

World Pressure Sensitive Tapes

Current overview and future growth

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Methodology – Source of variance

- ❑ Data derived from variety of sources.
- ❑ Definitional differences.
- ❑ Details may not add up to the totals due to rounding up.
- ❑ Conversion from the national currencies to the USD may account for some statistical discrepancies
- ❑ All GDP estimates are based on the PPP benchmarked in 2012, i.e., a year before the base used in this study.
- ❑ Some narrative not factually correct, e.g., factory, office, product

PSA Overview

Asia/Pacific

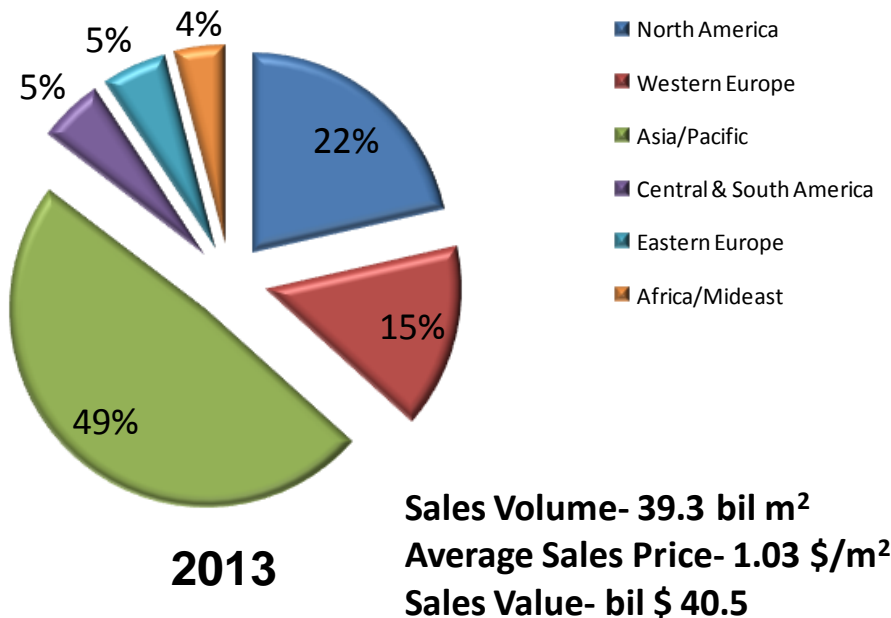
- In 2003 accounted for 40% of world PSA production
- In 2013 this stood at 55%

Tape sales in more advanced economies declined between 2008 – 2013:

- Western Europe slowed
- Growth in the US at less than 1%.

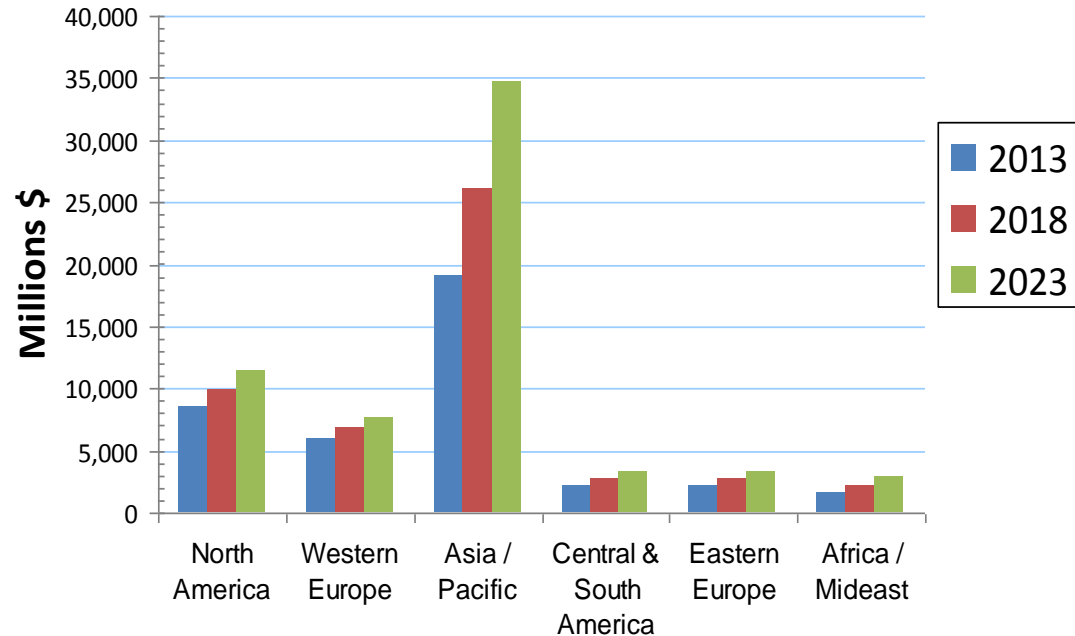
Tape manufacturing:

- China is now **world's largest manufacturer**, supplying to APAC, Eastern Europe, and North America.
- Taiwan and Indonesia also produce tapes mainly destined for export markets.
- Italy is **Europe's leading manufacturer**, supplying much of the market in both Western and Eastern Europe.



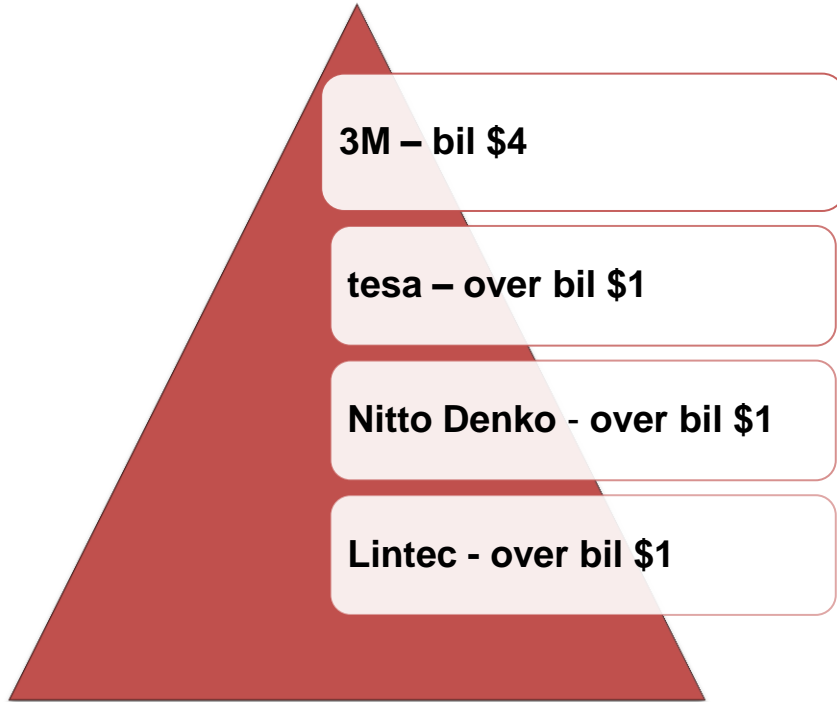
PSA Demand Overview

- ❑ By 2018 world PSA sales will increase:
 - 5% YoY to be 50 bil m²
 - 6.5% YoY in market value to be bil \$ 55.5.
 - Average selling price is 1.11 \$/m²
- ❑ The greatest share of PSA production to be in the **APAC region**.
- ❑ Carton Sealing tape will continue to account for over **2/3rd** of PSA sales.
- ❑ The second largest category, Masking tape sales will be driven by **construction and automotive production** particularly in APAC.
- ❑ Appreciable gains in **specialized tapes**.
- ❑ **Medical tape sales** will increase due to increased healthcare accessibility around the world.



