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Sugar has become an increasingly important driver of the food and beverage industry since we first explored the topic in 2015. The health impacts are clearly worrying, which is translating into increased regulatory attention and consumer awareness of sugar content. Many companies have responded by reformulating products and raising advertising spend, but financial pressures on the sector are growing. We expect the issue to continue moving up social and political agendas, handing an advantage to those companies that have taken earlier steps to adapt to a more sugar-constrained industry.

The risks to companies and investors are clear. The rewards for successfully navigating growing challenges and the costs of inaction will both be huge. The pick-up in restructuring and activism in the sector underlines a growing recognition of the sugar issue by major companies in the sector. We don't think those risks are reflected in a food and beverage sector that continues to enjoy valuations 35–40% higher than companies in the tobacco sector or the global equity market as a whole¹.

¹Sector remains highly-rated. Branded food product average P/E is still at 22.3 versus tobacco sector average of 16.5.

Part 1: Sugar is a key strategic issue for the sector

As far back as 2015, we identified key catalysts of increased risk to the industry and ways they might translate into tangible impacts². The table below describes how these risks have since evolved:

Figure 1: 2015 risk predictions and 2019 state of play

Catalyst	Risks identified 2015	State of play in 2019	Industry impacts
Increasing awareness amongst consumers and public health bodies	Increasing awareness amongst consumers and public health bodies	Healthier challenger brands and private labels are taking market share from Big Food companies. Examples include low sugar, high protein ice-cream Halo Top taking share and contributing to double digit sales declines for the world's largest ice-cream manufacturer Unilever	Staples sector volume and price growth has declined from 5% in 2011 to below 2% in 2017 ³
Rising healthcare costs	Tougher marketing and formulation regulations	Regulations around advertising, labelling and voluntary sugar reduction guidelines have stepped up. 35 countries now have mandatory restrictions on sugar-sweetened beverages in schools ⁴ . Singapore has set voluntary sugar reduction targets to be achieved by 2020 and the UK has done the same for sugary food categories	While we have not yet seen tobacco-like litigation, the incidence of lawsuits around mismarketing continues to rise. According to World LII legal database nearly 350 lawsuits have been brought against the staples sector in the last three years. Only the banking and pharmaceutical industries have faced a higher level of litigation ⁵
	Sugar tax	While we thought that the industry lobby may be influential enough to continue with voluntary targets, the burden of healthcare costs was enough to convince governments and states to introduce sugar taxes. 17 new sugar taxes have been introduced since 2015, with the global total now standing at 42. This means more of the global population is covered by a sugar tax than by a carbon tax ⁶	
Availability of scientific research	Tobacco-like product warnings	Nutritional labelling and industry best practice is continuing to evolve. For example, authorities have made changes to the nutritional facts label in the US and Hong Kong. However, tobacco-like warnings have not materialised. The American Beverage Association successfully blocked San Francisco's tobacco-like warning on sugary soft drinks at the US Circuit Court of Appeals in late 2017 ⁷	While tobacco-like warnings have not eventuated, media attention and consumer awareness means that damage has been done. Brand Index shows that perceptions of value are declining: less than 10% of consumers have a positive perception of product quality across 5 of the top 8 carbonated soft drinks brands ⁸

²See <https://www.schroders.com/en/uk/private-investor/insights/economics/is-sugar-turning-big-food-into-the-next-big-tobacco/>

³WHO, Worldbank, Beverage Daily, Schroders.

⁴World Cancer Research Fund International, Schroders.

⁵World LII legal database, Schroders.

⁶WHO, Worldbank, Beverage Daily, Schroders.

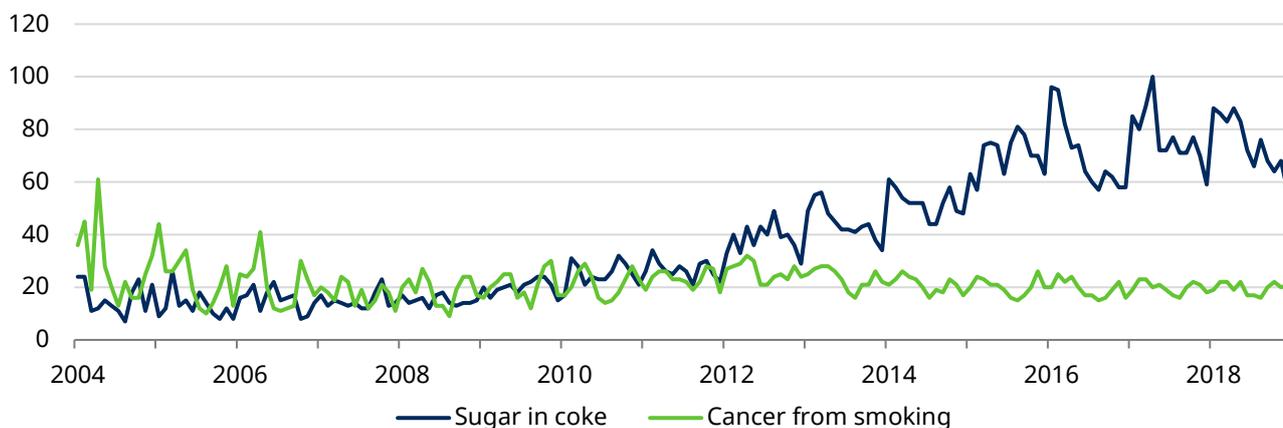
⁷<https://www.reuters.com/article/us-california-soda-ruling/u-s-appeals-court-blocks-san-francisco-ordinance-on-soda-health-warnings-idUSKCN1BU24U>

⁸Brand Index maintains a global survey panel to track consumer perspectives of different brands over time.

The three catalysts we have identified continue to build, pointing to tougher action and bigger impacts on the industry in the future.

