industry saw sub-par demand growth between 2012 and 2016 leading to the poor margins for a considerable period of time. However, with crude oil prices bottoming out through 2015 and continuing to move up over the last 2 years, the industry is witnessing a strong rebound in demand as well as margins. China's new policy on imports of PET waste has put extra pressure in virgin polyester fibers, but is also expected to put pressure on global recyclers now.

Polyester industry is set for a strong 2018 – both for demand and margins, but there are developing mid term concerns which one needs to watch out!

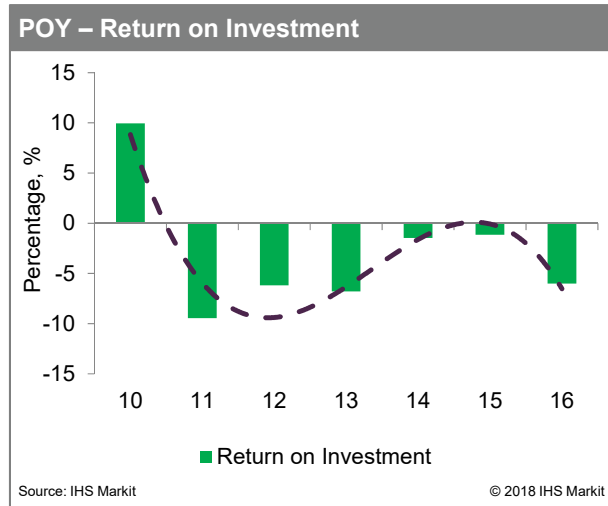
Polyester has seen anaemic growth rates in past 5 years



Questions raised as confidence shaken

- Short-term phenomenon or new trend line?
- Reasons for slowdown
- Did market overestimate polyester potential?
- Has demand moved back to cotton?

Polyester businesses passed through an extended downturn



- Investments plans made at start of decade - when margins & demand were strong
- Rise of PTA MegaTON in 2012 weighed down margins, not only for PTA but also polyester

Signs of recovery were already evident in early 2017

IHS Markit 32nd Annual World Petrochemical Conference

Global Polyester Fibers Outlook A Rebound but a new path



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Building a Foundation for Profitable Growth in Uncertain Markets

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So why are we excited now?



Year	Capacity (Million Metric Tons)	Demand (Million Metric Tons)	Operating Rate (%)
2011	35	35	100
2012	35	35	100
2013	35	35	100
2014	35	35	100
2015	35	35	100
2016	35	38	108
2017	35	42	120
2018	35	45	129

- Fastest demand growth in 2016
- Operating rate highest
- Slower capacity growth outlook
- Sustained positive margins

Source: IHS Markit
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What we'll cover today



