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THE WEEKLY REPORT

Fed intervention the last several weeks prevented markets from running out of control. That does not mean every market is calm, however. Nor, does it mean markets that were tamed last month will automatically remain in check. Municipal bonds were hit hard by liquidations starting March 11. Coming into last month, they were one of the strongest asset classes and enjoyed excellent sponsorship from households and banks.

Widening spreads – peaking March 23 – showed the pain investors were willing to suffer to put cash on the books, or to possibly swap into what appeared to be cheaper stocks. Once the selling frenzy was over, spreads retraced four consecutive days to more normal but still wide levels. That was a classic "all clear" signal in any market. Except this one.

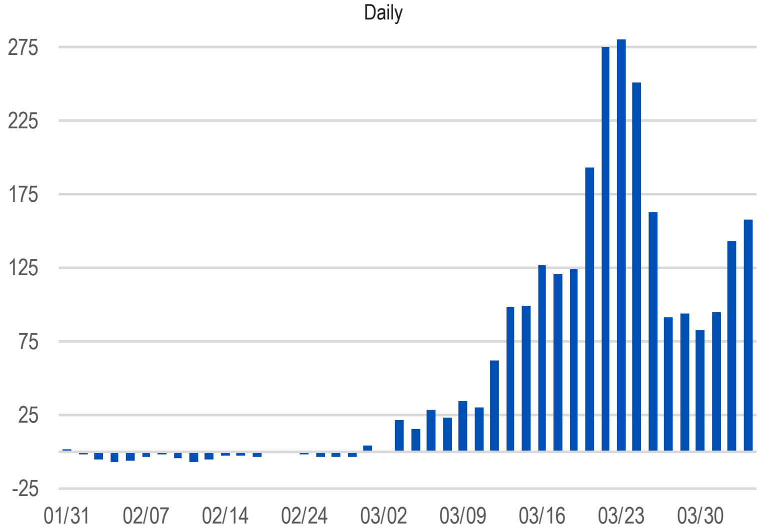
Early this week spreads eased wider then gapped again on Wednesday and Thursday. There was an improving tone in spreads early Friday, however, when this edition published. Finding "normal" market conditions in fixed income is still weeks away.

The chart's math is intentional, designed to demonstrate relative value during turbulence rather than in a standard time series. It looks at AA general obligation 10-yr yields, converting them to tax-equivalent yields at a 21% tax rate. The yields are then spread to Aaa 10-yr US agency bullet yields, which also have seen their own liquidity pressures. The chart, then, isolates spreads specific to municipals rather than credit or relative to the superior liquidity of UST.

Tax Equivalent 19-Yr AA Municipals Spread vs 10-Yr US Agency Bonds

January 31 to April 2, 2020

Daily



Source: FHN Financial

Disclaimer is on the last page of this report.

PANDEMIC UPDATE P. 2

As the pandemic spreads across the United States, its impact remains divided. Roughly 70% of the population sits outside the hot zones that have correctly dominated the headlines. Critically important, the spread among those 70% is not accelerating to catch up with the terrible concentrations in New York and Louisiana. The division of states by their status this week provides a valuable framework to track Covid-19 in the US, digging well below the national numbers.

PERFORMANCE P. 6

Four fixed income sectors enjoyed positive nominal returns last month. As the cover note suggests, it was a volatile period for all sectors – an event likely to repeat several times in the second quarter.

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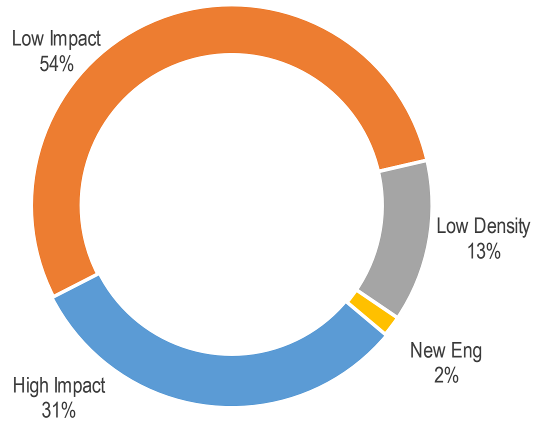
US Currently Falls into Four Pandemic "Zones"

Following the data metrics in the Covid-19 Primer published March 30, this week provided sufficient information to divide the US into four groups, ranked by "high" and "low" spread of the virus and its severity. All pandemic data are subject to changing assumptions, but these results rank current observations based on likely economic ramifications.