Catalyst 1: Increasing awareness amongst consumers and public health bodies

Figure 2: Google trends: Search term – Sugar in coke
Public concern over sugary drinks outpaces smoking worries

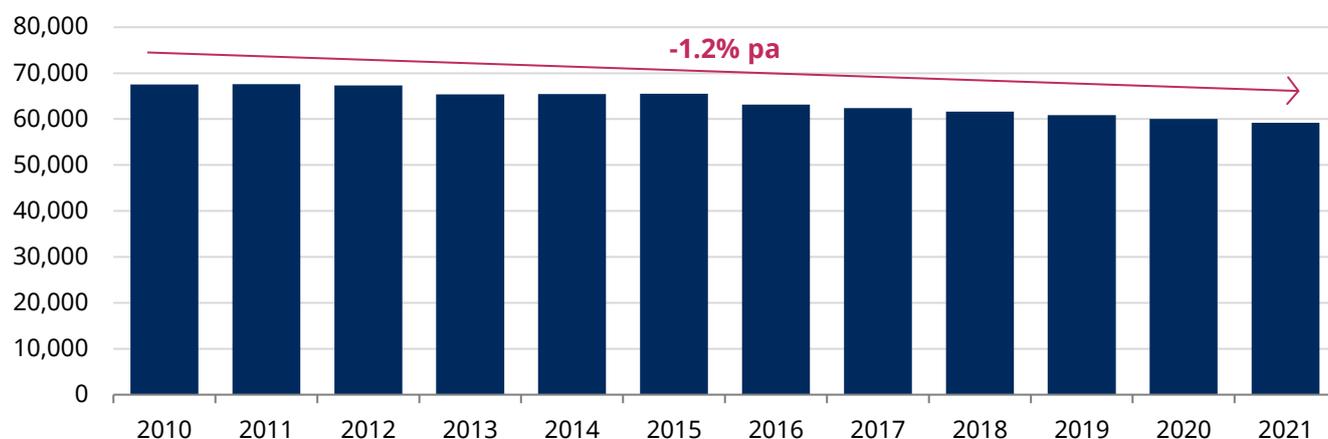


Source: Google Trends. Data extracted in December 2018.

The media, consumers and regulators are all increasingly focused on the role of sugar in our diets. Data from Google trends demonstrates the continued momentum in consumer interest in sugar in soft drinks compared to a 'known' risk of cancer from smoking. There's no indication that this picture will reverse, putting ever-more pressure on companies to reformulate their products and ensure the impact of sugar taxes is minimised.

Regulators have attempted to reduce excessive sugar consumption with a range of sugar taxes, advertising restrictions and voluntary targets. According to the medical journal, The Lancet, 35 countries have now introduced mandatory restrictions on sugar-sweetened beverages in schools⁹. Many new regulations and restrictions like these focus on the next generation of consumers, children between 11–18 years old. Public Health England (PHE) estimates¹⁰ that this age group gets 20% of their daily sugar intake from soft drinks alone, compared to 11% for adults. The regulatory focus and increasingly negative perception of carbonated soft drinks has contributed to the continued decline of soft drink volumes, as demonstrated by the graph below.

Figure 3: Volumes in the US soft drinks markets (mn litres)



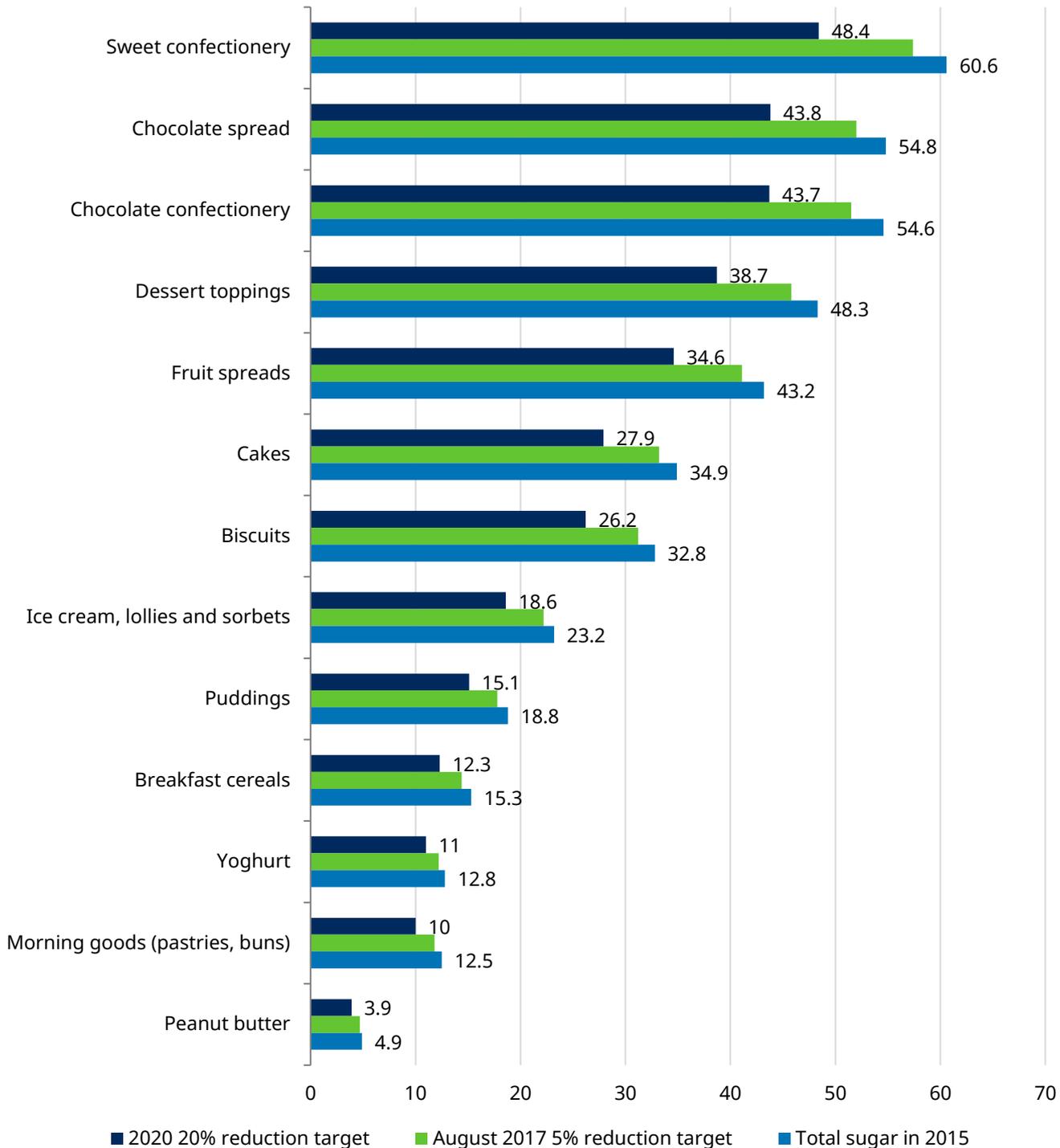
Source: Statista, April 2018.

