PULSe Indicator Rang the Alarm in Q3 2021

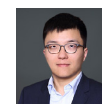
PULSe reached its highest level since April 2020.

October 2021

KEY INSIGHTS

- In Q3, the PULSe indicator increased in July and August due to deterioration in the Pandemic, the Liquidity, and the Sentiment factors. It reverted lower in September.
- The Pandemic factor rose to the crisis zone in August as the delta variant spread across major countries.
- The Sentiment factor oscillated between the crisis zone and the stable zone, driven by delta variant, inflation concerns, Fed discussions, and China's regulatory crackdown.

Thomas Poullaouec
Head of Multi-Asset Solutions, APAC



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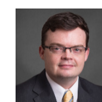

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PULSe is a composite indicator that is designed to monitor the state of global financial markets since the coronavirus crisis. It stands for Pandemic, Uncertainty, Liquidity, and Sentiment—four factors that we believe encompass much of the market's dynamics. High positive values of PULSe are typically a negative sign for market stability.[1]

The PULSe composite indicator decreased modestly in September and was characterized as stable as of the end of the month as improvements in the Pandemic, the Uncertainty, and the Liquidity factors made up for the deterioration in the Sentiment factor. As of September 30, 2021:

- The Pandemic factor abated as daily new cases continued to drop in the U.S., Europe, and Japan, which was confirmed by the reduced positive test ratios.
- The Uncertainty factor declined notably as the Bloomberg U.S. economic surprise index bottomed, long-term government bond yields rose, and earnings forecasts in Europe and Japan showed signs of reacceleration.
- The Liquidity factor decreased modestly as competing forces canceled each other out: The widening trend of the spreads of U.S. three-month commercial paper and euro investment-grade financial corporate credit slowed down, while the U.S. high yield spread reversed higher again.
- The Sentiment factor shot up as all four sub-factors deteriorated: The equity put/call ratio rose, the implied volatility surged, carry currencies underperformed the safer currencies, and the gold/copper price ratio climbed.

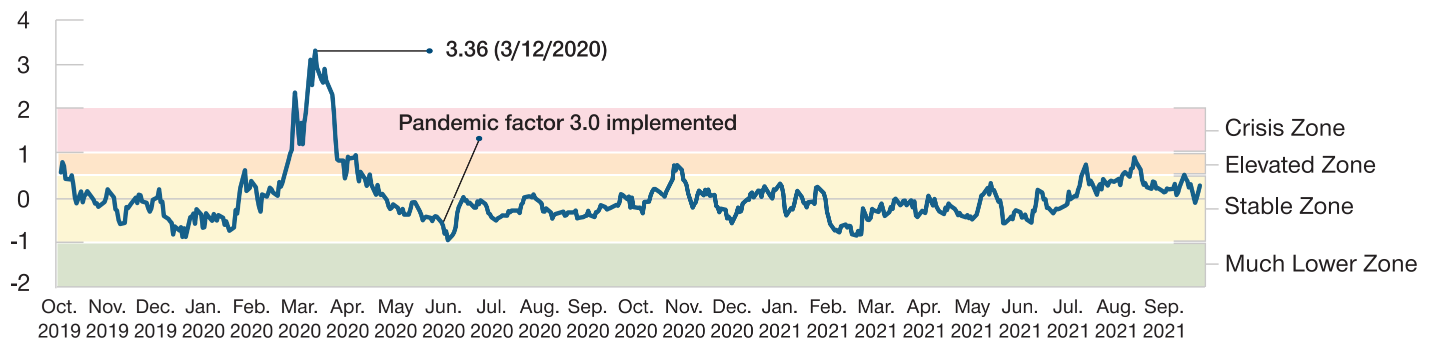
[1] For full details, please see our white paper "Taking the Market's PULSe in the Coronavirus Era" and additional information at the end of this paper.

Visualizing the PULSe Indicator

(Fig. 1) Expressed as an average of the four component indicators

	PULSe	Pandemic	Uncertainty	Liquidity	Sentiment
Current	0.30	-0.17	0.17	0.17	1.03
Zone	Stable	Stable	Stable	Stable	Crisis
5-Day Trend	0.05	-0.25	0.03	-0.60	1.01
1-Month Trend	-0.09	-0.97	-0.62	-0.12	1.34
3-Month Trend	0.53	0.36	-0.12	0.41	1.45

