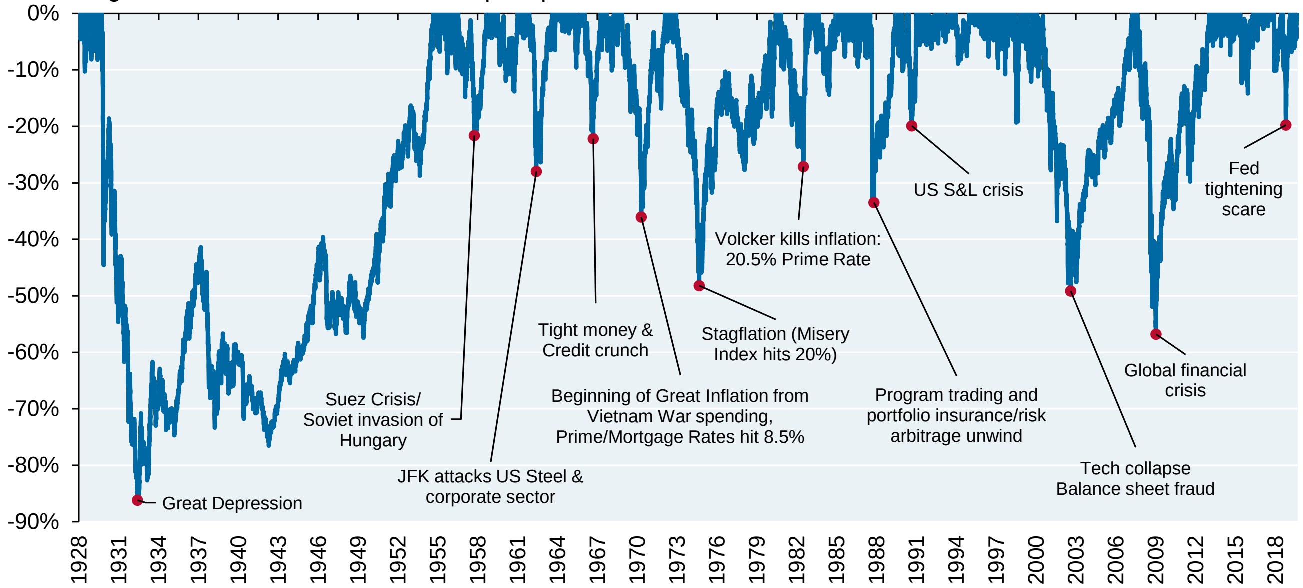
Topic: The Armageddonists

While recessions and bear markets are a fact of life, something peculiar happened after the Global Financial Crisis: the rise of the Armageddonists, which refers to the market-watchers, forecasters and money managers whose apocalyptic comments spread like wildfire in print and online financial news. I understand why: by 2010, investors had experienced two consecutive bear markets, each with equity declines of over 40%. It took several years for equity markets to recover each time, unlike the shallower, faster-recovering bear markets of the 1960's and 1980's. The dismal performance of consecutive 2001/2008 bear markets hadn't been seen in decades, and is only comparable to parts of the Great Depression.

I also understand that mega-bearish news appeals to human negativity bias, a topic examined by Nobel Prize winner Daniel Kahneman in his 2011 book on the brain and human survival instincts[1], by political scientist Stuart Soroka who has illustrated the inverse relationship between magazine sales and the positivity of a magazine's cover[2], and in a 2014 experiment in which a city newspaper lost two thirds of its readers on a day when it deliberately only published positive news.

That said, what are the consequences for investors that reacted to dire Armageddonist predictions which have flooded the airwaves and internet since 2010?

A history of S&P 500 bear markets
Percentage decline in the S&P 500 from its prior peak



Source: Bloomberg, JPMAM. November 8, 2019.

