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Supply Chains and the Downstream Implications for Sectors

The COVID-19 pandemic disrupted global supply chains and reveled their fragility. As the global economy re-opens and businesses struggle with material and labor shortages, increased demand for goods and services place additional pressure on tenuous supply chains. While supply constraints impact most of the economy, there are certain sectors which are either more or less affected by this disruption. Looking deeper into the current supply chain constraints is important for understanding the temporary or permanent nature of the current inflationary pressures and consequently how to position portfolios for this market environment.

Revised Demand Expectations and Supply Lead Times

The change in expected demand between April 2020 and April 2021 was unprecedented and supply chains struggled to keep up. While some supply chains are reasonably nimble to shifting demand pressures, we found that others can take months to resolve. The time it takes to create each product as well as existing capacity to increase production are factors that impact the nimbleness of supply chains. Global supply chains combined with just-in-time (JIT) manufacturing and ordering leaves minimal room for errors.

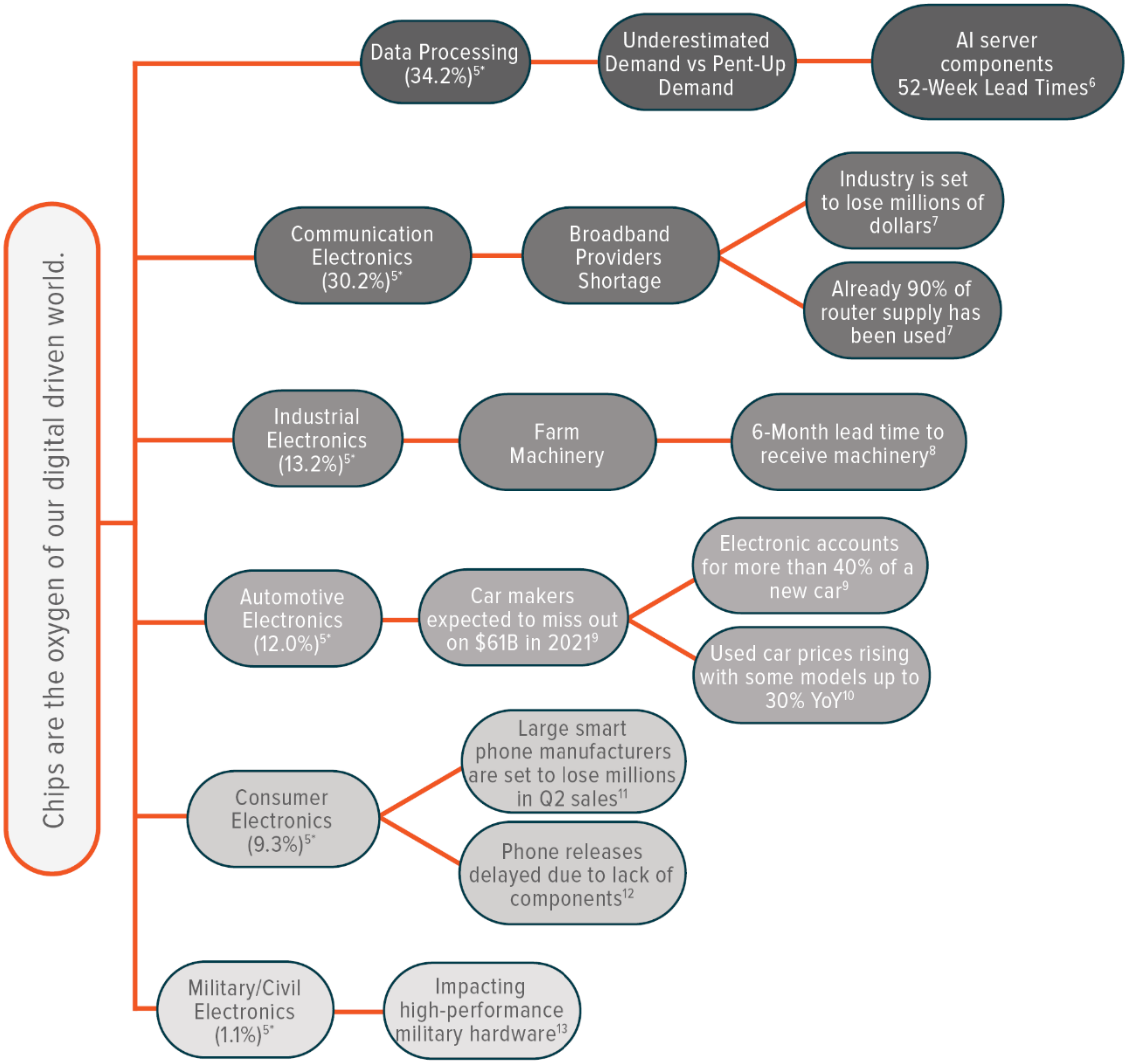
Far More than a Semi Story

Semiconductors are a good example of an industry with long lead times with high capacity utilization. They are the oxygen of our digital economy and their production affects many sectors. As illustrated in the graphic below, the current semiconductor shortage has implications across most sectors and industries, affecting products from cars and solar panels all the way to food products.

The current semiconductor chip shortage is partially due to sharp changes in expected demand. As the COVID lockdowns began, companies reduced their chip orders to avoid surplus inventory. Unlike prior economic contractions, there was a rapid increase in consumer demand for a whole swath of products that depend on semiconductor chips for their operation. In 2020, semiconductor demand increased 10.4% and demand for 2021 is forecast to expand a further 12.5%.