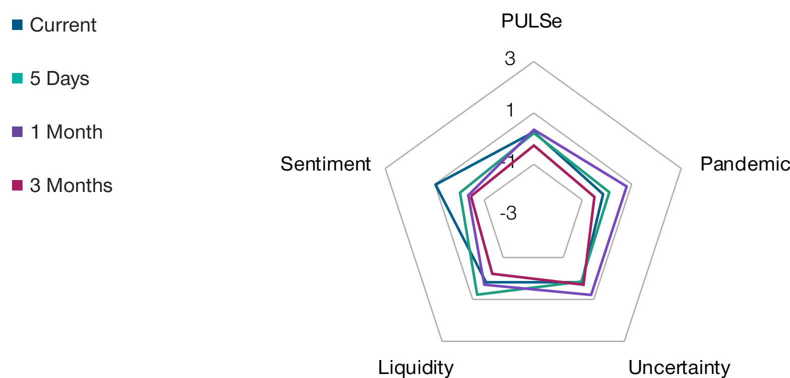
PULSe Indicator History



As of September 30, 2021.
Sources: Haver Analytics/Bloomberg Finance L.P. Analysis by T. Rowe Price.
For illustrative purposes only. Subject to change. The PULSe indicator has been developed by T. Rowe Price. Using different underlying indicators and data could yield different results. Future outcomes may differ significantly. Note: Positive indicator values are typically a negative sign for market stability. The division of PULSe into zones is subjective, based on historical data and statistical assumptions. “Trends” represent the change in the given indicator over the stated period. Please see additional disclosures on the PULSe indicator at the end of this paper.

Radar Chart Showing the PULSe Indicator and Its Components

(Fig. 2) Radial axes expressed as z-scores (number of standard deviations from the mean)



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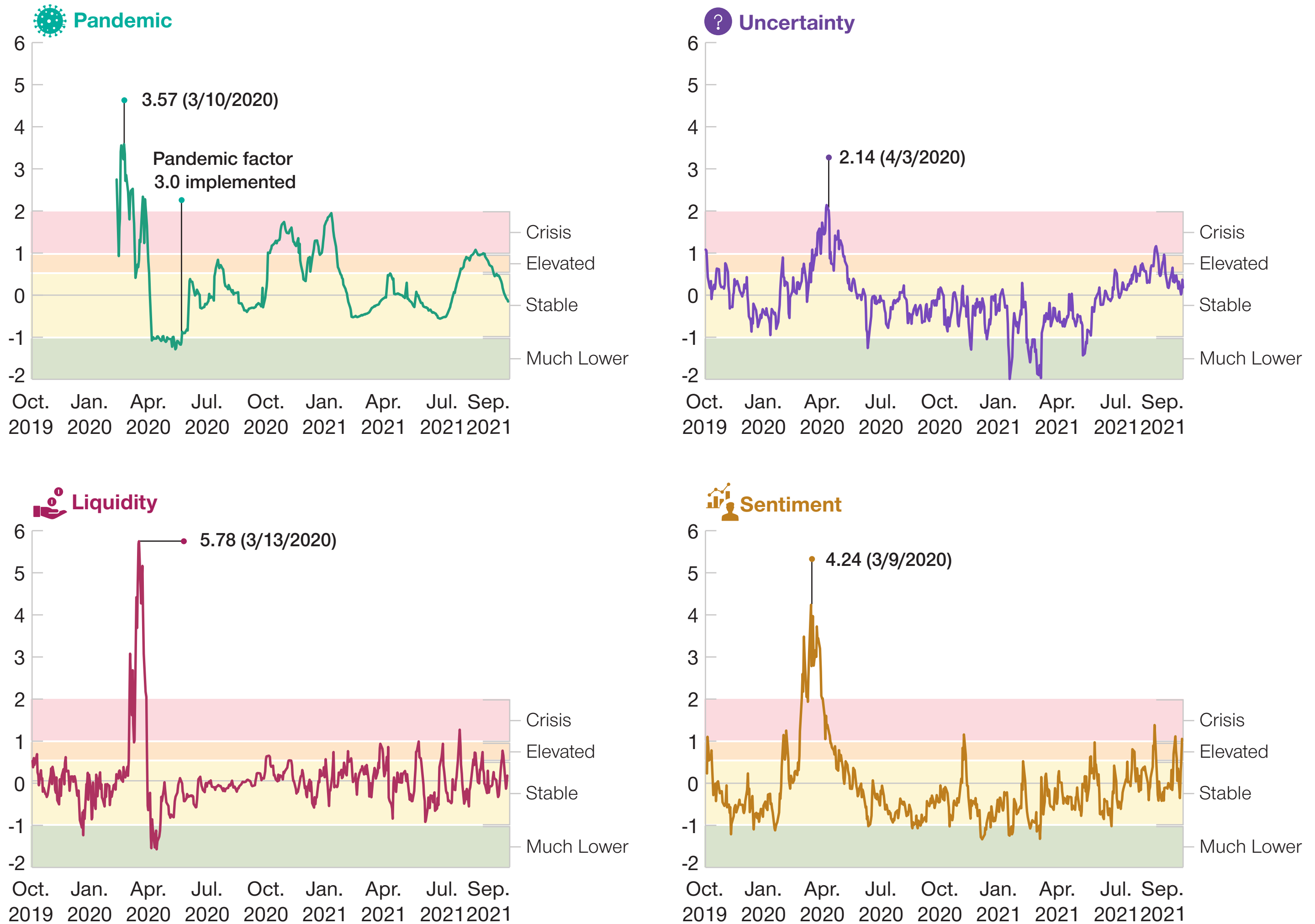
The Four Components of PULSe

