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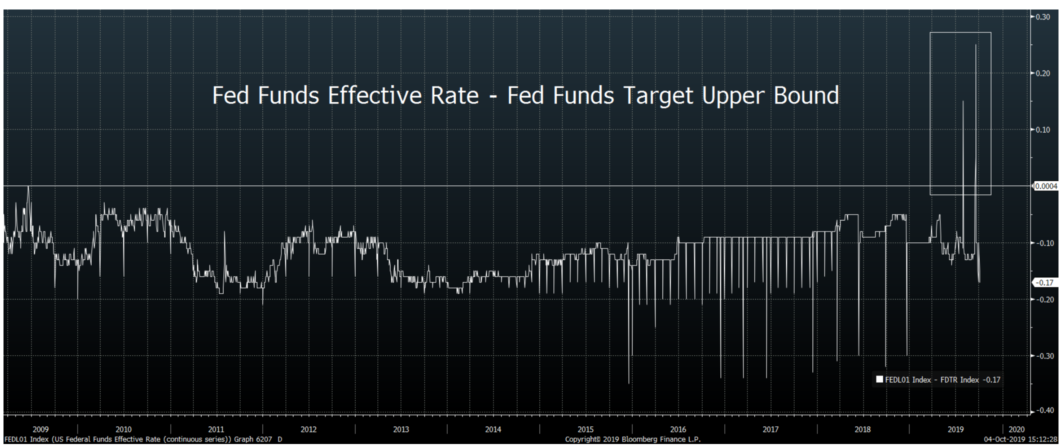
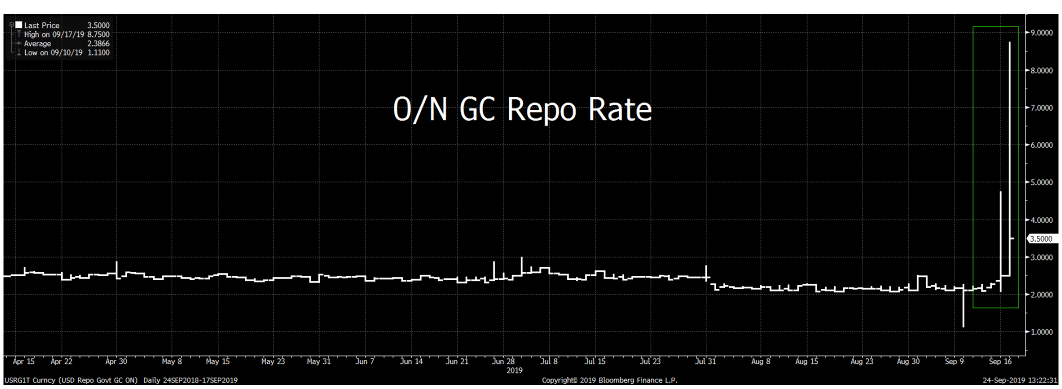
Liquidity, Repos, and Shadow Banking, Oh My!

Money markets[1] are like referees, when they are doing their job properly they go unnoticed. However, on the week of September 16th, the money markets became the center of the investing world when the Fed Funds rate spiked through the Fed's upper bound for the first time since the financial crisis and the overnight repo rate spiked to 8.8%, from 2.1% days earlier.

Something was clearly wrong but investors were left scrambling for answers because few understand the trade in the esoteric money markets. Yet, one thing was clear: the last time the market witnessed such extreme volatility in overnight interest rates was during the financial crisis. Investors are wondering if money market volatility is once again signaling distress in the banking system.

In this edition of the *Monetary Policy Report*, we pull back the curtain and reveal the inner workings of the shadow banking system to explain the recent money market volatility and answer the question: is it 2008 all over again?





[1] The money market is the trade of short-term debt.

Shedding Light on the Shadow Banking System

The role of the banking system is to rectify a mismatch between the short-term liquidity needs of savers with the long-term, risky funding needs of borrowers.

Businesses and individuals need to keep a portion of their savings in cash for spending and safety purposes. Un-invested cash does not earn a return but these liquidity needs prevent this cash from being invested for anything except the shortest of maturities. However, borrowers typically want to borrow cash to be paid back over long-time periods. Through a process called credit intermediation, banks step in to borrow short from savers – in the form of deposits – and lend long-term to borrowers.

Over the last several decades a shadow banking system has developed which now rivals the traditional banking system in terms of the volume of credit intermediation. Both the traditional and shadow banking systems consist of borrowers and savers. However, non-bank financial institutions (i.e. shadow banks) replace traditional banks as financial intermediaries in the shadow banking system.

Examples of shadow banks include finance companies, asset-backed commercial paper (ABCP) conduits, limited-purpose finance companies, structured investment vehicles, credit hedge funds, money market mutual funds, securities lenders, and government-sponsored enterprises.

One important difference between the traditional banking system and the shadow banking system is their source of funding. Banks raise funds through two channels: 1) retail deposits, which consists of deposits from individuals and small and medium-sized businesses and 2) the wholesale funding market, which consists of the cash of governments and other large institutions, like RSA. The traditional banking model relies on retail deposits for funding while the shadow banking system relies entirely on wholesale funding. That is to say, the savers in the traditional banking system are individuals and small business and the savers in the shadow banking system are large institutions.

Savers in the traditional banking system are limited to interest-bearing savings deposits, whereas savers in the shadow banking system benefit from being able to choose from a wide range of short-term assets with differing levels of risk and return. The rise of the shadow banking system has occurred because institutions prefer this ability to choose and customize the short-term assets backing their cash. Thus, the shadow banking system can be thought of as a channel to allow large institutional asset managers a way to manage their cash balances in a more flexible manner than with traditional bank deposits. (Institutional cash pools are also much larger than the FDIC deposit insurance limit which reduces the benefit of traditional bank deposits for large institutions)

Through the process of credit intermediation, the banking system transforms risky, long-term loans into seemingly credit-risk free, short-term, money-like instruments that can be withdrawn on demand. However, the stability of the banking system is dependent on its continued access to short-term funding. If savers ever get worried and stop lending their cash into the system, banks can be forced to fire sell assets. This classic asset-liability mismatch is inherent to both shadow and traditional banks; however, traditional banks have FDIC deposit guarantees and access to the Fed to prevent a bank run. Lack of access to central bank liquidity or public sector guarantees has forced the shadow banking system to rely on securities financing transactions (SFT) – most notably repo – to ensure the safety of saver's cash with mostly AAA-rated riskless securities as collateral.

The Fed and the FDIC have greatly improved the stability of the traditional banking system but the uninterrupted flow of credit to the real economy is no longer reliant only on traditional banks. In many ways the shadow banking system resembles the US banking system before the creation of the FDIC and the Federal Reserve. Consequently, the exponential rise of the shadow banking system has increased the fragility of the US financial system. At the start of the financial crisis, shadow banking liabilities accounted for 60% of total US bank liabilities ($20 trillion vs $13 trillion for the traditional banking system) from less than 5% decades earlier. It is no coincidence that 2008 was the first banking crisis since the Great Depression.

The ability of the shadow banking system to intermediate credit is reliant on stability in their most important funding market. Dysfunction in the repo market - the lifeblood of the shadow banking system – triggered the financial crisis. Considering the size and relative fragility of the shadow banking system, investors are right to be concerned when its funding rates unexpectedly spike from 2% to 8%.

To determine if the current repo market stress is a warning sign of another shadow bank run we must examine the financial plumbing of the shadow banking system – starting with a simplified explanation of the mechanics and institutional setup of the overnight repo market.

The Repo Market

We can segment the repo market into 3 types of players:

Cash lenders --------- Dealers --------- Collateral providers

The repo market is the process by which institutions (savers) lend their cash overnight to shadow banks (collateral providers) who are looking to borrow short-term funds.

The mechanics of repo borrowing require collateral providers to sell a high-quality liquid asset (ex. a Treasury bond) with an agreement to repurchase the security tomorrow – hence the term "repo". The cash lenders buy the collateral with an agreement to sell it back the next day – typically at a higher price. The difference in the repurchase price represents the interest the cash lenders receive for lending their cash.

Collateral providers receive cash and cash lenders receive collateral which they can sell in the event of borrower default.

Slightly complicating matters is the fact that cash lenders and collateral providers do not deal directly with each other but instead with a dealer that sits in the middle and acts as a market maker.

The dealer borrows cash from the cash lenders and lends it to the collateral providers who provide the dealer with the collateral they give to the cash lenders. Dealers use their balance sheet and take on liquidity risk that stems from lining up lenders and borrowers of cash and earn a small spread for their efforts.

Dealers run a matched book where they borrow and lend an equivalent amount. For example, imagine that cash lenders have $200 billion of cash to lend and collateral providers have $200 billion of funding needs. The dealer will borrow $200 billion of cash and lend $200 billion of cash.

As you can imagine, there is typically a mismatch between the amount of cash needing to be invested and the amount of collateral wishing to be pledged to borrow funds. Thus, matched books rarely clear the market.

There are times of excess reserves (i.e. cash) and periods of excess collateral. Excess reserves will tend to lower the overnight general collateral repo rate (o/n GC repo), as there is an excess supply of cash for lending relative to the demand for borrowing. In contrast, an excess collateral position will tend to push o/n GC repo rates higher.

The Fed conducts monetary policy by setting a target rate for overnight rates and they transmit these policy decisions to the economy by ensuring that the financial system has the appropriate amount of reserves so that the overnight borrowing rate hits the Fed Funds target rate.

Before the financial crisis, the Fed ensured overnight rates approached the Fed Funds target rate by setting reserve requirements for the banks. The New York Fed would also conduct temporary open market operations (TOMOs), which add or remove reserves from the system, to smooth out the short-term fluctuations in the repo market. This process worked smoothly and the overnight rate was rarely more than a couple of basis points away from their target.

Then the financial crisis hit and everything changed.

The Fed was forced to abandon the old regime, and adopt a new paradigm for transmitting monetary policy. The Fed replaced the target rate and minimum necessary reserve regime, with a 25 basis point target range and ample excess reserve regime. Under the old regime reserves did not earn interest. Therefore, banks would always attempt to keep their reserves at a minimum and lend the rest into the o/n repo market so as not to forgo the interest. To combat the crisis the Fed conducted a quantitative easing program (QE) which added over a trillion in excess reserves to the banking system. These reserves would have pushed the overnight rate below the Fed's target rate as banks lent them into the repo market. Consequently, the Fed began paying interest on a bank's excess reserves (IOER) held at the Fed (previously these reserves paid no interest). The IOER is set at the bottom of the Fed's target range. Therefore, banks only lend their reserves into the repo market if the overnight repo rate is above the bottom of the Fed's target range. If rates fall below that range the banks would leave the reserves at the Fed earning a higher interest rate. IOER has gone a long way in helping the Fed defend the bottom of its target range. However, IOER is only paid to banks, who have reserve accounts at the Fed. But banks are not the only institutions that hold cash and lend into the repo market. In order to drain non-bank excess reserves and the Fed conducted a reverse repo program (RRP) to further aid in setting the Fed Funds floor.

To illustrate how the Fed's RRP works, imagine that cash lenders have $250 billion of reserves they want to lend but collateral providers only wish to borrow $200 billion. Dealers' matched books will only clear $200 billion. The $50 billion in excess reserves will cause o/n repo rates to fall, potentially through the Fed Funds floor. Therefore, the Fed steps in with a reverse repo facility (RRP) to soak up the excess reserves and allow the market to clear.

See Appendix B for a detailed explanation of how the repo market clears.

The benefit of the new monetary policy regime is that the large store of excess reserves on bank balance sheets reduces the need for the NY Fed to conduct open market operations to keep o/n rates in-line with Fed Funds.

Excess Reserves vs Excess Collateral

An imbalance in the repo market can be a result of:

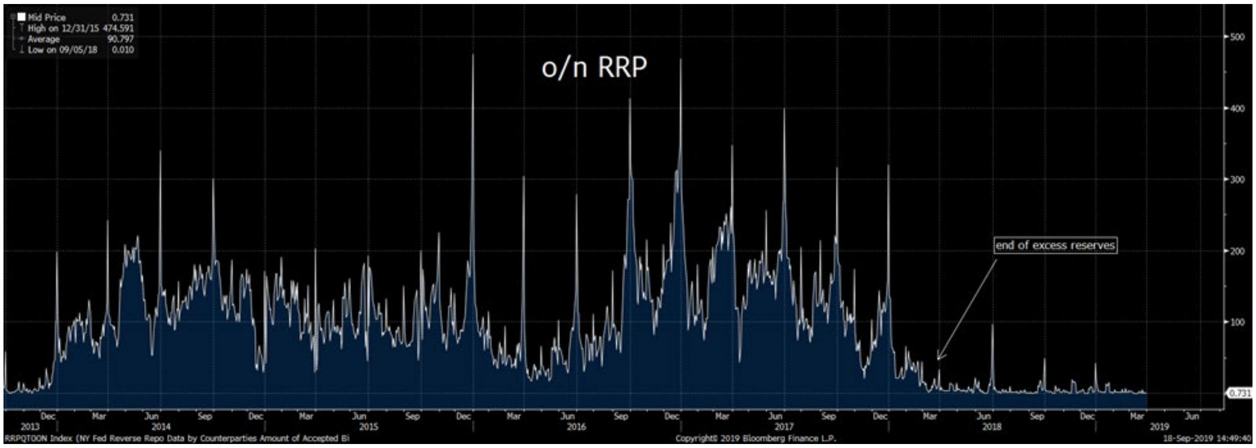
1) Excess reserves – supply of reserves to invest from cash lenders exceeds demand to borrow o/n from collateral providers

Or

2) Excess collateral – demand to borrow from collateral providers exceeds the supply of reserves to invest from cash lenders

From the start of the financial crisis through 2017, the imbalance was consistently an issue of excess reserves (which is the same as saying there was a lack of dollar-denominated safe assets that could be used for collateral in a repo transaction).

IOER kept bank reserves from flooding the system but reserves outside of the banking system still exceeded available collateral. As a result, the Fed's standing, fixed price, full-allotment o/n reverse repo facility (RRP) was consistently needed to allow the market to clear – which means that o/n GC repo rate was consistently trading at the bottom of the Fed's target range. The chart below shows the use of the Fed's RRP facility. The use of the RRP is proportional to the amount of excess reserves in the financial system. But as you can see, the period of excess reserves outside of the banking system ended in 2018.



Excess Collateral Regime

We are now in a period of excess collateral. An excess collateral position occurs when there is more collateral being pledged to raise cash than traditional cash lenders have to lend.

See Appendix C for an explanation of why we are now in an excess collateral/short reserve period.

Revisiting our example, except now imagine that collateral providers wish to borrow $250 billion but cash lenders only have $200 billion of reserves to invest – leaving the system with $50 billion of excess collateral (i.e. $50 billion short of reserves). In a world of excess reserves, the Fed would step in with their o/n RRP facility to soak up the excess reserves – providing treasuries from their account - and allow the market to clear without rates printing through the bottom of the Fed Funds floor. However, when the imbalance occurs because of excess collateral there is another layer that steps in to provide reserves and clear the market: large banks.

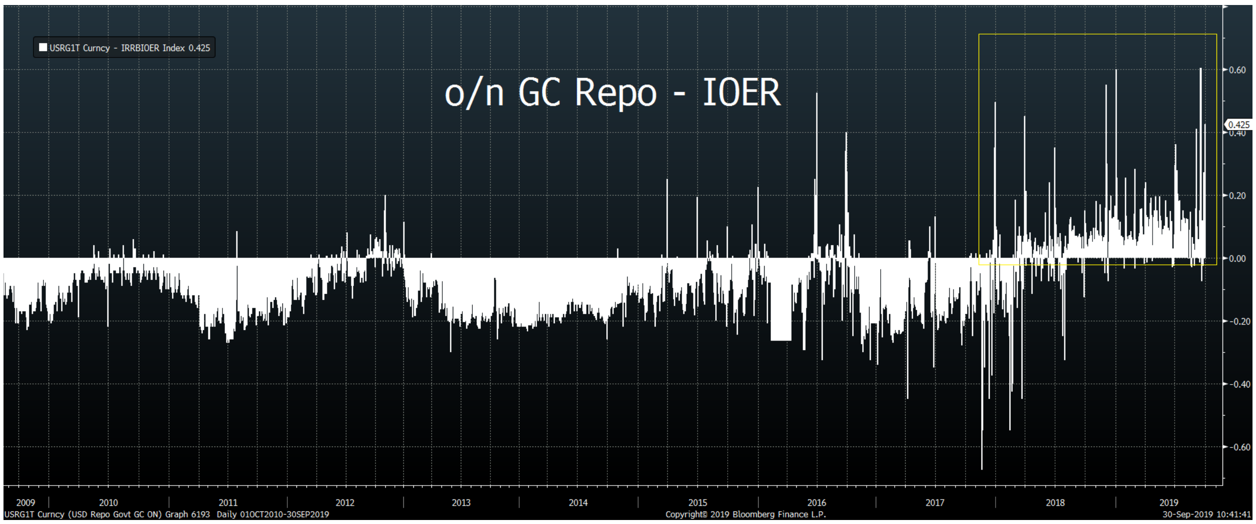
Large banks keep a portion of their portfolio of high-quality liquid assets (HQLA) held as reserves. Banks will only withdraw the excess reserves from the Fed when the GC repo rate trades above IOER.

When collateral supply exceeds excess reserves outside of the banking system, the o/n GC repo rate will trade above IOER. In response, banks will take their excess reserves held at the Fed and invest them into the repo market to capture the yield premium.

In the Q&A of JP Morgan's fourth quarter of 2018 earnings call management was asked, "Can you kind of walk through the idea of lowering down the deposit with banks and kind of moving into repo?"