Market Players

The top four companies (20% of global share)



Other significant Suppliers

North America

Intertape Polymer Group
Shurtape Technologies

Europe

Stokvis Tape Group (ITW)
Scapa Group
Boston Tapes (Chargeurs)

Asia/ Pacific

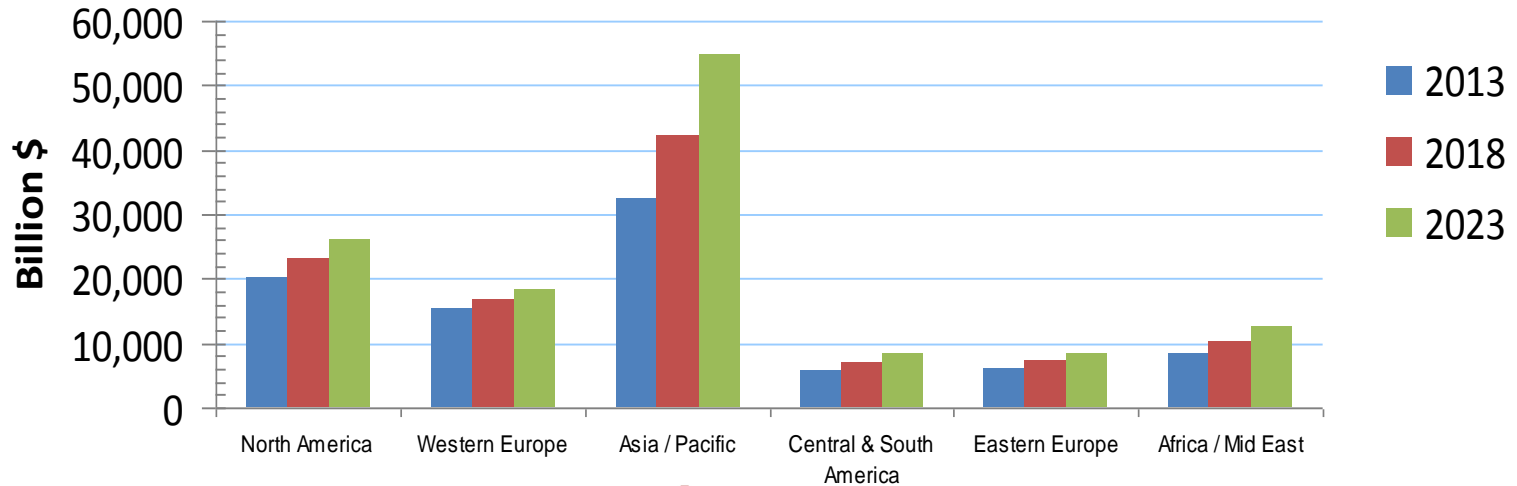
ACHEM Technology
Four Pillars Enterprise
Sekisui Chemicals
Zhejiang Yonghe

Market Variables

Factors influencing PSA sales (most of which are external to the industry itself and beyond its direct control) are:



World Economic Outlook (GDP)



- ❑ **World GDP to expand 3.8% YoY through to 2018** (faster than 2008 – 2013 but slower than 2003 – 2008).
- ❑ **China and India** will continue to post growth rates that **are fastest in the world**.
- ❑ Modest economic recovery in Western Europe will support export oriented industries in Eastern Europe, sparking growth in the region.

- ❑ **Africa/Middle East GDP will rise by 4.1% YoY** through to 2018.
- ❑ The **rise in the middle classes** will push this demand higher in **Nigeria and Sub Saharan Africa**.
- ❑ **Central and South America will see GDP rise to 3.5% through to 2018**, benefiting from strong growth in Chile, Colombia, and Peru. Brazil is projected to have moderate advances in real GDP.

Market Environment

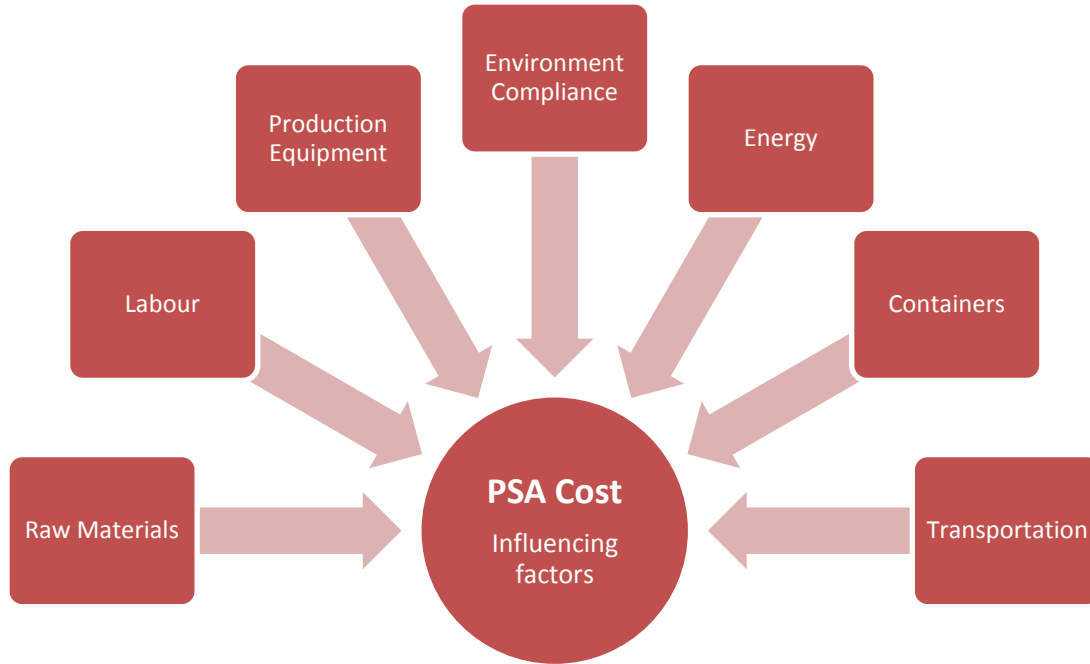
GDP influences tape consumption pattern.

- ❑ PSA sales is positively correlated to rising income levels.
- ❑ The world's developed economies (higher income levels) have the highest levels of per capita tape consumption.
 - USA and Taiwan 20 m²/capita
 - Developed countries exceeds 10 m²/capita
 - Developing world ranges between 1-5 m²/capita
 - The poorest areas of Africa and Asia have less than 1 m²/capita



Market Environment

Pricing Trends



Prices can vary between countries and regions due to:

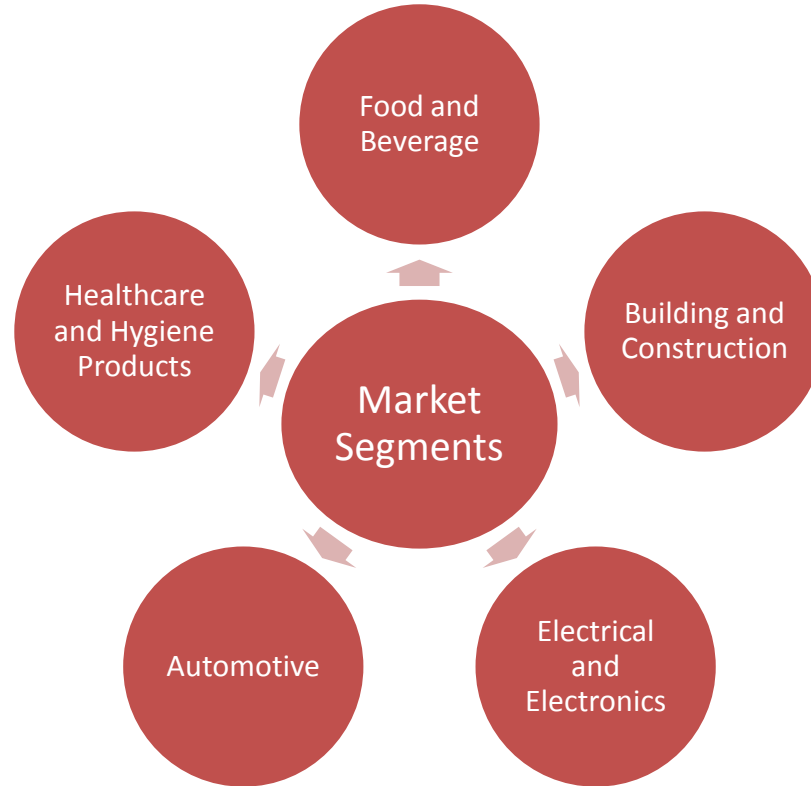
- ❑ Local Inflation rates
- ❑ Local demand.
- ❑ Availability of raw material

Globally prices:

- ❑ Range from 1 \$/m² for commodity plastic tape used in undemanding applications to 40 \$/m² for specialised industrial application
- ❑ In 2013 average selling price was 1 \$/m² however as this is linked to raw material costs it is set to increase mainly due to oil prices, which (by historical standards) will remain high through 2018.