(Fig. 3) Currently only Sentiment is elevated



As of September 30, 2021.
Sources: Haver Analytics/Bloomberg Finance L.P. Analysis by T. Rowe Price.
Indicator level on left-hand side expressed as a z-score and subjective stability zone on right-hand side of each chart.
For illustrative purposes only. Subject to change. The PULSe indicator has been developed by T. Rowe Price. Using different underlying indicators and data could yield different results. Future outcomes may differ significantly. Note: Positive indicator values are typically a negative sign for market stability. The division of PULSe into zones is subjective, based on historical data and statistical assumptions. Please see additional disclosures on the PULSe indicator at the end of this paper.

Background Note

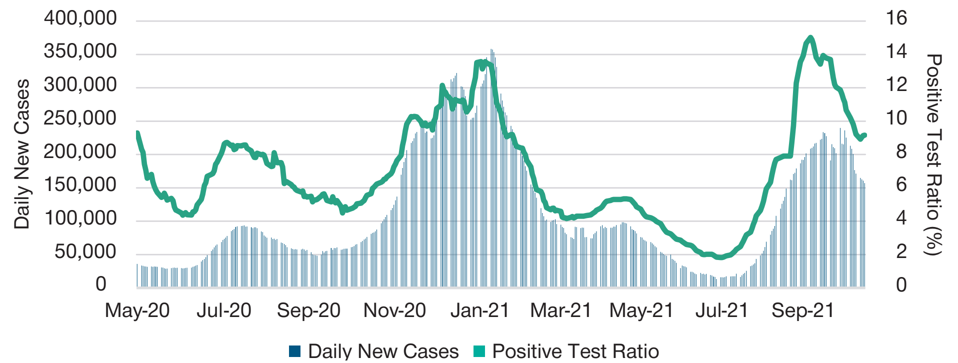
In this note, we highlight three factors that contributed meaningfully to the PULSe indicator over September, the last month of the third quarter. The delta variant wave abated in the U.S., long-term government bond yields rose, and implied volatility surged.

1. The Delta Variant Is Abating in the U.S.

In the current Pandemic factor model, we look at three key metrics: (1) daily new cases to track the spread of COVID-19, (2) Positive testing ratios to confirm the trend of the diffusion curves, and (3) Google retail mobility data to assess the ongoing impact of the pandemic on consumer behavior.

We Have Passed the Peak of the Delta Variant Wave, Confirmed by a Decreasing Positive Test Ratio

(Fig. 4) U.S. daily new cases and positive test ratio



As of September 30, 2021.
Sources: Haver Analytics/Bloomberg Finance L.P.

Starting from July, signs of overwhelmed hospitals in some regions of the U.S., which initially moved faster to vaccinate its population, suggested that vaccine efficacy may drop over time. As a result, Pfizer/BioNTech submitted trial data to the U.S. FDA seeking approval for booster shots for the general population and so far has received authorization for individuals over 65 years old and those 18 through 64 years of age at high risk of severe COVID-19. We will wait and see what percentage of the population can be boosted ahead of the 2021 holiday season.

Soon after the positive test ratio peaked in late August, daily new cases started to drop rapidly, leading to a decline in the Pandemic factor score. Interestingly, during this round of outbreak, the Google retail mobility data have not been drastically impacted as people seemed to have adapted to the new norm of living with COVID-19.

On Friday, October 1, Merck and Ridgeback announced positive interim results for their orally administered COVID-19 drug, molnupiravir. In the interim analysis, it reduced the risk of hospitalization by 50%. More encouragingly, through Day 29, no deaths were reported in patients who received the drug, as compared with eight deaths in patients who received a placebo.

