THE BLEAK FUTURE OF BONDS

How Bond Risks Threaten Traditional Portfolio Construction

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INTRODUCTION

For decades bonds have played a dual role in most investor portfolios: providing income and capital preservation. However, the tailwinds that have produced strong absolute and risk-adjusted returns for bonds may be coming to an end. Going forward there are numerous risks working against treasuries, corporate, and high yield bonds that pose tremendous challenges to their traditional roles of income and capital preservation and their reputation of being safe investments.

BULL MARKET BONDS

Over the last half-century, Modern Portfolio Theory (MPT) has been the dominant investment solution favored by investors. From multi-billion dollar institutional portfolios to the monthly savings of 401(k) participants, the idea that investment goals could be reached by simply investing in the “right” combination of stocks and bonds has been widely accepted as a fundamental truth.

Underpinning the success of MPT portfolio has been the great bull market in bonds for the last several decades. In the early 1980s the Volcker Fed took the painful but necessary steps to defeat inflation. Interest rates were driven down from double-digit levels to more normal levels throughout the 1980s and 90s. In the aftermath of the two big bear markets of the new millennium, rates fell to historically low levels for an extended period. This trend was mirrored around the globe as inflation was tamed and yields fell throughout most of the world’s economies.

Decades Long Bull Market in Bonds as Yields Fell

Source: U.S. Treasury, Zephyr StyleADVISOR

Yields on 10-year Treasuries peaked at 15.84% in Sept 1981 and declined all the way down to the 2% range in the 2010s. As yields and price returns move in opposite directions, this resulted in the Barclays U.S. Aggregate Bond index posting an average annual return of 7.69% from the period January 1982 to May 2019. The worst calendar year return was -2.92% in 1994 and biggest peak-to-trough drawdown was -5.15%. Clearly, bonds have been a good investment for the last 37 years.

Unfortunately, it seems highly unlikely that bonds can play this dual role of income and capital preservation in portfolios going forward. Without bonds performing this role, portfolio construction becomes much more difficult. At the very least bonds will likely have returns far short of the 7.69% average over the last 36.5 years. A more pessimistic forecast has bonds losing value through default, downgrades, duration risk, and/or inflation. These risks are the topic of this paper.

TREASURIES

Treasuries have long been the foundation upon which bond allocations are built. But with historically low yields, rising rates, and the massive amount of recent and looming issuance there are risks to Treasuries that haven't been seen in a long time.

Bond markets tend to move in very long cycles. While the generation-long bull run in markets has been quite beneficial to bondholders, the period preceding it was a different story. During the decades following World War II, bond holders had a very different experience.

10 Year Treasury Yields: January 1946 - May 2019

Source: Morningstar Direct, https://www.multpl.com/10-year-treasury-rate

During the period after 1982 when interest rates were falling, Treasuries offered a real, inflation-adjusted annualized return of 4.28%[1]. However, in the post-war period yields rose from 2.2% to over 15% in 1982. During this time, when rates were rising and government expenditures were skyrocketing to pay for "The Great Society" and the Vietnam War, the real, inflation-adjusted return was actually negative: -0.84%[2] annualized over 36 years. If interest rates are the primary driver of Treasury returns, what does that mean going forward?

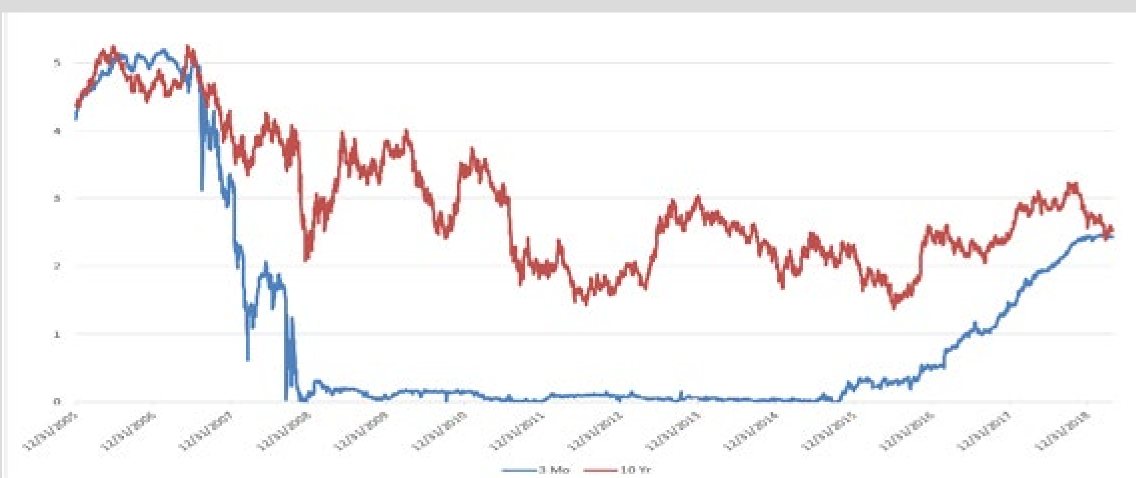
In order to understand the way forward, it is important to understand how we got here. The supply, demand, and pricing of Treasuries and other bonds were massively distorted in the wake of the Global Financial Crisis of 2007-09, referred to hereafter as "the GFC." The GFC was the biggest calamity to befall the world economy since the Great Depression. The S&P 500 lost over half its value; other markets and asset classes lost more. In the wake of the GFC, governments and central banks around the world flooded the markets with liquidity. This liquidity initiative took several forms, including:

- Lowering official lending rates to near-zero levels
- Open-market operations/Quantitative easing
- Stricter capital requirements mandated by regulators

The lowering of rates was the most visible to market watchers. The first defensive action the Fed usually takes is to tinker with the federal funds rates and hope that their actions influence the cost of lending and borrowing throughout the economy. Starting in September 2007, the Federal Open Market Committee reduced rates from 5.25% to 0.00%-0.25%, as low as they could go without being negative.