Polyester fiber

PET

Recycling

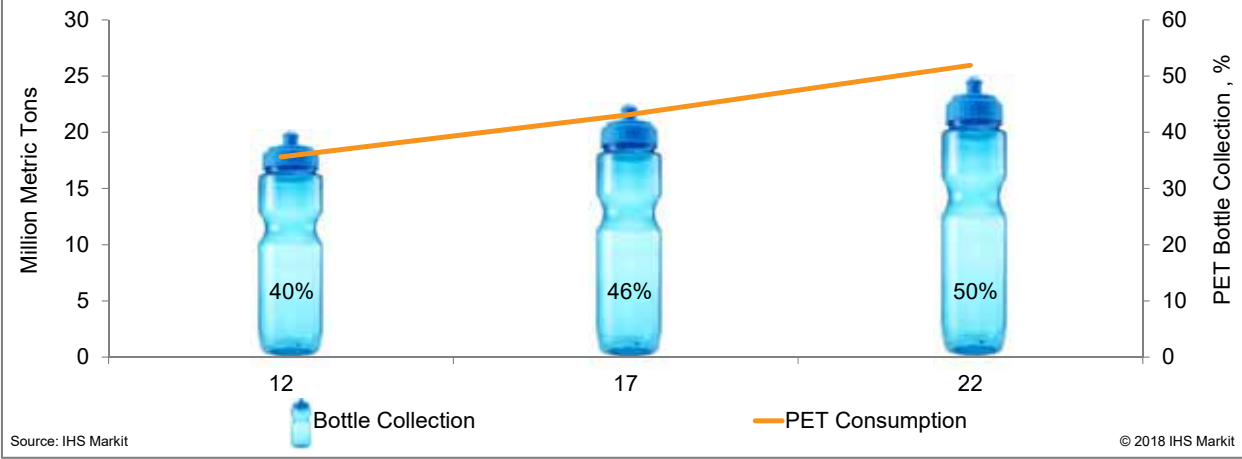


PET recycling

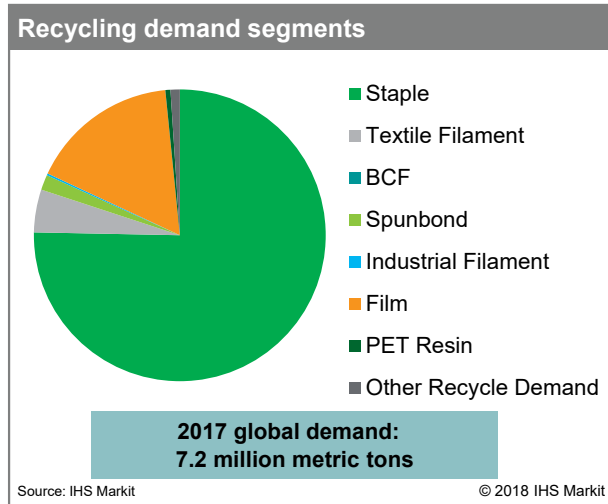
Chinese National Sword policy has a global impact

PET growth attractive; but handling waste is growing concern

Globally - waste collection has grown faster than virgin PET demand



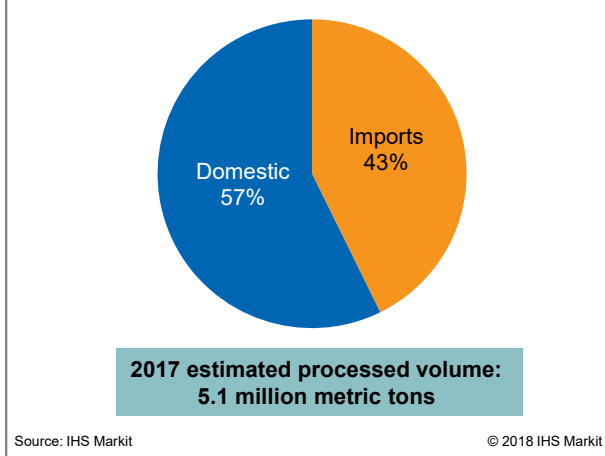
Fiber takes lion's share in recycling



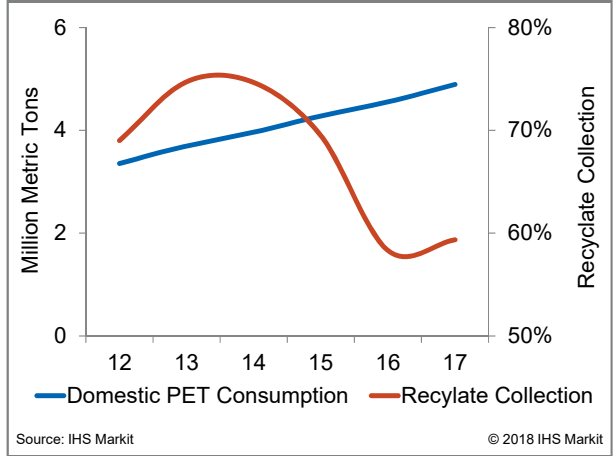
- Brand leaders continue to set big recycling goals
- Some legislation also promotes “Bottle to Bottle” recycling
- Costs currently prohibiting big growth in this field
- Recycling back into fibers tends to be most cost effective way to recycle post-consumer waste of polyester

Polyester recycling – caught between economics & regulation

PET recylate processed in China



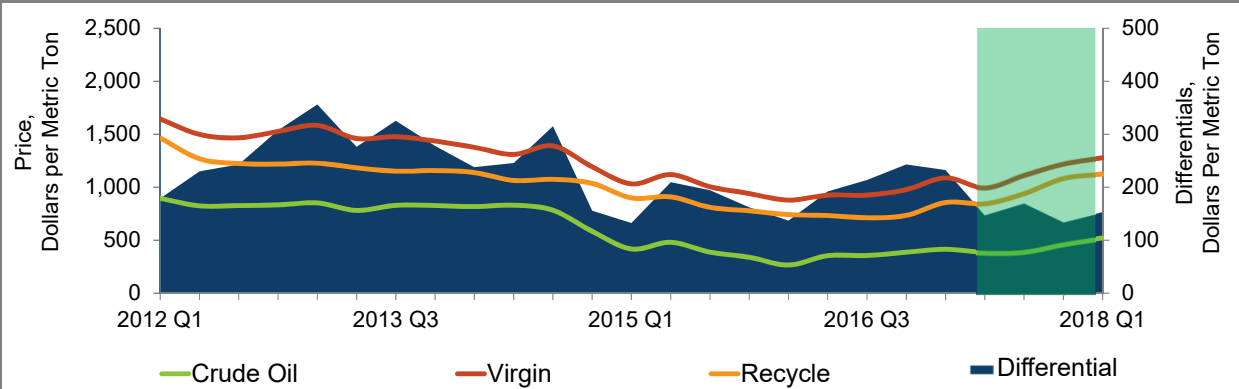
China's own recycling standards faltering!



