EYE ON THE MARKET

SPECIAL EDITION

THE agony & THE ecstasy

The risks and rewards of a concentrated stock position

J.P.Morgan

The Agony & the Ecstasy 3.0: an update on our concentrated stock research for high net worth families

Introduction

We wrote our first concentrated stock research paper in 2004 and completed version 2.0 in 2014. My plan was to wait until 2024 for version 3.0, but a confluence of market and economic factors drove the team and I to update it now. In this piece, we start with a review of important findings from our analysis of 40 years of business survival risk in the US. We follow up with a discussion of market, macroeconomic and microeconomic factors affecting business survival risk in the years ahead. The third section conducts a review across sectors of business failures over the last decade. We conclude with a discussion of the strategies concentrated families can deploy to diversify their concentrated wealth. To be clear, many of the market and macroeconomic risks we discuss in this piece do not represent our base case expectations as we manage money for clients; even so, they must be part of the discussion with concentrated portfolio families, since the cost of us being wrong is much greater than for diversified portfolios.

Michael Cembalest
JP Morgan Asset Management

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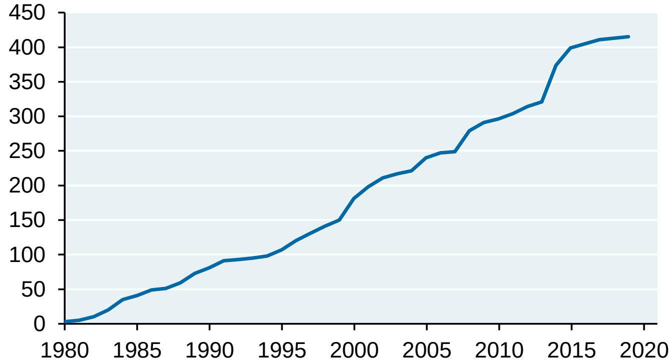
[1] Business failure risk, 1980-2020: measures and catalysts **Cembalest, Haldeman**

The world is awash in concentrated wealth. The global population of billionaires is on track to almost double from 2013 to 2023, and there are around 9,000 centimillionaires in the US alone. The US consistently ranks #1 on lists of the most entrepreneurial countries as high US scores on innovation and competitiveness offset its lower scores on labor skills and infrastructure.

Even so, part of the never-ending story of competitiveness is creative destruction: many new businesses end up displacing incumbents who were at one time leaders themselves. We monitor this creative destruction in a number of ways. As shown in the first chart below, there is a constant drumbeat of companies removed from the S&P 500 due to business distress. Furthermore, more than 40% of all companies that were ever in the Russell 3000 Index experienced a "catastrophic stock price loss", which we define as a 70% decline in price from peak levels which is not recovered.

Recap & update of Agony & Ecstasy findings

Cumulative number of companies removed from the S&P 500 due to distress, 1980-2019



Source: Bloomberg, Factset, J.P. Morgan Wealth Management. 2019.

Sector	Total % of companies experiencing "catastrophic loss" 1980-2020
All sectors	**44%**
Communication Services	49%
Consumer Discretionary	48%
Consumer Staples	32%
Energy	65%
Financials	29%
Health Care	48%
Industrials	39%
Information Technology	59%
Materials	38%
Utilities	14%

Source: Factset, Bloomberg, J.P. Morgan Wealth Management. September 2020.

Another way to think about concentration risk: **how often would a family have been better or worse off owning cash, or the Russell 3000 Index instead of the concentrated position?** As shown in the table, around 40% of the time a concentrated position in a single stock experienced negative *absolute* returns, in which case it would have underperformed a simple position in cash. And around 2/3 of the time, a concentrated position in a single stock would have underperformed a diversified position in the Russell 3000 Index. While the most successful companies generated massive wealth over the long run, only around 10% of all stocks since 1980 met the definition of "megawinners".

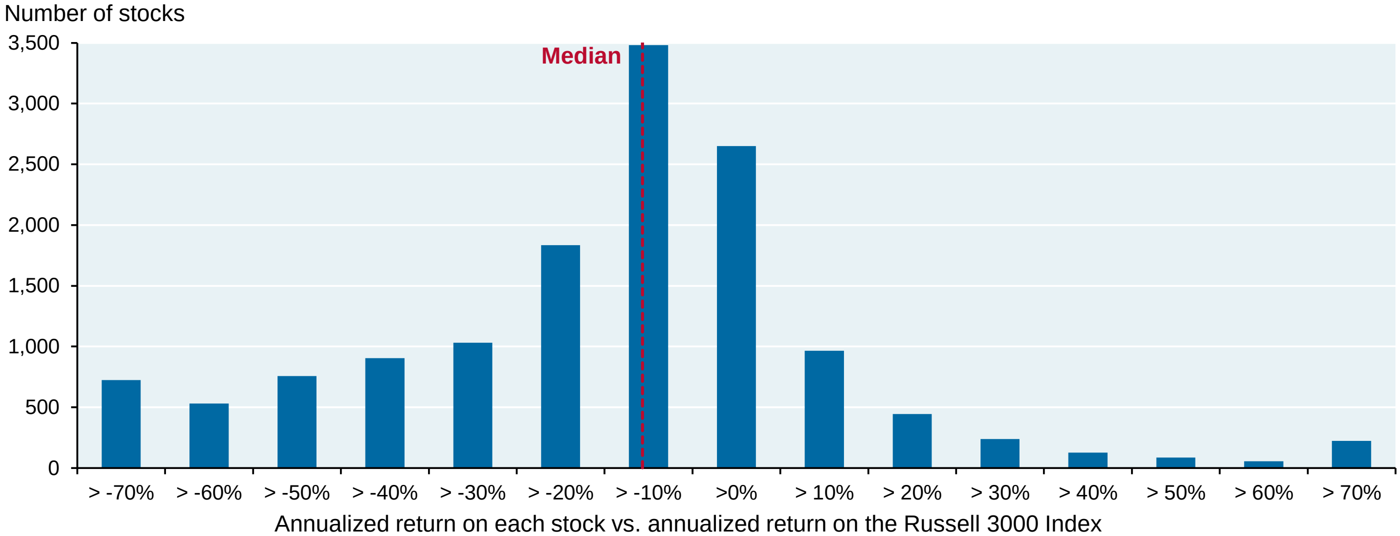
Sector	% of stocks experiencing negative absolute returns 1980-2020	% of stocks experiencing negative excess returns vs Russell 3000 1980-2020	% of stocks defined as "Megawinners" 1980-2020
All Sectors	**42%**	**66%**	**10%**
Communication Services	52%	70%	10%
Consumer Discretionary	47%	68%	11%
Consumer Staples	35%	61%	17%
Energy	63%	84%	5%
Financials	33%	63%	10%
Health Care	43%	62%	15%
Industrials	40%	68%	13%
Information Technology	54%	73%	10%
Materials	39%	69%	11%
Utilities	16%	85%	4%

Source: Factset, Bloomberg, J.P. Morgan Wealth Management. September 2020.

Megawinners defined as 500%+ cumulative price return vs Russell 3000 Index

Here's a visualization of winners and losers relative to the Russell 3000 Index. The winners generate enormous excess returns, but the median stock ends up underperforming the Russell 3000 Index.

Distribution of excess lifetime returns on individual stocks vs. Russell 3000, 1980-2020



Source: FactSet, Bloomberg, J.P. Morgan Asset Management. September 2020.

What are the primary reasons for business failure?

While some catastrophic losses may seem obvious or inevitable with the benefit of hindsight, in all likelihood the company's management, its board of directors, research analysts, credit rating agencies and its employees all firmly believed in its long-term success. In our prior two analyses of concentrated stock risks, **we found that most instances of business failures were largely outside management's control:**

- Commodity price risks that cannot be hedged away
- Government policy: changes in service reimbursement rates, a slowdown in FDA approval patterns, bandwidth and other public domain privatizations which increase the scope of competition, changing subsidies for renewable energy, changes in carbon tax regimes and fracking rules, government-sponsored enterprises with a lower cost of funds crowding out private sector activity, changes in the interpretation of anti-trust rules, shifts from capacity pricing to merchant pricing (natural gas), and price caps on Medicare Part B and D drug prices that align them more closely with international levels
- On government action, deregulation has proven to be just as disruptive as re-regulation, particularly as it relates to boom–bust cycles in telecommunications, utilities and broker-dealers
- Foreign competitors whose market share is magnified by government subsidies and FX manipulation. China's exchange rate management and subsidies to its auto, steel, solar, paper and glass companies are primary examples
- Intellectual property infringement by domestic or foreign firms
- The impact of patent trolls, estimated to cost US businesses upwards of $20 billion per year
- Changes in US or foreign government tariff or trade policy
- Fraud by non-executive employees, which according to SEC investigations account for ~30% of all instances; or fraud by employees or management in companies that you acquire, or which acquire you
- technological innovation that effectively provides consumers with enough information to bypass intermediaries and distributors
- a shift in buying power to the firms' customers resulting from consolidation
- unconstrained expansion by competitors, leading to a collapse in pricing power

[2] Market, macroeconomic and microeconomic risks facing concentrated stock families

Cembalest

Market risks

Relative to history, valuations are high irrespective of the means using to compute them. The only metric with below median valuations is based on an unsustainably low yield on the 10 year Treasury, which is below the rate of inflation.

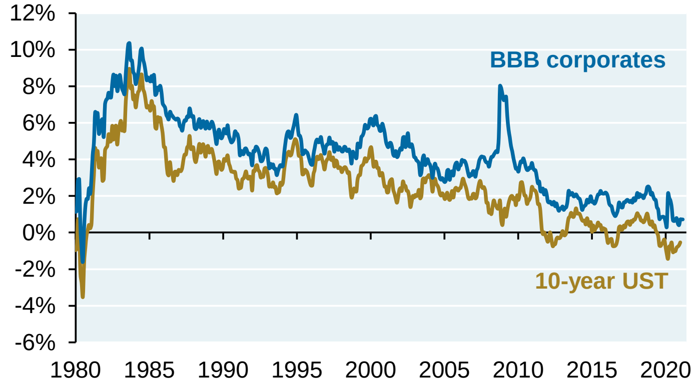
Equity valuation percentiles (100% = most expensive)

S&P 500 valuation metric	Dec 2019 percentile	Current percentile
US market cap / GDP	99%	100%
Enterprise value / Sales	99%	100%
Enterprise value / EBITDA	93%	100%
Forward P/E	88%	96%
Cash flow yield	85%	96%
Price / Book	90%	94%
Cyclically adjusted P/E	89%	94%
Free cash flow yield	53%	63%
S&P earnings yield - 10Y UST	28%	40%
Median metric	**89%**	**95%**

Source: Goldman Sachs Investment Research. EBITDA = earnings before interest, tax, depreciation, and amortization. February 9, 2021.

