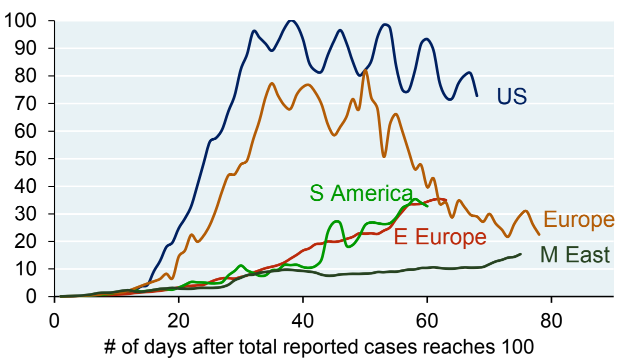
Topics: The US prepares to reopen despite having one of the highest infection rates in the world; monoclonal antibodies and anti-viral trials; the growing gap between markets and the economy; S&P 500 earnings haves and have-nots; regional equity performance (Europe loses again); leveraged loans

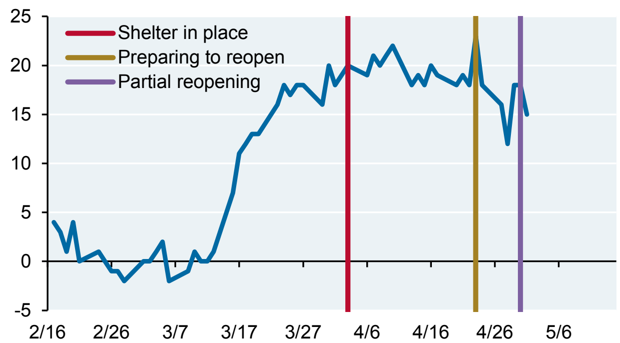
Around a month ago, I wrote that the US might start reopening in mid-May due to sharply declining infection rates. I was half right. States representing 45% of US GDP have announced reopening plans despite the US having one of the highest COVID infection rates in the world[1]. Given ample evidence of heightened COVID mortality risk for the elderly, this is a "**Logan's Run**" moment in which the risk of greater generational sacrifice is about to rise[2]. In states like Georgia, there was already a decline in stay-at-home behavior on May 1 (see chart, right). While there's some news of improved COVID treatment (see p.2), there are no game-changers yet. We will track virus consequences of state reopening (which may take 3-4 weeks to show up) as well as the impact on consumer spending using information we're building out from our colleagues at Chase Card Services. As shown in the third chart, we're already picking up signs of a revived economic pulse at a national level.

New daily infections per mm people
Linear scale, 3 day trailing average



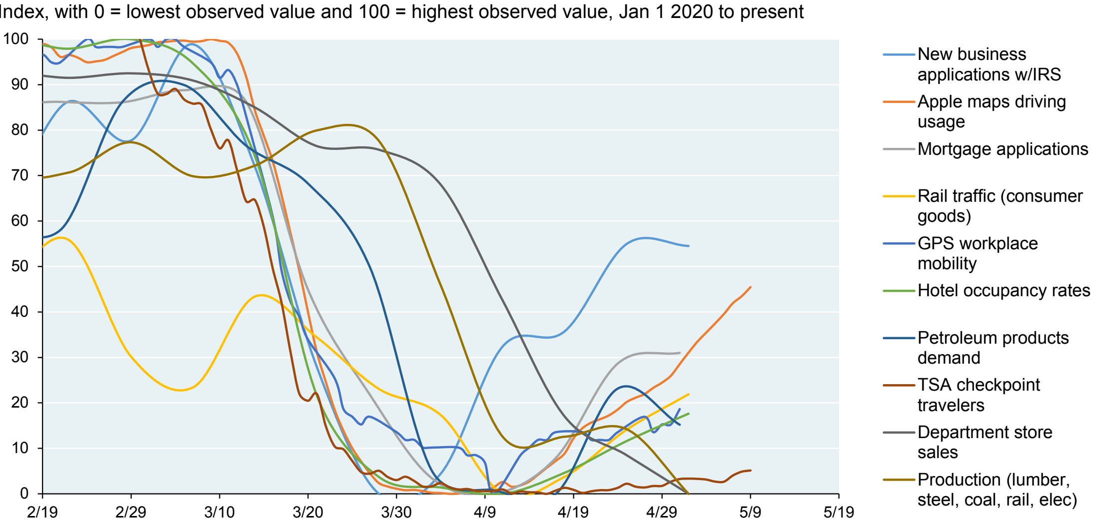
Source: Johns Hopkins University, IMF, JPMAM. May 10, 2020

