

23rd October, 2018

Aurum Small Cap Opportunities & Aurum Growth

Dear Investor,

We have chosen to deliberately release this quarterly update with some delay, as the market's free fall that began in later half of September continued in early October too. No one connected with the markets would have had the patience to read this update, unless the dust of this market storm settled down a bit. Thankfully, the market in general and our portfolio stocks in specific have found their feet for the time being. In the current carnage one thing that has gone unnoticed by most is that good quality stocks seemed to have steadily moved from weak hands (shorter term investors) to strong ones (longer term investors). Resultantly, we are of the firm belief that while market volatility will continue for another few quarters, until next general elections, good quality stocks are likely to show much more resilience during such volatile times.

One segment that still remains a big concern is NBFCs. With ultra rich valuations, aggressive growth targets and easy access to short term debt, they seemed to be in an utopian mode till reality hit them last month. The problems that surfaced at ILFS soon became a contagion not only exposing the shallowness of our debt market but also exposing the poor asset / liability planning by well known NBFCs. Some kind of a shakeout is imminent in this space and we haven't seen the entire movie yet. Given our conservative approach to valuations, we had gradually exited Canfin Homes last FY. Since then, we have refrained from making new investments in the financials space though we continue to like a few names amongst NBFCs/Small Banks. The current fall may allow us to participate in those at reasonable valuations.

Plastics – Boon or Bane!

Our search for interesting long term themes took us into the realm of plastics. A material that in many ways has impacted our lifestyle and consumption more than any other material, in last 50 years. As we dug deeper to build a global perspective around this versatile material and its usage, we realized that there is likely to be a major shakeout in the industry over the next 5-10 years, leading to decimation of many a businesses and opportunity for many enterprises providing alternative materials and solutions. We are happy to share our views on the same in this quarterly update.



China, the manufacturing capital of the world, apparently was also the recycling capital of the world!

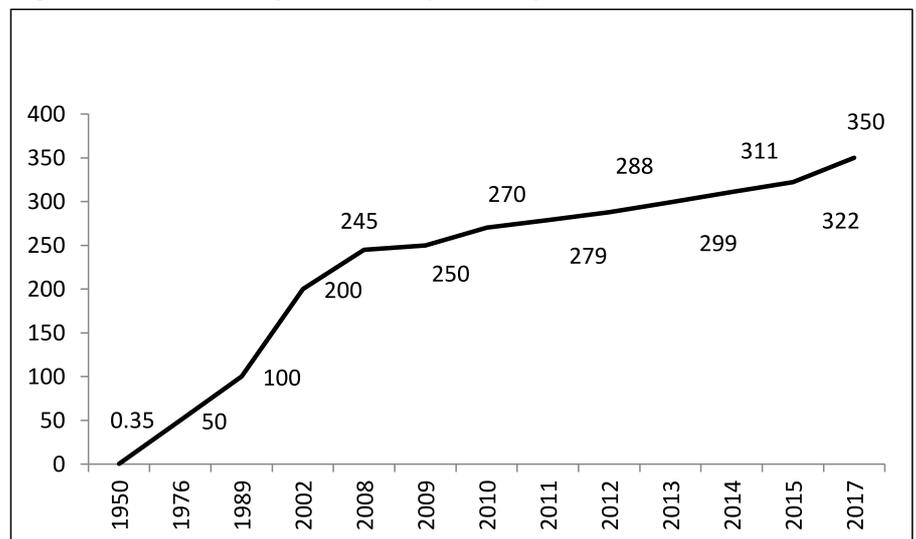
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The (plastic) straw that broke the camel's back: In 2016, China imported about 8-10 million tonnes of plastic waste representing about 45% of global plastic waste trade and ~3% of global plastic consumption. China, the manufacturing capital of the world, apparently was also the recycling capital of world! However, in a surprise move in 2017, China clamped down on import of waste, including plastic, below a certain purity, for further recycling. The implications of this move are profound and perhaps has gone unnoticed till now. Suddenly, US/EU countries, which were earlier blithely generating and exporting huge amount of plastic & other waste, did not know how to handle the problem at hand! With nowhere to go, more plastic waste is likely to end up in the countries of consumption (EU & US), as litter or in landfills. For example, UK exports 2.7 million tonnes or about 2/3rd of its plastic waste to China for recycling. The situation for US and most EU countries is more or less the same. At this point in time, they do not have enough recycling and incineration infrastructure to deal with this kind of waste generation. Creating such an infrastructure would not only be an expensive proposition but would also have serious environmental repercussions in their own backyard. The only way, therefore, to deal with this massive problem is to adopt a two pronged strategy of reducing generation of plastic waste by rationalising consumption and finding more environmental friendly alternatives to plastics!