JP Morgan’s CFO responded *“So, it's fair to say that money market rates traded above IOER throughout the fourth quarter and more pronounced at the end of the quarter…we were able to take advantage of the market opportunity to move out of cash into reverse repos. And so, for us, it was a yield-enhancing opportunity to redeploy cash and a mix change rather than adding duration. And that continues to be the case into the first quarter. It contributed to our NIM expansion in the fourth quarter.”*

You can see in the chart below that since 2018 the o/n GC repo rate has consistently traded above IOER. As a result, the large banks with excess reserves and balance sheet capacity have lent heavily into the repo market since 2018.



However, banks have a limit on their ability to provide liquidity to the repo market. Banks have regulatory requirements that force them to keep a portion of their HQLA portfolio as reserves held at the Fed. Excess reserves are defined as bank reserves in excess of the regulatory reserve requirement. However, since Basel III (2015) banks also have intraday liquidity limits which force them to keep excess reserves above their regulatory reserve requirements. Thus, banks will hit their intraday liquidity requirements despite still having “excess reserves”. Importantly, when banks excess reserves fall to their intraday liquidity limit they can no longer provide reserves to the repo market.

In September the Fed Funds rate shot up to 4% and o/n GC repo hit 6%. With IOER at 2.10%, why didn’t banks with excess reserves take advantage? This is not a case of fear in the banking system causing banks to hold on to reserves and unwilling to take on questionable collateral. Banks aren’t lending their reserves into repo because they are down to their intraday liquidity limit. They don’t have any “true” excess reserves left. As a result, the repo market has become inelastic – an increase in price (interest rates) does not induce increases in supply.

In their most recent quarterly earnings call (3Q19), JP Morgan’s CEO, Jamie Dimon, was once again asked about repo:

Glenn Schorr, Analyst:

Hi, thanks very much. Curious to get your take on everything that went on in the repo markets during the quarter. And I would love it if you could put it into context of maybe the fourth quarter of last year. If I remember correctly, you stepped in in the fourth quarter. So higher rates, threw money at it, made some more money and it calmed the markets down. I'm curious, what's different this quarter that that did not happen? And curious if you think we need changes in the structure of the market to function better on a go-forward basis?

James Dimon, Chairman and Chief Executive Officer:

So, if I remember correctly, you got to look at the concept of we have a checking account at the Fed with certain amount of cash in it. Last year, we had more cash than needed for regulatory requirements. So repo rates went up, we moved the checking account in IOER into repo, obviously makes sense, you make more money. But now the cash in the account which is still huge, its $120 billion in the morning goes down to $60 billion during the course of the day and back to $120 billion at the end of the day, but that cash we believe is required on the resolution and recovery and liquidity stress testing. And therefore, we could not redeploy it into the repo market, we would've been happy to do that. And I think it's up to the regulators to decide if they want to recalibrate the kind of liquidity they expect us to keep in the net account.

Since 2018, it has been excess reserves from bank HQLA portfolios that have stepped in to fund the growing collateral surplus. However, banks have now hit their intraday liquidity limits and thus have exhausted the pool of reserves they can lend into the repo market. Once reserves from bank HQLA portfolios have reached their regulatory limit, GC repo rates will spike up through the Fed Funds ceiling.

When bank excess reserves have been exhausted and the repo market is still in an excess collateral position the Fed must step up as the liquidity provider of last resort by setting up a repo facility (RP) to add reserves to the system and prevent repo rates from rising above their target rate.

So why didn't the Fed step in on September 16th and prevent rates from spiking? There are two reasons and they are both unsettling: 1) while the Fed has a standing mechanism to defend the bottom of their target range, they do not have a standing facility to defend the top of their range. 2) The Fed was unaware that the banking system was lacking sufficient unencumbered excess reserves. Repo market expert, Jeff Kidwell, explains, *"The problem seems to be that the Fed added all of these tools to provide liquidity but only to take cash out of the system with their RRP, not to ADD cash to the system to keep rates down and to provide liquidity to collateral providers or to broker/dealers."*

1) Fed lacks a mechanism to defend the top of their policy range

While the Fed has a standing, fixed price, full allotment RRP facility to prevent rates from falling through the bottom of its target range it does not have a standing RP facility to keep rates from spiking through the top of its target range. (Technically, banks can borrow from the Fed's discount window 50 basis points above the target rate. However, banks will never borrow from the Fed window unless they are on the absolute verge of bankruptcy. In the interest of transparency, some politicians thought that it would be a good idea to require the Fed to publish the name of the bank that accessed the Fed window and exactly how much they borrowed. When it becomes public that a bank accessed the Fed window, everyone will know they are in trouble and no one will lend them money and you get a Lehman moment. The unintended consequence of transparency is that it neutered this policy tool. For all intents and purposes, the Fed window is not a mechanism to police the top of the Fed's target range).

The Fed does not have a standing RP facility for a couple of reasons. First, a host of technical problems makes designing a standing RP facility more difficult than a standing RRP facility. Second, the excess reserves sterilized in a standing RRP facility are the result of the Fed's own policy decisions (i.e. QE). Their standing o/n RRP facility is just there to soak up the excess reserves so that rates do not go below their target. Further, sterilizing reserves does not inflate the Fed's balance sheet. Importantly, this means the Fed is in control of its balance sheet with a RRP facility.

In contrast, the collateral monetized in a standing RP facility does inflate the Fed's balance sheet and the amount of necessary monetization is the result of factors outside of the Fed's control. Thus, a standing fixed cost, full allotment RP facility causes the Fed to lose control of its balance sheet.

It should be noted that the ECB does have a standing, fixed price, full-allotment RP facility to police the top of their target rate.

Instead of a standing fixed cost, full allotment RP facility the Fed has implemented temporary open market operations (TOMOs), which will be run for at least two weeks. The Fed is increasing reserves in the financial system with these TOMOs and thus far the monetization has helped bring repo rates back below the Fed Funds ceiling. However, there are several shortcomings with TOMOs. First, they are only opening this facility up to prime dealers to prevent their own funding needs from crowding out their matched repo books. Secondly, this is a multi-priced, fixed allotment RP. The price isn't fixed at the Fed Fund's upper bound like the RRP facility is to the lower bound. The Fed can control quantities or prices but not both. Multi-priced, fixed allotment RPs limit the amount of collateral the Fed monetizes (and thus the size of its balance sheet expansion) but they cannot prevent another spike in repo rates if the collateral shortage is above the RP limit. The final problem with the Fed relying on TOMOs to rectify an excess collateral/short reserve position is that the Fed doesn't have visibility into the reserves needs of the system, which means they don't know the proper size of the daily fixed allotment RP (the October 16th RP was 4x oversubscribed). This "visibility problem" is critical to explaining the second reason why the Fed didn't ensure the banking system had ample unencumbered excess reserves to prevent repo rates from spiking to 8%.

2) The Fed was unaware that the banking system was lacking sufficient unencumbered excess reserves.

In the old monetary policy regime, the Fed set reserve requirements based on their assessment of the level of reserves the financial system needed to hit the Fed's target overnight interest rate and then used TOMOs to smooth out the anomalies. However, those tools only worked because the Fed had visibility into the reserve needs of the system. Yet, the Fed only had visibility because they knew banks would always seek to minimize excess reserves since they did not pay interest.

The Fed no longer has visibility into the reserve needs of the financial system because banks no longer attempt to keep excess reserves at the minimum regulatory requirement. The Fed now pays interest on excess reserves and so banks don't face the same opportunity cost by not lending them into the repo market. Further, the financial crisis altered the way banks think about liquidity. Large banks implemented a liquidity regulatory framework that provided the basis for setting banks' intraday liquidity limits, which impose a minimum threshold for reserves so that banks can withstand a 30-day freeze in funding markets. These intraday liquidity limits make assumptions about a bank's reduced access to funding during a crisis but the intraday liquidity limits are non-stationary and, importantly, the limits are set by the bank's internal models. All of this means that the Fed no longer knows what level of excess reserves is truly unencumbered and can be lent into the repo market if rates moved to the top of the Fed's target range.

The Fed's solution to its visibility problem was the Senior Financial Officer Survey (SFOS). The purpose of the SFOS was to give the Fed a better understanding of the reserve demands of the banking system so that the Fed could take action and adjust the reserve position of the system if necessary. The Fed's last SFOS was November 29th, 2018.

The Fed was fully aware that they had a visibility problem; yet, they walked into September 16th , almost a year removed from their last SFOS, unaware that the banking system was woefully short of unencumbered excess reserves, while lacking a facility to provide emergency reserves to prevent rates spiking through the top of their range in case they ever miscalculated the systems reserve needs.

The Fed didn't just make a small miscalculation. On September 16th, the Fed miscalculated the reserve needs of the system by $300 billion. Importantly, this was not a quarter-end seasonality problem[2]. This was the middle of the month.

Summary

[2] Banks will refrain from lending reserves into the repo market before quarterly reporting in order to make their balance sheet appear stronger (i.e. window dressing).

The financial system currently has a problem with excess collateral, where overnight borrowing needs exceed cash lenders' reserves. In an excess collateral regime, the biggest buffer to prevent rates from spiking above the Fed's target range is the large pool of excess reserves banks hold at the Fed. However, excess reserves have been drawn down to banks' intraday liquidity limits, which has prevented banks from providing the necessary reserves to clear the market. However, the Fed was unaware that banks had hit this limit and thus had insufficient unencumbered reserves to lend into the repo market. The Fed is supposed to act as the lender of last resort to keep overnight rates in-line with their target; however, the Fed had no mechanism in place to provide emergency liquidity and prevent overnight rates from spiking.

Fed Funds

We've focused on the repo market because of its role in the shadow banking system but there have been numerous episodes of repo market volatility over the last five years; thus, the recent bout of repo market volatility isn't what caught investors' attention. The money markets became the center of investor attention in September because the Fed Funds rate spiked through the top of the Fed's target range for the first time since the 2008 financial crisis.

The repo market is said to be "secured" funding because the lending is backed with collateral. In contrast, borrowing in the Fed Funds market is said to be "unsecured" because it is not backed with collateral.

When the Fed sets an overnight borrowing rate they are specifically setting a Fed Funds target range – the cost of borrowing unsecured, overnight - and not the repo rate - the cost of borrowing secured, overnight. For some philosophical reason, the Fed has been reluctant to react when repo rates have traded outside the target range. However, when the Fed Funds rate jumps outside the target range - as it did in September – the Fed is forced to adjust the quantity of money in the financial system so that the actual (i.e effective) Fed Funds rate falls within their target range.

The effective Fed Funds rate rising above the target worries investors because it is a classic sign of fear in the banking system - a higher rate is needed to induce lending. If banks are worried about lending unsecured, even over the shortest of maturities, it could mean that some financial institution is at risk of bankruptcy.

In 2008, volatility in the Fed Funds effective rate was the result of increased solvency risk among certain financial institutions. The question is whether the Fed Funds market is once again signaling risk in the banking system.

How GC repo stress can spill over to the Fed Funds market

When dealers are unable to borrow enough cash in the GC repo market they run overdrafts with Bank of New York (every dealer's clearing bank). In turn, the BNY taps the Fed for daylight overdrafts. BNY pays its daylight overdraft to the Fed by borrowing in the Fed Funds market. The Fed Funds market is small - the GC repo market is 10x the size of the Fed Funds market - and overdrafts are expensive (BNY charges dealers 60 bps per annum per minute and the Fed charges BNY 50 bps per annum per minute). Therefore, BNY will bid aggressively in this small market, which will cause rates to spike. And voila – we get a day when the Fed Funds effective rate prints above the Fed's target band.

The important point is that repo market stress spills over to the Fed Funds market when shadow banks are forced to tap the unsecured markets when they cannot raise sufficient funds to finance their assets in the secured market.

Recall that the shadow banking system relies on short-term liabilities to fund illiquid long-term assets and the ability of banks to intermediate credit is dependent on having continuous access to short-term funding. However, the shadow banking system is inherently fragile due to the lack of an FDIC guarantee to ensure the stability of its funding. As a result, the shadow banking system is dependent on secured, collateralized lending. Importantly, funding stability in the shadow banking system isn't about the solvency of the shadow bank but rather the quality of the collateral securing the borrowing. Just as the deposits in the traditional banking system are dependent on the FDIC guarantee and not on the solvency of any individual bank. If cash lenders become worried about the collateral they will refuse to roll over their debt – a proverbial run on the shadow bank.

Questioning the Collateral

In the run-up to the 2008 financial crisis, the shadow banking system was lacking sufficient high-quality collateral, in the form of Treasuries or AAA-rated senior MBS tranches, for repo transactions. Scarce high-quality collateral forced brokers to use riskier MBS tranches and wrap them with credit default insurance issued from insurers like AIG.

The run on the shadow banking system that started the financial crises was triggered by an adjustable-rate mortgage (ARM) reset in 2007 that resulted in rising delinquencies on sub-prime mortgages. The cash lenders in the shadow banking system started to worry about collateral quality and began to require increasingly large haircuts on some forms of collateral and outright refused to accept other forms of collateral.

Shadow banks were forced to fire sell assets when cash lenders stopped accepting much of the collateral that had been used to fund their existing levered asset positions. Shadow banks were unable to offload their MBS assets when the market for MBS froze; therefore, they were forced to sell their good assets, which led to a fall in the price of all financial assets.

2008 vs 2019

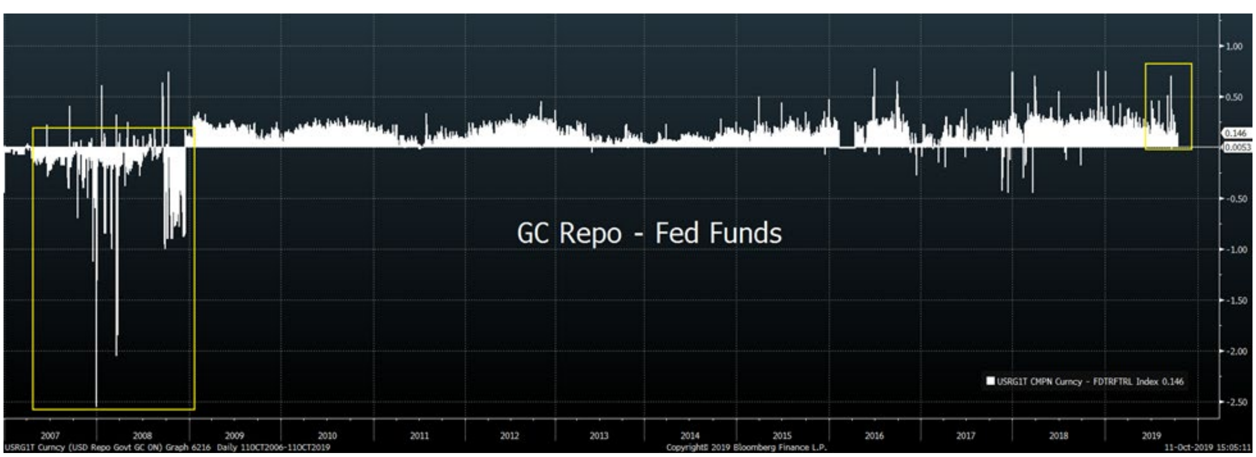
In 2008 and 2019 the Fed Funds rate jumped because shadow banks were forced to tap the Fed Funds market after being unable to secure sufficient funding in the repo market. However, the current funding stress is not a signal of an impending shadow bank run.

In 2008, the shadow banking system was pushed into an excess reserve (short collateral) position when cash lenders began to reject much of the non-Treasury collateral brokers had been using. As a result, the overnight GC repo rate was consistently below the Fed Funds target rate.

In contrast, the repo market is now in an excess collateral position, which is causing the GC repo rate to trade above the Fed Funds target range.

This point is important so it is worth repeating.

In 2008 insufficient funding was due to an unexpected lack of collateral; therefore, the GC repo rate fell below the Fed Funds target. However, in 2019, the problem was an unexpected lack of reserves; therefore, GC repo rates rose above the Fed Funds target.



The distinction is important because repo rates below the Fed's target rate, combined with effective Fed Funds above the target is a sign of a shadow bank run, such as 2008. However, the action in the repo market tells us that the current funding stress is a technical problem that resulted from several factors unexpectedly draining reserves from the banking system - or more cynically, Fed incompetence.

There is no easy remedy if concerns over collateral quality cause lenders to pull funding. Increasing reserves will not increase the availability of financing for the shadow banking system. Fortunately, the current short-reserve problem can be solved relatively easily with the Fed's open market operations. As we previously stated, the Fed sets the target rate for overnight borrowing and is required to adjust the money supply (i.e. reserves) to whatever level is necessary to bring overnight rates within that range. The Fed underestimated the reserve needs of the financial system in September but they are now increasing reserves with their repo operations.

Appendix A:

The repo rate is not one market with one rate that clears the market, but a collection of market segments matched up through the dealer's balance sheets. The rates are subject to a strict hierarchy. Your place within the hierarchy determines the rate at which you lend and borrow.

Cash lenders:

Money Market lending rates (lowest - highest)	**Type of fund lending at that rate**
o/n reverse repo with the Fed	Money market funds
o/n tri-party repo (pays a spread over RRP)	Money market funds
o/n general collateral (GC) repo: uncleared	Hedge funds
o/n general collateral (GC) repo: cleared	GSEs, trust banks

Collateral providers:

Money Market borrow rate (lowest - highest)	**Type of fund borrowing at that rate**
o/n GC repo - cleared	GSEs, trust banks, foreign banks
o/n GC repo – uncleared (spread over cleared)	Hedge funds

Appendix B: Dealer Matched book examples

<u>Balanced market:</u>

Ex. 1

Hedge funds need \$100 billion in funding and GSEs/trust banks need another \$100 billion – a total of \$200 billion of collateral.

On the other side, GSE's/trust banks have \$50 billion of cash to lend, hedge funds have \$50 billion to lend, and money market funds \$100 billion of cash to lend. – a total of \$200 billion of cash to lend.