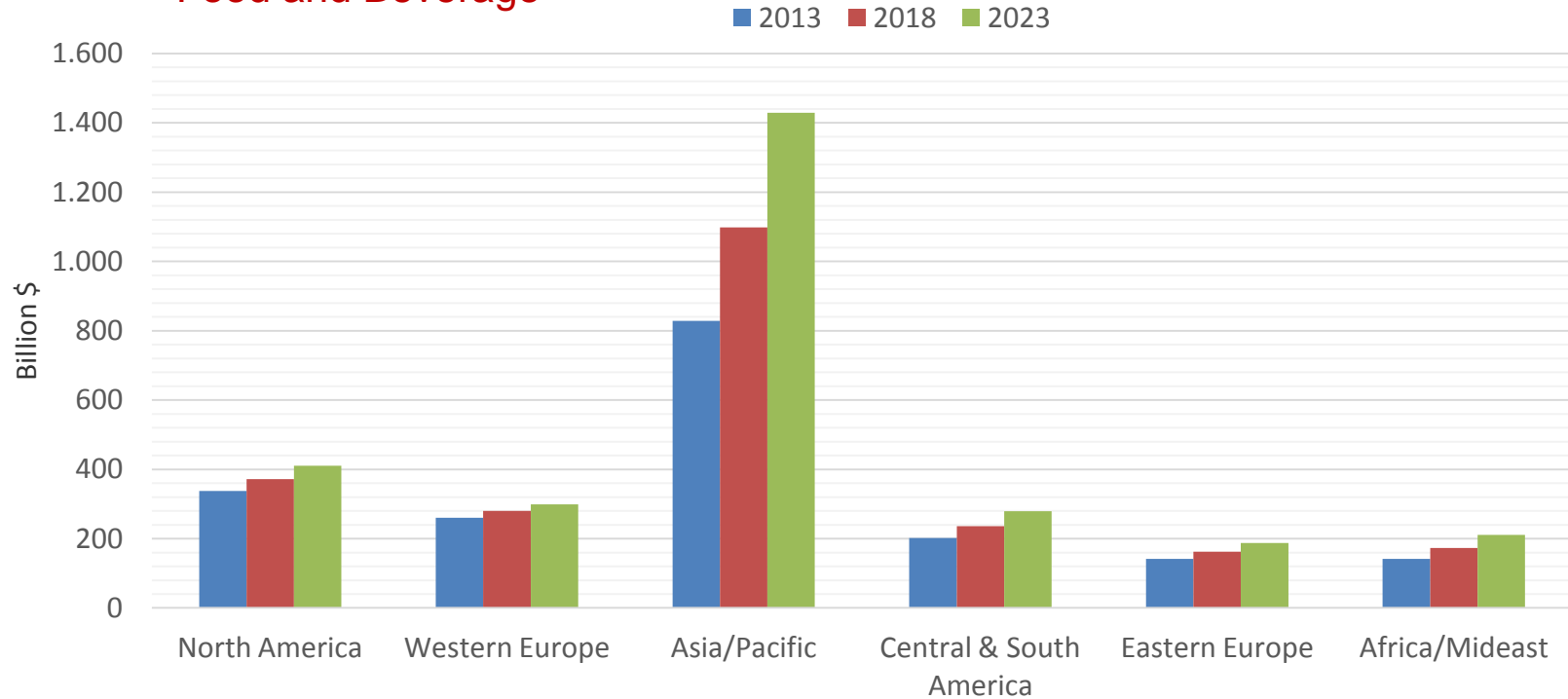
PSA Key market verticals

Following segments account for most of the PSA tapes used globally:



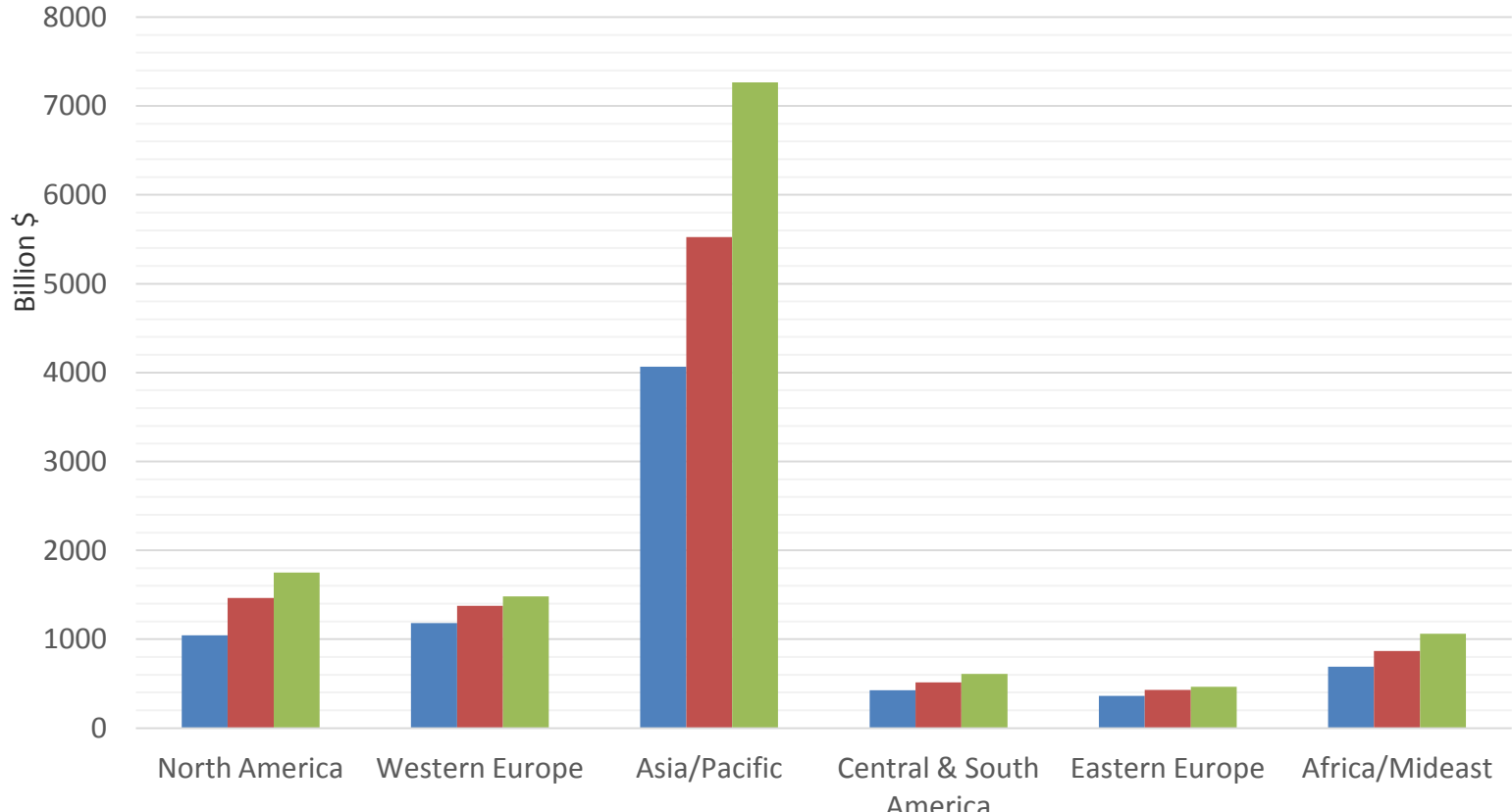
Market Environment

Food and Beverage



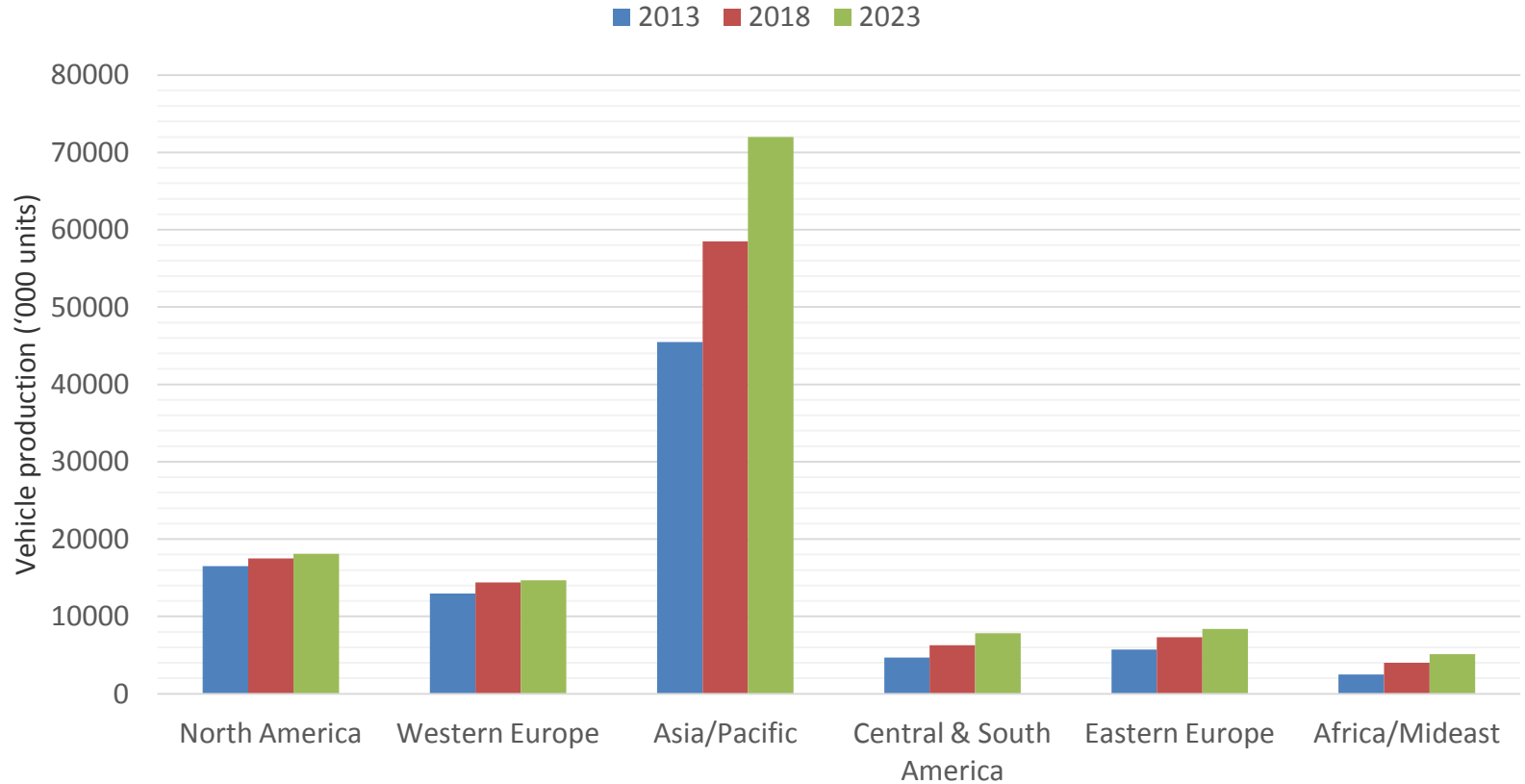
Market Environment

Building and Construction 2013 2018 2023



Market Environment

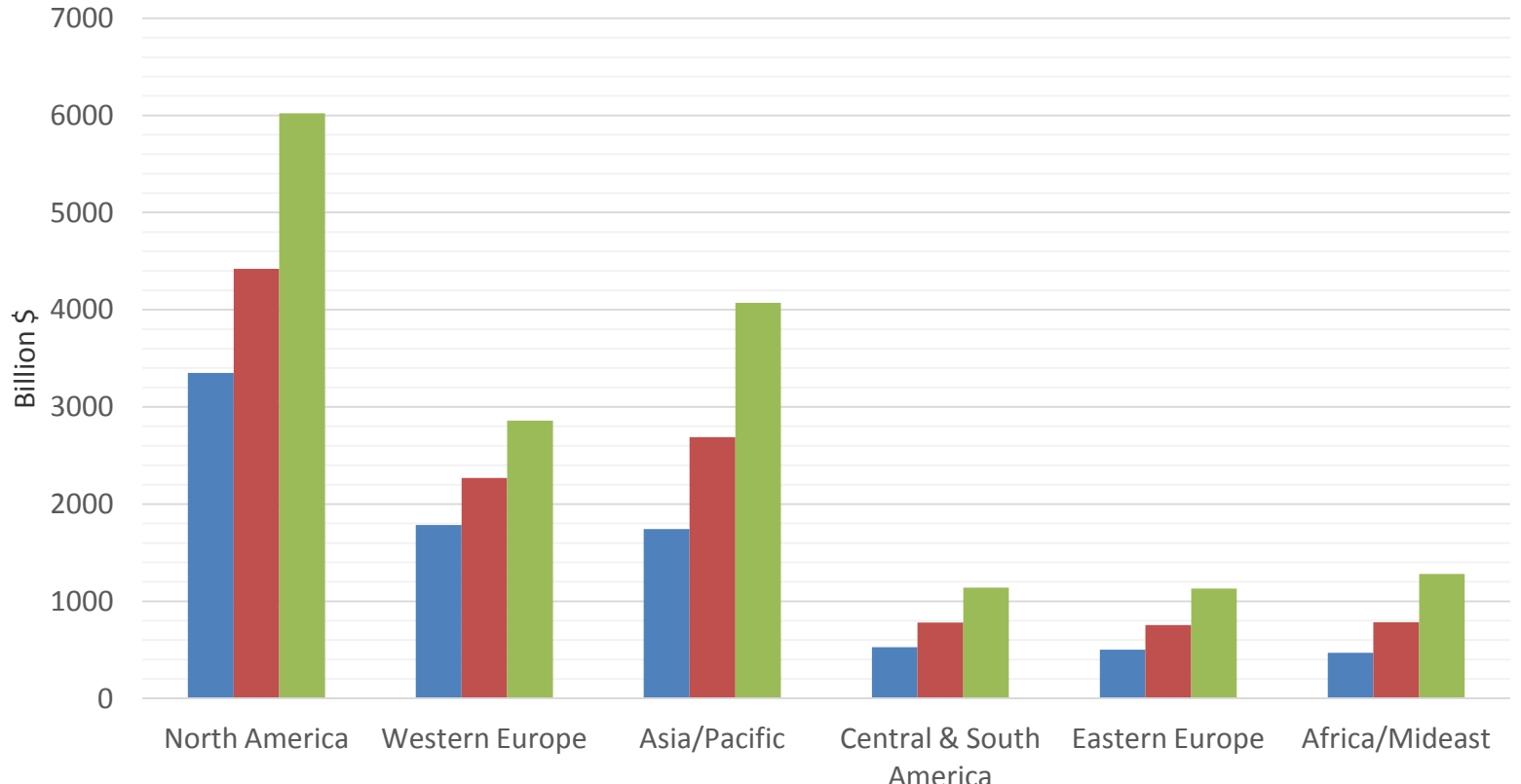
Automotive



Market Environment

Healthcare and Hygiene Products

2013 2018 2023



Raw Materials

- ❑ The **use of backing and adhesive materials is expected to lag** in the PSA market.
- ❑ The **trend is moving towards lightweight material or to down gauging** (using thinner backings and adhesive coatings) for financial and environmental reasons.
- ❑ The adhesive is the largest part of the costs associated with PSA, also the most critical component, as it determines **how well it sticks**.
- ❑ Major players in the PSA industry are investing in **solvent recovery systems** to slow the transition to aqueous formulations.
- ❑ **Increased use of hot melt adhesives** due to the environmental advantages such as:
 - Low energy requirements.
 - Lower production costs as opposed to solvent borne types.
 - The conversion from solvent to hot melt can reduce investment and coating cost considerably.

Tape Backing Materials

Overall Demand Overview

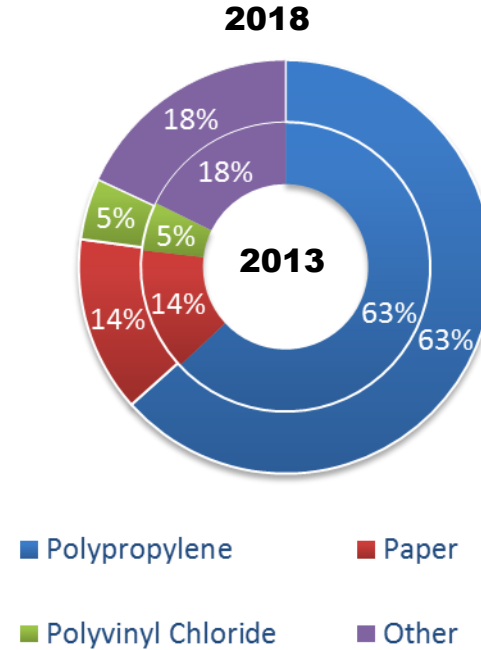
- Polypropylene
- Paper
- Polyvinyl Chloride
- Others



