

## Dear investors,

As we reflect on the challenges of 2021, we are reminded of the saying “a smooth sea never made a skilled sailor”. The effects of the pandemic were more prolonged and intense than anyone could have imagined. Inflation, a risk long forgotten in many developed markets, became abruptly topical again, as disrupted supply chains were unable to keep up with stimulus-driven demand. The specter of central banks raising rates in response unsettled the markets and drove exceptionally high volatility.

After a particularly strong 2020, last year was a tough year for us, perhaps the toughest in our careers. Over the past number of months, we have reflected deeply as a team on the main detractors of our performance. Of course, each investment has its own individual nuances and generalizations are difficult. The markets learned that management teams once thought of as “flawless” turned out not to be so perfect; businesses with exponential growth decelerated faster than investors anticipated; and beloved brands were not spared in the volatile macro environment.

As we have always said, longevity is a key advantage in investing. We have only become better investors with the passage of time and the collective compounding experience and insights that comes with that. 2021 was no different and played an important role in improving us as investors, better preparing us for the years to come.

From a business perspective, we completed our first investment in a private company. After much due diligence and many interactions with the team, we invested in Nubank, which we view as one of the most unique entrepreneurial stories in recent memory. Our positive view is based on three key pillars – 1) structurally lower customer acquisition cost, with 85% of customers acquired organically (especially word of mouth) 2) cost to serve at a fraction of incumbent banks and 3) cost of funding ~1/3 lower than the financial system, an advantage even more apparent in the lower income tiers. We think the Nubank team is executing on an unprecedented growth story in the Brazilian market.

We created a specific vehicle for this investment and will likely do other similar investments in the future. We see this as a complement to what we view as our primary activity, public markets investing. In the process of conducting research on our public investments, we have occasionally encountered particularly special private companies and management teams, and we see value in partnering with these companies earlier in their journey. We see important synergies here that help us be even more effective public investors, which we are very clear is our core activity and where our primary expertise lies.

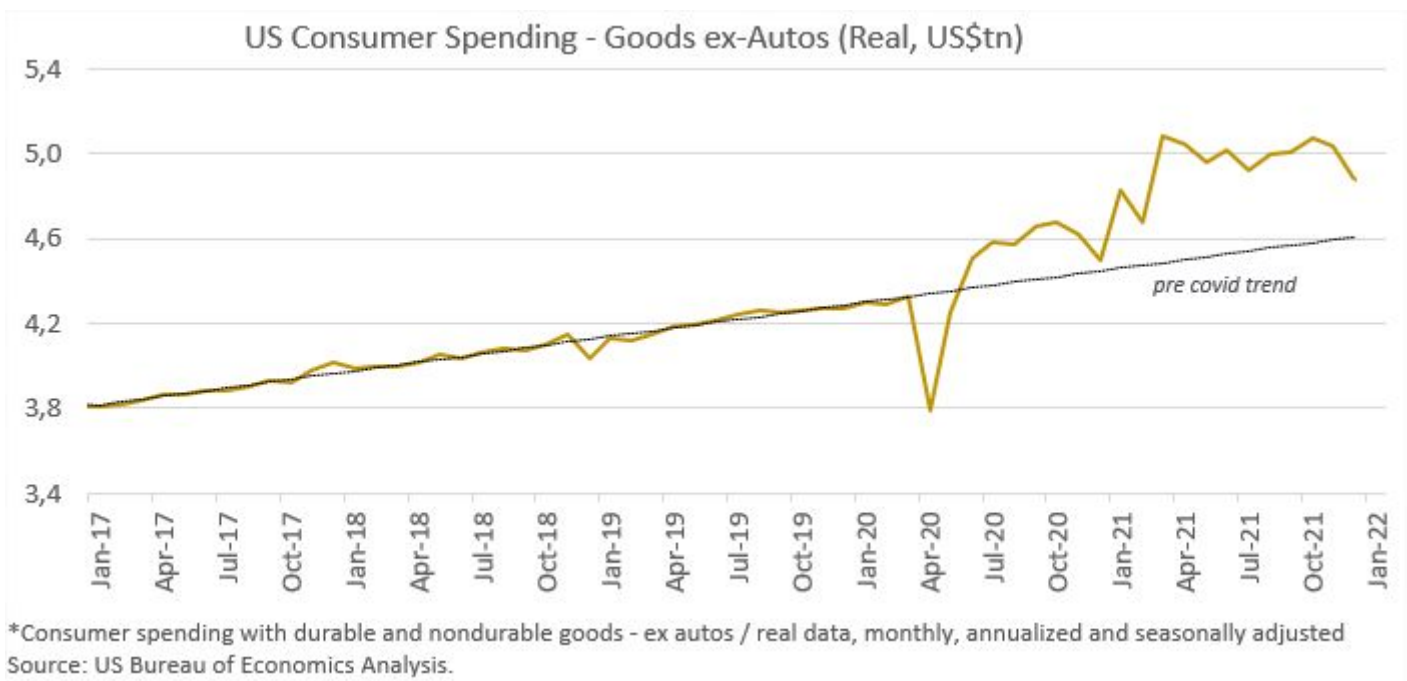
We also continue to grow our office in Greenwich, Connecticut, and recently opened our global fund to outside investors.