Economic incentive – primary driver for consuming fibers from recycle

Discounts over virgin PSF dropped to lowest levels after China's ban on imports of PET waste as supply has tightened

China - Polyester chip price: Virgin vs recycle



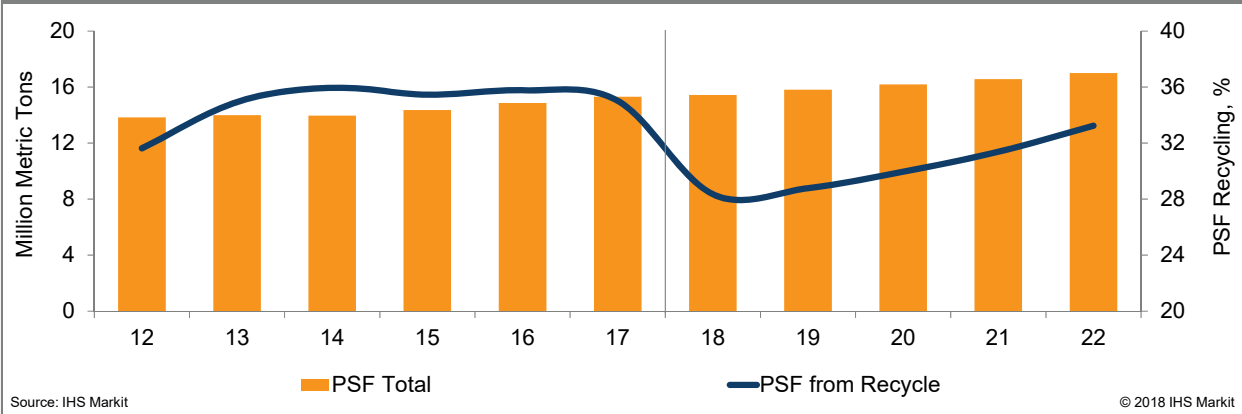
Source: IHS Markit

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Recycled polyester has become an important source for staple fiber

China's ban on import of polyester waste expected to benefit virgin fiber industry in 2018

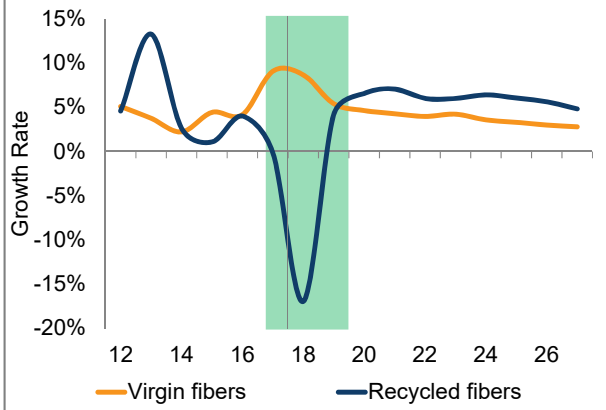
Global PSF Production: Virgin vs recycled



Policy measures delay growth of recycling, but economics favors more recycling



Global Fiber supply growth: Virgin vs. recycled



Source: IHS Markit

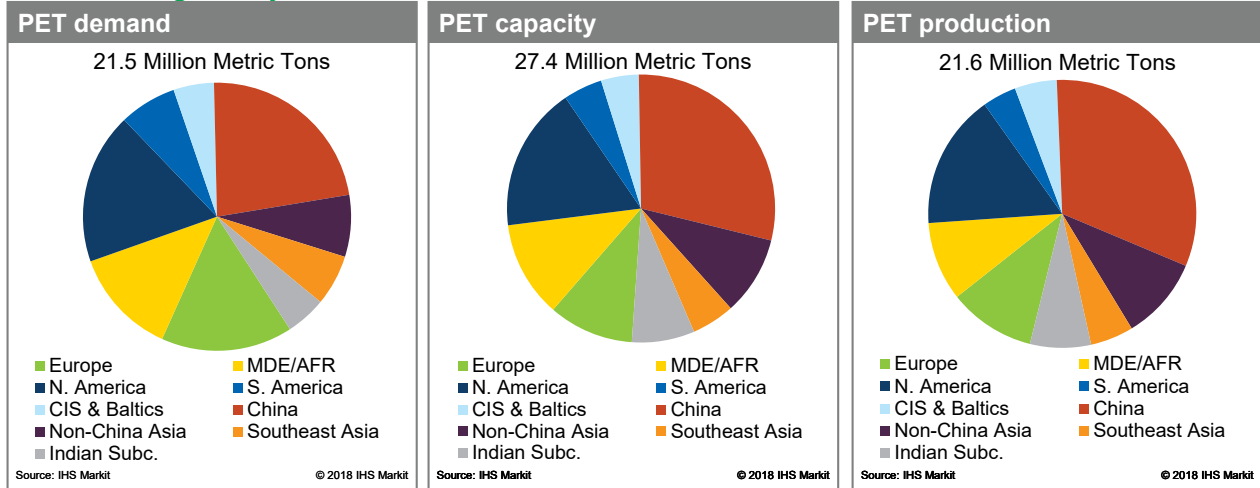
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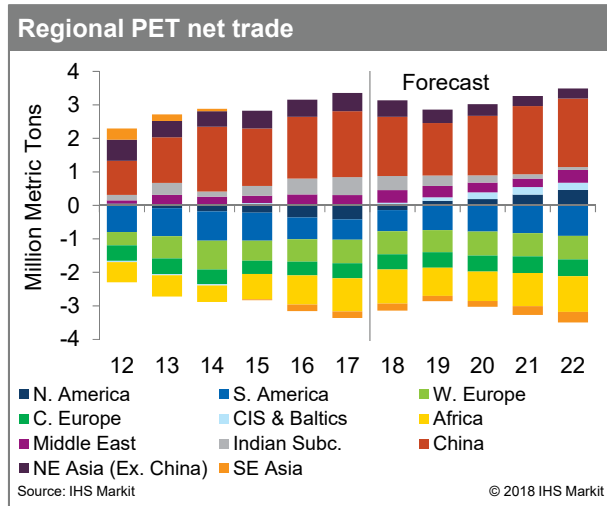
PET