Principal observations:

- About 1/3 of the US population resides in what we've termed high-impact states, where the active number of cases/million are well above the weighted national average of 775/million.
- Just more than 60% of the country occupies low impact states, where the weighted average of active cases/million is less than 275. In these states, the growth of reported cases is not accelerating toward the burden suffered by the high impact states such as New York and Louisiana. Instead, the caseload is growing more slowly over the five days ended April 2.
- As the pandemic lengthens, the correlation between population density and Covid-19's severity has gotten higher. Thirteen percent of the national population lives in low density states in the West and the Upper Midwest. There, again trying to adjust for the level of testing, active cases/million are a fraction of states with more concentrated populations.
- The national testing rate remains painfully low, less than .5% of the population. From March 30 to April 2, the total number of tests increased 22%, or about 7%/day. Even among the older, at-risk population, the testing rate is less than 2.5%.

Percentage of US Population by Covid-19 Impact and Density



Source: FHN Financial

Preliminary Conclusions

- So far, about 70% of the population has avoided the caseload and severity of the most stricken regions. As many large states among the low-impact states reported cases before the mid-Atlantic states did, it is possible but unlikely the differences can be accounted for by when the first introduction of the virus occurred.

- The longer healthier areas can stay that way, the better the chances social distancing and lockdowns can maintain the trend. Covid-19's severity appears to have an observable relation to i) local work patterns and economics; ii) mobility; and iii) observance of lockdown rules rather than patterns inherent in the virus itself. These low impact locales could recover faster as long as travel to/from high impact states doesn't increase. Public health officials are reaching similar takeaways, but it is helpful to be able to see the data confirm the frequently changing views expressed from government lecterns.
- To counter the positives, it's also clear the disease hasn't crested in any location. The differences are in rates of growth. There are no pockets of retreat or significant recoveries. Also, given the connections throughout the US economy, healthcare catastrophe for 30% of the country is a devastating event.
- The importance of a peak in New York and other key states is less as a predictor of what will happen elsewhere – although a peak could point to a roadmap for low impact states as well – and more as just sheer relief the worst of this phase is over.
- ***The next danger point to watch is whether any of the lower impact states do accelerate and join the high impact states.*** Last week, Michigan was on the cusp with cases/million just slightly above the national average. This week, it is in the middle of the high impact list. Florida and Indiana are the next two states to watch closely the week of April 6 to see if their higher growth rates move them into the riskier category.

High impact states face overwhelming numbers

The spread of Covid-19 has been as uneven across US states as it has been internationally. The gut-punch experience of nations such as Italy and Spain first highlighted the differences among EU countries that largely saw the introduction of the disease within days of each other. Due primarily to faster testing outside the US, it was easy two weeks ago to categorize the US as a low impact but vulnerable country. Now, unfortunately, the highest impact regions here are catching up quickly to the experience near the Mediterranean.

In delineating four categories across the US, the breakdown was largely driven by population size and the number of active cases/million. The high and low impact categories only include states with a minimum population of 3 million. New England states had some similarity to other states near New York but overall did not fit any particular pattern so were segregated into their own category.

Region	Population	Density	Active Cases/ Million	5-Day Growth	1-Day Growth	Severity	# of States
High Impact	102,951,054	383	1,638	79.6%	14.9%	17.0%	11
Low Impact	177,023,790	212	269	76.3%	15.6%	15.3%	16
Low Density	42,964,663	57	219	73.4%	16.3%	15.7%	19
New England	5,361,037	344	365	75.7%	13.8%	16.6%	5

Source: FHN Financial, Dadax Worldometer, US Census Bureau

Look at the severity column first. That measures the total number of active cases currently hospitalized plus the death rate on the total number of cases reported. The uniformity of those percentages across the four groups strongly suggests i) once Covid-19 strikes, the medical outcomes are very similar. There is no "robust" region of the country in terms of baseline health or ability to resist the pandemic; and ii) each of the four regions are likely on similar calendars. ***A later infection start in the low density area, for example, should result in a lower severity – but that is not the case. They are all the same, within statistical tolerances.***

The active cases/million averages across the four groups are striking. While the values in the table are weighted averages, the medians show the same big gaps.

High Impact	1,040
Low Impact	275
Low Density	190
New England	Not Meaningful

To put "faces" with the categories, we've assigned a representative state to each. It makes it easier to identify outcomes with place names rather than "impact" labels. The states in each category are listed on page 5.

