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Stewart Investors
Sustainable Funds Group

The plastics paradox

Plastics. Cost-efficiency and durability has made them indispensable in manufacturing and production. It’s also made them a world-wide environmental problem. What can be done to reduce the impact of one of the most ubiquitous materials of the modern age? Even as bottom-up investors, we still find benefit in exploring investment themes as they relate to sustainable development and which have potential implications for the companies in which we invest on our clients’ behalf.

As part of our ongoing research and engagement process, we have created a list of issues to explore, ranging from the environmental challenges palm oil supply chains face to implications and benefits of a circular economy. We have been working on deepening our understanding of the challenges and opportunities companies face in plastic and packaging.

The sustainable development challenge

Plastic is wonderful stuff. It is lightweight so less carbon intensive to move around, durable, mouldable and less energy intensive to make than glass or aluminium. It helps reduce food waste and decreases the risk of food contamination. Plastics industry group, Plastics Europe, argue that in developing countries 40% of food losses occur at post-harvest and processing levels and, of course, they argue plastic has an important role to play in reducing that.[1] There are also a wide range of medical applications, such as packaging for pharmaceuticals and manufacturing healthcare equipment. In the 1980s, the argument was made that plastic bags were better than paper bags given concerns around deforestation.

However, we are making and using far too much plastic, and it’s not made in a way that’s designed to reuse, rather it’s designed to be thrown away. What’s emerged is the ‘plastics paradox‘:

‘Over the past several decades, plastic’s unique properties have made it nearly ubiquitous. It has replaced previously used materials and enabled the creation of new products. However, the evolution of waste management and recycling systems globally has not kept pace with the evolution in materials. The result is that plastic, with its generally low recovery and recycling rates, has in many cases displaced metal, glass, and other materials that are much more likely to be recycled. And herein lies the ‘plastics paradox’: the inevitable forces of innovation and cost optimisation mean that companies that manufacture and use plastic resin are constantly seeking to dematerialise their products. This dematerialisation makes plastic an even more compelling material with even more uses. But it also has an unintended consequence: at the end of each product’s current use, there simply is not enough economic value to make collection of the material for conventional recycling financially viable.’[2]

And the oceans are the dumping ground. Eight million tonnes of plastics leak into the ocean each year. It is estimated that some plastic products will retain their original recognisable form 400 years after finding their way into the ocean.[2]

We have all heard about the Great Pacific Garbage Patch, a rubbish-covered region of the Pacific Ocean, several hundred miles in diameter.[3] Terrifyingly, by 2050 it’s assumed there will be more plastic in the ocean than fish, and that’s assuming fish stocks remain constant which is highly optimistic![4]

The problem with plastics in the ocean is not only the bottles and bags floating on top, it’s the micro plastics we cannot see. Micro plastics come about because plastic breaks down into smaller and smaller pieces, but it never actually disappears. It’s also sometimes from unlikely sources. In Norway it was found that the biggest micro plastic contributor was wear and tear from car tyres on the roads, which then washed into the ocean when it rained.[5] The other sources are concerning as well and make cosmetic companies recent efforts on banning microbeads seem futile.

There are also 'nurdles' which are small bits of plastic that are melted down to make plastic products. There is currently no standards for the movement of these and they also find their way to the sea.

Scientists have also highlighted the quandary of missing plastic. For the amount of plastic that has been produced, there should be far more in the oceans. But it is literally missing. It is broken down to nano-particles, stuff grows on it, making it heavier, and it sinks to the ocean bed, or is eaten by fish and maritime life.[5] Given 15% of the world's dietary protein comes from fish[2], if it becomes inedible or reduces capacity, we have another sustainable development challenge.

It has also been suggested that plastics, or at least the chemicals that go into making plastic, can be harmful to human health. Bisphenol A, known as BPAs, is used to make plastic clear and tough. However, its hormone-like properties have led to suggestions it is harmful to human health, being linked to a range of ailments including cancer, poor thyroid function, neurological problems and obesity.[6]

The investment implications

While only 26% of plastic is used in packaging, there are big problems with designed obsolescence. Most plastic packaging is single use, so is thrown away and ends up in the ocean, landfills or clogging drains and waterways. As a result, regulators are increasingly developing policy mechanisms that price these externalities, recognising the total cost of plastics is higher. This might be indirectly through environmental costs being added through the supply chain, such as carbon pricing or direct intervention, as we have already seen with the banning of plastic bags

Where do microplastics in the ocean come from?