The dealers in the middle run matched books in which they balance the imbalances in the various market segments. For example, hedge funds need to borrow \$50b more than other hedge funds have in cash to lend and the same with the GSE/trust bank segment.

Then the dealers run matched books by tapping money market funds for the remaining $100 billion of cash to lend to the hedge funds and GSEs.

Collateral Provider			Matched Book			Cash Lenders
Hedge Funds	$100				$50	Hedge Funds
GSE	$100				$50	GSE
					$100	Money Market Fund
	$200				$200	
			$0			

However, matched books rarely ever clear the market. In other words, the repo market is never in a state of balance. The question is always, which side of the ledger is in surplus at a particular time. The two types of imbalances are:

1) Excess reserves
2) Excess collateral

<u>Excess reserves with Fed RRP balancing:</u>

To complicate matters just a little bit we must add the fact that dealers must hold an HQLA portfolio which consists of Treasuries and reserves. However, dealers are not banks so they cannot keep their reserves at the Fed. Instead, they keep them invested in o/n GC repo market.

As a result, before the dealer starts building their daily matched book, they will lend their reserves into the repo market. And this lending will cause an imbalance in the matched book.

Ex.2

Cash lenders still have $200 billion of reserves to lend but this time dealers also have $50 billion of reserves to lend into the repo market – creating a total of $250 billion of reserves to lend.

However, collateral providers only need to borrow $200 billion.

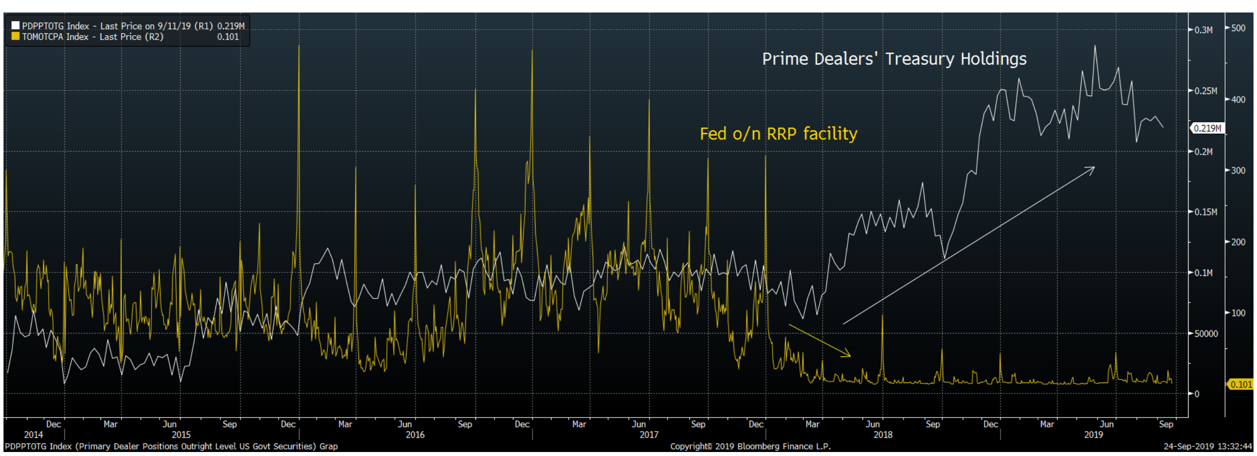
Thus, there is an excess of $50 billion in reserves which will pressure rates lower and potentially below the Fed Funds floor. Therefore, the Fed steps in with a reverse repo facility (RRP) to soak up the excess reserves (pays -5 bps below o/n TRP) and allows the market to clear.

Collateral Provider		Matched Book				Cash Lenders
Hedge Funds	$100				$50	Dealers
GSE	$100				$50	Hedge Funds
					$50	GSE
					$100	Money Market Fund
	$200				$250	
Fed RRP		$50		$50		
			$0			

<u>Excess collateral with big bank excess reserves balancing:</u>

One of the responsibilities of prime dealers is to underwrite newly issued Treasuries by buying them in the morning and then distributing them to buyers in the afternoon. However, ultimate buyers will only buy when it makes financial sense to buy. When the yield curve is inverted relative to actual funding cost – repo, Libor, and foreign currency hedging cost – ultimate buyers disappeared from the market and prime dealer's struggled to move their Treasury supply. But prime dealers are legally obligated to continue buying despite a rapidly growing inventory of Treasuries. This results in prime dealers HQLA portfolio shifting out of reserves and into Treasuries (recall that their HQLA portfolio is some combination of Treasuries and reserves). Prime dealers are forced to repo their Treasuries to raise cash to re-fill their clearing accounts – that is, borrowing in the o/n GC repo market.

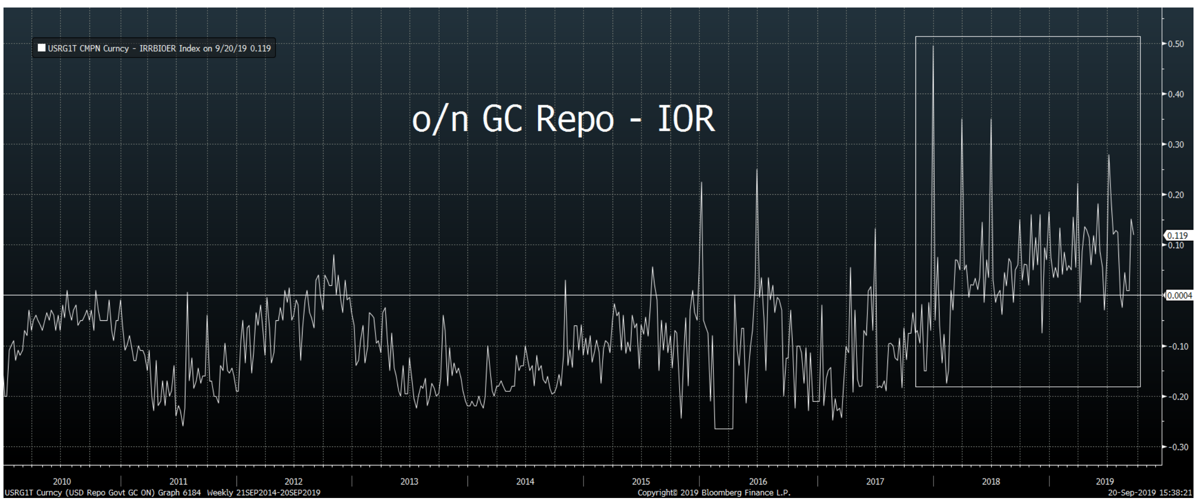
In the previous example dealers were net lenders of reserves into the repo market; however, their growing Treasury inventory position now causes them to be net borrowers in the repo market – the opposite. Thus periods of growing dealer inventories of Treasuries go hand in hand with excess collateral/short reserve periods and vice versa.



In a world of excess reserves, the Fed would step in with their o/n RRP facility to soak up excess reserves – providing treasuries from their account - and allow the market to clear without rates printing through the bottom of the Fed Funds floor. However, when the imbalance occurs because of excess collateral there is another layer that steps in to provide reserves and clear the market: large banks.

Large banks keep a portion of their portfolio of high-quality liquid assets (HQLA) held as reserves. Banks, unlike dealers, have reserve accounts at the Fed which pays interest on excess reserves (IOR). Therefore, banks will only lend into the repo market if the GC rate trades above IOR.

When collateral supply exceeds excess reserves outside of the banking system, the o/n GC repo rate will trade above IOR. In response, banks will take their excess reserves held at the Fed and invest them into the GC repo market to capture the yield premium.
You can see in the chart below that since 2018 the o/n GC repo rate has consistently traded above IOR and banks with excess reserves and balance sheet capacity have lent those reserves into the repo market.



Ex. 3

Cash lenders still have $200 billion of reserves to lend (same as ex. 2) but this time dealers have $50 billion of Treasury collateral to pledge (i.e. borrowing needs of $50 billion), while collateral providers still have $200 billion of borrowing needs.

Thus, collateral providers and dealers are trying to borrow $250 billion of funds but cash lenders only have $200 billion of cash to lend.

Excess borrowing needs would causes repo rates to rise above IOER. Banks respond by taking excess reserves out of the Fed and lends them into the repo market – picking up a higher yield – and clearing the market.

Collateral Provider		Matched Book				Cash Lenders
Dealers	**$50**				$50	Hedge Funds
Hedge Funds	$100				$50	GSE
GSE	$100				$100	Money Market Fund
	$250				$200	
		$50		$50		Bank Excess Reserves
			$0			

Excess collateral with Fed RP balancing:

When bank excess reserves have been exhausted and the repo market is still in an excess collateral position the Fed must step up as the liquidity provider of last resort by setting up a repo facility (RP) to add reserves to the system and prevent repo rates from rising above their target rate.

Ex. 4

The same situation as ex. 3 except this time banks have hit their intraday liquidity limits (i.e. they have no more unencumbered excess reserves).

Collateral Provider		Matched Book				Cash Lenders
Dealers	**$50**				$50	Hedge Funds
Hedge Funds	$100				$50	GSE
GSE	$100				$100	Money Market Fund
	$250				$200	
		$50		$0		Bank Excess Reserves
				$50		Fed RP
			$0			

Appendix C: Reasons for the Current Excess Collateral/Short Reserve Position of the Repo Market

There are 5 factors increasing collateral supply and reducing reserves:

1) Yield Curve Inversion

Treasury supply is not always purchased by real money accounts like pension funds in real-time. This gap is usually bridged by carry traders that borrow short and lend long (i.e. borrow to buy the bonds that there is no final demand for from real money accounts). These carry traders include relative value hedge funds and foreign real money accounts that currency hedge Treasuries.

Carry traders only buy when there is a positive spread after funding cost. However, yield curve inversions drive carry traders out of the market because it eliminates the positive spread.

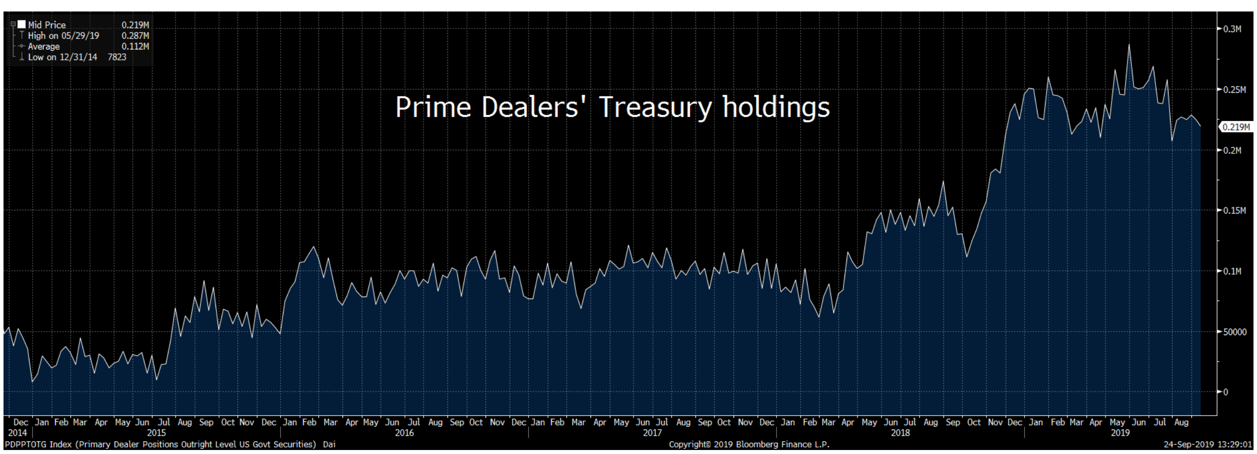
Where carry traders buy to earn a spread, prime dealers buy because they are legally obligated to do so. When carry traders are driven out of the market it leaves prime dealers as the marginal purchasers of Treasuries.

Carry traders fund at 3m – foreign real money accounts in the term fx swap market and hedge funds in the term repo market - while prime dealers fund overnight. Thus a hallmark of curve inversions is funding pressure moving from term funding markets to the ultra-front end repo and fx swap markets.

Traditionally an inverted yield curve is measured as 3m-10y. Pre-Basel III the spreads were negligible so bill yields gave a reasonable approximation for funding costs. But post-Basel III the 3m-10y is not informative because no one funds at a rate around the 3m treasury yield. Money market curves no longer trade at par, but with a spread as wide as 50-100 bps.

The curve is most inverted relative to o/n rates, -75 bps, and the deepest inversion relative to the ultra-short end on record.

The reason that there is an excess collateral problem, is that carry traders and real-money accounts won't buy treasuries because money markets offer rates 50 to 100 bps better. Thus, it leaves only prime dealers, who are obligated by law, as the only ones buying. But they are now stuffed with treasuries (i.e. excess collateral).

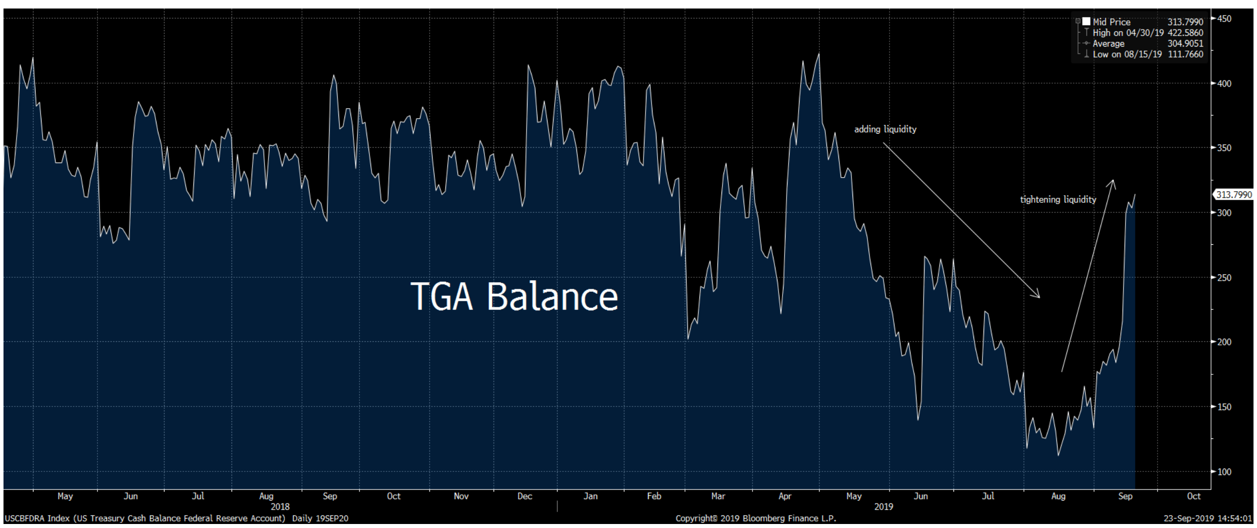


2) The Fed's Taper – The taper removes reserves from the system by design.

3) TGA Balance

In August of 2015, the Treasury Borrowing Advisory Committee set new guidelines for the Treasury General Account (TGA), held at the New York Federal Reserve. The committee determined that under normal conditions the Treasury department should increase their cash deposits to at least $350 billion to be drawn down under special circumstances. Under the guidelines the funds can only be used as 1) a contingency for natural disasters, 2) when Treasury funding markets may be temporarily closed, and 3) ahead of reaching a debt ceiling limit, in order to prevent the unnecessary furlough of government employees (only for the debt ceiling and not for government shutdowns like occurred to start the year).

When Treasury runs down their TGA balance they are spending money in excess of that raised by issuing debt or taxes and when they are taking their TGA balance up they are issuing more debt than they are spending. Since a debt ceiling deal was agreed upon the Treasury must raise its TGA balance by $250 billion by the end of the year. The TGA has drained $200 billion of reserves from the financial system since August. And the TGA balance increase by $83 billion on the day that Fed Funds broke through the Feds target band. That was no coincidence.



4) Foreign RRP facility

The foreign reverse repo facility is an old but historically small market. The foreign RRP provides intraday liquidity services because it settles at 8:30 am, and not 3:30 pm like tri-party repo. However, it pays a market rate. The foreign RRP is advantages for foreign central banks because they get a market repo rate for only investing intraday liquidity. Historically, the foreign RRP was capped so that foreign central banks could only invest limited funds in the facility to prevent it from drawing in funds and affecting the o/n repo rate. However, in 2015 the Fed uncapped the facility. It appears the Fed's motivation was that at the time there was a looming bill shortage and the Fed was worried that excess reserves in the system would prevent rates from rising along with the target range. Inflows into the foreign RRP sterilize reserves and add collateral to the financial system. Therefore, uncapping the foreign RRP would draw funds into the facility, which had the effect of adding collateral and draining reserves from the system – precisely what was needed at the time.

However, the problem now is that the system has excess collateral relative to reserves. And yet the Fed has refused to cap the foreign RRP facility and central banks are pouring money into it.

When the yield curve inverts, investors sell bonds and buy bills. Foreign central banks are no different. They are rotating their fx reserves. But the foreign RRP facility pays a premium to bills so foreign central banks are buying the foreign RRP and not bills.

O/n repo rates are spiking because there are insufficient reserves in the financial system relative to collateral. Because funds going into the foreign RRP facility adds collateral and shred reserves, it serves to exacerbate the reserve shortage and causes repo rates to spike higher. The higher repo rates spike, the more funds that the foreign RRP facility attracts. A vicious cycle indeed.

5) Increased Fiscal Deficits

Fiscal deficits are playing an important factor in excess collateral problem in the repo markets – though for reasons that aren't so obvious. Increased deficits require increased Treasury issuance and this would seem to cause an excess collateral problem. However, when the Treasury spends they increase reserves in the banking system with their spending. The increased debt issuance is matched by an increase in bank reserves (ignoring changes in the TGA balance). This is the argument made by MMT economists which shows that increased deficit spending doesn't directly increase interest rates (though they admit that deficit spending will increase interest rates if the spending tightens supply and demand for goods and services and thus increases inflation). Theoretically, MMT is correct on this point but in practice they are wrong in this case.

