

Highlights

Following a difficult performance year, investors have enjoyed very strong investment returns across all asset classes in 2019, despite slower global growth and numerous headwinds. A pre-emptive monetary policy reversal by the Federal Reserve has been the primary catalyst for pushing both stock and bond prices substantially higher in 2019. As we entered the year, our research team believed sufficient progress had been made toward achieving the Fed's dual mandate of full employment and price stability to allow the Fed to pause further monetary tightening for the balance of the year. However, the Fed undertook a series of unprecedented insurance policy cuts to protect against global growth concerns and muted inflation pressures. The Fed's policy reversal caused interest rates to reprice to the lower expected terminal policy rate, pushing long Treasury returns up over 20 percent. The Fed's actions also refueled investor's risk appetites as corporate bonds have returned 14.5 percent and equity markets are closing in on a 30 percent gain in 2019; a historic reversal from the difficult return environment experienced last year. It's been particularly fascinating to see interest for risk assets remain so strong in 2019 at this point in the credit cycle

given fundamental economic growth concerns. This rally has been unique in the fact that it's rare in our experience to see interest rates massively decline in such a short period of time without a commensurate widening in credit risk premiums. Rarely have so many asset classes exhibited such a sense of invulnerability. Improved corporate earnings and continued strong consumer and business sentiment is critical for the equity rally to continue. Rising nationalism, decelerating economic growth and the risk of change in a contentious election year will make that a challenge in our view. While fundamentals are stretched for both bond and stock prices, our outlook calls for equities to once again outperform bonds in 2020, albeit with a wider range of likely returns. As prudent investors, we know that the price paid for a stock or bond should contribute to a certain margin of safety, allowing for poor financial results, bad luck or multiple things going wrong at once. The margin of safety is getting too thin in most markets we research. One thing is certain: portfolio flexibility will be particularly critical to manage cycle uncertainty while preserving and growing wealth in the years ahead.

2014	2015	2016	2017	2018	2019 YTD
US Real Estate 19.4%	Securitized 1.5%	US Real Estate 22.3%	Intl Equity Ex-US 27.4%	US T-Bills 1.8%	US All Cap Equity 27.2%
US All Cap Equity 12.6%	US Treasury 0.8%	High Yield Corps 17.1%	US All Cap Equity 21.2%	Securitized 1.0%	US Real Estate 19.6%
Inv Grade Corps 7.5%	Aggregate Bond 0.5%	US All Cap Equity 12.7%	US Real Estate 20.3%	US Treasury 0.9%	Intl Equity Ex-US 16.6%
Aggregate Bond 6.0%	US All Cap Equity 0.4%	Inv Grade Corps 6.1%	High Yield Corps 7.5%	Aggregate Bond 0.0%	Inv Grade Corps 14.2%
Securitized 5.9%	US T-Bills 0.0%	Intl Equity Ex-US 4.7%	Inv Grade Corps 6.4%	Inflation Protected TSY (1.3%)	High Yield Corps 12.1%
US Treasury 5.1%	Inv Grade Corps (0.7%)	Inflation Protected TSY 4.7%	Aggregate Bond 3.5%	High Yield Corps (2.1%)	Aggregate Bond 8.8%
Inflation Protected TSY 3.6%	Inflation Protected TSY (1.4%)	Aggregate Bond 2.6%	Inflation Protected TSY 3.0%	Inv Grade Corps (2.5%)	Inflation Protected TSY 8.0%
High Yield Corps 2.5%	Intl Equity Ex-US (4.3%)	Securitized 1.8%	Securitized 2.5%	US Real Estate (2.9%)	US Treasury 7.5%
US T-Bills 0.0%	High Yield Corps (4.5%)	US Treasury 1.0%	US Treasury 2.3%	US All Cap Equity (5.2%)	Securitized 6.2%
Intl Equity Ex-US (3.4%)	US Real Estate (9.9%)	US T-Bills 0.3%	US T-Bills 0.8%	Intl Equity Ex-US (14.6%)	US T-Bills 2.1%