Just as important, rates were kept at rock-bottom levels for an extended period. Although the GFC recession technically ended in June 2009, the recovery was deemed too fragile to endanger. Rates weren't increased until December 2015. Rates moved up gradually over the next couple years until paused in late 2018. Current levels of 2.50% are still well below historical averages and close to the level of inflation.

Yields on 3-Month and 10-Year Treasuries

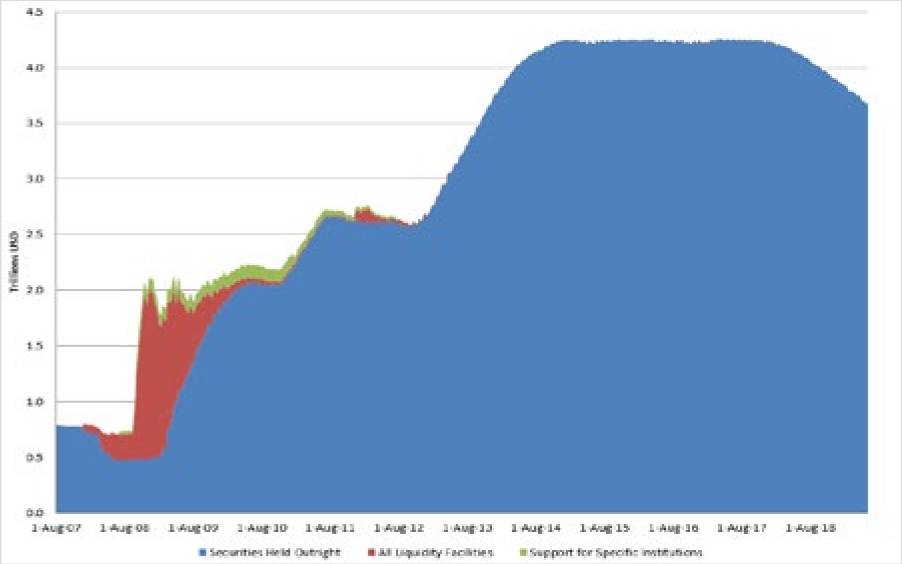


Source: U.S. Treasury

[1]Morningstar Direct: Ibbotson SBBI US IT Govt Inflation-Adjusted Total Return USD
[2]Ibid

The second main component of the liquidity drive was more radical and controversial. With no room to lower rates below zero, the Fed remained adamant about driving yields down further. If the "price" of a bond is its yield, the Fed drastically altered the supply and demand equation by flooding the market with new debt issuance. Three rounds of quantitative easing left the Fed with over $4.3 trillion on its balance sheet, up from $800bn prior to the crisis.

Federal Reserve Bank Balance Sheet: August 2007 - June 2019



Source: www.federalreserve.gov

It is worth noting that the ultra-low rates and open market operations were mirrored around the globe. Japan, Europe, and the United Kingdom all engaged in similar actions. Although it would seem to defy every traditional economic convention, negative yielding debt exists and has willing buyers. Moreover, there is a lot of it. In the first quarter of 2019, the global amount of negative yielding debt exceeded $10 trillion[3]. China's response to the GFC was a bit different: fiscal stimulus on an absolutely massive scale. However, it is important to remember that much of China's fiscal stimulus was also financed with debt.

The third point is somewhat overlooked relative to the other two. For lack of a better term, it can be called "mandated demand". Under normal circumstances higher demand leads to higher prices. However, the normal price discovery process that occurs when supply and demand intersect has been subverted since the GFC. For literally trillions of dollars of Treasury bond purchases, it simply did not matter what the yield was. Global central banks, insurance companies, commercial banks, passive mutual funds and ETFs, etc., gobbled up mountains of debt without any real concern about the paltry yield they received. Moreover, governments were all too happy to issue the debt.

[3] "The $10 Trillion Pool of Negative Debt Is a Late-Cycle Reckoning." Cecile Gustscher, Bloomberg; March 25, 2019.

As part of the damage control of the GFC, various governments and regulatory bodies insisted that different financial institutions clean up their balance sheets. The Basel III agreement placed a premium on "high quality liquid assets" above everything else. Insurance companies have long had their balance sheets dictated by regulatory rule. Ever since the 1997 Asian financial crisis, central banks around the globe have been stockpiling U.S. Treasury debt. And with the long-term viability of the Euro as a single currency in question, many European countries' debt was decidedly less attractive than dollar-based Treasuries. All of these factors are examples of top-down demand for Treasury or Government-backed debt.

Another variant of top-down "mandated demand" has come from the popularity of passive, index-based investing. The same move to passive management in equity investing has been mirrored in fixed income. For all intents and purposes, this means investments that track the Barclays U.S. Aggregate Bond Index. Not only have the assets tracking the "Agg" exploded in recent years, but the composition of the "Agg" has changed as well. In 2007, Treasuries made up 22% of the index; by 2018 that allocation was up to 38%[4]. Moreover, the Treasuries included tended to be longer duration, 20- or 30-year issues[5], which are more sensitive to interest rate changes. This is another example of a huge source of top-down demand that paid no attention to the yield attached to Treasury debt.

The GFC resulted in a bond market flooded by ultra-low yielding Treasury debt. Many bond buyers accepted the paltry yield they received in this distorted marketplace. However, not every investor was indifferent to the lack of yield in the post-GFC world. Indeed, many investors have income as a primary investment goal. Squeezed out of the Government bond market, they were forced to look elsewhere.

