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JANUARY 8, 2021

Through the course of any year, financial markets grapple with five to six major themes driven by headlines and economic developments. That was not true in 2020. Financial markets looked past the biggest story of the year – the total inability of the developed West and most of the southern hemisphere to control Covid-19 – and considered what would come next.

With the US in the vanguard of vaccine development, the assumption the virus could be tamed in 2021 had immediate and intuitive appeal for investors. While the third wave swept across almost the entire in the US in the fourth quarter, investors were beckoned still further into the future by national elections that promised major changes in fiscal policy and government administration. There was even hope fresh bureaucrats could do a better job of managing public health programs.

The chart of estimated active cases in the US, however, argues against the faith in a brighter 2H 2O21 that would restore most of normal life enjoyed in 2O19. "Normal" health conditions appear to promise economic recovery, rebounding inflation and a faster reduction in support from the Federal Reserve than officials there believed at their December meeting.

So far, the pandemic obeys no timeline or script but its own. Public health steps and plans have apparently squashed the flu so far this winter while every day's numbers show Covid-19 runs unabated. Last year's biggest story – the retreat of the pandemic – remains a moving target.



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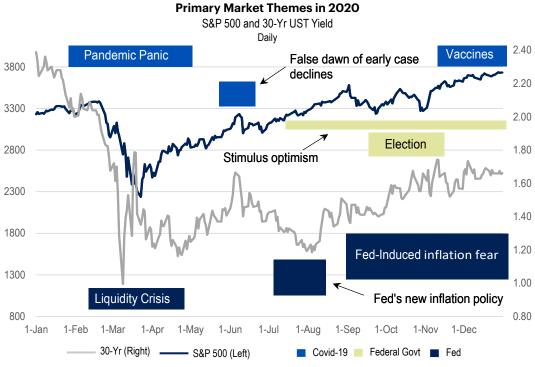
Pandemic Investment Challenges, Year 1

Throughout the year, Covid-19 was compared with 1918's flu pandemic, the last time the world suffered a plague of this virulence and strength. Yet, ours is a 21st century experience where private companies and public dollars mobilized to combat a surprisingly complex virus in record time. Vaccines with 95% effectiveness in less than a year? Unheard of.

In January and early February, markets refused to consider Covid-19 would be that different from epidemics of the last two decades (SARS, MERS, etc.). Recognizing the error of that certainty and the deadly potential to come took markets to the brink in a matter of weeks. At the time, despair was an apt description of public health preparedness, the economy, and prospects for recovery of devastated service industries. Yet, by the second week of April, financial markets were largely past the first wave of fear and confusion. In May came growing overconfidence that required a quick correction in June.

Even though the pandemic was at full roar everywhere outside Asia at the end of the year, the dominant investment story of 2020 was optimism over more US stimulus and the arrival of vaccines.

The chart shows the pandemic panic started in late January (in interest rates, the gray line) and ran through the first two weeks of the second quarter. The liquidity crisis started slowly in mid-February, reaching its peak just three weeks later. The Fed was instrumental in calming the liquidity drought, but it retreated to a market after thought by September.



Source: Standard & Poor's, FHN Financial

The last time the Fed directly influenced rates was the second week of August, when traders grasped the importance of the new inflation policy that would be announced near the end of the month. As market optimism increased in the fall, a dovish Fed triggered fears of returning inflation that would be difficult to arrest.

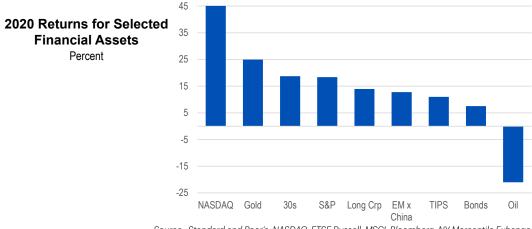


Unlike 2019, fiscal policy was the dominant theme of the year rather than monetary policy. Additional government spending – and the unwillingness of Congress to move toward any agreement at all – was frequently the daily headline from early July through the last weekend of December when the President signed a compromise bill after sitting on it for several days. Fed officials explained all through the last six months the economy needed more fiscal support.

Focusing on fiscal policy and efforts to send Covid-19 to the history books was such a successful investment strategy in 2020 that the *same* focus will continue well into 2021 even if it's no longer correct. By early September, 2020, the prevailing attitude was the preference for equities would bring an inevitable increase in interest rates. Since rate increases in 2020 were modest, most expect further curve pressure and falling bond prices in 2021.

