

TD Financial Stress Monitor

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Highlights

- With the recent wave of COVID-19 infections around the world, governments are reinstating restrictions to slow the spread of the virus. At the same time, political risk is heightened ahead of the much anticipated U.S. Election. The combination of economic and political uncertainty has resulted in a rise in volatility within financial markets.
- This pick-up in volatility adds another chapter to the wild ride for financial market sentiment over 2020. After market fear spiked earlier in the year, sentiment improved dramatically from April to August on the back of significant monetary and fiscal stimulus.
- Equity markets have been a closely watched barometer for financial market stress. Though some markets have recovered from the pandemic impact, many are seeing renewed selling pressure.
- At the peak of the crisis, short-term funding markets brought back memories of 2008, with interbank and commercial paper spreads spiking higher. The Federal Reserve and Bank of Canada have eased this stress through a range of liquidity injections.
- Corporate credit markets have improved with the Federal Reserve buying corporate bonds and ETFs that hold corporate issues. This market had been under stress, with elevated spreads on both investment and speculative grade debt. Fed actions have improved liquidity and allowed for new issuance. Of late, we have not see spreads widen much during the current burst in volatility.

We are living in extraordinary times. The collapse in economic activity and the massive risk-off move in financial markets will be featured in textbooks for years to come. Though the decline in equity markets garnered a lot of attention, financial stress was apparent in other markets as well. Specifically, corporate credit and short-term funding markets. To grasp the magnitude of the stress, we compare it to past historical episodes. This framework will be regularly updated to help our clients understand the evolution of financial market risk. This publication will be updated periodically to reflect notable changes in financial market sentiment and available [here](#).

Equity Markets

It took just 22 trading days for the S&P 500 to decline by 30% over the February to March time period. The speed of the decline is why the Volatility Index (VIX) increased so dramatically, eclipsing the level from the Global Financial Crisis (GFC) in 2008 (Table 1). With a peak of 83, it is the second highest level ever re-

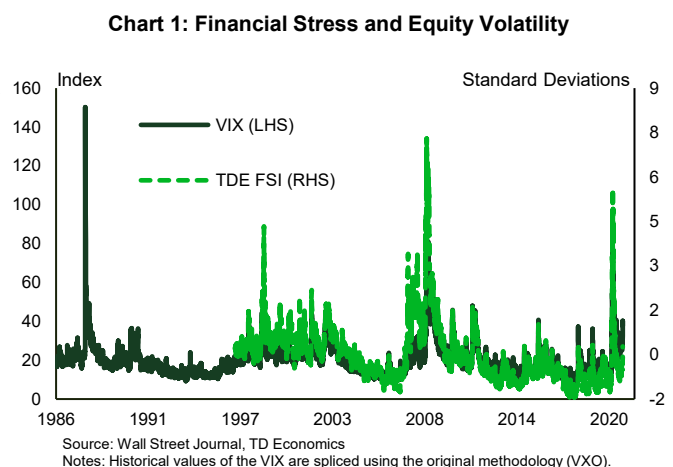
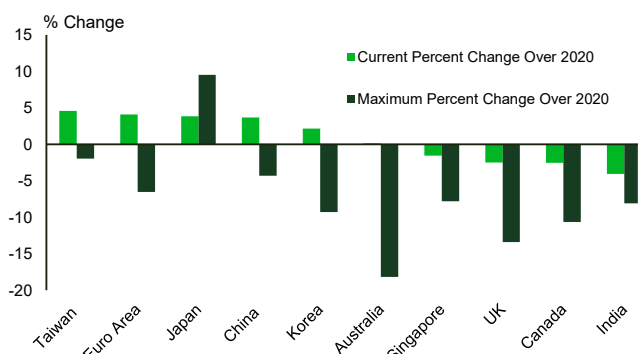


Chart 2: Currency Movements Over 2020



Source: Wall Street Journal, TD Economics
Notes: Current percent change is calculated as of October 29, 2020

corded, but still well shy of the all-time level of 150 reached during the stock market crash of 1987 (Chart 1).

Though the speed of the decline has few comparables, the depth of the decline is right in the middle of what we have seen in past recessions (Table 2). In the post-WWII time period, the average S&P 500 Index decline during recession was 29.5%. More recently, in the GFC and bursting of the tech bubble, the S&P 500 declined 56.8% and 49.1%, respectively. The point here is that even though the VIX reached GFC levels, the stock market did not perform as poorly. This likely has to do with the massive injection of central bank and government support this time around, which has been far more proactive at the onset of the stress than past cycles. It's also why our Financial Stress Index (in Chart 1) had not spiked as much as in the GFC.