Representative States	Population	Density	Active Cases/ Million	5-Day Growth	1-Day Growth	Severity
New York	19,453,561	419	4,271	53.9%	12.4%	24.8%
Texas	28,995,881	105	160	71.2%	19.4%	5.8%
Minnesota	5,639,632	69	77	47.6%	13.8%	30.4%
New Hampshire	1,359,711	376	413	86.2%	20.1%	16.4%

Source: FHN Financial, Dadax Worldometer, US Census Bureau

Grappling toward a "model" of Covid-19's spread

One of the frustrating components of Covid-19 for investors and economists is the lack of any working model that explains its ferocity in some areas and dangerous, but less pervasive invasion in others. The most common explanation of differences in timing doesn't work, but in the absence of other explanations it has become the default assumption.

Combining the experience of countries in Europe and individual states, the list of model inputs in descending order shapes up as follows:

- Density. Population concentration in urban areas fueled the original outbreak in China, and it appears to be a common denominator around the world.
- Congested mass transit and large social/sporting events. Commuter cities that rely on private transportation have fared better so far.
- Voluntary or mandated social distancing.

- Nature of the economy. This differentiates the ability to work from home versus centralized locations (factories, hospitals, retail, etc). Many companies where their core "inventory" is employees starting scattering them to remote locations well before lockdowns were ordered. Early efforts were often to test backup systems, but as remote locations worked smoothly, the trend spread quickly.
- Government healthcare analysts have found cities that closed schools earlier than others have seen fewer outbreaks. Children are classic, asymptomatic carriers.

Summary

There are no experts on Covid-19. None. The world will remain in emergency response mode for months, an environment where developing "expertise" is an unaffordable luxury. A Covid-19 update is exactly that, a look at the current state of the pandemic in the US to have a better sense of where to look next. The approach applied this week has worked reasonably well in the effort to squint several weeks into the future; we will try to develop new analytics as needed.

In one sense, every Covid-19 story and headline is "true" because each reflects the intense color palette of the pandemic. Intensity deserves respect and attention. Yet, the truth of one vantage point does not necessarily translate the same across the US or the rest of the world. For that job, we have statistics.

States Categorized by Level of Pandemic Impact on Health as of April 2, 2020

High Impact States	Low Impact States	Low Density States	New England
New York	Indiana	Kentucky	Vermont
New Jersey	Tennessee	Minnesota	Rhode Island
Louisiana	Florida	Nevada	Delaware
Massachusetts	Utah	Arkansas	New Hampshire
Connecticut	Maryland	Mississippi	Maine
Michigan	Wisconsin	Kansas	
Washington	Missouri	New Mexico	
Colorado	South Carolina	Nebraska	
Illinois	California	Idaho	
Pennsylvania	Alabama	West Virginia	
Georgia	Ohio	Hawaii	
	Arizona	Montana	
	Oregon	South Dakota	
	Virginia	North Dakota	
	North Carolina	Alaska	
	Texas	District of Columbia	
		Wyoming	
		Iowa	
		Oklahoma	

Source: FHN Financial

Note: Only the high impact states are ranked in order of severity.

March Total Returns

Dust still hasn't settled from March's amazing journey for financial assets. We start with four broad observations:

1. Volatility was more important than net price changes for the month. The Fed calmed many markets with its interventions, yet the magnitude of the price changes enter the second quarter at an elevated and dangerous level. In other words, don't look at how stocks rebounded 17.4% from March 23 to March 30, look at how VIX remained stubbornly high.
2. High grade fixed income only produced four sectors that were positive for the month.
3. The Fed's massive UST purchases rescued the investment grade credit sector. The oil price that launched March 7 was a major blow to prices. From the beginning of the month until March 23, LIBOR OAS widened 150bp. Into the end of the month, it retreated 100bp. Total returns climbed from -14% to finish at -7.1%
4. In a global, rapid, deflationary shock…the 30-yr UST was the worst performing benchmark on the curve, adjusted for duration. It closed the month with yields 33bp off the March 9 lows. Bond valuations are too harried to trade on core fundamentals.