Real yields

%, yield less core inflation



Source: Bloomberg, BLS, JPMAM. January 2021.

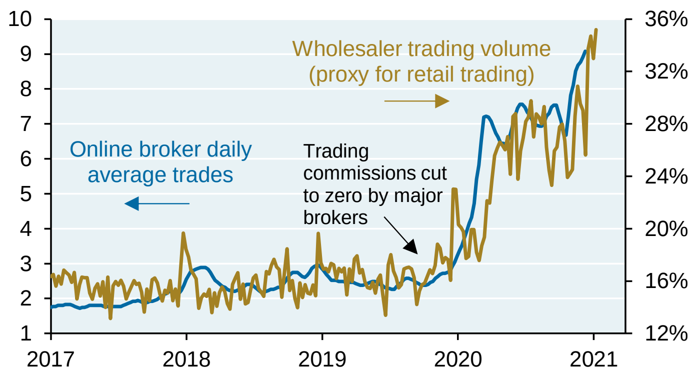
Other signs also point to a lot of optimism. Here are three measure of investor optimism, measured (100 = most optimistic, computed since 2016):

- American Association of Individual Investors, 98th percentile
- Investors Intelligence Advisory Sentiment, 95th percentile
- NAAIM Active Managers Sentiment, 99th percentile
- Cash holdings of the 20 largest US equity mutual funds, 100th percentile

On fast money flows, our prime brokerage team reported very high levels of exposure by the end of 2020 with most of the rise occurring after October. There are also signs that retail investors have been increasing exposure as well, such as the surge in the average size of online broker daily trades. At the same time, a measure of market depth has been falling. This latter measure suggests that prices could evaporate should selling pressure suddenly increase for a given stock or sector.

Online broker and retail trading volume

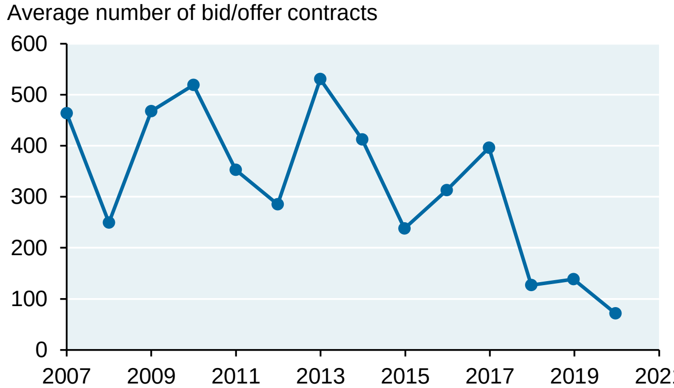
Number of trades, millions — % of total US trading volume



Source: Bridgewater, Credit Suisse, Bloomberg. January 17, 2021.

S&P 500 futures contracts volume

Average number of bid/offer contracts

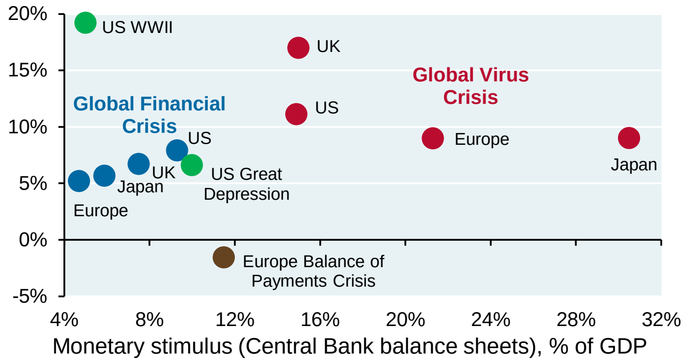


Source: J.P. Morgan Securities. 2020.

Macroeconomic risks

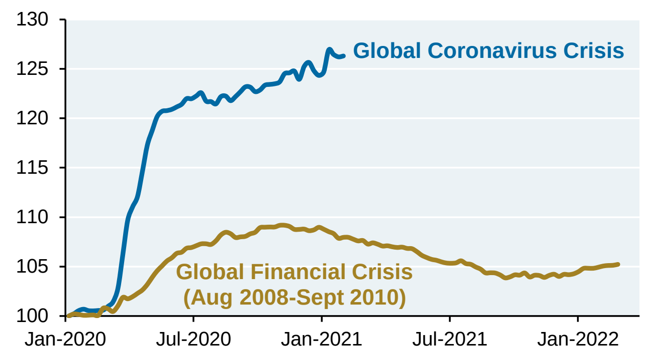
The single biggest risk facing all investors: the Fed has made a mistake but doesn't know it yet. We have shown the charts below before, but it's worth looking at them again. Post-COVID central bank stimulus is turning out to be the largest monetary policy experiment in the history of central banking, a concept first enshrined in Sweden in the year 1668. On fiscal stimulus, even before any additional stimulus bills, the US is already running a large fiscal deficit which could compound the eventual inflationary pulse from easy monetary policy. While interest to GDP has been low so far, this could change if rates rise and cause reverberations in equity markets.

Stimulus response to COVID sets a new bar
Fiscal stimulus, % of GDP



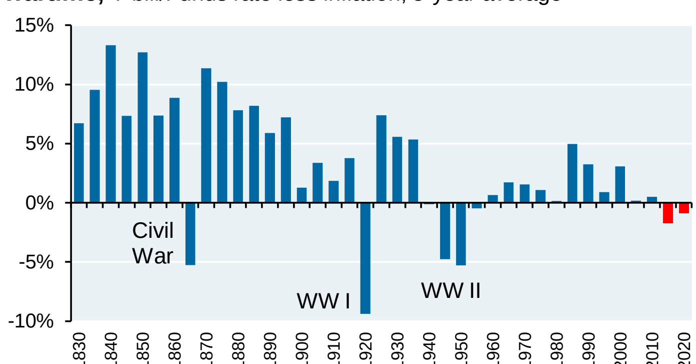
Source: Central bank sources, OMB, St Louis Fed, JPM Global Economic Research, JPMAM. December 2020.

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



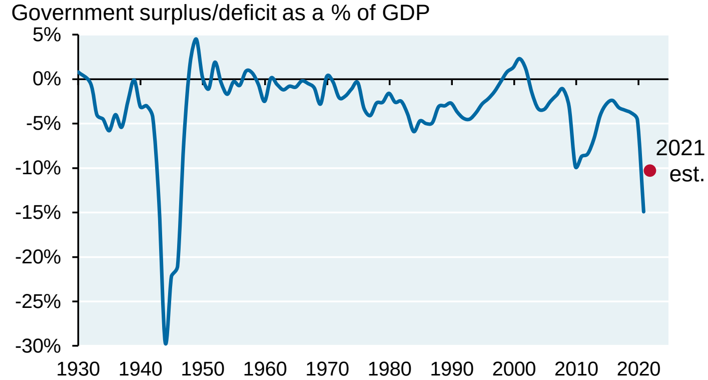
Source: St Louis Fed, J.P. Morgan Asset Management. February 1, 2021.

Lowest real yields on cash since 1830, other than during wartime, T-bill/Funds rate less inflation, 5-year average



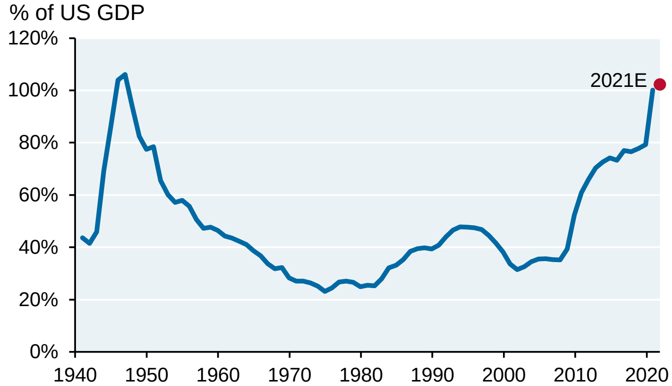
Source: FRB, Robert Shiller, GFD, BLS, JPMAM. December 2020.

US fiscal deficit
Government surplus/deficit as a % of GDP



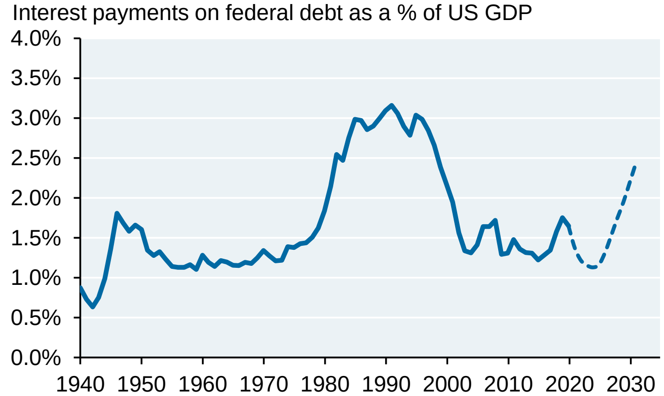
Source: OMB, CBO. February 2021. 2021 estimate excludes pending stimulus legislation.

Gross federal debt held by the public
% of US GDP



Source: CBO. February 2021.

