Topics: Interest rate pretzels; the Zoom shock on residential and commercial real estate; the COVID race against time (vaccinations vs variants)

Please join us for a Thursday, March 18 webcast to discuss SPAC returns for different categories of investors, and the latest celebrity SPACs sponsored by Tintin and Gritty the Flyers Mascot

If long-term US interest rates stay below 2%, that's a great sign for equity investors. But if they don't…it's amazing to see the pretzels that people contort into to convince themselves that rising rates are not a problem for equities. The rationalizations below are all plausible in their own way[1]. Even so, the incessant drumbeat of "if rates rise, don't worry about equities" from every research piece I've seen is a cause for concern: no one wants to confront a possible disconnect between Fed policy, the long bond, the recovery and equity valuations.

Our 2021 Outlook called for ~10% returns on US large cap stocks assuming a surge in consumer and business activity, widespread vaccinations and minimal disruption from vaccine-resistant variants, another $1.9 trillion in fiscal stimulus, an infrastructure bill in the fall, a collapse in US unemployment to ~4.5% by year end (the NFIB small business survey of "job openings hard to fill" has hit an all-time high, see p.7), investor euphoria, sky-high valuations of anything growth-related, rising anti-trust risks for the FAANG stocks and small increases in interest rates and inflation. If 10-year rates hit 2.5% or higher and stay there, I would be much less optimistic.

Popular interest rate pretzels:
"I'm not worried about the impact of rising interest rates on equities because…"

Inflation is good for equities

Equity inflows go up at times of rising interest rates

Fed will buy bonds if rates get too high; so will foreign central banks and sovereign wealth funds

Rates rising since economy is improving, so no problem

Massive money market fund balances will lift equities even if rates rise

Rising long rates don't matter when Fed is on hold

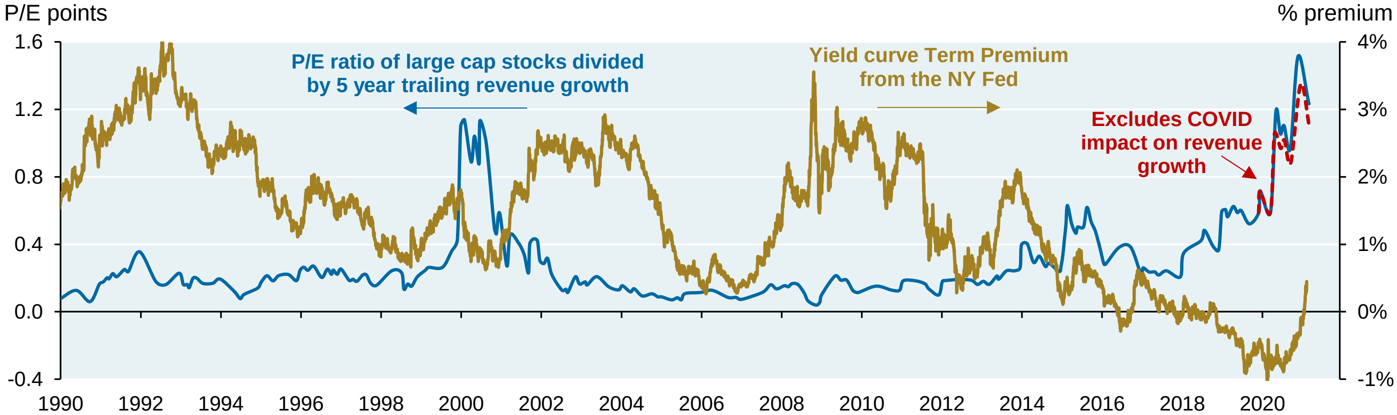
Rising real rates only a problem in late cycle periods

Steeper yield curve slope great for downhill skiing

[1] **Let's take the "rising inflation is good for equities" theory**. The dispersion of equity outcomes as a function of inflation are so wide that mean and median outcomes are meaningless. When looking at inflation changes since 1975, equity market returns are all over the place in both directions but there are more negative return periods than positive ones when inflation goes up.

Interest rates and equities, 2021. The outperformance of growth stocks has been highly reliant on low interest rates *and* low expectation for future rate increases. The next chart is from Empirical Research and shows the price investors pay for growth (blue line: P/E multiples divided by trailing 5 year revenue growth). The gold line shows the true "term premium" in the bond market: how much investors are paid for the risk that something changes vs the status quo on rates or inflation. We're now exiting a unique period of negative term premiums and growth multiples are still high As a result, growth stocks are at risk for possibly minor changes in perceptions of future interest rates and inflation, irrespective of what the Fed decides to do and when.