Tape Backing Materials

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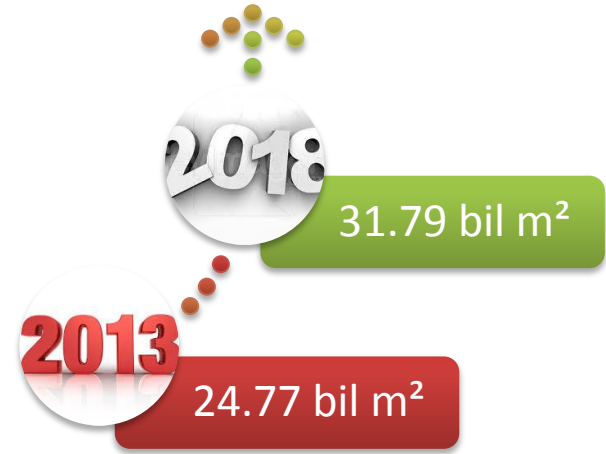


Tape Backing Materials

Polypropylene Demand Overview

Polypropylene

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Tape Backing Materials

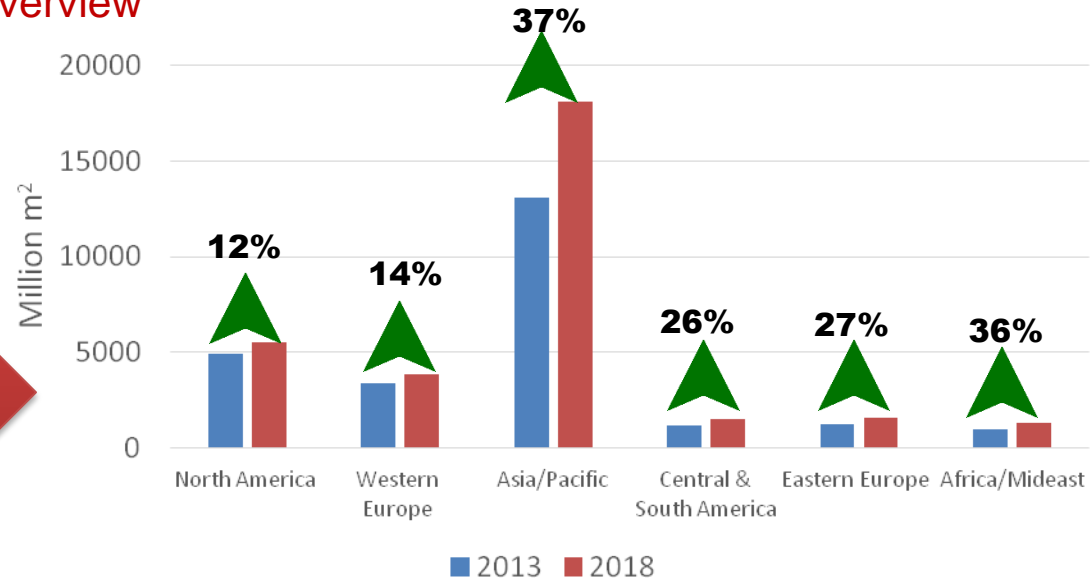
Polypropylene Demand Overview

Polypropylene

Paper

Polyvinyl Chloride

Others



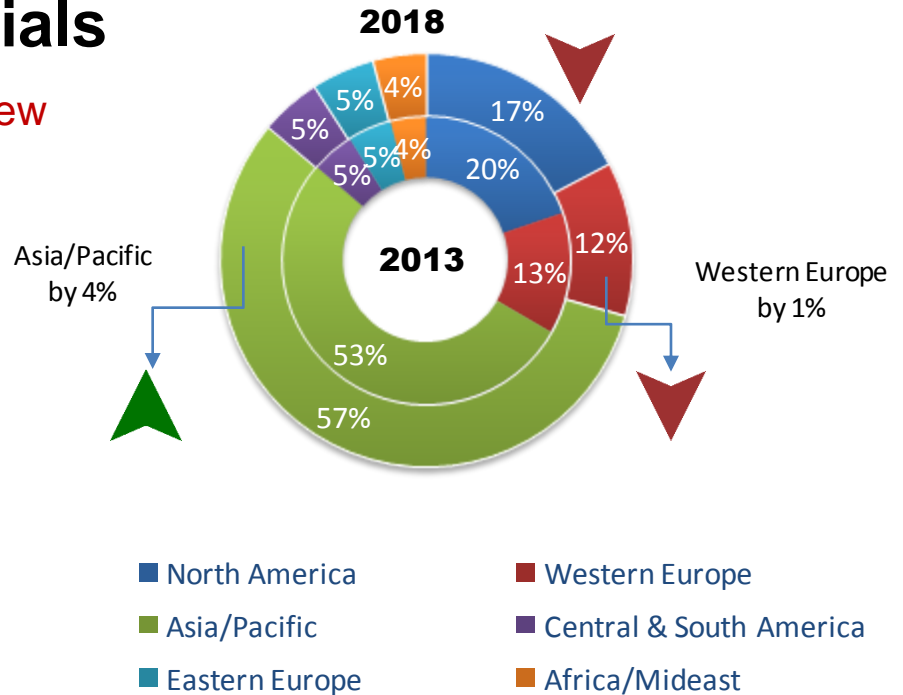
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- ❑ PP accounted for **63% of total PSA in 2013**, and accelerated gains for corrugated box will drive this growth through 2018.

Tape Backing Materials

Polypropylene Demand Overview

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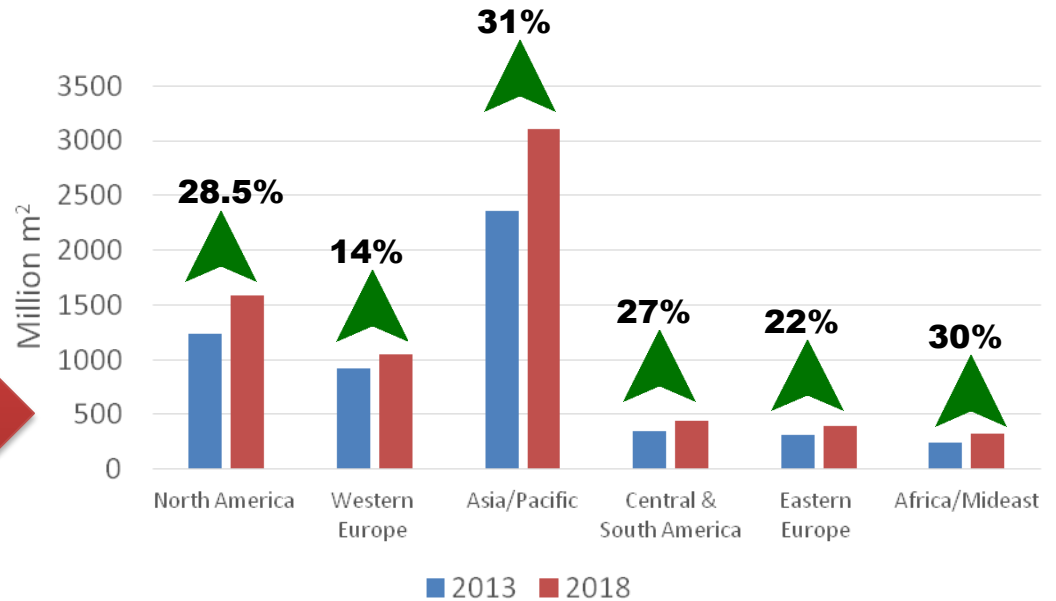
Tape Backing Materials

Paper Demand Overview



Tape Backing Materials

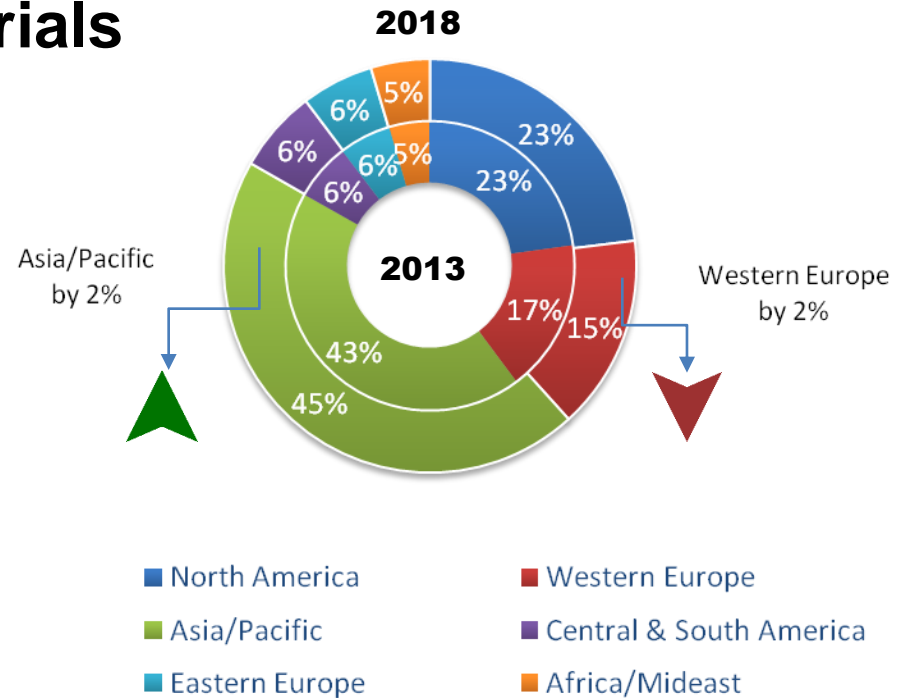
Paper Demand Overview



- ❑ Paper backed PSA tapes are projected to grow **4.9% YoY to 6.9 bil m²**.
- ❑ **Masking tapes will drive this growth** despite not being utilised in growing markets such as electronics and industrial bonding.
- ❑ Paper tapes are **more environmental friendly** due to the recyclable and repulpable nature. This will help drive the sales.