Interest burden on federal debt
Interest payments on federal debt as a % of US GDP

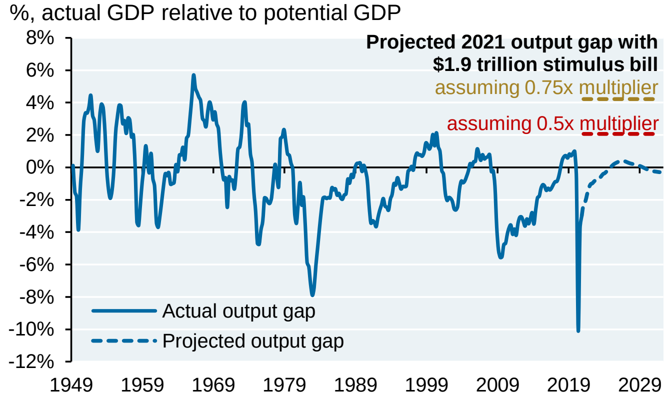


Source: OMB, CBO. February 2021.

How can we visualize the mistake the Fed might be making? If there's another $1.5-2.0 trillion in fiscal stimulus, that could contribute to an increase in price levels. The CBO estimates an "output gap", which is a proxy for the amount of spare capacity in the economy. Using a 0.5x multiplier on a new stimulus bill of this size could push the output gap into positive territory, which indicates no more spare capacity left. An even higher assumed multiplier would push this figure to levels last seen in the 1970's. To be clear, a lot has changed since the 1970's (decline in unionized labor and cost-push wage inflation, increase in globalization, rise of industrial robots, digital economy, etc). As such, we are not expecting anything like the inflationary dynamics that occurred back then. **However, the risk for concentrated stock families is NOT whether the Fed would raise rates to much higher levels; the risk might be whether the Fed would raise them *at all*.** A yield of 3.0%-3.5% on the 10 year Treasury, which would still be low relative to inflation, could create substantial equity market losses.

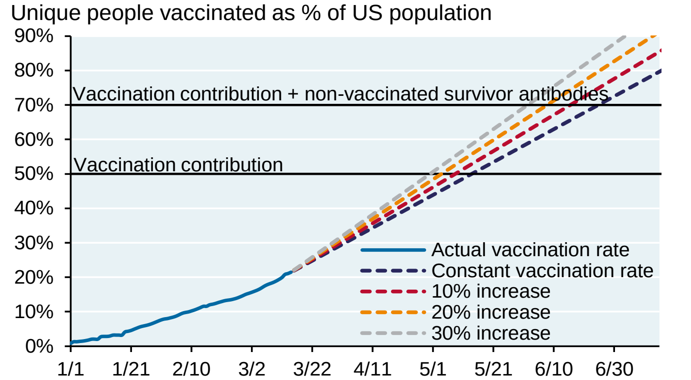
These dynamics will all unfold over the next 2-3 years. Fiscal stimulus in 2021 could coincide with a US economy that is expanding at a more rapid pace by mid-year as vaccination rates rise (second chart), unleashing pent-up spending (third chart). Fed chair Powell stated that he will have tolerance for a period of above-trend inflation, and that he will ignore what he considers transitory post-COVID increases in inflation. Even so, it is impossible to predict the multiplier effects that may lie ahead given the unprecedented nature of the monetary and fiscal experiments underway. Morgan Stanley, as one example, is already forecasting that post-COVID GDP will rise above pre-crisis levels, something that did not happen after the 2008/2009 financial crisis.

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



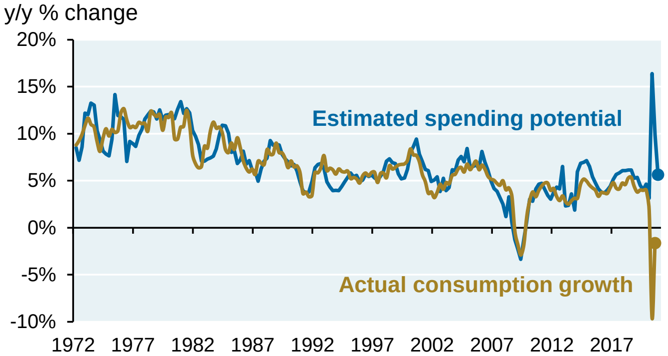
Source: CBO, JPMAM. Q4 2020.

US vaccinated individuals and survivors
Unique people vaccinated as % of US population



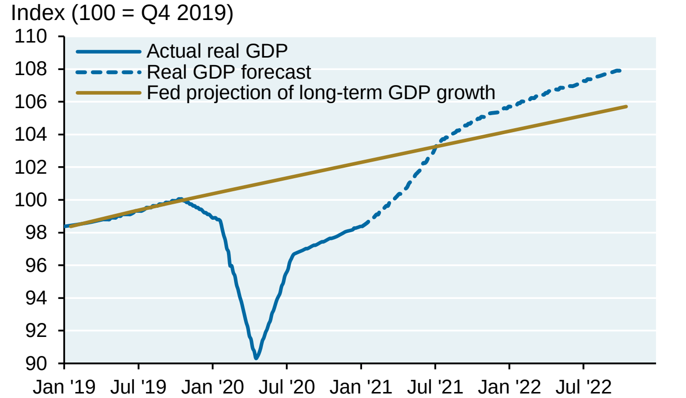
Source: OWID, JPMAM. March 15, 2021. Estimates of vaccination rates based on trailing 7-day average vaccination rate.

Pent-up spending will be unleashed sometime in 2021
y/y % change



Source: Federal Reserve, BEA, JPMAM. Q4 2020. Spending potential: 65% of taxable income, 100% of transfer payments, 10% of housing wealth and 1.5% of financial wealth.

US real GDP vs long-run growth expectations
Index (100 = Q4 2019)



Source: Morgan Stanley Global Macro Strategy. February 2021.

*Microeconomic risks: what if COVID **doesn't** go away?*

Our base case is that life gradually gets back to normal in 2021 given mass vaccination programs and improved treatments for hospitalized patients (less ventilation and increased use of steroids and anti-coagulants). **However, this outcome is not a foregone conclusion**. COVID variants in the UK and South Africa have reduced the efficacy of approved and pending vaccines. If COVID continues to evolve, new mutations could render the spike protein approach of existing vaccines less and less effective, at which point vaccine developers might have to start from scratch with revised approaches. Whether governments impose lockdowns or not, in this scenario, companies and businesses would likely make major changes in consumption, mobility, investment and domicile.

	Moderna	Pfizer	AstraZeneca	J&J	Novavax
Type	mRNA	mRNA	Vector	Vector	Recombinant
Status	Approved	Approved	Approved	Pending	Pending
Efficacy vs D614G (2020 prevailing variant)	94%; 100% vs severe infection, hosp. and deaths [T]	95% [T]	84% vs symptomatic 75% vs asymptomatic [T]	72%; 86% vs severe infection [T]	95.6% [T]
Efficacy vs B.1.1.7 (UK variant)	2x reduction in neutralization [V]	"modest decline in neutralization" [V]	75% vs symptomatic 27% vs asymptomatic [T]		85% [T], 2x reduction in neutralization [V]
Efficacy vs B.1351 (S Afr variant)	6x reduction in neutralization [V]	"2/3 decline in neutralization" [V]	"minimal protection" in preventing mild/moderate illness [T]	64%; 82% vs severe infection [T]	60% [T]
Efficacy vs B.1.427/9 (Calif variant)	Effectiveness cut in half	Effectiveness cut in half			
Efficacy vs B.1.526 (NY variant)					
Storage	Normal refrigerated conditions	Ultra-cold storage (-94˚F)	Normal refrigerated conditions	Normal refrigerated conditions	Normal refrigerated conditions
Additional trial data		No COVID-related deaths in trials (across U.S., Ger., Turkey, S Afr, Brazil and Arg.)	Prevented 100% of severe infection, hosp. and deaths in UK, Brazil and S Afr trials [T]	Prevented 85% of severe infection and 100% of deaths in US, LatAm and S Afr trials [T]	No hospitalizations or deaths reported in trial participants receiving vaccine
Roll-out observations	**Pfizer**: In Israel, 60+ infections fell by 2/3 after first shot; after 2nd dose, only 0.1% infection rate. UK study: 75% reduction in hospital admission & death after single shot; 70% infection decline after first dose, 85% after second dose (57% and 88% for people over 80). Germany study: no neutralizing antibodies in 31% of people over 80 compared to 2% in people under 60 **AstraZeneca**: In Scotland, reduced risk of hospital admission by 94%				

Notes: efficacy refers to the decline in infection probability relative to a placebo or control group.

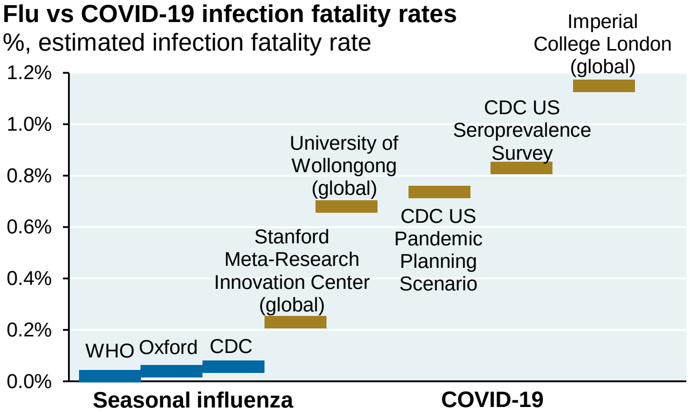
Declines in neutralization do not map directly into efficacy declines. For example, for the flu vaccine, a 4x reduction in neutralization is generally seen as the level at which reformulation of a new vaccine is required

T= clinical trial (researchers observe treatment efficacy in human subjects); V = in vitro study (researchers isolate cells outside of human subjects)

Sources: Company press releases, Duke University, University of Cambridge, University of Oxford, University of the Witwatersrand (Johannesburg), New England Journal of Medicine, Public Health/England. 2021.

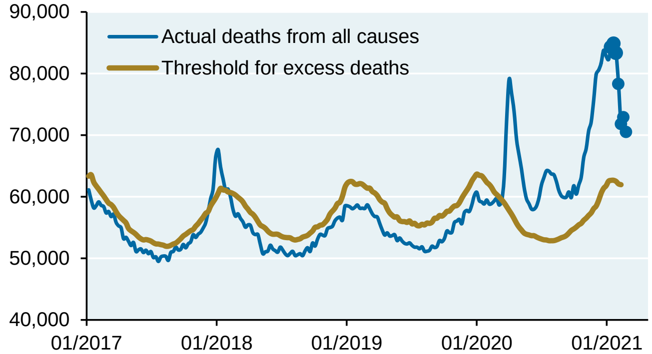
A longer-lasting pandemic is a substantial public health and economic challenge. As shown below, COVID has a much higher lethality rate than the flu and has resulted in a sharp rise in excess deaths. Furthermore, the flu is not associated with the lingering aftershocks reported in some COVID survivors after the fact (some of which are described in the table).