As of 11/30/19

Source: PMA Asset Management, LLC, Bloomberg

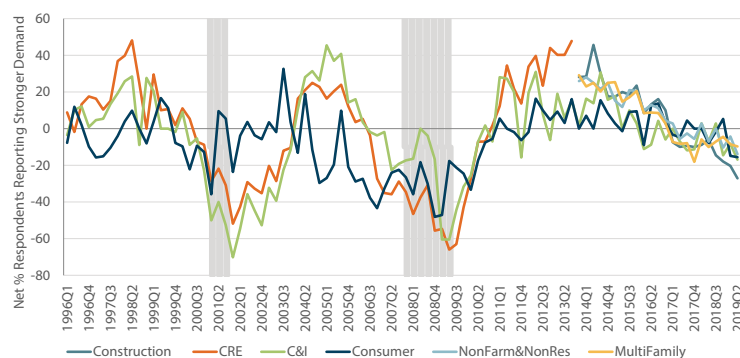
Economic Outlook

When is the next recession going to start? That is the number one question we get from our clients here at PMA. Economists, analysts and investors have attempted and failed to predict the next recession over the past several years, utilizing a wide variety of economic and market models. PMA's 35-year history is firmly rooted in fundamental credit research, specifically bank credit research. While predicting a recession is difficult to forecast given the complex relationship of fundamental economic factors, our research team thought it would be interesting to see what banking industry indicators might give us insight on when the next recession might occur. We studied over twenty years of bank data to identify what indicators might provide accurate insight on this lingering question. We chose this period due primarily to data availability and the belief that recent data was more relevant due to substantial changes in banking regulations since the early 1990's.

As prudent investors, we know that every recession is distinct in terms of its genesis, so our goal was to find commonalities observed before each of the most recent recessions, specifically the 2001 Credit Recession as well as the Great Recession in 2007-2009. We analyzed trends in key banking industry metrics, both in aggregate as well as by loan type, to guide our research. It's interesting to note that several industry metrics stood out as good leading indicators of a recession including loan demand, loans past due, non-performing assets, loan growth and lending standards. In our research, a change in trend was defined as a clear shift in direction seen over multiple quarters. It is also important to note that not all shifts are linear and changes in trend direction can be somewhat subjective. That said, we sought to identify trends that were clear and observable.

The results of our research indicate that loan demand was the most telling metric in terms of longest time between change in trend and the start of each recession. Focusing on Commercial Real Estate (CRE) and Commercial and Industrial loans (C&I), each saw three consecutive quarters of a clear reduction in loan demand prior to the 2001 Credit Recession. Additionally, both CRE and C&I loans saw five consecutive quarters showing a reduction in loan demand prior to the Great Recession.

LOAN DEMAND

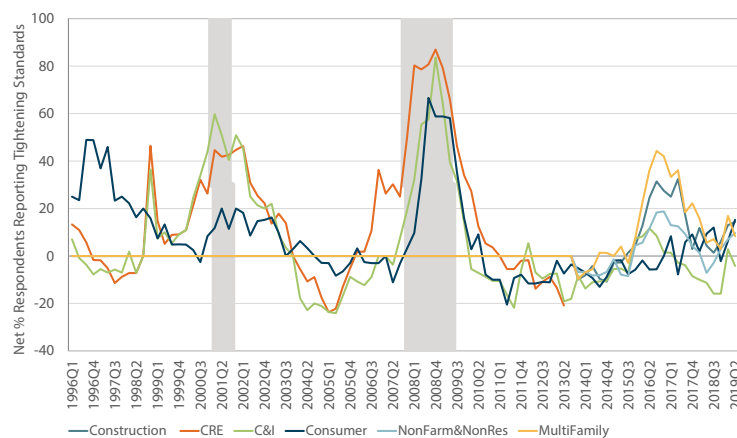


Source: PMA Asset Management, LLC, Bloomberg

Today, both of these loan categories have seen loan demand decrease for several years, which indicates a higher recession probability in upcoming quarters. While loan demand hasn't fallen as deep or rapidly as observed before the two prior recessions, there certainly appears to be a clear trend of falling loan demand across all observed loan categories. It's important to note that reported aggregate CRE loan demand was adjusted to its constituent loan categories since 2013. Construction loans have seen a particularly sharp reduction in demand over the past several quarters.

Another metric showing significant lead time before both of the previous recessions was tighter lending standards. Tightening lending conditions can be defined as the percentage of banks reporting a tightening of lending standards less than percentage reporting an easing of standards. Both CRE and C&I loans tightened 10 quarters prior to the 2001 Credit Recession. CRE and C&I loans tightened seven and two quarters, respectively, in advance of the Great Recession. Currently, banks are reporting somewhat tighter lending conditions for most loan types, although no clear trend is yet observable. Nonetheless, lending standards should be monitored closely as one interesting observation is that tighter lending standards tend to precede a rise in delinquencies, perhaps indicating that bankers may have insight to recessions before borrowers begin falling late in loan payments. Overall, while loan demand, lending tightening and delinquencies all proved to be decent indicators of a recession during the study period, none are forecasting an imminent recession, which is in line with our fundamental forecast.