⁹World Cancer Research Fund International.

¹⁰Public Health England, 'Sugar reduction: Achieving the 20%', March 2017.

While most regulations so far have focused on the soft drinks category, the pressure on food producers is also increasing. While soft drinks can be seen as an easier target because of their ‘empty calories’ (they deliver sugar and calories but limited nutritional benefit), sugar is also present in other food groups which offer some nutritional benefit (like protein, fibre or vitamins and minerals) in addition to their sugar content. To address this, PHE has also set voluntary targets for the food industry. It is aiming for a 20% sugar reduction by 2020 across the food categories with the largest contribution to children’s daily sugar intake. These targets have been set against a 2015 baseline and a 5% reduction must be achieved in the first year. The categories at risk are shown in the chart below.

Figure 4: Public Health England (PHE) sugar reduction targets by food category



Source: Public Health England, Statista.

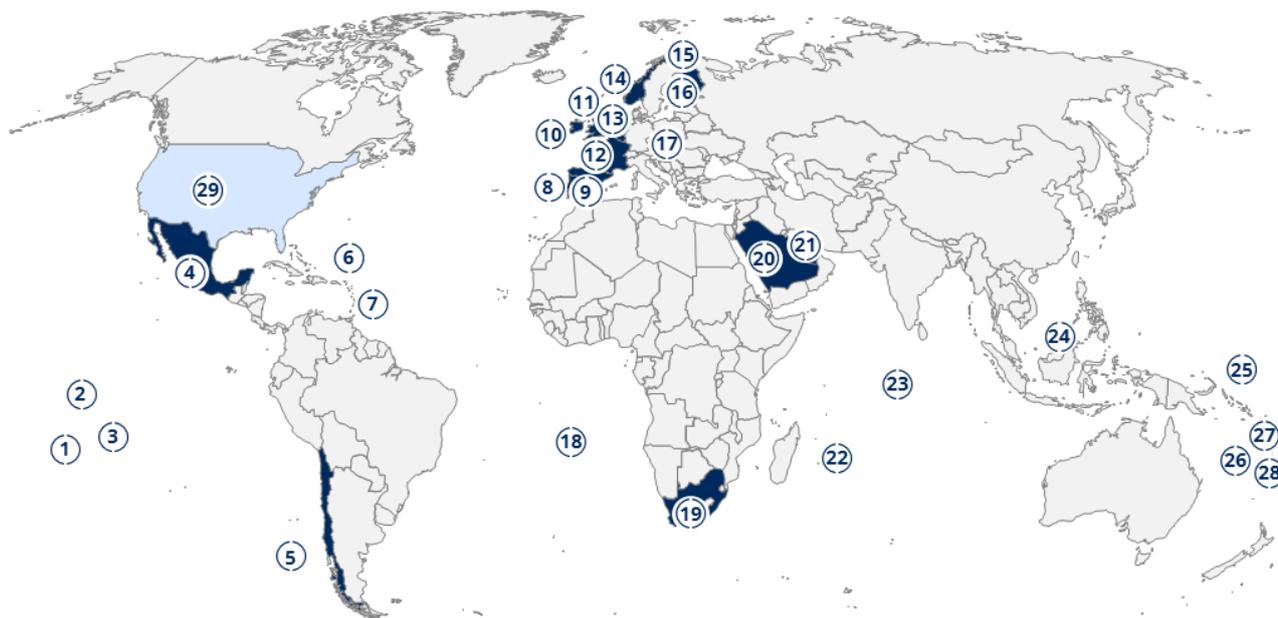
These voluntary targets are a warning shot from regulators. Unless food companies can demonstrate progress then we believe sugar taxes could extend to these high sugar food categories too. Many international food majors are taking the threat seriously, using the UK as a test market for new recipes, reformulations and portfolio mix. Other countries that have introduced a sugar tax, including Australia and South Africa, could follow a similar path and extend regulatory focus to these food categories too.

Outcome and valuation impact: Increased regulations and a rise in the number of sugar taxes is driving up R&D budgets and lowering sales volumes. Soft drinks have seen the greatest pressure on volumes, which on average are down c.6%¹¹ since our first research note in 2015. Going forward, we think food producers will face more pressure on volumes and costs (given the likely increase in R&D spend). They are already facing headwinds from the continued rise of private labels and changing consumer tastes, but we think sugar could compound the challenge and contribute to further declines in sector volume and price growth.

Catalyst 2: Rising healthcare costs – increased prevalence of obesity, diabetes and non-communicable diseases putting pressure on governments to act

The growing number of people globally diagnosed with obesity, diabetes and non-communicable diseases is undeniable. The World Health Organisation (WHO) states that obesity rates have doubled since 1980 and that the negative economic impact of obesity alone is greater than the GDP of India. Although we previously suggested that the strength of the consumer industry lobby and preference for self-regulation may limit the possibility of sugar taxes, we've seen 28 new sugar taxes introduced across the world since 2015. This takes the global total to 42 sugar taxes, shown on the map below:

Figure 5: Countries with sugar taxes implemented

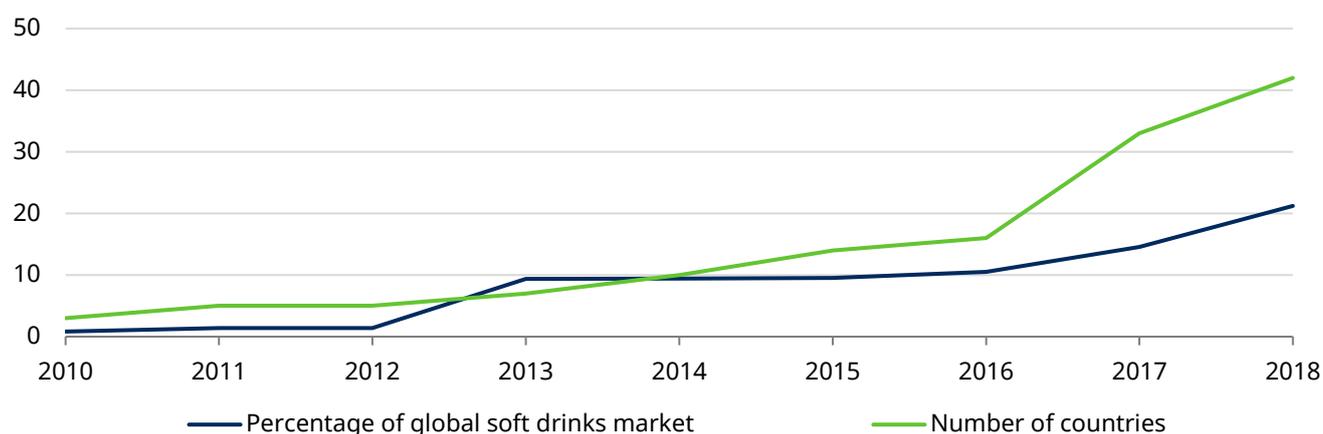


- | | | | |
|---------------------|----------------------|--------------------------|-----------|
| 1. Cook Islands | 9. Spain (Catalonia) | 17. Hungary | 25. Nauru |
| 2. Kiribati | 10. Ireland | 18. St. Helena | 26. Fiji |
| 3. French Polynesia | 11. United Kingdom | 19. South Africa | 27. Samoa |
| 4. Mexico | 12. France | 20. Saudi Arabia | 28. Tonga |
| 5. Chile | 13. Belgium | 21. United Arab Emirates | 29. USA |
| 6. Dominica | 14. Norway | 22. Mauritius | |
| 7. Barbados | 15. Finland | 23. Seychelles | |
| 8. Portugal | 16. Estonia | 24. Brunei | |

Source: Media searches, Industry sources, Schrodgers research

¹¹Statista, Soft Drinks market report, 2018.

Growth of sugar taxes



Source: Media searches, Industry sources, Statista, Schroders research

All of these taxes have been applied to soft drinks rather than food products. Recent taxes have also singled out energy drinks, especially in the Middle East. According to our analysis, the taxes introduced since 2015 have been in countries that meet one or more of the following criteria:

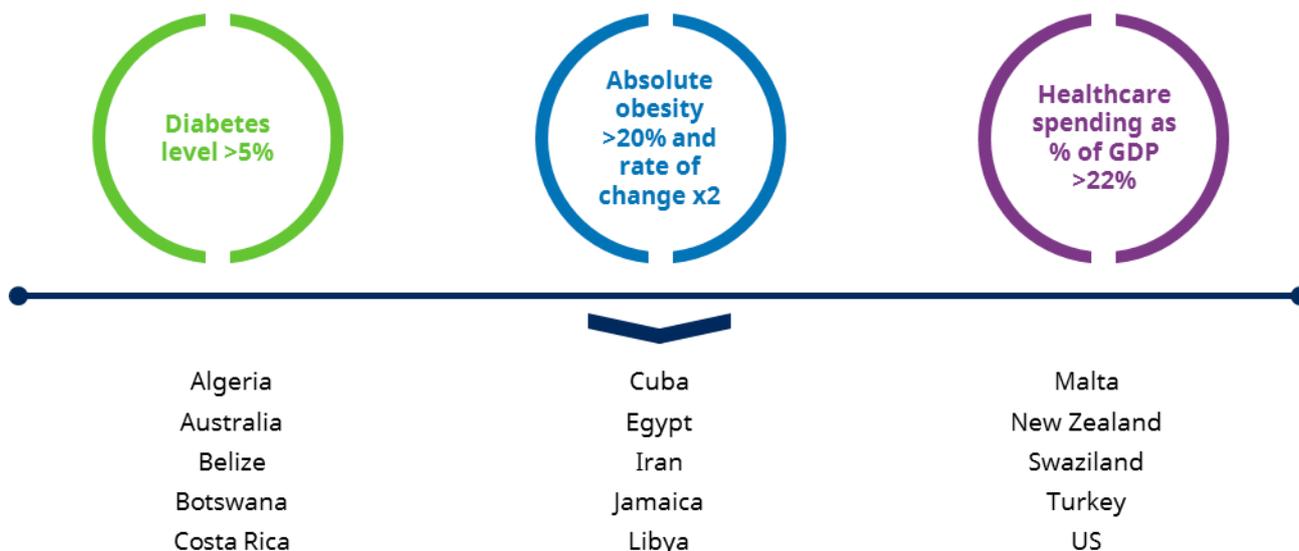
- Level of obesity in the adult population exceeds 20%
- The rate of change in obesity rates exceeds the global average since 1980 i.e. more than doubled
- Diabetes rates exceed 5% of the population
- A significant increase in healthcare spend as a % of GDP. While the increases vary greatly from single digit increases in smaller countries up to nearly 60% in Saudi Arabia, the average increase over a 20-year period was 26%

This rising healthcare burden is a key incentive for introducing a sugar tax. The rationale is similar to that for taxing alcohol to help offset the costs drinking places on public healthcare services and societies. With £45 billion worth of food/beverage related healthcare costs¹² in the UK alone, governments' incentives for raising taxes is clear.

To identify countries at risk of future legislation, we have calculated the average healthcare costs and obesity rates across these countries in which sugar taxes have already been implemented. We have then used these averages to identify other countries where the increase in healthcare costs or obesity rates is higher. This analysis is based solely on healthcare spend and obesity rates; it does not account for political appetite or strength of the national industry lobbies. The countries identified are listed below.