For a couple of technical reasons increased fiscal deficits are now draining reserves and causing rates to spike in the repo market.

The first reason is a result of the inverted yield curve. In an inverted yield curve prime dealers are underwriting the issuance but then are having trouble getting the Treasuries off their balance sheet because investors prefer the higher-yielding bills. As dealer inventories have risen, dealers have been increasingly forced into the o/n market to repo their Treasuries and raise cash. In effect, the Treasury Department is funding its entire deficit in o/n market.

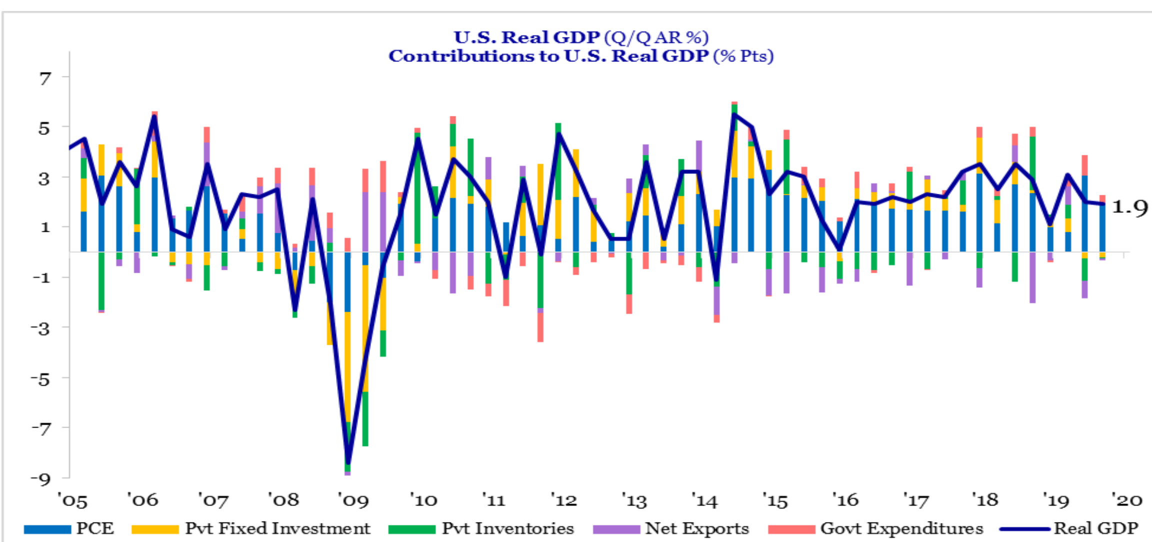
The second reason increased deficits are tightening liquidity in the repo market has to do with bank's intraday liquidity limits. Without going into much detail, the higher the deficit the more Treasuries that must be issued and the higher the Treasury issuance the higher the minimum level reserves banks must hold for their intraday liquidity. Therefore, banks can't lend these reserves out into the repo market.

Economic Outlook

By Bobby Long

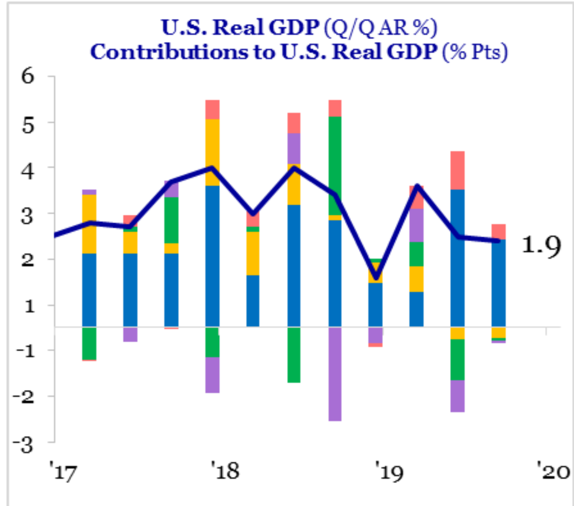
The big debate around the state of economic conditions has been whether we are experiencing a mid-cycle slowdown or signs of an approaching recession. With the current long-running expansion we have enjoyed, we are mindful that all good things come to an end and that economic conditions move through expansions and contractions over their natural cycle. History has proven that these economic cycles are inevitable, but the duration and magnitude of these cycles are variable, which leads to our constant efforts to assess the continuous flow of economic information and attempt to forecast the overall health and direction of economic conditions. We are also mindful that expansions and contractions within the economic cycle are not necessarily linear and can consist of strengthening and weakening conditions within a current economic phase. We have noted in the past that the current expansion has been long in duration relative to prior expansions, but it has also been much weaker and is coming off a deep recessionary period. Economic cycles are not constrained by the calendar, therefore we look to the data to measure the health of current conditions and assess whether certain data serve as leading indicators on the direction of economic activity. While economic data is mixed and activity has been slowing more recently, there are areas of underlying strength and policy action that has been more accommodating. For now, the evidence seems tilted toward a mid-cycle slowdown within a continued expansionary phase.

Economic growth in the U.S. as measured by GDP has been slowing over the past several quarters. Annualized third quarter GDP came in at 1.9%, slightly lower than the second quarter and forming a decelerating trend through 2019. The chart below shows how GDP has trended since prior the recession and provides a breakdown of its components.

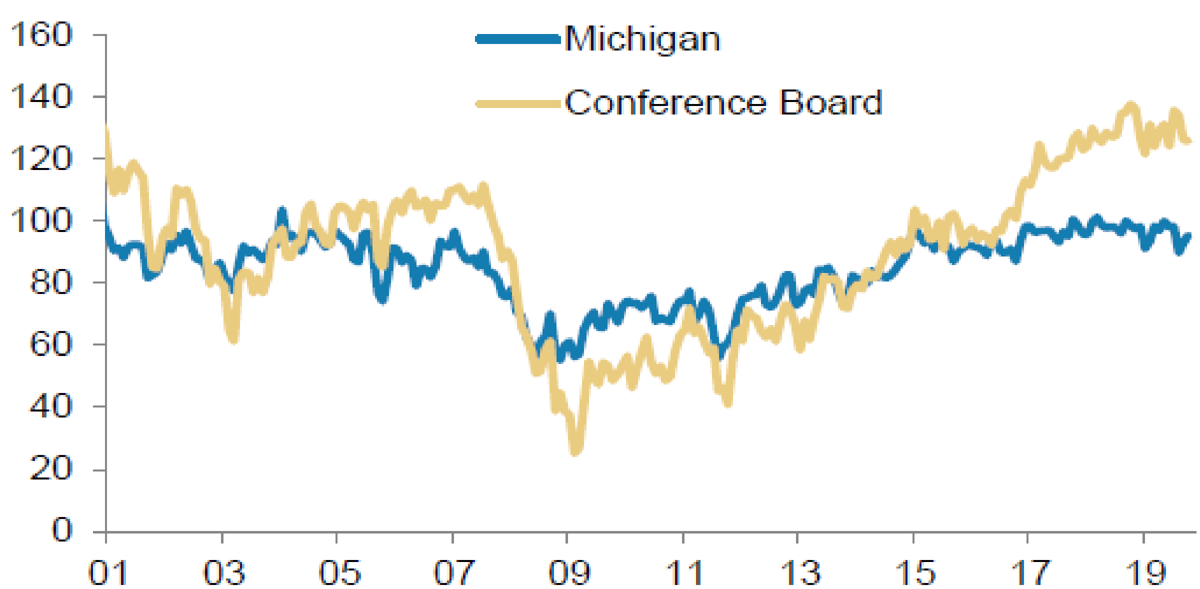


Source: Strategas Securities, LLC

The chart on the right provides a snapshot of the previous GDP chart over the past three years for more detail. Consumer spending, represented by the blue bar, is the larger component contributing to growth and has remained supportive. Business fixed investment, represented by the yellow bar, has been in a declining trend over the past eight quarters and has become a negative contributor over the past two quarters. This is an important trend that bears watching.



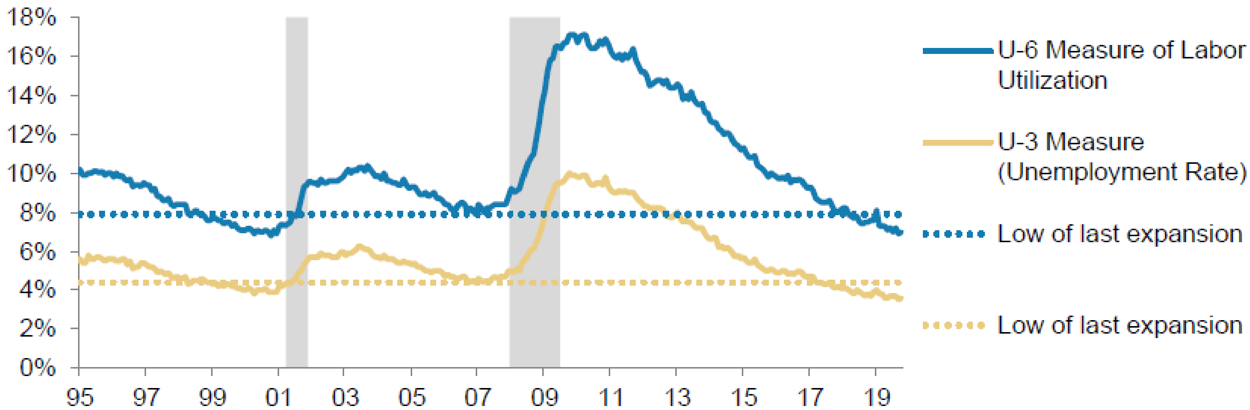
The consumer continues to be the strength behind U.S. economic growth. Consumers and households are in much better shape relative to before the prior recession. Tighter labor markets and broader wage strength are providing a boost. Inflation remains low and stable. Low interest rates are keeping debt-service costs low and manageable. Household net worth continues to increase supported by stronger financial and housing markets. Mortgage debt as a percentage of total debt has declined along with the ratio of debt to disposable income. Savings rates are also at much higher levels. While paying down debt and saving more means lower spending to stimulate the economy, the general improvement in the consumers' balance sheet may be supporting confidence to increase spending of disposable income as incomes rise. The chart below shows how consumer confidence has risen over the past decade. While confidence remains high, it has plateaued over the past year, which may reflect some increasing caution on the part of consumers. Any drop in confidence would be concerning and likely lead to lower consumer spending as well.



Source: University of Michigan, The Conference Board, Morgan Stanley Research

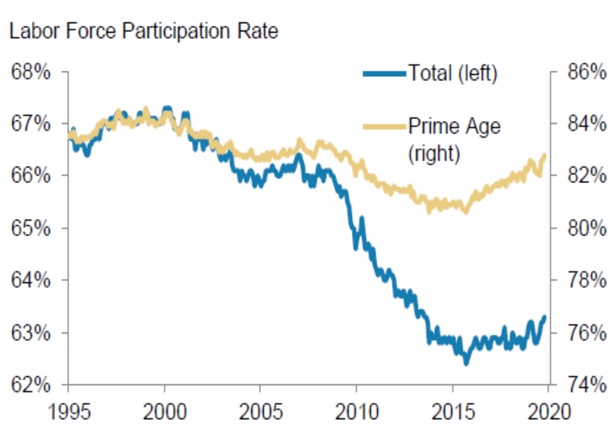
Low interest rates and credit availability have supported consumer spending, but have also led to an increase in auto debt and modest increase in credit card debt. It should be noted that auto and credit card delinquencies have risen. Auto and credit card debt make up a smaller percentage of total debt, but this may translate into lower spending if credit has been extended to borrowers who are not able to service the debt.

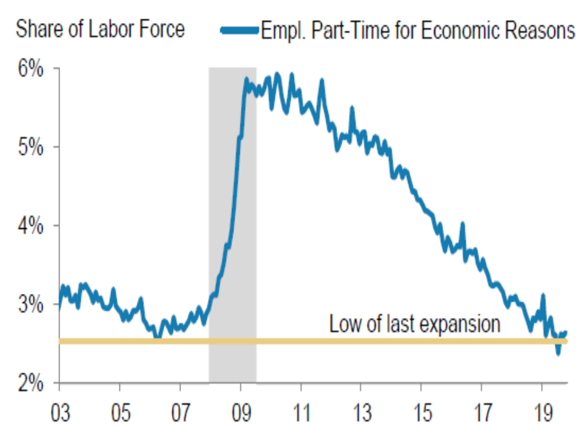
Unemployment remains low within a tightening labor market. Nonfarm payroll gains have moderated some but are still healthy. Jobless claims are low and the official unemployment rate stands at 3.6%. The U-6 employment rate, which is a broader measure including marginally attached workers and part time workers for economic reasons, has also substantially declined. Both measures are now below the lows of the prior expansion.



Source: Bureau of Labor Statistics, Morgan Stanley Research

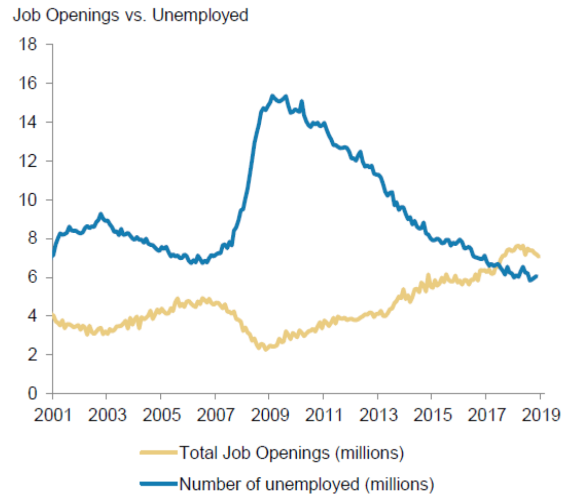
Importantly, the labor force participation rate has been moving higher with increasing participation from prime age workers (age 25-54). The labor force participation rate is facing natural headwinds from demographic trends, but the lower rate of prime age workers has been a source of slack in a weak job recovery. This increase of prime age workers is important as it has been a major drag on labor markets. The number of marginally attached workers and workers employed part-time for economic reasons are also at lows.





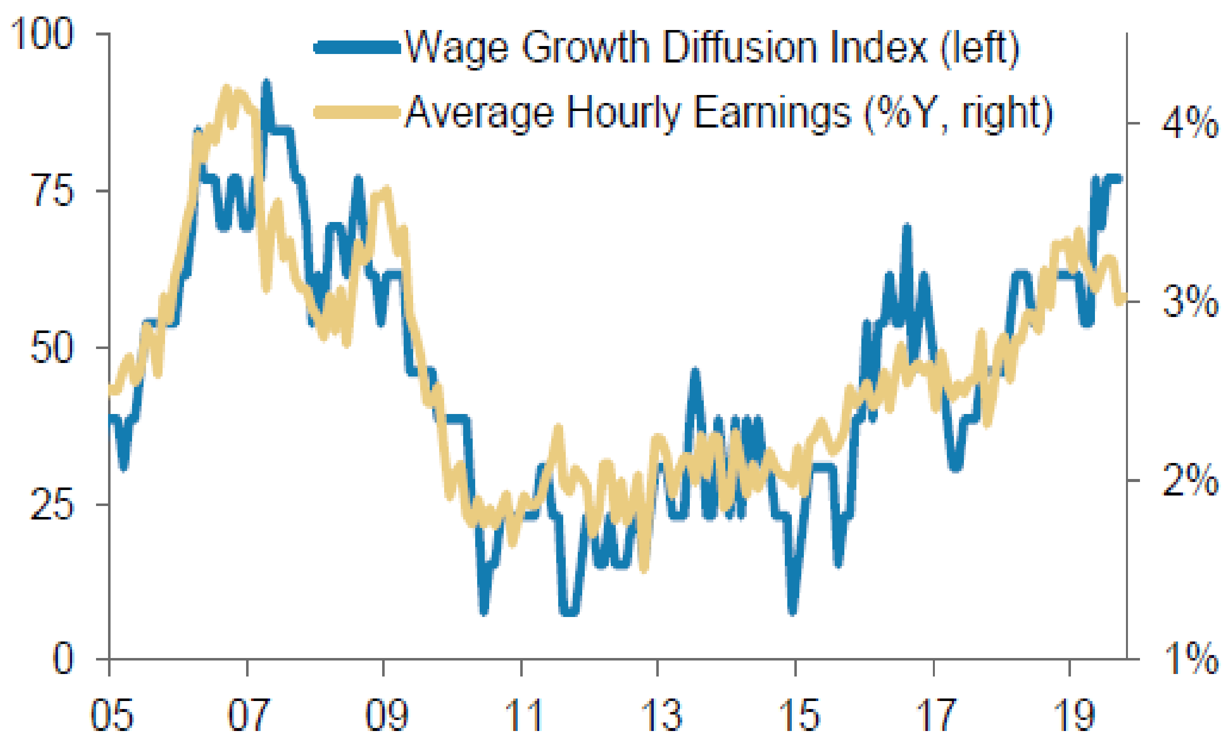
Source: Bureau of Labor Statistics, Morgan Stanley Research

Employers are having difficulty finding workers. The number of job openings continues to exceed the number of unemployed individuals seeking employment and more people are quitting their jobs for better opportunities. This is helping pull unemployed workers back into the workforce who may have previously found it challenging to find jobs due to things such as gaps in employment, criminal records, etc. Employers are now struggling not only to find workers, but also to retain good employees.