When we look at other international equity markets, it is easy to see high cross-asset correlation, with most markets experiencing peak-to-trough declines of 30%, on average. That said, compared to the U.S. market, the S&P/TSX Composite was relatively weak, reaching a peak-to-trough decline of 37.4% (Table 3). The high energy sector weight had a large impact on the Canadian market relative to the U.S. This weakness was also apparent in the Canadian dollar, which depreciated by 11% at the worst point in the crisis. We find that commodity and/or export focused currencies (such as the Australian dollar) were the hardest hit over the stress time period. (Chart 2 and Table 4). Since that time, the Canadian dollar has appreciated versus its lows on the back of improved sentiment and rising commodity prices.

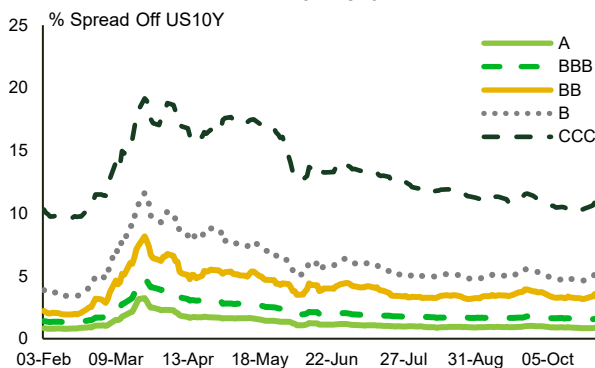
North American financial market sentiment had been upbeat over the April to August time period, with central banks communicating a lower for longer interest rate environment. This coincided with economies around the world gradually reopening and strong job growth leading the way. Over the last couple of months, however, risk assets have suffered, with uncertainty surrounding the upcoming U.S. election, a stalemate in congress over additional fiscal stimulus, and new COVID-19 infections rising around the world all weighing on risk sentiment.

Foreign exchange markets had seen strong flows out of the U.S. dollar over the summer months with the economies that were furthest along in their re-opening phases experiencing the greatest appreciations relative to the greenback. The renewed risk-off activity in financial markets over the past two months has seen the U.S. dollar strengthen against most currencies with the Australian dollar, euro, and pound experiencing notable depreciations.

Credit Markets

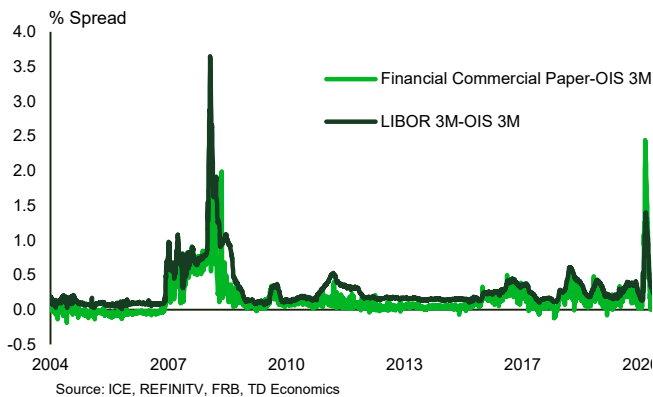
Even though we are in the midst of the recovery, there had been growing concern about the second-round impact from corporate credit markets. We have been warn-
ing about rising levels of corporate debt around the world for some time. Declining revenues have increasingly challenged the market's view on the ability for businesses to service debt payments. This led to a wave of credit downgrades and rising credit spreads in the first half of the year (Chart 3). This was especially concerning for the lowest grade credit borrowers (CCC and lower), where the spread to government bonds doubled in the beginning of the year. Investors were demanding a 17% to 19% premium

Chart 3: Corporate Spreads in the Current Macro Environment



Source: ICE/BAML, Federal Reserve Board, TD Economics

Chart 4: Interbank Spreads Rose to Worrying Levels



for investing in such credit instruments. This compared to 20.1% during the oil shock of 2015 and 43.8% during the financial crisis. There has been reprieve on this front, with CCC spreads coming in significantly from their peak, but remaining historically high.