Tape Backing Materials

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Tape Backing Materials

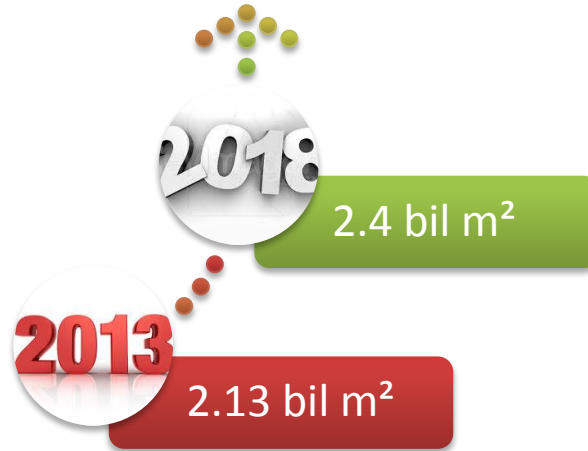
Polyvinyl Chloride Demand Overview

Polypropylene

Paper

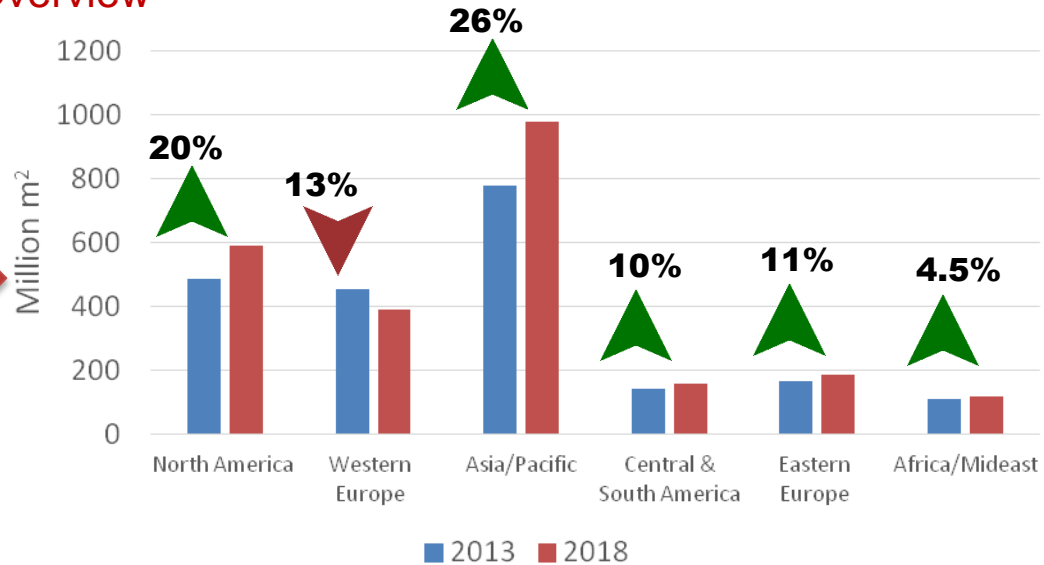
Polyvinyl Chloride

Others



Tape Backing Materials

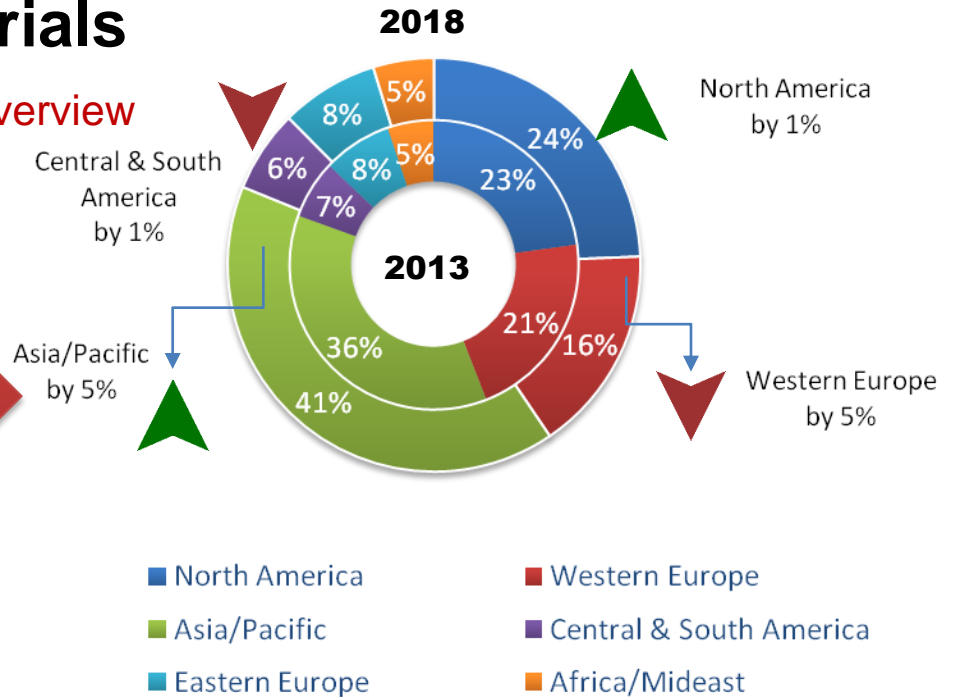
Polyvinyl Chloride Demand Overview



- ❑ Growth at **2.5% YoY to 2.4 bil m²** will be below the global PSA growth rate.
- ❑ PVC gains will be mostly **restricted to China**, in the rest of the world demand will be weak or will decline.
- ❑ Environment (VOC) concerns will drive this decline.

Tape Backing Materials

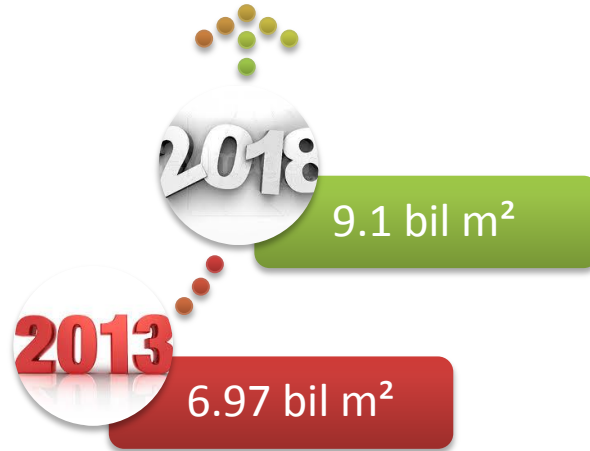
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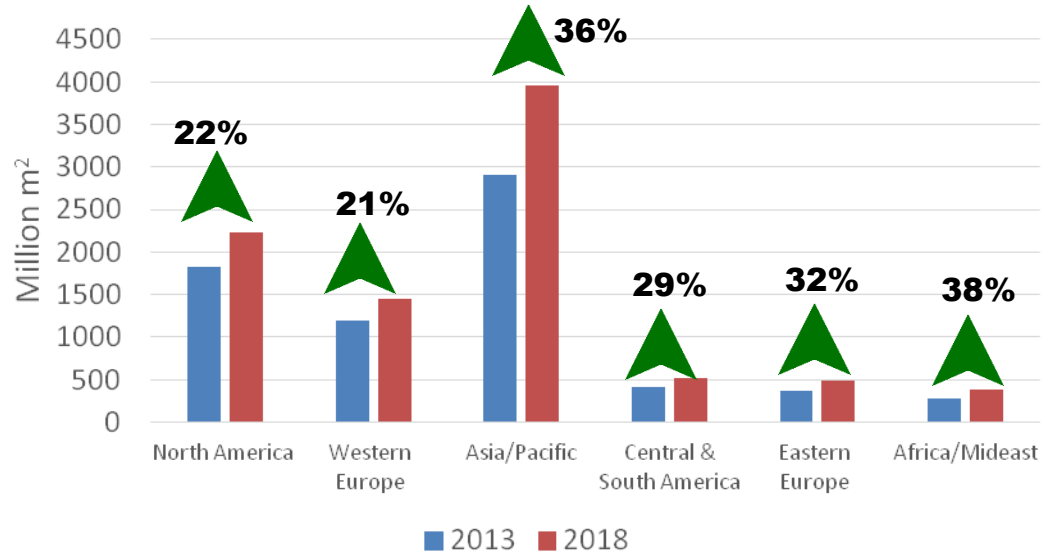
Tape Backing Materials