As important as Treasury yields are in and of themselves, it is just as important to recognize the ripple effects of low yields. However, the term "ripple effects" understates the problem. Tsunami is a better description of the hundreds of billions or even trillions of dollars sloshing around the globe searching for yield. We will now turn our attention to the credit markets.

CORPORATE BONDS

With Treasury yields so low, some investors look to corporate bonds to fill their income and return needs. However, investors should be cautious of the credit and liquidity risks that have been building in the corporate bond market. The concerns in corporate bonds include:

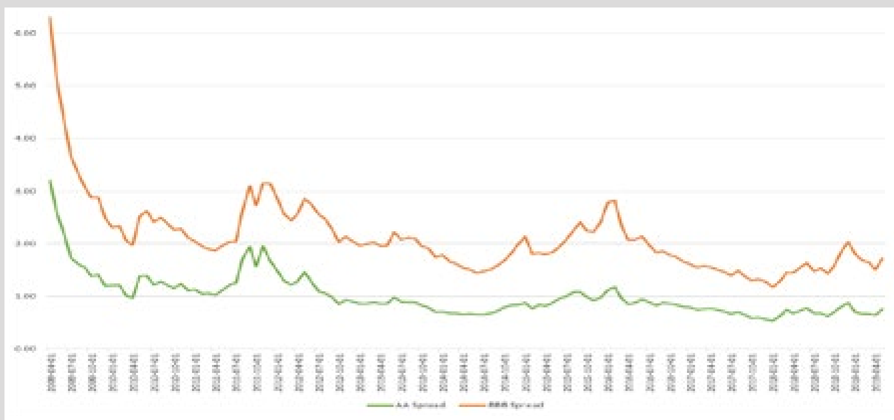
- A decline in the absolute level of yield
- A "leveraging up" of the balance sheets of many U.S. companies
- A general deterioration of credit quality within investment grade
- A large "bulge" of companies on the cusp of junk rating
- Potential liquidity problems due to changing market dynamics

[4]Columbia Threadneedle: "Beyond the Bond Benchmark", September 2018.

[5]JP Morgan Asset Management: "The US Agg Has Changed", June 2018.

The amount of “take-home” income available to the investor from corporate bonds has been much-reduced with the collapse in overall interest rates. Corporate bonds are frequently valued on their spread over Treasuries. This is a relative measure of the compensation required for the credit risk above and beyond the baseline Treasury rate. In the decade since the GFC, spreads have fluctuated with market sentiment but have been range-bound. AA-rated corporate debt has typically sold at an average premium of 100 basis points to Treasuries, whereas the low-end BBB corporate debt’s spread has averaged 211 basis points.

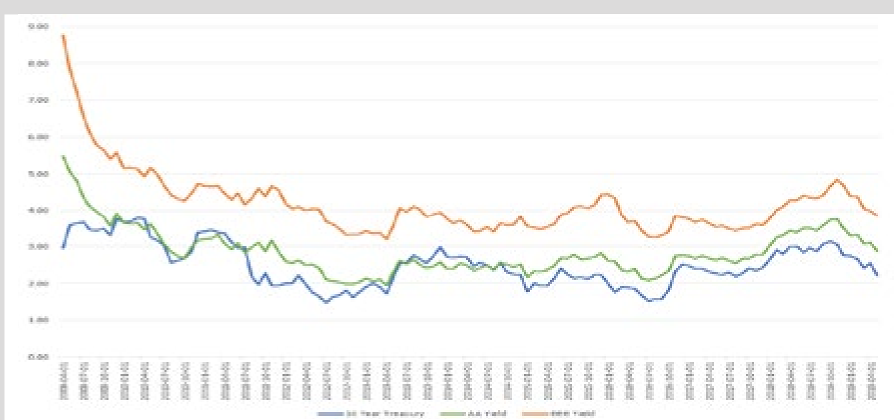
Post Crisis Spreads



Source: St. Louis Fed

However, there is an old saying in investing: “You can’t eat relative returns.” In absolute terms the yield received from corporate issues is quite low. The graph below illustrates the reality facing bond investors these last ten years. A 2% spread over Treasuries when Treasuries are yielding 6% leads to a respectable 8% in income. Alternatively, a 2% spread over 2% Treasury yields amounts to an underwhelming 4% yield. For a retiree relying upon high quality Treasuries and investment grade corporate debt to pay the bills, their income is cut in half.