Financial strategy for 2021, then, looks to the same four pieces that worked the last eight months:

- 1. Barbell stocks with cash
- 2. Avoid Treasuries
- 3. Buy TIPS
- 4. Increase fixed income allocations to credit



Source: Standard and Poor's, NASDAQ, FTSE Russell, MSCI, Bloomberg, NY Mercantile Exhange

Equity strategists developed half a dozen reasons to explain what seemed to be out-sized and continued profits accumulated in US equities. The US was unique amid the global rally because the previous two years had produced total gains of almost twice as much as the second best returns elsewhere.¹ *Fixed income portfolio managers, however, should look beyond stock-centric explanations of interest rates to two macro risk dampers that encouraged higher inflation expectations and wider term premiums:*

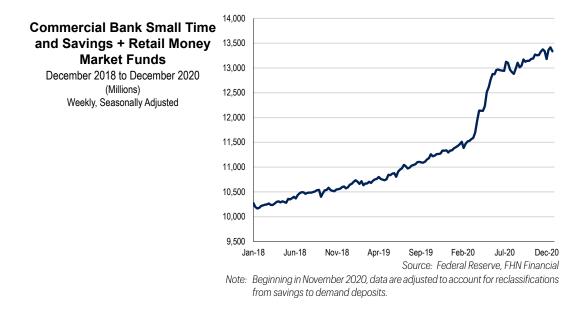
• Large-scale fiscal stimulus cushioned the systemic impact of the pandemic on the economy. Economists assume it will continue in 2021 be generous enough to spur above-average growth for several years.

¹ Overseas equity performance for 2018-2019 combined ranged from zero to 14%.



 A \$1.9 trillion increase in cash savings held via commercial bank short-term deposits and money market funds. It served three functions – i) sustaining consumption through public health restrictions; ii) apparent availability to do the same in 2021 as restrictions ease; and iii) as a risk-free anchor for ever-rising risk market valuations.

The promise of additional federal borrowing – thanks in part to an ambitious new Administration – and pent-up consumer demand drive growth expectations. If the growth is slow to develop, though, investors can ride out the wait depending on cash rather than financial assets for liquidity. Prospects for selling pressure that zeroes out equity momentum are small unless vaccination programs collapse (unlikely).



The New York Times did a careful breakdown of the economy's twist and turns from March through November (the latest month available).² Among its findings relative to aggregate savings:

- Aggregate wages fell \$43 billion during those 8 months
- CARES Act spending sent \$775 billion directly to households
- Total spending fell \$535 billion.

From those shifts, it's not hard to see how households accounted for \$1.2 trillion of the savings in the core economy.

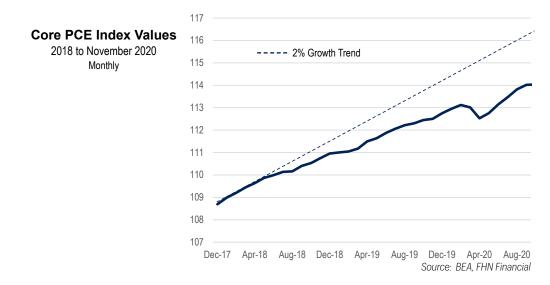
² "Why the Markets Boomed in a Year of Abject Human Misery," January 2, 2021

Three possible risk asset hurdles in 2021

The unusual dependence on fiscal support for a thorough recovery – after three decades of business cycle management via monetary policy – leaves 2021 investment planning open to three challenges:

- 1. Gridlock in Washington stymies additional spending. Meanwhile, Washington efficiency in addressing public health policy suffers not-unusual issues arising from a completely new leadership atop the bureaucracy.
- 2. The size and depth of savings accumulated in 2020 as seen in the immediately previous chart will take time to work back into the economy. If confidence doesn't remain high, savings can remain on the sidelines to protect against new or continuing uncertainties. The longer they become "permanent," the less they may increase appetite for expensive risk assets as they become a core position.
- 3. Inflation could fail to materialize. Analysts are working with a simple formula: Stimulus + recovery + easy Fed policy = Inflation. The math makes sense but inflation has been tame under similar circumstances for years. Among other issues for the outlook, a pullback in inflation expectations with no decrease in nominal rates would reduce the current benefit from low real interest costs.

