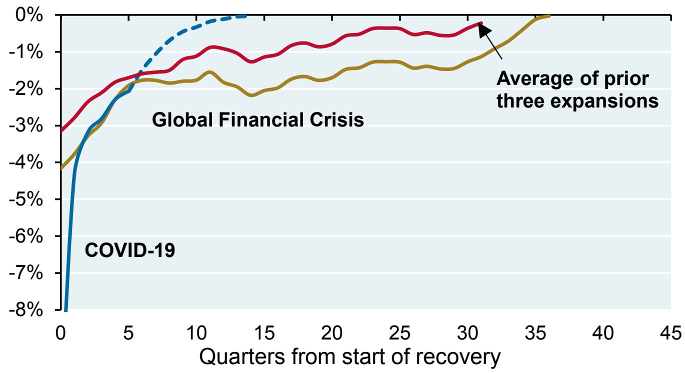
Reflation: Endgame

Executive Summary

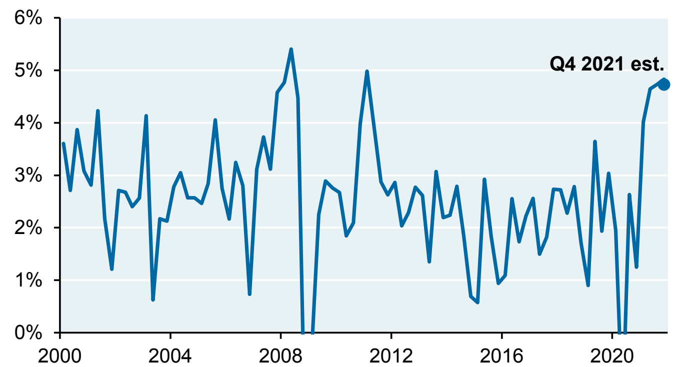
The superheroes on the cover have all contributed in their own way to a reflating world: higher nominal growth, higher wages, higher prices and rising asset prices. While the COVID recession was deeper, the global recovery is on track to eliminate spare capacity at a much faster pace than after prior recessions. Global inflation is close to the highest level in 20 years, driven by surging goods prices and changing consumption patterns due to COVID, the inability of a just-in-time corporate sector to respond, soaring government debt[1], monetary policy that dwarfs anything seen after the Global Financial Crisis a decade ago, and energy policies which reduce the supply of thermal energy much faster than they reduce demand.

Global output gap (spare capacity measure)
%, actual GDP relative to potential GDP



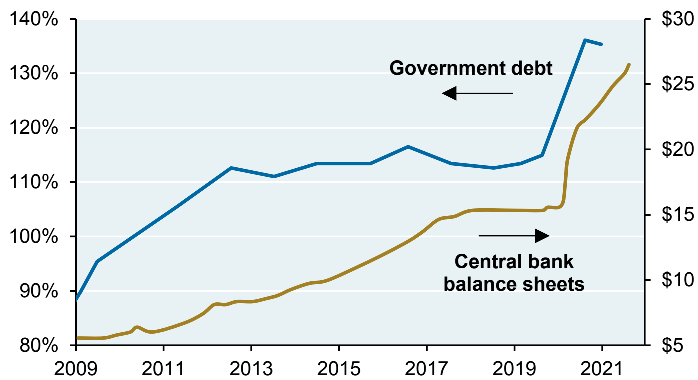
Source: JP Morgan Economic Research. Q3 2021. Dotted line = forecast.

Global headline CPI inflation
%, annualized quarterly change



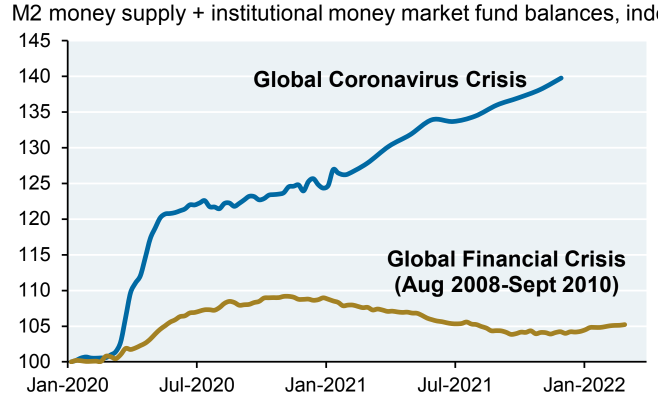
Source: JP Morgan Economic Research. November 2021.

Dev world government debt & central bank balance sheets
% of GDP US$, trillions



Source: JP Morgan Economic Research. November 2021.

Faster growth in the US money supply this time around
M2 money supply + institutional money market fund balances, index



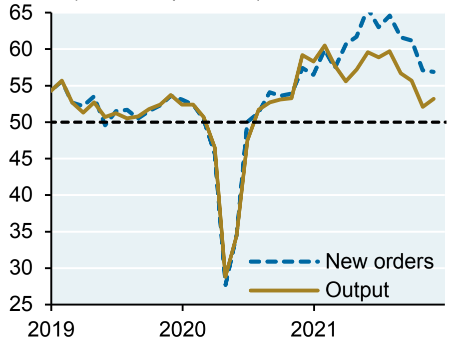
Source: St Louis Fed, ICI, J.P. Morgan Asset Management. Nov 2021.

For the latest developments on COVID, Omicron, immunity escape, vaccine efficacy, booster shots and vaccinated vs unvaccinated outcomes by state, please see our COVID web portal linked above in the header

[1] In mid-December, the CBO reported that if temporary provisions in the "Build Back Better" bill were made permanent, it would add $2.75 trillion to the deficit as opposed to adding $158 billion as written. The latest negotiations point to a smaller bill given objections by Senator Manchin (D-WV). Even so, any revised smaller bill might still rely on temporary provisions which could be inflationary if made permanent.

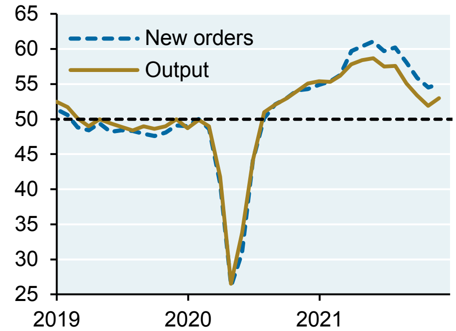
While leading manufacturing indicators have been weakening, we don't interpret them as we normally would (i.e., a worrisome decline in demand). This time around, widely reported supply chain shocks are responsible. That's why we're optimistic that with gradual resolution of supply chain delays, global growth will rebound.

US manufacturing PMI
Index (50+ = expansion)



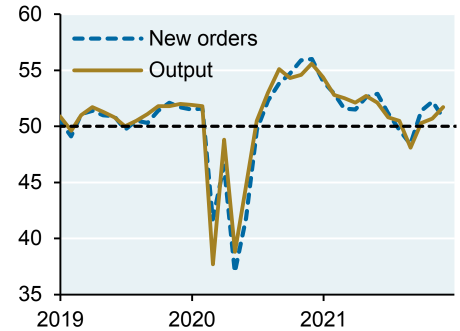
Source: Bloomberg. November 2021.

Dev markets manufacturing PMI
Index (50+ = expansion)



Source: Bloomberg. November 2021.

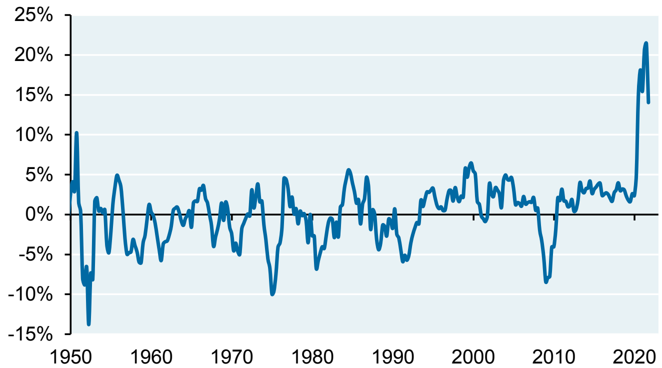
Emerging markets manufacturing
Index (50+ = expansion)



Source: Bloomberg. November 2021.

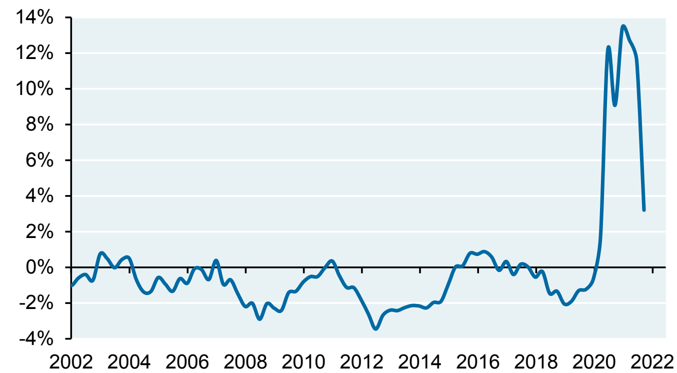
One important trend we're monitoring: the surge in goods spending vs services which sparked the supply chain mess in the first place. In the US and Europe we're already seeing a shift back to services, and inventory growth already contributed to US Q3 2021 GDP growth. But in the meantime inflationary pressure is broadening, confirmed by the November US PCE report showing the largest increase in rental inflation in 20 years and a large number of categories whose prices are rising > 4%. While COVID spending shifts triggered supply chain delays, there are **structural issues in the US which made them a whole lot worse** (see next page).