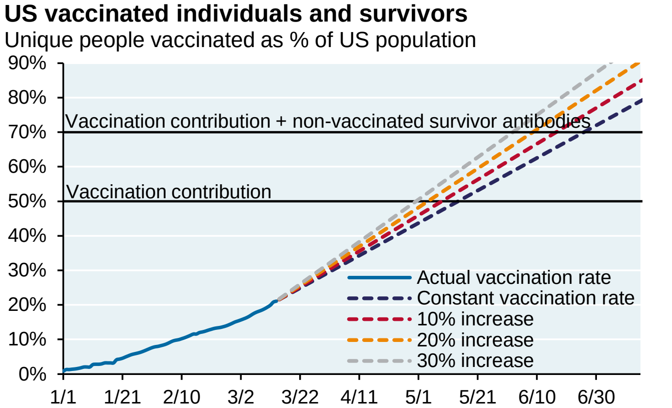
Equity multiples at risk as dormant bond market investors react to growth and stimulus



Source: Empirical Research, Federal Reserve Bank of New York. March 2021.

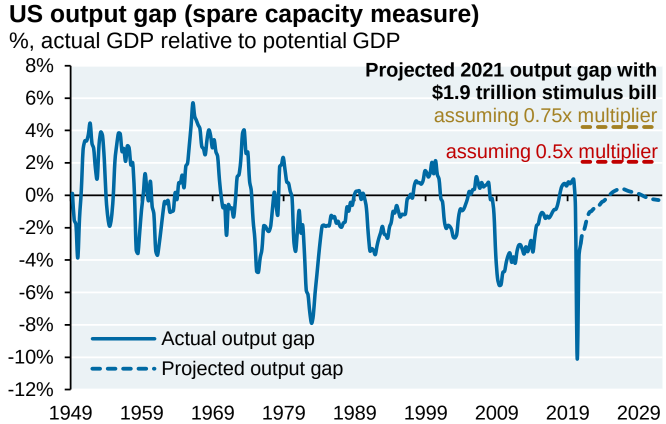
We'll see how this goes over the next few months. Our estimate of vaccinations plus non-vaccinated COVID survivors is headed to 70% by late May, right when $1.2 trillion of the new $1.9 trillion in stimulus hits the economy in the form of direct checks, small business aid and state/local aid. This much stimulus could eliminate a lot of the current output gap (a proxy for spare capacity). After being wrong about rising inflation over most of the last decade (see p.7), the Fed is now betting the house on red instead, believing that any inflation revival will be temporary. The Fed intends to exit the monetary swimming pool **very slowly**: first by *announcing* they will slow bond purchases (currently $120 bn per month); then they will actually *start* to scale them down; then they will stop purchasing but still reinvest interest; then stop doing that; and then they will raise rates (markets are pricing in Fed 4 hikes by Jan 2023). **I'm not sure the long bond will wait that long**.

US vaccinated individuals and survivors



Source: OWID, JPMAM. March 14, 2021. Estimates of vaccination rates based on trailing 7-day average vaccination rate.

US output gap (spare capacity measure)

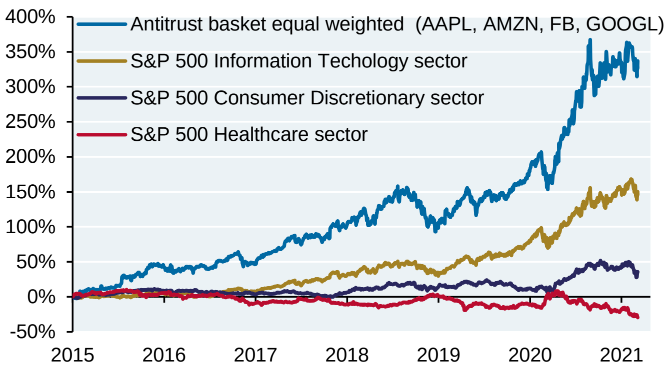


Source: CBO, JPMAM. Q4 2020.

As we wait for this to play out, value sectors are performing well: **financials** (steeper yield curves help bank Net Operating Income), **industrials/basic materials** (global post-COVID recovery in industrial production) and **energy** (industry consolidation and renewed management focus on free cash flow). Since Jan 1, the cheapest value stocks have recovered almost half of their cheapness vs the most expensive growth stocks.