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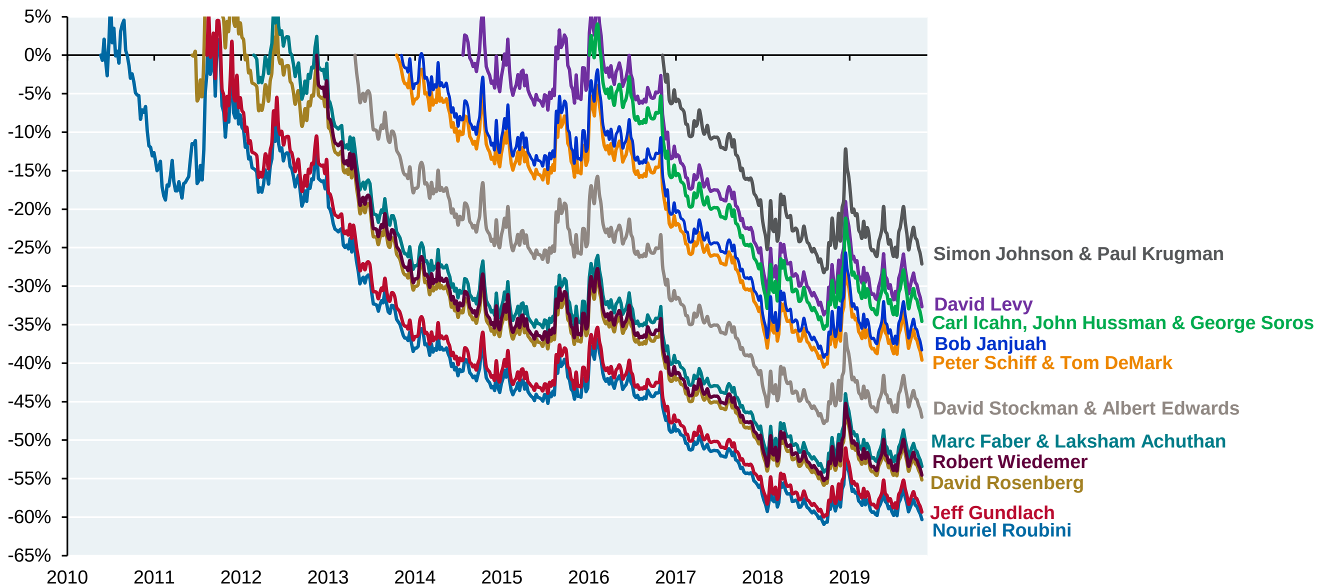
[1] "The brains of humans and other animals contain a mechanism that is designed to give priority to **bad news**. By shaving a few hundredths of a second from the time needed to detect a predator, this circuit improves the animal's odds of living long enough to reproduce". Daniel Kahneman, in *Thinking Fast and Slow*, 2011.

[2] In "*Negativity in Democratic Politics*" (Cambridge University Press, 2014), Stuart Soroka also explores the heightened physiological impact of negative news, including changes in heart rate and skin conductivity.

We pulled together comments made by well known Armageddonists since 2010 (see Table 1, page 4), a few of whom are on record as having anticipated the prior bear market and recession. We measured the impact on an investor deciding to shift a dollar from equities to diversified government, mortgage-backed and corporate bonds after reading the post-2010 comments. To be clear, this isn't about whether the Armageddonist at some point became more optimistic. This chart is about the **opportunity loss** for investors that acted upon seeing their comments at the time. One example: $1 shifted from equities to bonds in 2014 in response to mega-bearish commentary would have underperformed equities by around 40% as the S&P 500, propelled more by earnings growth than by multiple expansion[3], rolled on.

The consequences of listening to the Armageddonists, 2010-2019
Performance impact of shifting $1 from the S&P 500 to the Barclay's Aggregate Bond Index, measured from the week of the Armageddonist comment in Table 1 to November 8, 2019



Source: JPMAM, Bloomberg. November 8, 2019. Using weekly S&P 500 and Barclay's Aggregate data.

One day, of course, Armageddonists will be rewarded with a recession. Partly as a consequence of the China-US Trade War, equity outperformance vs bonds reached a peak in early 2018 and has been treading water since; CEO Confidence has plunged to its lowest level since the financial crisis; the US is now in an earnings recession; and 67% of respondents to the Duke CFO Survey believe the US will be in recession by the end of 2020 (despite all of this, institutional investor positioning in equity futures is close to its highest/most bullish level since 2007). I believe that the health of the US consumer, strong labor and housing markets and a modest rebound in manufacturing will prevent a recession from happening in 2020, but I could be wrong[4]. In any case, for investors that reacted to Armageddonist comments, the larger issue is this: **the next recession and bear market will have to be quite severe to earn back what was sacrificed along the way**. Using rough math, a sustained, multi-year bear market with 35%-45% declines from peak levels would be needed to reverse many of the opportunity losses shown in the chart.