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### The normalization that did not occur:

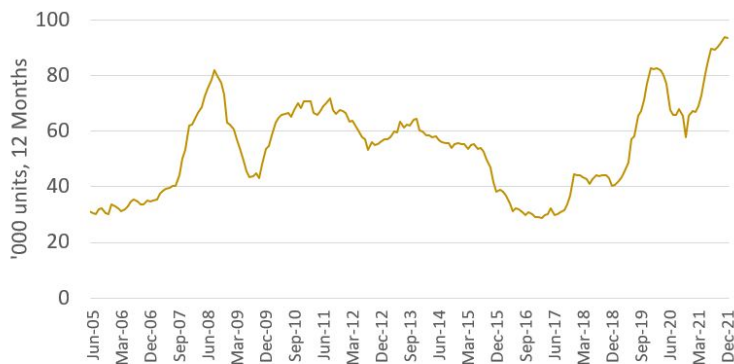
2021 began with much optimism, as the promise of vaccines would enable the gradual removal of mobility restrictions, a recovery in services demand and the easing supply chains.

However, the pandemic turned out to be more persistent than hoped, leading to ongoing restrictions and intermittent lockdowns. Government stimulus, particularly in developed countries, drove abnormally elevated demand for goods. Coupled with supply chain disruptions, this drove higher than expected inflation. This was the main reason for market unease and volatility.



Pandemic impacts were particularly amplified in certain industries. As remote and “hybrid” work became a more permanent feature of everyday life, people invested more in their homes (driving demand for electronics, furniture, construction materials) and even bought new homes. This behavior was encouraged by the low interest rate environment, and we witnessed an enormous increase in housing market activity to the highest levels ever in Brazil, and the highest in the USA since the 2008 financial crisis.