A surge in US goods spending
Difference in rolling 6-quarter growth rates, goods - services



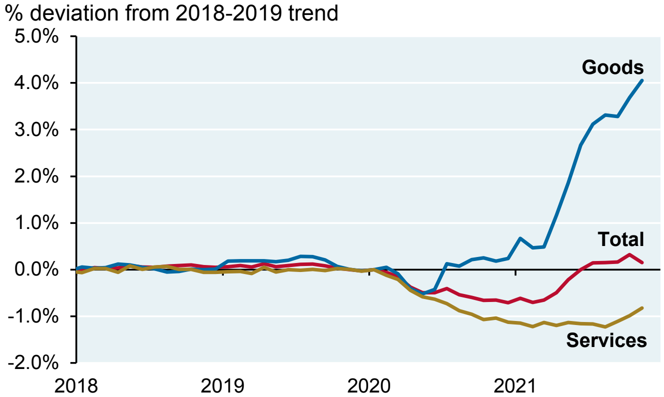
Source: BEA, JPMAM. Q3 2021.

A surge in Europe goods spending
Difference in rolling 6-quarter growth rates, goods - services



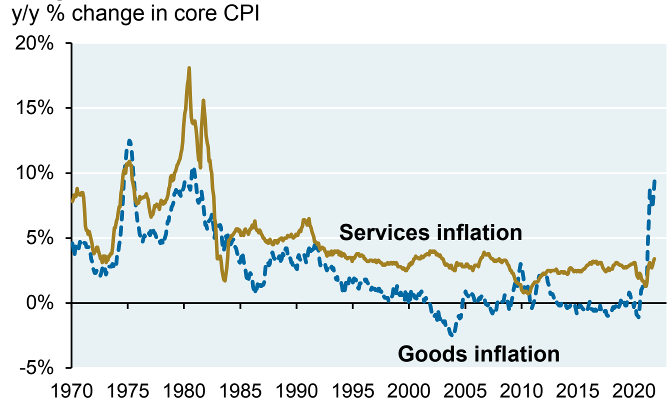
Source: Eurostat, JPMAM. Q3 2021.

Global goods and services price level
% deviation from 2018-2019 trend



Source: JP Morgan Economic Research. November 2021.

US goods vs services inflation
y/y % change in core CPI



Source: BLS, JPMAM. November 2021.

Supply chain problems: not just the byproduct of COVID and the surge in goods spending

Two years ago, Jamie asked me to prepare a report on structural issues that stand in the way of higher US growth. We looked at the opportunity cost of wars and elevated military spending; land use regulations which constrain density where it should be higher; state licensing requirements which impede labor mobility; the impact of racial inequality in education, lending and criminal justice; the high cost of gun violence, opioids and incarceration; and commercial litigation and class action costs.

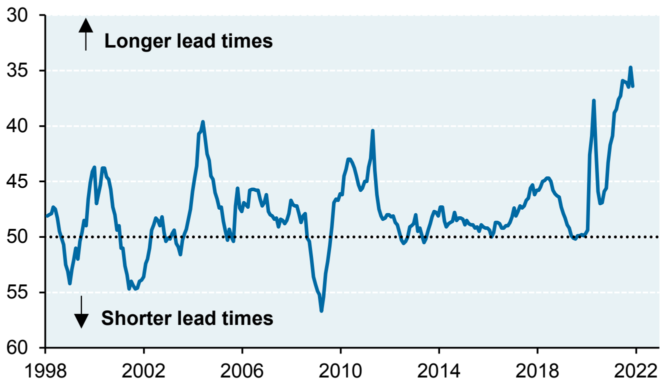
COVID and the supply chain mess surfaced more growth constraints that can be added to the list. These structural issues may impede Biden's infrastructure projects as well.

- Containership problems in Los Angeles and Long Beach were exacerbated by **local regulations** that prevented the stacking of containers more than two at a time, ordinances preventing port owners from paving and consolidating plots they already own to accommodate more storage, and land use regulations that require two to nine years before warehouses can be built on empty land
- **No US port ranks in the top 50 globally in terms of cost or efficiency**. The Los Angeles port ranks #328 and the Long Beach port comes in at a dismal #333. Contracts that prevent port automation, labor costs, limits on operating hours, weekend closures and other factors are partial reasons. Note that the semi-automated port of Virginia is free of backlogs despite handling record volumes, and ranks #85. There was a "*60 Minutes*" episode in November that focused on the LA/LB ports that made no mention of their relatively poor productivity; I wonder why its producers didn't ask questions about the labor and automation issues involved
- **The Jones Act and Foreign Dredging Act** raise port handling and dredging costs and put pressure on trucks and rail to transport goods that should be carried by ship instead. Section 301 tariffs of 221% on imported Chinese truck chassis cut trucking capacity and exacerbate supply chain delays at an inopportune time
- **US rail projects take longer to complete** and are more expensive than projects elsewhere. US rail projects with minimal tunneling take six months longer to complete than non-US projects, while underground rail can take 1.5 years longer. Domestic rail projects also cost 50% more on a per-mile basis than in Europe and Canada, and 250% more in New York City. One example: a Metro Line in Toulouse, France was built underground at $176 million per mile while Houston's Green Line is at-grade and cost $223 million per mile
- Despite a worsening US trucker shortage that has existed for many years, **the US effectively bars Mexican trucking companies from operating in the US**. The number of American trucks available for inland delivery is reduced since many of them are picking up cargo at the Mexican border
- From 1960 to 1994, the real unit cost of construction materials and construction workers in the US was unchanged yet real interstate highway spending per mile rose by 400%. What changed: **the power of local governments and/or citizens groups to delay or block development.** Environmental Impact Statements used to be 10 pages; due to litigation, the current EIS is more than 600 pages plus appendices that can exceed 1,000 pages, and can take 4.5 years to complete. No ground can be broken on federal or private projects until an EIS makes it through the legal gauntlet. One California public policy nonprofit argues that the state's environmental protection law is often used inappropriately to delay or stop transit and sustainable transportation projects that would have significant benefit to the environment, such as solar farms, infill housing and mass transit

Sources: Cato Institute; Wall Street Journal; Eno Center for Transportation; Niskanen Center; World Bank/IHS Markit; Congressional Research Service; George Washington School of Public Policy; Yale Law School

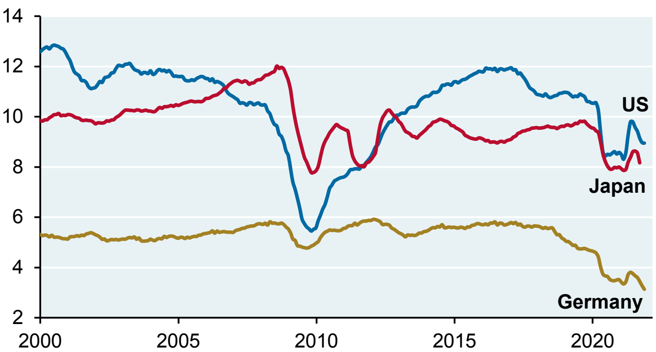
Anchored, loitering and slow-speed containerships in the vicinity of Los Angeles and Long Beach ports are still hovering at the highest levels on record, waiting to unload ~750,000 20-foot equivalent containers with $30 billion in imported goods. Other supply shock measures we're tracking: manufacturer delivery times, auto production and backlogs, freight rates, trucking demand and air cargo rates. One consequence: the US NFIB survey shows the largest % of firms reporting inadequate inventories since 1975, and by a very large margin. There are preliminary signs that US auto and regional delivery times are improving from very delayed levels.

Global manufacturing delivery times
Index



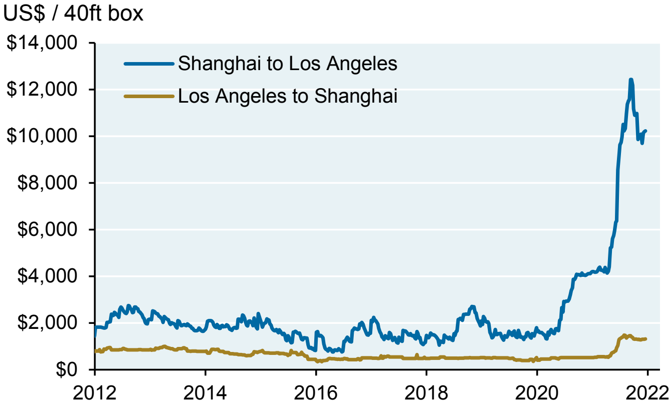
Source: Bloomberg, JP Morgan Economic Research. November 2021.

Auto production by region
Millions of units, trailing 12 month sum



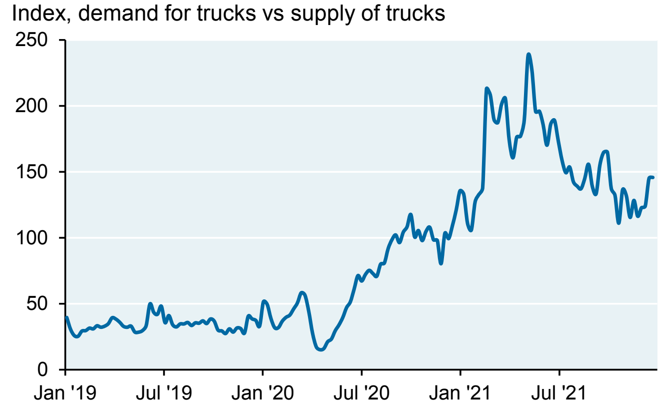
Source: Automotive News, regional automobile manufacturers associations, JPMAM. November 2021.