Flu vs COVID-19 infection fatality rates
%, estimated infection fatality rate



Source: CDC, WHO, Stanford, Oxford, Imperial College London, University of Wollongong. 2020.

Tracking excess deaths from COVID
Total deaths per week



Source: CDC, JHU, JPMAM. March 6, 2021. Dots are estimated using most recent JHU data.

Long term COVID survivor effects

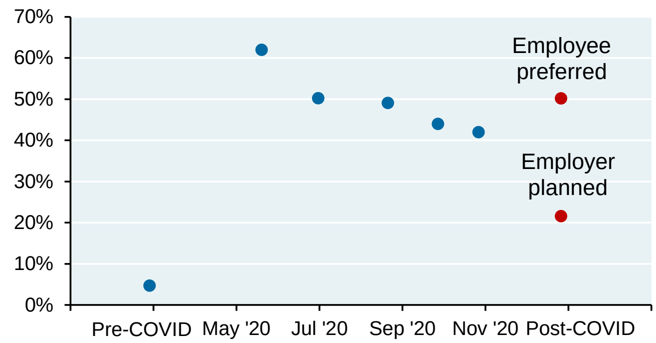
A University College London study surveyed 3,700 people with suspected or confirmed COVID symptoms lasting more than 28 days. A few key findings:

- 96% of respondents reported symptoms beyond 90 days, and 65% reported symptoms beyond 180 days
- Most common reported symptoms after 6 months were fatigue, cognitive dysfunction and post-exertional malaise (relapse of symptoms triggered by physical or mental activity)
- 45% required reduced work schedules

These findings are similar to study of 1,700 previously hospitalized COVID patients in Wuhan, 76% of whom reported symptoms six months after initial illness. The most common symptoms in this study were fatigue, muscle weakness and sleep difficulties

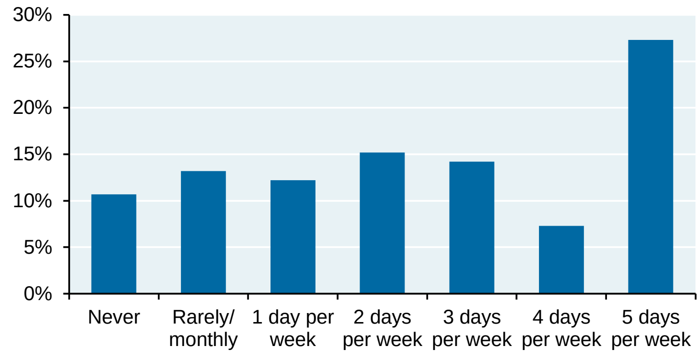
Consequences of a world where COVID never goes away: work from home becomes more permanent. The desire to work from home by employees sharply exceeds employer expectations for a post-COVID world[1]. How this gap gets closed will have major impacts on the way the US economy operates with disparate impacts on different sectors.

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



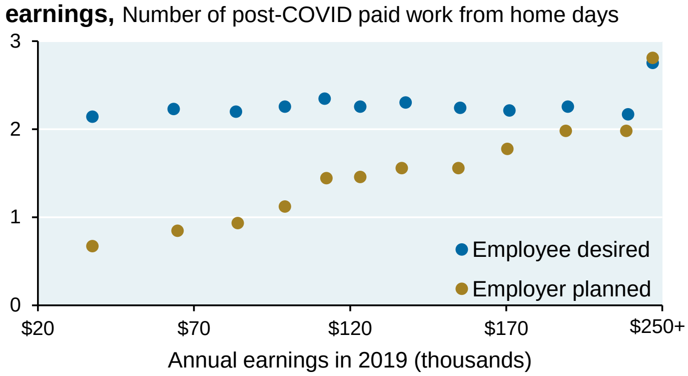
Source: Barrero et al., University of Chicago Becker Friedman Institute, JPMAM. December 2020. Pre-COVID estimate from 2017-2018 survey.

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.

Employee and employer work from home plans vs annual earnings, Number of post-COVID paid work from home days



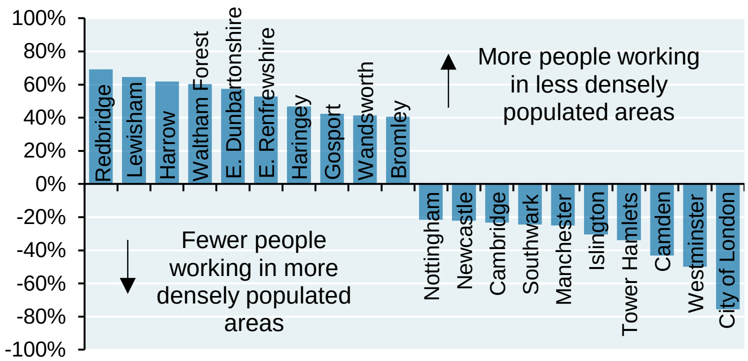
Source: Barrero et al., University of Chicago Becker Friedman Institute. December 2020.

[1] "*Why Working From Home Will Stick*", Jose Maria Barrero, Nicholas Bloom, and Steven J. Davis, Becker Friedman Institute at the University of Chicago. December 2020

The "Zoomshock"

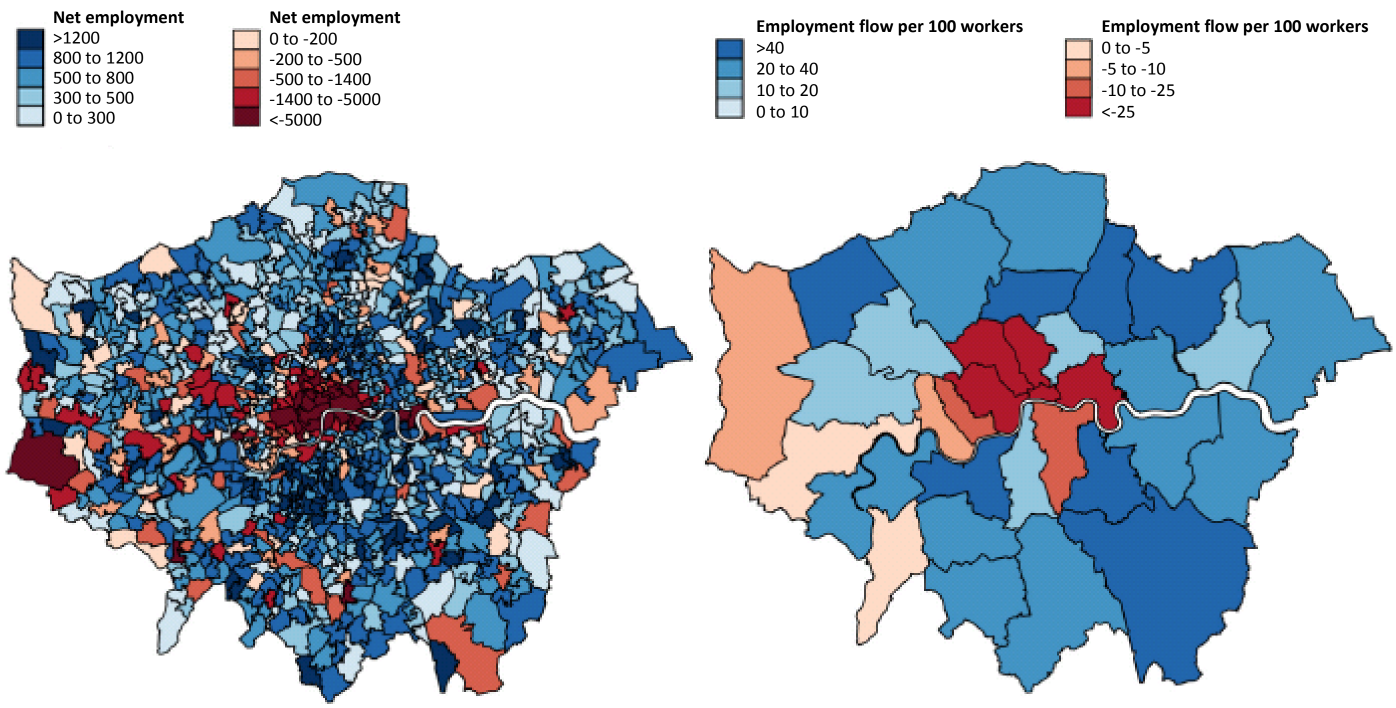
One way to visualize the shock associated with a long-lasting pandemic: the shift to more permanent work-from-home policies that substantially change the way economies are structured. Researchers in the UK call this the Zoomshock and use novel ways of estimating it[2]. Using work-from-home classifications for different jobs developed by the University of Chicago[3], the UK team computed the change in the number of workers for each London district. In other words, what is the change in hours physically worked in each district if workers telecommuted at the frequency assumed in the University of Chicago estimates? To be clear, employment *levels* are not assumed to change; a person's *employer* is not assumed to change; all that happens is a change in the assumption of *where* work happens.

Estimated change in work activity based on ability to work from home in the UK, % change in number of workers



Fraja et al., Nottingham School of Economics. January 2021.

Here's a more detailed look at changes in employment flow in the greater London area.