Plastics – A miracle material, assumes menacing proportions

To be fair, plastic, is a miracle material! It is lightweight, flexible, strong and generally sterile. Usage of plastic has grown by leaps and bounds since the development of the petrochemical industry in the '50s. Today, globally, about 350 million tonnes of plastic material is being produced annually. (Fig 1)

Fig 1: Global Plastic production (Mn tons)



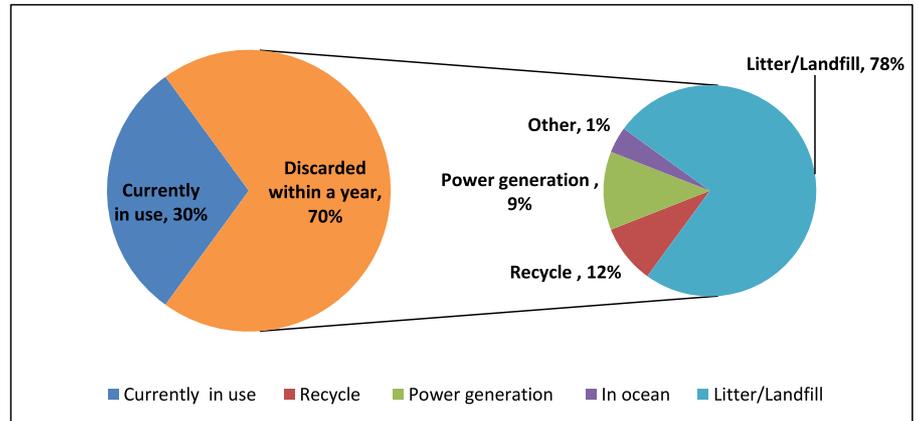
Source: The statistic portal



Of the 350 million tonnes plastic produced annually, it is estimated that 70% is discarded within the same year. Within the 70% that is discarded within the first year, a mere ~ 9% is recycled, 12% is incinerated to generate power and the remaining 79% end up as either litter or in landfill & ocean.

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Fig 2: Plastic cycle, cradle to grave



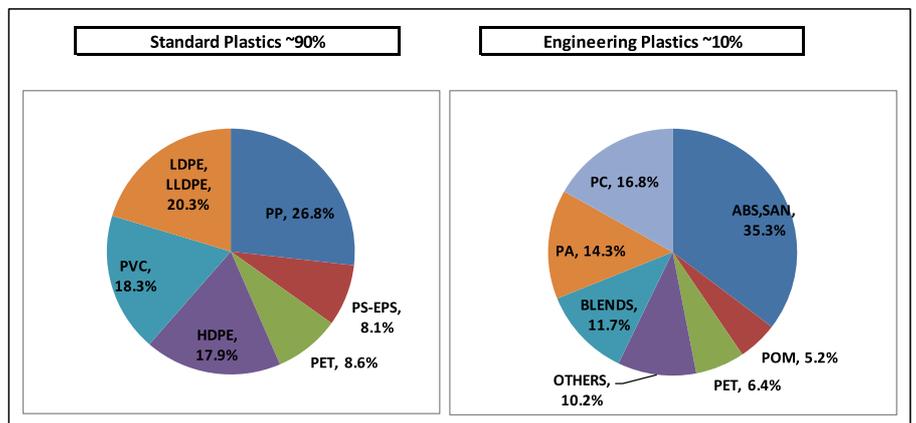
Source: *The National Geographic*

Production & Consumption pattern of plastic

Thermoplastic or plastic, is broadly divided into;