Georgia mobility trends: Residential locations, % change from baseline



Source: Google, J.P. Morgan Asset Management. May 01, 2020.

High frequency US data tracker
Index, with 0 = lowest observed value and 100 = highest observed value, Jan 1 2020 to present



Source: WWPA, EIA, AISI, EEI, AAR, Redbook, Census Bureau, TSA.gov, Apple, Smith Travel, MBA, Google, JPMAM. May 10, 2020.

[1] The only large country that had **higher infection rates than the US** as of Sunday evening: Russia. See our online virus portal, Sections 1 and 2.

[2] See Section 6 of our online virus portal for COVID mortality risk tables by age. ***Logan's Run*** is a novel by William F. Nolan and George Clayton Johnson depicting a futuristic society running out of resources. To avoid overpopulation, everyone over the age of 21 (30 in the film version) is terminated.

Moderna, monoclonal antibodies and another modestly positive anti-viral trial result

Moderna is entering Phase II trials with its messenger RNA vaccine, but as a reminder, all that's tested in Phase I is whether the vaccine is unintentionally lethal, not if it works. Moderna tested its vaccine on 45 people in Seattle starting in March as part of Phase I, and will now test 600 people as part of Phase II.

Monoclonal antibody therapy (mAb) involves infusion of antibodies either intravenously or subcutaneously. While convalescent plasma relies on antibodies harvested from recovered individuals, mAb can be harvested from recovered humans, from mice genetically modified to have the immune system of a human being, via genetic engineering or from advanced cell cultures. While mAb are used to treat cancer and autoimmune diseases, few have been developed for infectious diseases. However, mAb worked against Ebola, and Regeneron is expected to enter clinical mAb trials for SARS-CoV-2 this summer. The mAb goal: neutralize the infectivity of SARS-CoV-2 by binding to the spike protein that enables it to enter human cells. A likely treatment regimen could contain 2 or more mAbs.

- **mAb advantages:** available more quickly than a vaccine, and can be used as acute therapy for COVID patients and as a prophylactic for front-line health care workers. The disadvantages: higher cost than vaccines; harder to produce at scale since a large dose of recombinant proteins might be needed since your body isn't making them for you; and the fact that they are temporary (usually just a few weeks). While a vaccine is preferable given its ability to immediately halt the spread of disease, mAb may be an important treatment regimen for sick patients and front-line workers until a vaccine can be realized

Another modestly positive anti-viral trial. A group of Hong Kong physicians report that a mix of drugs approved for treatment of other viral diseases improved clinical and laboratory outcomes of hospitalized COVID-19 patients[3]. Mild to moderately infected patients treated with the full four-drug regimen recovered more rapidly than those treated by only two of the four drugs.

- The four drugs include lopinavir and ritonavir (anti-HIV drugs), ribavarin (inhibitor of RNA viruses) and interferon-1 beta (stimulates anti-viral immune responses). The control group was treated with lopinavir-ritomnavir, a combination shown to be no better than placebo. In the treatment group, average time to resolution of symptoms was reduced from 12 to 7 days; treatment group patients also experienced reduced virus loads beginning on day one and continuing throughout the treatment period
- *Limitations*: the study involved a small number of patients (127), and included patients with mild to moderate symptoms only. This is also a hospital-only approach, given the use of 3 anti-virals, interferon injections, multiple antibiotics and oxygen therapy. While the viral load declined more rapidly in the treated group, it did not drop dramatically as is the case with most anti-viral drugs used for other diseases. There were no significant differences in outcomes for patients who treated 7 days or more *after* symptom onset. So, a solution mostly for people hospitalized with mild to moderate symptoms, which is not a large population group in many Western nations