Others Demand Overview



Tape Backing Materials

Others Demand Overview

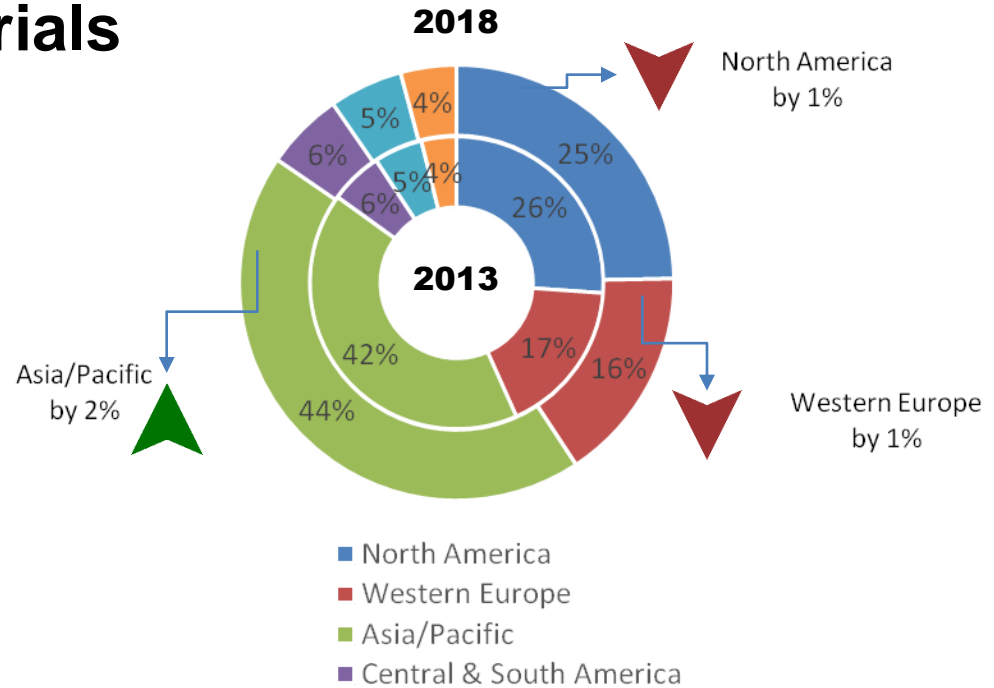


❑ Grow **5.4% YoY to 9.1 bil m² by 2018**.

❑ Medical grade cloth, Foam, Fiberglass, Fabrics, Glass cloth, Reinforced epoxy, Polyester, PEN, Polyimide, and PTFE all are expected to grow above average.

Tape Backing Materials

Others Demand Overview



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North America

Overall projected sales will **increase by 3.2% YoY to 9.9 bil m² in 2018**

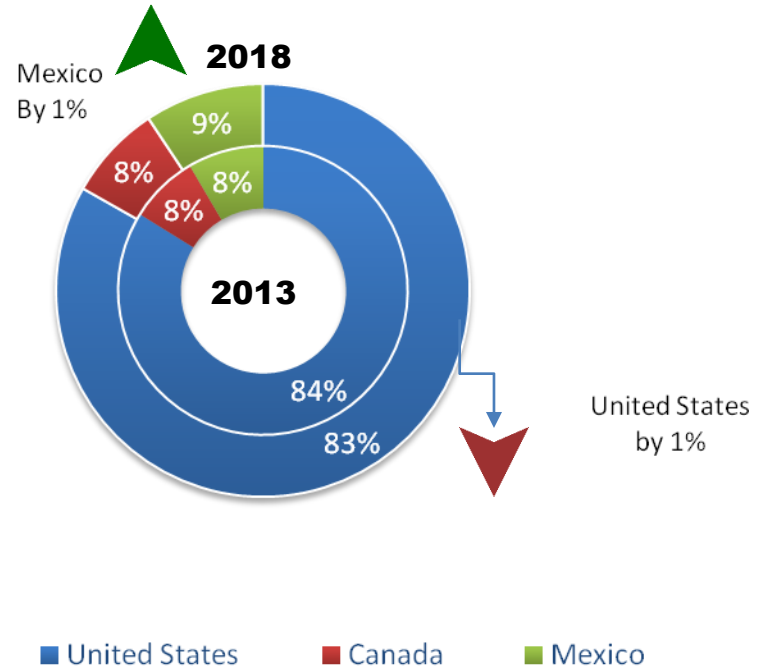
North America PSA market share

- ☐ US has 84%
- ☐ Canada has 8%
- ☐ Mexico has 9%

Mexico will outpace this growth by a small margin through 2018.

Market Trends

- ☐ Carton sealing tapes accounted for 60% (lower than the global average of 67%) of NA tape sales.
- ☐ Polypropylene accounted for 58% of total 2013 sales.
- ☐ Smaller but faster growing niche applications will see faster than average gains such as: cloths, foams, and non-wovens.

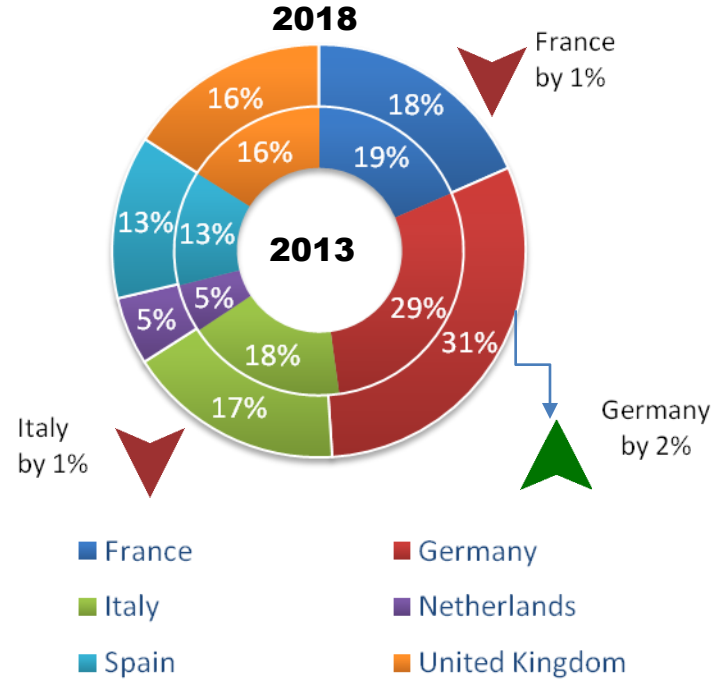


Western Europe

- Regional tape production will **rise a modest 1.2% annually to 6.3 bil m² in 2018.**
- Germany has the largest regional market share with 23% of the total .**
- France, Italy, United Kingdom, and Spain each account for at least 10% of the market.
- Italy will remain the largest regional producer.**

Market Trends

- Western Europe will have the market edge with speciality tapes.
- Solvent based adhesives will continue to be replaced by environment friendly waterborne and hot melt types.