Post Crisis Yields



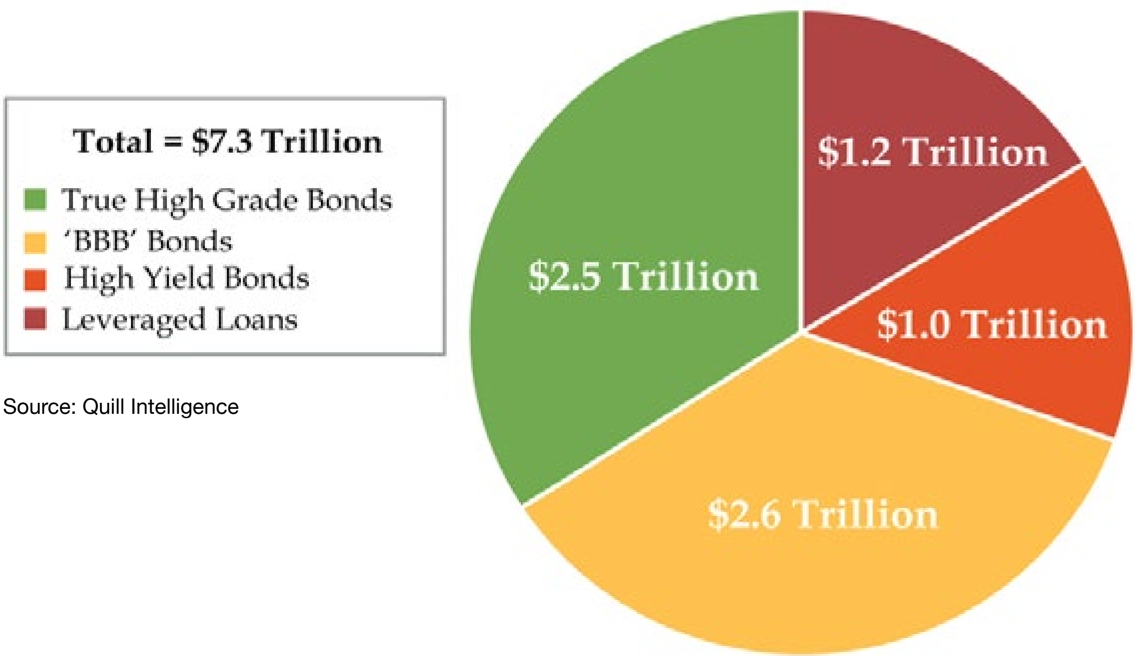
Source: St. Louis Fed

Leveraging Up the Risk

Another consequence of the liquidity flood was corporations becoming much more leveraged, and thus more susceptible to downturns in economic conditions. With rates at historic lows, it was entirely rational for individual CFOs to restructure their firm's existing debt or borrow more. Some say the whole point of the liquidity flood was to fuel the "animal spirits" of capitalism. Whether or not this led to productive use of capital or simply more share buy-backs benefitting existing equity shareholders is hotly debated. What is not in question, however, is that corporations are more leveraged now than they were before the GFC. The overall size of U.S. corporate debt was around $9.2trn in late 2018, compared to $5.4trn in December 2007[6].

This leveraging up of corporate balance sheets has changed the composition of the corporate bond market. What should be eye-opening is that only two firms—Johnson & Johnson and Microsoft —are currently AAA rated by Standard and Poor's. In contrast, there were 98 companies with the coveted AAA rating in 1992[7].

Moreover, in recent years the volume of debt on the lowest rung of the investment grade ladder has ballooned. There is currently over $2.5trn worth of BBB-rated debt, making up roughly half of the investment grade corporate bond pie. By way of reference, the entire investment grade corporate bond market was worth less than $1.75trn prior to the GFC in 2007[8].



Source: Quill Intelligence

[6]Securities Industry and Financial Markets Association.
[7]"Triple A Quality Fades as Companies Embrace Debt." The Financial Times; May 24, 2016
[8]"The Corporate Bond Market is Getting Junkier." Danielle DiMartino-Booth, Bloomberg; July 10, 2018

Companies on the edge of junk bond status have little margin for error. Should economic conditions change for the worse, their ability to service that debt is questionable. A downgrade to non-investment grade can have serious implications. Many institutional investors have strict guidelines forcing liquidations of non-investment grade debt. It is unclear who the buyers would be in a sell-off, leading to a potential liquidity crisis.

In addition, of the approximate $5trn of investment-grade corporate debt, roughly half of it must be repaid or refinanced before 2022[9]. While no one knows when the next recession might occur, few economists are predicting the next three years will be turmoil-free. It might be that when this debt is due to rollover, investors will demand a higher yield or stricter covenants from the issuers.

Liquidity Risks in “Safe” Money

Another consequence of the GFC was that many large banks dramatically reduced their inventory of corporate bonds. Banks used to play a market-maker type role for corporates, constantly buying and selling. With their mandated emphasis on higher-quality Treasury and Government issues, this role as a liquidity provider in corporate issues has been dramatically reduced in the last ten years. It is estimated that in 2006 there was $200bn in corporate bonds in dealer inventory and that today the number is closer to $20bn—a reduction of 90%[10]. We have yet to see the liquidity of the corporate bond market severely tested since the banks have curtailed their participation in corporates.

It will also be interesting to see how quickly the rating agencies react to worsening conditions and downgrade issuers. Downgrades lead to forced selling and forced selling leads to liquidity problems. In the aftermath of the GFC the rating agencies were heavily criticized for being too slow to respond to deteriorating economic conditions. Some claim the downgrades happened after it was too late for them to be useful to anyone. Whether or not this criticism compels the rating agencies to react and downgrade more quickly the next time a crisis hits will be closely watched.

Obviously, no one knows how the investment grade corporate bond market will respond to the next crisis until the moment it arrives. That being said, the current environment is much changed from what it was prior to 2007. It seems prudent to assume investment grade corporate debt poses challenges to investors on two fronts: overall return potential and reduced ability to serve a capital preservation role during the next crisis.

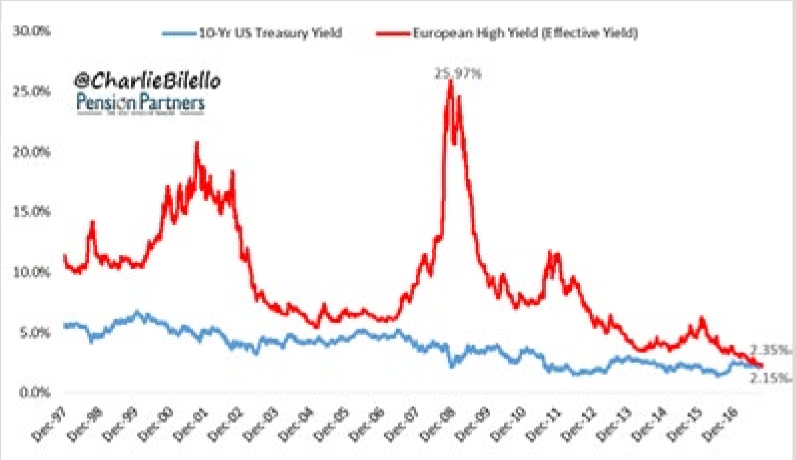
[9] “Market Insight: The Storm Surrounding BBB-Rated Corporate Debt.” Tortoise Advisors, September 2018
[10] “The Changing Nature of Market Liquidity- Understanding Banks’ Corporate Bond Inventory.” Richard Woolnough, Bond Vigilantes; April 4, 2019

