The Coronavirus Crisis: What’s the Same? What’s Different?

By Kathryn M. Kaminski, PhD, CAIA®, and Ying Yang, MFE
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History doesn’t repeat itself, but it does tend to rhyme. Each crisis period in financial markets is different, but crisis periods may have some aspects in common. In 2020, equity markets endured a devastating fall in the wake of concerns around COVID-19. This article looks at recent market conditions from the perspective of a trend-following strategy to determine what is similar and what is different from the crisis periods that came before. Trend-following strategies take long and short positions across a wide range of asset classes (i.e., equity indexes, bond index futures, rates, currencies, and commodities).

Over time and across asset classes, they adapt to changing market conditions using statistical techniques that measure and adjust to prevailing market trends, sometimes achieving “crisis alpha.”

Given that the speed of trend measurement can provide different results in different crisis periods, this article also considers two different trend-following trading systems: a faster trend system (with signals using data from less than six months) and a slower trend system (with signals using data from more than six months). This article first examines the severity of each crisis period in recent history, focusing on both depth and length. It then discusses how trend signal speed, prior equity positioning, and non-trend signals impact performance during both the crisis and subsequent recovery periods.

CRISIS OR CORRECTION?
A correction is a short-term loss that recovers relatively quickly. A crisis, on the other hand, is a prolonged period of market stress with sustained losses. For the purpose of this article, losses of 15 percent or more over periods of two months or less are corrections, and deeper or more sustained losses are crises. It is important to note that each crisis or correction is different and that both the depth and length of each crisis, as well as its recovery period, varies from one drawdown to another.

To put this into perspective, we consider the peak-to-trough loss in equity markets using data from 1992 to 2020. Using this approach, we are able to identify nine substantial drawdowns since 1998. Each of these crisis and correction events is detailed in Table 1.

For each period, we highlight the exact dates of the period, the total depth (cumulative loss), the total length (number of trading days), the corresponding equity position of a fast and slow trend-following system at the beginning, and the return of a representative fast and slow trend-following system for the same period. Each crisis period is given a descriptive name that will be used in the remainder of this article for simplicity.

<table>
<thead>
<tr>
<th>Description Name</th>
<th>Peak Date</th>
<th>Trough Date</th>
<th>Total Depth</th>
<th>Total Length</th>
<th>Fast Trend-Following Weights</th>
<th>Slow Trend-Following Weights</th>
<th>Fast Trend Return (%)</th>
<th>Slow Trend Return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian Debt Crisis</td>
<td>7/17/1998</td>
<td>8/31/1998</td>
<td>19.19%</td>
<td>31</td>
<td>20%</td>
<td>20%</td>
<td>4.84%</td>
<td>5.25%</td>
</tr>
<tr>
<td>Tech Crisis</td>
<td>9/1/2000</td>
<td>11/30/2000</td>
<td>13.29%</td>
<td>64</td>
<td>39%</td>
<td>36%</td>
<td>2.98%</td>
<td>3.15%</td>
</tr>
<tr>
<td>Sub-Prime</td>
<td>10/9/2007</td>
<td>3/10/2008</td>
<td>17.91%</td>
<td>108</td>
<td>23%</td>
<td>6%</td>
<td>15.40%</td>
<td>19.59%</td>
</tr>
<tr>
<td>Lehman</td>
<td>5/19/2008</td>
<td>3/9/2009</td>
<td>51.52%</td>
<td>209</td>
<td>20%</td>
<td>14%</td>
<td>7.88%</td>
<td>5.09%</td>
</tr>
<tr>
<td>Flash Crash</td>
<td>5/3/2010</td>
<td>6/30/2010</td>
<td>13.93%</td>
<td>42</td>
<td>26%</td>
<td>41%</td>
<td>0.62%</td>
<td>-1.07%</td>
</tr>
<tr>
<td>Euro Crisis</td>
<td>8/1/2011</td>
<td>8/8/2011</td>
<td>12.96%</td>
<td>5</td>
<td>-5%</td>
<td>-7%</td>
<td>2.07%</td>
<td>3.19%</td>
</tr>
<tr>
<td>Volpocalypse</td>
<td>2/1/2018</td>
<td>2/8/2018</td>
<td>8.51%</td>
<td>5</td>
<td>43%</td>
<td>60%</td>
<td>-5.50%</td>
<td>-6.23%</td>
</tr>
<tr>
<td>Equity Sell-Off</td>
<td>9/20/2018</td>
<td>12/24/2018</td>
<td>19.36%</td>
<td>67</td>
<td>17%</td>
<td>15%</td>
<td>2.61%</td>
<td>-1.86%</td>
</tr>
<tr>
<td>COVID-19</td>
<td>2/19/2020</td>
<td>3/23/2020</td>
<td>33.79%</td>
<td>23</td>
<td>35%</td>
<td>107%</td>
<td>7.91%</td>
<td>-2.00%</td>
</tr>
</tbody>
</table>