Container freight rate between LA and Shanghai
US$ / 40ft box



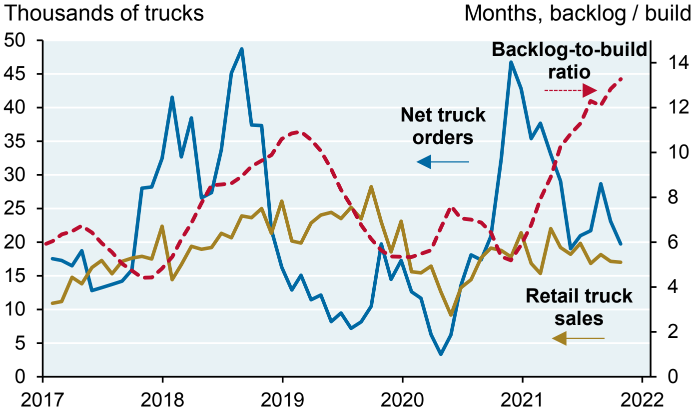
Source: Bloomberg. December 23, 2021.

Truckstop market demand index
Index, demand for trucks vs supply of trucks



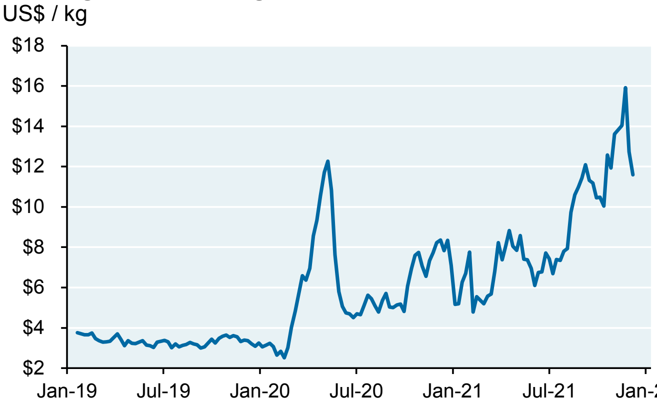
Source: Bloomberg. December 24, 2021.

US class 8 truck purchase trends
Thousands of trucks
Months, backlog / build



Source: Bloomberg. October 2021.

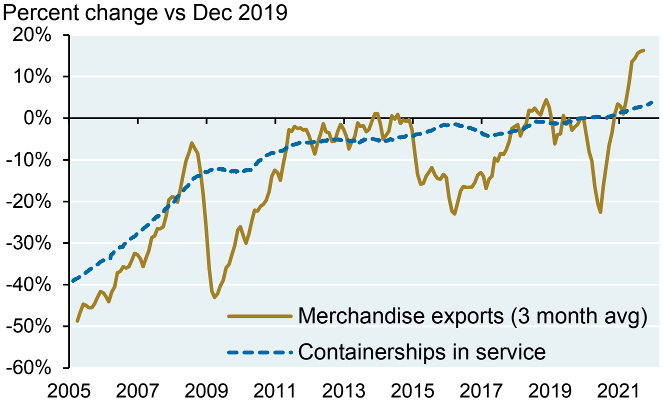
Air cargo rates: Shanghai to North America
US$ / kg



Source: Bloomberg, JPMAM. December 27, 2021.

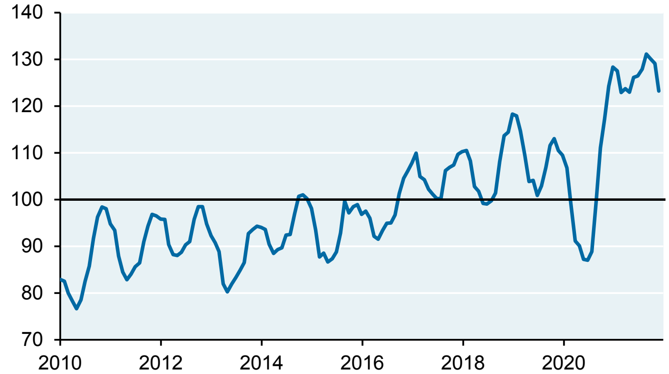
The global supply shock is more a consequence of surging demand than of weak output; in most sectors, output is quite strong (just not strong enough to meet soaring demand). Global goods production, world exports, containerships in service, LA port throughput, US truck tonnage and global semiconductor shipments are **all well above trend**. So are US housing completions.

World exports vs shipping capacity
Percent change vs Dec 2019



Source: Bloomberg, IMF, JPMAM. December 24, 2021.

Port of LA container import throughput
Index (100 = Dec 2019)

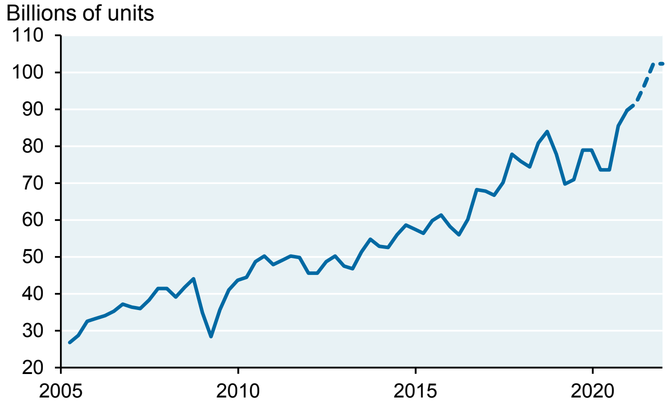


Source: Bloomberg, JPMAM. November 2021.

US truck tonnage hauled
Index (100 = 2015)

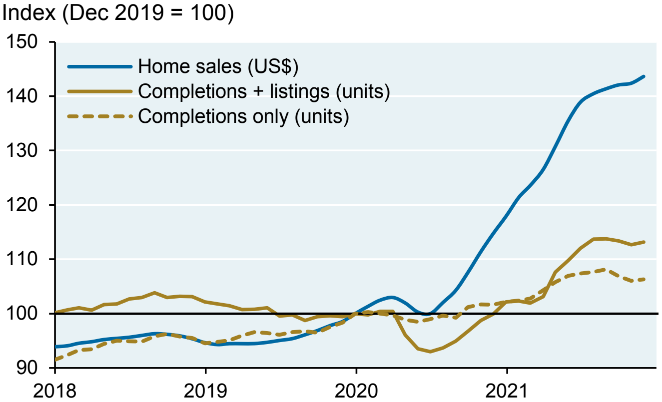
Source: Bloomberg. November 2021.

Global semiconductor shipment volumes
Billions of units



Source: WSTS, IC Insights. Q2 2021. Dotted line = 2021 forecast.

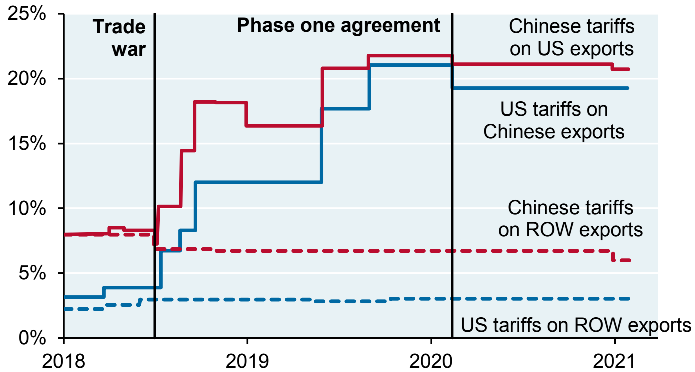
US housing: supply vs demand
Index (Dec 2019 = 100)



Source: National Association of Realtors, US Census, JPMAM. Nov 2021.

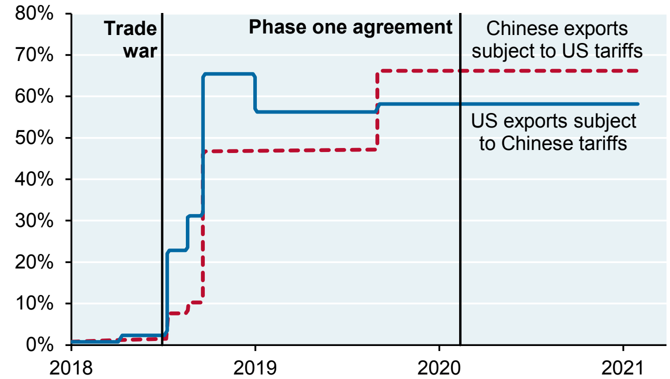
The strength in output and new orders is a positive sign, and we do not see long-lasting weakness in global demand despite rising tariffs and declining cross-border foreign direct investment. In theory, there could be tailwinds for growth and US/Chinese asset prices if the Biden administration reduced tariffs on China, perhaps justifying it as a means of reducing inflation and boosting employment and income. **But we consider this unlikely**; if anything, Senate Majority Leader Schumer has kept China issues on the agenda by advancing the US Innovation and Competition Act, which includes sanctions on China for human rights issues, its trade with North Korea and state-sponsored cyberattacks. In addition, China is only 62% compliant with its Phase One trade deal agricultural purchases from the US. The Trump tariffs illustrated below are estimated to have reduced US employment by 245,000 jobs, to have reduced annual US household income by $675-$2,000, and to have reduced S&P earnings by 7%-8%[2].