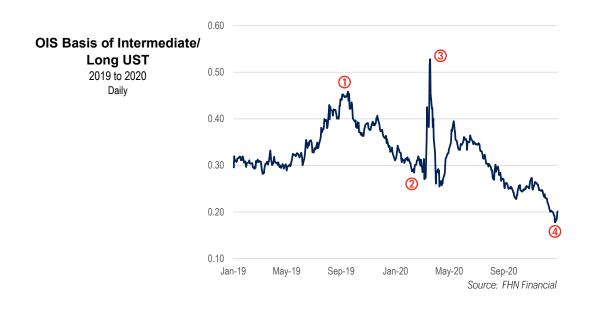
The chart trends the first half of 2018, the last time core inflation achieved a run of 2% for longer than three months. In 2019, inflation started to pull back from the trend despite the temporary inflation impact of trade tariffs. While there was a move toward the 2019 trend line in the third quarter (1), prices shifted to near zero increases in the fourth quarter. **The distance inflation will have to travel to hit 2%, much less exceed it, is increasing.**



Two challenges for low interest rates

Although FHN Financial saw fourth quarter rates as fundamentally cheap, there was no visible supply premium in UST yields. Auctions absorbed ever increasing size through the year. The weighted basis for Treasury benchmarks is a good way to follow the health of the short-term liquidity and the cost of looming supply relative to interest rate swaps.





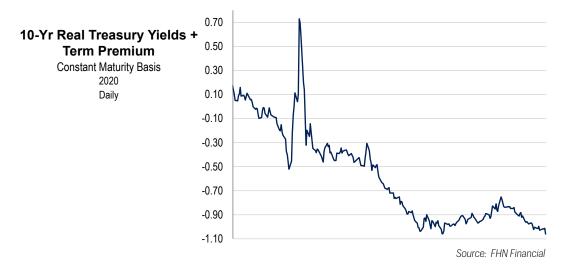
Several items of note for those that don't follow this metric that closely:

- 1. The SOFR and repo funding snafu in September 2019 made the cost of financing all Treasuries more expensive, reducing inventories and requiring a wider basis to compensate for potential hedging errors.
- 2. The Fed's larger balance sheet and direct repo intervention took funding costs below normal and restored confidence.
- In an unexpected twist, rushed trading activity in the most liquid global asset Treasuries – made Treasuries themselves illiquid because they became a trading vehicle rather than a market fundamental tied to the economy. The best option – until the Fed could accumulate sloppily priced Treasuries on its balance sheet – was for Treasuries to cheapen.
- 4. As risk premiums returned at the long end of the Treasury curve, valuations appeared fairer to many bidders at progressively larger monthly auctions. That provided support for the increasing supply.

Our supply initial supply estimates for 2021 are on the low side, but it's also obvious the supply picture will be cloudy until corporations can evaluate their balance sheet needs in the second half of the year and Treasury scheduling reflects any attitude adjustments about debt maturities from Secretary (designate) Yellen. *Given how well 2020 handled large new issuance volume, supply is the first of the challenges in 2021.*

Next, investors have never directly rebelled against negative real yields. Leading commentators and portfolio managers say they are going to, but in 10 years it hasn't happened. The reasons why negative real yields <u>can</u> persist are well known, but that's different from saying they <u>will</u> persist.





The chart demonstrates a backup of 30bp to the highs of mid-November should not be a surprise.

We have listed two challenges as illustrations that within our overall call for sedate interest rates, they are not a sure thing. See the next section for more on rate performance in 2020.

2020: Lower Rates, Steeper Curve, Little Change in Credit Spreads

The table summarizes key markets in an unusual and busy year. In particular, note the change over the last five years as well.

		1	Cha	ange
	<u>2020</u>	<u>2019</u>	Year	<u>5-yr</u>
UST 2s/10s	79.7	34.0	45.7	-48.2
UST 5s/30s	128.7	69.6	59.1	-4.1
UST 10-Yr Yield	0.92	1.92	-1.00	-1.30
UST 10-Yr TIPS	-1.08	0.14	-1.22	-1.69
5-Yr Swap Spread	6.8	3.8	3.0	14.8
Mortgage Index LOAS	2.0	37.6	-35.7	-29.7
Agency Avg LOAS	-2.6	-1.8	-0.8	-14.0
1x5 Swaption Vol (bp)	43.4	63.5	-20.1	-39.3
Inv Crade Cradit I OAS	105 /	105.2	0.0	66.7
Inv Grade Credit LOAS	105.4		0.2	-66.7
FHN Financial Crdt Indx	192.5	188.0 250.6	4.5	-133.5
High Yield LOAS US Dollar	389.9	359.6	30.3	-316.0
US Dollar	90.0	96.4	-6.5	-10.3
Dow Jones Industrials	30606	28538	9.7%	98%
S&P 500	3756	3231	18.4%	103%
NASDAQ	12888	8973	45.1%	173%
FTSE	6461	7542	-11.5%	26%
DAX	13719	13249	3.6%	28%
Nikkei	27444	23657	18.2%	59%
Shanghai	3473	3050	16.6%	10%
Hang Seng	2732	28190	-0.2%	49%
Commodity (Bloombrg)	78.1	81.0	-3.5%	-0.6%