Past performance is not necessarily indicative of future results. Each crisis or correction period is defined as the peak-to-trough loss. For certain periods such as the tech bubble, several waves of losses warrant distinct time periods; only the first wave is presented here and throughout the paper, labeled Tech Crisis. Fast Trend-Following represents a generic trend-following strategy implemented with equal risk-weighting across futures markets spanning commodities, equity indexes, fixed income, and currencies, with signals using data from less than six months. Slow Trend-Following represents a similar generic trend-following strategy with signals using data from more than six months. Source: Bloomberg, AlphaSimplex.
fast or slow trend-following system. For comparison, the equity weights for both the fast and slow systems also are plotted to demonstrate how these systems react to the equity markets’ moves. Note that the dashed lines (slower trend systems) seem to move slower out of equity markets as they draw down in each crisis period.

Each of these graphs demonstrates how trend-following strategies can capture crisis alpha; most of these crisis periods resulted in positive returns for the strategy, whether it is fast or slow—but there are a few exceptions. For example, during short corrections where the strategy is long equity, the strategy may not be able to get out of its equity position and find other opportunities before the market corrects. During quick sell-offs, faster trend-following systems seem to be able to navigate the environment slightly better. Yet on average, for many crisis periods, both slow and fast systems seem to navigate the events similarly.

PRIOR POSITIONING MATTERS, ESPECIALLY FOR SHORT PERIODS

As figure 1 shows, each crisis or correction is different both in depth and length. So clearly for trend-following strategies, prior positioning matters. If trend-following strategies are long equities going into a crisis or correction period, they can take time to adjust to changing market trends. As we saw in table 1, the COVID-19 crisis and the Volpocalypse included some of the biggest equity exposures going into the events. However, because trend-following strategies adapt and find trends across asset classes, we simply cannot look at equities and see the whole picture. Instead, we need to consider the equity position before the crisis and compare with the returns of other asset classes during periods of stress. To demonstrate this, figure 4 plots the performance of representative fast and slow trend systems for each crisis and correction period against the prior equity position.

Figure 4 shows that if trend-followers are long equities going into a crisis the

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**Figure 1**

**Crisis and Correction Periods, 1992–2020**

As described in table 1, only the first drawdown is plotted for the Tech Crisis period.

**Figure 2**

**Historical Crisis and Correction Periods, 1992–2020**

The size of each circle represents the relative speed of each crisis or correction period, where speed is defined as drawdown divided by length of drawdown.

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Past performance is not necessarily indicative of future results.

Source: Bloomberg, AlphaSimplex

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*A correction is defined as losses of 15 percent or more over a period of two months or less. A correction with deeper or more sustained losses is considered a crisis. Past performance is not necessarily indicative of future results.*

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As described in table 1, only the first drawdown is plotted for the Tech Crisis period.
strategy will experience some losses; however, faster trend systems are able to move out of equity markets faster. Consider the recent COVID-19 crisis. Given the speed of the crisis period, faster trend systems were able to move out of equities faster. Additionally, these systems already were positioned with lower equity exposure, perhaps due to increased equity volatility in late January 2020. It is notable that for each crisis or correction period there are positive trends in a range of asset classes (commodities, fixed income, currencies, and equity indexes). The key takeaway from the recent COVID-19 crisis is the divergence in performance between fast and slow trend systems. During one of the fastest crisis periods, being fast was clearly better, whereas in other historical periods with more-sustained crisis losses this distinction has been less clear.