The Federal Reserve widened the credit ratings of corporate bonds it will buy to include recently downgraded corporate bonds that have a rating no lower than BB-, as well as ETF's that have exposure to eligible non-investment grade corporate bonds. The announcement paid immediate benefit, as BB spreads have declined just over 2.5% since April 8th.

The investment grade space has been strongly supported by the Federal Reserve announcement that it will purchase investment grade credit and ETFs of investment grade bonds. This market, especially in the lower rated BBB issues, had been under pressure. Since the Fed announcement, the BBB spread has narrowed. The Fed measures are likely the reason why the BBB bond spread only reached a max of 4.80%, below the GFC spread max of 7.52%.

Short-Term Liquidity and Bank Funding

Known as the plumbing of the financial system, the short-term bank funding market doesn't get the attention it deserves. But those that lived through the financial crisis remember it all too well. When commercial banks and non-financial corporations found themselves in liquidity trouble in 2008, the rate on short-term borrowing soared. We measure this by comparing 3-month LIBOR to the OIS rate and the Commercial Paper rate to OIS. The LIBOR-OIS spread reached 365 basis points at the peak in 2008, and the Commercial Paper spread reached 284 basis points. We can see in Chart 4 that these rates shot up again early in 2020, with 3-month LIBOR-OIS and Commercial Paper-OIS reaching a high of 140 basis points and 244 basis points, respectively. The Federal Reserve stepped into these markets, and we have seen dramatic improvement as the LIBOR-OIS spread narrowed significantly. The central bank will continue to provide cash and liquidity needed in order to ensure the continued functioning of the financial system.

Bottom Line

The sudden stop to economic activity was unprecedented. So too had been the speed of the decline in risk assets. Equities, credit, and funding markets all exhibited heightened levels of financial stress, though the depth of the stress has been right around what we see in a typical recession. Since that time, there has been a strong reversal in risk sentiment which has favored risk assets. But as COVID-19 infections are now starting to rise again, we are watching out for pockets of financial stress reemerge.

As the narrative continues to evolve, we want to make sure you have an accurate perspective of the financial market landscape. We are closely watching how this evolves and will use this platform to provide you with updates.

Table 1: Market Volatility Indicators

	29-Oct	23-Oct	2020 Max	Maximum Value During Global Financial Crisis	Maximum Value During European Debt Crisis	Maximum Value During Oil Price Shock 2015
CBOE VIX	38	28	83	81	48	41
Crude Oil Volatility	63	46	325	100	69	79
3-Month MOVE	55	51	123	233	120	95

Source: Bank of America Merrill Lynch, CBOE, TD Economics

Table 2: Historic S&P 500 Declines

Recessions		
	Peak-to-trough, %, Closing Value	Number of days Between Peak and Trough
1929	-86.2	1026
1937	-54.5	386
1945	-6.9	19
1948	-20.6	363
1953	-14.8	252
1957	-20.7	99
1960	-13.4	294
1970	-36.1	543
1973	-48.2	630
1980	-17.1	43
1981	-27.1	622
1990	-19.9	87
2001	-49.1	929
2008	-56.8	517
2020	-33.9	33
Non-Recessions		
	Peak-to-trough, %, Closing Value	Number of days Between Peak and Trough
1933-1935 Sell Off	-33.9	604
1962 Sell Off	-28.0	196
1966 Sell Off	-22.2	240
1987 Sell Off	-33.5	101
1998 Sell Off	-19.3	45
2011 Sovereign Debt Crisis	-19.4	157
2015 Oil Shock	-14.2	266
2018 Trade War Shock	-19.8	95

Source: Bloomberg LP, TD Economics
Notes: Dates for all recession and non-recession sell offs can be found in table 5 in the appendix.