Source: FHN Financial, FTSE Russell, Bloomberg

Rates Ignore the Return QE for a Fourth Act

The Federal Reserve has unwavering faith in the power of quantitative easing as a policy tool in adjunct with fed funds below .50%. However, investors were so impressed with the Fed's \$2.3 trillion purchases of US Treasuries from March through June they see little value to smaller but regular monthly purchases. When the FOMC codified its 2021 plan for QE at its December meeting, the curve continued to steepen...the opposite of the QE reaction during and after the financial crisis.

The December 16 statement lengthened the QE time horizon, tying it directly to the prime directive of current monetary policy:

...the Federal Reserve will continue to increase its holdings of Treasury securities by at least \$80 billion per month and of agency mortgage-backed securities by at least \$40 billion per month until substantial further progress has been made toward the Committee's maximum employment and price stability goals.

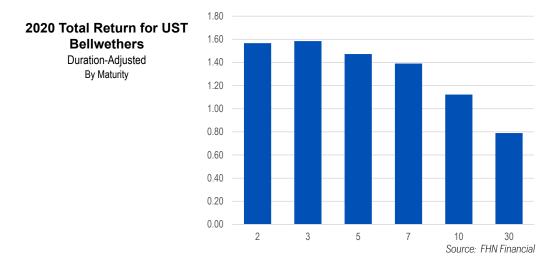
At a minimum, the continuation of monthly QE will delay rate increases at the short end because the Fed manages QE both as a pillar of monetary policy but also as a communication tool about changes in accommodation. Instead, the 5-yr UST found no fundamental support in the fourth quarter.

The chart shows that on top of higher 5-yr yields, the 5s/10s curve never stopped steepening for the entire second half of last year. In other words, investors paid little attention to the long-term effects of QE and its influence on short-term policy.





The impact of the steeper curve was obvious from the distribution of neutral duration returns across the UST benchmark curve:



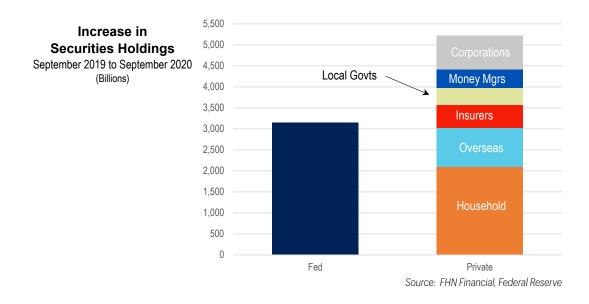
The lack of interest – or understanding – of what the Fed accomplished in the second half of the year can be attributed distractions from other major stories and lazy analysis of monetary policy's impact. Two things market professionals overlooked in considering the Fed's impact in late 2020 and its plans for 2021:

- The Fed's 2020 commitment to balance sheet growth creates two virtuous circles. Of greatest interest to the market is ongoing reinvestment will increase its direct purchases of bonds from the Treasury at almost every auction of term debt. In 2020, the total was \$444 billion to fund that portion of the deficit, and in 2021 it will be more than \$700 billion, even as the deficit is expected to shrink. The second virtue is when the Fed stops reinvesting, it will not start selling – unique among all other holders in the private market.
- In 2018 the Fed was determined to shrink its balance sheet, primarily on theoretical grounds rather than monetary policy. It didn't think interest rates would see that much of a change, but it did not take into account repo market liquidity (see page 6). Although it's safe to conclude after the last 18 months the Fed may not love running a huge portfolio, it is no longer scared to do so when necessary. The Fed can return as needed for a still larger balance sheet if necessary the next time it is warranted. This is a major change from just two years ago.

Two drivers of relative performance

Fixed income performance was solidly in the middle of the pack for the year: 1) Not as good as in Europe and certainly not as strong as US equities; 2) Better than it might have been against widespread warnings against the rising inflation.