[3] **Earnings growth vs multiples**. The price of the S&P 500 has risen by 175% since 2010; 75%-95% of this increase can be attributed to earnings growth, with the rest attributed to P/E multiple expansion.

[4] **Recession models** have mixed results; updated versions which reflect structural changes in the US economy include business surveys, core inflation, yield curve slope to 18 months, credit spreads and the private sector financial balance. Using this approach, **recession probabilities out 12-24 months are ~25%**. As for yield curve signals, they are not as reliable as they used to be. First, demand from negative-yield economies (Europe/Japan) puts downward pressure on long term US yields, which is more of a sign of weakness overseas than in the US. Second, the term premium for long duration bonds has declined since the 1980's, making inversions more likely even outside recession.

How severe will the next bear market be? I believe it won't be as bad as the prior two, due to the following: a reduction in global economic imbalances (c1), higher levels of capital and decreased funding risks in US and European banks (c2), stronger balance sheet fundamentals of US households (c3), reduced risk in most Emerging Markets due to higher levels of foreign exchange reserves and less reliance on foreign capital (c4, c5), and the low level of new US equity supply since buybacks and M&A have exceeded new equity issuance for the last five years (c6). See Appendix I for charts.

What are the **mega-bearish counterpoints**? US equity valuations are well above median[5], underwriting standards in the leveraged loan market have declined to disturbing levels, and deficits are financing a large part of US growth this late in the cycle. And, as discussed in our October *Eye on the Market*, there could be a seismic shift in Washington in 2020 that imposes substantial taxes, bans on share repurchases and regulatory costs on tech, energy, healthcare, financials, biotech, wireless, chemicals and more. Too soon to assess in terms of probabilities, but chances of a fundamental re-ordering of the US economy are rising.

All things considered, I think the next recession and bear market will not be as severe or long-lasting[6] as the worst ones shown on page 1. If that's the case, it would ratify the approach of money managers that maintained normal exposures to risky assets in diversified portfolios since 2010, even as the business cycle aged and apocalyptic commentary swirled around them. If you're looking for Armageddon, by the way, you don't have to look far: a slow-moving one is unfolding in real time in **Illinois** (see page 6).

Michael Cembalest
JP Morgan Asset Management

Armaggedonism: not just for financial markets

Some well-known analysts have also mentioned, with spectacular inaccuracy, "peak" levels of certain raw materials. In 2012, money manager Jeremy Grantham wrote the following in an article in *Nature* Magazine:

> "Then there is the impending shortage of two fertilizers: phosphorus (phosphate) and potassium (potash). These two elements cannot be made, cannot be substituted, are necessary to grow all life forms, and are mined and depleted. It's a scary set of statements…What happens when these fertilizers run out is a question I can't get satisfactorily answered and, believe me, I have tried. There seems to be only one conclusion: their use must be drastically reduced in the next 20–40 years or **we will begin to starve**."

Sounds terrifying, right? Turns out that there was plenty of information at the time showing over one hundred years of supply for both commodities (IFDC, USGS). Furthermore, US Geological Survey and UN reports for 2019 show **140 to 420 years of supply** based on economically viable reserves for potash and phosphates (respectively), and more than **1,000 years of supply** for both commodities based on technically recoverable resources.

[5] Most **US equity valuation measures** are around the 90th percentile of expensiveness relative to their history; examples include price to book, price to earnings and enterprise value to sales. Some valuation indicators look much cheaper: free cash flow yield (50th percentile, mostly due to the decline in capital spending intensity since 2008), and S&P earnings yield less US 10 year Treasuries (24th percentile, due to financial repression by the Federal Reserve).

[6] **The duration of a bear market is important in understanding consequences for investors.** The longer a bear market lasts, the more investors that were positioned defensively in advance can re-invest at lower valuations, and the more overweight investors are likely to succumb to pressure to sell. Shorter duration bear markets, on the other hand, don't entail as much opportunity or dislocation. As an example, after the 20% S&P 500 decline at the end of 2018, the recovery was the fastest on record; within 20 days, more than 50% of the losses were recovered.

Table I: Armageddonist comments, 2010-2016

Armageddonist comments differ from money managers adopting a "defensive posture". The latter typically results in modest 10% risk reductions in fully invested portfolios, while the former are in effect a call for wholesale reductions in portfolio risk given expectations of recession, bear markets, financial crises and general mayhem. The table below is not an exhaustive list; we could have included Bill Gross ("The Cult of Equity is Dying", 2012) and Harry Dent ("The US Has Gone Over The Demographic Cliff And Markets Will Crash This Summer", 2013) but we ran out of room.