### Housing Starts: São Paulo (Metropolitan Region)



Source: Secovi

### Housing Starts: United States

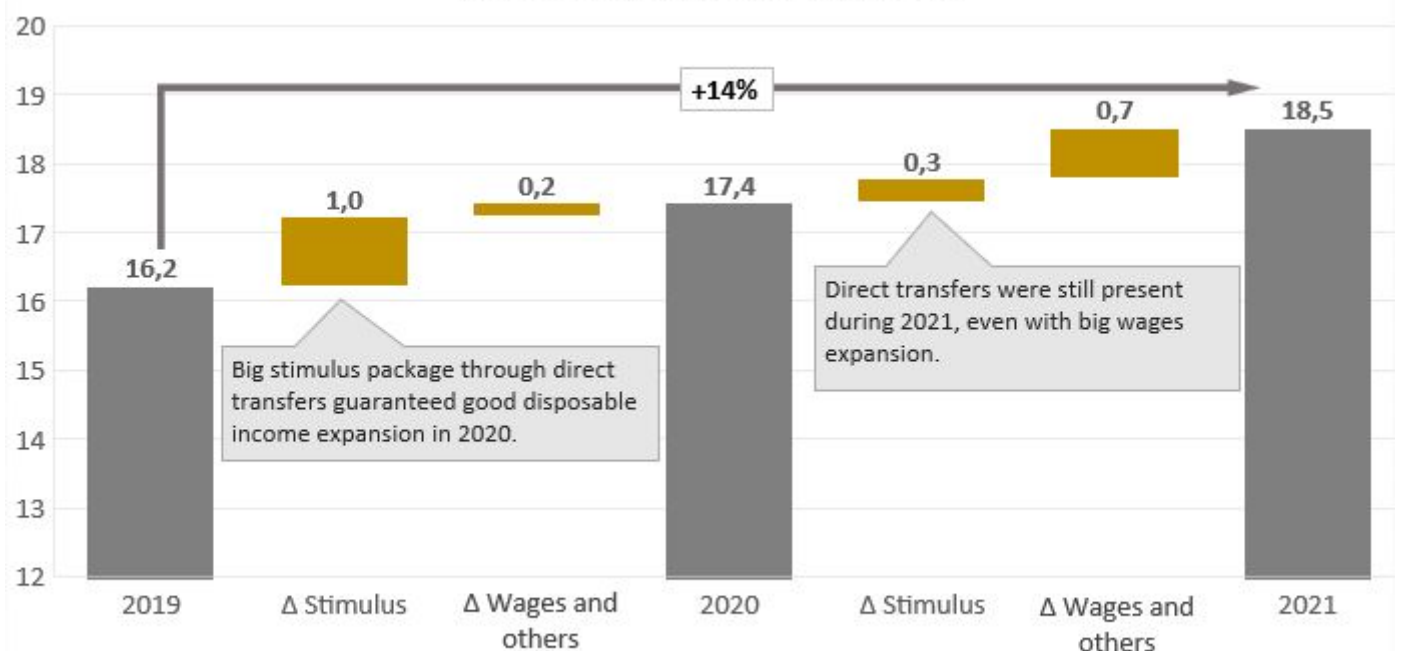


Source: Bloomberg

Meanwhile, uncertainty around when life would return to normal, and concerns around travel and eating out suppressed demand for services, further inflating expenditure on goods.

Finally, an important and distinct feature of this period is that, unlike prior crises, government stimulus was made directly to consumers in the form of bank checks and vouchers, rather than through the financial system (as was the case in 2008). This direct injection of stimulus drove disposable incomes higher – according to Goldman Sachs, disposable income increased by 14% in the USA between 2019 and 2021, and was even more pronounced for lower-end consumers, who have higher propensity to consume.