¹²The Hidden Cost of UK Food, Sustainable Food Trust, November 2017, www.sustainablefoodtrust.org

Figure 6: Schroders proprietary sugar tax prediction screen



...And small island developing states including Antigua and Barbuda, Micronesia, Saint Vincent and the Grenadines, Tuvalu and Vanuatu

Source: Schroders.

A sugar tax has already been proposed and defeated in Australia despite the high levels of obesity and consumer support. The US is also an interesting case; sugar taxes have already been introduced in a number of states (San Francisco, Boulder, Albany, Oakland, the Navajo Nation, Philadelphia and Seattle), but rejected in New York, Santa Fe and Massachusetts.

We've also looked at longer term trends, and which countries are seeing increases in obesity, diabetes and healthcare costs, but have not yet reached the same level as the countries who have already introduced sugar taxes. For example looking at countries where the obesity rate is already at 75% of the obesity and diabetes rates seen in countries that have introduced a sugar tax may suggest that the additional countries below may consider sugar taxes in the medium term including some significant emerging markets such as Brazil, Nigeria, Poland and Russia.

Outcome and valuation impact: Sugar taxes have quickly moved from a local to a global phenomenon. Companies reliant on high-sugar products are going to come under more and more volume pressure as their products become relatively more expensive to consumers. Those companies that have already reformulated their ranges or have less exposed portfolios should benefit relative to slower peers.

Catalyst 3: Availability of independent scientific research – increasing the possibility of large scale litigation

In our original research we highlighted the parallels between the food industry and the tobacco industry in the 1980s. To date we have seen an increase in litigation risk for the food and beverage sector, but the majority of these claims have been for mislabelling and false health claims. According to the World LII legal database there are nearly 350 lawsuits that have been brought against the staples sector in the last three years. Only the banking and pharmaceutical industries have faced a higher level of litigation during this period.

Despite this, litigation risk has not reached the scale seen in the tobacco sector in the 1980s and 1990s. One of the most frequent arguments we've heard against sugar being the next tobacco is that smoking can easily be isolated as the main cause of lung cancer. But unlike smoking, where customers are often loyal to one brand, people consume multiple food and beverage brands every day. In addition, multiple causes for the non-communicable diseases have been identified. We believe that scientific research will continue to advance but our thinking on litigation and causation has evolved.

Accounting for the fact that people's diets are more complex than their smoking habits, we have reduced the scale of potential litigation costs by half (using the tobacco industry's Master Settlement Agreement as a guide). We have also modelled a low probability of 10% due to the fact that we have yet to see a successful lawsuit proving corporate practices contributing to obesity. This allows us to model the scale of the potential fines. We estimate that average forecast earnings for staples could decline by 1.3% due to this litigation risk alone.

We think litigation risk will follow the more recent tobacco litigation in Canada and award damages on market share of high risk product and contribution to a given population's obesity rates. We think governments' voluntary targets, which focus on higher risk categories such as soft drinks, breakfast cereals, confectionery, yoghurts and ice cream, provide an indication for product categories that face higher litigation risk.

Outcome and valuation impact: Litigation risk remains material in the industry. Despite challenges quantifying and attributing the damages caused by sugar consumption, we estimate the impact at over 1% of current earnings. Companies with portfolios which are structurally less exposed to sugar are in the strongest positions.

Part 2: The industry is responding

With sugar firmly on the radar of all stakeholder groups, food and beverage companies need to adapt to survive these increasing headwinds triggered by the three catalysts above. The key trends we've identified are explained below:

M&A, divestment and the threat from activist investors

Increased stakeholder awareness is a double-edged sword; there is a rise in challenger brands meeting consumer demand for healthy products, creating a wide range of M&A opportunities for the food majors. But at the same time, it also changes investor expectations on the speed of product reformulation and portfolio restructuring. Those companies investing in R&D, product reformulation and acquiring healthier brands are better positioned to take market share and protect the sustainability of future earnings. But companies failing to adapt to these new trends fast enough may become a target of activist investors.

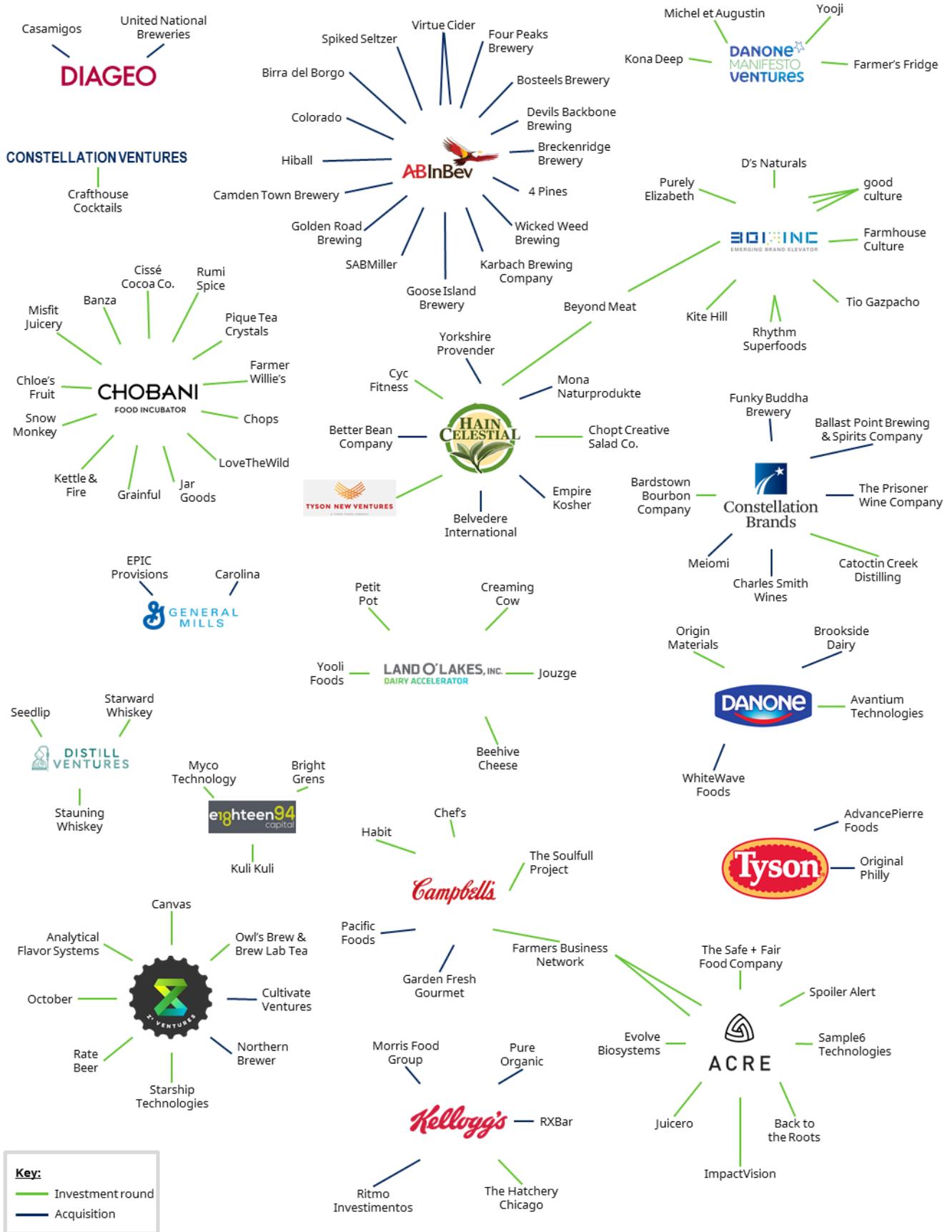
Since 2015, we have seen the food majors themselves become a target of activism with a surprise bid for Unilever from Kraft-Heinz, a company which has focused on the 3G model of cost cutting rather than investing in R&D into healthier products. There has even been activist investor attention at Nestle over concerns about earnings growth and the performance of its current portfolio.