Recent Eye on the Market topics: COVID impact on unfunded state pension obligations and the Chapter 9 debate (May 4); Is US fiscal stimulus "enough"? (May 4); COVID, food/energy supplies and the Electoral College (May 4); The questionable premise that the BCG vaccine is a driver of COVID severity (April 27); The most ambitious vaccine timetables we have seen so far (April 27); Latest serology results (April 27); History of market bottoms (April 20); COVID infection rates and the connection to collectivism vs individualism (April 20)

[3] "*Triple combination of interferon beta-1b, lopinavir–ritonavir, and ribavirin in the treatment of patients admitted to hospital with COVID-19: an open-label, randomised, phase 2 trial*", Yuen et al, State Key Laboratory of Emerging Infectious Diseases, Carol Yu Centre for Infection, University of Hong Kong, May 8, 2020

The growing gap between markets and the economy

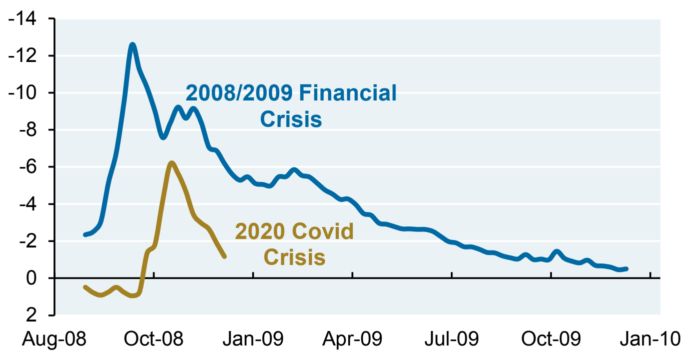
We have written on the history of markets leading profit and economic recoveries, and certainly $8 trillion in asset purchases/commitments from the Fed and WWII-sized fiscal deficits will do a lot to drive asset prices higher (see web portal Section 3). **Even with this precedent, I'm not sure there has ever been a wider gap between a market recovery and deterioration in economic conditions**. On the left you can see the recovery in financial conditions (rates, spreads, equities and the dollar) and in equity valuations relative to bonds (the "equity risk premium"). On the right: the projected collapse in employment and output. There are three main assumptions implicit in the market recovery, as I see it:

- Infection second waves, if they occur, will not overburden state healthcare systems to the point that governors of reopening states end up reimposing lockdowns
- If lockdowns persist in other states, additional Federal and state assistance will be forthcoming to offset the hit to household incomes and delinquency rates
- The employment, consumer spending and manufacturing "elasticity" to reopening will be high. One example: over 95% of all unemployed respondents to the April BLS employment survey described their layoff as "temporary" rather than "permanent"

While these are reasonable starting points, the certainty with which they are now priced in seems high to me relative to the epidemiological, behavioral, policy and growth risks ahead. A very important marker for investors will be Q2 earnings, which we discuss on the next page.

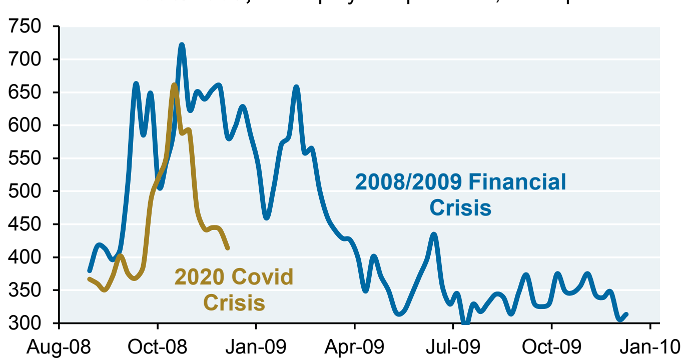
Markets, recovering

Rapid recovery in financial conditions, as in 2008/2009
Bloomberg Financial Conditions Index (inverted)



Source: Bloomberg. May 8. 2020.