**TREND VS. MULTI-STRATEGY CTA**

In most of the prior analyses, we use a simple representative trend-following strategy to demonstrate how the trend would react to market moves. In practice, many managers also include a range of other approaches outside of pure trend, which can affect performance during periods of equity market losses. To demonstrate how this might impact returns, we compare the performance of a pure trend index (the SG Trend Index) and a multi-strategy commodity trading advisor (CTA) approach (the SG CTA Index). Figure 5 plots the returns of these two indexes compared with the equity loss periods detailed in table 1.

In figure 5, the pure trend strategy seems to outperform during the longer, more sustained crisis periods as well as during the COVID-19 crisis. On the other hand, the multi-strategy approach seems to perform better during the short events such as the 2010 Flash Crash, the 2018 Equity Sell-Off, and the 2018 Volpocalypse. Because the composition of managers and their strategies change over time, further research may be necessary to pinpoint which strategies or approaches outside of trend might be driving these differences.

In order to visualize the relative performance differences between a pure trend and a multi-strategy approach, figure 6 plots a circle for each crisis period. The shaded circles indicate times when pure trend outperformed multi-strategy; the clear circles indicate times when multi-strategy outperformed pure trend. The size of each circle indicates the relative magnitude of outperformance or underperformance of pure trend versus multi-strategy.
From this example, we can see that pure trend tends to perform well during longer, more drawn-out crisis periods and to perform less well during corrections or short-term crises.

CONCLUSIONS

The year 2020 was a challenging market environment for most investment portfolios. After the big moves in the first quarter of 2020, few strategies were able to navigate this high-volatility, fear-driven, and uncertain environment. Trend-following strategies are well-known to have the potential to generate crisis alpha by adapting to the persistent trends that occur in the wake of a market crisis. The 2020 COVID–19 market crisis was one of the fastest crisis periods in history. Despite being long equities going into this historic move, trend-following strategies managed to adapt to find positive opportunities despite the difficult scenario, as they have done during past crisis periods. What rhymed with past crises is that trend followers, especially pure trend followers, found opportunities that allowed them to outperform while navigating market moves, and faster systems were better poised to move with such large moves. What was different was the sheer speed of the equity losses. After a strong and steady recovery, what still remains unclear is where we will go from here. One thing holds true: When it comes to crisis alpha, everyone likes the alpha but no one likes the crisis.

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ENDNOTES

1. “Crisis alpha” opportunities are profit opportunities gained from persistent trends during periods of market stress or crisis. For more information on the concept of crisis alpha, see Kaminski (2011).
2. Note that the Tech Crisis is defined by four substantial drawdowns (September–November 2000, February–March 2001, May–September 2001, and June–July 2002). For comparison with the recent COVID-19 crisis, we consider the recovery period for the first drawdown in each crisis period for the remainder of the article. Note that only the Tech Crisis experienced multiple drawdowns in this period.
3. For additional details on the distinction between a crisis and a correction, please see Kaminski (2019).
4. For additional details, please see Kaminski (2019).
5. This concept is discussed in detail in Chapter 16 of Greyserman and Kaminski (2014).
6. See also Kaminski and Sinnott (2019).

REFERENCES


**Comparison of Pure Trend vs. Multi-Strategy CTA Performance**

Equity market returns during each crisis and correction period compared with the performance of a group of pure trend-following managers using the SG Trend Index and a group of multi-strategy CTA managers using the SG CTA Index (index information available since January 2000).

![Graphs showing equity market returns during each crisis and correction period compared with the performance of a group of pure trend-following managers using the SG Trend Index and a group of multi-strategy CTA managers using the SG CTA Index.](image)

Source: Bloomberg, AlphaSimplex


Disclosures

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