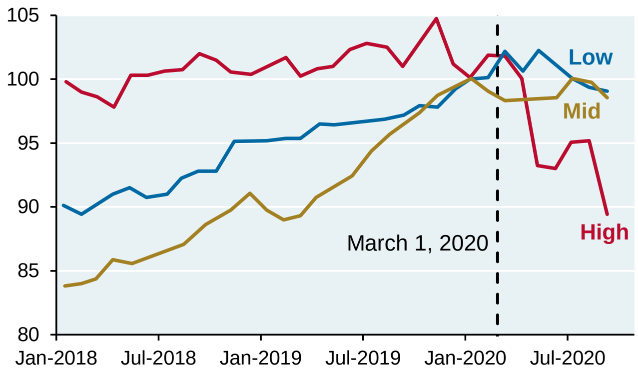
[2] *"Zoomshock: The geography and local labour market consequences of working from home"*, De Fraja, Matheson and Rockey, January 9, 2021

[3] "*How many jobs can be done at home?*", Dingel and Neiman, Journal of Public Economics, 2020

While this might just seem to be an issue for restaurants, bars, clothing shops and other businesses in urban centers that cater to commuting workers, the consequences and implications are much broader than that. Hundreds of billions of dollars have been invested in urban commercial real estate, transportation infrastructure and the thousands of businesses created to support them. I do not think the full range of "Zoomshock" consequences are known yet; they could create substantial challenges for certain sectors and industries over the long run.

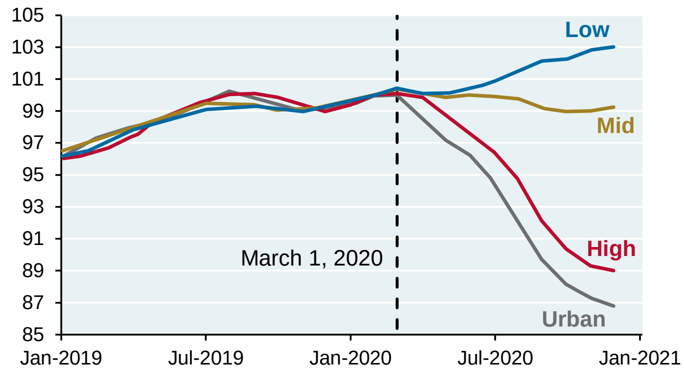
Here's what we do know so far: office property prices and residential (apartment) rents are falling more rapidly in high density locations with more work from home jobs, and the more a city relies on jobs that can be done from home, the bigger the drag on its residential property price appreciation at a time of very low interest rates[4]. There's also a trend that cities whose workers rely more on mass transit have lower office occupancy rates. But even in Texas cities with little mass transit usage, occupancy levels are still just 35%-40%.

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



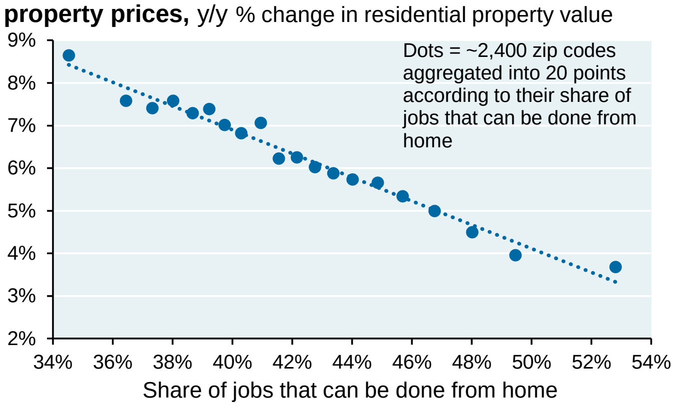
Source: N. Bloom, Stanford University. January 2021.

Residential rental prices by density for 12 largest metros
Normalized observed rental index (Feb 1, 2020 = 100)



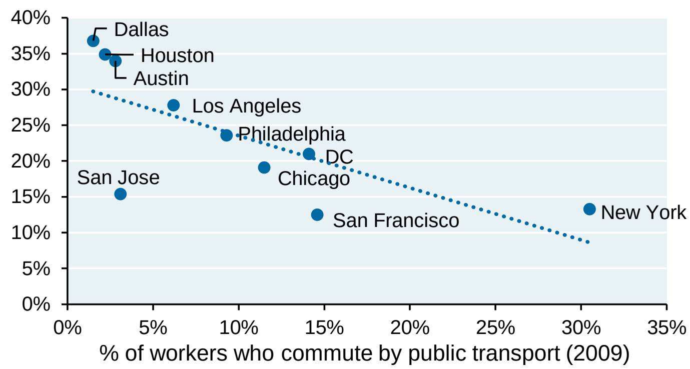
Source: N. Bloom, Stanford University. January 2021.

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.

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



Source: US Census Bureau, Kastle Systems. February 2021.

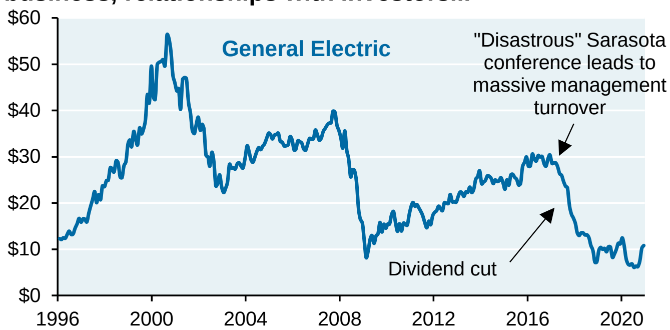
[4] "*The doughnut effect of COVID-19 on cities*", Nicholas Bloom (Stanford), January 2021

[3] Business failure review: 2017-2020 **Baggini, Manoukian**

This section contains a brief review of some notable business failures over the last four years through December 2020. For a broader set of company and sector business distress that occurred during the 1990's and 2000's, see our Agony & the Ecstasy 2.0 version **here**.

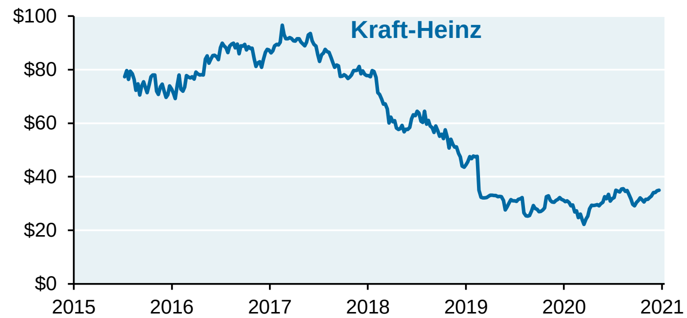
The Blue Chips. Even the bluest of blue chips can suffer from lack of innovation, indecision, failed merger and acquisition strategies, shaky accounting, and debt. At its peak in 2000, GE was the most valuable company in the United States. In 2018, over 40% of its shares were owned directly by individuals, making its downfall all the more painful. Kraft and Heinz are ubiquitous with American food culture: Oscar Meyer, Cool Whip, Crystal Light, not to mention ketchup. The late 2010s were not kind to either company.

What is rotten in Denmark? The power unit, the Alstom deal, succession plans, the strategic direction of the business, relationships with investors...



Source: Bloomberg, Factset, WSJ. December 2020.

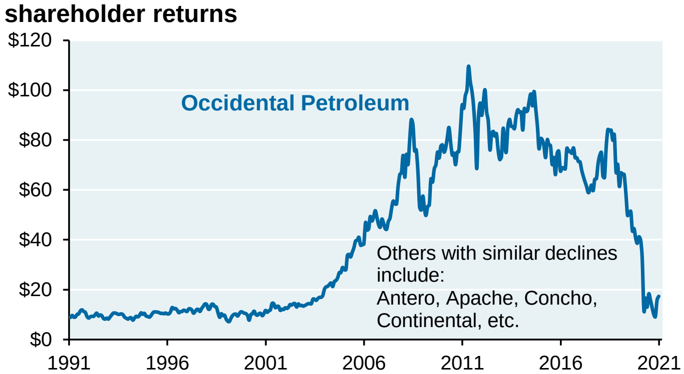
No amount of A1 can make this steak taste good. Merger was doomed from high debt, cost cutting at the expense of innovation, and competition from "fresher, healthier" options



Source: Bloomberg, Factset, WSJ. December 2020.

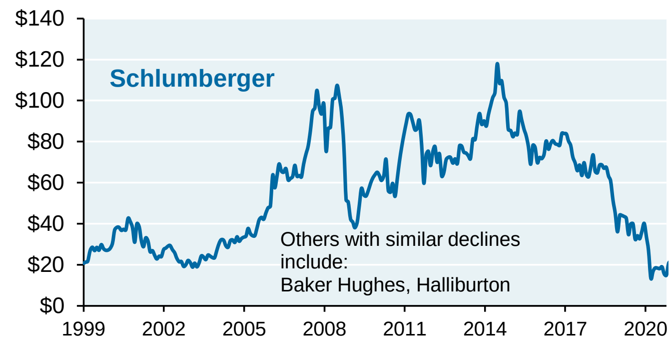
The US shale bust. US shale producers revolutionized oil and gas production, but their "drill at all costs" mentality resulted in too much oil and not enough shareholder returns. Even before the COVID-19 crisis sent oil prices plummeting and halted travel around the world, exploration and production (E&Ps) companies underperformed in six of the seven years ending in 2019. To illustrate just how much value has been destroyed, US E&Ps are up 90% collectively since the US elections and Pfizer's vaccine announcement in November 2020, but are still down over 75% since 2014.

Just like the dwarves of Moria, the shale producers drilled too much and woke up the Balrog of oversupply and poor shareholder returns



Source: Bloomberg, Factset. December 2020.

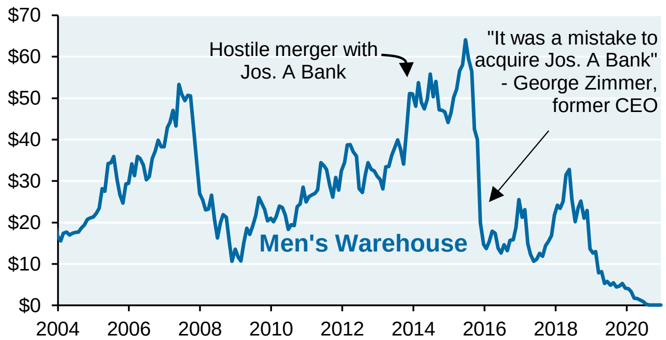
Active rig counts in the US have been cut in half since the 2014 peak, oil service companies have fallen right down with them



Source: Bloomberg, Factset. December 2020.