Most producers see better days, as few majors falter

PET is globally well spread out, with most regions having the flexibility to meet own demand regionally



...yet PET remains a widely traded product

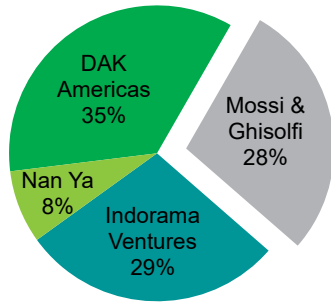


- Asia continues to be in surplus, led by continued capacity growth in China
- Latest technology and integration with upstream helped Asian producers remain cost competitive in global surplus market
- Tariff and non-tariff trade barriers most actively used against PET trade in past few years
- Barriers will alter trade flows – but not reduce it in long term

North America & Europe supply faced disruptions in 2H 2017

Temporary stoppages as 2 largest producers face bankruptcies; operations remain below capacity until today

North America: PET bottle resin producers

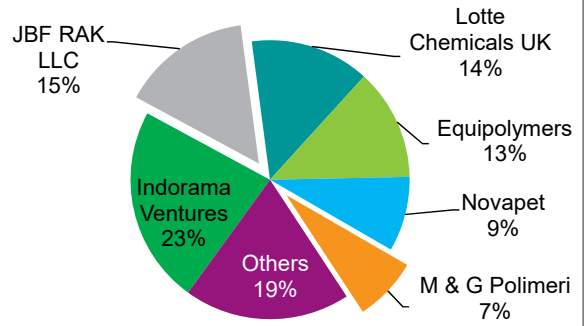


Capacity = 4.8 Million Metric Tons

Source: IHS Markit

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West Europe: PET bottle resin producers



Capacity = 2.6 Million Metric Tons

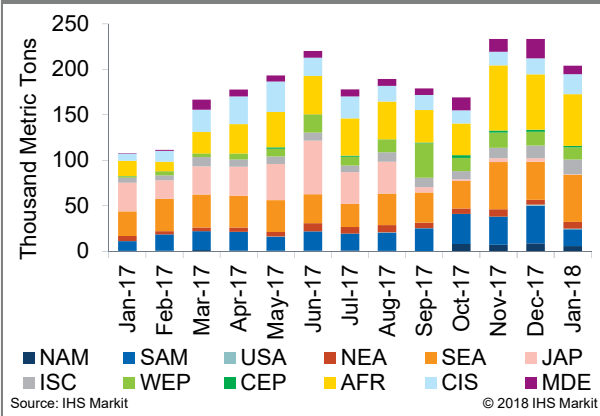
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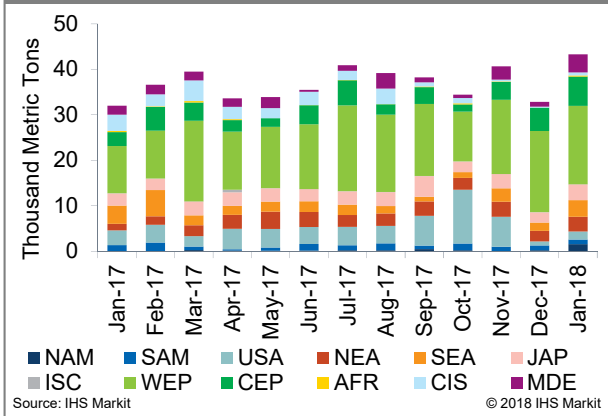
Asian exporters have benefited from global supply disruptions