HIGH YIELD BONDS/COLLATERIZED LOAN OBLIGATIONS

Going further down the credit ladder, what is the outlook for non-investment grade, or “junk” bonds? What about the massive growth in the collateralized loan obligation (CLO) market? Investors in this space have always emphasized higher levels of income or growth rather than capital preservation. Often times these investments are termed “speculative,” which would suggest buyers are cognizant of the risks of the asset class. Is this a fair assumption, though?

The emphasis has clearly been on yield rather than capital preservation in the post-GFC world. The chart below shows how much downward pressure has been placed upon European high yield bonds. According to this chart, credit risk, default risk, and currency risk are currently only worth 20 basis points more than Treasuries.

10-Year U.S. Treasury vs European High Yield

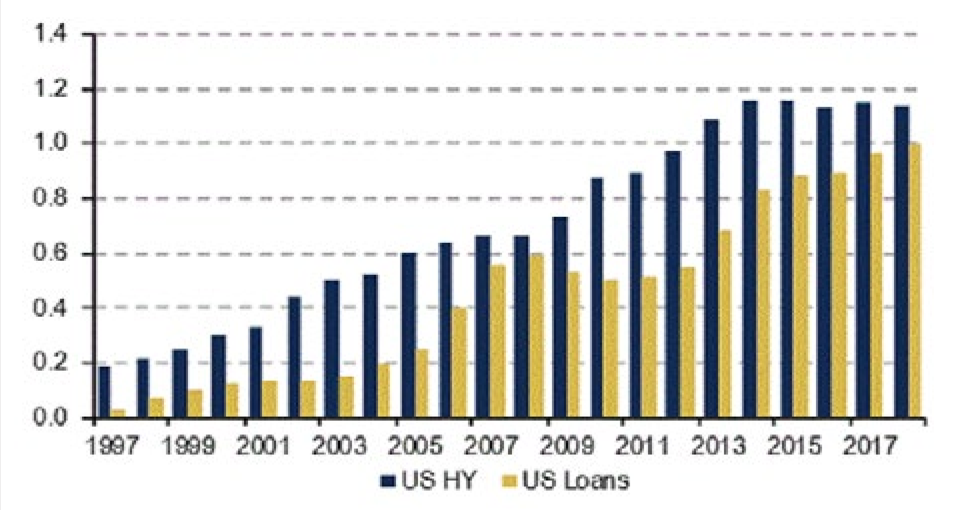


Source: Pension Partners

The high yield bond market has followed an interesting path in the aftermath of the GFC. Initially high yield bonds rebounded well and the size of the market doubled. However, over the last five years the size of the high yield market has plateaued. Instead, leveraged loans and collateralized loan obligations (CLOs) have become the preferred debt of choice for non-investment grade borrowers and lenders. Borrowers who would have previously been issuers of high yield bonds have either been “pushed up” into the BBB range, as discussed previously, or “pulled out” by the attractiveness of the leveraged loan market.

[11] “Opinion: The Next Wreck in Junk Bonds Will Be Bigger, Longer, and Uglier.” Jonathan Rochford, MarketWatch; June 16, 2018.

Size of High Yield and CLO Markets



Source: BofA Merrill Lynch Global Research

Driving the growth in the leveraged loan space has been the loosening of lending standards in the leveraged loan market. According to the S&P/LSTA Loan index, over 75% of recent leverage loan issues are classified as "covenant lite". In a "cov-lite" situation, borrowers have much more leeway in maintaining specified financial targets. Obviously, it is in the best interest of individual borrowers to negotiate the least restrictive loan terms possible. But when so much issuance is done on such liberal terms it suggests too much money is chasing too few deals. In 2007 when the leveraged loan market was less than half the size it is now, only 17% of issuance was covenant lite[11].

Chasing Yield—To What End?

Why have lenders been so eager to lend, and lend without covenants? Again, this ties back to the initial problem about the lack of yield from traditional sources like Treasuries or investment grade bonds. Lenders have been so thirsty for income they have been getting progressively more lenient on lending standards, giving borrowers the "green light" to take on more risk. While an economic downturn has yet to test these borderline issuers, a trade-off has been made between increased income potential and downside risk.

Some market watchers are raising warning flags about the number of similarities between the CLO market to the pre-GFC mortgage backed security (MBS) market. At an industry conference on May 20, 2019 Federal Reserve Chairman Jerome Powell spoke about the threat posed by the $1.2trn CLO market to the overall financial system. Mr. Powell claims the financial system is in a much better position to handle any turmoil and that the Fed does not view CLOs as a systemic threat. Mr. Powell stated, "We take the risks from business debt seriously but think that the financial system appears strong enough to handle potential losses."[12] Whether one should be relieved or alarmed by Powell's sanguine outlook is open for debate.

[12] "Powell Says Leveraged Lending Isn't Posing a Crash Threat." Jesse Hamilton, Bloomberg. May 20, 2019

FISCAL OUTLOOK

Up to this point we have been describing what the bond market looks like today. What challenges await the bond market over the next ten or twenty years?