[1] Capacity utilization in the semiconductor industry typically runs at around 80%, with some facilities at between 90-100% of capacity.[2] The inelasticity of chip production exacerbates the current supply shortage as it requires billions of dollars in capital investment and several years to open a new silicon chip facility: an expensive solution that will not have any effect on fulfilling short-to-medium term demand.

While the semiconductor shortage is currently the most discussed supply chain bottleneck, it is certainly not the only supply chain problem. The shortage of the raw materials, polyethylene, polypropylene and monoethylene are disrupting the supply chain for plastic manufacturing. This shortage has implications from smartphones and car manufacturing all the way to food packaging and exercise equipment.[3] Moving goods around the globe has been one of the causes of supply chain constraints and increased costs of shipping is also having an impact. The Baltic Dry Index, an indicator of global shipping costs, has increased 143% YTD.[4]

SEMICONDUCTOR SUPPLY SHORTAGE AND PENT-UP DEMAND



*Numbers reflect percentages of semiconductor used in production.

Just-in-Case Driving Extra Demand

As a result of recent supply shortages, manufacturers have been forced to rethink their use of just-in-time supply chain management. Diminished faith in ultra-complex global supply chains are causing manufacturers to consider stockpiling certain raw materials and components that are believed to be vulnerable to future supply disruptions. This shift from just-in-time ordering and supply chain management to a just-in-case mindset has exacerbated the current increase in demand.

Elevated uncertainty surrounding expected demand resulted in companies ordering additional supplies, just-in-case. This process was repeated by many companies, thus stressing supply lines. Reasonably similar occurred with toilet paper and other key staples back in March 2020. This raises questions about the true level of increased demand. Is the elevated mismatch being driven by a sustained increase in demand, or is it partially driven by current uncertainties?