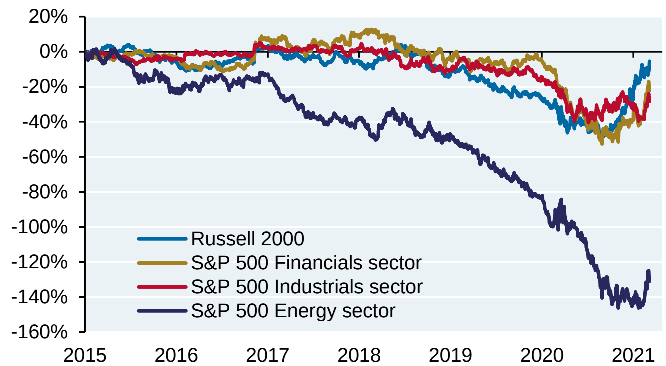
We made a bullish call on oil & gas in our 2020 Energy paper last June, since we believed that the sector's problems were more related to the shale supply shock and management decisions to ignore profitability than to "stranded asset" risks, "peak oil demand" or the pace of renewable energy penetration. That call in our 2020 paper coincided with the lows in oil & gas valuations. I recommended sticking with it; energy is the only sector with short interest still above historical averages, meaning that a lot of investors still don't believe in it. Our 2021 energy paper comes out in mid-May this year[2].

Growth sectors vs S&P 500
Total return vs S&P 500



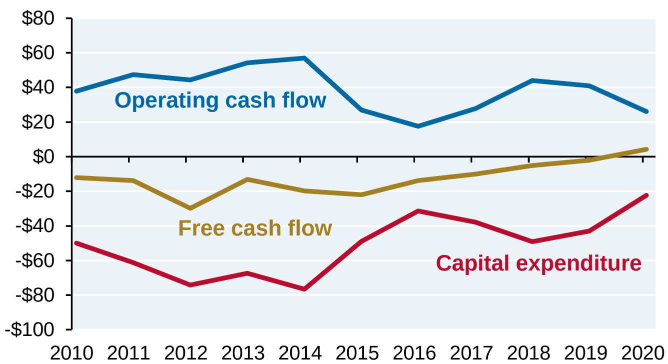
Source: Bloomberg. March 11, 2021.

Financials, cyclicals and small caps vs S&P 500
Total return vs S&P 500



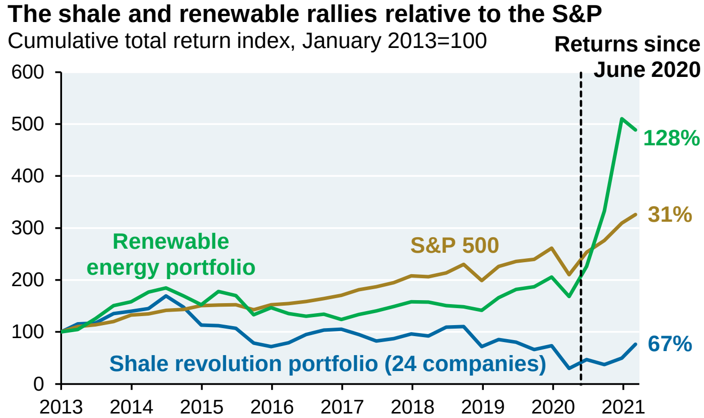
Source: Bloomberg. March 11, 2021.

Shale revolution: a revolution in supply, not profit
Select cash flow measures for 24 shale companies, US$ billions



Source: Bloomberg. 2020.

The shale and renewable rallies relative to the S&P
Cumulative total return index, January 2013=100



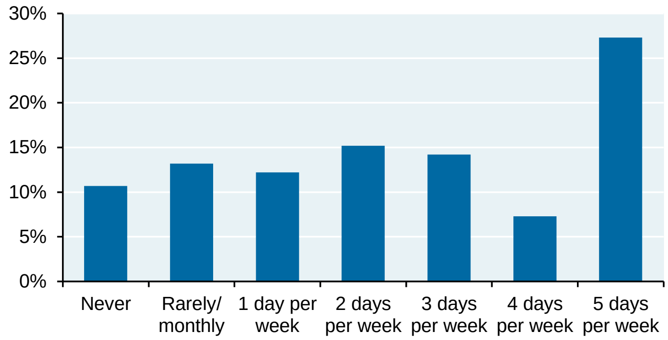
Source: Bloomberg. March 11, 2021.