Federal and state expenditures far exceed government revenues. The U.S. has been able to sustain these fiscal policies by running annual deficits and issuing ever-increasing amounts of debt. However, the problem looks to get much worse. For decades there have been warnings about unsustainable levels of government spending and the "ticking time bomb" of entitlement programs. For just as long, these concerns have been ignored by politicians of both parties and at all levels of government. To be blunt, the problem is bad and it's only getting worse.

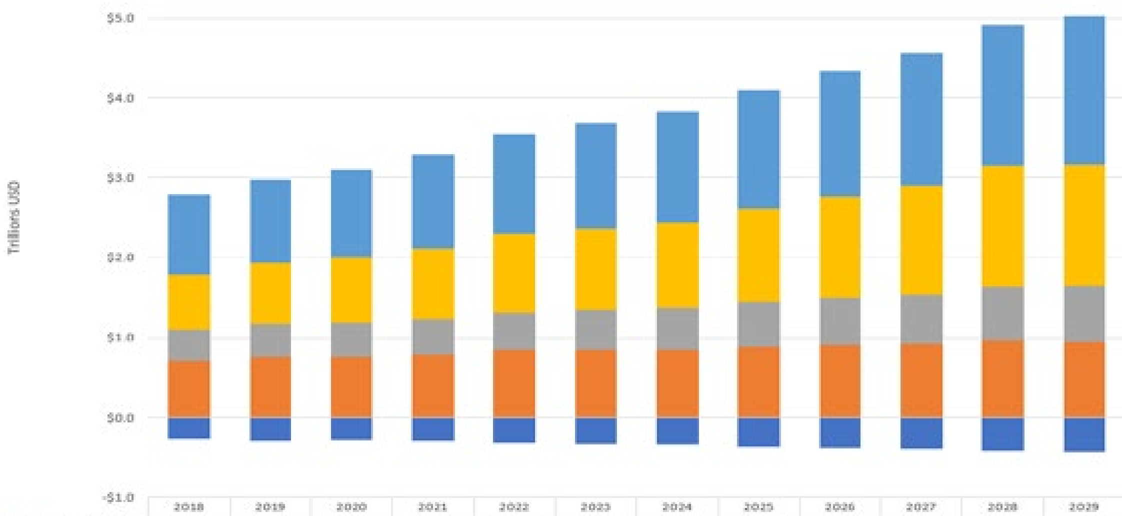
At the Federal level, the most recent Congressional Budget Office report[13] makes the following projections:

- Deficits: The CBO projects a federal budget deficit of $900bn in 2019 and expect annual deficits to exceed $1trn per year starting in 2022. These deficits are estimated to be from 4.1% to 4.7% of GDP. Over the last 50 years, deficits have averaged 2.9% of GDP.
- Debt: Due to persistently high deficits, the federal debt is expected to reach 93% of GDP by 2029, the highest level since World War II. Beyond that, debt is forecast to reach 150% of GDP by 2049, higher than it has ever been.
- Spending: The CBO projects federal outlays will be $4.4 trillion in 2019, which is roughly 20.8% of GDP. While GDP is expected to grow at an under 2% rate, outlays over the coming decade are expected to grow at an annual 4.8%. Over the course of a decade, this compounds to forecasted outlays of $7.0 trillion per year by 2029, or 22.7% of GDP. Social Security, Medicare, and net interest are expected to account for roughly three quarters of that $2.6 trillion increase.

The strain that the Baby Boom generation will put on entitlement programs as they retire and proceed to end of life will be immense. Most of these programs are non-discretionary in nature, meaning spending is mandated and cannot easily be changed even if Congress found the will to deal with the issues. The chart below on mandatory spending projections pulls data from the aforementioned CBO report.

[13] "The Budget and Economic Outlook: 2019 to 2029." Congressional Budget Office, January 2019

Mandatory Federal Government Spending, CBO Forecast



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Social Security	$0.98	$1.04	$1.10	$1.17	$1.25	$1.32	$1.40	$1.49	$1.57	$1.66	$1.76	$1.86
Medicare	$0.70	$0.77	$0.82	$0.88	$0.99	$1.02	$1.06	$1.18	$1.26	$1.36	$1.53	$1.52
Medicaid	$0.39	$0.41	$0.42	$0.44	$0.47	$0.50	$0.53	$0.56	$0.59	$0.63	$0.66	$0.70
Other spending	$0.70	$0.76	$0.77	$0.79	$0.85	$0.85	$0.85	$0.89	$0.91	$0.92	$0.97	$0.94
Offsetting reciepts	$(0.26)	$(0.28)	$(0.27)	$(0.29)	$(0.31)	$(0.32)	$(0.34)	$(0.37)	$(0.38)	$(0.40)	$(0.41)	$(0.44)