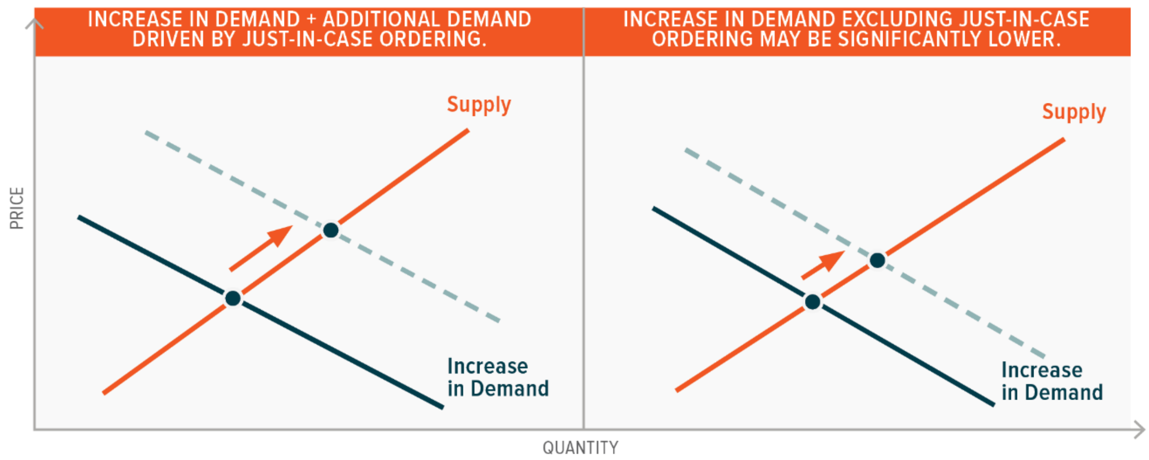
Lumber is a good example and has important implications for the inflation debate due to its impact on house prices. By mid-May, lumber prices increased by almost 180% on a year to date basis. During the rally in lumber prices, supplies were being hoarded by builders and retailers due to concerns regarding future supply.[14] These hoarders have become sellers, and since the highs of May, lumber futures for July delivery declined 55%.[15] This reflects the speed at which areas can shift from hoarding to surplus as demand expectations normalize.

Similarly, the Bloomberg Commodity Index pulled back in mid-June. Two factors contributed to this:

- The Federal Reserve (Fed) brought forward the date when they are likely to start increasing interest rates. This supported the value of the dollar while weighing on commodity prices.
- China, who accounts for 47% of the global consumption of refined base materials,[16] indicated that they will begin selling some of their industrial metal stockpiles in batches as a way to dampen producer price increases that have been driving concerns over global inflation.

Reduced commodity prices are likely to lessen the inclination for businesses to hoard production inputs. Improved clarity on demand has the potential to ease some of the strain on supply chains.

THE IMPACT OF JUST-IN-CASE ORDERING ON THE DEMAND CURVE



Potential Impact on Different Sectors

Restarting the economy has been almost as disruptive as shutting it down. Dramatic changes in demand expectations have resulted in substantial mismatches between supply and demand. As you move down the supply chain, these mismatches and bottlenecks are accentuated. The graphic below outlines a few of the key supply chain disruptions and how they are impacting different sectors.

SUPPLY CHAIN BOTTLENECKS & POTENTIAL IMPACT ON DIFFERENT SECTORS

In our view, the Consumer Discretionary sector is likely to be the most impacted by the current supply chain constraints. This view is driven by two major supply chain pressures having a significant impact on a large portion of the sector.

1. As the most labor-intensive sector, labor shortages and the potential for higher wages may have the largest impact on this sector.[21] This has implications across the sector; from department stores and hospitality services all the way to e-commerce platforms.

2. Typically, during an economic recession, consumers delay discretionary and durable purchases. As such, this is a sector that generally had a large downward revision in demand expectations during the first half of 2020. This had implications across the Consumer Discretionary sector from home appliance manufacturers all the way to auto manufacturers. Due to substantial revision to demand expectations, this sector has been one of the worst impacted by the semiconductor shortage.

But where there is disruption, there is also opportunity. The last year stress-tested global supply chains and revealed the need for improvement. The Industrials sector stands to benefit from increased capital expenditure as companies rethink their supply chains. While we believe this is a longer-term benefit that the Industrial sector is likely to enjoy, it is currently still adversely impacted by both raw material and labor shortages.

Sector Views

While supply chains constraints are an important consideration, there are numerous factors impacting our current sector views. The table below outlines these views.