[2] Topics: the slow-motion electric vehicle revolution; decarbonization of the industrial sector (limits and challenges); how NIMBY is killing transmission projects that are critical to deep decarbonization; the gargantuan mining and pipeline demands of carbon capture and storage, carbon mineralization and direct air capture; Biden's energy agenda and the future of US energy independence; China's rare earth metals diplomacy; distributed solar, green hydrogen and electrified shipping; and last words on the Texas power outage.

An early look at the "zoom shock" on US residential and commercial real estate

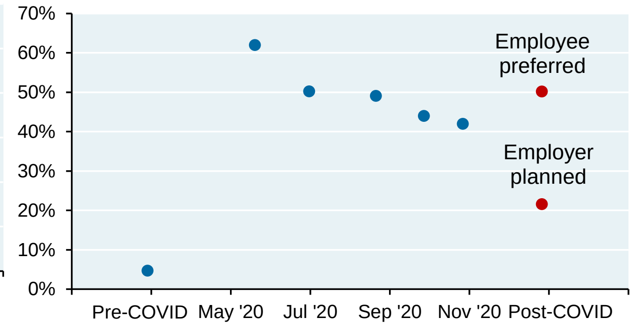
A year ago, I wrote that the US would be 70%-80% back to normal in a year. So far so good: energy consumption, capacity utilization, industrial production, consumer spending, housing starts and capital goods shipments have all recovered by at least that much. But there's something that may *not* normalize that quickly; **the number of people working from home (WFH) compared to pre-COVID levels**. University of Chicago researchers surveyed employee WFH preferences last December. Granted these surveys took place before vaccinations began, but I still think they're indicative of employee preferences. As shown in the first chart, employees prefer a substantial number of WFH days; the average works out to around 2.5 days per week in the office. As shown on the right, that's higher than the 1 day per week that employers would like to see.

Post-COVID employee preferred work from home days
% of workers who can work from home



Source: Barrero et al., University of Chicago Becker Friedman Institute. December 2020.

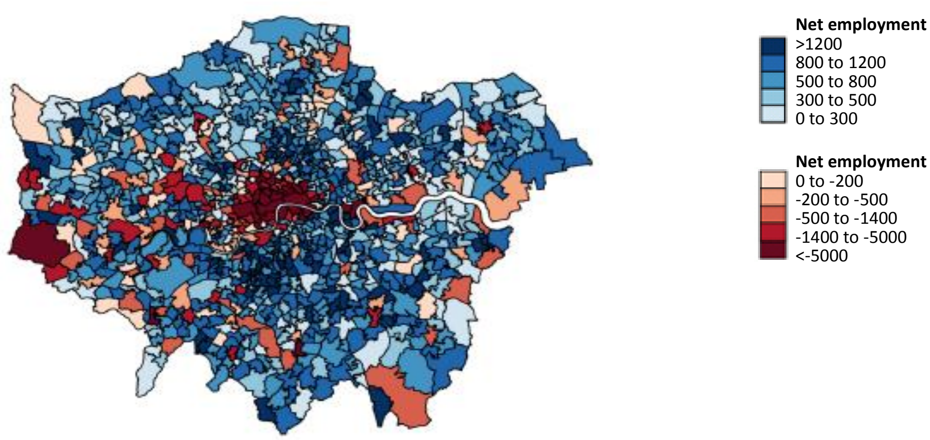
COVID impact on employer & employee work from home plans, % of paid days worked from home



Source: Barrero et al., University of Chicago Becker Friedman Institute, JPMAM. December 2020. Pre-COVID estimate from 2017-2018 survey.

If the WFH compromise ends up someplace in between, office owners may be in for a "zoom shock". This term, coined by the UK researchers cited below, refers to the employment flow impact of people shifting their work domicile to their place of residence. People aren't assumed to switch jobs; they still spend the same amount of money; almost everything about their lives stays the same, they just work from home instead. The map below shows greater London "MSOA" geographical areas. The intensity of the employment inflow or outflow is based on estimates of WFH potential by job developed by Jonathan Dingel in 2020[3].

Modeled net employment flows in Greater London according to WFH classifications

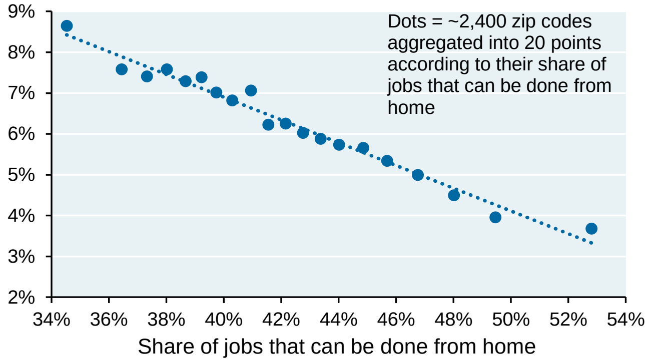


Source: "*Zoomshock: The geography and local labor market consequences of working from home*", De Fraja (University of Nottingham), Matheson (University of Sheffield) and Rocke (University of Birmingham), January 9, 2021. Figure B.1 in the paper is a great proof of concept: *actual* WFH activity in the UK corresponds closely to *ex-ante* WFH projections by job sector.