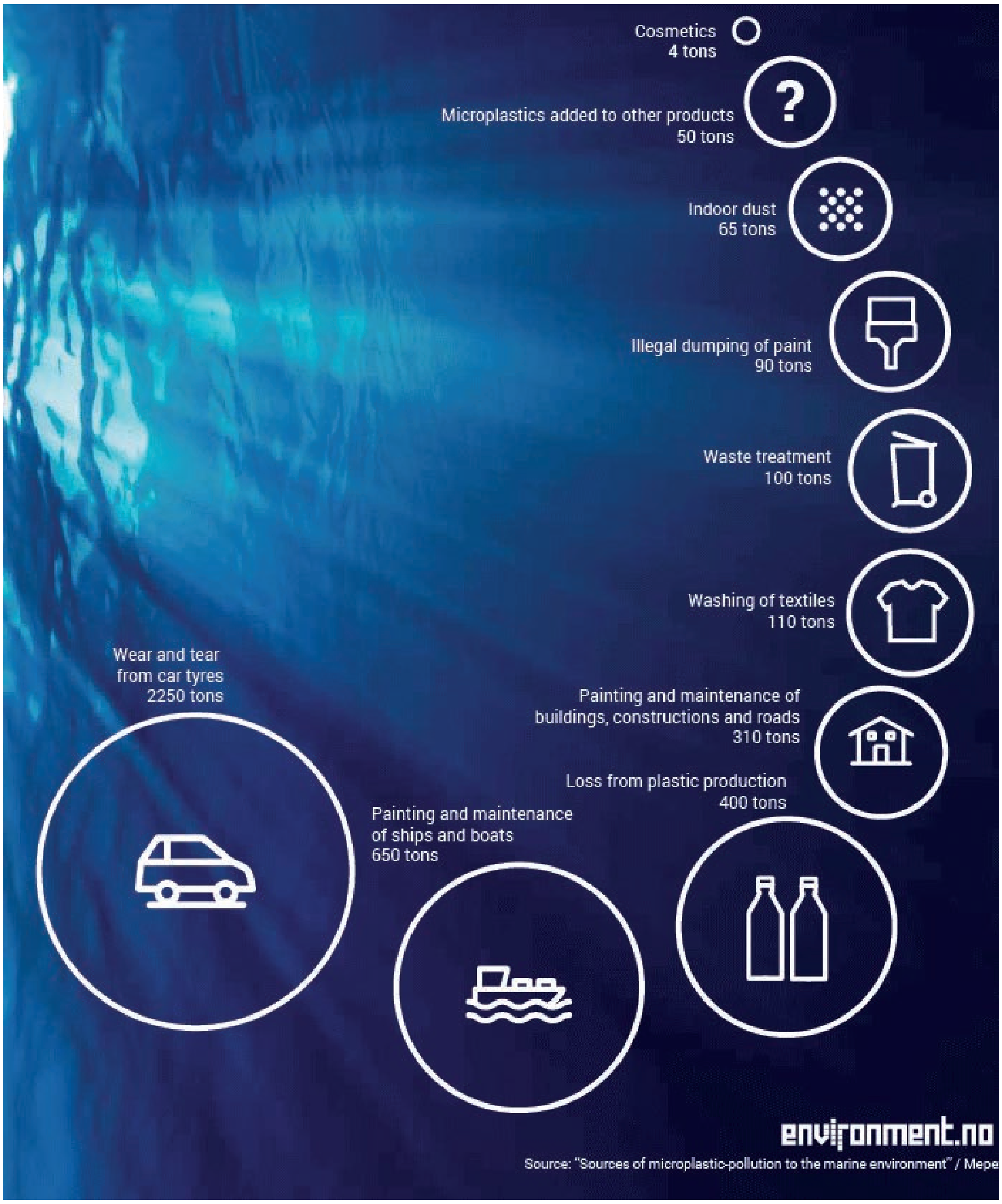

Image source: http://www.environment.no/topics/waste/microplastics/

and bottled water, or forcing companies to pay for the pollution generated from their products, for example compulsory take back schemes and levies to offset the cost of reverse vending. Trucost calculates the total natural capital cost of plastic in the consumer goods industry to be more than US$75 billion per year.[7] As a result the value at risk suggests companies would be better placed to reduce their dependency on plastic now to protect long-term margins. There is also the potential reputational risk companies' face when there is more plastic in the ocean than fish and images of, for example, plastic bottles floating in the ocean cannot be good for particular brands.