CURRENT VIEWS ON U.S. SECTORS

	Positive Factors	Negative Factors	Overall View
Communication Services	This sector continues to benefit from COVID-19 disruption increasing the adoption of digital communication and entertainment. We believe the reopening rotation is almost complete. While improved economic growth sentiment may shift attention to value focused segments, we believe that into the second half of the year we are likely to experience improved balance between growth and value.	Adversely impacted by the semiconductor chip shortage. There is bipartisan support for increased regulation in this space. The start of antitrust investigation into mega-cap internet companies is also a risk factor for the sector. But this a long and winding road.	**Market weight** Currently, our preferences are in the Gaming & Esports and Social Media segments within this sector.
Consumer Discretionary	The Consumer Discretionary sector stands to benefit from pent up demand, an elevated savings rate. However, the economy has likely already experienced the increase in demand driven by the stimulus. Consumers have adapted to ordering more items online. Additionally, retailers have adapted to the current environment through increased availability of online delivery as well as order online and pickup in store options.	We believe that the Consumer Discretionary sector is likely to be the most impacted by the current supply chain bottlenecks. Additionally, as the most labor-intensive sector, it has a lot to lose from wage pressure.[22] Online retail and household durables could be adversely impacted by the full reopening of the economy. Due to the scale of these industries relative to the portions that should be positively impacted by the reopening (hotels and brick & mortar retail), overall, the impact of the reopening is likely to be negative.[23] The Consumer Discretionary sector has a high correlation with the housing market. The strength of this market has been a positive for the Consumer Discretionary	**Market weight**

		sector; however, reduced affordability could weigh on discretionary consumption.[24] Elements of the antitrust investigation or increased regulation have the potential to impact on large e-commerce players. Large companies in this space may be forced to separate their logistic and platform operations from their private label business.[25]	
Consumer Staples	This sector may work as a good defensive play against rising COVID-19 cases. During the pandemic, spending patterns shifted to favor essential retail. This sector has benefited from higher demand for household products, PPE and disinfection products.	Consumer Staples have been impacted by higher input costs and labor shortages. Higher prices have started to be passed onto consumers while labor shortages remain a constraint to restoring full production capacity.[26] Spending is likely to shift away from necessities towards discretionary as vaccine distribution continues. We believe the abundance of choice is likely to weigh on this sector unless pricing pressure reached the point where consumers need to prioritize staples. While there is pricing pressure, at this stage we do not believe that this risk is likely to be realized.	**Underweight**
Energy	The Energy sector benefits from increased community mobility. As people start engaging in society; commuting, traveling and generally getting on with their normal life, demand for crude products should rise. While the U.S. has generally reopened, crude demand stands to benefit from improved global reopening and growth.	The Energy sector is dependent on global demand and mobility. Consequently, this sector is one of the most sensitive to rising COVID-19 cases. The increased spread of the Delta variant is a risk to improved global mobility. A Biden presidency raises the risk of increased regulation favoring clean energy and climate friendly policies. ESG thinking is increasingly being incorporated into corporate governance, therefore, even without regulatory shifts, the market is leaning into cleaner alternatives.[27]	**Market weight**
Financials	The Financial sector benefits from transitory inflation that is good for GDP. Provided the spike in inflation readings reflects the faster-than-expected improvement in economic activity and temporary supply challenges can be resolved, faster economic growth is likely to benefit cyclical sectors such as financials.[28]	This sector remains highly exposed to the impacts of COVID-19.	**Overweight**

	The Financial sector stands to benefit from the shift from growth to value as the market looks forward to the economy more fully reopening in the second half. Fiscal stimulus and an infrastructure bill are reflationary. This increases expectations for higher interest rates in the future which is beneficial for the financial sector. The Financial sector is attractively valued relative to the rest of the S&P 500 GICS sectors.[29]		
Health Care	The Health Care sector remains a defensive hedge against increased COVID-19 cases. Additionally, improved Federal assistance for dealing with the pandemic is also a potential positive for this sector. The social portion of ESG could drive increased corporate spending on health care. Given Democrats only have a small majority in Congress, we are likely to see increase health care coverage but are less likely to see any aggressive legislation that could adversely impact pharma or other segments of the health care market.[30]	Drug pricing pressure remains a risk factor. The Biden platform advocates lowering the Medicare qualification age and reducing reimbursement rates for hospitals, two policies that could potentially reduce revenue for hospitals, although volume increases may offset.	**Overweight**
Industrials	The Industrials sector combines both cyclicality with a quality orientation.[31] There are also several potential tailwinds for this sector: • A possible Infrastructure bill of $2 trillion. • Reshoring of supply chain. • Automation • Improved certainty regarding tariffs and taxes could unleash pent up capex within non-tech sectors.[32] • Should elevated inflation become permanent, this sector stands to benefit from increased investment to expand productivity and raise productivity.[33]	The Biden administration may impose tougher emissions requirements on airlines.	**Overweight** Robotics & AI stand to benefit from reshoring and increased automation. Infrastructure and especially green infrastructure are key focus areas. As such, we believe that PAVE and CTEC are likely to be key beneficiaries within this space.