US-China tariff rates toward each other and rest of world
%, trade-weighted tariff rate, constant 2017 trade levels by industry



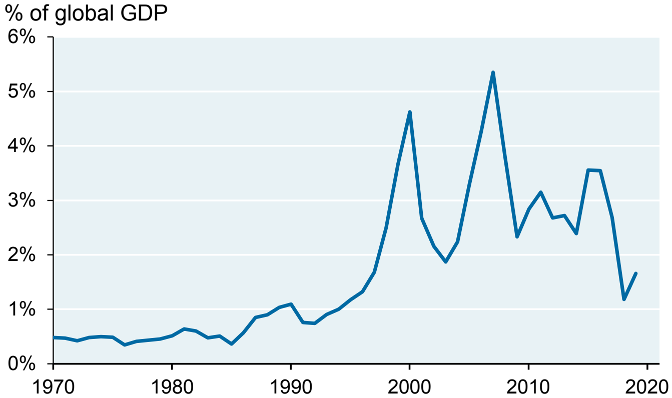
Source: Peterson Institute for International Economics. March 2021.

US-China trade subject to tariffs
%



Source: Peterson Institute for International Economics. March 2021.

Global foreign direct investment flows
% of global GDP

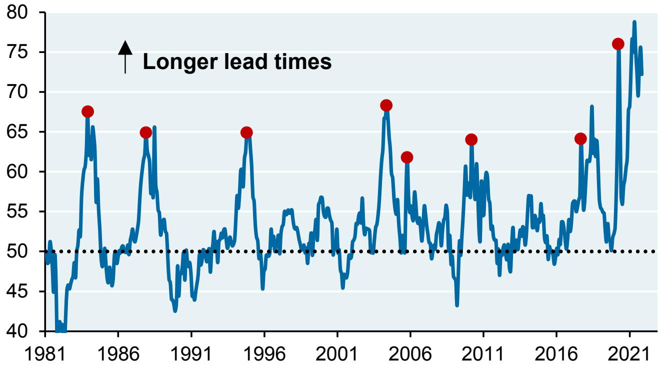


Source: IMF, World Bank. 2019.

[2] Sources: US-China Business Council ("*US-China Economic Relationship: A Crucial Partnership at a Critical Juncture*", January 2021), National Foundation for American Policy, JP Morgan Global Markets Strategy.

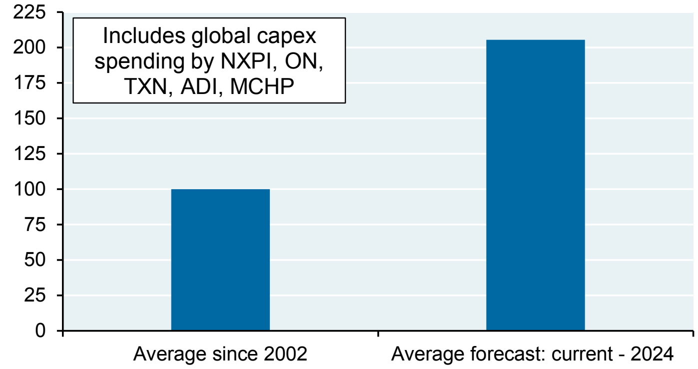
How will supply shock delays get resolved? Supply shocks have happened before, with 8 highlighted in the first chart. They typically get resolved within a few months as capital spending catches up to demand. COVID is a complicating factor, but we expect that to happen this time as well. The second chart shows how automobile-related semiconductor capital spending is expected to double in 2022 vs prior trends. This is critical for supply chains given increased semiconductor values per car. According to Trend Force, capex by the top 10 semi foundries surpassed $50 bn in 2021, up 43% y/y with another 15% increase in 2022, increasing global 8-inch and 12-inch wafer capacity by 6% and 14%. Increased vaccination in Asia will help supply chains as well.

US ISM supplier deliveries index
Index



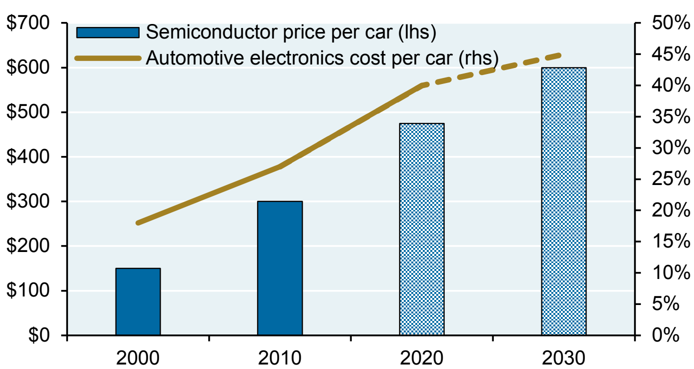
Source: Bloomberg, JPMAM. Nov 2021. Red dots = start of supply disruption

Global automotive semiconductor capex
Index (100 = 2002 - 2021 average in real terms)



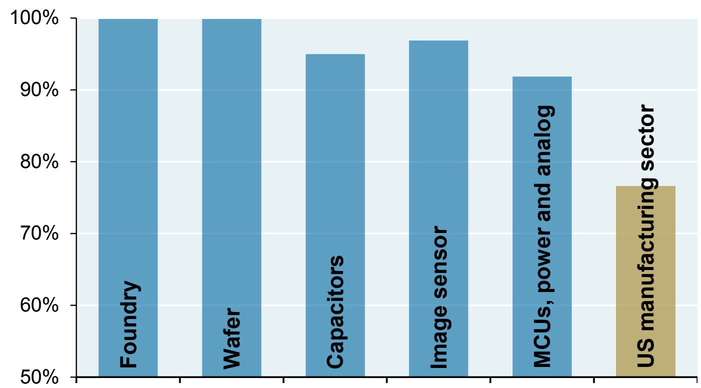
Source: GS, JPMAM. Q3 2021.

Contribution of electronics & semiconductors to car cost
US$ per car
% of total car cost



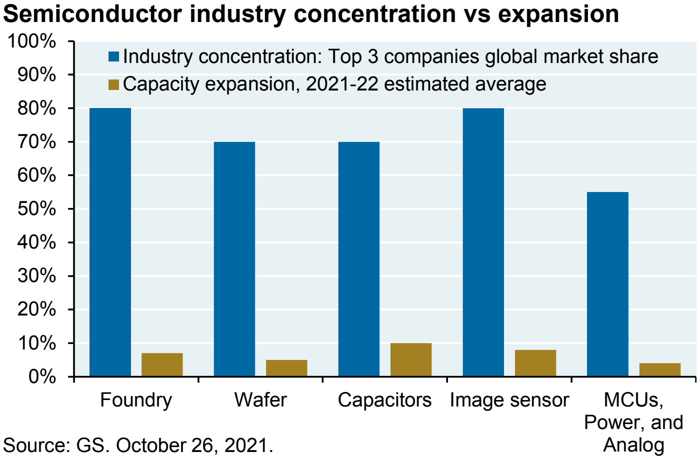
Source: Deloitte, IHS. April 2019. Dotted line & shaded bars indicate estimates.

Global semiconductor producer capacity utilization



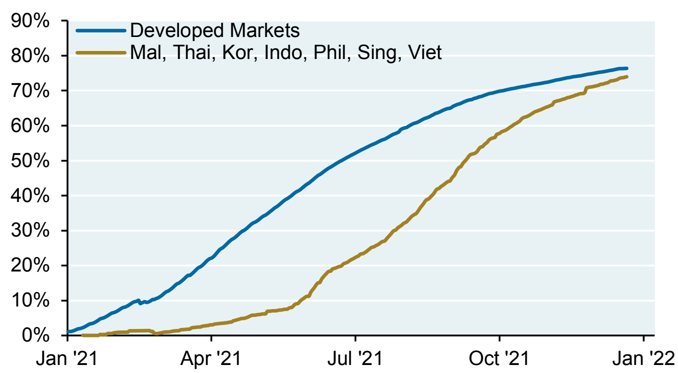
Source: GS. October 26, 2021.

Semiconductor industry concentration vs expansion



Source: GS. October 26, 2021.

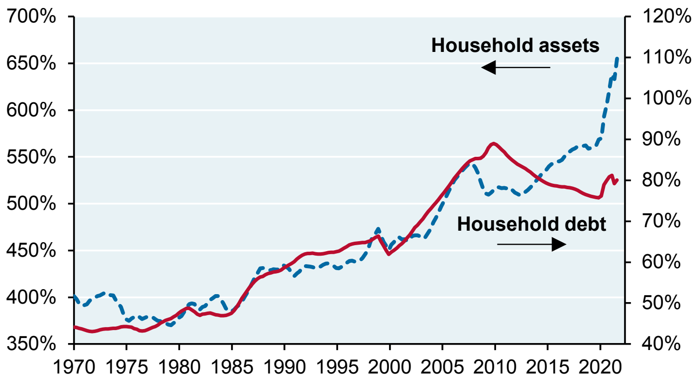
Regional GDP-weighted vaccination rates
Unique people vaccinated as % of population



Source: OWID, JPMAM. December 28, 2021.

