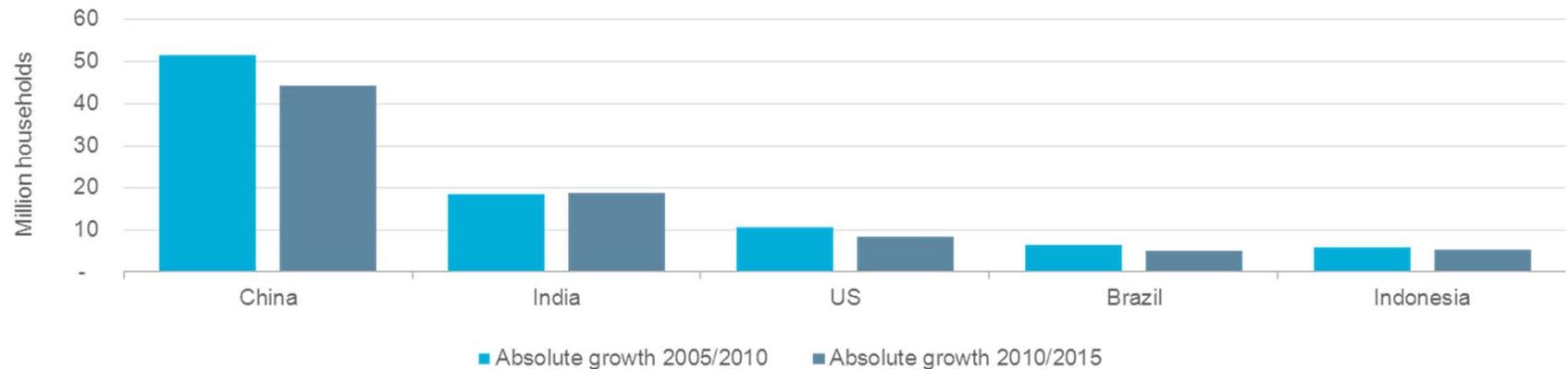


Increase in washing machine penetration

- China has seen the largest growth in the number of households with a washing machine over the last five years. Euromonitor International estimates that 73% of Chinese households had a washing machine in 2010, rising to 80% by 2015. This equates to an extra 41 million households with washing machines by 2015 – all of which will be using automatic laundry products, such as powder detergents.
- Growth in demand for washing machines has been driven by urbanisation in many countries, such as China and India. Urban houses are built with the necessary plumbing and have clean water available, unlike rural homes, where hand washing is still commonplace.
- However, it is worth noting that the penetration of washing machines can be misleading, as this does not necessarily result in all clothes washing being done in the machine. One industry source suggests that in developing countries, even households that have washing machines may still do a proportion of their washing by hand – particularly in the summer months, when it is a more pleasant experience.

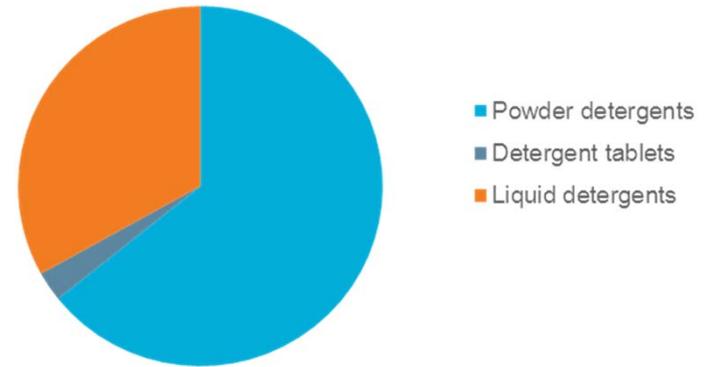
Washing Machines: Top 5 Countries for Growth by Household 2005/2015