The Mall Rats. Like shale producers, brick and mortar retail has been in a prolonged decline since the mid-2010s. While some of the apocalyptic narrative is overdone (online sales have doubled as a share of total retail sales, but they still only made up ~12% of the total before the pandemic) the weakest links in the brick and mortar space have still suffered. This weakness has spread to the broader ecosystem like real estate and private label credit cards

It's Men's Warehouse, not Men's Warehome. Work from home was the final blow after an ill-concieved merger and relaxed office dress codes

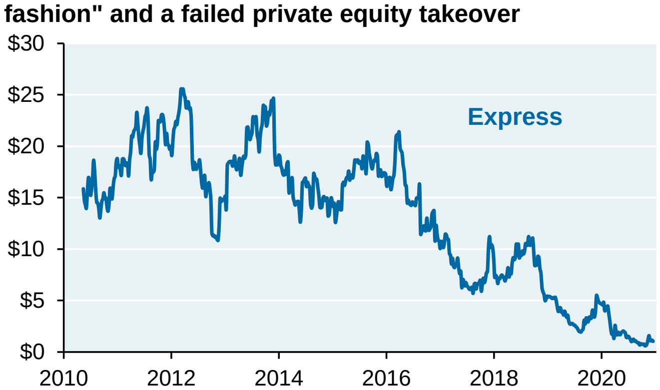


Source: Bloomberg, Factset. December 2020.

Diamonds are your best friend, but declining mall traffic and digital competitors that make prices more transparent are not

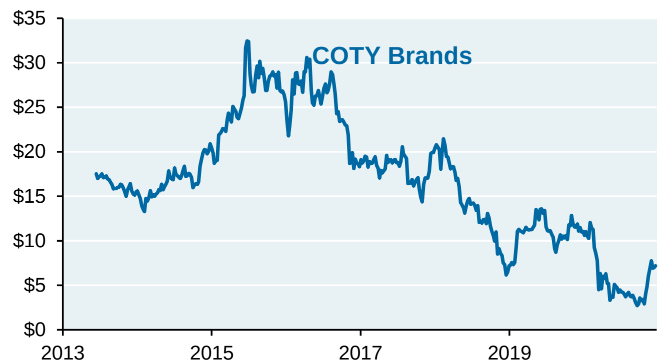
Source: Bloomberg, Factset. December 2020.

Inventory mismanagement, consumer shift towards "fast fashion" and a failed private equity takeover



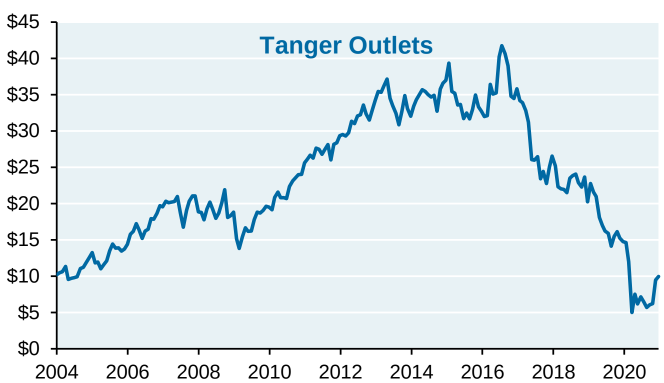
Source: Bloomberg, Factset. December 2020.

Overreliance on M&A to drive growth, too much debt, and too many CEOs



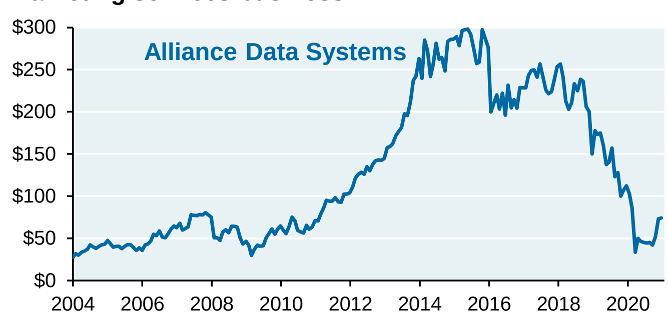
Source: Bloomberg, Factset, Barrons. December 2020.

No Mom, I don't need any new khakis. The freeway exit outlet mall landlord couldn't overcome secular decline.



Source: Bloomberg, Factset. December 2020.

Challenges pivoting away from card partnerships with secularly challenged retailers (like J. Crew, Pier 1, and Pottery Barn). Plus, they botched the forced sale of their marketing services business.



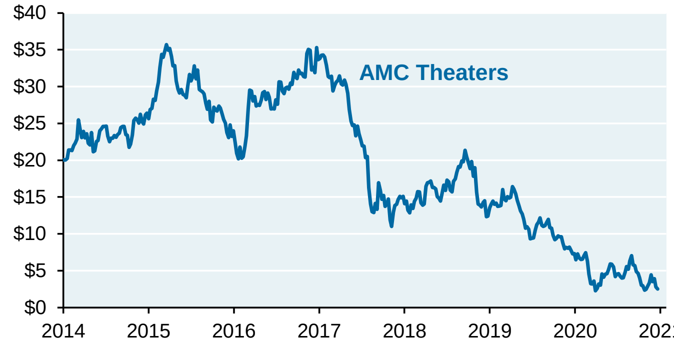
Source: Bloomberg, Factset. December 2020.

The Reddit #stonks. Before they went mainstream during the bizarre and unprecedented "reddit short squeeze" of late January 2021, these stocks were popular hedge fund shorts for a reason. They were disrupted by digital games, by the "amazon effect," and, in the case of AMC Theaters, the COVID-19 pandemic. Only time will tell if the reddit crowd or the hedge fund shorts are right, but at the end of 2020 the verdict was clear. These stocks were catastrophic losers.

Admit it. Before this year, you hadn't thought about GameStop since you took your kid (or your parents took you) to buy Call of Duty in eighth grade.

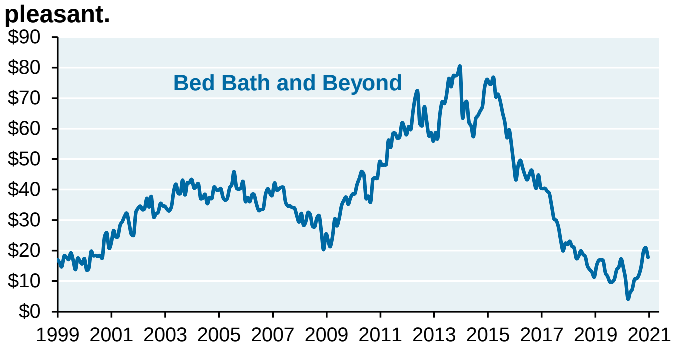
Source: Bloomberg, Factset. December 2020.

The company was on the brink of bankruptcy until they raised capital during the reddit short squeeze. Only time will tell if they can recover.



Source: Bloomberg, Factset. December 2020.

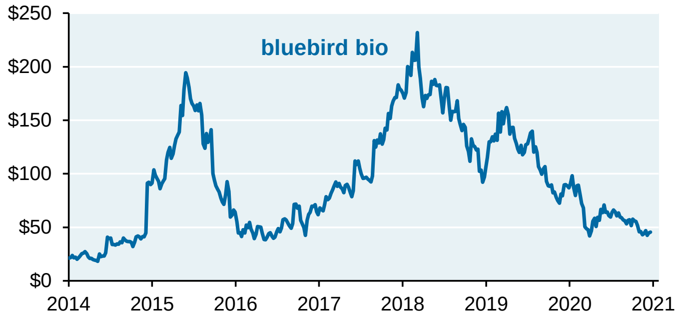
Beyond the Amazon effect, the retailer of home goods treated shareholders poorly and failed to redesign their stores. Seriously, have you been inside a Bed Bath? Not pleasant.



Source: Bloomberg, Factset. December 2020.

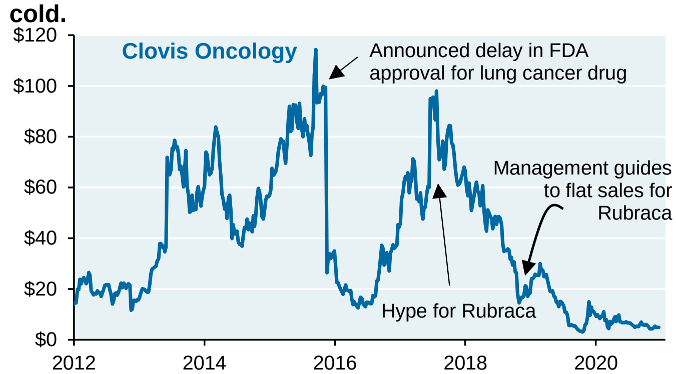
Healthcare disappointments. We believe that investing behind healthcare innovation will generate attractive returns for the long term. However, there are many examples of failures in the space as well. Some pitfalls include lack of innovation, a poorly executed M&A strategy, and running afoul of regulators and politicians. Indeed, 90% of drugs that enter human clinical trials never make it to market.[5]

Multiple hype cycles driven by 23 analysts covering the stock in 2018 (vs 17 for Merck) and nothing to show for it. Bluebird suspended trials for its gene therapy treatment for Sickle Cell in Feb 2021.



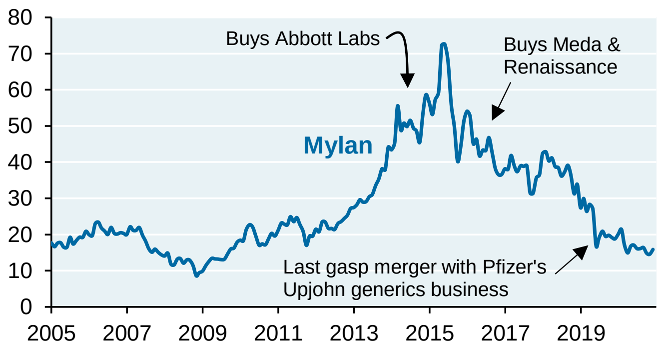
Source: Bloomberg, Factset. December 2020.

Failure to develop a differentiated "star drug" (Rubraca for ovarian cancer) and a lack of catalysts leave investors cold.