Trade barriers altering trade flows, overall trade volumes still increasing

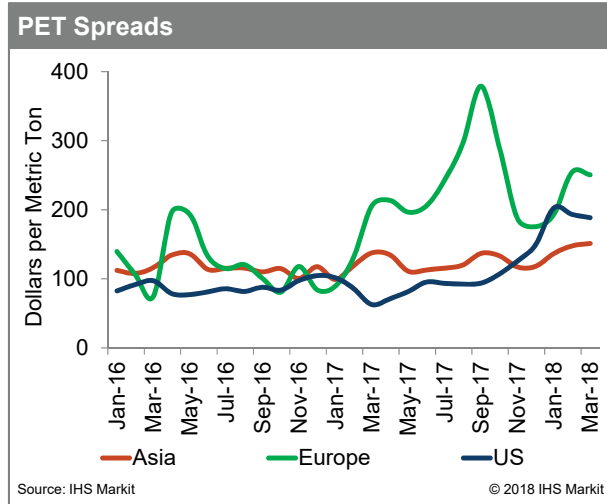
PET: Exports from China



PET: Exports from South Korea

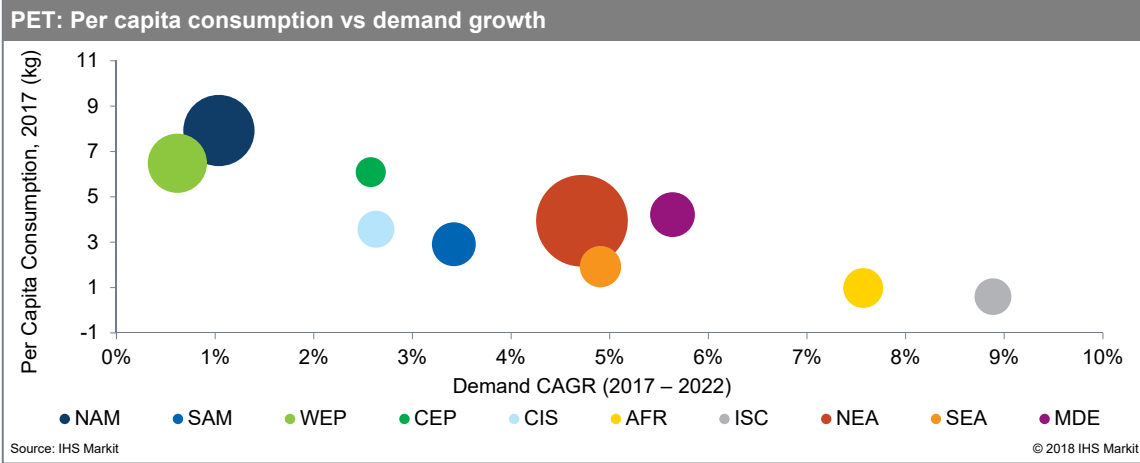


Global supply disruptions have pushed up spreads since late 2017

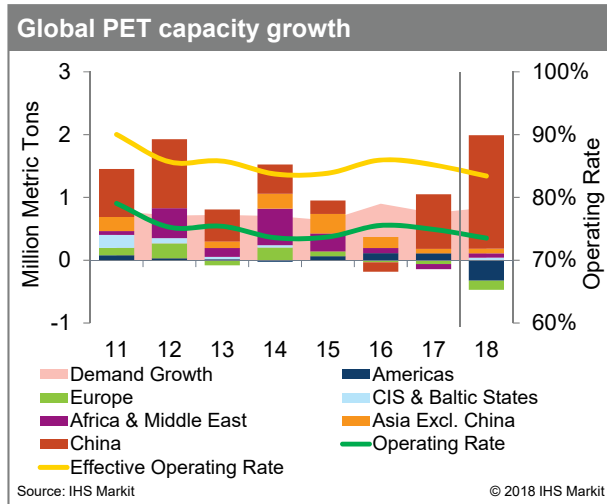


- European and US spot margins spiked in 2H 2017 as significant capacity outages led to shortages during the peak demand period
- Europe & US markets primarily trade against annual contracts, agreed pricing formulas for 2018 indicate a healthy increase in spreads
- Asian export spreads are usually at cash break-even levels, but these have also increased through 2017
- Domestic spreads tend to be higher, due to tariffs and non-tariff barriers