[3] "*How many jobs can be done at home?*", Dingel & Neiman (U Chicago), Journal of Public Economics, 2020

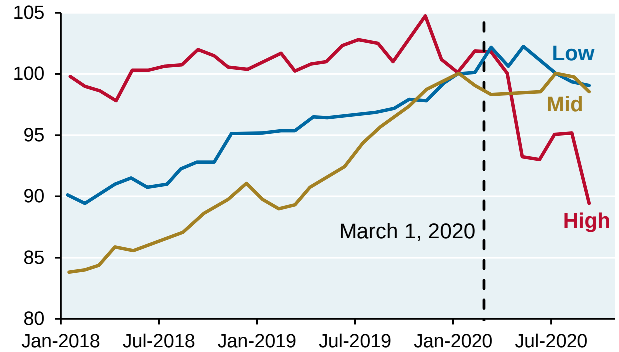
WFH has begun to impact residential and commercial property values. The first chart is from Nicholas Bloom at Stanford and shows the remarkably close correlation between how many jobs can be done from home by zip code vs residential property price changes from 2019 to 2020[4]. In other words, cities where a lot of jobs can be done from home saw the smallest gains since more WFH families opted to leave the city. Bloom also found that **price declines for commercial real estate were larger for denser cities (chart, right); and that denser cities have higher shares of WFH jobs, making them more vulnerable to zoom shocks[5].**

Share of jobs that can be done from home vs residential property prices, y/y % change in residential property value



Source: N. Bloom, Stanford University. January 2021.

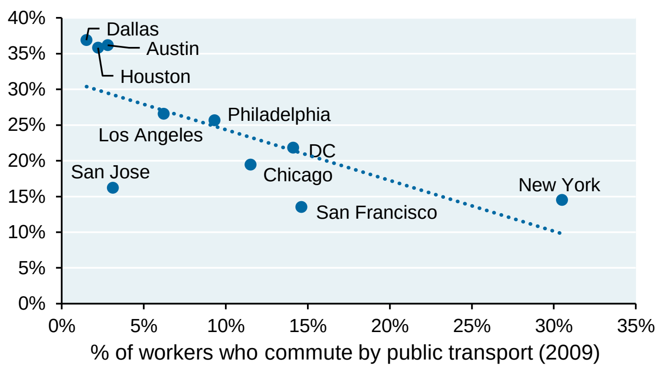
Commercial office prices by density for 12 largest metros
Monthly price index (Jan 2020 = 100)



Source: N. Bloom, Stanford University. January 2021.

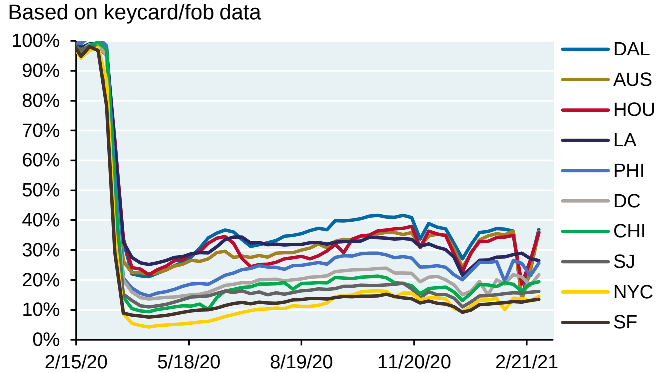
Cities with less public transit usage are important bellwethers for tracking WFH activity. In other words, when people can reduce COVID risks by commuting without public transport, how many are going back to work? The next chart below shows the answer: not that many, at least so far. Texas cities have the lowest public transit usage of cities we analyzed, and their office utilization rates are still just 35%-40%. We'll take another look in a few months, since lower COVID mortality and more vaccinations may change worker sentiment. **But as investors, we need to consider longer-term zoom shock impacts on residential property prices, office markets (rents, valuations, sublet volumes), public transit systems (ridership, solvency), municipalities (bond risks, tax base, tax rates[6]) and a range of businesses tied to urban office utilization.**

Mass transit use vs office utilization rate by metro area
Office utilization rate



Source: US Census Bureau, Kastle Systems. March 3, 2021.