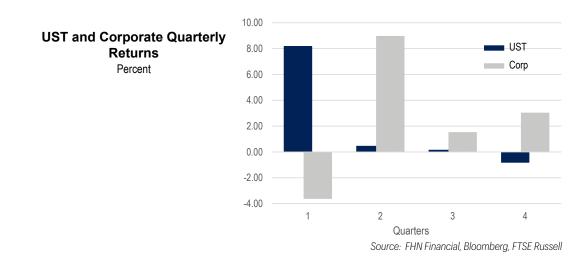
Many year-end reviews will say fixed income performance was due to the Fed's intervention. While that was significant, the private funds devoted to fixed income and the modest amount of household borrowing made a significantly greater contribution to low rates than the Fed. This chart is reproduced from *The Weekly Report* (TWR - 12.18.2020.pdf), and it shows that relative to the impressive increase in the Fed's portfolio of \$3.2 trillion in 12 months, a combination of private sources added more than \$5 trillion at the same time.



Three differences between the Fed and private investors mattered in 2020 helped explain the pattern of yields and the curve shape through the course of the year:

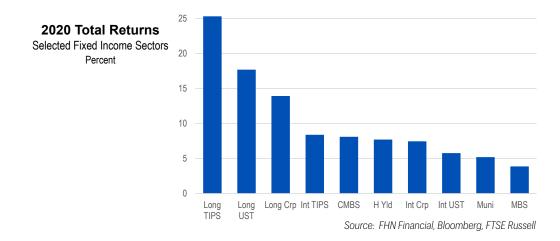
- The Fed purchases span the maturity spectrum, with weighted reinvestment duration equal to 7.9 years and weighted new purchase duration of about 4.9 years. Private investors tend toward shorter purchases, particularly commercial banks that were so active last year.
- Private investors favor credit over Treasuries. From mutual fund flows, the preference was at least 5/1 for investment grade corporates over government bonds (including agency mbs). Among individuals, municipal bonds were 35% more popular than US debt.
- 3. Fed purchases were front loaded during the year. Private investors added fixed income on roughly a 3-month lag to the buildup in cash reserves.





The performance timeline in the chart follows what would be expected in a crisis year. The minor surprise, though, is the visible lack of sponsorship for Treasuries even though the Fed publicized its two dovish decisions in the second half of the year.

The big move backward in the first quarter for credit took just two months to wipe out. Intermediate corporate returns were sideways all through the third quarter, however, leaving long corporates to be the second best source of unhedged performance in 2020. The reflation fears of the second half made long TIPS the easy winner for the year.

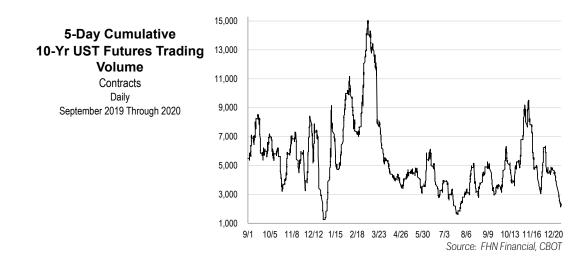




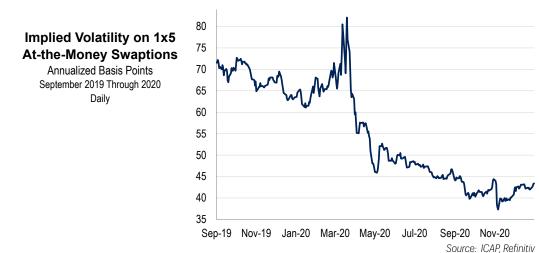
Liquidity and volatility

Market function was surprisingly messy in the spring for Treasuries, partly because many of the largest players had to husband resources to stay comfortably within regulatory guidelines. Even without those boundaries, no one could confidently predict what was coming next other than some form of support from the Fed. The uncertainty required caution, one reason the Fed had to pull out all the stops so quickly. Many want to turn the Fed's actions into support for "Wall Street," but the central bank is well aware how financial disruption can impact every corner of the US economy – a lesson burned in memories from 2008.

Trading volumes spiked quickly and didn't return to normal levels until several weeks after the Fed's initial actions. Volume set a second half peak during the excruciatingly long period in November to determine the winner of the presidential election. UST purchases reached the same amount achieved by the selling after the 2016 election.



The cost of insuring against rate swings rose during the worst of the liquidity crunch, of course. After subsiding by the last week of March, Fed guidance and bank Treasury buying lowered the annualized range of volatility to +/- 20bp. Then, as vaccine successes were announced, volatility in 1x5 swaptions and the other benchmarks began to rise.