- **Engineering plastic:** Material like ABS, POM, PA, PC, etc. accounting for 10% of plastic production
- **Standard plastic:** Comprises of generic LDPE, HDPE, PET, PVC, etc. which are used for packing material, single use cutlery, stationary, toys, shoes, etc. It accounts for 90% of plastic production, is accountable for generating bulk of the waste and is therefore at an imminent risk from a business standpoint. (Fig 3)

Fig 3: Global Thermoplastic demand by type



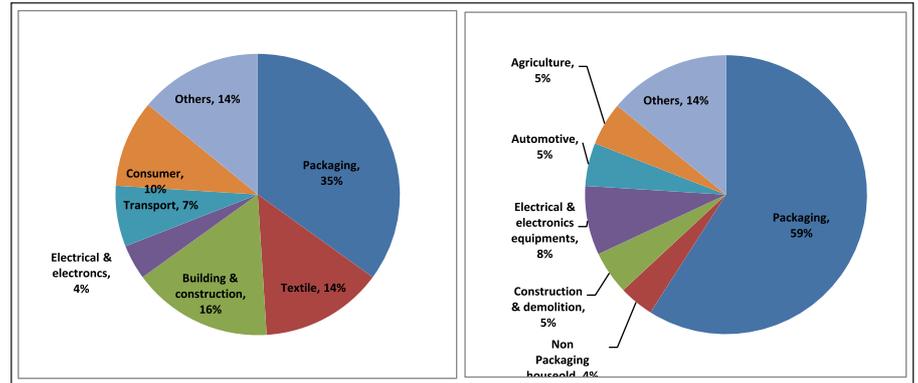
Source: *Plastics Europe market research group (PEMRG)*



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Within standard plastic, packaging is the largest segment of consumption and also the largest source of plastic waste, estimated at 50-60% of total waste generated. Typically packaging waste would include plastic bags, shrink wraps, bottles, snack packs, thermocole, bubble packs, bopp/pvc films, PET, etc. Closely following packaging are single use articles like plastic cutlery, toys & gifts and cigarette butts. (Fig 4/5)

Fig 4: Consumption of plastics, by Industry Fig 5: Waste generation of plastic, by Industry



Source: Business wire

The problem of plastic – Never say die

Plastic emerged as a miracle material in the 50's. However, irresponsible large scale plastic usage has led to the world being overwhelmed by plastic litter, which refuses to fade away given its non degradable nature. Plastic has invaded & choked soil, drains, water bodies, beaches and forests. Further, certain grades of plastics contain carcinogenic, neurotoxic, and hormone-disruptive chemicals like chlorine (PVC), phthalates (PVC & others), benzene (polystyrene), dioxins (PVC), formaldehyde, bisphenol A (polycarbonate) and they have found their way into our ecology through water, land, and air pollution. Today plastic pollution is as large an issue as global warming, chemical pollution or desertification.

To put things in perspective, the ~350 m t of plastic is produced every year (Fig 1) is more or less equal to the weight of the entire human population! Not only is waste plastic choking the land but also the oceans and water bodies. To put the enormity of ocean pollution in perspective, there are about 5 large plastic patches in the oceans across the globe. Patch #5, off the coast of California and Hawaai, is ~ 3x the size of France or 1/5th the land mass of India! All the patches put together may well be the size of India! (Fig 6)



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Fig 6: Plastic patches across oceans



Source: www.Theoceancleanup.com

Global response to plastic pollution

Slowly but surely the world has woken up to the problem of plastic pollution. Given the background and the magnitude of the problem, going forward, we expect a strong push back from society and emergence of strong regulatory headwinds for the plastics industry in general and for single use plastic and packaging products in particular. User industry & producing companies will have to respond affirmatively and take appropriate remedial steps. We believe that the costs associated with the same will be significant.