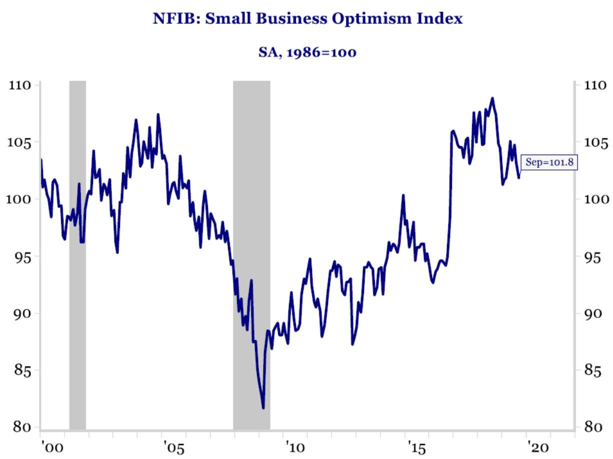
Source: Bureau of Labor Statistics, Morgan Stanley Research

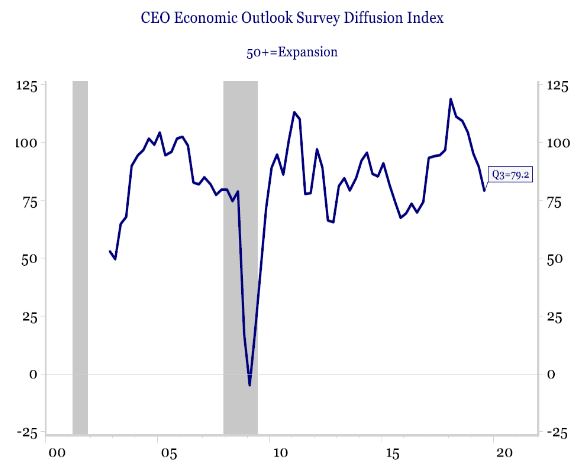
All this reflects a tighter labor market that is pushing wages higher. Wages have been moving higher and wage growth is broadening out across a wider number of industries. Wages for higher earners has been growing faster, but low and middle wage earners have also been experiencing stronger growth. The chart below displays the percentage increase in industries experience wage pressures. The wage growth diffusion index has moved sharply higher over the past year, increasing from 61.5% to the most recent 77% reading.



Source: Bureau of Labor Statistics, Morgan Stanley Research

While businesses are benefitting from consumer spending, they seem to be expressing more concern about economic conditions. The charts from the two surveys below show that business confidence has declined recently.



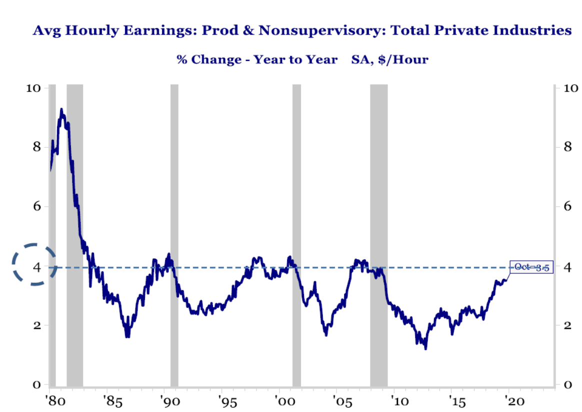


Source: Strategas Securities, LLC

The declining confidence is translating to reduced manufacturing activity and lower capital expenditures that are negatively impacting current economic growth and represent a potential drag on future growth. Several factors are likely contributing to this lack of confidence. One is weaker economic conditions outside of the U.S. Global economic activity has been weak with consumers and labor markets relatively weaker than the U.S. Manufacturing activity has been broadly weaker over the past year both inside and outside the U.S. The trade dispute between the U.S. and China is negatively affecting activity as exports and new orders are pulled forward or delayed around the impact of potential tariffs. Traditional supply chains are being disrupted leaving CEOs and business owners cautious around inventory levels and hesitant to make large capital investments.

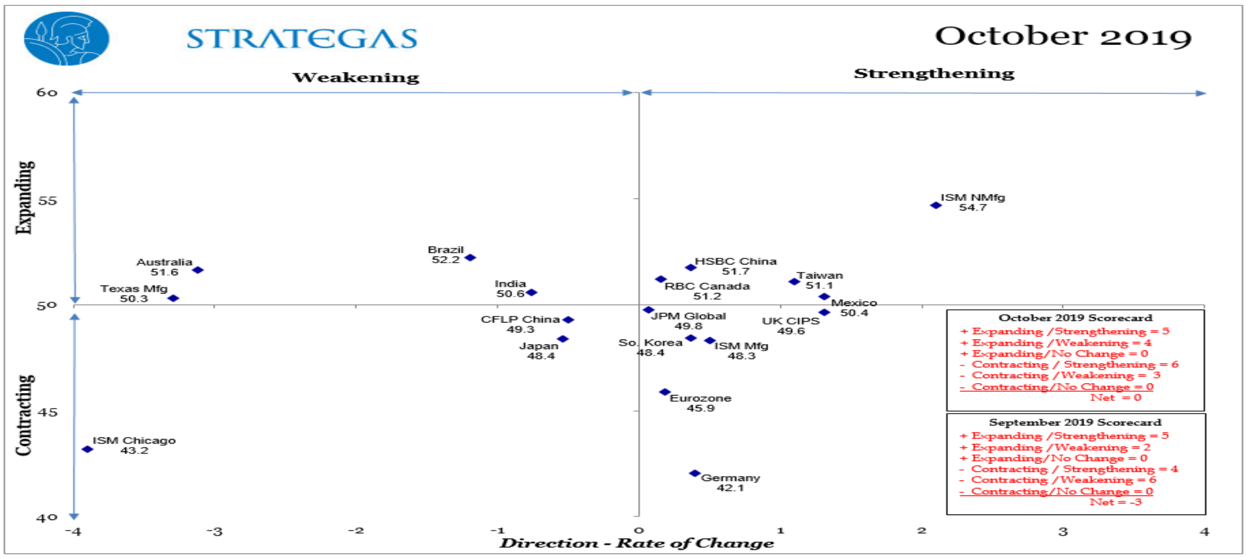
Also, while businesses have generally benefitted from more accommodating regulatory and fiscal policies, the increasing political uncertainty may be hurting confidence and activity. Businesses are hesitant to make significant investments if they feel uncertain about the direction of policy.

While tighter labor conditions reflect stronger economic activity and rising wages benefit consumption, businesses may also be feeling concern about margin pressures without a corresponding rise in productivity or ability to pass on cost increases. The chart below shows that average hourly earnings are rising, but remain below the 4% level that has historically proven to be an upper limit ahead of prior recessions.

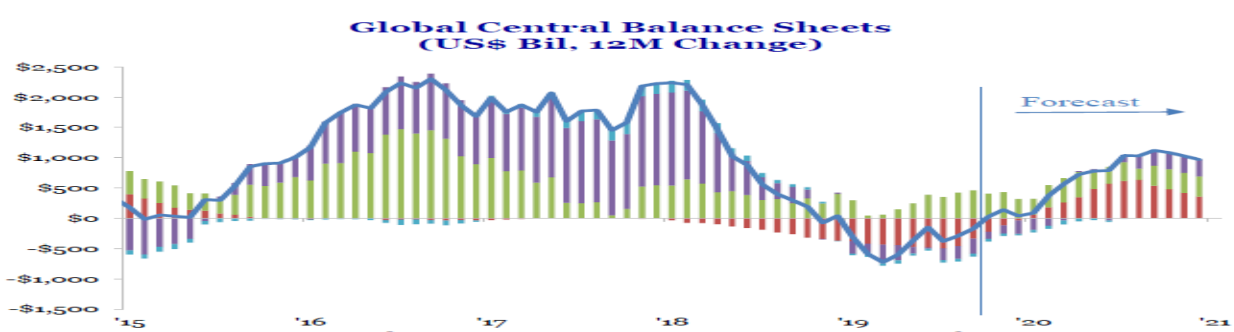


Source: Strategas Securities, LLC

While global manufacturing activity has been undeniably weak, there are some signals that suggest this could be bottoming. Norbert Ore with Strategas Securities, LLC monitors 18 indices that track manufacturing activity across major economies. Half of these are growing modestly and half are contracting modestly. This is an improvement after a weak 12 months and may signal that conditions are now stabilizing. Many of these indices had been contracting at an accelerating pace. The scatterplot below illustrates the direction these measures are moving. Earlier this year, many of these indices were massed in the lower, left quadrant.

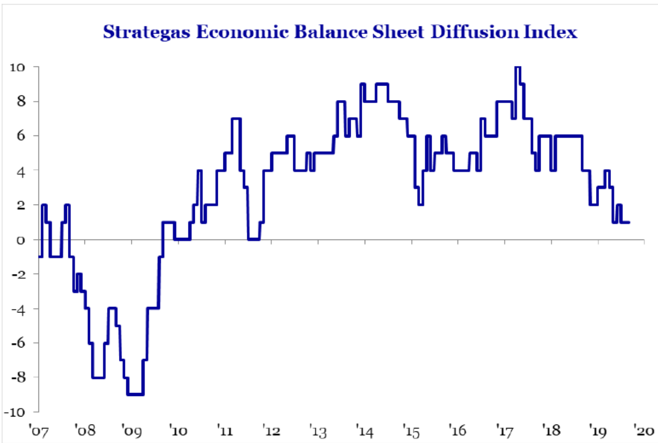


Global activity is being supported by more accommodative monetary policy. Central banks across both developed and emerging markets have been lowering rates. The Federal Reserve has also lowered the federal funds rate three times this year in what is being viewed as a mid-cycle adjustment. Following the most recent rate cut, they seemed to signal a pause and expressed confidence that the federal funds rate was at a level that they view as supportive. With inflation low and inflation expectations stable, there is room to reduce rates further if necessary. Historically, the policy rate has been much higher and the yield curve inverted before entering a recession. With the federal funds rate at 1.75% and the yield curve slightly positive, policy seems accommodative to stimulate activity.



Source: Strategas Securities, LLC

Don Rissmiller with Strategas Securities, LLC publishes an Economic Balance Sheet Diffusion Index each month in an attempt to quantify their interpretation of the state of the economy. The diffusion index considers 14 broad economic sectors and characterizes them as either assets, liabilities, or neutral to the health of U.S. economic conditions. The most recent assessment is only slightly positive and has been in a declining trend. A chart of the index is shown below along with the current characterization of the economic sectors.



Assets	**Neutral**	**Liabilities**
Credit Environ	Housing	Nonres Constr
Cons Spending	Govt Deficit	Capex Eqp
Employment	Trade Deficit	Mfg
Interest Rate Env	Wage Inflation	
	Price Inflation	
	Business Conf	
	Cons Conf	

Source: Strategas Securities, LLC

At this stage in the cycle, we really want to see manufacturing and capital expenditures pick up. The consumer has been doing the heavy lifting, but we need businesses to carry us forward. This is the third significant slowdown within the current expansion. Several things could help support a continued expansion. A trade agreement would be significant. The current trade dispute has halted a large amount of activity and investment. A pick up in global growth would have a big impact for U.S. companies. Any reduced political uncertainty within the U.S. and concerning Brexit would also be beneficial. Any of this could serve to improve business confidence and lead to stronger manufacturing and capital investment. Housing has been mixed more recently, but with mortgage rates having fallen again a pick-up in activity would be supportive.

Overall, economic conditions remain mixed, but some of the weakening areas of activity that have been a drag on growth are showing some signs that indicate they could be bottoming. We will be looking for these to turn back up over the next several months. For now, the slower economic conditions seem more reflective of a mid-cycle slowdown than the beginnings of the next recession.

RSA PORTFOLIO STRATEGY

Interest Rates and Fixed Income Strategy

By Julie Barranco

When we last met in August, the financial markets were in the midst of a very volatile month. Trade war concerns had escalated once again, and along with some weak economic data, this led to an increase in global recession fears. Interest rates were collapsing, with the 10-year U.S Treasury yield falling more than 50bps during the month to 1.50%. Risk assets surprisingly held in well despite these concerns, with the S&P 500 only losing 1.58% for the month, and while credit spreads did widen, it was a fairly modest move.

September was a different story. Some of the weak data prints in August, particularly within the manufacturing sector, bounced back in September. This, coupled with a more positive tone between the U.S. and China regarding trade, allowed recession fears to fade and risk assets to rally. As expected, the Fed lowered the Fed Funds rate another 25bps to the 1.75% - 2.00% range. The statement afterward lightly acknowledged weaker growth through the end of the year and there were no major changes to the growth or inflation outlooks. While the majority of FOMC members voted for this cut, three members dissented, which is unusual but did not seem to cause too much concern. Fed Chairman Powell noted that more cuts may be necessary going forward particularly if trade tensions escalate and the economy weakens; but the committee prefers to use monetary stimulus sparingly.

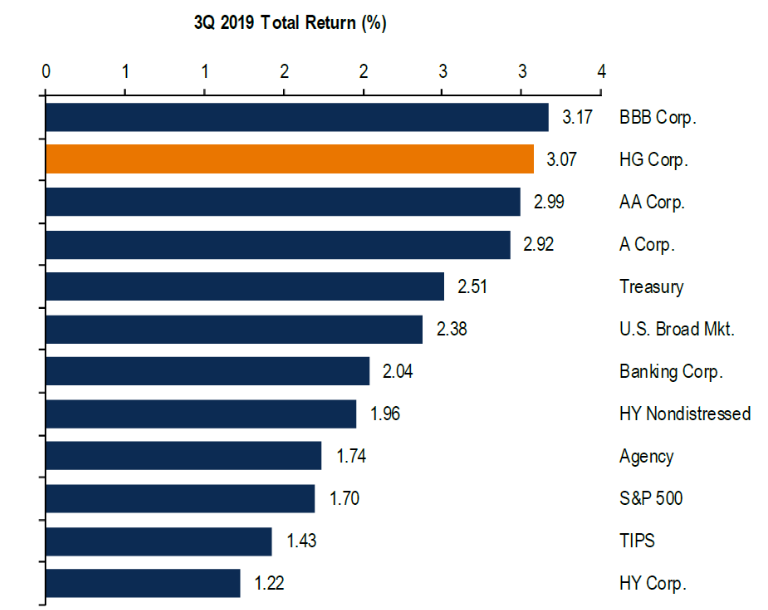
There was also much discussion during the month about the lack of liquidity in the short term funding markets, in particular the repo market and the federal funds market. It is not unusual to see rates in these markets spike a bit at month end when demand for cash is higher, however these markets were seeing rates move higher than usual and on random days during the month. This situation was technical in nature and had nothing to do with any macro issues present in the markets. It is a supply and demand situation within the short term funding markets. The Fed responded by announcing an expansion of their balance sheet, buying $60 billion of Treasury bills per month through the second quarter of 2020, together with continuing overnight and term repo operations until at least January 2020. The Fed has said that this expansion is not considered quantitative easing (QE) despite some investors wanting to call it that – it is simply the Fed accommodating an increased demand for liquidity, not providing excess liquidity, which is the main purpose of QE.

By the end of September, many risk assets had retraced their August losses, with equities leading the way. High yield credit performed the best within fixed income, returning .32%, while Treasuries performed the worst, returning (.90) % for the month as yields rose from August levels.

The more positive tone in the markets also contributed to record issuance in the high grade credit sector during September. New issuance reached roughly $166 billion for the month – the busiest September and third largest month on record in terms of supply. The chart below shows total return results for the entire quarter as of September 30. High grade credit performed the best, returning over 3% for the quarter as Treasury yields were lower overall and credit spreads did not widen significantly in August as Treasuries rallied. Government securities came out in the middle of the pack, returning between 1.75% – 2.50%, and high yield performed the worst for the quarter despite the bounce back in September, returning roughly 1.22%.

3Q 2019 Returns

Figure 6: Broad Asset Class Total Return Performance, 3Q 2019



Source: BofA Merrill Lynch Global Research

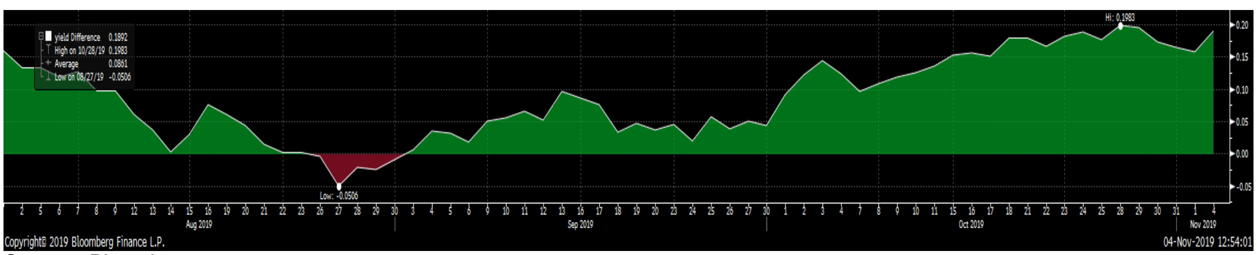
October got off to a bit of a volatile start. Yields were declining once again around recession fears tied to renewed trade tensions with China, weaker economic data, dysfunction in Washington around the impeachment proceedings as well as uncertainty around monetary policy. This did not last long as stronger data and positive news around the China trade negotiations brought the risk-on trade back to life and yields began to rise quickly. These higher yield levels prevailed through most of the month, until the Fed meeting on October 30th.

At this Fed meeting the committee , as expected, cut the Fed Funds rate another 25bps to the 1.50% - 1.75% range. During the press conference following the announcement Chairman Powell hinted strongly that this was the last of the three insurance cuts. He stated that monetary policy is currently in a "good place" and that the current stance of policy is "likely to remain appropriate". To consider another cut the Fed would need to see a material change in the outlook. After the announcement, Treasury yields began to move notably lower, particularly on the longer end of the curve. A December rate cut was pretty much being priced out of the market and the yield curve was flattening, which is typical for a Fed that is expected to stay on hold. Yields continued to rally into month end; high grade and high yield credit spreads, which had been moving tighter throughout the month, bounced out a bit at month end as investors were hesitant to add risk at nearly the richest levels of the year, while uncertainty was still present.