Office utilization rates by metro area
Based on keycard/fob data



Source: Kastle. March 3, 2021.

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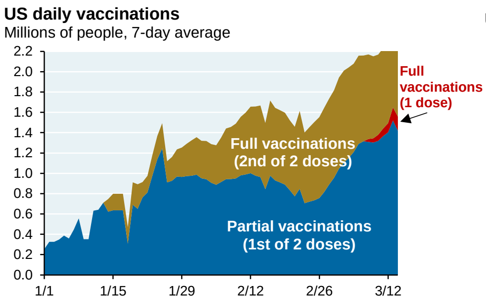
[4] "*The Donut Effect: how COVID-19 shapes real estate*", Nicholas Bloom (Stanford), January 2021

[5] Bloom's research draws on other work that illustrates the tight connection between population density and WFH jobs in cities. See Figure 1 in "*The City Paradox: Skilled Services and Remote Work*", Lukas Althoff (Princeton) et al, CESifo, December 2020 as one example. The Princeton authors believe that "**specialization makes these cities vulnerable to remote work shocks**" and that when high-skill workers work from home or leave the city altogether, they withdraw spending from local consumer service industries that rely heavily on their demand

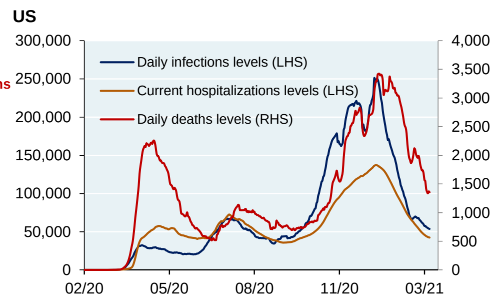
[6] In the courts: can jurisdictions like **New York City** tax remote work done by people who never set foot in the state just because their employer is incorporated there, and because they *would* have worked there pre-COVID?

COVID update: vaccinations vs variants and the race against time

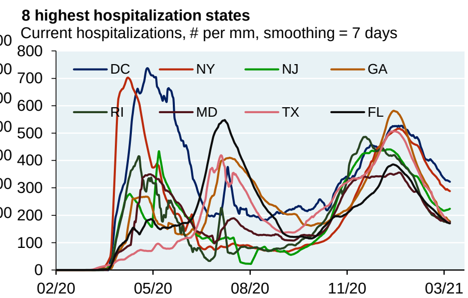
US COVID situation continues to improve. The pace of vaccination has picked up in the last 2 weeks, and you can see in the first chart that J&J vaccines show up as one-time completed doses. Based on this more rapid pace, the US could reach 50% vaccination plus 20% non-vaccinated survivors by mid-May. US mortality, infection and hospitalization are plummeting and it's possible that the US will win the race against time (rising vaccinations vs spread of more contagious and deadly variants). Recent genetic tracking shows that US exposure to the UK B117 variant is only 8.8%, and that exposure to South Africa and Brazil variants is only 0.1%.



Source: OWID, JPMAM. March 14, 2021.

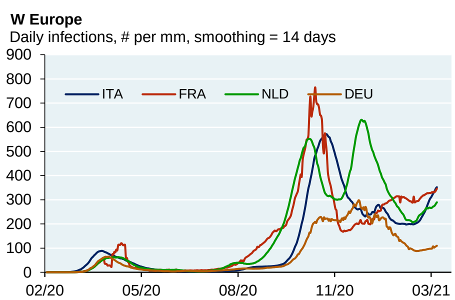


Source: JHU, IMF, HHS, JPMAM. Mar 14, 2021. 7 day smoothing.

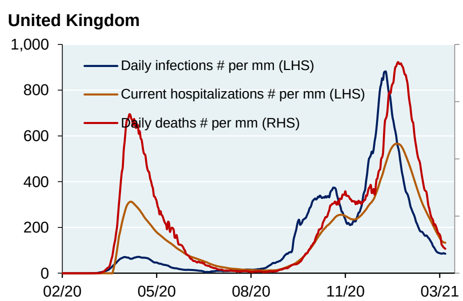


Source: HHS, IMF, JPMAM. Mar 14, 2021.