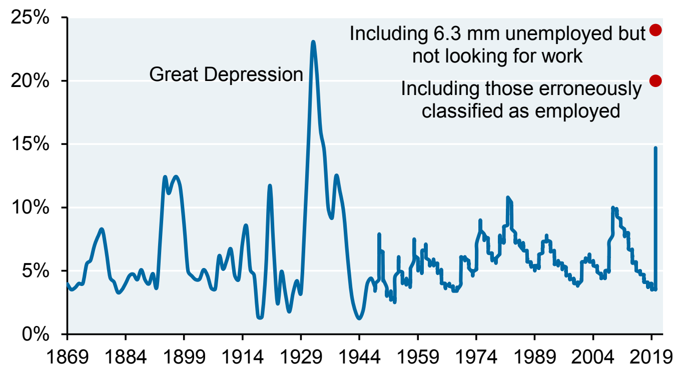
Even faster recovery in equity valuations relative to bonds vs 2008/2009, US equity risk premium, basis points



Source: Morgan Stanley. May 8, 2020.

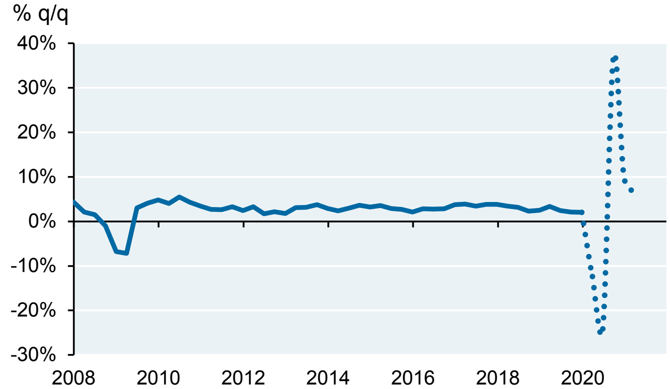
Economies, collapsing

US unemployment rate rivals Great Depression, for now



Source: Pre 1948: C. Romer (Berkeley), Post 1948: BLS. Economic Policy Institute, April 2020.

Global GDP, history and JP Morgan forecast
% q/q



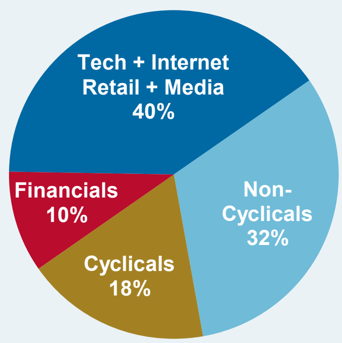
Source: J.P.Morgan Global Economic Research. April 2020.

The earnings dichotomy: the haves and have-nots of corporate profits

Last week, we reviewed the haves and have-nots of employment and how layoffs are highly concentrated in leisure and retail. Earnings consequences of the US lockdown are concentrated as well. As shown on the right, Q2 earnings for Tech, Internet Retail and Media are expected to hold up better than other sectors, with non-cyclical companies not far behind. The damage appears highly concentrated in cyclicals and financials, which represent 28% of S&P 500 market cap. **The equity market's partial recovery may reflect the notion that 72%of S&P market cap is projected to suffer a much smaller earnings hit**.