Table 3: Equity Markets

Country	Current Drawdown Over 2020	Percent Change from October 23, 2020	Max Drawdown Over 2020	Drawdown During Global Financial Crisis	Drawdown During European Debt Crisis	Drawdown During Oil Price Shock 2015
US: S&P 500	-7.6	-4.5	-37.5	-56.8	-19.4	-14.2
Canada: S&P/TSX Composite Index	-12.7	-3.9	-37.4	-49.8	-21.7	-24.4
UK: FTSE 100	-27.3	-4.8	-34.9	-47.8	-18.8	-22.1
Euro Area: Euro STOXX Price Index	-21.0	-6.8	-37.9	-61.8	-32.3	-27.4
Australia: S&P/ASX 300 Index	-16.5	-3.3	-36.8	-54.6	-22.5	-19.1
Japan: Nikkei 225 Average	-3.1	-0.8	-31.3	-61.4	-28.0	-28.3
China: Shanghai-Shenzhen 300 Index	-1.6	1.2	-27.3	-72.3	-41.0	-46.7
Hong Kong: Hang Seng Index	-15.4	-1.3	-25.3	-65.2	-34.9	-35.6
Korea: KOSPI Index	-4.8	-1.4	-40.4	-54.5	-25.9	-15.8
Taiwan Stock Market	-2.4	-1.8	-33.1	-58.3	-27.5	-25.7
Singapore: Straits Times Index	-25.3	-3.4	-31.9	-62.4	-23.7	-28.5
India: Nifty 50 Index	-5.6	-2.2	-38.4	-59.9	-28.0	-22.5

Source: TD Economics, Standard & Poor's, Toronto Stock Exchange, Financial Times, STOXX Limited, Shanghai Stock Exchange, Hang Seng Indexes Company, Korea Stock Exchange, Taiwan Stock Exchange, National Stock Exchange of India
 Note: All values are calculated as of October 29, 2020.

Table 4: Foreign Exchange (% return is local currency/US\$)

	29-Oct	Percent Change from Jan. 1, 2020	Percent Change from October 23, 2020	Maximum Percent Change Over 2020	Percent Change During Global Financial Crisis	Percent Change During European Debt Crisis	Percent Change During Oil Price Shock 2015
CADUSD	0.75	-2.5	-1.5	-10.7	-23.7	-3.3	-12.3
GBPUSD	1.29	-2.5	-0.9	-13.4	-30.7	-4.5	-7.5
EURUSD	1.17	4.1	-1.6	9.5	-11.0	-1.3	-0.2
AUDUSD	0.70	0.1	-1.5	-10.1	-29.1	-4.0	-11.5
USDJPY	105	3.8	0.1	-2.0	19.7	8.0	4.2
USDCNY	6.72	3.7	-0.4	-4.3	9.9	2.7	-5.6
USDKRW	1131	2.2	-0.2	-7.8	-41.4	-6.6	-9.0
USDTWD	29	4.6	0.1	-6.5	-6.7	-4.8	-8.2
USDSGD	1.37	-1.5	-0.7	-18.2	-5.3	-2.4	-4.9
USDINR	74	-4.1	-0.7	-9.3	-23.9	-6.2	-6.2

Source: Wall Street Journal, TD Economics
 Note: For foreign exchange a positive value represents an appreciation of the local currency relative to the US dollar. The Global Financial Crisis has been defined from Oct. 9 2007 to Mar. 5 2009 while the European Debt Crisis has been defined from Feb. 8 2011 to Sept. 22 2011, and the 2015 Oil Shock has been defined from May 18 2015 to Feb. 9 2016.

Table 5: Dates of Historic S&P 500 Declines		
Recessions		
	Date of Peak	Date of Trough
1929	16-09-1929	08-07-1932
1937	10-03-1937	31-03-1938
1945	07-03-1945	26-03-1945
1948	15-06-1948	13-06-1949
1953	05-01-1953	14-09-1953
1957	15-07-1957	22-10-1957
1960	05-01-1960	25-10-1960
1970	29-11-1968	26-05-1970
1973	11-01-1973	03-10-1974
1980	13-02-1980	27-03-1980
1981	28-11-1980	12-08-1982
1990	16-07-1990	11-10-1990
2001	24-03-2000	09-10-2002
2008	09-10-2007	09-03-2009
2020	19-02-2020	23-03-2020
Non-Recessions		
	Date of Peak	Date of Trough
1933-1935 Sell Off	18-07-1933	14-03-1935
1962 Sell Off	12-12-1961	26-06-1962
1966 Sell Off	09-02-1966	07-10-1966
1987 Sell Off	25-08-1987	04-12-1987
1998 Sell Off	17-07-1998	31-08-1998
2011 Sovereign Debt Crisis	29-04-2011	03-10-2011
2015 Oil Shock	21-05-2015	11-02-2016
2018 Trade War Shock	20-09-2018	24-12-2018
Source: Bloomberg LP, National Bureau of Economic Research, TD Economics		

Disclaimer

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