PET: All developing markets continue to show strong demand growth



PET capacity addition accelerates in China

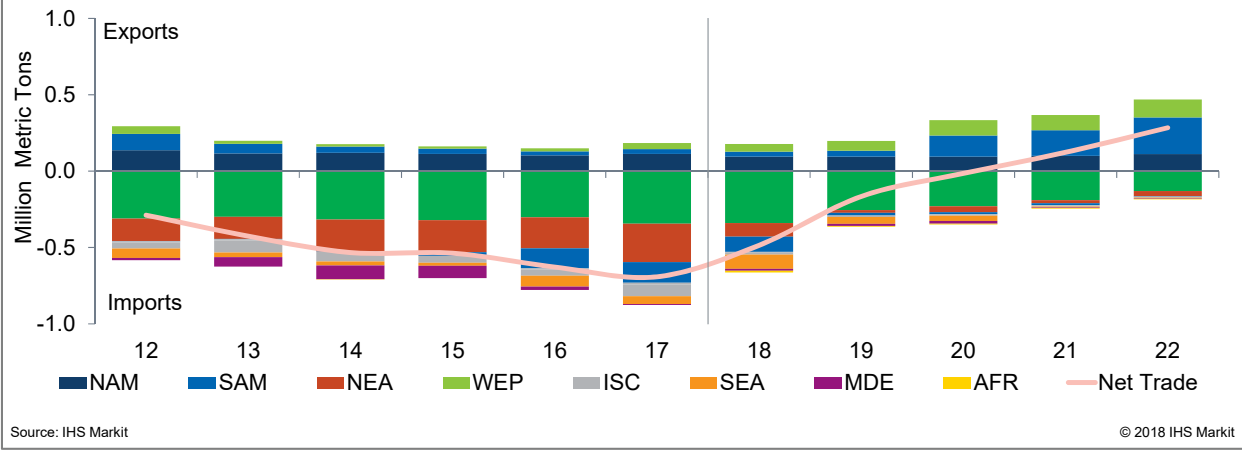


- In past couple years, demand has increased faster than capacity
- In 2018, expected capacity addition to far outweigh projected demand growth!

However, with only China adding capacity, will it be able to meet growing demand in other regions?

US PET trade story – from deficit to surplus

PET: US exports & imports





Polyester fibers

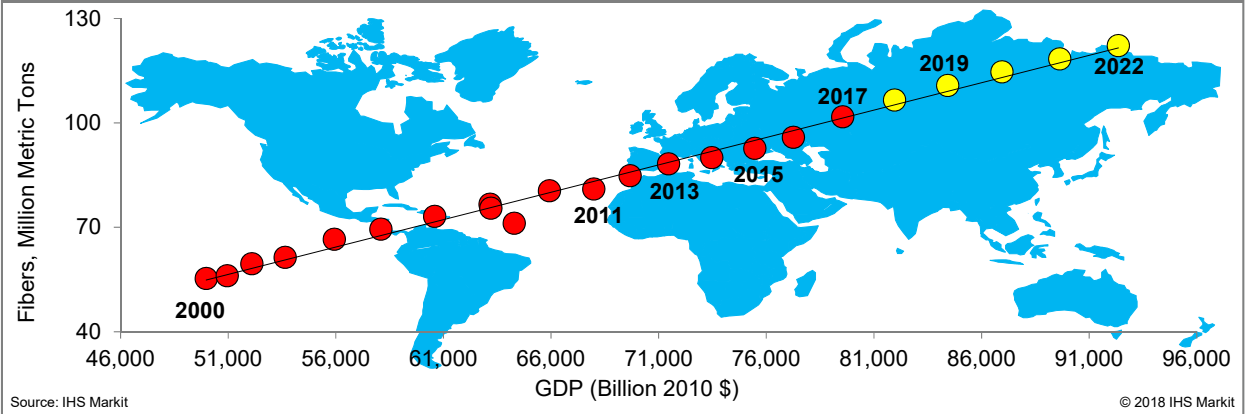
Broad-based economic growth leads to revival in fibers demand

Credit: Shutterstock

Economic growth drives fiber demand – polyester takes largest share of growth

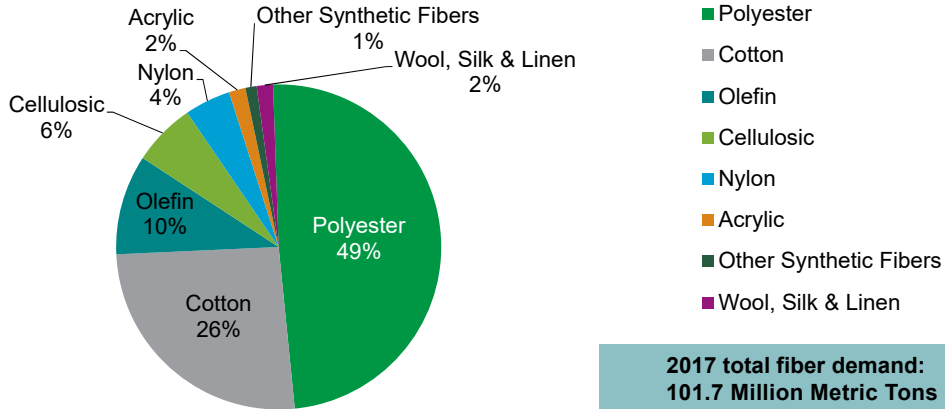
Total fiber demand is estimated to have increased by 6% in 2017, fastest since 2010