The changing profile of the industry is not reversing. During the past three years we've seen the continued rise of smaller challenger brands. According to CBInsights¹³ there are over 175 new food and beverage start-ups. Food majors including General Mills, Campbell Soup, and Kellogg's have all launched or invested in venture capital funds to foster start-up innovation.

In light of these trends, we continue to believe that companies will need a) a diversified product portfolio and b) a strong balance sheet to support acquisition of smaller, healthier start-ups. However, reliance on M&A for growth, over organic investment, is inevitably dilutive for the industry.

¹³CB Insights, '[175+ Food & Beverage Startups Attacking Grocery Shelves](#)', CBInsights website, October 2017.

Figure 7: Major food companies' private market activity 2015-1 December 2017



Source: [CBInsights](https://www.cbinsights.com).

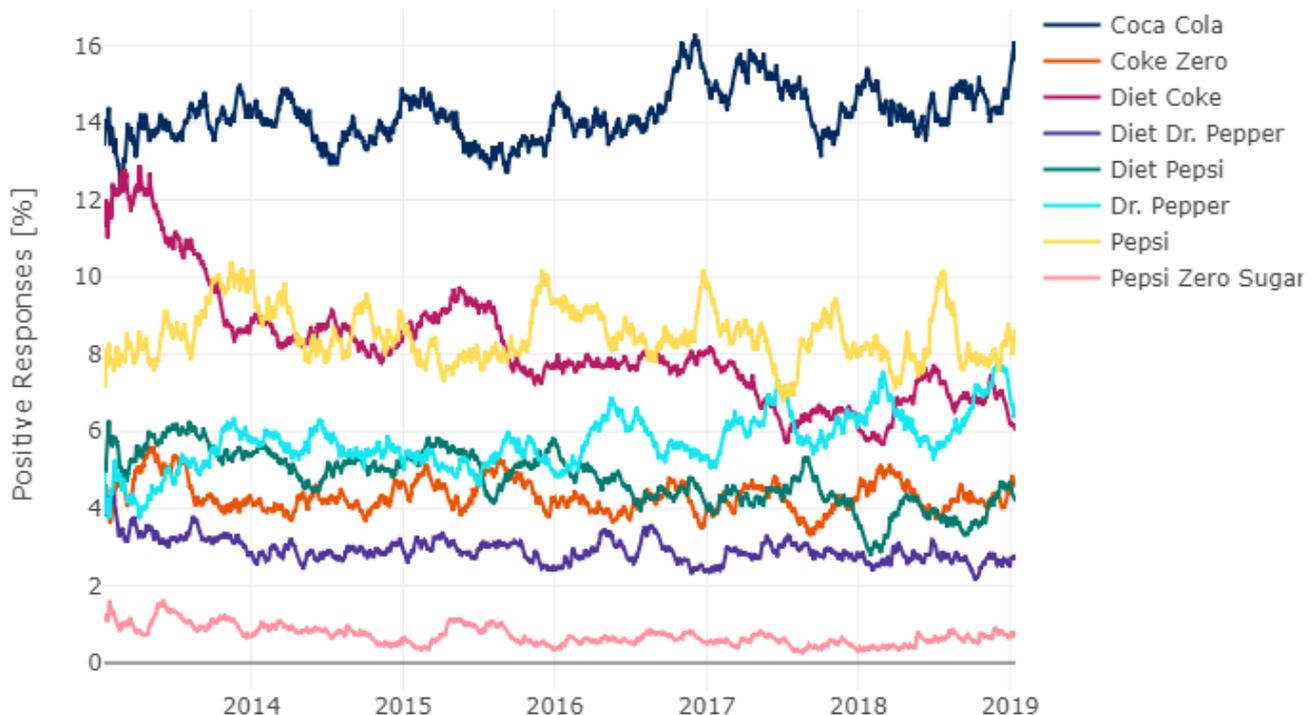
Reformulation, reducing portion sizes and product innovation

As well as acquiring challenger brands, food and beverage majors are reformulating existing product portfolios to respond to consumer demand and the threat of sugar taxes. But reformulation success is not guaranteed; it can be costly and can damage the brand if it doesn't meet consumer expectations.