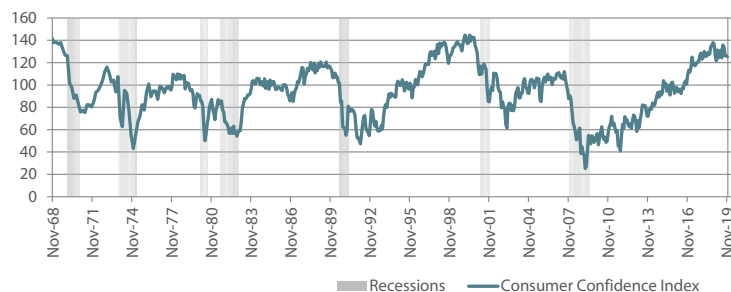
LENDING TIGHTENING



Source: PMA Asset Management, LLC, Bloomberg

We forecast U.S. economic growth to decelerate in 2020, but remain positive, largely in line with the 2 percent growth rate reflected in the most recent quarterly GDP report. The consumer remains the economic bright spot, and consumer confidence levels - another great recession indicator - do not reflect imminent recession risks either.

CONSUMER CONFIDENCE AROUND RECESSIONS



Source: PMA Asset Management, LLC, Bloomberg

Labor market strength, supported by continued low unemployment rates, improving wages and strong consumer balance sheets, should drive consumption levels higher. Easier financial conditions should provide a modest boost to economic growth as well, particularly in the housing market. We expect continued weakness in business investment as corporations continue to favor spending free cash flow on buybacks and other shareholder enhancement activity. A sustained increase in business investment is important for the economic expansion to sustain itself. Easier policy conditions and cheap borrowing rates make financial gearing more attractive than the risks associated with increasing investment. Recent positive developments in trade negotiations with China and our North American trading partners could provide a positive catalyst. Absent further escalation in the trade war, the economic drag caused by it should fade somewhat in 2020.

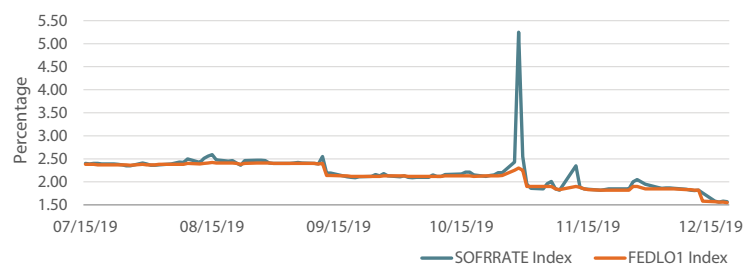
Despite the record breaking length of the current economic expansion, typical late cycle issues, like higher inflation levels or large financial imbalances, are not a huge threat at this time. With the UK general election out of the way and some of the uncertainty related to Brexit, the U.S. Presidential election is a likely source of volatility depending on who gets elected in November. Politics are frustratingly complicated at times, but they should never be ignored. If President Trump, or a more progressive Democratic challenger emerges victorious, fiscal challenges will likely increase over the next several years. The CBO projects the annual budget deficit to average \$1.2T over the next 10 years and federal debts to equal 95% of GDP by 2029. Rising debt levels have the potential to crowd out private investment. As we discuss elsewhere in our outlook, deficits are financed by increasing issuance of U.S. Treasuries, which puts pressure on dealer financing in the repo market. In addition, the more dollars spent on interest payments to service that debt, the less available for the government to invest in areas that could drive future economic growth. As prudent investors, a more balanced approach to fiscal policy would be welcomed.

Repo Market Troubles & the Fed

Our team researches the short term financing markets closely given the large amount of cash liquidity pools we advise across the U.S.

One area of the market that we pay particular attention to is transactions in the \$4T repurchase agreement (repo) market. Repurchase agreements are financial transactions which provide collateralized loans between high quality financial counterparties. Financial institutions predominantly use repo to finance short term fluctuations in their balance sheet rather than general balance sheet funding. Spikes in short term financing rates, like repo, have historically been a good predictor of larger funding stresses in the financial system.

The repo market has experienced significant periodic volatility requiring Fed intervention since our last outlook. Specifically, in mid-September, the secured overnight financing rate (i.e., repo rates) exceeded the federal funds rate by 3% for several days.