January 8, 2021

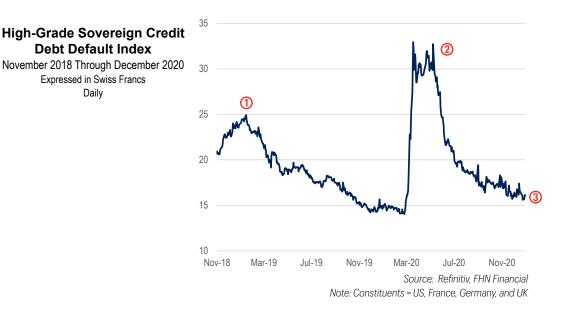


Even though volatility on forward 5-yr instruments fell in the second half of the year, it may not have fallen enough. Against forwards (as of January 5) of .60% for 5-yr swaps, 45bp of annual volatility implies protection up to .80% which would require the Fed to start raising rates sharply at the beginning of 2022, not the end of 2023 as it has recently guided via its dot plot.

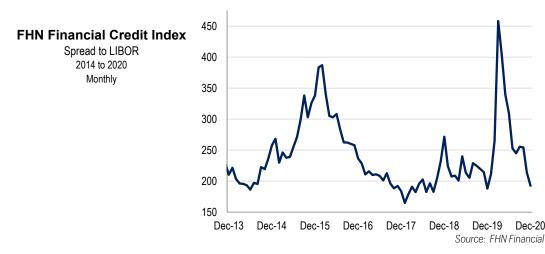
Credit Values Bruised, but Never Beaten

A principal credit lesson of 2020 has very little to do with the Fed a lot to do with the strength of sovereign credit. A key to eventual stability of corporate credit directly depends on investors' ability to rely on the credit of the industrialized western countries to provide direct and indirect support to their own economies, banks, and critical industries. Last year passed the test in many ways the EU sovereign debt crisis ten years ago did not.

The chart shows (1) Fed tightening and trade disruptions in late 2018 and early 2019 were a challenge for all four countries that comprise the FHN Financial index of sovereign credit default spreads. Spreads remained elevated for about five weeks, considerably longer than the liquidity crisis period (2). The peak, though, was less than 10bp higher than the max in 2018. By the end of the year (3) spreads were much narrower but not yet at the lows of the first quarter.

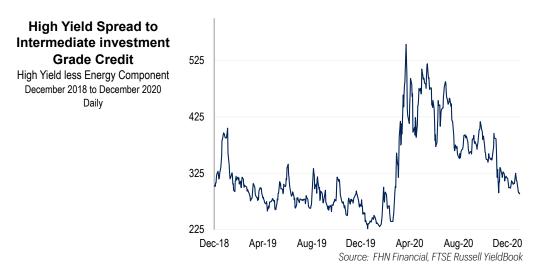


Our credit spread index that encompasses investment grade, HY and EM debt is expressed in nominal terms. Relative to total nominal yields, there is still room for tighter spreads in 2011.

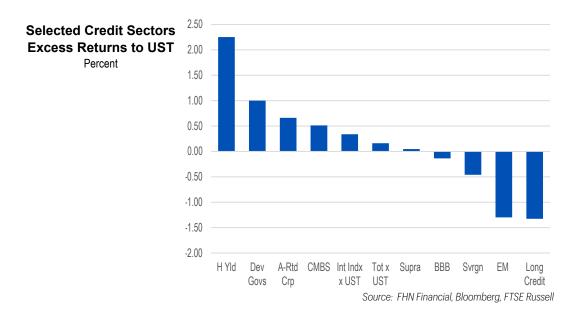




While BBB-rated names lagged single-A securities by a significant margin, going down into high yield space was the single most profitable credit trade in 2020. The chart tracks the high yield basis – excluding volatile energy exposure – against intermediate credit.



The high yield excess return on the chart below does include energy – where total returns lagged UST by 5.4% – but the \$1+ trillion market still comes out on top.





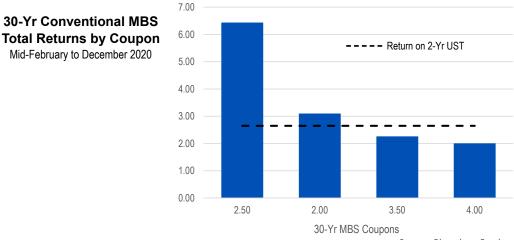
Mortgages Anchor Short End of Portfolios in Difficult Year

There were two central decisions in managing single-family mortgage portfolios last year:

- 1. How much to overweight 30-yr 2.5% coupons in the first quarter
- 2. How to reinvest the never ending wave of prepayments the rest of the year.