So what are companies doing?

Recycling

Almost all companies have some sort of awareness of making products out of materials that can be recycled, but it's also about making it happen.

Natura, a Brazilian consumer goods company, are developing a reverse waste logistics approach with waste-picker cooperatives to upcycle their disposed packaging in a fair way. Dabur, an Indian consumer goods company, has a similar initiative.

H&M, the Swedish clothing retailer, have successfully introduced a 'take-back' scheme without a financial incentive.

Enviro Pallets based in Bali have built a business on making durable pallets from used plastics.

Tomra Systems from Norway create sensor-based solutions to enhance productivity by producing reverse vending machines, compactors and sorting machinery to assist consumers and companies recycle used products.

However, more work is required from supermarkets, retailers, and logistics companies to help with the innovation to facilitate customer recycling.

Doing plastic better

Companies have also been looking at ways to 'do plastic better'. Light weighting is happening. Natura have the innovative SOU range that uses 70% less plastic than other packaging. Unilever have patented MuCell technology and as a result use 15% less plastic in the Dove body wash bottle. Although these are not unique examples, generally across the industry it has got a lot better. Today, a one-litre washing-up liquid bottle uses 64% less material than in the 1970s, a 165g yoghurt pot 43% less, and a two-litre plastic fizzy drink bottle 31% less.[8]

However, it has been argued light weighting has a downside. Reducing the quantity of plastic in packaging reduces the growth rate of plastic consumption by only a few percentage points while also reducing the incentive for waste pickers to manually extract some items, since items will contain less material that can be resold.[2] This low value plastic then typically ends up in the ocean.

So a true example of the plastic paradox. On the one hand, Natura is reducing the plastic in its products while supporting a waste picker initiative although the initiative won't see the waste pickers make any money and so are less incentivised to collect recyclable materials! We hope that it will still be successful given the high value harder plastic in the waste stream from the other consumer companies.

Coke has also produced 'plant bottles' which use 30% plant-based substitutes for petroleum-based materials. While bio-degradable plastics are encouraging, at the moment only 0.6% of plastics represent these bio-plastics. Although they can be used with existing plastic making infrastructure, they cost 33% more to make[4], and are typically compostable only under controlled conditions, as in industrial composters.

All our consumer companies use plastic. Some are doing great stuff with it and most have demonstrated some alignment in thinking, and while we don't think 'plastic risk' is a reason to sell, or even fundamentally re-visit the investment case of any of our companies (except maybe having a more optimistic view of the franchise strength), we do acknowledge there is more we can do to encourage improved sustainable development outcomes.

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[1] Source: PlasticsEurope. Plastic packaging born to protect brochure 2014.

[2] Source: Stemming the Tide; Land-based strategies for a plastic-free ocean, The Ocean Conservancy, 2015.

[3] Source: National Geographic, Resource Library. Great Pacific Garbage Patch.

[4] Source: The Ellen MacArthur Foundation. The New Plastics Economy: Rethinking the future of plastics. January 2016.

[5] Source: Norwegian Environment Agency. Sourced 2 August 2016.

[6] Source: Medical News Today – How does bisphenol A affect health? Written May 2017.

[7] Source: UNEP (2014) Valuing Plastics: The Business Case for Measuring, Managing and Disclosing Plastic Use in the Consumer Goods Industry.

[8] Source: INCPEN. Factsheet: Too much packaging?

Source for company information: Stewart Investors investment team and company data. For illustrative purposes only. Reference to the names of each company mentioned in this communication is merely for explaining the investment strategy, and should not be construed as investment advice or investment recommendation of those companies. Companies mentioned herein may or may not form part of the holdings of Stewart Investors.

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