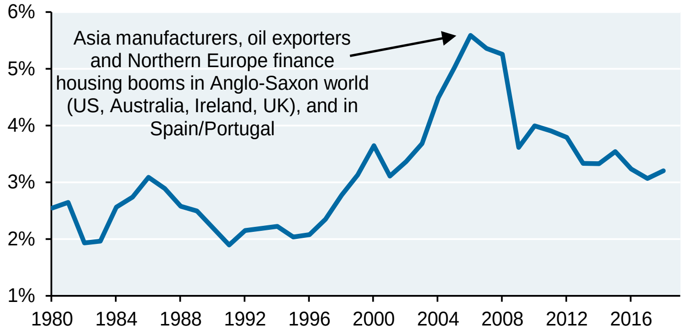
Date	Armageddonist	Quote
May 20, 2010	Nouriel Roubini	"There are some parts of the global economy that are now at the risk of a double-dip recession. From here on I see things getting worse." - *CBS*
June 4, 2011	David Rosenberg	"Another recession is coming, and soon. So says Gluskin Sheff economist David Rosenberg. Rosenberg, a longtime bear on the economy and the stock market, now says he is 99% sure we will have another recession by the end of next year." - *Fortune*
August 9, 2011	Jeff Gundlach	"It seems suicidal to buy a broad-based basket of stocks or economically sensitive commodities or emerging markets stocks - all of which are very leveraged to economic growth" - *Kiplinger;* and "Sell everything, nothing looks good" in July 2016 - *Reuters*
February 24, 2012	Lakshman Achuthan	"Lakshman Achuthan, co-founder of the Economic Cycle Research Institute, said on Friday that his research firm is sticking with the forecast it made in September: A new recession is inevitable, despite improvement in high-profile economic indicators, such as job creation and unemployment, and a stock market rally. Achuthan said data gathered since his September forecast only confirms his view that economic growth has slowed to such a degree that a downturn is now unavoidable, likely by late summer." - *CNN*
May 25, 2012	Marc Faber	"I think we could have a global recession either in Q4 or early 2013. That's a distinct possibility." When asked what were the odds, Faber replied, "100%" - *CNBC*
November 12, 2012	Robert Wiedemer	"The data is clear, 50% unemployment, a 90% stock market drop, and 100% annual inflation starting in 2013." - *Newsmax*
March 31, 2013	David Stockman	"When the latest bubble pops, there will be nothing to stop the collapse. If this sounds like advice to get out of the markets and hide out in cash, it is." - *Business Insider*
April 25, 2013	Albert Edwards	"We repeat our key forecasts of the S&P Composite to bottom around 450 (-70%), accompanied by sub 1% US ten year yields" - *CNBC,* following on Edwards' "ultimate death cross" in July 2012
May 30, 2013	Peter Schiff	"We've got a much bigger collapse coming…I am 100% confident the crisis that we're going to have will be much worse than the one we had in 2008" - *Marketwatch,* and "The crisis is imminent. I don't think Obama is going to finish his second term without the bottom dropping out. And stock market investors are oblivious to the problems." - *Money Morning*
October 15, 2013	Tom DeMark	"DeMark's Dow Jones Index chart covering the period from May 2012 to the present seems to be tracking, almost precisely, the months leading up to the 1929 stock market crash." "The market's going to have one more rally, then once we get above that high, I think it's going to be more treacherous... I think it's all preordained right now." - *Bloomberg*
November 6, 2013	Bob Janjuah	"We see a significant risk-on top before giving way, over the last three quarters of 2014 through 2015, to what could be a 25%-50% sell-off in global stock markets." - *Marketwatch*
July 24, 2014	David Levy	"David Levy says the United States is likely to fall into a recession next year, triggered by downturns in other countries, for the first time in modern history. "The recession for the rest of the world … will be worse than the last one," says Mr. Levy, whose grandfather called the 1929 stock crash . Mr. Levy predicts a US recession will throw its housing recovery in reverse, and push home prices below the low in the last recession. He says panicked investors are likely to dump stocks and flood into US Treasuries, a haven in troubled times, like never before." - *The Independent*
September 29, 2015	Carl Icahn	"I see real tremendous problems ahead and I don't think we are handling it right and nobody really wants to talk [it] out... We are headed toward a strong correction and possibly a complete meltdown but not systemic like 2008. It won't threaten the system, it's just going to threaten your livelihood and net worth....I do think you are in a very massive bubble and when it bursts it isn't going to be pretty, it could be a blood bath." - *Forbes*
January 7, 2016	George Soros	"Global markets are facing a crisis and investors need to be very cautious, billionaire George Soros told an economic forum in Sri Lanka on Thursday..."China has a major adjustment problem," Soros said. "I would say it amounts to a crisis. When I look at the financial markets there is a serious challenge which reminds me of the crisis we had in 2008." - *Bloomberg*
January 18, 2016	John Hussman	"A broad range of other leading measures, joined by deterioration in market action, point to the same conclusion that recession is now the dominant likelihood." - *Hussman Funds*
October 31, 2016	Simon Johnson	"Mr. Trump's presidency would likely cause the stock market to crash and plunge the world into recession...anti-trade policies would cause a sharp slowdown, much like the British are experiencing after their vote to exit the European Union." - *New York Times*
November 9, 2016	Paul Krugman	"It really does look like President Donald J. Trump, and markets are plunging....So we are very probably looking at a global recession, with no end in sight. I suppose we could get lucky somehow. But on economics, as on everything else, a terrible thing has just happened." - *New York Times*