Source: Congressional Budget Office

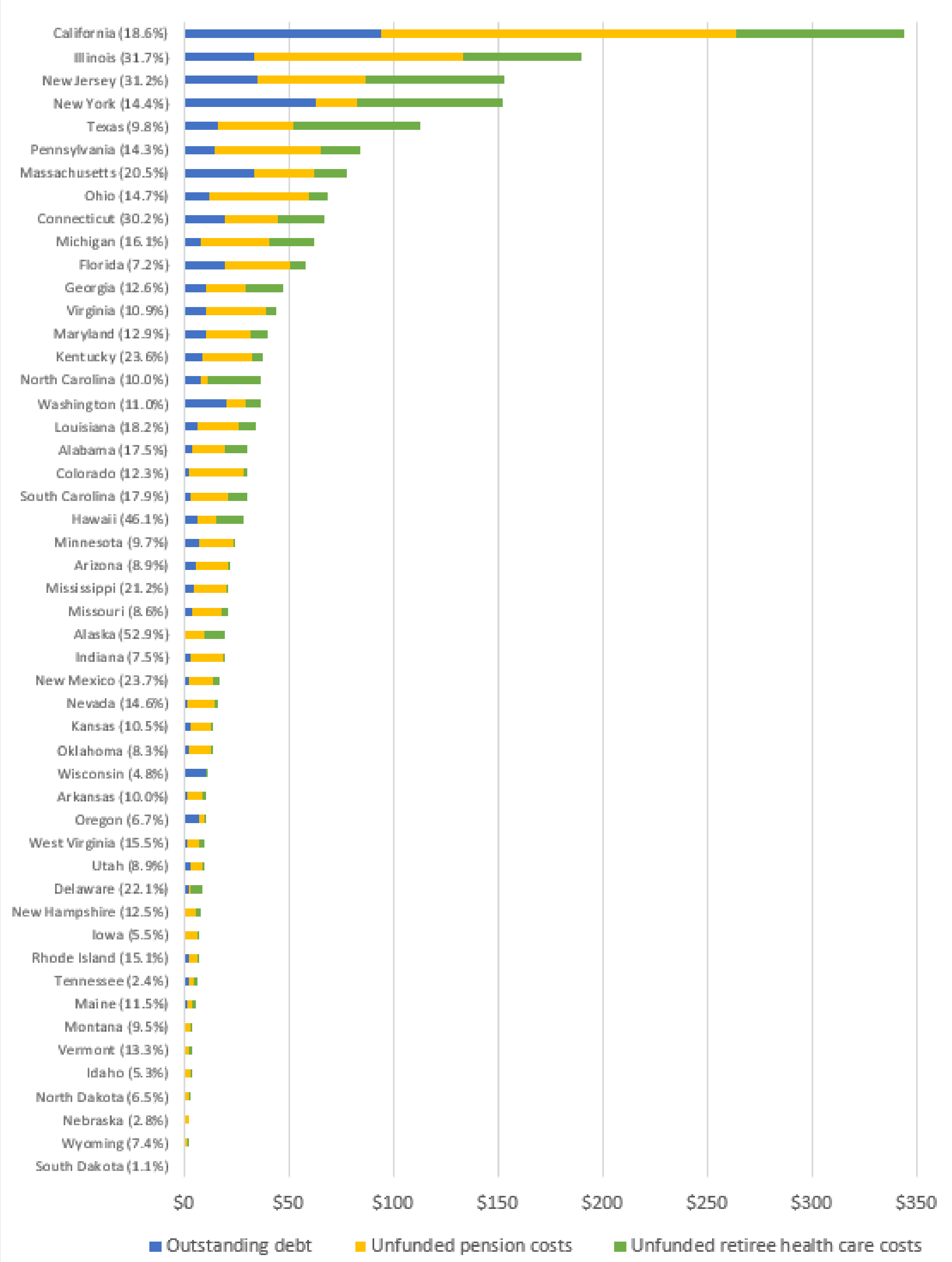
While Social Security ran a surplus when the Baby Boomers were working and contributing, those days are soon ending. The so-called trust fund had a balance of $2.9 trillion at the end of 2018, but that is forecast to be depleted by 2035. Moreover, the Medicare A trust fund is expected to be exhausted by 2026[14].

If the government insists upon staying on this path, it will need to issue ever increasing levels of debt. At some point bond holders will demand a yield adequate to compensate them for the risks they are taking. Should yields rise significantly, those bond holders who locked in a 2.5% coupon on a 30-year bond will discover those bonds won't be worth nearly as much.

This grim outlook is repeated at the state and local level. For far too long politicians have swapped entitlements for votes, knowing full well they would be out of office when the reckoning arrives. The chart on the next page was comprised of data collected by the Pew Charitable Trusts comparing the outstanding debt, unfunded pension costs, and unfunded retiree health costs of all fifty states. The bars represent the liabilities, in billions. In parenthesis following each state's name are the liabilities represented as a percentage of personal income—a "per capita" representation of the debt burden upon each state's residents.

[14] "The 2019 Annual Report of the Board of Trustees of the Federal Old Age and Survivors Insurance and Federal Disability Insurance Trust Funds." U.S. Government Publishing Office, 2019

Dollar Value of State Obligations, 2013 USD, Billions



Source: Pew Charitable Trusts

Unlike the federal government, states obviously cannot issue more money. Also constricting the states' freedom of actions are balanced budget requirements. Every state except for Vermont has some form of balanced budget requirements, although the stringency of these rules varies widely. And like the non-discretionary nature of the federal entitlement programs, much of this spending has been designated as untouchable by its authors. This leaves states with only one significant lever: the ability to tax.

While states have the ability to tax, residents have the ability to move. If taxes rise to unacceptable levels, those who pay the most in taxes have the strongest incentive to move to more tax-friendly jurisdictions. This can potentially create a self-reinforcing downward cycle where the most economically productive individuals and firms exit the tax base, leaving the burden on an ever-shrinking pool of less productive taxpayers.

Faced with the challenges of deficit, debt, and demographics, policy makers have a limited set of options available, namely:

1. They can raise taxes
2. They can cut benefits
3. They can borrow more, effectively "monetizing" the debt

None of these options are attractive to anyone, but it is likely that a combination of all three will be required if the problem of deficit, debt, and demographics is ever addressed.

SO WHAT DOES IT ALL MEAN?