Information Technology	Tech hardware and tech-focused industrials stands to benefit from productivity and capex potentially becoming dominant trends.[34] Technology has had an increased role in our lives as a result of the pandemic. The increased adoption of certain key disruptive technologies is likely to remain in a post COVID-19 world as societies adapt to these new technologies. This shift will likely continue after a vaccine is widely available. The Info Tech sector benefits from reduced tariff risk as well as a more accepting approach to immigration which is supportive for the tech talent pool.	Increased regulatory scrutiny is a risk for this sector. There is bipartisan support for increased regulation in this space. The Info Tech sector does not stand to benefit from the reflation trade. Higher interest rates are typically negative for this sector. In our view, the reflation trade is drawing to an end and thus this is no longer a major headwind. Continuing semiconductor shortage may limit hardware sales despite demand.	**Market weight** Cloud Computing, Cybersecurity, Clean Energy and CleanTech are major potential beneficiaries.
Materials	This sector benefits from the current reflation trade. Rising commodity prices and a weaker USD benefit this sector. Chinese growth is positive for commodity prices. Improved trade relations as well as a comprehensive infrastructure plan are tailwinds for the sector.	The Federal Reserve (Fed) more clearly acknowledged the potential for higher inflation combined with the messaging that the first interest rate increase may occur in 2022 or 2023 rather than being further out. This shift in messaging has helped support the value of the US dollar while weighing on commodity prices. Increased regulations, especially those focused on preventing climate change is a potential negative.	**Market Weight** Increased focused on alternative energy sources and energy storage should be beneficial to Lithium and Battery Technology (LIT). This theme also stands to benefit from increased Electric Vehicle adoption.
Real Estate	Industrial focused REITs are expected to benefit from reshoring. This is likely to play out over several years as companies reconsider their supply chains. Overall, the real estate sector has benefitted from reopening optimism. As the U.S. approaches herd immunity, there is an increased focus on life getting back to 'normal'. This is echoed by the growing corporate push to return to the office.	Commercial Real Estate is an area that continues to be hard hit by the pandemic. Another wave of COVID cases within the U.S. is likely to have a large negative effect on the Real Estate sector, especially Retail and Office focused Real Estate. While a return to 'normal' is beneficial for shopping malls, this does not negate the long-term structural trend away from brick-and-mortar retail towards e-commerce. Rising interest rates, which increases the cost of financing are a threat if costs cannot be passed along to tenants.	**Underweight** Industrial Real Estate stands to benefit the most from reshoring while being least exposed to COVID-19 risks.

Utilities	Utilities remain a defensive hedge against rising COVID cases. Capex costs associated with shifting towards green power production may be partially offset by government support.	The Utility sector's low beta and high yield mean that this sector is less sensitive to the current cyclical improvement in economic growth while being adversely impacted by the higher market yields that accompanied those improved growth expectations. As such, the Utility sector's defensive properties detracted during the reopening rotation.[35] A Biden presidency is likely to be negative for this sector. The potential for increased climate-related regulations are likely to detract from this sector. Rising inflation expectations and expectations for higher future interest rates adversely impact this sector.	**Underweight**

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Definitions

Beta: A measurement of volatility, or systemic risk, compared to the market as a whole.

Bloomberg Commodity Index: This index reflects commodity futures prices. The index is weighted two-thirds by trading volumes and one-third by global production.

Global Industry Classification Standard (GICS): This is a standardized classification system to sort business entities by sector and industry group. It consists of 11 sectors, 24 industry groups, 68 industries and 157 sub-industries.

S&P 500 Total Return Index: The index includes 500 leading U.S. companies and captures approximately 80% coverage of available market capitalization.