### US: Overall Disposable Income (\$tn)

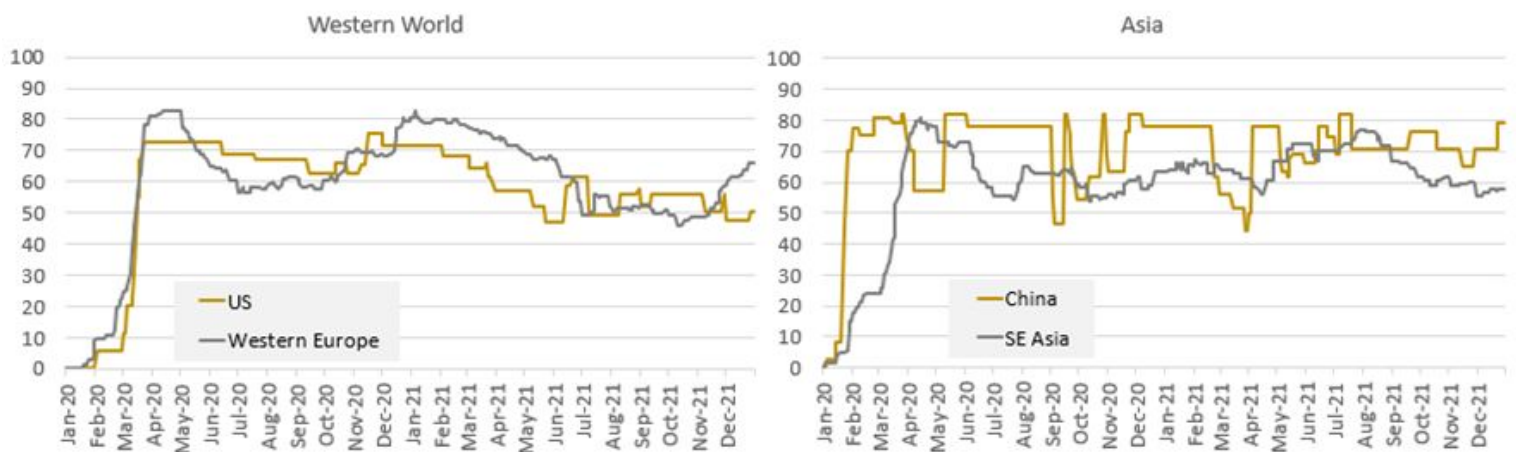


Source: US Bureau of Economics Analysis, Goldman Sachs Global Investment Research.

This “innovative” stimulus method was highly effective in the early days of the crisis, helping keep people isolated in their homes and softening the economic blow from the pandemic. However, extended government stimulus had important unintended consequences, contributing to overheating demand for goods, disincentivizing people from returning to work, and exacerbating supply chain imbalances.

Artificially elevated demand, coupled with supply chain constraints, revealed the fragility of the global supply chain. The arrival of the delta variant in 2021 brought a new wave of lockdowns and further disrupted supply chains that were already stressed. The impact was especially visible in China and Southeast Asia, critical regions in the global manufacturing chain and where stricter policies enforced more severe lockdowns. The Oxford Stringency Index shows how restrictions in parts of Asia were as strict in 2021 as they were in 2020..

### Oxford Social Distancing Stringency Index (100=maximum restriction)



\*The Oxford Stringency Index is a tool for monitoring the level of restrictions in each country, bringing values from 0 (less stringent) to 100 (most stringent). It is based on 9 indicators: school and workplace closures, public events cancellation, agglomerations, mass transport restrictions, lockdown measures, public campaigns and travel restrictions.

\*\* Western Europe: Spain, UK, Germany, France and Italy / SE Asia: Indonesia, Vietnam, Malaysia and Thailand.

Source: Oxford.

After years of improving efficiency in the global supply chain, driven by the positive benefits of increased outsourcing and globalization, we experienced the other side of the coin – the fragility and dependence of global manufacturing on a concentration of geographic regions. Through our research we have come across various examples of this:

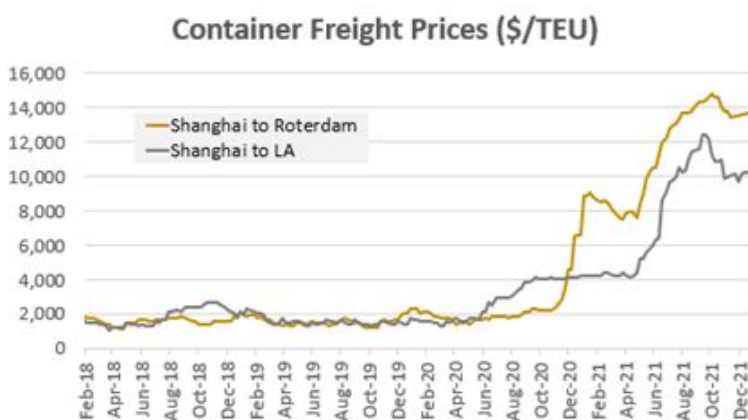
- [Sep/20: Valor Econômico: “V” resumption leads to lack of inputs: Disconnection between supply and demand generates temporary shortages in the country's industrial chain](#)
- [Dec/20: Folha de SP: Heineken suffers from a lack of glass beer bottles in some regions](#)
- [Dec/20 - Sea Intelligence: Empty container shortages in Asia to persist into January](#)
- [Mar/21: Builders turn to imported Turkish steel: Cooperative buys rebar from Turkey to regularize supply](#)
- [Apr/21: BrazilJournal: In the American summer, there will be no chlorine](#)
- [Jul/21: FT - Nike/Adidas: no Yeezy way out of Vietnam](#)
- [Sep/21 - Bloomberg - China’s coal shortage means higher prices for the whole world](#)
- [Sep/21 - The Independent: Shoppers face empty shelves at Christmas without urgent solution to labor shortage, government](#)

Supply chain disruptions have various knock-on effects, two of which strike us as especially relevant – container transportation and chip production in the automotive industry.