Social and Regulatory headwind: The most obvious pushback against using plastic has come from civic society and has been backed by regulatory initiatives. These have been in the form of outright ban, levy and cooperation with corporates to reduce generation. At individual level, voluntary use of alternate material is gaining momentum. To quote some global instances;

- Rwanda, a pioneer in banning single-use plastic bags (2008), is now one of the cleanest nations on earth. Kenya has followed suit, helping clear its iconic national parks. African countries are ahead of the pack with 25 of 54 countries having banned plastic and single use plastic products
- EU countries have adopted a more nuanced approach of ban & partnership with business to reduce single use plastic
- In US the initiatives are led by cities and counties rather than at national levels.
- China has banned import of waste plastic and taken initiatives to reduce single use plastic. India (along with ban in certain states) has announced plans to be free of single use plastic by 2022. Overall, Asia continues to be a laggard.



Individual Initiatives: Similarly, citizens have come together to clean up beaches, pilgrim places, forest and community areas. Even in a socially apathetic country like India, the beach clean up initiative by Afroz Shah in Versova, Mumbai is an example of citizen initiative and indicative of the trend going forward. (Fig 7)

Fig 7: Afroz Shah, Versova beach transformation from 2015 to 2018



Source : TOI

Similarly, **Oceancleanup** is a great example of individual initiative, technology and investors coming together to tackle the problem of waste head on. On 8th September 2018, **System 001** (Fig 8) was launched to help collect plastic garbage from great Pacific Garbage Patch (#5, Fig 6). Launched by The Ocean Clean Up, this supposed to the 1st of the 60 units to be floated.

Fig 8: System 001



Source: (<https://www.theoceancleanup.com/technology/>).

Impact on Businesses

Clearly we are at a tipping point as far as the plastic waste generation is concerned and by corollary the plastic -polymer industry. Sadly, business response to plastic pollution, across the value chain, has been half hearted and at best limited to calling for better recycling.

Going forward, in the face of social initiatives and regulatory initiatives, businesses will have to go back to the drawing board to redesign their products, packaging and manufacturing process to reduce their plastic footprint. There will be a significant cost involved in this transformation processes. Some of the envisaged transformative initiatives are;

- **Extended Producer Responsibility (EPR):** We believe, widespread application of '**Extended Producer Responsibility**' principle will come into play sooner than later. Recycling is an obvious but not so easy solution to EPR. However, to make recycling more viable, industry needs to;

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- ✓ Reduce & rationalize use of packaging material
- ✓ Redesign product & packaging to avoid usage of multiple polymers and hard to recycle plastic
- ✓ Re-engineer products to reduce chemical content and their environmental impact

We believe, it would have a cascading impact on the entire polymer value chain, by way of reduced consumption of plastic, ban of use of carcinogen and heavy polymers in certain applications like food packaging and strict protocol for their disposal.

- **3D Printing:** While still at a nascent stage, this additive manufacturing technology is being widely used for complex, precise and high value product development like medical devices, aircraft parts and beehive design products to replace steel or aluminium auto parts. Though not yet suited for mass production, wider adoption of 3D printing eventually should help in reducing plastic wastage and consumption thereof.
- **Investment in recycling infrastructure:** Plastic producers along with consumer industries will have to carry out accelerated investments in developing a robust recycling chain.
- **Investment in research to develop compostible plastic & plastic consuming micro organisms:** We believe that there is significant work already happening in developing commercial scale starch based plastics and plastic consuming micro organisms. However, it will be a fair bit of wait before either of this can achieve economies of scale.

Expected Industry Impact

Over medium to long term we expect a set of businesses to be negatively impacted and some others to benefit from the changes that are likely to take place in the plastics industry. At this point, the businesses likely to be adversely impacted are more obvious. In contrast, winners are yet to emerge sharply in perspective. As per our initial assessment, the businesses that are likely to get adversely impacted are;

- **Primary polymer producers:** Plastic polymer is a part of the petrochemical industry. Plastic consumption has sharply de accelerated to 3.7% CAGR over the last 5 years vis a vis a growth of 12% CAGR over 10 years (Fig 1). As social and regulatory pushback gains momentum, petrochemical industry is likely to face demand & growth headwinds, especially in standard plastics segment. While we are unable to quantify the same in the immediate future, the writing on the wall is evident.
- **Packaging:** In the context of packaging, the Japanese experience is worth a look. In 2009 Japan implemented the '*Container and Packaging Recycling Law*'. Under the said law, responsibility to maximise recycling was placed with an industry association handling all types of packing material and was managed & paid for by industry participants. Consequently, from 2008 to 2012, plastic packaging



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Similarly, globally, there is a distinct possibility that within plastic packaging there will a shift towards PET. Paper based solution may also emerge stronger

material usage (by value) in Japan degrew @4.5%. PET bucked the trend and remained flattish. Effectively, apart from package rationalisation, within plastic there was a distinct shift towards PET, probably because PET is much more easier to recycle. In Japan, paper has also emerged as a leader in the packaging industry.