In the past two years we've seen mixed results. For example, the reduction of sugar in Nestle's Kit Kats, the first major recipe change since the Second World War and marketed as an increase in milk and cocoa was met with negative media attention¹⁴. We've also seen a swift reaction from private label brands that are keen to benefit from the rising health and wellness trends by, for example, introducing sugar-free and lower sugar alternatives. Tesco, the UK-listed supermarket, has reformulated its entire soft drinks range and reduced sugar content to below 5g per 100ml, which makes them exempt from the UK sugar levy.

YouGov data tracking consumer perceptions in the soft drinks market shows that reformulation can be challenging. Many soft drinks have swapped sugar for artificial sweeteners to avoid sugar taxes, but this strategy may not be successful in all markets. As shown in the graphs below, US consumers prefer full sugar options. Consumers also perceive diet drinks as poor value. In early 2018, ahead of the new UK sugar levy coming into force, news stories reported that consumers were stock-piling 'full sugar' versions of AG Barr's IRN BRU¹⁵, driven by expectations that the new sugar-free recipe would not be as good. Suntory's first reformulation efforts with UK Lucozade also failed and saw sales drop by 8% as a result¹⁶.

Figure 8: Purchase intent: full sugar vs. diet drinks



Source: YouGov's BrandIndex, Schroders.

History has proven that incremental change works best; manufacturers have successfully reduced salt levels in crisps and bread by up to 40% over several years without attracting significant consumer attention¹⁷.

We've also seen some very innovative solutions from the consumer staples sector. Nestle, for example, has developed a spherical sugar crystal which will reduce sugar intake by up to 40% without compromising taste or texture. However, the few global food and beverage majors that do report on R&D numbers paint a mixed picture; almost a 50/50 split between increases and decreases in R&D investment. Nestle, PepsiCo and Danone have all made notable increases in R&D spend; on average R&D spend as a percentage of SG&A (selling,

¹⁴Morley, K. 'New 'healthier' KitKat only contains four fewer calories than previous recipes', The Telegraph, March 2017.

¹⁵BBC, 'Irn Bru panic as fans stockpile before recipe change', BBC news, January 2018.

¹⁶Fletcher, I. 'Lucozade sales plummet after brand dramatically cuts amount of sugar in drinks following tax levy', The Mirror, November 2017.

¹⁷Action on Salt, www.actiononsalt.org.uk.

general and administrative) spend stands at 5.8%. When considering the magnitude of changing consumer trends and new sugar taxes, investors may question whether relying on acquisitions of challenger brands and some successful reformulations will be enough for the food and beverage companies to sustain earnings at their current levels.

Increase in advertising spend

Another response method we've seen is an increase in advertising to help offset the move to healthier alternatives. The introduction of a sugar tax has also contributed to the 'demonisation' of sugar, the perceptions of which advertising agencies are trying hard to fight. Advertising spend data from Societe General shows that 66% of the top 32 staples brands have increased their ad spend over the last five years¹⁸.

¹⁸Societe Generale, Global Staples and Global Media report, November 2017.

Part 3: How we're considering sugar risk within our investment process

Engaging for better disclosure

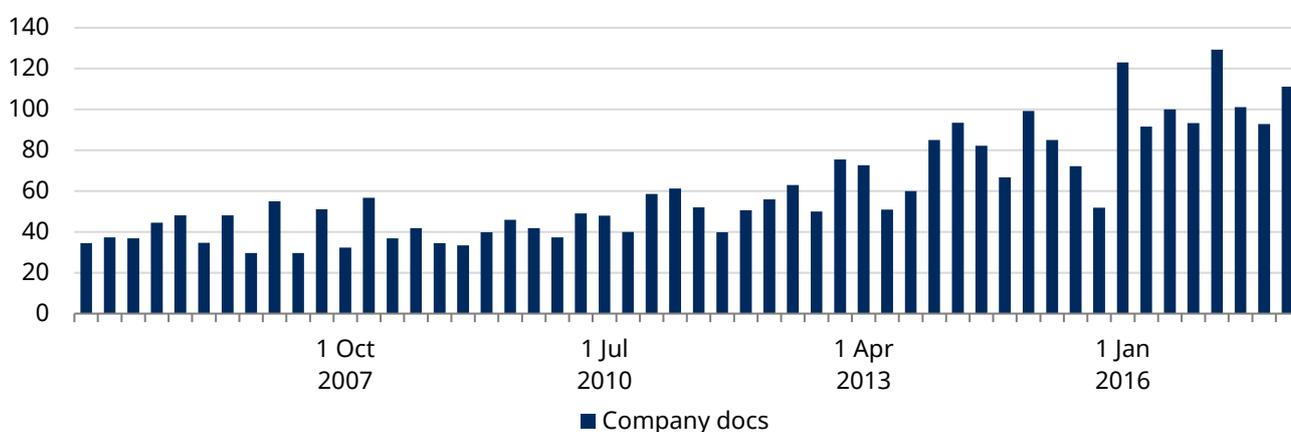
There is greater pressure on companies, from all stakeholders including investors, to explain how they are responding to this trend. In 2015, we conducted an earning per share (EPS) sensitivity test on three global food producers. Depending on the adjustments made to sales growth reflecting changing consumer tastes, and the weighted average cost of capital (WACC) to account for the risk of changing consumer tastes, we saw a negative value impact of between 2–25%. However, we recognised that opaque disclosure and restrictive assumptions hinder our ability to reach firm conclusions.

Our efforts at company-specific analysis also underlined the need for better disclosure. In 2016, together with another investor, Rathbone Greenbank, we established the Sugar Roundtable, an open, educational forum. It allowed investors and companies to discuss the emerging health and wellness trends, and the risks and opportunities facing the industry through advertising, consumer behaviour, national obesity rates, education and regulation.

We held two meetings and several conference calls, during which we collected the views of over 30 companies. From this dialogue we drafted [Investor Expectations: Sugar, Obesity and Non-communicable Diseases](#), which provides a framework for company disclosure. The draft was peer-reviewed by a wide range of stakeholders from corporates and public health bodies to academics and NGOs (non-governmental organisations). The final draft is available at the link above and has now been communicated to over 40 global food and beverage companies¹⁹.