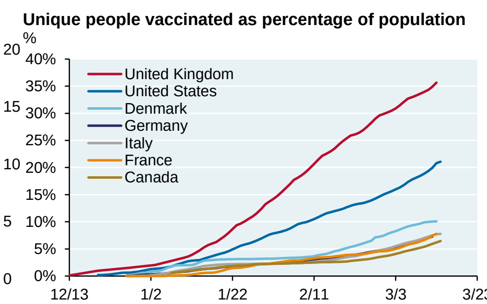
Continental Europe is paying a price for not having vaccinated more quickly. The UK variant is now spreading in France, Italy and the Netherlands (>50% of new infections), and vaccinations are still 5%-8%. Italy shut down again in preparation for Easter holidays. Note how UK COVID data continues to decline as vaccinations hit 35%. This morning, Germany temporarily suspended AstraZeneca vaccines due to perceived blood clot risks, following decisions late last week by France, Italy, Norway and other European countries.



Source: Johns Hopkins University, IMF, JPMAM. Mar 14, 2021.

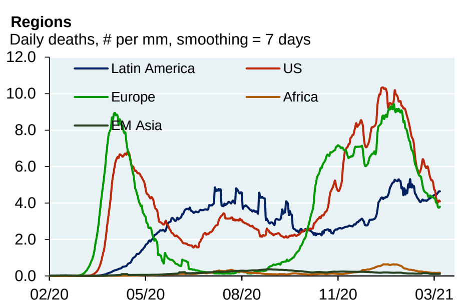


Source: JHU, IMF, OWID, JPMAM. Mar 14, 2021. 7 day smoothing.

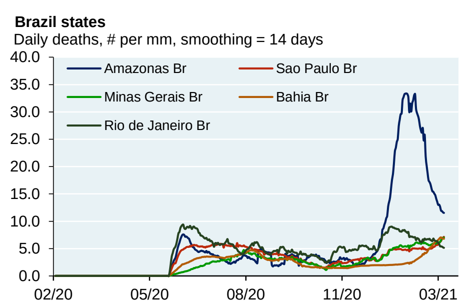


Source: OWID, JPMAM. March 14, 2021.

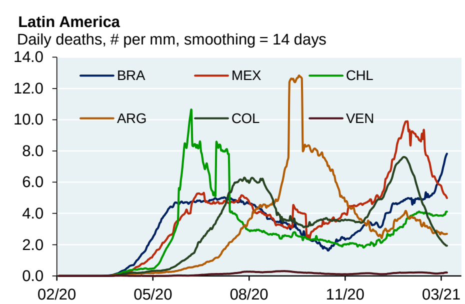
Brazil's COVID mortality situation is deteriorating and accounts for all the worsening in Latin America since most other countries in the region are improving. While the mortality spike in the Amazon is rolling over, deaths are rising in the larger states now. The 2021 mortality spike in the Amazon is a concern, since the region was believed to have achieved herd immunity in 2020. Brazil has only vaccinated 3.8% of its population, one of the lowest vaccination rates of highly infected countries in the world; only a couple of Eastern European countries are worse (Bulgaria and the Czech Republic, with similar vaccination rates and even higher mortality rates).



Source: Johns Hopkins University, IMF, JPMAM. Mar 14, 2021.



Source: Johns Hopkins University, IMF, JPMAM. Mar 14, 2021.



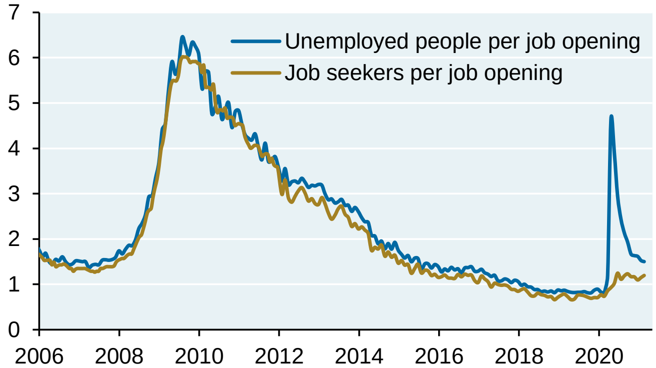
Source: Johns Hopkins University, IMF, JPMAM. Mar 14, 2021.

Appendix: employment, supply shortages and the Fed

The Fed believes that a surge in inflation resulting from reopening will be a transitory one. We'll see; it wouldn't take a large increase in wage or price inflation to make current Fed policy out of sync with the recovery.