Appendix I: possible mitigants to the severity of the next bear market

Chart 1

A decline in global imbalances

Absolute value of all country current account surpluses and deficits, % of world GDP



Source: IMF, n=194 countries. 2018.

Chart 2

Decreased risk in the financial system

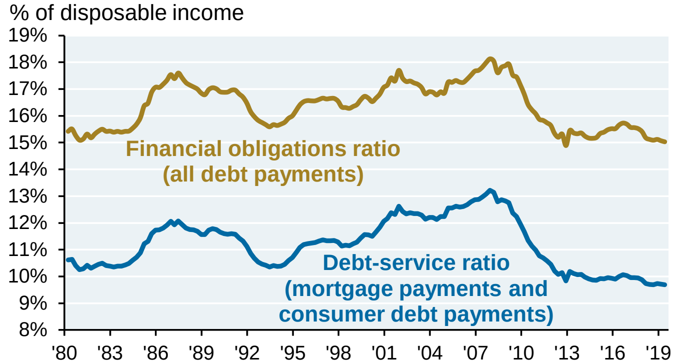
Bank risk-weighted-capital ratio	2007	2019
US	8.5%	13.7%
Europe	8.0%	15.6%
Bank liquid assets as % of short term liabilities	**2007**	**2019**
US	41%	45%
Europe	35%	41%
Bank loan-to-deposit ratio	**2007**	**2019**
US	97%	77%
Europe	139%	104%

Source: Fed, FDIC, ECB, JPMAM. Q2 2019.

Chart 3

Lowest household debt-service ratios in 40 years

% of disposable income

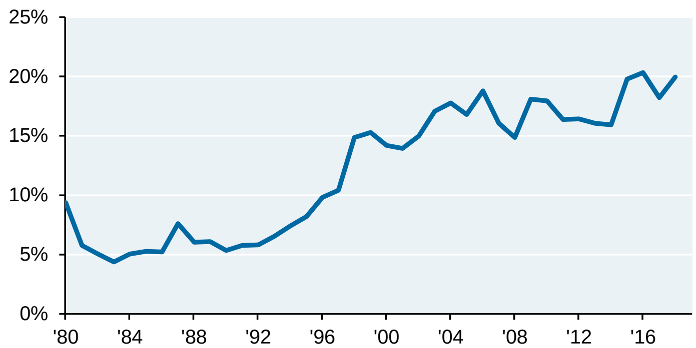


Source: US FED. Q2 2019. Financial obligations include mortgage, consumer, auto lease, rental, homeowners' insurance and property tax payments.