Our medium-term view is that COVID-19 will be treated like a flu once enough of the global population gets vaccinated and receives regular booster shots or drugs. This should allow the cyclical part of the economy to fully recover and benefit from the excess spending reserves of businesses and consumers. However, this view has been delayed by the new delta variant. We still believe that the COVID-off destination remains our base case, and getting there has only been delayed, not derailed.

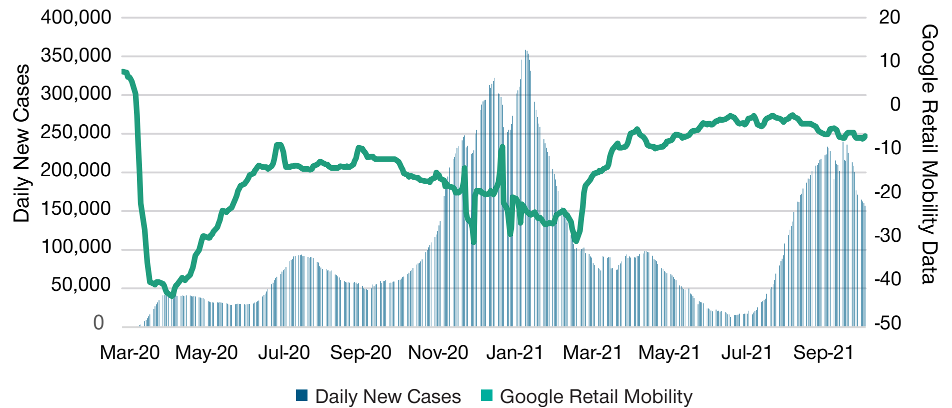
2. Long-Term Government Bond Yields Rose

Our Uncertainty factor includes the 10-year U.S. government bond yields to estimate changes in the market's view of long-term growth, inflation, and the term premium. Yields rise when investors see brighter economic prospects or expect higher inflation, and they drop when economic and market risks escalate.

In September, after the Federal Reserve's two-day policy meeting, policymakers announced that they would soon consider tapering the central bank's purchases of Treasuries

The Recent Virus Wave Didn't Threaten Retail Mobility

(Fig. 5) U.S. daily new cases and Google retail mobility



As of September 30, 2021.
Sources: Haver Analytics/Bloomberg Finance L.P.

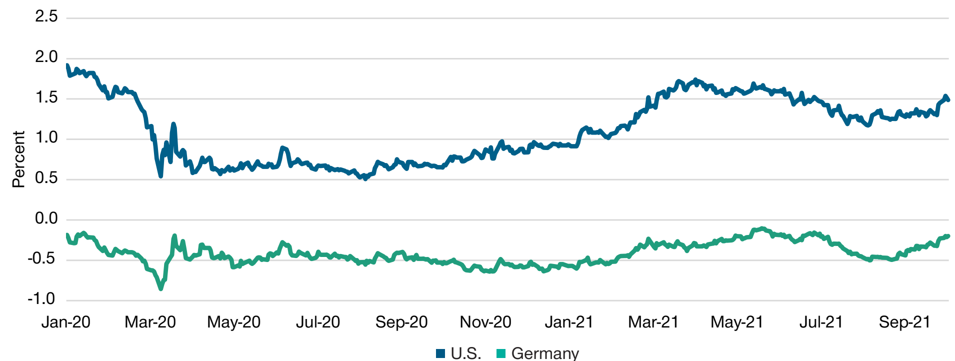
and mortgage-backed securities. The Fed's release of its quarterly survey of individual policymakers' forecasts of future official short-term interest rates showed a small increase in their median rate expectations, which some investors interpreted as a modestly hawkish signal. The coming wind-down of the Fed's monthly asset purchases and mildly hawkish revisions to its interest rate forecasts helped push the 10-year U.S. Treasury yield significantly higher. Our fixed income portfolio management team believes that reaccelerating economic growth, a stabilizing CPI, peaking liquidity, moderating regulatory crackdown, and abating coronavirus cases were all partially responsible for the recent movement in rates. Higher yields above all indicated lower economic uncertainty.

3. Implied Volatility Surged

The implied volatility of a market index derived from option prices reflects investors' forecasts of the likely movement in security prices in that market, and it's often thought to be a good proxy for market risk.