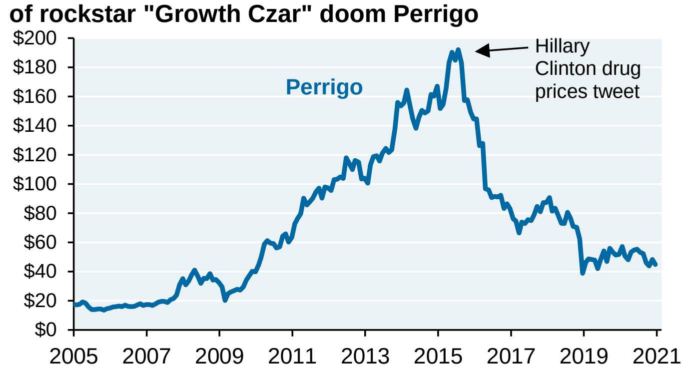
Source: Bloomberg, Factset. December 2020.

$15 billion in M&A spending over 4-5 years to merely keep cash flow flat is not a winning strategy, especially given competition from biosimilar drugs.



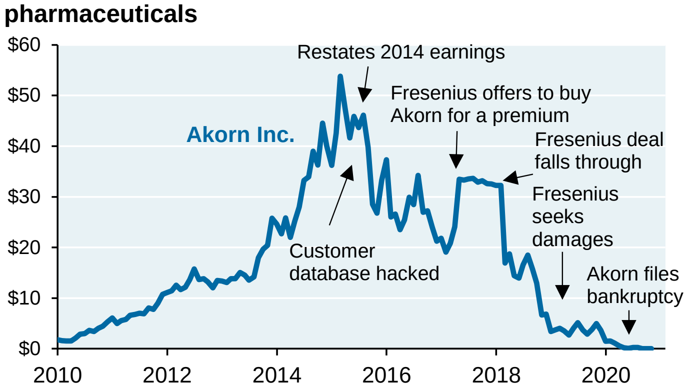
Source: Bloomberg, Factset. December 2020.

It started out with a tweet how did it end up like this? Headwinds to the generic drug industry and the departure of rockstar "Growth Czar" doom Perrigo



Source: Bloomberg, Factset. December 2020.

A chaotic stretch for the manufacturer opthalmic pharmaceuticals

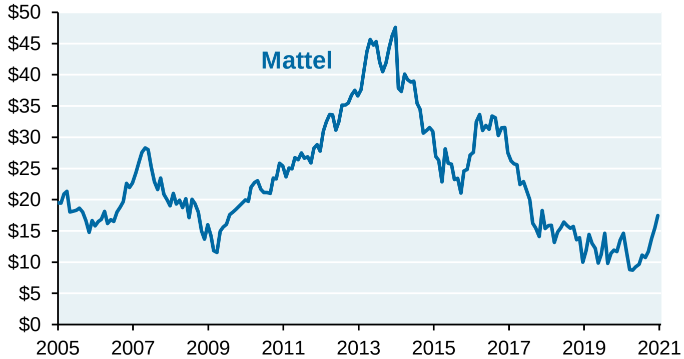


Source: Bloomberg, Factset. December 2020.

[5] *Clinical Development Success Rates 2006-2015,* Biotechnology Innovation Org., Biomedtracker, Amplion. 2016.

The Island of Misfit Toys. The rise of digital entertainment, running afoul of regulators, reliance on the latest fad in financial markets, and fierce competition can all lead to value destruction for shareholders.

Life in plastic hasn't been so fantastic since kids have shunned toys for video games.

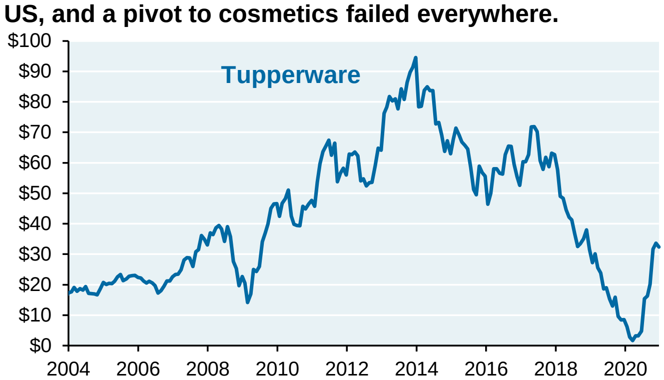


Source: Bloomberg, Factset. December 2020.

Multi-level marketing scheme, meet Chinese regulators

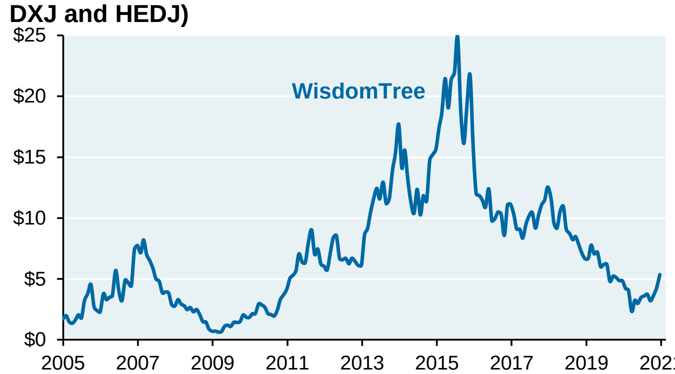
Source: Bloomberg, Factset, WSJ. December 2020.

Nothing fresh about inability to generate free cash flow and increasing leverage. Sales model failed outside of the US, and a pivot to cosmetics failed everywhere.



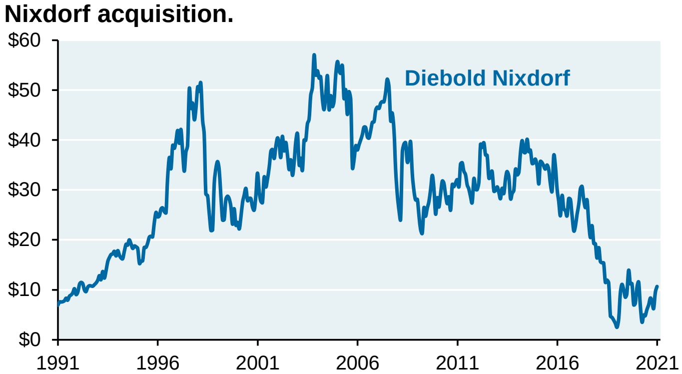
Source: Bloomberg, Factset. December 2020.

WisdomTree suffered from over-concentration in hedged equity ETFs after the dollar surge in 2015 (60% of AUM in DXJ and HEDJ)



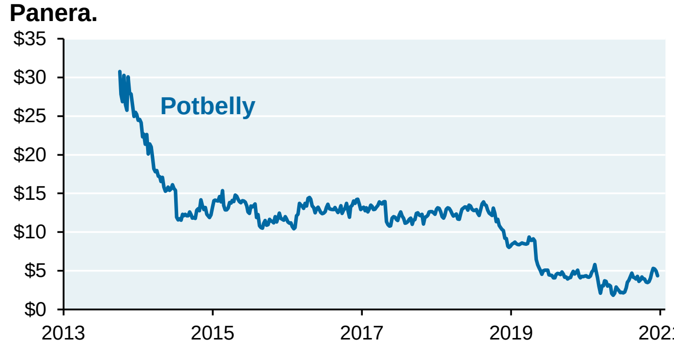
Source: Bloomberg, Factset. December 2020.

Death of cash means the death of ATMs, but Diebold also failed to properly integrate their debt-financed Wincor Nixdorf acquisition.



Source: Bloomberg, Factset. December 2020.

Can't blame COVID for poor marketing, poor sales, and poor relationships with lenders and landlords and competition from better options like Jimmy John's or Panera.



Source: Bloomberg, Factset. December 2020.

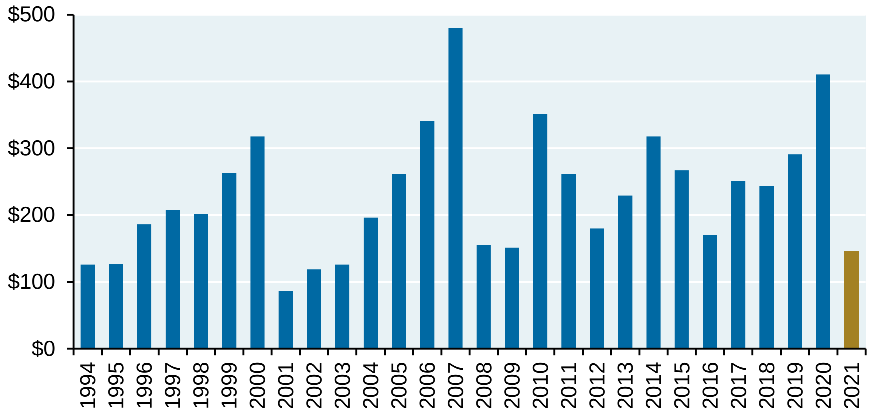
[4] Concentrated portfolio diversification and hedging strategies **Haldeman**

All of a sudden everything was different and always would be. COVID-19 and the lockdowns that it forced are a recent reminder that without warning, forces beyond our control can paralyze even the most resilient businesses and financial plans.

Many of us spent the year with our eyes closed, waiting for normal. "Eyes closed" might have been a pretty good investment strategy. Twelve months later, uncertainty lingers but financial markets have thrived. The peak to trough selloff lasted a month and markets fully recovered five months later – one of the fastest market drawdowns and recoveries in stock market history. Markets are now back to making all-time highs.

In fact, the pandemic coincided with a renaissance for equity issuance. 2020 was the best year for Initial Public Offerings since 2007, and 2021 is off to a strong start. Right now there are over five hundred Unicorns (private companies with values greater than $1bn). The formation and success of emerging companies is creating a new generation of wealth. This wealth creation is also leading to extreme levels of portfolio concentration.

2020 saw most global IPO value since 2007, 2021 off to strong start
IPO value by announced date, US$ billions



Source: Bloomberg. 2021. 2021 data is through March 3.

Victims of success. The formation of a concentrated position is often the result of the sale of a business, stock or option compensation from an employer or a successful long-term investment. Regardless of how the position is acquired it results in outsized, idiosyncratic risks in a portfolio. While the position may have been responsible for substantial wealth creation, it increases the probability of dramatic losses and reduces the certainty of financial plans.