This paper started out as a discussion of the various challenges facing bond holders. The challenges range so far and wide it makes sense to recap them. The key points were:

Treasuries

- Low yields
- High volume of issuance
- Interest rate risk
- High levels of demand from yield-agnostic buyers

Corporates

- Low absolute levels of yield
- Borderline credit quality
- Liquidity in the post-GFC landscape

High Yield and Leveraged Loan

- Low absolute levels of yield
- Massive issuance of leveraged loan products
- Weak covenant protection
- Fiscal Outlook
- Deficits
- Debt
- Demographics

So what does this mean for the investor? Unfortunately, it seems highly unlikely that bonds can play the dual role of income and capital preservation in portfolios going forward. If rates stay low and monetary policy remains loose, then bond holders are stuck with a measly yield barely enough to cover inflation. If rates start increasing, the prices of existing bonds will fall. Neither of these scenarios will provide bonds with the 7.69% rate of return enjoyed over the last three and half decades.

Since 1982, a simple portfolio consisting of 60% S&P 500 Index and 40% Barclays Aggregate Bond Index returned 10.23% annualized—a healthy return by most anyone's definition. Even a portfolio with no equity would have done reasonably well.

Annualized Return: Jan 1982 - May 2019	
S&P 500	11.47%
80% S&P 500/20% Barclays Agg	10.90%
60% S&P 500/40% Barclays Agg	10.23%
40% S&P 500/60% Barclays Agg	9.47%
20% S&P 500/80% Barclays Agg	8.62%
Barclays U.S. Aggregate	7.69%

Source: Zephyr StyleADVISOR

Modern Portfolio Theory is based upon the assumptions that 1) a decent rate of positive return will be generated by conservative investments (i.e. bonds and cash) and that 2) the returns of stocks and bonds are uncorrelated and will dampen volatility when mixed.

But based upon the issues discussed in the paper,

- Should anyone be willing to bet on bonds contribution of over 7% to a portfolio?
- What kind of returns would the above portfolios produce if bonds return 2% going forward?
- What if bonds return 0%?
- What if bonds no longer provide downside protection when equity markets sell off?
- What if stocks and bonds move down at the same time?
- What if the economy enters a "stagflation" period like it did in the 1970s when equity markets were in a rut and bonds were rapidly losing value due to inflation?

It is the opinion of Swan Global Investments that the long bull market in bonds that started in the early 1980s is drawing to a close, so investors must look beyond bonds for capital preservation.

A New Way Forward

Swan's Defined Risk Strategy (DRS) believes that long-term, buy-and-hold equity investments need downside protection. Capital preservation and offsetting volatility in equity markets is of paramount importance when it comes to long-term investment success.

Rather than relying on bonds to perform this pivotal role, the DRS hedges market risk via put options in its investment portfolios. While the majority of the assets are invested in an equity market, the defensive element of the strategy allocates a portion of the account to long-term put options. These put options are inversely related to the equity markets and provide a much more direct way to address systematic risk.

The DRS has successfully weathered the two largest bear markets since World War II. Going into the Dot-Com Crisis (2000-02) ten-year yields were 6.7%, prior to the Global Financial Crisis they were at 5.0%. These days, with yields back around 2.0% there is much less of a cushion when a bear market finally surfaces. Given the pessimistic outlook for bonds, we believe our hedging strategy is a much more effective way of countering downside risk.

IMPORTANT DISCLOSURES:

Swan Global Investments, LLC is a SEC registered Investment Advisor that specializes in managing money using the proprietary Defined Risk Strategy ("DRS"). SEC registration does not denote any special training or qualification conferred by the SEC. Swan offers and manages the DRS for investors including individuals, institutions and other investment advisor firms. Any historical numbers, awards and recognitions presented are based on the performance of a (GIPS®) composite, Swan's DRS Select Composite, which includes nonqualified discretionary accounts invested in since inception, July 1997, and are net of fees and expenses. Swan claims compliance with the Global Investment Performance Standards (GIPS®).

The Swan Defined Risk Strategy Select Composite demonstrates the performance of non-qualified assets managed by Swan Global Investments, LLC since inception. It includes discretionary individual accounts whose account holders seek the upside potential of owning stock, and the desire to eliminate most of the risk associated with owning stock. The Composite relies on LEAPS and other options to manage this risk. Individual accounts own S&P 500 exchange traded funds and LEAPS associated with the exchange traded funds as well as multiple other option spreads that represent other indices that are widely traded. The Defined Risk Strategy was designed to protect investors from substantial market declines, provide income in flat or choppy markets, and to benefit from market appreciation. Stock and options are the primary components of the strategy.

All data used herein; including the statistical information, verification and performance reports are available upon request. The S&P 500 Index is a market cap weighted index of 500 widely held stocks often used as a proxy for the overall U.S. equity market. Indexes are unmanaged and have no fees or expenses. An investment cannot be made directly in an index.

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There is no guarantee any investment or the DRS will meet its objectives. All investments involve the risk of potential investment losses as well as the potential for investment gains. Hypothetical performance analysis is not actual performance history. Actual results may materially vary and differ significantly from the suggested hypothetical analysis performance data. This analysis is not a guarantee or indication of future performance. Prior performance is not a guarantee of future results and there can be no assurance, and investors should not assume, that future performance will be comparable to past performance. Further information is available upon request by contacting the company directly at 970.382.8901 or visit swanglobalinvestments.com. 276-SGI-070819

ABOUT SWAN GLOBAL INVESTMENTS

Investing Redefined

Since 1997, our hedging and options strategies have been redefining investing to directly address the biggest threat long-term investors face: market risk.

Market risk is too big a threat to investors to be dealt with passively. So we hedge it.

Our simple, yet innovative investment philosophy is the foundation of our Defined Risk Strategy, a rules-based, multi-asset hedged equity strategy, with a track record of generating consistent returns while defining, or limiting, downside risk to improve investment outcomes and protect irreplaceable capital through full market cycles.

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