We have already seen an improvement in corporate disclosure with greater coverage of the issues around sugar since the paper's publication. For example, across the consumer sector annual reports, there has been a clear trend in mounting disclosure around sugar taxes, as demonstrated by the chart below:

Figure 12: Number of company annual reports referencing sugar tax (2004–2018)



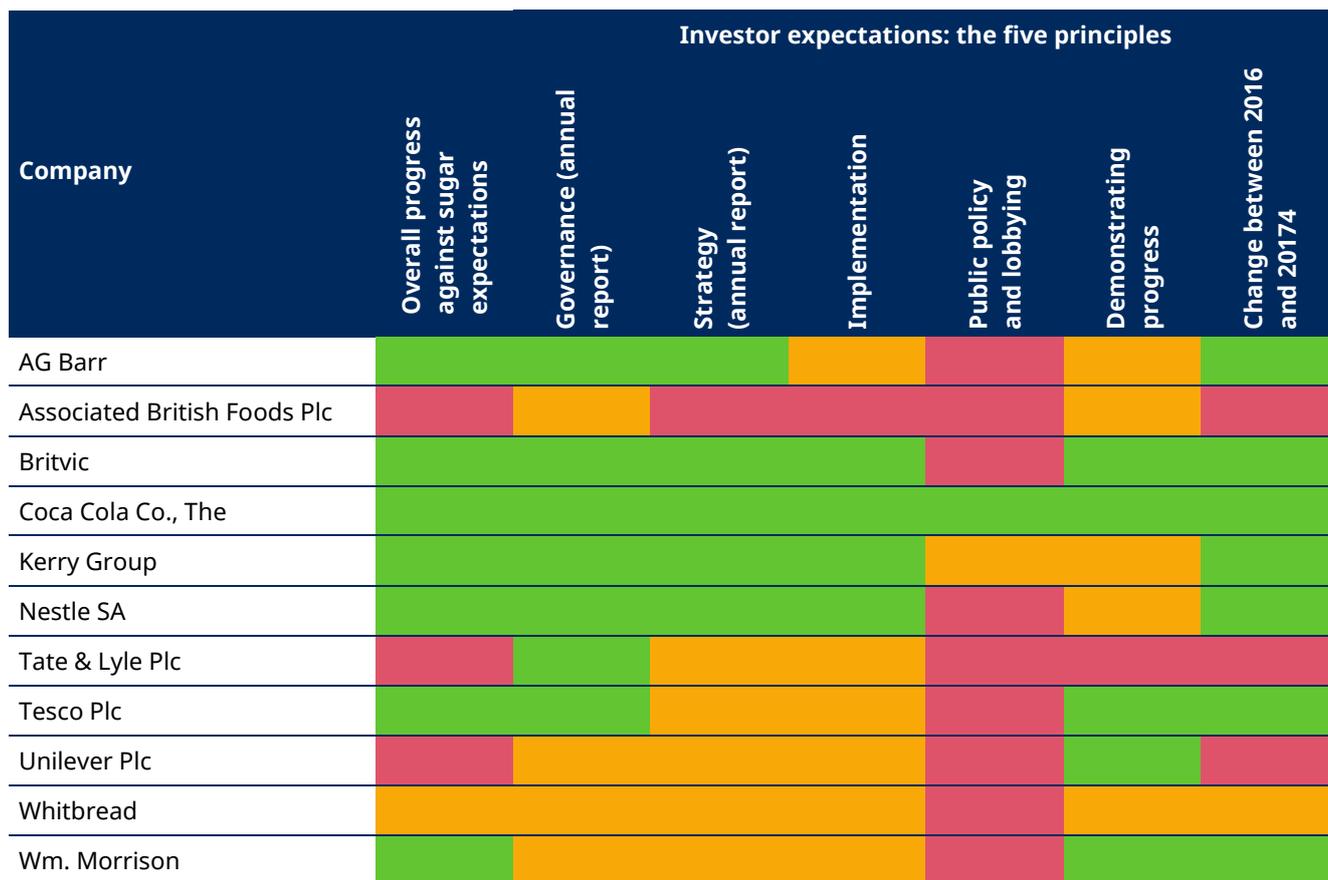
Source: Alphasense.

We analysed the publicly available disclosures of 11 food and beverage companies to benchmark changes in reporting against our Investor Expectations. We saw positive improvements in transparency at eight out of the 11 companies, with the most progress made against the first principle: governance structure. There is greater transparency around how boards are assessing the risks and opportunities around sugar and adapting their strategies in response.

The area where we saw least progress was transparency around public policy and lobbying. Despite escalating regulation and media coverage, there is little transparency from companies on lobbying spend or alignment between public commitments and lobbying activity. A summary of our benchmarking results are below:

¹⁹Schroders, research notes written between November 2015 and January 2018.

Figure 13: Schroders' benchmark on disclosure against the investor expectations on sugar



Key:

- No progress
- Some progress
- Meets expectations

Company research and stock recommendations

Our proprietary research platform at Schroders includes over 40 instances of analysts factoring sugar risk into their stock recommendations, sector research or discussing it at company meetings. The risks and opportunities around sugar are also being incorporated into our investment processes, with over 50 references to sugar taxes alone across analysts' notes in our proprietary research database.

Portfolio construction

That analysis is feeding into portfolio decisions across Schroders. For example, the pan-European credit team started looking at diabetes in 2013, following sustainability team research. As a result, the team adjusted its sector exposure to mitigate potential balance sheet risk faced by the European food and beverage corporate bond issuers.

Conclusion

Of the risks identified in our original research piece in 2015, the majority have risen. Sugar taxes have now been implemented across 42 nations, states and cities, regulators have tightened rules about advertising and selling practices, and consumer tastes continue to change. We believe that these trends will continue to create headwinds for the food and beverages sector, and whilst the soft drinks sector has been hardest hit, we think food companies now face the greatest pressure to reformulate and innovate to protect future earnings. Improved corporate disclosure has helped us to more effectively identify industry leaders and laggards but we will continue to engage and monitor emerging best practice.

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