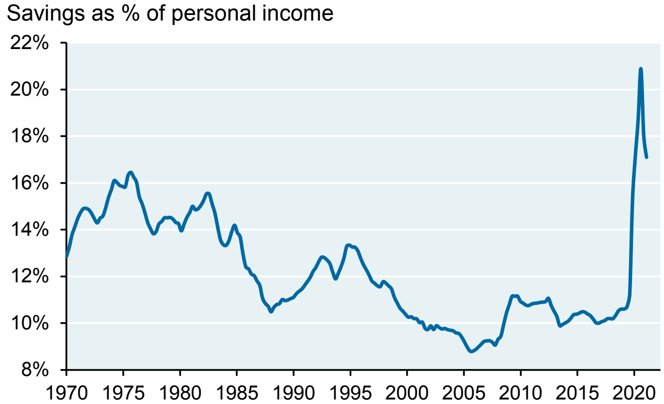
So, we believe that supply chain problems will be resolved in 2022 and 2023 through vaccination, more capital spending and a shift in spending from goods back to services. **As that's happening, developed world consumers are in good shape and should be able to support the economic expansion**. Developed world household balance sheets and savings rates look strong, and in the US, there's still a large gap between the strong pace of final sales and weaker inventory accumulation. US household debt service burdens are also at the lowest levels on record. The risk: as shown in the last chart, a large boost in US consumer spending came from the lowest credit quintile of borrowers, suggesting some sensitivity to the end of fiscal stimulus.

Developed World household balance sheets
% of GDP



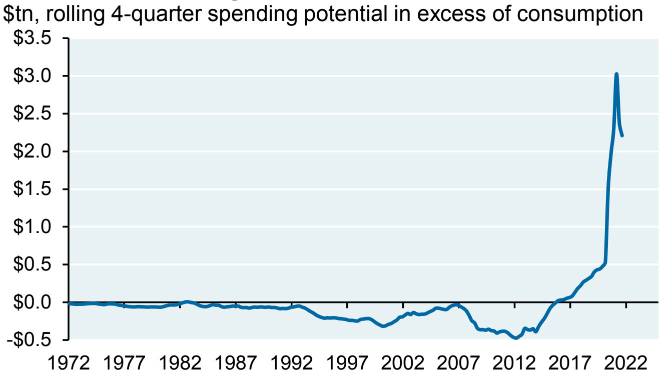
Source: BEA, ECB, regional statistical offices, JPMAM. Q3 2021.

Developed World household savings rate
Savings as % of personal income



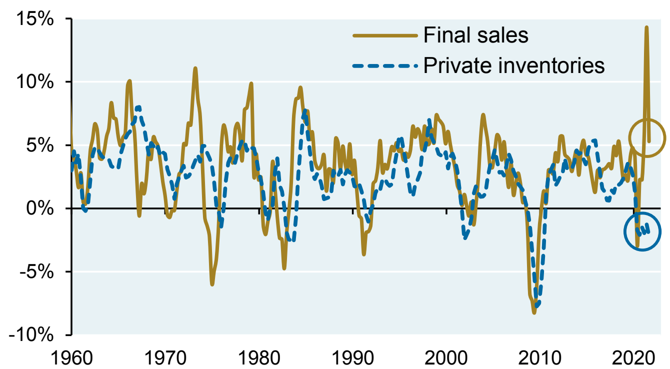
Source: BEA, regional statistical offices, JPMAM. Q3 2021.

US excess spending potential has piled up
$tn, rolling 4-quarter spending potential in excess of consumption



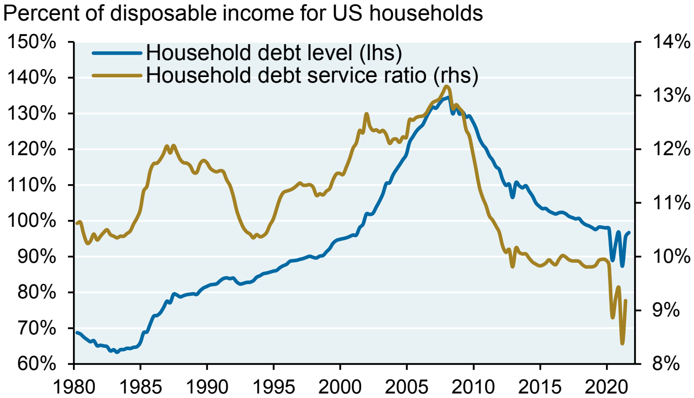
Source: Fed, BEA, JPMAM. Q3 2021. Spending potential: 65% of taxable income, 100% of transfer pmts, 10% of housing wealth and 1.5% of fin. wealth.

US unprecedented sales to inventory gap
y/y % change in real values



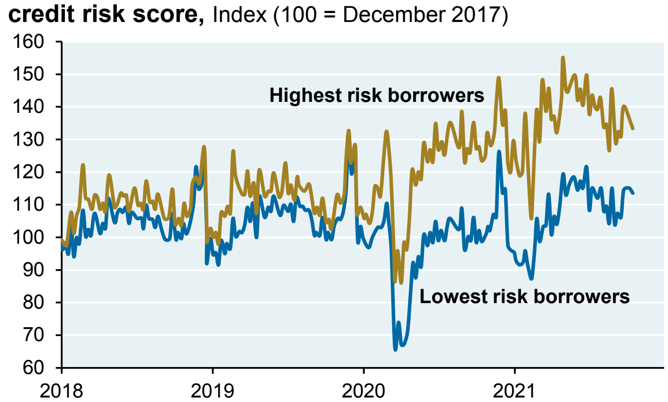
Source: BEA, JPMAM. Q3 2021.

Debt levels vs debt service
Percent of disposable income for US households



Source: Fed, BEA, JPMAM. Q3 2021.

US consumer spending: transaction amounts by Equifax credit risk score, Index (100 = December 2017)



Source: Equifax, Commerce Signals, AEI Housing Center. November 17, 2021.

We expect goods-related supply chain issues to be resolved, and for goods price inflation to fall as the Fed has been expecting. However, US labor shortages appear to be a chronic issue, driving up wage inflation in tight labor markets. As we explained last October, worker shortages are the result of accelerated retirement vs trend, immigration declines, increased self-employment that draws labor away from where it's needed and COVID impacts (vaccinated people afraid to return to work, working parents unable to find child care and unvaccinated people fired/furloughed from their jobs). The latest data from the BLS shows US low skill wages rising at almost 7% per year.

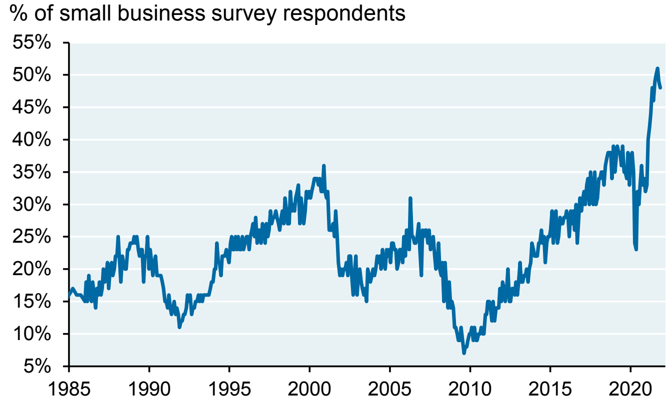
The charts below show the tightest labor markets in 30-40 years. Other labor market indicators also show tight conditions: all-time highs in workers saying jobs are plentiful, rising job openings and voluntary quits, and all-time lows in layoffs. Record highs in job openings are not just in leisure & hospitality but also manufacturing, transportation, warehousing, retail, professional business services, education and health. Hourly earnings and employment costs are rising 4%-5%, close to the highest levels seen in the last three decades.

The infrastructure and pending reconciliation bills could deploy up to $2 trillion, directly as government purchases and indirectly via tax cuts and transfers. At a time of very tight labor markets, where are the workers going to come from, what impact will this have on wages and what impact will it have on the Fed?

Worker shortages
Millions of workers

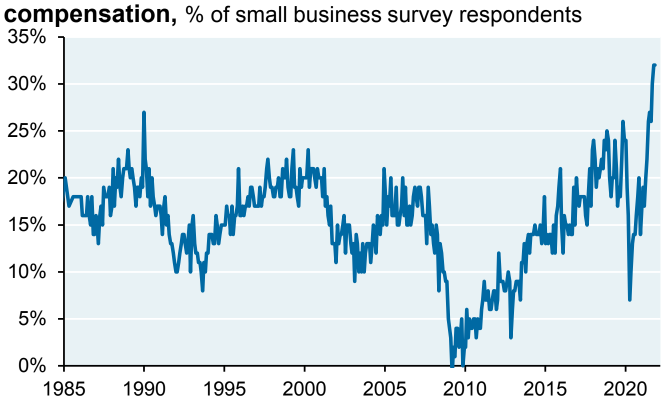
Source: BLS, Census, GS, JPMAM. October 2021.

US small businesses with hard to fill job openings
% of small business survey respondents



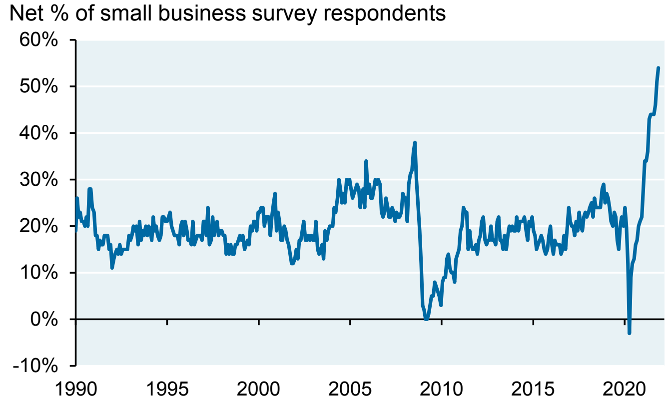
Source: Bloomberg, NFIB. November 2021.