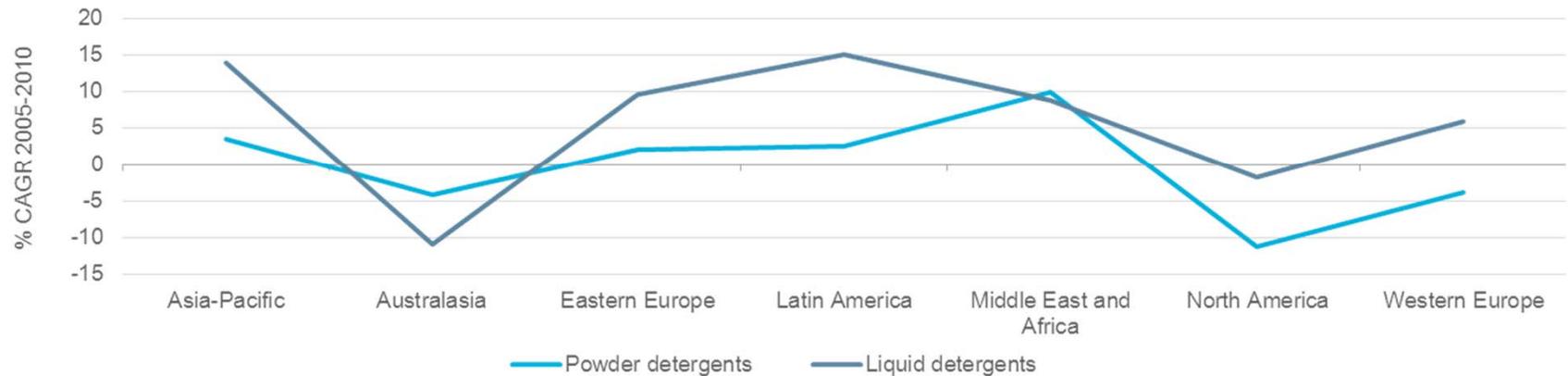
Competition from other formats

- The powder detergent category is coming under increasing pressure from liquid detergents. Liquid detergents are particularly popular in North America and Western Europe where, in 2010, they accounted for 83% and 41% of the automatic detergents category by value, respectively.
- While there are benefits for the consumer in using liquid detergents (convenience), the key benefits are for the manufacturer. They are cheaper to produce and so their margins are a lot greater – it is therefore in their interests to promote them.

Automatic Detergents: 2010
(% value share)



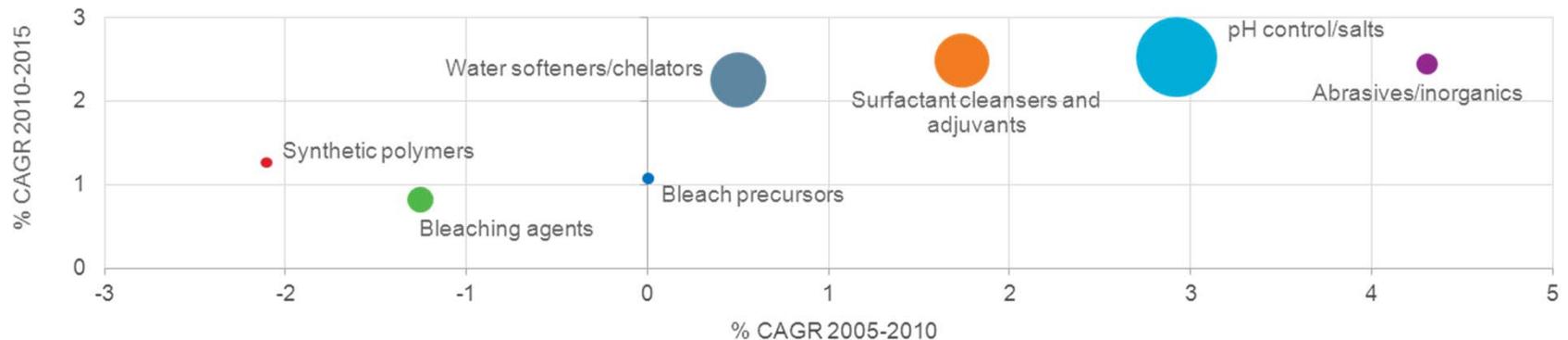
Automatic Detergents: Volume Growth by Region 2005-2010



Changing formulations impact the market

- There are three main categories of ingredients used in powder detergents – pH control/salts, water softeners/chelators and surfactant cleansers and adjuvants. Together, these accounted for 88% of the ingredients consumed (excluding water/aqua) in powder detergents in 2010. Growth in these ingredient categories therefore generally follows growth in powder detergents. However, as manufacturers change formulations, in particular removing phosphates, this has meant that growth in water softeners/chelators (which includes sodium triphosphate) has been a lot lower than that of the other key categories, and in turn, growth in pH control/salts has been much stronger, as carbonates are increasingly being used to replace phosphates.
- Bleaching agents are one of the poorest performing ingredient categories, with a CAGR forecast at under 1% between 2010 and 2015. These ingredients are expensive and almost exclusively used in European formulations, so with demand for powder detergents falling in this region, this has resulted in a decline.

Selected Powder Detergent Ingredients: Growth and Growth Prospects by Volume
2005-2015



Note: Size of bubble represents volume used in powder detergents in 2010

Green surfactants beginning to emerge

Alkyl Polyglucoside

- Alkyl polyglucoside (APG) is a naturally derived non-ionic surfactant, produced from plant-derived raw materials, such as vegetable oils and starch. APG is mild to the skin and environmentally friendly, as well as offering strong cleaning performance. It has been used in a wide variety of products, including detergents.
- Cognis (now part of BASF) is considered to be the world's largest producer of APG. Its faith in the long-term potential of APG is evident in its opening of a new APG plant in China in 2010. It markets its products for detergents under the brand Glucopon.
- As well as being greener than other non-ionic surfactants, APG is said to be better at dissolving in water, and at a low temperatures, a requirement for many detergent manufacturers. It also claims to offer better stability with enzymes, which can be a problem in liquid detergents.

Methyl Ester Sulphonate

- Another green surfactant starting to make its mark is methyl ester sulphonate (MES). As an anionic surfactant, it has the potential to replace LAS; however, it is unstable at low wash temperatures, which makes it unsuitable for many of the newer concentrated products being launched on the market. Nonetheless, there is plenty of opportunity for its use in regular powder detergents.
- Only a handful of companies currently produce MES. Two main producers are based in Asia – Japanese company Lion Corp and Malaysian company Kuala Lumpur Kepong Bhd. The latter completed an MES plant in 2010 in Port Klang, Malaysia.
- Lion Corp has started to use MES in a number of its consumer detergent products, including its new Top Platinum Clear detergent.