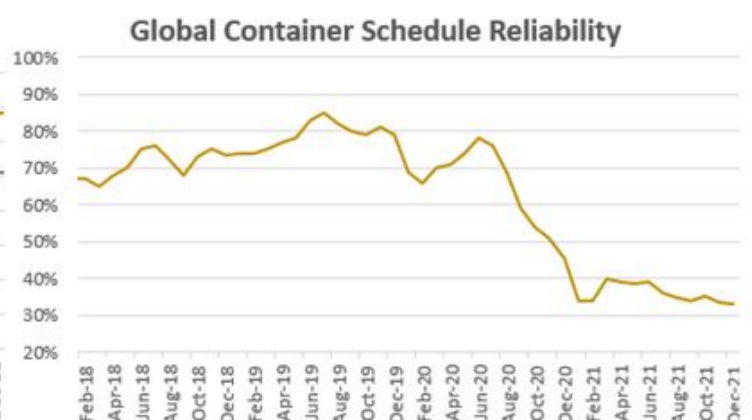
## Container Transport

The elevated demand for goods increased volume of full containers from Asia to the US by 20% compared with pre-pandemic levels, driving elevated utilization of vessels, channels and port terminals. Accidents and delays became more frequent. One well-publicized example is the Ever Given Suez Canal obstruction, which lasted for six days, creating a queue of 200 boats carrying the equivalent of \$9.6bn in merchandise, according to the Lloyd’s insurance company.

Similar problems around the world compounded, driving abruptly higher freight prices and long delays. A container that previously cost \$3,000 and took six weeks to ship from Hong Kong to Los Angeles now costs \$15,000 and takes over three months. This disruption continues to impact not only costs but also the ability of the companies reliant on this cargo to plan effectively – for example, the global container schedule reliability index as measured by Sea Intelligence shows schedule reliability falling from ~70% pre-pandemic to ~30%.



Source: Drewry.



Source: Sea Intelligence.

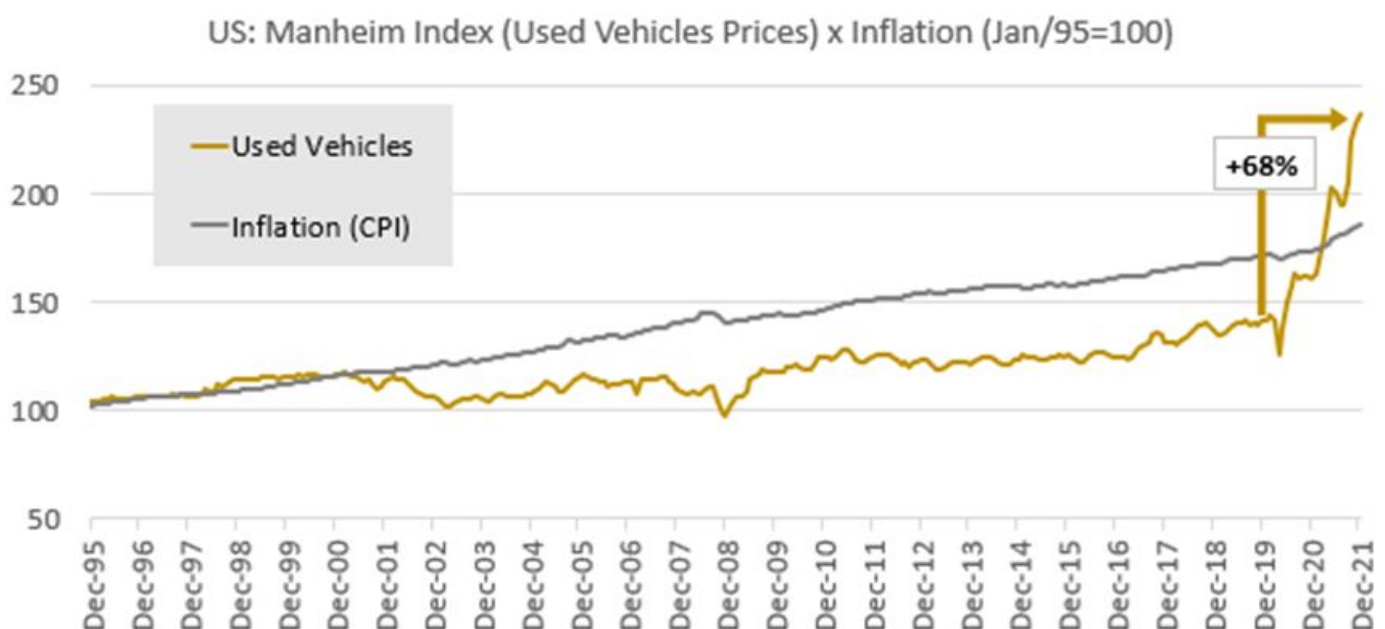
## Chip Production for the Automotive Industry