Fiber: World demand vs global GDP



Global Fibers mix – dominated by polyester & cotton

World fiber demand in 2017



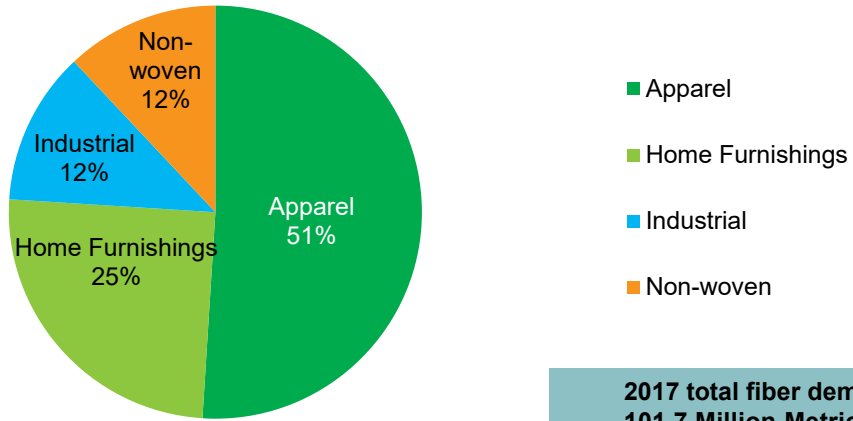
**2017 total fiber demand:
101.7 Million Metric Tons**

Source: IHS Markit

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Fibers provide one of the basic necessities

Fiber: World demand 2017 (by application)



**2017 total fiber demand:
101.7 Million Metric Tons**

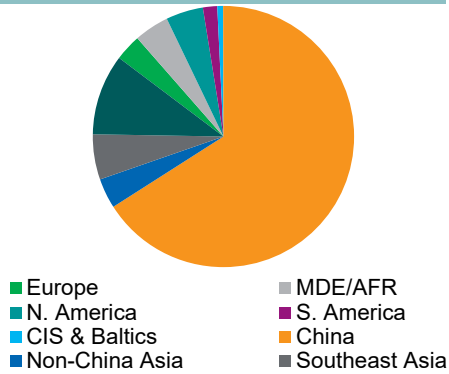
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Polyester fibers demand...heavily skewed towards China

World: Total Polyester Fiber Demand (2017)

2017 demand: 49.8 Million Metric Tons

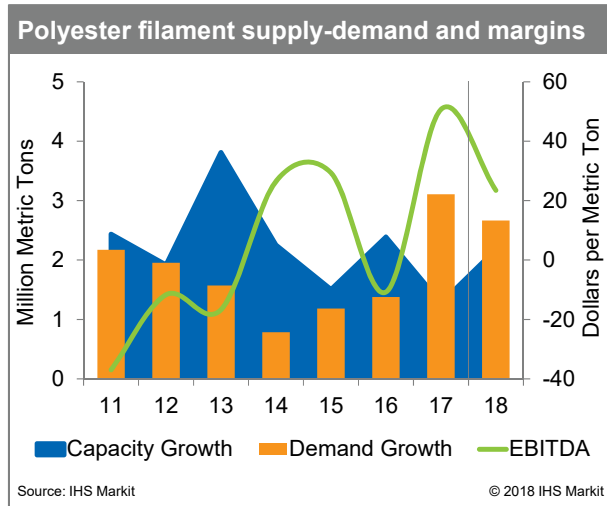


Source: IHS Markit

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- In 2017, China alone accounts for
 - 66% of global demand
 - 71% of global production
- up from a 25% share in the year 2000
- In total, Asia accounts for 86% of global demand.
- Lower labor costs initially attracted investments in the textile sector in Asia.
- Fast developing economies, rapid urbanization and strong growth in disposable income is now sustaining the growth in regional textile industry.

Investments run counter cyclical to margins



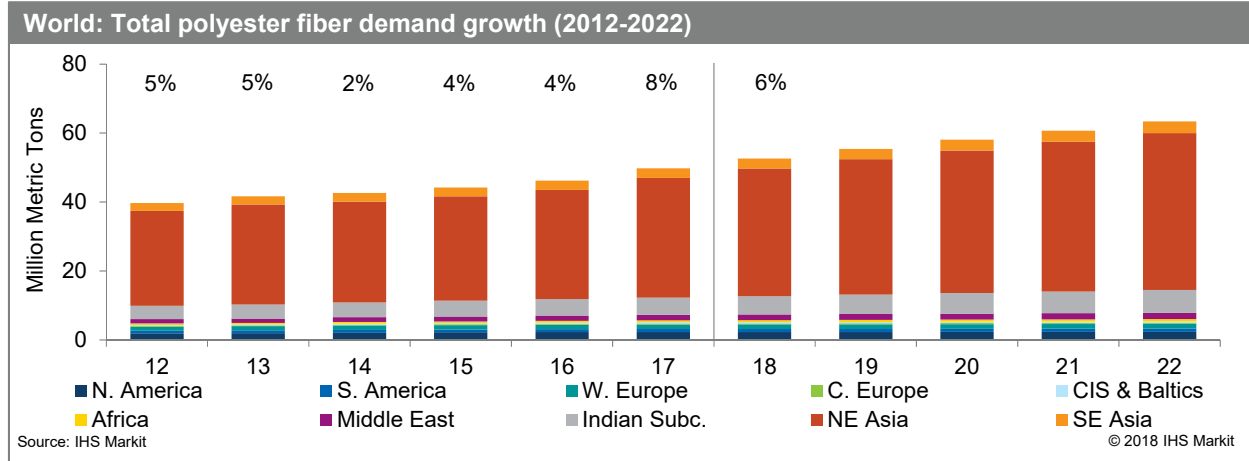
- Excessive capacity growth between 2011 and 2016 put severe pressure on polyester margins
- Demand accelerated in 2017 as capacity growth stagnated, resulting in a quick increase in product margins
- 2018 outlook is anticipated to be similarly positive, but continued profitability is expected to result in excess capacity buildup again!