A Rise in Yields Indicates Brighter Economic Prospect

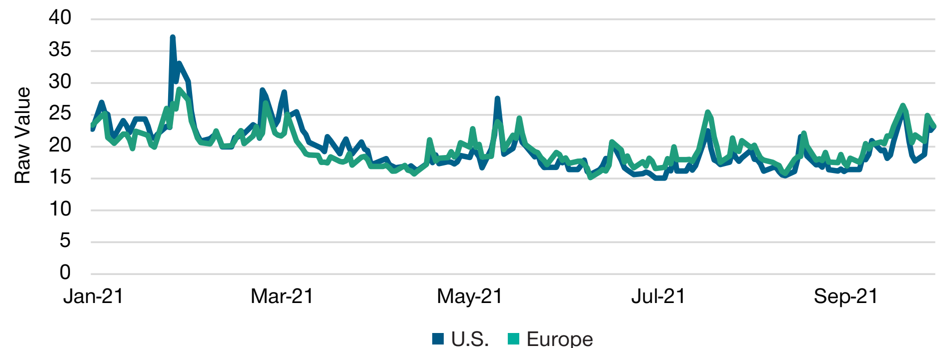
(Fig. 6) U.S. and Germany 10-year government bond yields



As of September 30, 2021.
Source: Bloomberg Finance L.P.

A Surge in Implied Volatility Indicates Deteriorating Market Sentiment

(Fig. 7) S&P 500 and Euro STOXX 50 implied volatility



As of September 30, 2021.
Source: Bloomberg Finance L.P.

In early September, implied volatility surged, which could be largely attributed to the uncertainty of President Joe Biden's spending plan and inflation worries. It was reported that Democratic Senator Joe Manchin backed as little as USD 1 trillion of Biden's USD 3.5 trillion spending plan, highlighting the wide gap between Democrat moderates and progressives. According to the Job Openings and Labor Turnover Survey (JOLTS) data release, there were a record 10.93 million positions waiting to be filled in July, putting upward pressure on wages, which will further challenge corporate profit margins.

In the week after, implied volatilities in the U.S. and Europe continued to push higher, likely due to contagion worries from China's Evergrande and U.S. Treasury Secretary Janet Yellen's op-ed on debt ceiling risks. Our colleagues in the emerging markets credit team, Sheldon Chan and Anna Zhang, believe Evergrande's troubles are unlikely to cause systematic risk in China, not to mention other parts of the world. Despite being the second-largest property developer in China by contracted sales, it has only a 5% market share in the fragmented industry. Chan and Zhang expect that any impact to the banking system should be manageable and that the government will instead focus on the social fallout of unfinished housing units and payables to suppliers.

Implied volatility spiked again toward the end of the month, as investors anticipated the Federal Reserve moving away from the current highly accommodative policy and were concerned about the impact of rising Treasury yields on asset valuations. It appears we will continue to observe some volatility over the last three months of the year, driven by pandemic, Fed discussions, fiscal spending, energy prices, and regulatory crackdowns.

Additional Information Regarding the PULSe Indicator:

We stress that the PULSe indicator is directional only, meant to show whether the key factors underlying the market turbulence are strengthening or weakening over time. It is not meant to be the basis for making market or asset allocation decisions and is not designed to be a market timing indicator.

A high number for the PULSe indicator is a sign of market stresses and, thus, potential turbulence.

Z-Score—We focus on how the latest market data are different from the recent past using a z-score, where each data point is expressed in terms of the number of standard deviations above or below the mean, or average, of the series.

The Pandemic factor or score differs slightly from the other three factors in terms of its underlying principles and, thus, the manner of its construction. Our Pandemic series is measured focusing on the largest economies such as the G-7. In the current Pandemic factor model, we look at three metrics: (1) daily new cases to track the spread of the COVID-19 (the disease caused by the coronavirus); (2) positive test ratio to confirm the trend of the diffusion curve; and (3) Google retail mobility to assess the impact of the pandemic on consumer behavior. Our Uncertainty factor focuses on economic data and how they differ from market expectations. Examples of underlying data include the Bloomberg economic surprise indices, changes in oil supply and demand, yield curves, and earnings per share growth forecasts. The Liquidity indicator aims to identify any stresses in the credit market. Spreads on credit typically widen when liquidity dries up. Our Liquidity gauge uses the commercial paper spread, the financials sector spread, the high yield energy and ex-energy spreads and ratio. Finally, our gauge of market Sentiment looks at risk appetite from market participants. This includes put/call ratio, implied volatility, a measure of extremes in daily returns, currency sentiment, and some commodity prices.

Our aggregate PULSe indicator is composed of the four components or factors that are themselves composite indices. A simple average is taken across the four components.

For full details, please see our white paper “Taking the Market’s PULSe in the Coronavirus Era.”

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