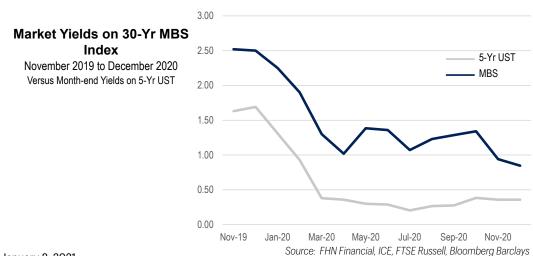
Other, traditional strategy questions were swept aside as mortgages provided yield with the downside of major duration changes that defied attempts to manage classic, fixed income risk. In short, mortgage performance was difficult to measure on a total return basis, an issue that will continue to leave sponsorship concentrated among depository portfolios. See the second section below.

The first inkling rates could plummet due to the pandemic was in mid-February. Using that as a starting date, here were the total returns by the four largest 30-yr coupons, compared with the total return for 2-yr UST during that period. The obvious benefit of moving down in coupon captures the 2020 story very well.



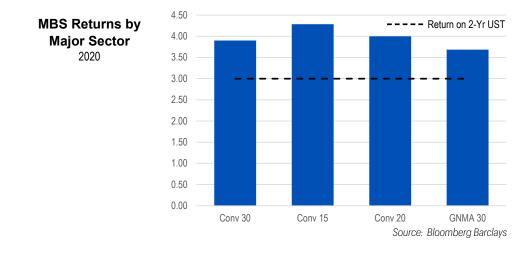
Source: Bloomberg Barclays

As for reinvestment of prepayments, this simple chart provides a picture of month-end market based yields on 30-yr pass-throughs (weighted by coupon) and compares them with the month-end yield on 5-yr UST. Although the mortgage yields are based on modeled forward prepayments, there has been a consistent expected yield cushion to a bellwether UST that roughly matches extension risk on the entire sector.





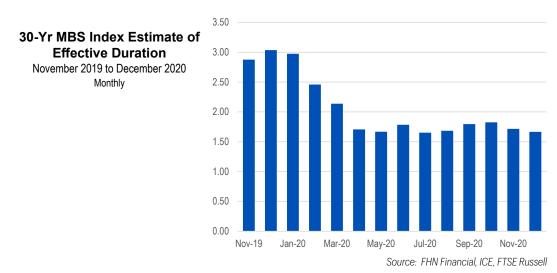
Switching to the entire year, the chart looks at total return performance by major group. The return reference point for the year remains the 2-yr.



Prepay forecasts vary widely, distorting hedge ratios and total returns

The science of measuring the relative value of mortgages for any investment horizon – compared with "same" duration Treasuries – has always contained an unhelpful degree of art. Science went out the window last year as seen by the wide (occasionally wild) disagreement in the math used by the three major index providers to compute excess returns.

At the beginning of 2020, index calculations were in synch with regard to expected prepayments and market yields. By May, however, different prepayment estimates created a standard deviation for effective duration of one year (!). Using a blend of metrics computed among the three index firms, the chart demonstrates the rapid decline of duration for the mortgage index last year.