It is a cliché to say that modern cars have increasingly become mobile computers. A car today has approximately 100 electronic systems accounting for around 40% of the cost of the car, and contains up to 3,000 chips. The concentration of chips in cars will only increase as autonomous driving systems and energy efficiency evolve.

Unfortunately, while the automotive industry is dependent on semiconductor producers, the reverse is not true – the automotive industry only represents a small (and low margin) portion of semiconductor producers' business. Take TSMC in Taiwan as an example – one of the largest chip producers globally, TSMC is also one of the main suppliers of chips to the automotive sector. Yet automotives only account for ~3% of TSMC's sales, dwarfed by the smartphone segment at >50%. The automotive sector also requires older chips with more disseminated technology and is therefore less profitable for semiconductor producers. As a result, the automotive industry was de-prioritized during the pandemic behind other verticals.

This shortage of chips resulted in a steep drop in the global production of vehicles. In January of 2021, while analysts had projected 90 million vehicles produced for the year worldwide; only 76 million ended up being produced. Automotive production represents ~3% of global GDP, so this shortfall impacted global growth around ~0.5%.

These bottlenecks manifested themselves in both slower activity and, even more starkly, in the price of new and used vehicles. The Manheim Index, which tracks the price of used cars in the USA, has grown 68% since the start of the pandemic – this compares with an average annual increase of ~1.5% between 1995 and 2019, well below the 2.2% annual average inflation over the same period. Along with higher prices on new vehicles, this contributed as much as 1.8% of the 7% North American CPI in 2021, according to the BEA



Source: Bloomberg, Manheim.

<sup>1</sup> <https://www.thejournal.ie/egypt-suez-canal-seized-ship-5408806-Apr2021/>

<sup>2</sup> <https://www.ft.com/content/33046396-15ec-460f-9724-faf6443c80b8>

<sup>3</sup> <https://www.nytimes.com/2021/04/23/business/auto-semiconductors-general-motors-mercedes.html>

<sup>4</sup> Consultoria IHS Markit

<sup>5</sup> <https://www.nytimes.com/2021/11/02/business/car-shortage-global-economy.html>

<sup>6</sup> Comitê de assessores econômicos da Casa Branca: <https://twitter.com/WhiteHouseCEA/status/1491781787504283652?s=20&t=HTTvS621rYsZPJ7iJP7p9w>

