October 30th, 2023

Consumer Behavior

I (Ted) recently ordered a rubber ball for my dog from Amazon. The tennis ball-sized toy arrived in a box large enough to hold a pair of adult sneakers. The ball was confined with plastic balloons, something rather pleasingly referred to in the industry as an "air pillow." The plastic ball was wrapped in a separate plastic bag. I am not quite sure where the ball originated from, but it certainly went in a truck and possibly a plane on its way to my front door. The oversized box, the unnecessary protective plastic bag, and its "pillows" all take up more space and weight than the actual item I had ordered. In addition to the waste created, shippers are also burning fossil fuels to transport the "air" in those packages all around the world.

According to the EPA, the United States generates 82.2 million tons of packaging waste a year. Much of that packaging is plastic. In 2021, Amazon alone generated 709 million pounds of plastic waste. That is enough to wrap the world 800 times in those air pillows, which would be helpful, I guess, if we were shipping the planet somewhere.[1] The amount of plastic packaging is growing, having quadrupled in the last 30 years. Its creation is highly energy intensive. Every ounce of polyethylene produced results in about an ounce of carbon emissions.[2] In total, plastic production accounts for 3.4% of global greenhouse gas emissions. While energy intensity could be reduced with reused plastic, globally only 9% of that plastic is recycled.[3]

Plastic does not biodegrade and thus creates long-lasting waste. The most glaring examples of this are the two islands of garbage in the Pacific that are largely made up of plastic.[4] The plastic island closest to the United States is about 1.6 million square kilometers big or about twice the size of Texas.[5] Microplastics have been found everywhere from the depths of the Mariana Trench to the heights of Mount Everest and in all parts of the human body.[6] This letter could be spent talking about the impacts of just these plastics on our food system, humans, and the health of the oceans but suffice it to say it is not good.

Plastic use has gotten the attention of both consumers and government agencies. States ranging from California to Maine have passed laws aimed at reducing plastic usage and pollution.[7] The federal government through the Environmental Protection Agency is currently working on a national plastic strategy. The objectives of this strategy are to reduce plastic pollution, improve recycling, and prevent

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1 https://thehill.com/policy/energy-environment/3775185-amazons-plastic-waste-increased-by-18-percent-in-2021/

2 https://stanfordmag.org/contents/the-link-between-plastic-use-and-climate-change-nitty-gritty#:~:text=Carbon%20Calculations,production%20closer%20to%205%3A1.

3 https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm#:~:text=Global%20plastic%20waste%20generation%20more,11%25%20from%20clothing%20and%20textiles.

4 https://education.nationalgeographic.org/resource/great-pacific-garbage-patch/

5 https://theoceancleanup.com/great-pacific-garbage-patch/#:~:text=ESTIMATION%20OF%20SIZE,times%20the%20size%20of%20France.

6 https://www.sciencenews.org/article/microplastics-human-bodies-health-risks

7 https://www.gov.ca.gov/2022/06/30/governor-newsom-signs-legislation-cutting-harmful-plastic-pollution-to-protect-communities-oceans-and-animals/#:~:text=Legislation%20signed%20today%20requires%20all,and%20after%20January%201%2C%202032.

trash.[8] Consumers are also picking up on the trend to reduce plastic packaging. They increasingly find paper or cardboard more environmentally appealing. According to a recent meta-study, this pro-sustainable packaging view impacts their product choice and willingness to pay.[9]

Cardboard and paper packaging are broadly speaking better environmentally than plastic packaging. Virgin cardboard still requires a lot of energy to produce, though less than plastic. More importantly 90% of corrugated cardboard is recycled, a sharp contrast to plastic.[10] Recycled cardboard is significantly less energy intensive and prevents or at least delays methane emissions from biodegradation. So, while the transition to cardboard is a positive step, using less of it and manufacturing it in a sustainable way are also important.

Westrock

Westrock is the world's leading manufacturer of cardboard with a focus on corrugated cardboard and consumer packaging. The company attracted our attention after its valuation dropped over 50% from its peak and over 20% in 2023. Demand for packaging driven by pandemic-fueled online sales left the industry exposed to slower growth and oversupply. The oversupply problem was also exacerbated by the concern of a looming economic slowdown.

The paper and packaging industry has been consolidating for the past decade and is now an oligopoly. In recent years the cardboard industry has demonstrated a more orderly management of supply during periods of cyclical declines. This has allowed Westrock to maintain margins even in periods of slowing demand. The company's stock price decline did not appear to account for the more consolidated, and we believed price disciplined cardboard industry. We were pleased to see early evidence that the leading paper and packaging companies' response to falling demand was not price cuts but capacity closures. This, coupled with cyclically low valuations, made Westrock's valuation compelling.

The recently appointed CEO, David Sewell, an executive who had been the COO during a successful run at Sherwin-Williams, increased our confidence. David led the cyclical paint manufacturer through economic periods and multiple acquisitions, seemingly making him exactly the leader Westrock needed after a period of consolidation.