Source: PMA Asset Management, LLC, Bloomberg

While there have been various explanations offered by Wall Street of what caused the volatility, our team did some independent research to shed light on the fundamental issues impacting this important part of the market. Our research indicates the spike in repo rates was mainly reflective of a sudden mismatch in the supply and demand for funding. The outstanding supply of U.S. Treasuries has been steadily increasing the past several years and is up 14 percent since 2017. Gross issuance has increased 37 percent on an annualized basis over the same period due in some part to less prudent fiscal policies (i.e. large budget deficits). This supply of Treasuries is either taken down by primary dealers or is sold into the market. The large move in repo rates was magnified by elevated primary dealer Treasury positions, combined with a large Treasury coupon settlement in the middle of September. Additionally, big structural changes in financial markets have occurred in recent years as the Fed has unwound the huge purchases of bonds it has made to boost the economy after the financial crisis. In conjunction with the Fed reducing their balance sheet, excess bank reserves have fallen from \$2.3T to \$1.5T since 2017. The extent of the move in repo rates suggests that the level of excess reserves at banks has reached an inflection point, such that they are reluctant to play the role of the marginal buyer of repo. Additionally, a new post-crisis regulatory requirement, called the liquidity coverage ratio (LCR), forces banks to hold enough high quality liquid assets (HQLA) to last a month in a significant financial and economic crisis scenario and a significant amount of HQLAs is held as reserves at the Fed.

In response to the spike in repo rates, the Fed conducted open market operations aimed at temporarily increasing the supply of reserves via overnight and term repo operations. The Fed then

committed to purchasing \$60 billion of U.S. Treasury bills a month, at least until the second quarter of 2020, in an effort to permanently increase the level of excess reserves. While smaller bouts of volatility have impacted the repo market at mid-month and month-end periods since September, it appears that at this point, the Fed's actions have led to stabilization in the repo market.

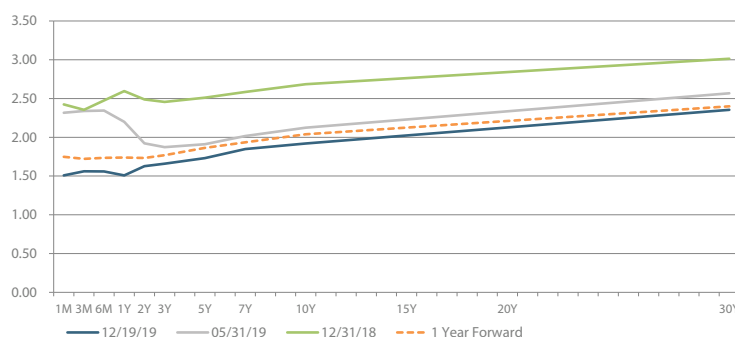
We believe the repo volatility was mainly attributable to the lower excess reserves in the system, combined with the heightened liquidity requirements for banks, rather than concerns about the underlying collateral or counterparty credit risk. While we don't see this as a systemic issue or a credit problem per se, PMA closely monitors volatility in the repo market as repo rates influence overnight money market rates, funding stability and the Fed's policy benchmark rate. Looking ahead, these bouts of volatility may become more frequent as the Fed's strategy to keep rates low for years following the financial crisis has resulted in much higher debt levels among governments and corporations that require the requisite liquidity to finance this debt. While the Fed appears to be on hold with respect to immediate changes in monetary policy, they continue to reshape their balance sheet. In general, the Fed is replacing mortgage backed securities with Treasuries, which might alleviate some of the funding pressures in the repo market. Overall, our outlook is for the Fed to remain on hold for the majority of 2020, with the caveat that a rate cut in the second half of the year would not be unexpected if economic fundamentals worsen significantly. Chairman Powell has clearly indicated their stance would change only when incoming data caused a "material change" in the committee's assessment of the economic outlook. We believe the bar to hike rates, despite the Fed's own forecast of tighter policy by 2021-2022, is high.

Market Outlook

In our experience, the market unfolds in a consistently surprising manner, and we wouldn't be surprised to see volatility increase in 2020. Few predicted this time last year that interest rates would more than fully retrace the increase in rates seen in 2018. While the Fed has a history of overshooting economic fundamentals, these types of rate swings in consecutive years are unusual, specifically when economic fundamentals remain largely positive. Growth remains stable, the labor market is strong and inflation pressures are low. As we discussed at length in our last outlook, we believe the rate volatility largely reflects the evolving nature of the Fed's mandate and the existential pressures they face. Importantly, the rate volatility serves as a great reminder that timing interest rates as a reliable source of return can be costly to one's financial health. Market timing is impossible to perfect. It's the financial equivalent of gambling. As fiduciaries, we can't emphasize enough how