Thus, going forward, we are likely to see the Japanese experience being played out globally. Primary responsibility of redesigning product packaging would be with consumer product (FMCG & Consumer durable) and consumer facing (off line & ecommerce) companies.

- **Extrusion and injection moulding:** Extrusion and injection moulding process are the most commonly used process to manufacture any plastic products. With the expected quantitative reduction of plastic usage and redesigning of products, we expect extrusion and injection moulding industry to face volume pressures.
- **Chemicals Industry:** As mentioned earlier, a large number of chemicals go into the manufacturing of plastic product to get the right set of physical properties. With expected reduction of polymer volume and a move towards reducing its carcinogen profile, consumption of chemicals like chlorine, phthalates, bisphenol, benzene and other polymer specific chemicals are likely to impacted.

Other industries which will have to adapt to change are but are unlikely to be severely impacted are;

- **Food & Healthcare:** There have been concern regarding the leaching of chemicals and their effect on food and medicines packed in polymer containers. Companies in this sector may voluntarily revert to other packaging material or more sterile polymers, impacting standard polymer volume. Also, polymer based consumables used in healthcare industry are well managed through the recycling process and do not pose a risk of user decline.
- **FMCG & Consumer durable:** One of the large consumer of plastic packing is the FMCG industry. Being directly in touch with end consumers, sooner or later, they will have to respond with better packaging to reduce plastic pollution. Similarly, Consumer durable industry may have to redesign both packing and products to ensure lower polymer footprint without compromising quality. We believe, they are in a better position to undertake the changes and also pass on the cost much more easily.

On the other side, industries likely to benefit or emerge stronger in the medium to long term are;

- ✓ **PET & plastic recycling:** An obvious choice to combat plastic pollution would be recycling. Currently, it is hamstrung by general apathy and presence of hard to recycle & mixed plastic products in the waste cycle. In this context, as mentioned above, it is very interesting to note what happened in Japan from 2008 to 2012. Similarly, globally, there is a

distinct possibility that within plastic packaging there will a shift towards PET. Paper based solution may also emerge stronger. Both, PET & paper being relatively easier to recycle.

- ✓ **Alternative Packaging:** Some consumer durable and fmcg products may move towards using paper based packaging solutions. Similarly, local food delivery related packaging is likely to move towards paper and metal packaging. Thus, we expect to see higher consumption of paper and metal or emergence of paper based packing solutions for different applications. Similarly, starch based compostable plastic packaging & edible cutlery is also a possibility. However, supply of starch remains a challenge.
- ✓ **Engineering and Special Polymers:** We expect engineering and special plastics to continue to grow because of their specialised or niche applications, long lasting usage and versatility. The advent of 3D printing would also add to their sustainability.

In Conclusion

Historically, polymer industry has been growing @3.7% & 12.9% CAGR over the last 5 and 10 years, respectively. We believe, all the above mentioned factors and the Chinese ban in particular will impact the generation and consumption pattern of plastic & associated chemicals. This could translate into anaemic growth rates (& possible de growth) and profitability decline in the entire value chain. This adverse impact will be felt more in the non-engineering plastic space (~85-90% of plastic industry). This would also impact many small & medium scale manufacturers in the plastics value chain. We believe, we are very close to the tipping point. Either a dramatic technological development to help manage plastic waste comes about to be or the industry is likely to tip into a period of long term regulatory and social head wind accompanied by anaemic or negative growth.

Note: Plastic industry & allied data has been collected from various sources and we cannot vouch for the numerical accuracy of the same. However, they are in line with broader trends.

Looking forward to your continued support and encouragement.

Warm regards,

Sandeep Daga

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