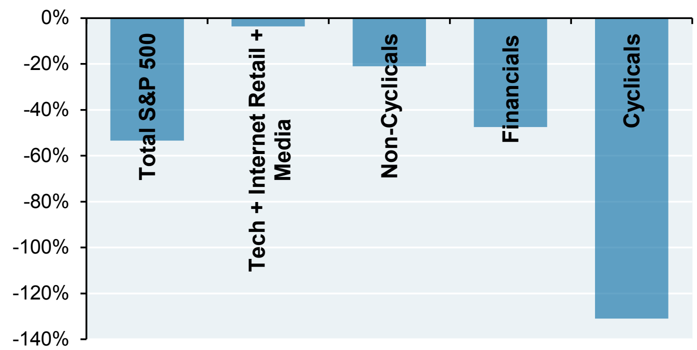
It's hard to anticipate in a pandemic how companies will actually manage fixed and variable expenses. Many US companies have a lot of "operating leverage", meaning that earnings can fall sharply in a weak economy and rise sharply in a recovering one. The degree to which tech and non-cyclicals can escape Q2 with -2% and -20% earnings declines will be a very important marker given optimistic earning rebounds projected for 2021. As shown in the last chart, consensus earnings for 2021 are now roughly flat to 2019 actual levels, which seems high to me.

S&P 500 Sector weights



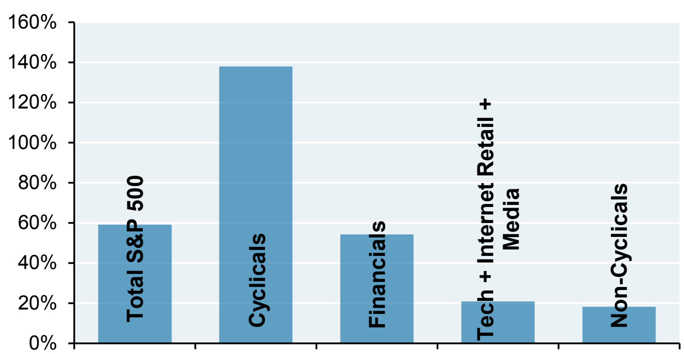
Source: Bloomberg. May 8, 2020

Consensus EPS growth, Q2 2020 vs Q2 2019



Source: Bloomberg. May 10, 2020

Consensus EPS growth, 2021 vs 2020



Source: Bloomberg. May 10, 2020

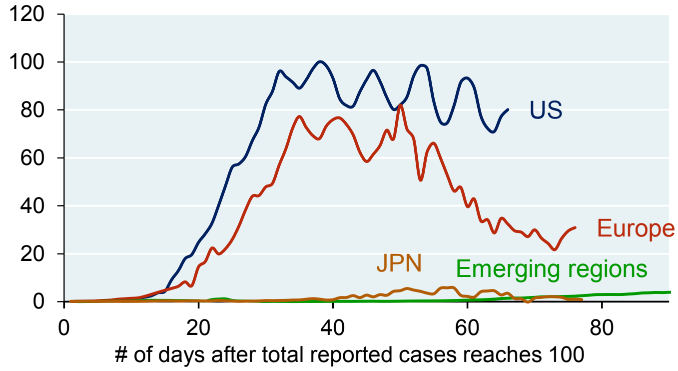
S&P 500 earnings versus 2021 projections

Source: Datastream, S&P Dow Jones Indices. May 10, 2020.

Regional equity performance barbell: Europe and Japan underperforming, again

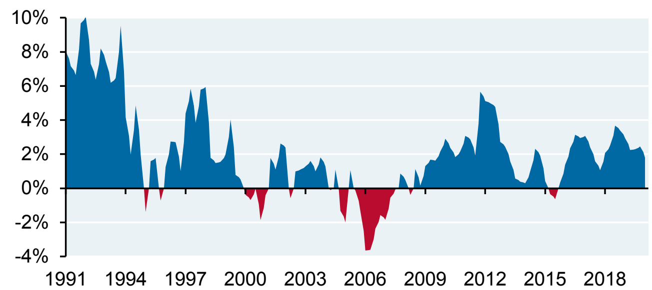
Compared to the US, Europe has experienced a faster decline in infection, and Japan's infection rate barely registers at all. Nonetheless, European and Japanese equities are once again underperforming a barbell of US and Emerging Market equities. **This trend has persisted through so many different market periods that I'm running out of ways of imagining how it would ever change**. As discussed in our 2020 Outlook, structural advantages of US equity markets include two factors illustrated below. First, the US has higher exposure to Tech than to sectors with lower and more volatile earnings growth (Basic Materials, Energy and Industrials), unlike Europe and Japan. Second, US companies have higher profitability (RoA, RoE) *within* sectors than European and Japanese counterparts. This song remains the same.