For October, high grade credit was the best performing sector, returning .61%. High yield credit lagged, returning roughly .25%, and government related sector returned the least, with Treasuries barely positive on the month. October high grade new issuance declined to $84 billion and was the slowest October since 2013.

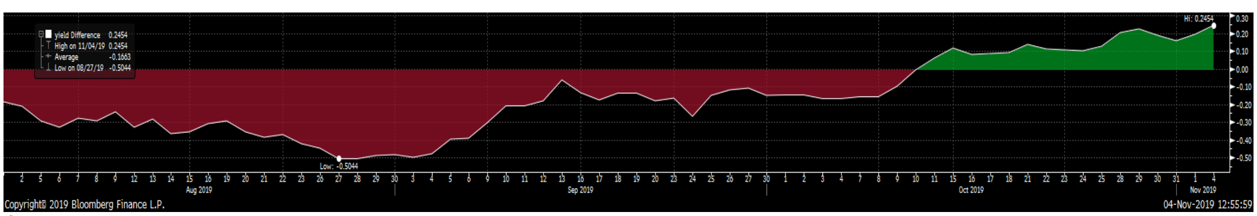
The charts below show a snap shot of the changes in yield levels between 2-year and 10-year Treasury notes, and then 3-month bills and 10-year Treasury notes. Spreads between these yield levels are regularly looked at as recession indicators. The 2-year/10-year differential was only negative for a very short time in August; the 3 month/10 year differential was negative for a number of months, however in mid-October it finally flipped back to positive. Both differentials have been moving higher as the Fed has cut rates and data has remained supportive, meaning the markets currently see less risk of recession.

2-Year /10-Year Yield Spread



Source: Bloomberg

3-Month /10-Year Yield Spread



Source: Bloomberg

With the improved market conditions we have experienced since early September, we have been fairly active within the fixed income portfolio. Activity in the corporate sector has been primarily in the new issue market, although a couple of secondary positions were added as well. During the brisk pace of issuance in September we were able to take advantage of attractive pricing on several new issues including Willis, Unum, British American Tobacco, Simon Properties, Kraft and others. Most of these maturities purchased were in the intermediate to longer part of the curve and in stable sectors. After credit spreads had widened out some in August, levels on several of these issuers were attractive and we felt that even if spreads widened again in response to any market turmoil, these sectors would not necessarily see as much volatility and would continue to perform well. Credit spreads have narrowed so far into the new quarter and outside of any one-off event, we think this should continue for the time being. We are still overweight the sector, with a shorter duration than the credit index; we will continue to look for attractive names/maturities to selectively add to the credit sector, particularly if we get any further weakness in spreads that provides an opportunity.

In the mortgage sector we have been fairly active as well. After the large drop in rates during August, the duration of the portfolio shortened notably versus the duration of the index. As one would expect, prepayments picked up significantly, and have remained somewhat elevated since then. We added several pools over this time period, purchasing 3.5% 30-year pools for the mortage portfolio as they have offered the most attractive yield/duration profile. These purchases have allowed us to extend the duration of the portfolio and move closer to a neutral level versus the Index, which we thought was prudent. Mortgage spreads moved around somewhat as yields were declining in August but have settled down more recently and are at slightly higher levels than seen earlier this year. Despite putting money to work in the sector, we are still underweight versus the index, and therefore have room to add to the sector when opportunities arise, along with the continuing reinvestment of prepayments. We will monitor interest rate movements and adjust duration as needed.

In the agency debt sector we have seen spreads remain stable and fairly tight. Over the past couple of months we replaced two maturities within this portfolio. Purchases include 2029 and 2032 bullet issues. With yields declining throughout August, and then boucing around a good bit since then, we felt comfortable adding exposure in the intermediate/longer part of the curve. With the global economic outlook still somewhat cloudy right now, coupled with some contninued volatility in the market, we wanted to add bullet exposure for the positive convexity that they provide, especially if interest rates begin to move lower again. These purchases also helped to move the duration of the portfolio closer to neutral, which we felt was prudent at this time. We would expect any upcoming trades to still be maintenance type trades to replace a call or maturity, or perhaps a swap to adjust interest rate risk. We do not anticipate adding any significant new money to this sector given the tightness of spreads versus Treasuries.

Lastly, we added to the Treasury portfolio, purchasing a small block of 30-year bonds as yields were rising. We are still a little underweight in this maturity but took advantage of the more attractive levels to add more exposure. With global economic and political uncertainties still present, we felt it prudent to add as a bit of a hedge against rates moving lower again. We are still underweight the sector as a whole and our duration is currently a little short versus the Index. We continue to watch yield levels closely and will adjust our Treasury positions and duration as needed.

Domestic Equity Strategy

By Allan Carr

What a difference a year makes. As we prepared our year-end update last December, markets were getting crushed. The President fighting a trade war on social media certainly wasn't helping, but the predominant reason for risk aversion was the state of monetary policy. The overriding fear was that history was on the verge of repeating itself with the Fed making the policy mistake they'd made in prior cycles: raising rates too aggressively and choking out the expansion. Fed Chairman Powell had already had some communication mishaps, but his line in early October of rates being "a long way away from neutral" led to a vicious risk-off trade. The S&P was down over 13.5% in 4Q, which as you know is RSA's fiscal 1Q.

Since the 4Q closing low on Christmas Eve, the S&P 500 is now up 34%. In the last week we've witnessed record highs on the S&P, DOW, and Nasdaq. We are up 9% since our last economic update in mid-August. Let's take a look at what's changed over the course of 2019 that's resulted in markets breaking out to new highs.

From an equity market perspective, it had become apparent through numerous indicators that the Fed had gotten ahead of themselves in raising rates. We have said many times that there's never been a recession that wasn't preceeded by a yield curve inversion. There had been a few brief periods in the last year when the curve was flat or even slightly inverted on some measures. Then rates fell precipitously from May to the end of August, with the 10 year going from 2.5% to 1.5%. This caused the yield curve to invert meaningfully enough to spook markets, and apparently the Fed. To their credit, the Fed didn't wait around, but instead took action with three 25 bps cuts starting in late July. As you can see below, the yield curve picture is much improved.

<u>Exhibit 1 (CSFB)</u>

Yield Curve – Current

	1M	3M	6M	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	0.00									
3M	0.01	0.00								
6M	0.02	0.02	0.00							
1Y	-0.02	-0.03	-0.04	0.00						
2Y	0.04	0.04	0.02	0.06	0.00					
3Y	0.05	0.05	0.03	0.07	0.01	0.00				
5Y	0.06	0.06	0.04	0.08	0.02	0.01	0.00			
7Y	0.14	0.13	0.12	0.16	0.10	0.09	0.08	0.00		
10Y	0.23	0.22	0.21	0.25	0.19	0.18	0.17	0.09	0.00	
30Y	0.72	0.71	0.70	0.74	0.68	0.67	0.66	0.58	0.49	0.00

Severely Inverted
Inverted
Not Inverted

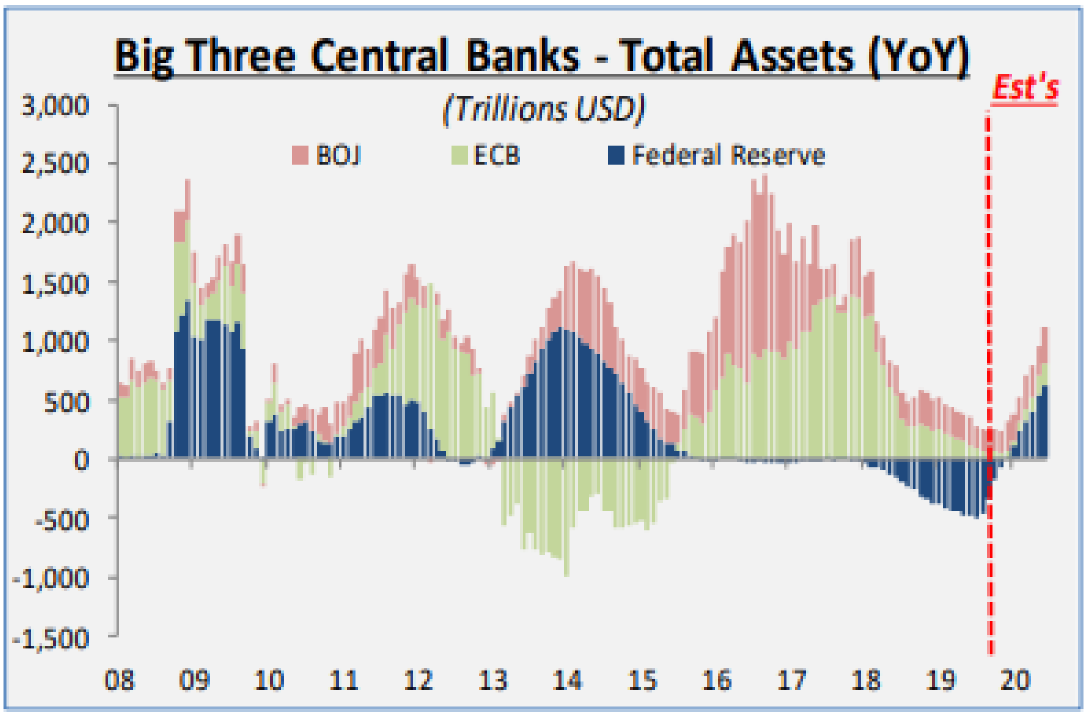
Yield Curve – August 28, 2019

	1M	3M	6M	1Y	2Y	3Y	5Y	7Y	10Y	30Y
1M	0.00									
3M	-0.08	0.00								
6M	-0.19	-0.11	0.00							
1Y	-0.32	-0.25	-0.13	0.00						
2Y	-0.56	-0.48	-0.37	-0.23	0.00					
3Y	-0.64	-0.56	-0.45	-0.32	-0.08	0.00				
5Y	-0.68	-0.60	-0.49	-0.36	-0.12	-0.04	0.00			
7Y	-0.63	-0.55	-0.44	-0.30	-0.07	0.01	0.05	0.00		
10Y	-0.58	-0.50	-0.39	-0.26	-0.02	0.06	0.10	0.05	0.00	
30Y	-0.09	-0.01	0.11	0.24	0.47	0.56	0.59	0.54	0.49	0.00

Note: Severely Inverted defined as <-15bps, Inverted defined as < 0bps.
Source: Federal Reserve, The BLOOMBERG PROFESSIONAL™ service, Credit Suisse

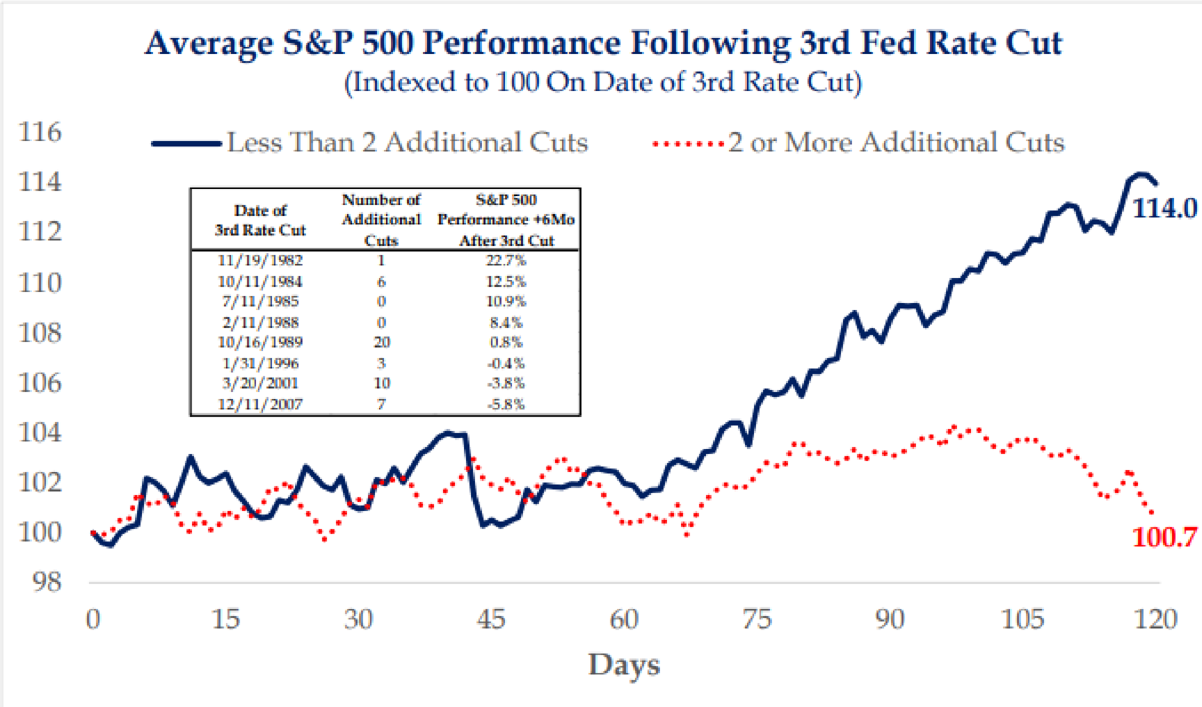
There was also a scare in the overnight repo market in September, and the Fed stepped in there as well. After over a year of balance sheet runoff, they reversed course by committing to buying treasuries to aid in liquidity. The Fed switching from restrictive back to accomodative, in conjunction with other central banks adding liquidity, has helped dampen global recession fears.

Exhibit 2 (Wolfe Research)



Rhetoric from the Fed since the rate cut on October 30 has been that they plan on sitting tight for the foreseeable future, barring something unforeseen. Jay Powell said it would take a "material reassessment" for the Fed to move. Vice Chair Richard Clarida made similar comments in a speech saying "the economy is in a good place, and monetary policy is in a good place." If the Fed is indeed on hold, these small mid-cycle adjustments have been a solid backdrop for stocks. If they don't have to make more than one additional cut, or flip the script and start raising.

Exhibit 3 (Strategas)

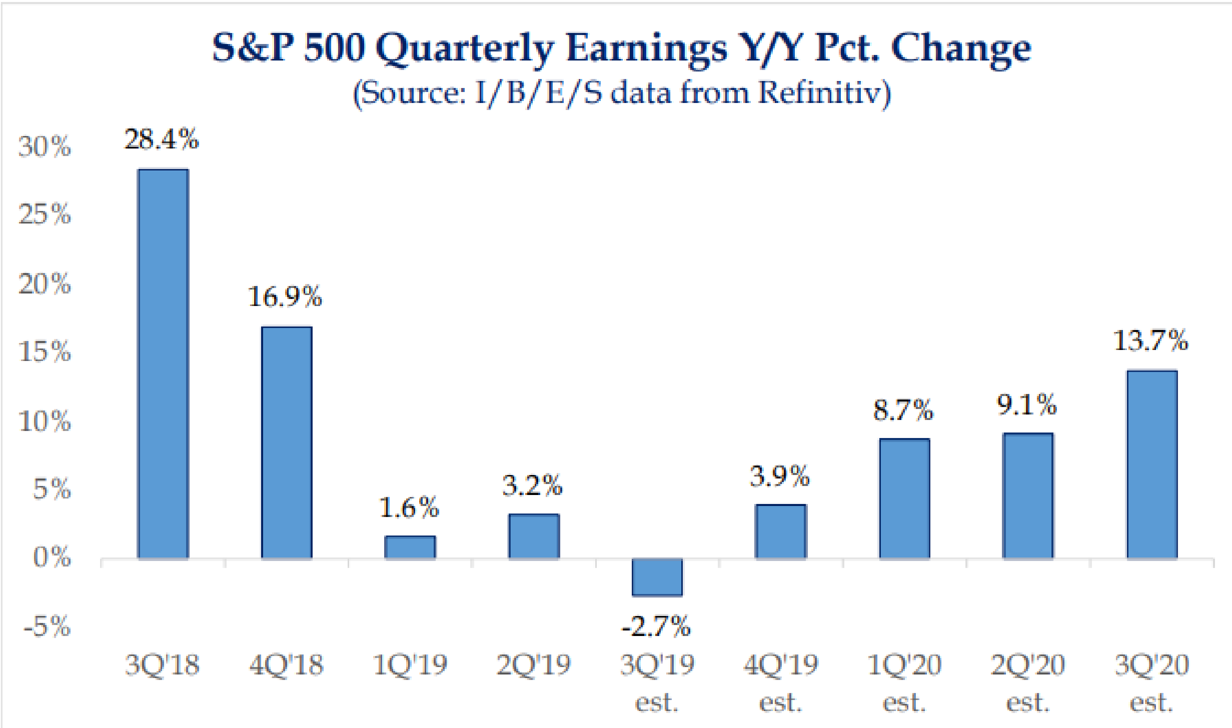


The second biggest boost to markets has been renewed hope on the trade front. Refer to the Fiscal portion of this update for more granular info, but suffice it to say there appears to be real progress being made between the US and China. This obviously would be a welcomed development as markets don't like uncertainty and this back and forth has been going on for quite some time.

While monetary policy and trade have been the biggest reasons for renewed optimism, there have been other positive developments such as increasing odds of a no-Brexit deal, the General Motors strike resolution, and some better than expected economic news in areas such as homebuilding and the recent October jobs report.

Earnings growth has been a source of angst with investors this year, and it too appears to be turning the corner. Earnings growth in 1Q and 2Q was 1.6% and 3.2%, respectively. Third quarter earnings are projected to be negative but we're seeing a solid beat rate with over 80% of companies having reported. We will see what the final tally is but it's looking like slightly down to flat. However, 3Q should be the inflection point with earnings growth set to ramp heading into next year. Earnings expectations for 2020 have already been brought down meaningfully, so there is the possibility if the backdrop continues to improve that earnings could surprise to the upside.