US small businesses planning to raise worker compensation, % of small business survey respondents



Source: Bloomberg, NFIB. November 2021.

US small businesses planning to raise prices
Net % of small business survey respondents

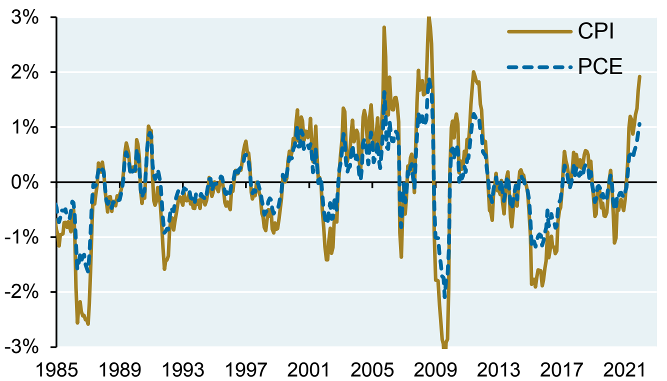


Source: NFIB, JPMAM. November 2021.

Energy-related inflation may be sticky as well. The gap between headline and core inflation is rising. One reason: **the collapse in investment in oil & gas production at the same time that global *demand* for fossil fuels has barely declined** (fourth chart below). An extreme version of this paradigm is found in Europe whose electricity prices are soaring given renewable energy policy that is changing faster than fossil fuel demand, and given Europe's reliance on Russia for half of its thermal energy needs.

JP Morgan Commodities Research expects global oil demand to grow by 3.5 million barrels per day (mbd) in 2022 and reach 99.8 mbd, slightly above 2019 levels and a record high, and expects global oil demand to average 101.5 mbd in 2023. **But in this new era, US and Global rig counts are rising very slowly now**. As a result, JPM Research expects Brent oil prices to average $80-$90 in 2022 and 2023. Separately, JP Morgan's Global Equity Research team has their own forecast in which oil prices hit $125 in 2022 and $150 in 2023.

Headline less core inflation
y/y % change in headline inflation less y/y % change in core inflation

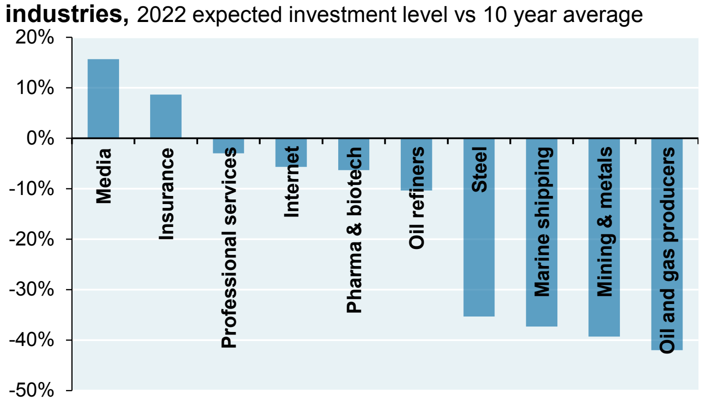


Source: BLS, BEA. November 2021.

GSCI commodity index
Index

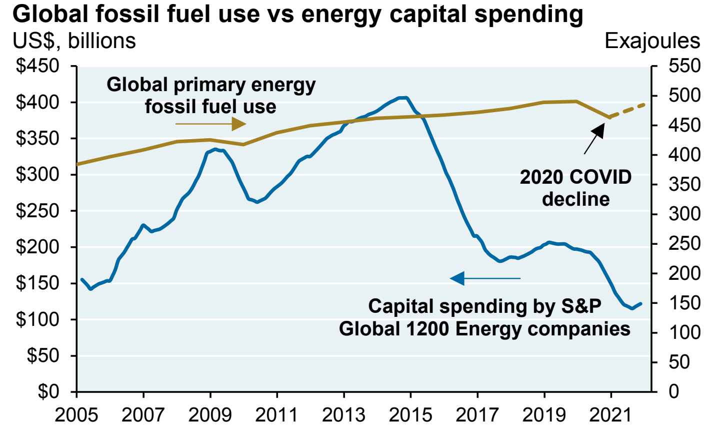
Source: Bloomberg. December 28, 2021.

Collapse in global investment in energy-intensive industries, 2022 expected investment level vs 10 year average



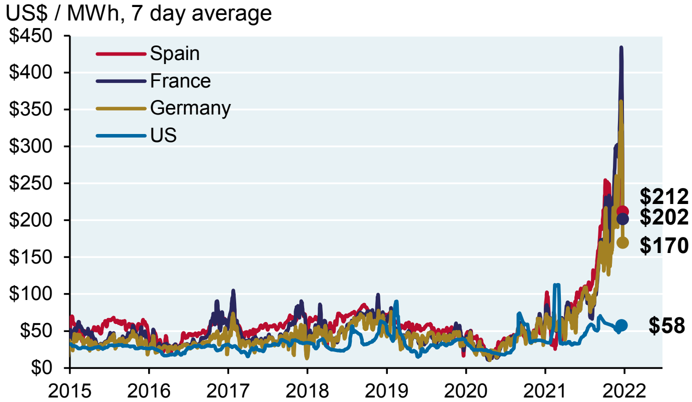
Source: GS, JPMAM. November 10, 2021.

Global fossil fuel use vs energy capital spending
US$, billions



Source: BP, Bloomberg, IEA, JPMAM. Nov 2021. Dotted lines = estimates.

US vs Europe: Day ahead electricity prices
US$ / MWh, 7 day average



Source: Bloomberg. December 29, 2021.

<u>European electricity price vertigo</u>

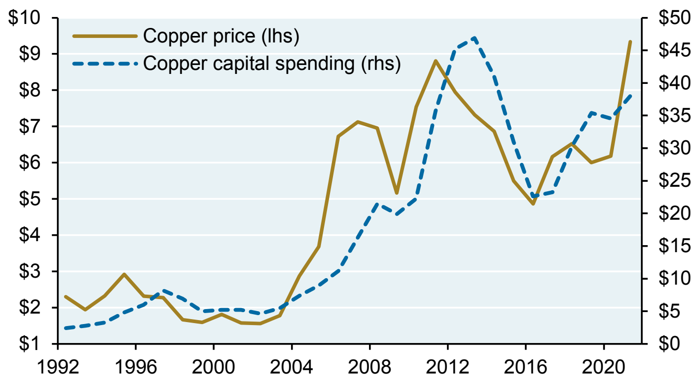
Falling investment in thermal energy
Unreliable supply of Russian natural gas
Start of a very cold winter in Russia and Europe
Lower than expected wind speeds
Emergency repairs of French nuclear plants
Rising CO_2 permit prices

On the other hand, industrial metals inflation should subside. Copper, aluminum and nickel inventories as a % of demand are close to the lowest of the last 20 years. However, capital spending on new production typically follows higher prices, and we expect that happen again. Demand for copper may remain high despite slower real estate construction in China since the transition to renewable energy for power, electrified heat and for electric vehicles requires a lot more copper (see tables). But unlike oil & gas, we do not envision the same structural impediments to new capital spending on industrial metals.

Food price inflation is also elevated. While less severe weather and more planting should help resolve some of the corn and wheat shortages shown in the second chart, rising **biodiesel demand** is creating a feedback loop which pushes cereal and vegetable oil prices higher, which in turn pushes meat/dairy prices higher as well.

Copper price vs capital spending

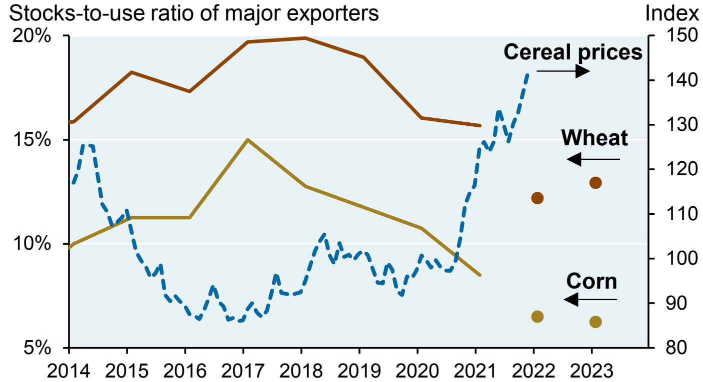
Thousand US$/ tonne — US$, billions



Source: JP Morgan Commodities Research, Wood Mackenzie. June 2021.

Cereal prices rising as supply remains tight

Stocks-to-use ratio of major exporters — Index



Source: Bloomberg, USDA, JP Morgan Commodities Research. November 2021. Dots = JPM forecasts.

Tons of copper per megawatt of electricity	
Gas	1.0
Coal	1.0
Nuclear	1.5
Onshore wind	3.9
Grid energy storage	4.0
Solar farm	5.5
Offshore wind	10.5
Solar rooftop	11.4

Source: World Bank, Université Grenoble Alpes, Copper Development Association. 2020.