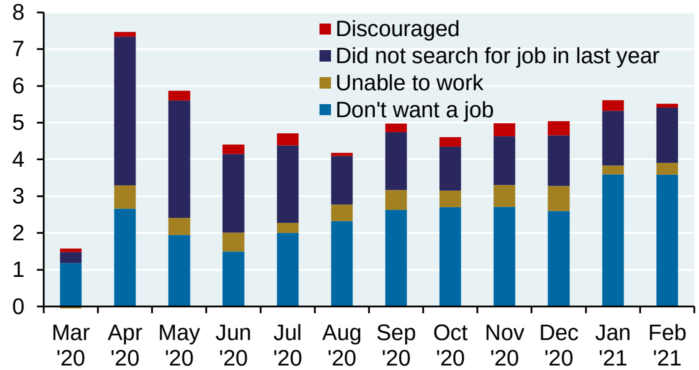
- The first chart shows how job seekers diverged sharply from unemployed people, since most unemployed people expected to get their jobs back…and most of them did
- When looking at people not in the labor force, a shrinking number are out of the labor force for economic reasons (red and purple segments) rather than personal reasons (gold and blue segments)
- Small business "hard to fill" job openings and the ISM Supplier Deliveries Index (a proxy for supply shortages) are both at their highest levels in decades

The key labor market difference, 2009 vs 2020
Ratio



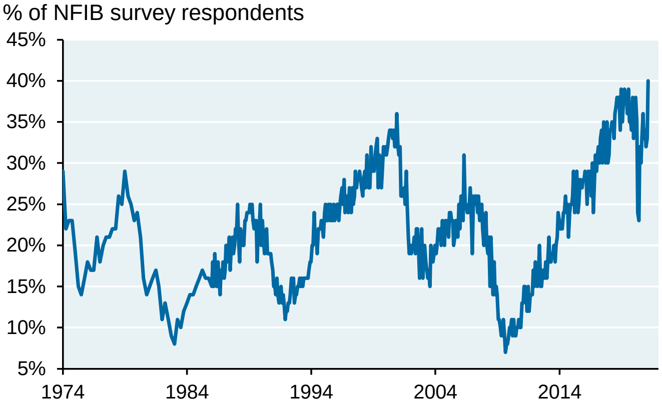
Source: BLS, GS. February 2021.

Breakdown of people not in labor force
y/y change, millions



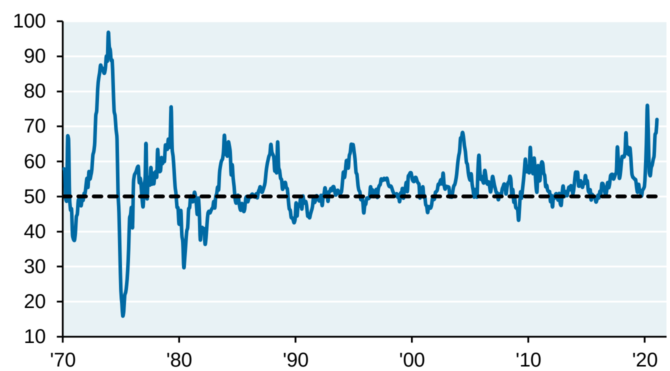
Source: BLS, JPMAM. February 2021.

Small businesses with "hard to fill" job openings
% of NFIB survey respondents



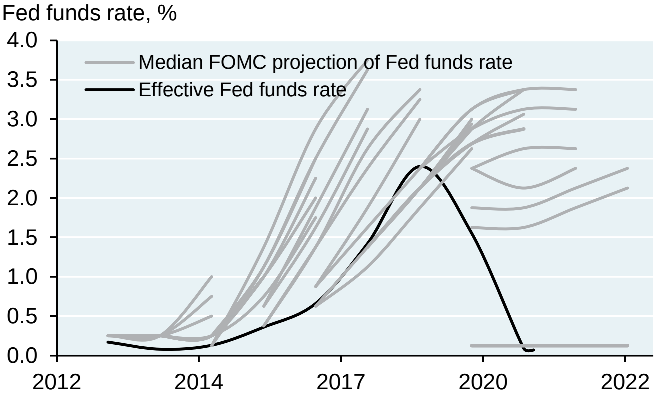
Source: Bloomberg. February 28, 2021.

ISM manufacturing supplier deliveries index
Index, 50+ = slower deliveries



Source: Bloomberg. February 28, 2021.

Fed projections vs actual Fed funds rate
Fed funds rate, %



Source: Federal Reserve, JPMAM. March 10, 2021.

The Fed's decade of bad inflation forecasts

The chart on the left shows the Fed's projections of future rates (grey lines) compared to what they actually ended up being. The Fed was basically wrong about growth and inflation for the better part of a decade, consistently overestimating the need for policy tightening.

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