New daily infections per mm people
Linear scale, 3 day trailing average



Source: Johns Hopkins University, IMF, JPMAM. May 08, 2020

Overweight US & EM, underweight Europe & Japan
3-year rolling out (under) performance vs MSCI All World Index



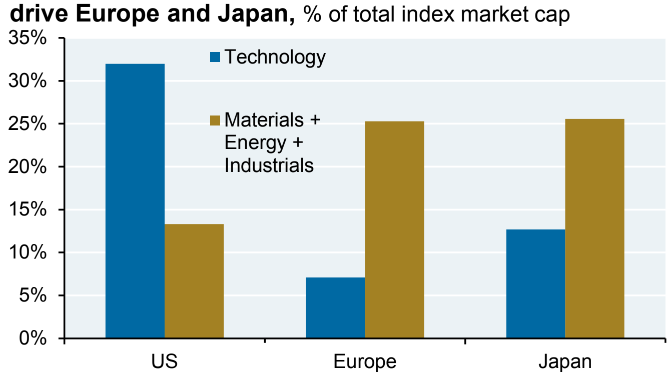
Source: Bloomberg, JPMAM. Q1 2020. All equity portfolio, rebalanced quarterly. 10% OW to US, 10% UW to Europe, 5% OW to EM, 5% UW to Japan. Assumes no currency hedging.

YTD United States/Emerging Markets vs Europe/Japan regional equity market barbell performance

YTD barbell outperformance		Region	Weight	Delta	Rev weight	US$ return	LOC return
		US	62%	10%	72%	-8.7%	-8.7%
US$ barbell	0.9%	EM	12%	5%	17%	-17.7%	-12.8%
Local currency barbell	0.9%	EUR	18%	-10%	8%	-20.1%	-17.0%
		JPN	8%	-5%	3%	-12.2%	-14.0%

Source: Bloomberg. May 10, 2020. LOC refers to local currency return.

High growth tech drives US markets, growth laggards drive Europe and Japan, % of total index market cap



Source: Bloomberg. May 10, 2020. Technology includes: GICS level 1 Information Technology + GICS level 3 Interactive Media & Services.

	Return on Assets: Higher in the US					
Country	**Consumer Staples**	**Consumer Discretionary**	**Technology**	**Healthcare**	**Communication Services**	**Financials**
US	5.9	5.7	10.1	6.0	5.7	1.0
Europe	5.2	3.4	6.0	6.2	1.7	0.3
Japan	3.4	3.4	4.1	4.0	3.1	0.3

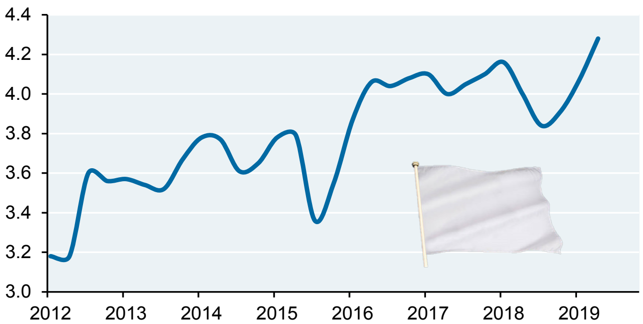
	Return on Equity: Higher in the US					
Country	**Consumer Staples**	**Consumer Discretionary**	**Technology**	**Healthcare**	**Communication Services**	**Financials**
US	27.9	30.7	27.5	18.4	13.9	11.8
Europe	18.0	12.1	12.3	17.2	9.8	8.4
Japan	10.8	9.5	9.4	8.9	7.0	7.0