Chart 4

Emerging Markets foreign exchange reserves

Median level of country reserves as % of GDP

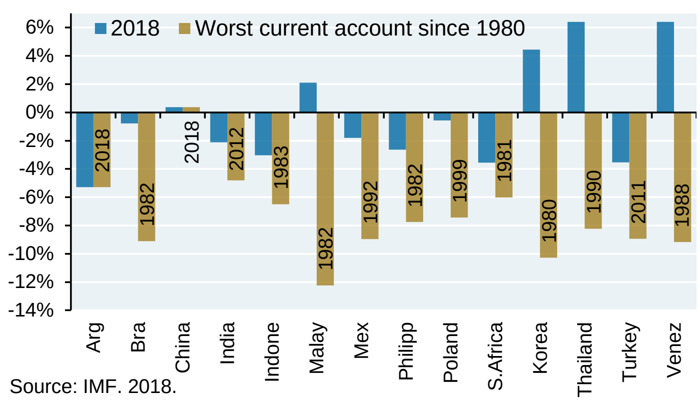


Source: IMF, World Bank, Haver. 2018.

Chart 5

Emerging Markets current account balances

% of GDP

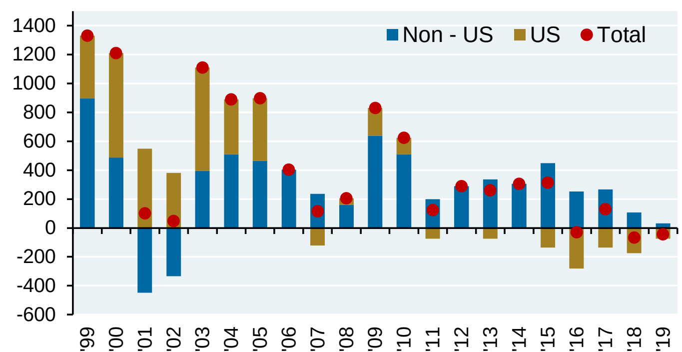


Source: IMF. 2018.

Chart 6

Unprecedented low levels of net equity supply

US$ bn, based on MSCI All Country World Equity Index

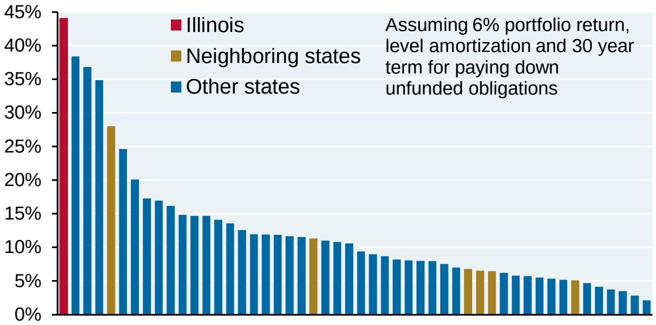


Source: JPM Global Markets Strategy Flows & Liquidity Report. 2019.

Appendix II: The grass is much greener outside Illinois

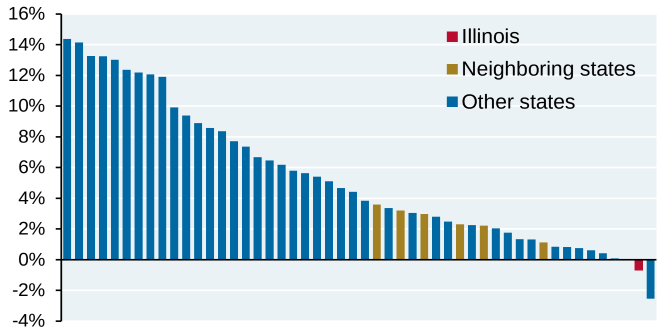
It's happening much more slowly than in Detroit or Puerto Rico, but Illinois may be heading for its own Armageddon. As we estimated in our "ARC & the Covenants" project, Illinois would have to dedicate 40%+ of state revenues to underfunded pension/retiree healthcare costs in perpetuity to pay them in full. Similar burdens are required in Chicago, which we analyzed as well. At the same time, in the wake of last year's tax hikes, the state's population and labor force (i.e., tax base) are shrinking, it has one of the worst net migration rates with respect to households and adjusted gross income, and now its home prices are stagnating. The new Pritzker plan would result in Illinois having one of the most onerous business tax climates in the US, which could in turn accelerate departure of businesses and households to more attractive neighboring states (Indiana, Michigan, Kentucky, Iowa, Wisconsin and Missouri, highlighted below in gold). Absent an unprecedented Federal bailout of pensioners and/or bondholders, I do not see this ending well in the long run. Here's former FDIC Chairman William Isaac: "The city of Chicago and the state of Illinois should act now to restructure their liabilities and put the fiscal mess behind them. This can be accomplished by utilizing Chapter 9 and other tools Congress just gave Puerto Rico. The process would entail about two years of unpleasant headlines, but the city and the state will rebound far sooner and less painfully than if they stay on their current paths" (2016).