A quick survey of the primary fixed income markets. In this section, all returns are expressed in nominal terms, not hedged vs UST or LIBOR swaps:

- The 2s/10s curve bull steepened 18bp in March. Based on the deflationary plunge in energy costs, the steepening could have easily been 30bp. Valuation of short Treasuries, however, was gummed by a rush to take profits and raise cash after the Fed's second extraordinary intervention of the month on March 15. The Fed concentrated buyback volume for 2020-2022 maturities to absorb the liquidations.
- Measured in either dollars or euros, Treasuries overcame supply concerns to sit atop the global fixed income performance tables for March. Overseas diversification was a losing strategy for USD based investors as G-6 (ex US) sovereign debt trailed Treasuries by more than 5% on a currency hedged basis.
- US TIPS fell 1.9% in price.
- Intermediate investment grade corporates surrendered 5.5% in value, while 10+ year maturities fell almost 10%. Intermediate financials fell less than 5% while industrials' declines exceeded 6%. Tech and telecom represented safe havens among industrials; consumer cyclicals suffered but not to the extent that energy did.
- HY losses of about 11.5% were less than the broad US stock market and certainly better than the "materials" component of the S&P 500 that fell 14%. Given the financial and operating leverage in HY – and only modest value in moving up the capital structure in a credit tempest – HY's performance is to be applauded. Without the energy component, HY fell approximately 7%.

- Single-family mortgage prices ripped in too many directions last month. The last day saw a big relative decline in dollar prices for current coupons, ending on a sour note that had been sweet after two weeks of Fed purchases (that saw a leg higher after a March 22 announcement). In addition to confusion over the ability of the system to process refis that could eventually spike prepayments, agency mortgages also saw forced liquidations from REITs and others. Based on price gains the week of March 23, however, nominal returns moved just above 1% to close the month.

			Change	
	Mar 31	Feb 28	Month	Dec 14
UST 2s/10s	42	42	0.0	-107
UST 5s/30s	94	94	0.0	-16
UST 10-Yr Yield	0.67	0.67	0.00	-1.50
UST 10-Yr TIPS	-0.26	-0.26	0.00	-0.72
5-Yr Swap Spread	14.0	14.0	0.0	2.0
Mortgage Index LOAS	36.7	36.7	0.0	39.1
Agency Avg LOAS	-0.5	-0.5	0.0	9.4
1x5 Swaption Vol (bp)	59.5	59.5	0.0	-25.8
Inv Grade Credit LOAS	289.7	289.7	0.0	171.8
FHN Financial Crdt Indx	458.1	458.1	0.0	200.1
High Yield LOAS	892.8	892.8	0.0	366.9
US Dollar	99.0	99.0	0.0	8.8
Dow Jones Industrials	21917	21917	-13.6%	40%
S&P 500	2585	2585	-12.4%	40%
NASDAQ	7700	7700	-10.0%	73%
FTSE	5672	5672	-13.4%	7%
DAX	9936	9936	-16.4%	1%
Nikkei	18917	18917	-9.8%	21%
Shanghai	2750	2750	-4.5%	-6%
Hang Seng	23603	23603	-9.5%	21%
Commodity (Bloombrg)	61.9	61.9	-12.9%	-41%

Source: FHN Financial, FTSE Russell, Bloomberg

- Municipal bonds came into the first quarter on a tear of outperformance versus other high-grade fixed income sectors. Households quickly liquidated munis, however, to raise cash and move toward non tax advantaged investments on prospects of lower overall income and lower tax burdens for the next year. Returns fell to -3.7% on the broad index. HY munis declined almost 11%, in line with taxable HY.
- A tumultuous month produces outliers. Here are several
  - Agency CMBS fell more than 3% in value. With Fannie/Freddie backstops, that demonstrated concerns about the commercial real estate sector in general and the need to reduce overall sector exposures regardless of credit.
  - Emerging market sovereign losses were worse than EM corporates and agencies. It was a good example of the most liquid markets getting punished more than fundamentals warranted when liquidity disappeared on higher risk names.
  - High quality, stable asset-backed securities – with very attractive maturities in a bull steepener – lost 2.3% in value.

Investment Grade Sector Returns: March

Returns on a duration adjusted basis hedge maturity exposure against UST and LIBOR-based interest rate swaps.

		Duration Adjusted	
	Returns	UST	LIBOR
Total	-.59	-3.14	-3.10
Intermediate	-.04	-1.89	-1.29
Treasuries	2.89		-.06
Mortgages	1.07	-.22	.11
Corporates	-7.09	-10.90	-10.49
Agencies	.94	-.96	-.77

Source: FHN Financial