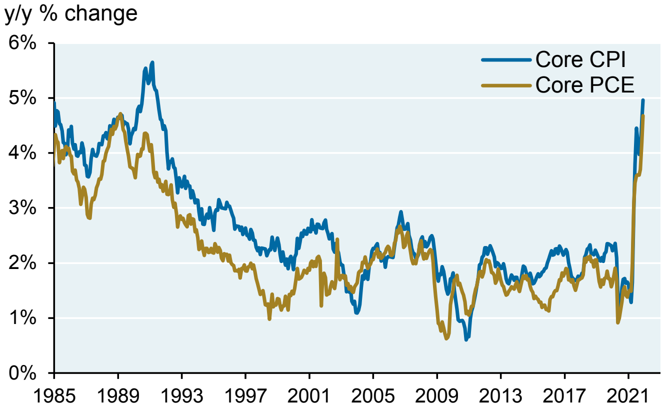
Pounds of copper per vehicle	
Conventional (ICE)	34
Hybrid (HEV)	85
Fuel cell (FCEV)	121
Plug in hybrid (PHEV)	132
Battery electric (BEV)	183

Source: Copper Development Association, Argonne National Laboratory. 2020.

Bottom line: the Fed is now facing the largest challenge yet to its "transitory" description of inflation dynamics. We agree that goods price inflation will roll over, in which case CPI and PCE measures will as well. But we believe that wages and commodity prices will remain high since their supply/demand curves have shifted.

Core CPI and PCE inflation

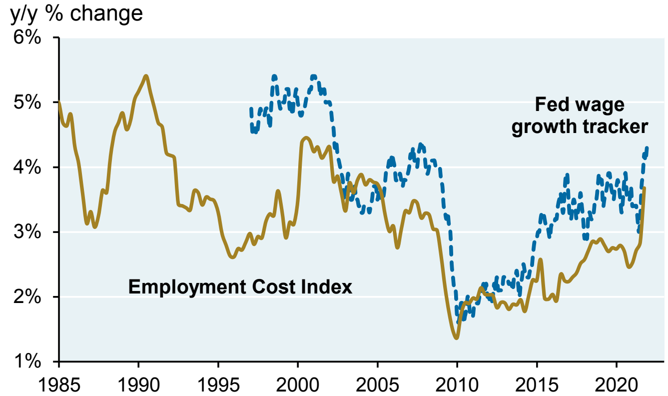
y/y % change



Source: BLS, BEA. November 2021.

US wage growth

y/y % change



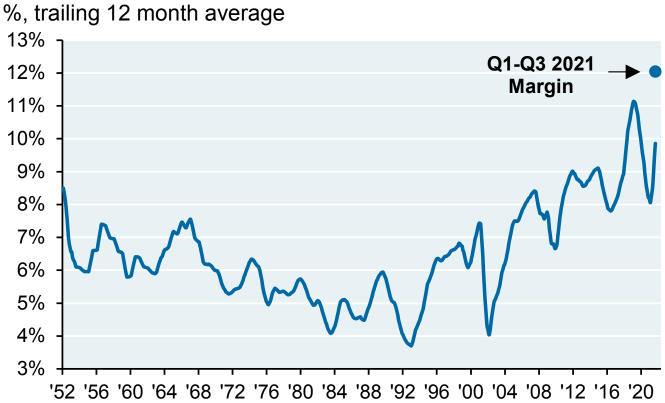
Source: BLS, Atlanta Fed, Bloomberg, JPMAM. November 2021.

What's next for US equity markets

For the S&P 500, we expect 10%-14% earnings growth in 2022 as trend growth returns and as the Fed begins to raise rates. P/E multiples should contract as this occurs, delivering total returns of 7%-10% including dividends. In other words, another version of 2021 when earnings rose by 36% and P/E multiples fell by 6.1%. If this were to occur, it would be the 16th year out of the last 20 in which stocks outperform bonds, during which time cumulative returns on stocks and bonds have been 697% and 111%, respectively. Increased buybacks and dividends should help; US companies have a lot of spare accumulated cash (see p. 17).

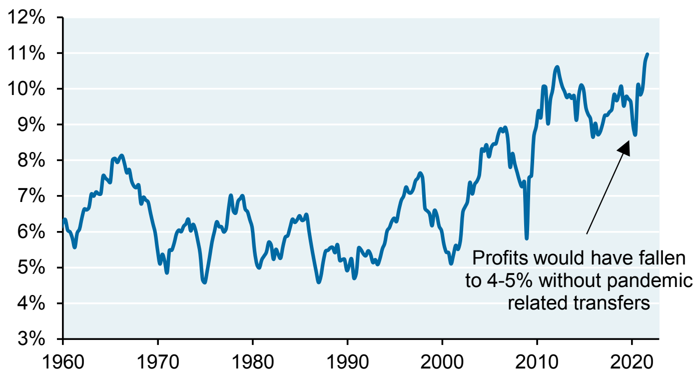
Despite rising labor, intermediate goods and raw materials costs, S&P 500 profit margins defied expectations in 2021 and rose vs pre-pandemic levels (12.3% in Q3 2021 vs 11% in 2019). Many companies simply passed cost increases on to consumers. Profit margins in the national accounts (all private and public companies) rose as well to record highs in 2021. We think input cost increases will be harder to pass along in 2022, and margins may fall by 1% or so back to 2017-2019 trend levels.

S&P 500 ex-financials and REITs net profit margins
%, trailing 12 month average



Source: Empirical Research Partners. November 2021.

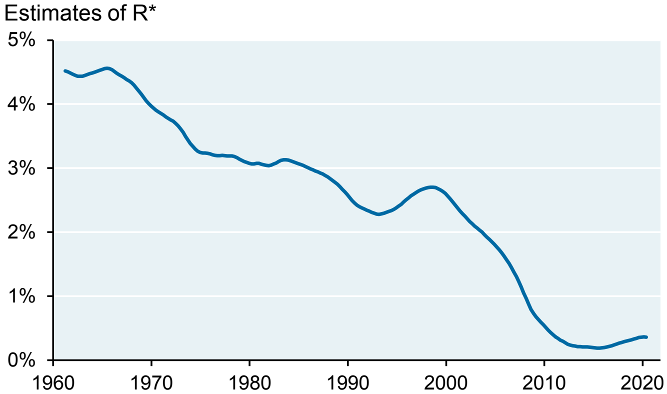
US after-tax corporate profits
% of GDP



Source: BEA, JPMAM. Q3 2021.

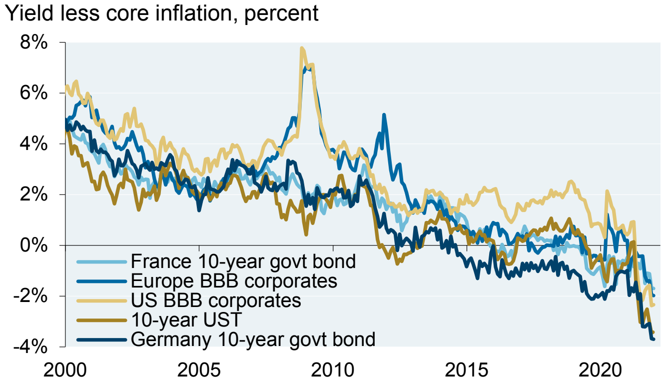
While the Fed is expected to raise policy rates next year and slow the pace of its asset purchases, we think the most important question to ask is this: **what is the Fed's endgame, positive real rates or just real rates of around zero?** We believe it's the latter. As illustrated on the left, the Fed now uses an approach which yields much lower equilibrium real policy rates. Most of the reason for this decline: aging demographics, slower trend growth and income inequality which offset the rise of government debt[3]. **As a result, maybe real yields crawl back to zero at some point, but that's as far as we could see them going in the US or Europe**. Also, while the Fed is expected to scale back its asset purchases, our economists still expect another $1 trillion in developed market central bank balance sheet expansion through December of next year.

Estimated US equilibrium real policy rates
Estimates of R*



Source: NY Fed. Q2 2020.

US and Europe real yields
Yield less core inflation, percent



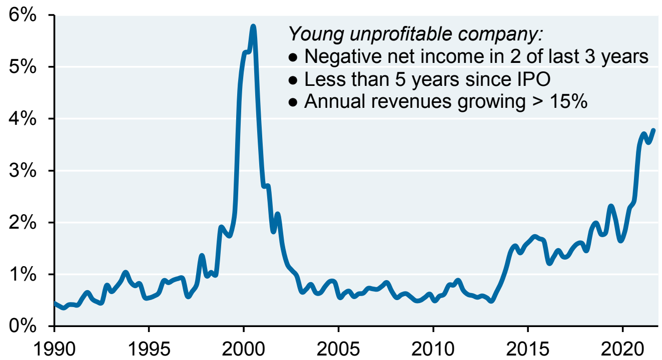
Source: Barclays, BLS, Bloomberg, JPMAM. December 28, 2021. UST is yield to maturity; other indices are yield to worst.