Percent of state revenues required to fully repay pension and retiree healthcare obligations



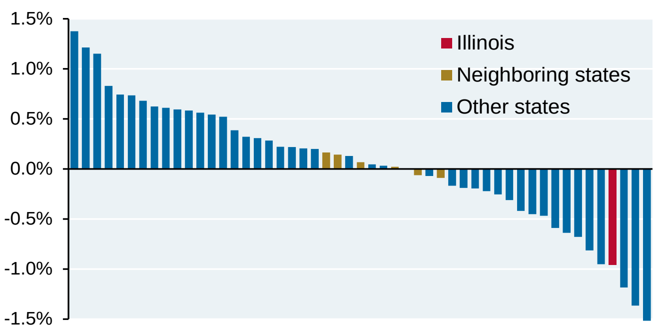
Source: JPMAM ARC & The Covenants Project, FY 2017, Illinois FY 2018

Cumulative percentage change in population, 2010 - 2018



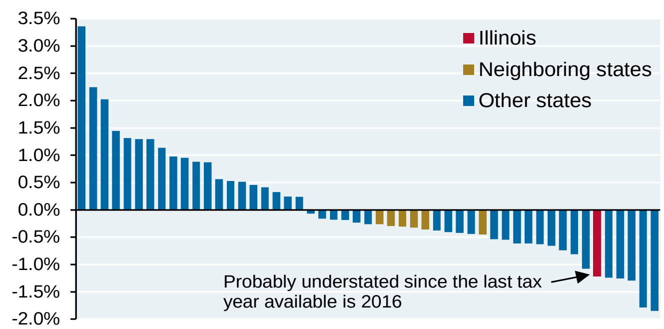
Source: US Census. 2018.

Percentage population change due to interstate migration, 2017-2018



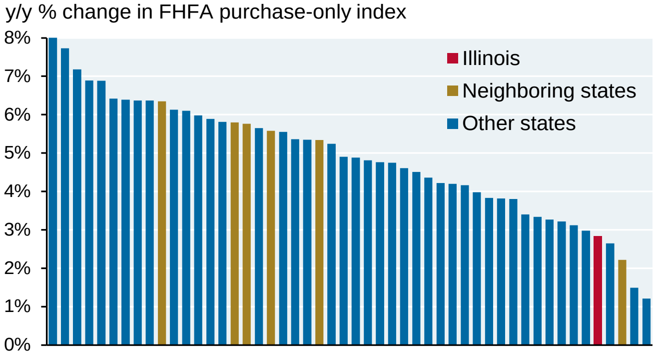
Source: US Census. 2018.

Percentage change in adjusted gross income due to interstate migration, 2016



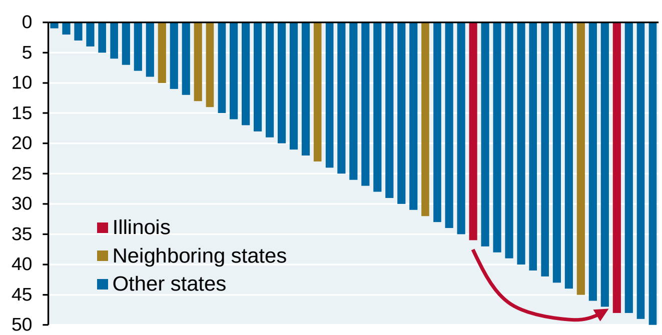
Source: IRS. 2016.

1 year change in home prices
y/y % change in FHFA purchase-only index



Source: Federal Housing Finance Agency. Q2 2019.

Pritzker tax plan would move Illinois from 36th to 48th
Tax Foundation Business Tax Climate Index, best = 1



Source: Tax Foundation. 2019.

Acronyms of the week

ARC Annual Required Contribution; **CFO** Chief Financial Officer; **ECB** European Central Bank; **FDIC** Federal Deposit Insurance Corporation; **FHFA** Federal Housing Finance Agency; **IFDC** International Fertilizer Development Center; **M&A** Merger and Acquisition; **S&L** Savings and Loans; **UN** United Nations; **USGS** United States Geological Survey