While growth for corrugated cardboard is generally forecast to be in the low single digits,[11] Westrock has been focused on two fast-growing segments – plastic replacements and custom packaging. Custom packaging is the solution to the problem of my dog's ball. Westrock manufactures machines and sells cardboard to create the right-sized boxes. Sized exactly to fit the shipped item, those boxes use less space in transit allowing for better efficiency and reducing cardboard waste. On average boxes are 14% too big. This leads to a Denver-sized forest of waste each year and unnecessary emissions needed to transport excessive volumes of air.[12]

Westrock also manufactures plastic alternatives, innovative products likely visible in your grocery store. Beverage cans come in cardboard boxes instead of plastic wraps and six-packs are no longer held

[8] https://www.epa.gov/newsreleases/biden-harris-administration-announces-latest-steps-reduce-plastic-pollution-nationwide

[9] https://academic.oup.com/jcr/article/50/3/468/7008764

[10] https://www.afandpa.org/news/2023/us-paper-and-cardboard-recycling-rates-continue-hold-strong-2022#:~:text=A%20bar%20and%20line%20graph,time%20from%202002%20to%202022.&text=Cardboard%20boxes%2C%20also%20known%20as,increase%20over%20last%20year's%20rate.

[11] https://www.mordorintelligence.com/industry-reports/corrugated-board-packaging-market

[12] https://paccurate.io/posts/how-to-save-the-planet-think-inside-the-box-report

together by plastic rings but by cardboard holders. Westrock is largely responsible for these alternatives. The transition to more efficient cardboard packaging is being driven by a regulatory environment and consumer preferences, which Redwood Grove believes are long-term trends.

Westrock's strong climate and business decisions have not been unnoticed by Westrock's competitors. In September, cardboard peer Smurfit Kappa offered to acquire Westrock for a significant premium to market price. Its CEO listed Westrock's commitment to sustainable packaging and its R&D efforts as key drivers of the transaction as Smurfit aspires to become a global leader in sustainable packaging.

Closing Thoughts

I (Ted) grew up in a Brooklyn apartment that overlooked the East River. In the winter, I would imagine myself skating across the river when it filled entirely with ice floes. In the mid-1800s the river would freeze so thoroughly that ferries were unable to cross and taverns were erected to serve people walking to work.[13] The need to build an alternative to ferries in the winter months led to the building of the Brooklyn Bridge. Sadly, it's been decades since I last saw the East River filled with ice floes. While the Brooklyn Bridge remains, very few New Yorkers today even know it was built to solve a problem that no longer exists.[14]

I thought of the Brooklyn Bridge when we recently learned of the concept of the "habitual present tense." It is the tense we all use to describe something in the past, present, and future. "The winters are snowy in Denver," is an example. The statement comments on how the weather was, is, and will be. We often use this tense when describing the climate of a region, however, we no longer live in that world. Our use of this language silently tricks us into believing we are living in an unchanging world. Actuarial tables relied on by insurance companies that use backward-looking weather and storm data can no longer accurately forecast the future. Yet our markets are built on the idea that our physical environment remains in the habitual present tense. That will work until something breaks.

Rising interest rates are a good example of a much more benign but similarly ignored phenomenon. At the start of this year, the rise in rates was largely ignored by the equity markets because they were within an acceptable range. The United States 10 year had been below 5% for over two decades. Very few investors had even lived in an environment with rates above that level. However, as the 10-year approached 5%, the market started to reprice a lot of risk built on those low-interest rate assumptions. This is because when stable foundations like low-interest rates move outside of their expected range, things like the housing or financial market can start to break. It can be hard to know where and when these break(s) will happen, but we have already seen some breakage in the bank run and receivership of Silicon Valley Bank and First Republic Bank.[15]

Since the beginning of civilization, the world's temperature has been very stable. Prior to the last decade, peak warming was 1 degree C above the historical average. We are currently about to hit 1.5 degrees C of warming, something outside anything experienced in the past 12,000 years. Things are

[13] https://gothamist.com/arts-entertainment/new-yorkers-used-to-walk-over-the-frozen-east-river-on-ice-bridges

[14] https://www.dailymail.co.uk/news/article-2966974/Manhattan-encased-ice-deep-freeze-intense-Polar-Vortex-Hudson-turned-river-ice-record-lows.html

[15] Silicon Valley Bank (SIVB) Collapses, Enters FDIC Receivership - Bloomberg

likely going to start to break. While uncomfortable, these breaks will be alarms that will accelerate the need to transition to a low-carbon economy. The economy must and will move to low carbon faster than the markets recognize today. How this happens will be dynamic and complicated and much more widespread than just renewable energy. Redwood Grove continues to work to understand, underwrite and invest around this long-term secular trend.

With gratitude,

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