[3] "*On falling neutral rates, fiscal policy and the risk of secular stagnation*", Summers and Rachel, 2019

Be prepared for intermittent selloffs, since market internals are less favorable than they were last spring:

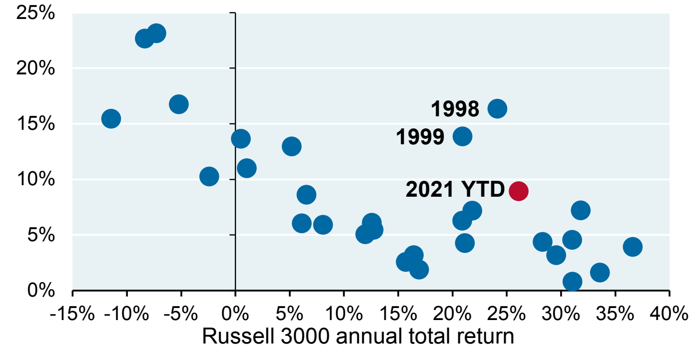
- Young and unprofitable companies make up the largest share of market cap since 1999; Bridgewater estimates $200 bn in "YUC" supply in 2022 from primary/secondary issuance and insider lockups expiring
- There were a lot of highly valued, crowded-trade stocks which fell by 35% or more in 2021, which is unusual for a year when market returns were ~25%; another development we have not seen since the late 1990's
- A rising number of companies are now more sensitive to changes in liquidity conditions and monetary policy than their counterparts that are more sensitive to changing economic growth
- There's a high concentration of S&P 500 market cap and total return that is reliant on a handful of stocks
- Signs of weakness in momentum/liquidity plays (fintech, renewable energy, IPOs and SPACs)

Market cap of young unprofitable companies
% of total market cap



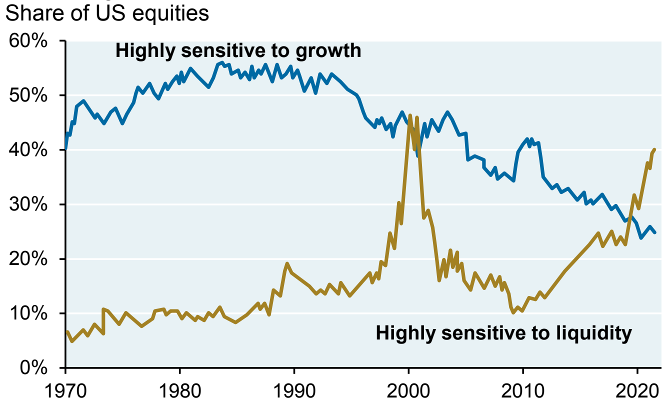
Source: Factset, J.P. Morgan Asset Management. Q3 2021.

Share of poorly performing stocks vs overall market return
%, companies with returns of -35% or worse, annual data since 1990



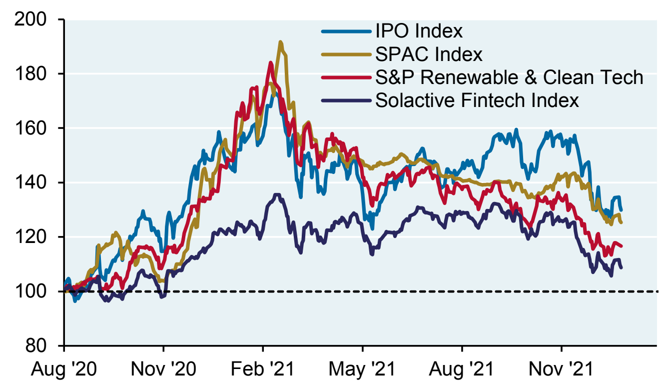
Source: Factset, Bloomberg. December 28, 2021. Includes top 50% market cap companies of the CRSP Index of US large, mid and small cap stocks.

US equity market sensitivities
Share of US equities



Source: Bridgewater. December 10, 2021.

Signs of weakness
Total return index (Aug 2020 = 100)

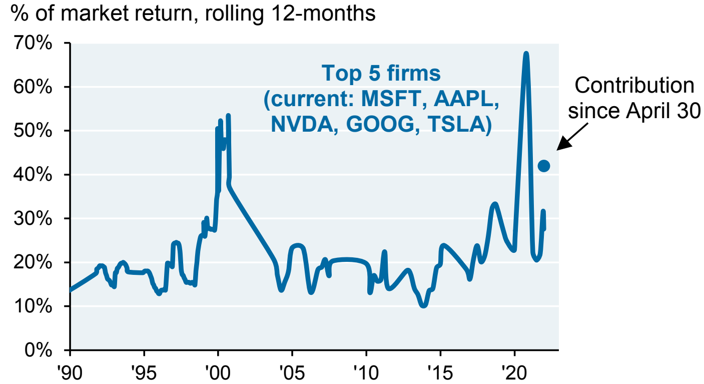


Source: Bloomberg. December 29, 2021.

Contribution of top firms to overall US market cap

Source: Bloomberg, JPMAM. December 29, 2021.

Contribution of top 5 firms to overall US market return
% of market return, rolling 12-months

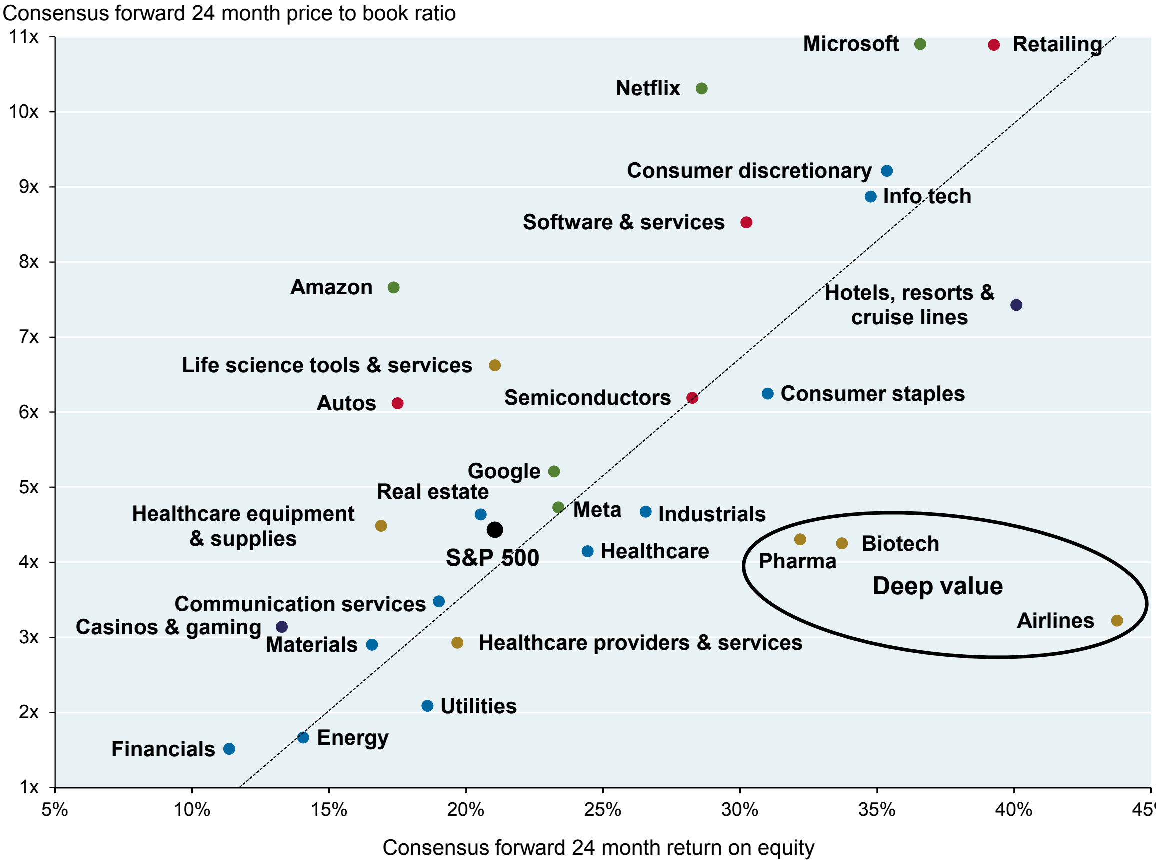


Source: Bloomberg, JPMAM. December 28, 2021. Data reflects periods of greater than 10% annual market return.

As shown below, there is general order to the S&P 500 valuation universe: the higher a sector's projected return on equity, the higher its price/book valuation. **Looking for deep value? There isn't much other than large cap pharma, biotech and airlines.**

- **Large cap pharma:** a reconciliation bill if passed could allow the Medicare system to negotiate prices for the first time since the 1960's when it was created. The bill as written would apply to older drugs that have no generic competition (10 drugs starting 2025, 100 drugs starting 2030). The bill would also cap drug price increases at the rate of inflation, and be applied to the entire drug market including private and employer health insurance programs. However, drug companies would still set prices on new drugs. A bigger headwind: concern about the 2025-2028 patent cycle and a potential downward cliff in earnings. Our pharma team thinks this is a pessimistic view given large cap pharma pipelines and balance sheet strength
- **Biotech.** Biotech stocks were decimated in 2021, with a median return of -23%. Even so, our biotech team is cautious given a potential reconciliation bill with drug price provisions, clinical setbacks on gene therapy with the death of young patients, fallout from the controversial approval of Biogen's Alzheimer's drug Aduhelm (no room here to list all of its problems), a flood of new issuance (some from companies that haven't even begun human trials yet) and a lack of M&A activity. Real catalysts are needed here, not just low valuations. One positive sign: biotech companies have $500 bn of cash on hand for deals and R&D
- **Airlines:** valuations for consumer discretionary, autos and retailing are already back to normal using this framework. The biggest outlier: airlines, even when looking at income projections out two years. Business travelers make up 12% of passengers but 75% of revenues, resulting in a 25% decline in revenue per seat mile from 2019 to 2021. While Delta expects business travel to be back to pre-COVID levels by 2022/2023, McKinsey does not expect that to happen until 2024 and also projects a 20% structural decline in business travel, offset by an increase in lower-value leisure trips. High and rising industry debt is also a big concern

S&P 500 valuations vs return on equity
Consensus forward 24 month price to book ratio



Source: Factset. Dec 29, 2021. Blue = sectors, red = industry groups, gold = industries, purple = subindustries, green = megacap tech stocks.

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