important it is to stay attuned to your financial goals, consistently measure your liabilities and, most importantly, stay invested. The Fed's dovish pivot this summer created a floor to risk assets everywhere and drove short term rates significantly lower. While long term rates quickly priced in expected changes in Fed policy during the first half of the year, short term rates moved lower with policy during the third quarter. Since the Fed's last ease in September, we have seen a steepening in the yield curve as the 2's-10's Treasury spread has widened 24bps. We anticipate this trend to modestly continue higher in 2020 as the Fed remains on hold and inflation levels move closer to the 2 percent Fed target. Net Treasury supply is forecasted around \$700B next year and the possibility of continued funding pressures, as discussed earlier, could pressure yields higher as well. Treasury return prospects in a low yielding environment with the Fed on hold are centered around 1.50-2.00 percent (see corresponding 2020 Expectations table on the following page). Unfortunately, Treasuries can't provide the same level of income and principal protection they've enjoyed more recently.

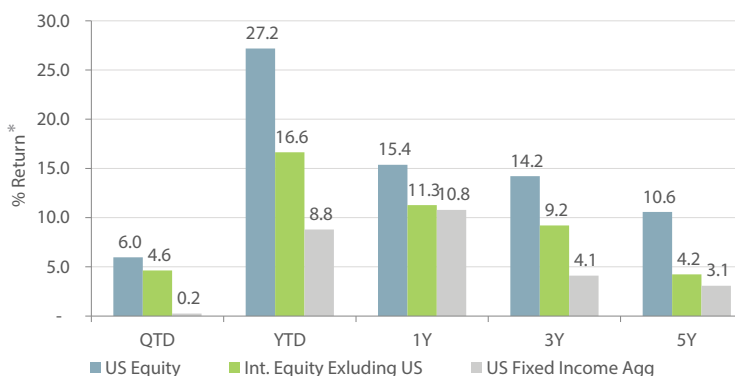
TREASURY CURVE



Source: PMA Asset Management, LLC, Bloomberg

Absolute returns have been extraordinary this year across asset classes, especially equities. U.S. Equity indices are up nearly 30 percent year to date, reaching new record levels on what seems like a daily basis thus far in December. Trailing five year annualized returns across asset classes have been impressive despite numerous headwinds and persistently slow economic growth. Equity and fixed income performance has risen in U.S. markets. Five year forward projected annualized returns are range bound in the low to mid-single digit zip code across most asset classes. While U.S. corporate earnings growth declined 1.7 percent this past quarter, earnings are forecasted to improve materially in 2020 around 9 percent. If earnings grow as expected next year and forward multiples remain relatively consistent, expected returns for U.S. stocks are in the 3-5 percent range. While that is 2 percent higher than base returns we forecast for investment grade bonds, the premium comes with a much wider range of potential returns.

BROAD ASSET CLASS RETURNS



Source: PMA Asset Management, LLC, Bloomberg 11/30/19

* Annualized for periods > 1 year

While we agree that most fundamental valuations measures of U.S. equities are full, they are cheap to bonds and still exhibit the potential for upside. ETF and mutual fund flows indicate we have yet to experience the large shift in allocations from bonds to stocks we generally evidence at this point in the cycle. Not unlike the effect quantitative easing had on risk taking earlier this decade, if rates remain low and the Fed's balance sheet expands as expected, investors will be increasingly forced to rethink the tradeoff between the need for returns versus reduced portfolio risk. This could provide a continued strong tailwind for risk assets, despite the lower margin of safety concerns we mentioned earlier.

International equities are particularly attractive from an expected return standpoint, despite the numerous fundamental economic and political challenges ahead. International equities have performed well quarter to date, and we would expect that trend to continue into 2020. International equities have lagged U.S. equities by over 6 percent annually over the past five years. Historically, the U.S. has exhibited several advantages that have attracted prudent

investors including the enforceability of contracts (i.e. the rule of law) and relative political stability. While the U.S. is certainly still in a leadership position in this regard, those advantages are eroding as we regress to the pack in our opinion. Fundamentals and carry are also favorable in international equities and our base case expectation is that international equities outperform in 2020 as U.S. equities remain relatively range bound.

2020 Expected Returns	Base	High	Low
US Fixed Income	2.8%	6.0%	-3.0%
US Equity	4.0%	10.0%	-20.0%
International Equity	5.0%	20.0%	-20.0%

As of 11/30/19

Source: PMA Asset Management, LLC

Term	2020 Expectations
Fed Funds Rate	1.5%
3 M LIBOR	1.6%
1 YR	1.5%
2 YR	1.6%
3 YR	1.7%
5 YR	1.7%
10 YR	1.9%
30 YR	2.3%
US GDP	2.0%
US CPI	2.0%

Source: PMA Asset Management, LLC



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