There are many investment and wealth planning strategies that are designed to help investors manage a concentrated position. These strategies seek to allow the investor to de-risk, access capital from and/or diversify the position. Investors often select a combination of customized strategies to optimize for her investment view, personal financial goals, the transaction cost or market impact, tax circumstances, as well as legal and regulatory implications.

In this section, we focus on five categories of how to deal with concentrated positions: **Sell, Monetize, Diversify, Give and Hedge.**

Sell it. An outright sale is the most direct path to mitigating the idiosyncratic risks of a concentrated stock position. Sales strategies come in many shapes and sizes. Most are a tradeoff between price and speed of execution.

- **Staged selling** involves creating a plan that details the quantity of shares to sell, the timeframe and qualifying price levels. The main benefit is that it may mitigate the downward pressure of selling a large position. It also helps deal with the challenge of predicting the best time to make a sale. Investors can also consider which shares will be sold and may have a preference to sell stock that has appreciated less first to mitigate taxes.

  A good plan is usually informed by a "trade-cost analysis" to measure the price impact of each sale in the market. The investor should consider volume limits when trading to avoid inadvertently affecting the stock price. The best plans are well-defined and committed, but retain enough flexibility to adapt to unforeseen price swings or unplanned liquidity needs.

  Executives and certain insiders of U.S. listed companies may utilize a format of a staged selling strategy referred to as a 10b5-1 plan. These plans are established by the insider and approved by the company when the seller has no insider information. The plan is then executed at some point in the future. This pre-programmed strategy specifies when and how much stock will be sold and is far less flexible than a conventional selling strategy. The seller has no further involvement so the plan can continue even if the seller has access to insider information.

- **Block trades** allow an investor to sell a large portion of shares quickly in the marketplace. This strategy may be effective for investors selling very large positions or significant stakes in companies with limited trading volume. One drawback: block trades are usually conducted at a discount to the last market price.
- **Covered call options** allow an investor to sell shares while collecting an upfront premium. Some investors think of this like being paid to leave their stock position. An investor sets an exit (strike) price, typically above the current market price, at a predetermined date in the future. If the stock rises above the strike price, the buyer can exercise the option and receive the shares at the strike price. The seller keeps the premium regardless if the option is exercised or not.
- **Target price selling strategies (TPSS)** may be useful for a client that has an exit price in mind at a higher price. This sophisticated instrument allows the investor to lock into a series of daily sales at a pre-determined target price, which is usually 5-15% above the current price. Each day, the client will sell an equal portion of shares at the target price. If the stock appreciates above the target price, the investor is locked in to sell and forgoes the opportunity to sell the shares for more. The strategy includes a knock-out provision if the stock declines below a certain price and could be "knocked out" early and no additional shares will be sold at the target price.
- **Private company sales** allow an investor to dispossess shares in a company that has not yet gone public but has grown considerably in size. New laws around the world have made it easier for companies to remain private-longer and the size of private, venture-backed companies is approaching $2 trillion compared to $25 billion just fifteen years ago. Increasingly private companies have permitted transfers of stock for certain shareholders. The private markets remain less liquid than public markets but may be a viable alternative for an investor that is extremely concentrated in a private company.

Of course, **taxes** are the most cited rationale for holding a concentrated position. Selling a position creates a one-time tax payment on unrealized gains. This creates "tax drag" in the portfolio since the investor will have fewer dollar in the market working towards her financial goals. There are various planning and investment strategies aimed at helping investors mitigate the impact of taxes by providing de-risking, monetization or diversification without triggering an immediate taxable event.

Monetize the position. These strategies allow a client to access the value of the concentrated position without selling it. These strategies can generate liquidity for diversification, charitable or lifestyle goals.

- **Principal Installment Stock Monetization (PrISM)** strategies combine a hedge with an upfront cash advance on the hedged position. This non-recourse cash advance can be used for a variety of purposes. The investor also has the benefit of de-risking since the advance can be fully repaid by the shares in the strategy regardless of the stock price at expiration. The investor may forgo upside appreciation in the shares if the stock rises above a defined upside participation limit.
- **Charitable Remainder Trusts** allow the investor to further their philanthropic endeavors by contributing shares to a trust in return for an annual income stream. The trust can sell the concentrated position and invest in a diversified portfolio. When the trust ends any remaining assets pass to a charity of the investor's choice.
- **Security-based lines of credit** allow an investor to pledge her concentrated position as collateral in a lending facility. Strategies like this allow the investor to access capital without selling shares. Investors should be mindful that borrowing will actually increase the risk of the portfolio and could create situations where the client has to sell declining shares to meet collateral requirements.
- **Hedge and borrow** strategies can combine hedging strategies like protective puts and collars to stabilize collateral. Since the collateral is protected at a minimum value a lender may offer higher levels of liquidity and lower costs than a traditional security-based line of credit. The strategy has the added benefit of mitigating the risk of having to sell shares if they decline to meet collateral requirements.

Diversify with an exchange fund. An exchange fund allows investors to exchange a concentrated position for a more diversified portfolio. Traditionally, investors choose to [1] sell stock for cash, and [2] invest the cash in a broad-based portfolio of stocks for diversification. The exchange fund skips the first step and allows the investor to contribute shares directly into the Fund in exchange for Fund Units, without incurring a tax liability. Investors contribute different shares creating diversification within the fund. The Fund is managed to a broad-based benchmark. After a period of seven years, the investor can redeem her units of the fund for a diversified basket of securities that will be assigned her original cost basis.

Certain investors can consider designing and managing a "do-it-yourself", Personal Exchange Fund. This strategy may allow the investor more control over her portfolio investments.

Give it away. Giving shares may allow the investor to pass wealth to loved ones or charitable endeavors.

- **Direct gifts to family and friends** may be a great stocking stuffer and allow you to share financial success with loved ones. There are also income and transfer tax benefits for investors that gift appreciated positions. The grantor gifts not only the current value of the asset but also any future appreciation, which will grow outside of the grantor's taxable estate and will ultimately escape estate taxes. Gifting to individuals – often children- at a lower tax rate may allow them to sell the position with less income tax impact.
- **Grantor Retained Annuity Trusts (GRATs)** allow a grantor to contribute a concentrated position to an irrevocable trust. The trust will repay the grantor the original amount and earn a minimum rate of return as specified by the IRS, known as the 7520 rate. Every year an annuity is paid back to the Grantor. At the end of the trust term any residual assets pass to the beneficiary free of transfer taxes.

The price fluctuations of a concentrated position can be a secret weapon in estate planning. If the concentrated stock performs very well and exceeds the 7520 rate it could result in a significant transfer of wealth. If it does not exceed the 7520 rate the GRAT would fail but the only losses would be stock depreciation and the cost of establishing the GRAT.

- **Charitable contributions** made with an appreciated stock may allow an investor to maximize her charitable impact. Since the entity receiving the appreciated stock is tax-exempt, it may be more effective to let the charity sell the position and wipe out the embedded gain.

- **Charitable Remainder Trusts** allow the investor to further their philanthropic endeavors and defer the payment of capital gains taxes over a period of years by contributing shares to a trust in return for an annual income stream. The trust can sell the concentrated position and invest in a diversified portfolio. When the trust ends any remaining assets pass to a charity of the investor's choice.

Hedge the position. Hedging allows an investor to protect against downside risk in the stock position without selling the position. By retaining the position the investor will continue to receive dividends and maintain voting rights. Importantly most hedges can be administered in a manner that does not create a taxable event thus allowing an investor to avoid "tax drag" and leaving pre-tax dollars to compound in the investment.

- **Protective puts** are a common way to protect against downside risk. The buyer of a put option pays a premium upfront for the right to sell the stock at a predetermined "strike" price on or before the expiration date. The strategy is often compared to insurance since losses below the strike price are guaranteed by the counterparty of the trade. Like insurance, buying put options can become expensive since the buyer will lose the entire premium if the option is not exercised.

  The expiration date and strike price of a protective put is more art than a science. Longer options are more expensive than shorter options since the protection lasts longer. Options with higher strikes are like insurance contracts with smaller deductibles. They protect a larger portion of the position but are more expensive.

- **Protective put spreads** involve the purchase of a protective put option combined with the sale of a lower strike put option. The combined package is less expensive than the outright purchase of a protective put option since the protection is limited and the investor is exposed to losses below the lower put strike. This strategy has become increasingly utilized since the cost of lower strike options (which the investor sells) is more expensive, on a relative basis, than higher strike options. This dynamic, referred to as skew, has always existed but has become more pronounced since the GFC as financial regulation has made it more difficult for market makers to sell these deep out-of-the-money options.
- **Collars** are the most utilized strategy for hedging a concentrated position as investors may not have the desire or ability to spend the premium on the Protective Put upfront and are typically willing to sell at a higher price in the future given the large gains they have on the position. The Collar can reduce or eliminate the initial cost of the Protective Put in exchange for agreeing to give up potential future appreciation. In a Collar, the investor purchases a Protective Put and Sells a Covered Call Option. The second option obligates the investor to sell shares at a strike price that is generally above the current price. The combined position reduces downside exposure and upside appreciation, thus narrowing the range of potential outcomes while the Collar is in place.
- **Proxy hedges.** Most hedging strategies utilize derivatives linked directly to the concentrated stock. This poses a few considerations. First, the use of derivatives may create selling pressure on the underlying shares. Additionally, certain shareholders such as insiders and affiliates may be restricted from engaging in derivatives on the position itself. The shareholder may consider hedging using a proxy asset that they expect will share the same risks or anticipate will have correlated returns with the stock position they own. These strategies will never perfectly eliminate risk as the proxy asset may not trade in-line with the concentrated stock.

Every concentrated position comes with its own set of emotional considerations in addition to the more rational factors like risk and reward. That is why we encourage investors to design a plan with their team that not only optimizes investment views, transaction costs, market impacts, tax circumstances, and legal and regulatory implications, but also fits with the family's overall personal financial goals.

Our team of experts understands how to utilize these tools, and can help you and your family navigate the complexities of a concentrated stock position. Please reach out to your JPMorgan team to create a diversification strategy that works for you and your family.

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