	Third Quarter			Fo	ourth Quar	ter	2H 2020			
		Duration Adjusted		Duration Adjusted			Duration Adjusted			
	Returns	UST	LIBOR	Returns	UST	LIBOR	Returns	UST	LIBOR	
Total Inv Grade Fixed Income	0.63	0.46	1.10	0.70	1.33	1.62	1.33	1.79	2.74	
Intermediates	0.40	0.33	0.48	0.42	0.63	0.46	0.82	0.96	0.94	
Fixed Mortgages	-0.14	-0.16	-0.14	0.27	0.33	0.35	0.13	0.17	0.21	
Corporates	1.53	1.46	2.43	3.07	4.15	4.63	4.64	5.67	7.18	
Treasuries	0.18		0.75	-0.66		0.29	-0.49		1.04	
Agencies	0.41	0.27	0.54	0.06	0.31	0.37	0.47	0.58	0.91	
TIPs	3.17	2.96	3.71	1.67	2.24	2.48	4.90	5.27	6.28	
CMBS	1.70	1.48	1.68	1.05	1.50		2.78	2.99		
3-month Tbills	0.03		-0.04	0.02		-0.03	0.05		-0.07	
Fed funds effective	0.02		-0.04	0.02		-0.03	0.04		-0.08	
High Yield	4.91	4.70	4.88	6.37	6.86	6.91	11.59	11.88	12.13	
Emerging Markets	2.83	2.75	3.23	5.43	6.53	7.48	8.41	9.45	10.94	
Government/Credit	0.86	0.69	1.39	0.92	1.88	2.20	1.77	2.58	3.59	
FTSE Russell Pension Fund	1.19	0.61	0.99	0.43	1.99	2.49	1.18	2.59	3.48	
World Govt (USD)	0.65	0.54	0.69	0.15	0.75	1.07	0.79	1.05	1.76	
Commodities (SPGSCI)	7.59			16.93			25.80			
Commodities (CRB)	7.64			12.99			21.62			
Commodities (Bloomberg)	9.04			10.17			20.13			
Dow Jones Industrials	8.22			10.73			19.83			
S&P 500	8.93			12.14			22.16			
NASDAQ	11.23			15.67			28.67			
Russell 2000	5.05			31.36			37.83			
FTSE	0.11			17.21			17.34			
DAX	8.07			12.71			21.80			
Nikkei	6.86			21.10			29.63			
Shanghai	13.45			12.33			27.44			
Hang Seng	-2.60			16.19			13.15			
Emerging Markets	9.65			19.61			31.19			

2020 2H

Note: Overseas equities expressed in USD terms

Source: FTSE Russell Index, Bloomberg, MSCI, Standard and Poors, FHN Financial

		First Half		S	Second Ha	lf		2020		
		Duration Adjusted			Duration Adjusted			Duration Adjusted		
	Returns	UST	LIBOR	Returns	UST	LIBOR	Returns	UST	LIBOR	
Total Inv Grade Fixed Income	6.17	-1.67	-1.98	1.33	1.79	2.74	7.58	0.09	0.70	
Intermediates	4.59	-0.76	-0.53	0.82	0.96	0.94	5.45	0.20	0.41	
Fixed Mortgages	3.58	-0.55	-0.50	0.13	0.17	0.21	3.71	-0.38	-0.29	
Corporates	4.97	-5.91	-5.80	4.64	5.67	7.18	9.84	-0.57	0.96	
Treasuries	8.69		-0.56	-0.49		1.04	8.16		0.48	
Agencies	5.02	-0.58	-0.64	0.47	0.58	0.91	5.51	-0.01	0.27	
TIPs	6.38	-0.61	-0.93	4.90	5.27	6.28	11.59	4.63	5.29	
CMBS	5.19	-2.49	-2.30	2.78	2.99	3.42	8.11	0.51	1.12	
3-month Tbills	0.30		-0.24	0.05		-0.07	0.35		-0.31	
Fed funds effective	0.32		-0.22	0.04		-0.08	0.36		-0.30	
High Yield	-4.80	-9.03	-8.78	11.59	11.88	12.13	6.26	2.54	2.29	
Emerging Markets	-2.71	-9.74	-10.14	8.41	9.45	10.94	5.58	-4.45	-2.60	
Government/Credit	7.21	-2.03	-1.83	1.77	2.58	3.59	9.12	0.75	1.76	
Citigroup Large Pension Fund	10.06	-2.67	-3.09	1.18	2.59	3.48	11.36	0.20	0.39	
Citigroup World Govt (USD)	4.72	-0.85	-0.80	0.79	1.05	1.76	5.52	0.19	0.96	
Commodities (SPGSCI)	-25.39			25.80			-6.13			
Commodities (CRB)	-25.74			21.62			-9.68			
Commodities (Bloomberg)	-19.67			20.13			-3.50			
Dow Jones Industrials	-8.43			19.83			9.72			
S&P 500	-3.09			22.16			18.39			
NASDAQ	12.74			28.67			45.06			
Russell 2000	-12.99			37.83			19.93			
FTSE	-22.32			17.34			-8.86			
DAX	-6.82			21.80			13.50			
Nikkei	-3.80			29.63			24.70			
Shanghai	-2.43			27.44			24.34			
Hang Seng	-11.87			13.15			0.22			
Emerging Markets	-9.70			9.65			18.50			

2020

Note: Overseas equities expressed in USD terms

Source: FTSE Russell Index, Bloomberg, MSCI, Standard and Poors, FHN Financial

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January 8, 2021