Source: Bloomberg. May 10, 2020

Leveraged loans and rising bankruptcies: a longer road ahead this time

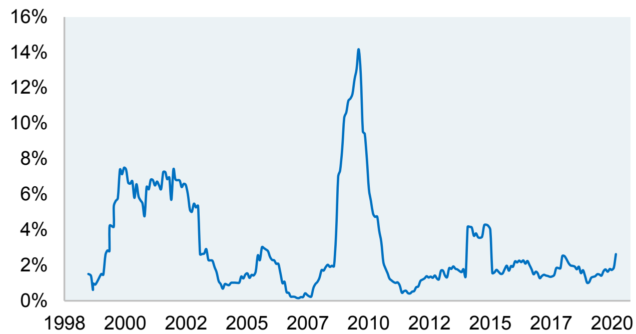
Last July, we wrote a special Eye on the Market on loan investor willingness to sacrifice covenant protections in exchange for yield[4]. The first chart shows Moody's leveraged loan covenant quality score, which ended 2019 at its weakest level on record; that's one reason why we concluded that defaulted loan recovery rates could be 60-65 cents on the dollar in the next recession compared to prior levels of 75-80 cents. Now the recession is here, a record number of companies filed for bankruptcy in April 2020 and April defaulted loan balances were among the highest on record. Loan default *rates* haven't risen much yet, for a few reasons: (a) rising denominator due to rapid loan growth since 2010, (b) some borrowers receiving payment waivers, (c) weaker covenants reducing events of default, (d) default rates shown below are par-weighted, and would be higher if they were equal-weighted, and (e) not enough time has passed yet.

Loan investors waving the white flag: Moody's loan covenant quality score
5.0 = weakest covenant quality



Source: Moody's. Q4 2019.

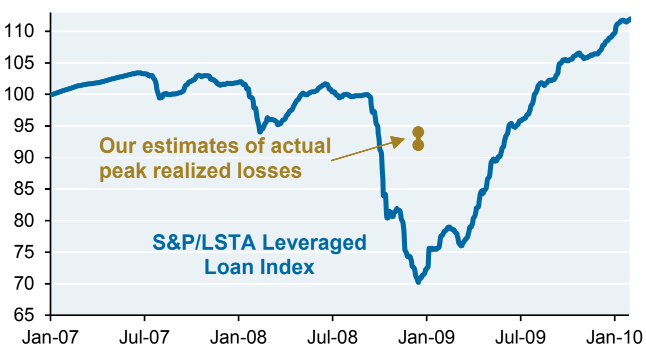
Leveraged loan default rates: small pickup, so far
12 months trailing through April 2020, par-weighted



Source: JP Morgan, S&P LCD, May 9, 2020

In prior cycles, loan investors sold first and sorted out the details later. For example, loan prices plummeted in early 2009 (pricing in more than double the amount of actual losses that eventually occurred) and then rallied sharply. This time around, a similar 25% selloff took place in March which was followed by a partial recovery. Given the erosion of creditor protections discussed above, I see more risk of a relapse or stagnant loan prices compared to the V-shaped loan recovery seen in 2009/2010. Leveraged loans are tempting at a time of zero interest rates, but after the recent rally I think a balance of distressed debt and loans makes more sense, given the expected surge in the former towards the end of 2020.

Leveraged loan market pricing vs realized losses during the 2008-2009 Financial Crisis, Tot return Index, Jan 2007 = 100



Source: S&P/LSTA, Bloomberg, JPMAM. May 10 , 2020.

Leveraged loan total return index
Total return Index, Jan 2007 = 100

Source: S&P/LSTA, Bloomberg, JPMAM. May 10, 2020.

[4] **Covenant assessments** analyze leverage and interest coverage tests, most-favored-nation provisions, mandatory prepayments from asset sales, exceptions to negative covenant restrictions, restricted payments clauses, scope of allowable EBITDA adjustments, leakage of assets from the collateral pool, caps on investments in or transfers to unrestricted subsidiaries and affiliates, the ability to add senior pari-passu or priority debt, lien dilution by non-guarantor subsidiaries, etc. These are the protections that loan investors have been **surrendering** at a record pace.

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