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 WS: WLD (CC92 to CQ108)

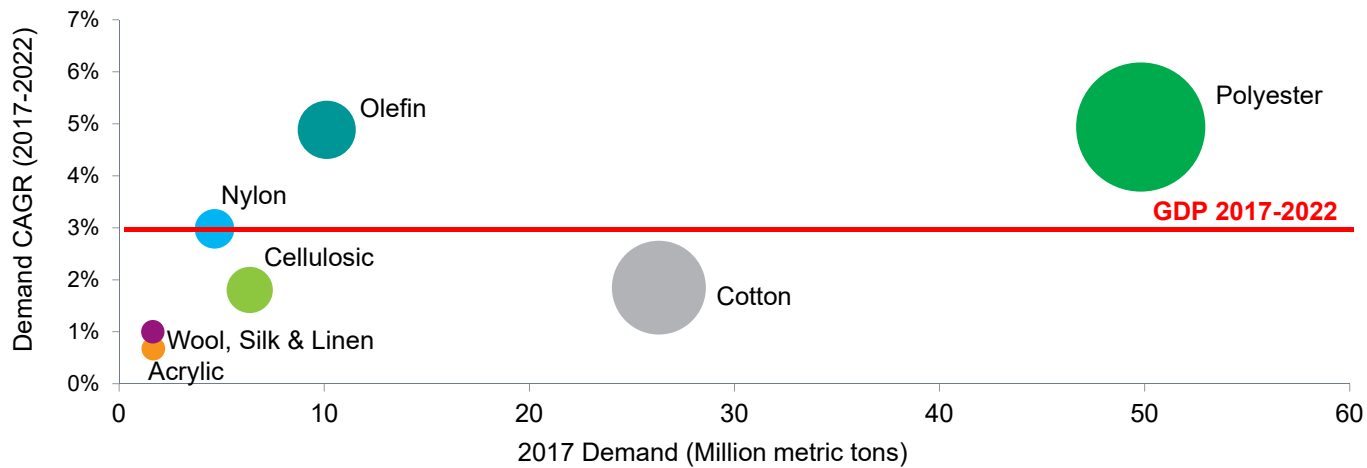
Polyester growth bounces back in 2017

Aided by healthy economic conditions, growth expected to be strong in 2018, but eventually slow down to trend line



Polyester expected to show strongest growth, others grow moderately

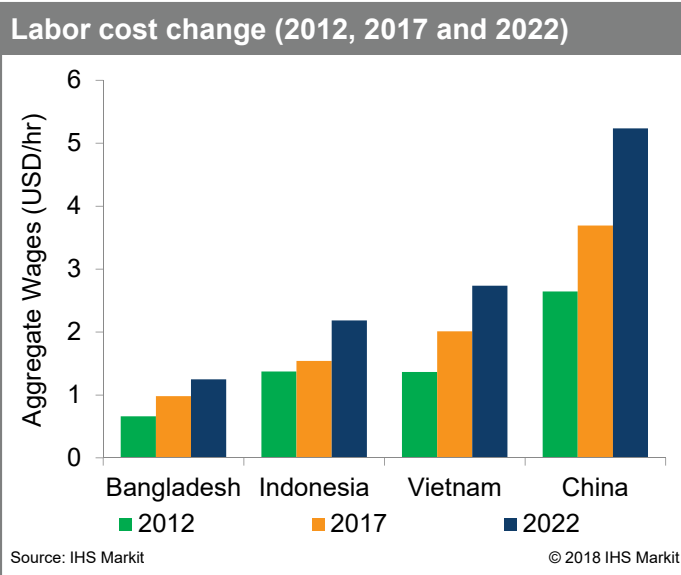
Fiber: 2017-2022 demand growth



Source: IHS Markit

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Textile industry on the move to lower costs



- Labour, not raw material, accounts for largest costs in a finished garment
- China’s labour costs are no longer at lowest levels and continue to increase rapidly
- Downstream industry already started to move to low cost areas
- Will not be surprised to see new polyester investments in under-developed regions

Key takeaways

PET

Markets expected to remain tight through 2018

Increasing brand owner focus on recycling

Recycling

Sudden policy changes affect short-term growth

Newer recycling avenues expected in longer term

Polyester fibers

Demand growth expected to be strong in 2018

Fastest growing fiber for many years to come

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