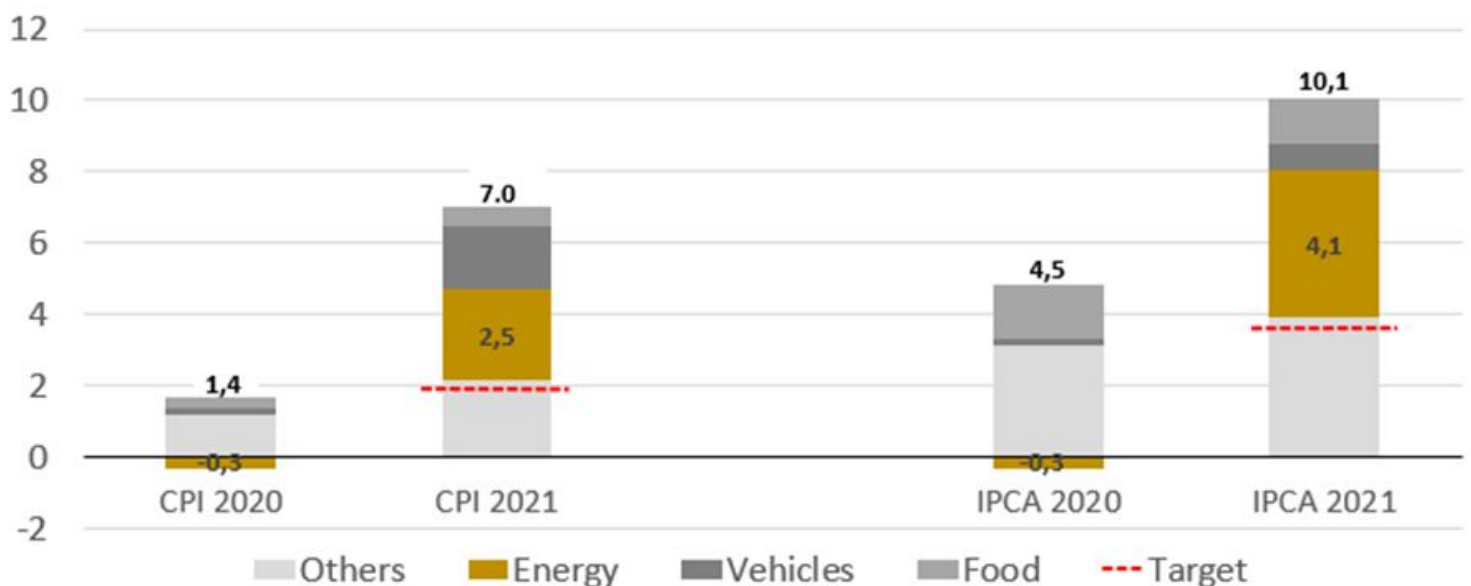
## Energy Scarcity

Only adding to this “perfect storm”, we saw an energy scarcity in 2021 that conjures memories of the worst moments of the 1980s. After a decade of lower investments in the oil and gas industry, driven by low returns and increased pressure on companies to reduce their reliance on fossil fuels, the world had become dangerously dependent on OPEC – the only supplier with enough spare capacity to increase production. Further, clean energy policies are still a few years away from having a meaningful impact on reducing our reliance on fossil fuels.

Finally, environmental factors have constrained countries’ ability to generate renewable energy, such as the lack of rain in Brazil and China for hydropower, or the lack of wind in the USA and UK for wind power. The increasing relevance of renewable energy make it clear that substantially more investment will be required, but at the same time illustrate how challenging and inflationary the energy transition is likely to be.

The confluence of energy “shocks” described above was a key factor in driving global inflation well above central banks’ targets, adding 2.5% to US CPI and 4.1% to Brazilian IPCA.

**Inflation Decomposition (US and Brazil, %)**



Source: Council of Economic Advisers, Brazil Central Bank.

## Inflationary Impact on Companies and Concluding Thoughts

The immediate impact of global supply chain disruption has been seen in ongoing and elevated price increases for various inputs, thus meaningfully impacting the broader value chain in several industries. These cost pressures were not always passed fully onto consumers, further resulting in margin compression.

However, as we have repeatedly said, market leaders who are well positioned in their respective sectors, with sound balance sheets and economies of scale, tend to further consolidate their market position in challenging scenarios like this one. This is even more clear in fragmented industries, where there are fewer well-managed companies capable of positioning themselves effectively to address, and even take advantage of these challenges.

We remain convinced that companies with these characteristics will once again set themselves apart, strengthen their businesses and enhance their competitive advantages, as we have seen in prior crises. We view the current backdrop of compressed multiples as an opportunity to acquire unique assets with attractive growth and profitability potential, at multiples significantly lower than what we consider fair.

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