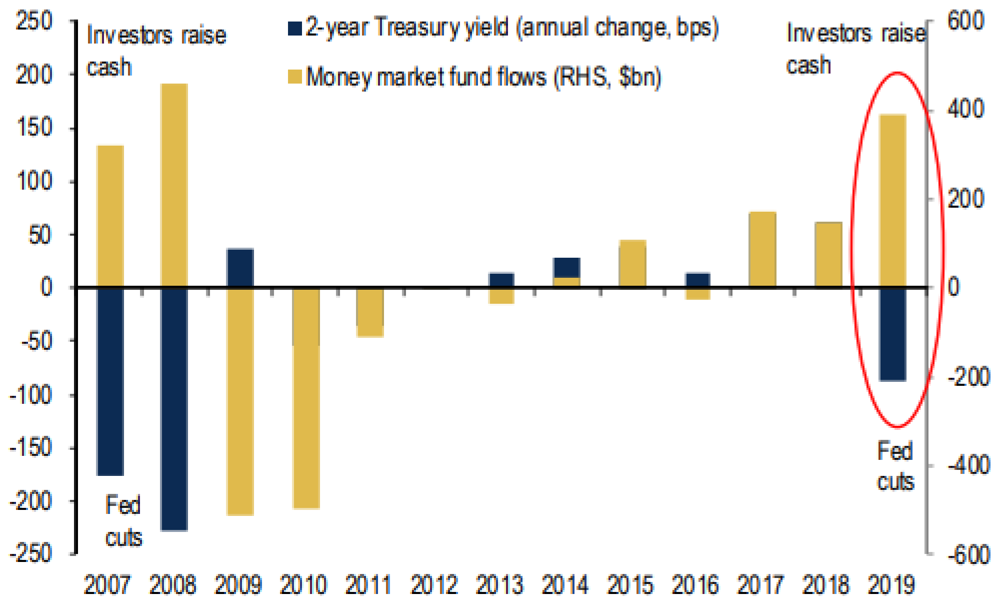
Exhibit 4 (Strategas)



With the skies turning less cloudy in recent months, it's interesting to look at investor sentiment and positioning. Being a decade plus into the bull market and sitting at record highs, history would say be wary. However, many of the metrics we look at would argue moreso of caution than complacency. Whether it's Citigroup's Panic/Euphoria model, the put-call ratio, AAII Investor sentiment poll, or fund flows; we still aren't seeing the usual warning signs, which is encouraging.

Investors are positioned cautiously with money moving out of equities into bonds and cash, despite rates having come down dramatically. Money market funds now stand at $3.5T after substantial inflows, and are at levels not seen since Lehman failed and people ran for cover.

Exhibit 5 (BAML)

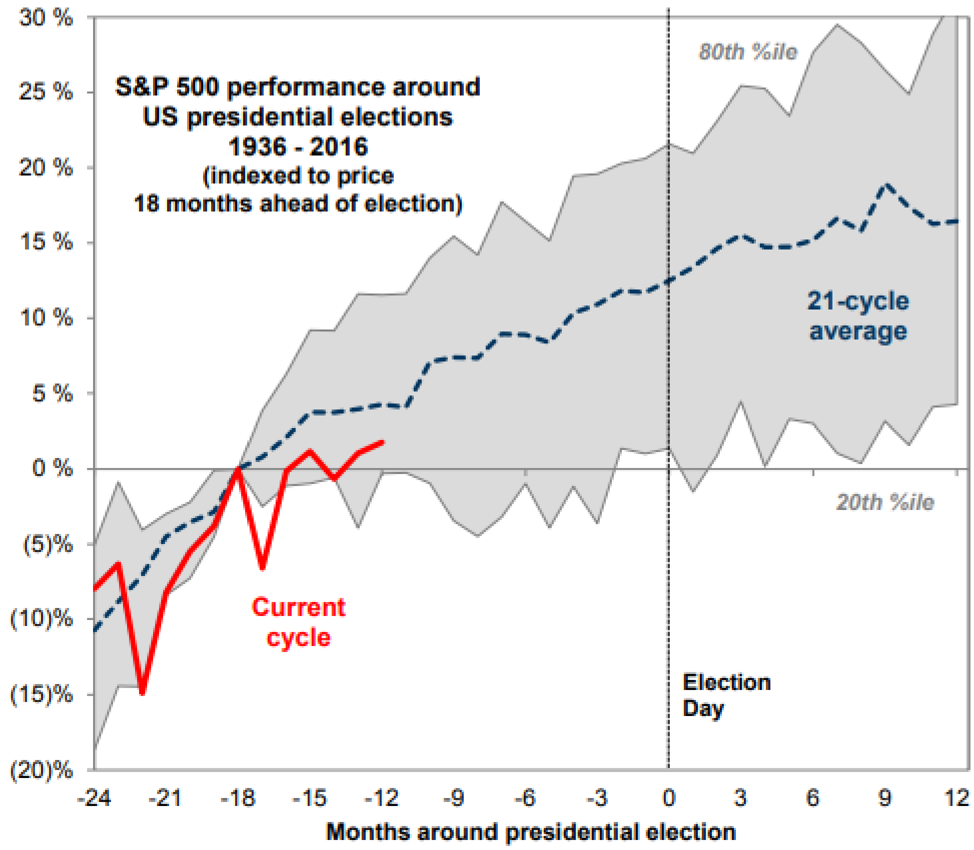


As we head into an election year, there a few things to watch that have a solid track record of predicting the winner, and have no bias. Last update we showed a chart showing the importance of the economy for presidents running for re-election. Simplistically, if the economy is doing well heading into an election, the incumbent has won re-election 12 out of 12 times since 1928. If the economy was in recession in the two years leading up, the incumbent has lost 5 out of 6 times.

Another indicator to keep an eye on is market action in the three months leading up to the election. If the market is up in the three months ahead of the election, the incumbent party usually wins. If the market is down, the opposing party normally wins. In the 23 elections dating back to 1928, this has held true 20 of 23 times (87%). The last miss on this metric was in 1980, so it's correctly predicted the last nine elections.

Lastly, despite election years being noisy they have historically been good for stocks with an average return of over 10% in the last 21 elections. The chart on the following page shows how the market is tracking this cycle versus the prior 21 election cycles.

Exhibit 6 (Goldman Sachs)



In summary, while we still have a laundry list of worries, the two that have worried us the most have been monetary policy and trade. We are relieved the Fed acted swiftly with cutting rates and are cautiously optimistic about trade. Lower rates have helped housing numbers and we've seen some other aspects of firming in the economy. All of these combined with global central banks adding liquidity to stabilize markets has decreased the odds of a recession in 2020. Absent a recession, and with earnings growth set to accelerate, we remain constructive on stocks in this low rate, low inflation environment.

International Equity Strategy

By Steve Lambdin

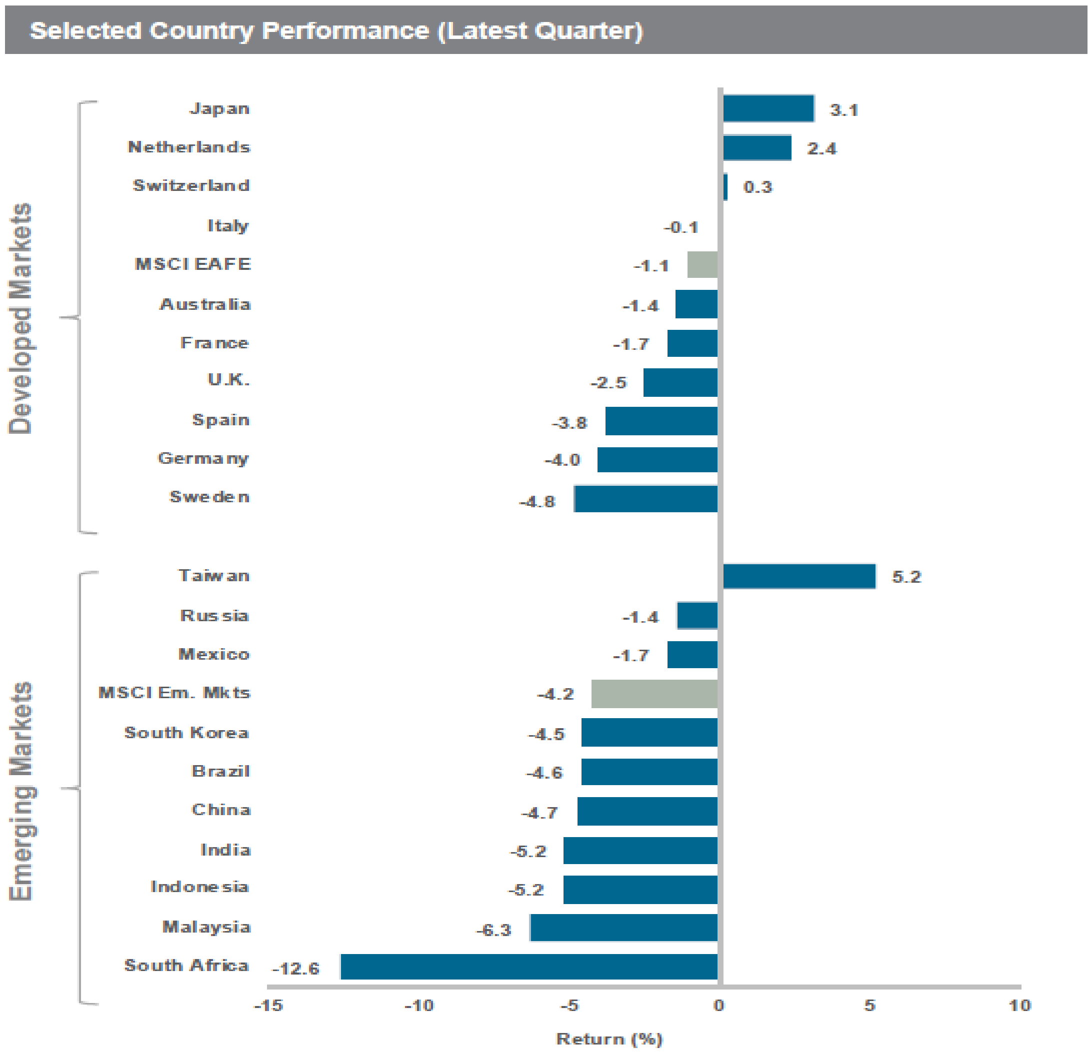
International equities reversed course from the previous quarter and fell slightly in the period. The ongoing U.S./China trade war, Brexit saga, slowing economic indicators, political upheaval in Hong Kong, and Iran's strike on Saudi oil fields were too much to overcome even as central bank actions in the quarter pleased most investors. It seems like investors dealt with a multitude of issues on many different fronts in the period. In light of everything that took place in the quarter, we are surprised the global equity markets did not fall further. The U.S. and China went back and forth on negotiations through the summer that basically failed to reach any real solution which resulted in tariff implementations by both sides. Meanwhile, economic data points in Europe and China continued to be rather weak indicating a slowing economy in each region. Meanwhile, the Brexit saga continued throughout the period with no agreement reached. The only progress made was an agreement to set a new deadline to the end of January. Ultimately at some point an agreement will be reached, but we just don't when or any details of a potential deal. This will remain a wildcard with investors going forward. The geo-political front remained active in the quarter as Iran's surprise strike on Saudi Arabian oil terminals reminded us just how unstable the Middle East is. Also, the protests in Hong Kong awakened the world to the social injustices prevalent under Chinese rule. During the quarter, we would characterize central bank actions as accommodative as the European Central Bank (ECB) cut interest rates slightly and re-started their quantitative easing policy in an effort to avoid a recession in Europe. The Bank of Japan (BOJ) kept interest rates unchanged but did include language the current policy settings will remain in place well into 2020, bringing a little comfort to investors.

	September 2019		3Q 2019		YTD 2019	
Equity index returns (%)	**U.S. dollar**	**Local currency**	**U.S. dollar**	**Local currency**	**U.S. dollar**	**Local currency**
S&P 500	1.9	1.9	1.7	1.7	20.6	20.6
MSCI ACWI	2.1	2.2	–0.0	1.1	16.2	17.2
MSCI ACWI ex USA	2.6	2.9	–1.8	0.7	11.6	13.7
MSCI World	2.1	2.3	0.5	1.5	17.6	18.5
MSCI Emerging Markets IMI	1.9	1.5	–4.3	–2.1	5.4	7.4
MSCI EAFE	2.9	3.5	–1.1	1.8	12.8	15.7
MSCI Europe	2.7	3.1	–1.8	2.0	13.7	18.4
MSCI Pacific	3.1	4.4	0.2	1.4	11.4	11.4

Source: RIMES and Capital Group World Markets Review Q3 2019

The MSCI EAFE Index (net dividend) and the MSCI Emerging Markets Index returned +1.1% and -4.3% respectively during the third quarter of 2019 vs. +1.7% for the S&P 500 Index. Large cap U.S. stocks continue to perform better than equities outside of the U.S. as we would expect during times of abundant global weakness and stress. The U.S. dollar was stronger in the quarter and hurt returns by about -2.6% for unhedged U.S. investors. The Asian region was stronger than the European region as the

Japanese equity market rallied in September as investors welcomed actions made by the BOJ. Defensive sectors were stronger than the more cyclical sectors of the markets as you would expect with everything that happened in the quarter. As a result, gold continued to move higher and finished up +4.5%. Surprisingly, crude oil continued its recent trend, falling -8.5% even as turmoil is rampant across the Middle East.

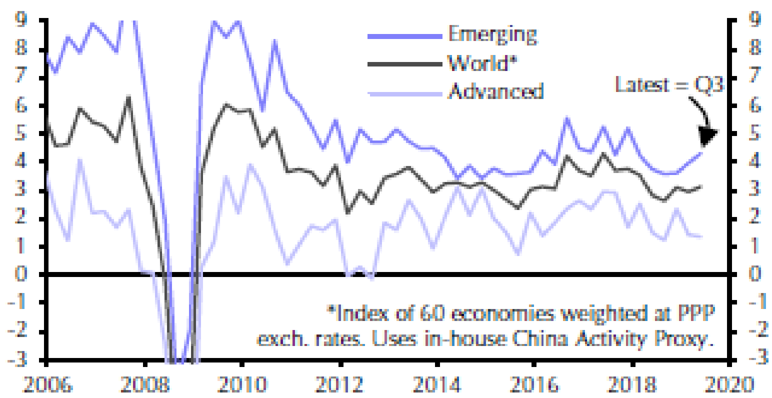


Sources: Baird Market Chart book; Morningstar Direct; MSCI

So far into the fourth quarter of 2019 thru early November, global equities have been rather strong as optimism has developed on the trade war with China. It looks like we may be close to some type of a partial truce on tariffs with certain goods. If this is true, then this could be the breakthrough investors have been waiting for since all of this began. However, we must be cautious until we see something more concrete on this front. Also, we saw the Brexit deadline get pushed out yet again. Both sides seem to be willing to work hard on avoiding any disaster scenarios at the moment. The MSCI EAFE Index and the MSCI Emerging Markets Index are up approximately +4.8% and

+7.1% respectively through early November, vs. +3.5% for the S&P 500 Index. Investors seem to be willing to take on more risk as these actions unfold.

Chart 2: GDP (% q/q Annualised)



Sources: Capital Economics

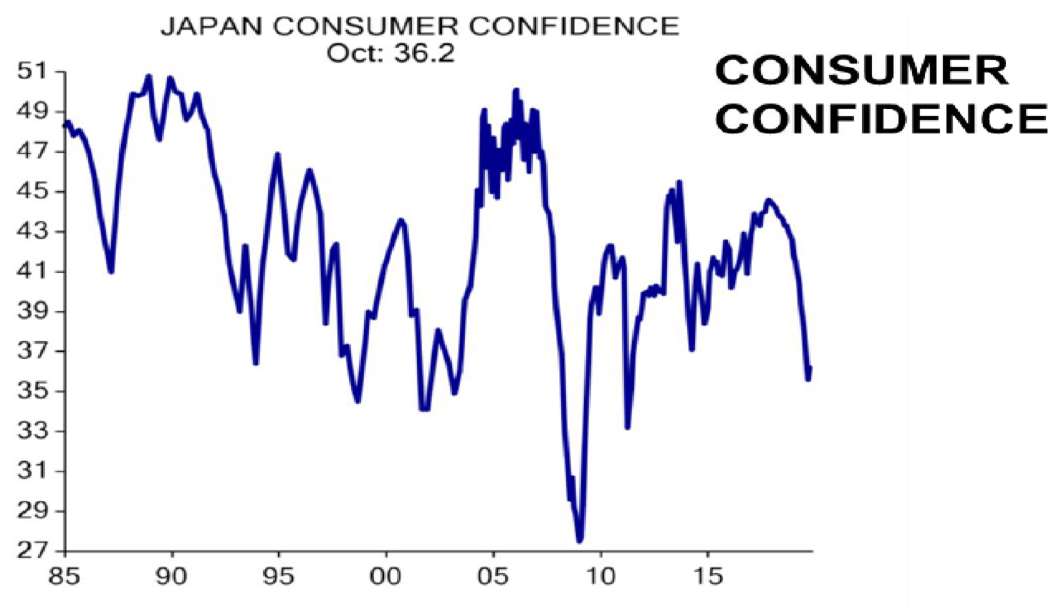
Asia Update

Asian equities managed to squeeze out a small positive return in the third quarter as Japanese equities were strong in September ahead of October's consumption tax hike. In addition, the BOJ said it is considering further stimulus measures in an effort to keep the economy pushing ahead as trade wars continue between the U.S. and China and unrest in Hong Kong reached a boiling point. The MSCI Pacific region rose +1% in the period, as the Japanese and Australian equity markets both rose +3%.