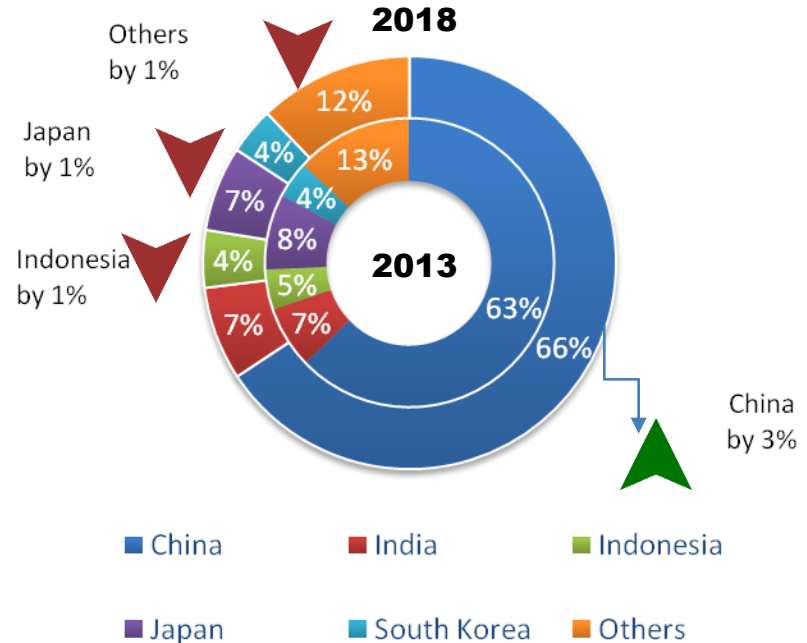


Asia/Pacific

- ❑ **Asia/Pacific** represents the **largest regional market globally**.
- ❑ Sales of PSA was **19.1 bil m² in 2013**, projected to increase by **6.4% to 26.1 bil m² in 2018**. China accounting 65% of this total.
- ❑ Growth will be due to continued expansion in China, India, and Indonesia.
- ❑ Production is expected to rise 6.4% per year through to 2018 to achieve 30.5 bil m².

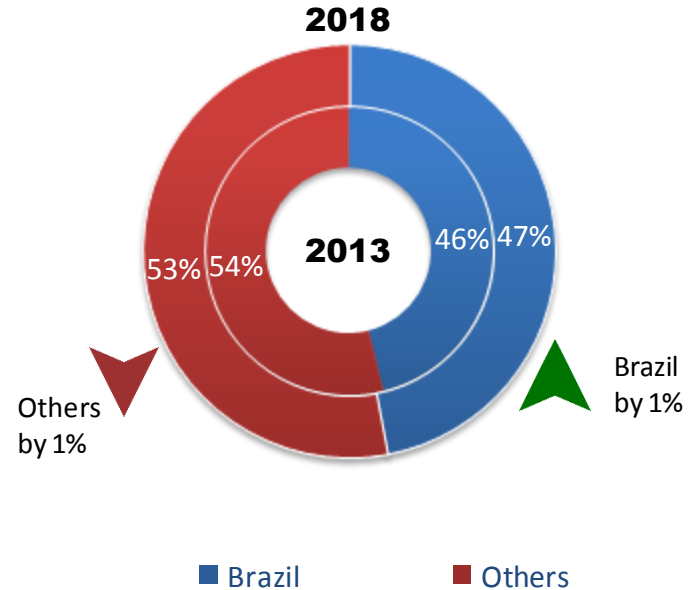
Market Trends

- ❑ A large amount of the tape production features PP.
- ❑ Medical tapes despite being less intensively used than in advanced economies (due to the population size and healthcare infrastructure) make this a significant growth market
- ❑ Carton Sealing tapes made up 73% of regional tape sales (*slightly higher than N. America and W. Europe*).
- ❑ Increased packaged goods consumption and production is linked to climbing income per capita.
- ❑ Japanese motor vehicle production accounted for half the regional production in 2003 but will drop to 15% by 2018, partly due to automakers shifting production to Thailand, Malaysia, and other Asian locations.



Central and South America

- ❑ Total sales: **2.1 bil m² (5% of global market)** in 2013, to grow by 4.7% to 2.6 bil m² in 2018.
- ❑ **Brazil accounted for 45% of the total.**
- ❑ Excluding Brazil sales was 1.1 bil m², this is expected to increase by 4.4% YoY to 1.4 bil m² in 2018.
- ❑ Other significant markets include Argentina, Venezuela, and Colombia.
- ❑ Regional tape shipments to increase by **4.6% YoY to 1.65 bil m² by 2018.**
- ❑ There is considerable interregional trade of tapes. For instance most of Brazil's tape exports go to Argentina, Chile, Colombia, Ecuador, Peru, Uruguay, and Venezuela.
- ❑ Brazil's expansion in manufacturing and construction activities will boost the regional demand, for speciality, electronics, electrical, and double sided tapes.

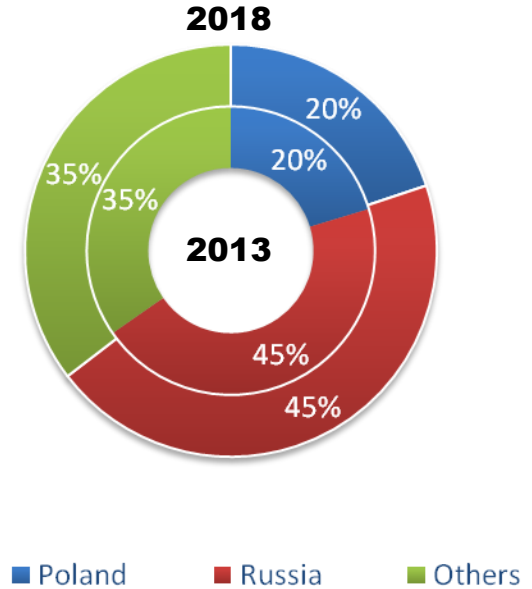


Eastern Europe

- ❑ PSA demand is projected to **increase 4.8% to 2.6 bil m² in 2018.**

Market Trends

- ❑ Market growth is **linked to the expanding middle class rising personal income** driving demand for consumer goods leading to an increase in manufacturing activity.
- ❑ The European packaging markets range moderately from advanced EU member states – **Czech Republic, Hungary, and Poland** - to very limited in less developed countries like **Albania and some of the Balkan states.**
- ❑ Carton sealing accounted for 62 % of the tape used in Eastern Europe in 2013 .
- ❑ **EU membership** has made East European countries more attractive to Western European. Countries such as Czech Republic and Poland are expected to boost growth due to these factors.

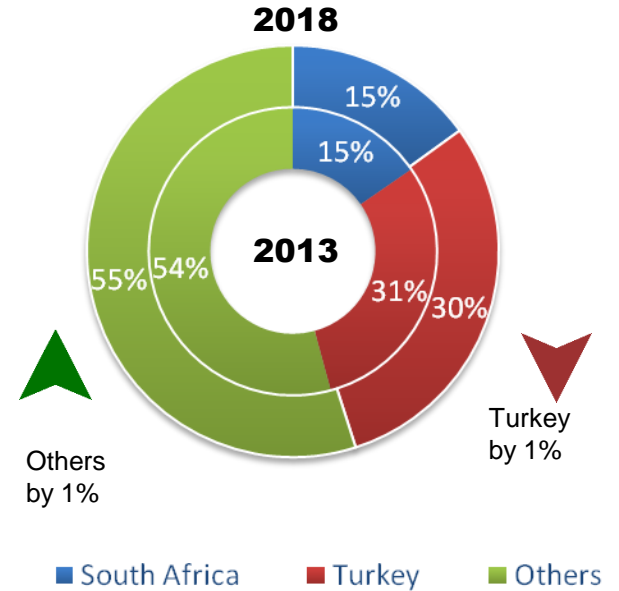


Africa Mideast

- ❑ This region encompasses **80 countries** and territorial dependencies located on **or near the continent of Africa and the Arabian Peninsula, or in Southwest Asia from Iran westwards to the Mediterranean Sea.**
- ❑ The region's population increased 2.3% annually from 2003 – 2013 surpassing 1.4 billion and remaining the second most populous region after the Asia/Pacific.
- ❑ The largest manufacturers in this region are found in South Africa and Turkey both have sizable manufacturing bases in comparison to others in the region.

Market Trends

- ❑ Real GDP is set to rise 4.1% through 2018 the second fastest pace of any region.
- ❑ Sales for PSA totalled 1.6 bil m² in 2013, accounting 4% of global market.
- ❑ Sales for PSA are expected to increase 6.0% YoY to 2.1 bil m² in 2018.
- ❑ The best opportunities for growth in this region are with the more developed countries such as Israel, Saudi Arabia, South Africa and Turkey.
- ❑ Carton sealing tapes remain the largest tape segment accounting for 62% of total sales in 2018.
- ❑ Demand for Masking tapes in Turkey in particular will increase due to the building and construction expenditures.
- ❑ PSA demand in Iran and Turkey will be bolstered by the motor vehicle industry.



Thank you