Decelerating growth continued in China's economy as third quarter GDP rose +6.0% from a year earlier, which was another record for the weakest rate of growth in three decades. The trade war with the U.S. continued to play havoc with the economy here. In response, The People's Bank of China (PBOC) pegged the yuan's value below 7 yuan per dollar for the first time in a decade, prompting the U.S. to label China as a currency manipulator. As all of this unfolded, many Chinese companies are falling well short of revenue and earnings expectations and share prices are falling. In an effort to combat economic weakness, recent fiscal policy actions have been aimed at further infrastructure spending. Also, monetary actions were taken recently as the PBOC cut the reserve requirement ratio by 100 basis points in September and are mentioning even more cuts to this in the months to come. Focusing on economic data points, industrial production continued to move southward as YTD production through September rose only +5.6% from a year earlier. We just see no relief on this front until we get some clarity with trade. Fixed asset growth also followed a similar trajectory as third quarter growth came in at +5.5% and could fall further in the months to come. Overall exports continued to deteriorate as October exports fell -.9% in U.S. dollar terms and exports to the U.S. alone were down -16.2%. Retail sales growth continued to struggle in the third quarter and were up just +7.6% from a year earlier, renewing its downward spiral. October CPI jumped unexpectedly to +3.8% from a year earlier, which is now a seven year high. Pork prices rose significantly as swine fever curtailed the supply of pork to the region. At this point, we expect growth to continue to trend downward even as the U.S. and China may have reached some solutions on parts of the trade war. This is certainly not an agreement on all issues, but certainly a few small steps forward while negotiations continue on other key issues. Perhaps the equity markets will respond positively on these developments.

Source: Bloomberg; Evercore ISI

While though third quarter GDP has not been released yet, we expect growth to continue as the Japanese economy should post growth of about +.2% from the previous quarter. The recent momentum in the economy seems set to continue even as 2Q GDP was revised slightly downward. Pushing the economy forward in the third quarter looks to be buying ahead of the October increase in the value added tax (VAT). From a historical perspective, the economy usually gets a boost right before an increase in the VAT and goes into a slight lull following the increase. We will see if this is the case again. The weakening global economy continued to be felt here as exports fell -5.2% in September, which is the 10th month in a row of falling exports. No doubt the U.S./China trade war is having quite an effect on this economy. Industrial production has been up and down lately with September's production rising +1.4% after a weak reading in August. Electronic equipment and parts of machinery were strong ahead of the tax increase. Unfortunately, many feel this will only be temporary. Coming as little surprise, Japan's leading economic index continued to fall as September's reading of 92.2 remains very near ten year lows. The current global economic outlook gives businesses little to be optimistic about in the near term. The Bank of Japan (BOJ) kept its short term rate at -.10% and is still targeting a 10-year government bond target yield at 0% at its late October meeting. The BOJ's new guidance did indicate policy rates will remain lower for even longer than previously stated. This is not any surprise at all in the current environment. Consumer confidence continued to trend downward as September's reading fell to 35.6, which is the lowest point since June 2011. Tax hikes and trade issues are zapping any optimism with consumers at the moment. The labor market remained tight as is the case in many other economies as the jobless rate did tick up very slightly to 2.4% in September, while the jobs-to-applicant ratio fell to 1.57, remaining very near a historical record. Government officials are still contemplating measures to bring more female participation into the workforce in an effort to fill employment needs. However, most of these jobs are part-time in nature and could be a risk to full-time workers. This will have to be done very delicately so not to disrupt the overall labor market. Looking out over the next few months, we do believe the consumption tax increase could be a short-term blip in the economy here in the fourth quarter, but should rebound beyond this. However, the key to this rebound could be progress on the trade front between the U.S. and China. Any further deterioration in trade negotiations could jeopardize this train of thought and push the region to some type of technical recession. Only time will tell.

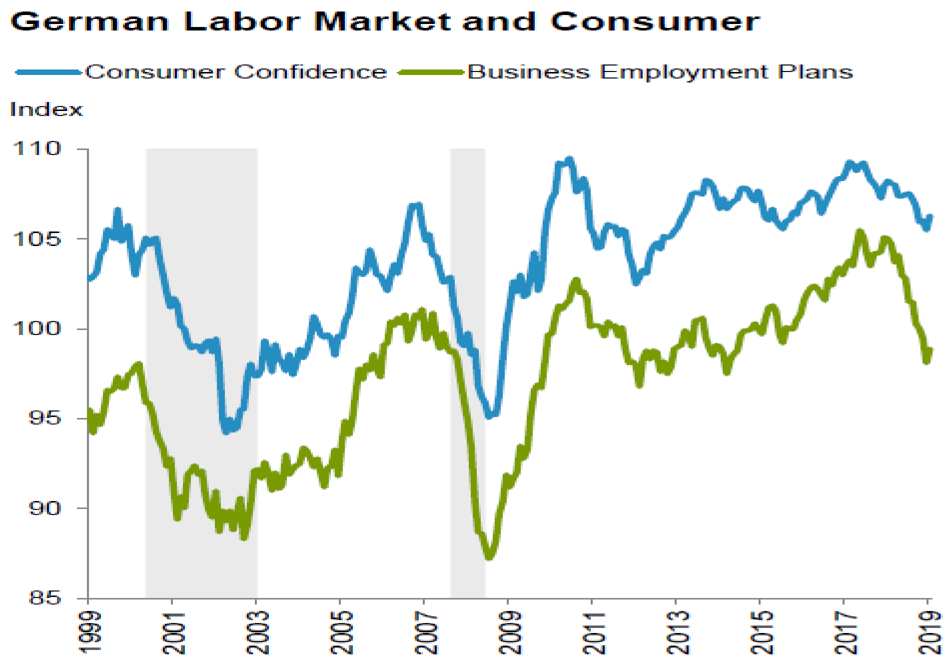


Sources: Evercore ISI

Europe Update

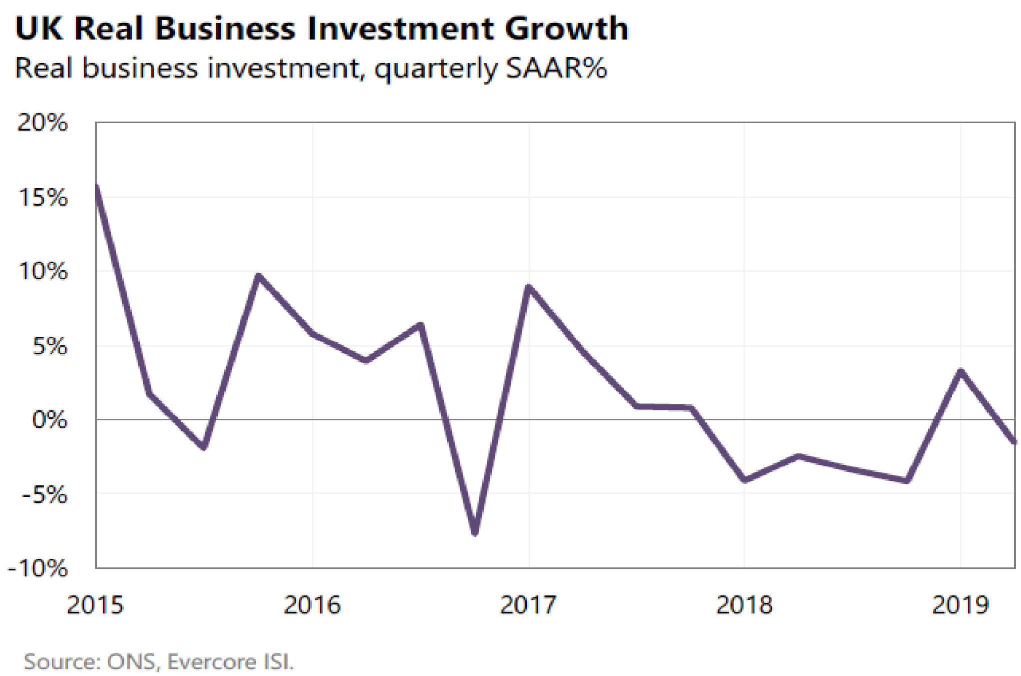
European stocks struggled in the third second quarter as weak economic readings pushed many of the markets into negative territory and proved too much to overcome. In addition, Brexit fallout continued to bring a heightened level of uncertainty into the picture as investors remained quite anxious on this issue. The German, French, and U.K. equity markets were all weak as this unfolded. As we speculated in our last report, this did lead the European Central Bank (ECB) to cut interest rates and restart their quantitative easing. This did push the yield on the German 10-year bund down to a fresh new historic low of -.71% as of late August before a recent nice rally pushed yields up the -.27% level as of early November. Perhaps we have seen the lows pass in the global economy and this could be fueling a bit of a rate rally. We will see if this is the case. The MSCI European Index (ex. U.K.) fell -1.78% in the quarter as a strong U.S. dollar pushed returns into negative territory even as local returns were positive. Defensive sectors of the market wound up performing the best.

The European economy posted another quarter of low growth in the third quarter as GDP grew +.2% from the previous quarter, or +1.1% from the year earlier period. This is right in line with growth in the previous quarter and slightly better than many were expecting. This is probably not as bad as it could have been considering Germany remains in an industrial slump. As we saw in the previous quarter, the French and Spanish economies are providing the bulk of the strength and keeping the region at least in slow growth mode. Eurozone industrial production will probably be down about -2% in the third quarter once official numbers are released in mid-November. The key automobile sector remains in a slump and the trade wars going on around the globe are not helping any. As a result of all the trade issues and Brexit transpiring at the moment, the index of executive and consumer sentiment continued to struggle, moving down to 100.8 in October, another fresh multi-year low. We are just not seeing much optimism in the region at the moment. Manufacturing, construction, and consumer service providers all seem to be providing weak outlooks lately. Retail sales were actually a bit better than expected and were up +2.7% in the third quarter from a year earlier. Computer related equipment and medical products had decent demand in the last few months. Core CPI remained not much of an issue as October was reported to be up +1.1% from the year earlier. The ECB made no change to interest rates at its late October meeting after cutting interest rates in September and restarting its bond buying program. This was widely expected ahead of new ECB President Christine Lagarde taking over on November 1st. We will see what further actions she intends to take over the next several months. Employment indicators have been very stable lately as the September unemployment rate remained at 7.5%. If we are to see further improvement in employment gains, then we will have to see the economy pick up some momentum, which seems a bit tough in the current environment. Going forward, we are optimistic that we could be near a trough in the Eurozone economy and maybe we could see a pickup in activity in early 2020. But the ongoing China/U.S. trade war and Brexit always present a risk to this outlook.



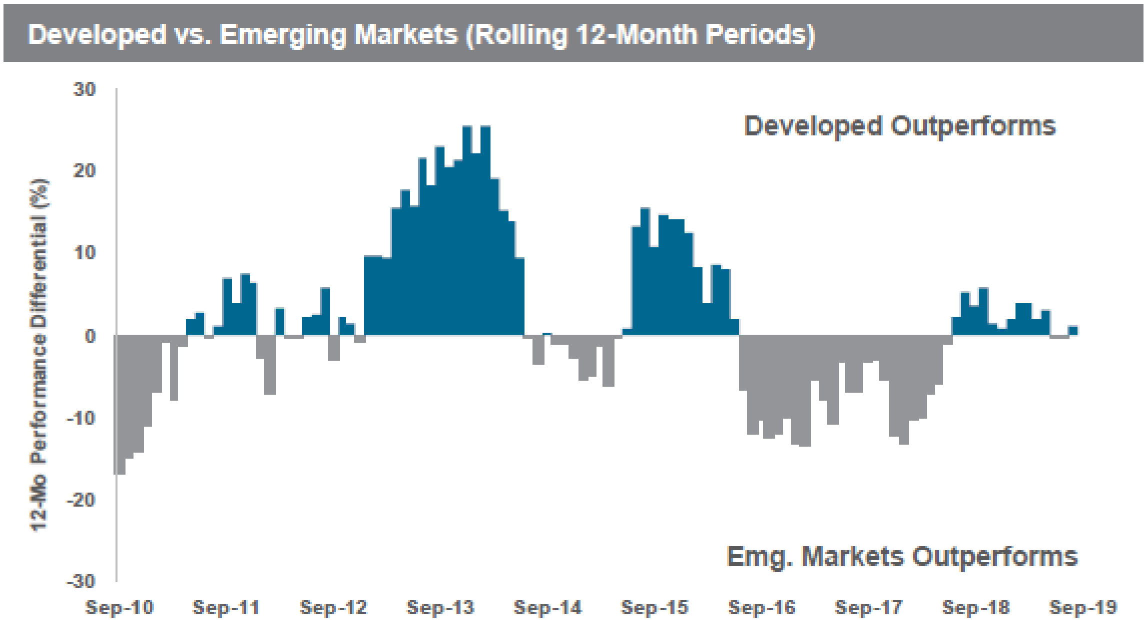
Source: ECRI; European Commission; Ifo; Haver Analytics; Fidelity Investments (AART)

Brexit negotiations still continued to dominate the scene in the U.K. over the last few months. Thus far, no agreement has been reached. The House of Commons want to desperately avoid a disorderly exit from the European Union (EU). We still believe that a “no deal” Brexit would create chaos causing shortages of critical supplies needed in both regions. No one really wants to see this happen. Therefore, a law was passed that Prime Minister Boris Johnson must be compelled to seek an extension if no agreement is reached by October 31. This in fact is what happened. So we now have a new deadline for Brexit that is pushed out to January 31, 2020. Between now and the end of January we will see a tremendous amount of political gamesmanship by both sides with discussions taking a lot of different directions. Ultimately, an agreement will be reached with the details to come. At this point, investors still seem to be on guard and will probably get more nervous as the new deadline gets closer. We will see if this continues to be the case. The MSCI U.K. Index again lagged the broader European Index in the third quarter and returned -2.3% with currency movements responsible for the negative return. The economy continued to grind at a very slow pace as third quarter GDP rose +.3% from the previous quarter, or +1.0% from a year earlier. While avoiding a technical recession, this economy is still clearly being held hostage by the Brexit negotiations and lack of an agreement. Industrial production continued to struggle and fell -.3% in September from a month earlier, or -1.4% from a year earlier. A weak manufacturing environment continues to plague the region with little good news on this front lately. Exports did manage to stabilize and were actually up just a bit in the third quarter. Retail sales have been surprisingly stable, as third quarter sales rose about +3% from a year earlier. We haven’t seen much change in inflation recently as Core CPI rose +1.7% in September from a year earlier. This still remains well below targeted levels and should stay this way over the next several months. At its recent early November meeting, the Monetary Policy Committee (MPC) voted to maintain its benchmark interest rate at .75%, while maintaining its bond purchase target of 435 billion pounds, including 10 billion in corporate bonds. We believe the MPC remains ready to cut interest rates if the economy takes a move downward from Brexit. Third quarter unemployment continued to hover right at historic lows of 3.8%, steady from the previous quarter. Ending employment remained at a record 32.753 million workers. Wage growth actually accelerated just slightly in September to +3.6%, which is indicative of a tight labor market.



Emerging Markets

Once again, emerging market equities (EM) were the weakest performing equity asset class in the third quarter as almost every market posted a negative return. In fact, Taiwan was only market within EM that managed to post a positive return in the quarter. Trade issues between China and U.S. were just too much to overcome as investors remained fixated on developments on this front. As a result, Chinese equities fell another -4.7% in the period. Also, South African equities fell -12.6% as fresh economic and geo-political issues recently surfaced. Overall, the MSCI Emerging Markets Index fell -4.3% as mentioned earlier. Over the next couple of months, emerging market equities could be quite interesting, as we see a potential “rubber band” effect here. If we see positive news on the trade front between the U.S. and China, then we could see a decent near term bounce in these equities. If not, then lackluster returns could remain in play. We will see how investors react to the news as we move into late 2019.



Sources: Baird Chartbook Q3 2019; MSCI; Morningstar Direct

International Equity Activity/Strategy

As we head into late 2019 and early 2020, we are still plagued by the same issues as a few months back. Brexit remains unresolved, global economic data points remain weak, the geo-political landscape remains a mess, and a permanent trade agreement with China remains allusive. However, all of these issues are well known by investors and fresh negative developments on these points have seen a rather muted response by the equity markets. So maybe we are entering a period to where news flow on these issues is somewhat balanced. Central bank actions seem to be a net positive as the U.S. Federal Reserve cut interest rates again, and the ECB and BOJ should remain quite accommodative if they continue to follow recent rhetoric. Also, we still do not see excessive imbalances in the global economy at the moment and our "scorecard" of recession indicators do not seem to point to any meaningful deep recession. If anything, we believe investors are looking to grab ahold of any "green shoots" in many of the major economies around the world as justification to push equity markets higher even as things remain fragile and can change in a hurry. Therefore, with these points in mind, the global equity markets could remain healthy in the last quarter of 2019 and surprise some investors along the way.

We recently added $25 million to our Emerging Markets asset class in mid-August as the price of EEM finished below our put strikes for the month of August. We expect to continue to remain active with our put and call writing strategy on EEM over the next months in an effort to bring in some current income as well as to add further to this asset class after an extended period of under-performance lasting several years. Premiums for doing this strategy still look attractive in the current low interest rate environment. Our current allocation to Emerging Market equities is approximately 3.0% of total assets and approximately 10.5% for MSCI EAFE equities across our TRS, ERS, and JRF portfolios. *(Credit is given to the following entities for charts provided: Baird Chartbook, MSCI, Morningstar Direct, ONS, Evercore ISI, ECRI, Ifo, European Commission, Haver Analytics, Fidelity Investments, Bloomberg, Capital Economics, RIMES, Capital Group World Markets Review)*