# The Coronavirus Crisis:
## What is the same? What's different?

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## Introduction

History doesn't repeat itself, but it does tend to rhyme. Each crisis period in financial markets is different, but they may have some aspects in common. In 2020, equity markets endured a devastating fall in the wake of concerns around the novel coronavirus COVID-19. This paper takes a look 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 indices, 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".[1] Given that the speed of trend measurement can provide different results in different crisis periods, this paper 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 greater than six months). This paper first examines the severity of each crisis period in recent history, focused 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 paper, losses of 15% or more over periods of two months or less are corrections, while more sustained or deeper losses are crises. It is important to note that each crisis or correction is different and that both the length and depth 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.[2] Each of these crisis and correction events are detailed below in Table 1.

| Description | Peak Date | Trough Date | Total Depth | Total Length | Fast Trend-Following Weights | Slow Trend-Following Weights | Fast Trend Return (%) | Slow Trend Return (%) |
|---|---|---|---|---|---|---|---|---|
| **Russian Debt Crisis** | 19980717 | 19980831 | 19.19% | 31 | 20% | 20% | 4.84% | 5.25% |
| **Tech Crisis 1** | 20000901 | 20001130 | 13.29% | 64 | 39% | 36% | 2.98% | 3.15% |
| **Sub-Prime** | 20071009 | 20080310 | 17.91% | 108 | 23% | 6% | 15.40% | 19.59% |
| **Lehman** | 20080519 | 20090309 | 51.52% | 209 | 20% | 14% | 7.88% | 5.09% |
| **Flash Crash** | 20100503 | 20100630 | 13.93% | 42 | 26% | 41% | 0.62% | -1.07% |
| **Euro Crisis** | 20110801 | 20110808 | 12.96% | 5 | -5% | -7% | 2.07% | 3.19% |

[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 2000 – November 2000, February 2001 – March 2001, May 2001 – September 2001, and June 2002 – 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 paper. Note that only the Tech Crisis experienced multiple drawdowns in this period.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Volpocalypse** | 20180201 | 20180208 | 8.51% | 5 | 43% | 60% | -5.50% | -6.23% |
| **Equity Sell-Off** | 20180920 | 20181224 | 19.36% | 67 | 17% | 15% | 2.61% | -1.86% |
| **COVID-19** | 20200219 | 20200323 | 33.79% | 23 | 35% | 107% | 7.91% | -2.00% |

*Table 1: Description of Crisis/Correction periods for the S&P 500 Total Return Index from 1992 to 2020. Past performance is not necessarily indicative of future results. Each crisis/correction period is defined as the peak-to-trough loss. For certain periods such as the tech bubble, there are several waves of losses which warrant distinct time periods. Fast Trend-Following represents a generic trend following strategy implemented with equal risk-weighting across futures markets spanning commodities, equity indices, 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 greater than six months. Source: Bloomberg, AlphaSimplex.*

For each of these periods, we highlight the exact dates of the period, the total depth (cumulative loss), total length (number of trading days), the corresponding equity position of a slow and fast 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 description, which will be used in the remainder of this paper for simplicity. Figure 1 plots the cumulative return of the S&P 500 Total Return Index with these periods highlighted for reference.

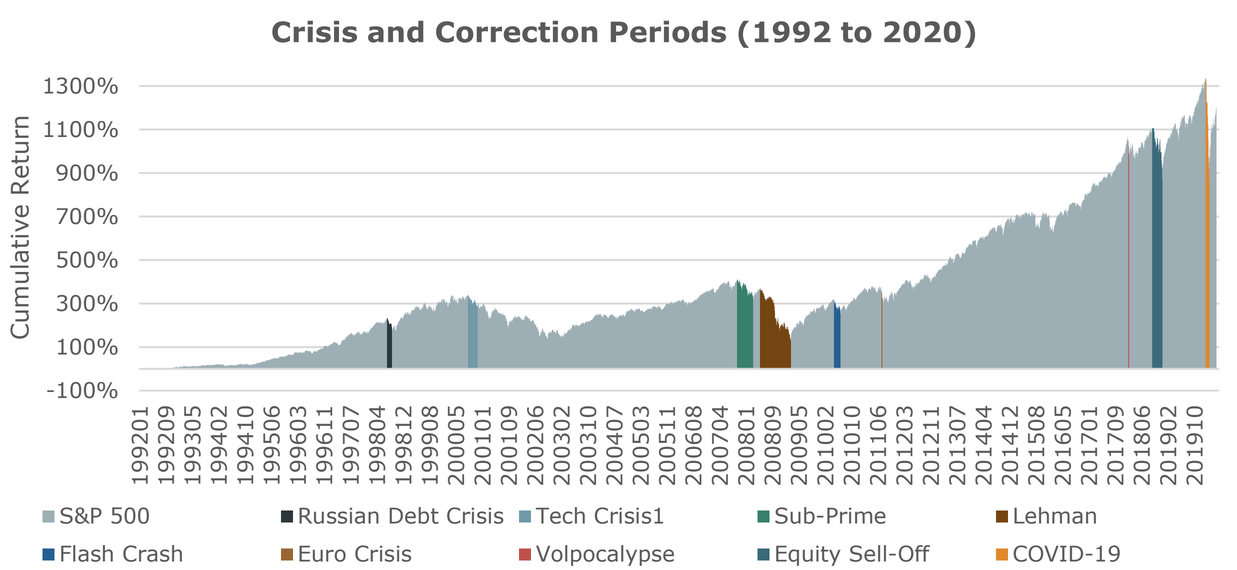



*Figure 1: Cumulative return of the S&P 500 Total Return Index from January 1, 1992 to May 31, 2020. As described in Table 1, only the first drawdown is plotted for the Tech Crisis Period. Source: Bloomberg. A correction is defined as losses of 15% or more over a period of two months or less. A correction with more sustained or deeper losses is considered a crisis. Past performance is not necessarily indicative of future results.*

To visualize these events based on depth and length, Figure 2 plots a schematic of past crisis and correction periods where the relative adjusted size of the circle represents crisis speed defined as the depth divided by length (the total time period). This approach can help us visualize how different crisis/correction periods differ. From this simple picture, we can clearly see that the European Debt Crisis, Volpocalypse, and the COVID-19 crisis had the highest crisis speed (drawdown divided by length of drawdown) of all periods. The drop for COVID-19 lasted 23 days with a roughly 34% loss, while the Euro Crisis lasted a mere five days with a roughly 13% loss and Volpocalypse lasted five days with a 8.5% loss. Using the definition given above, losses of 15% or more over periods of two months or less are corrections, while more sustained or deeper losses are crises.[3]

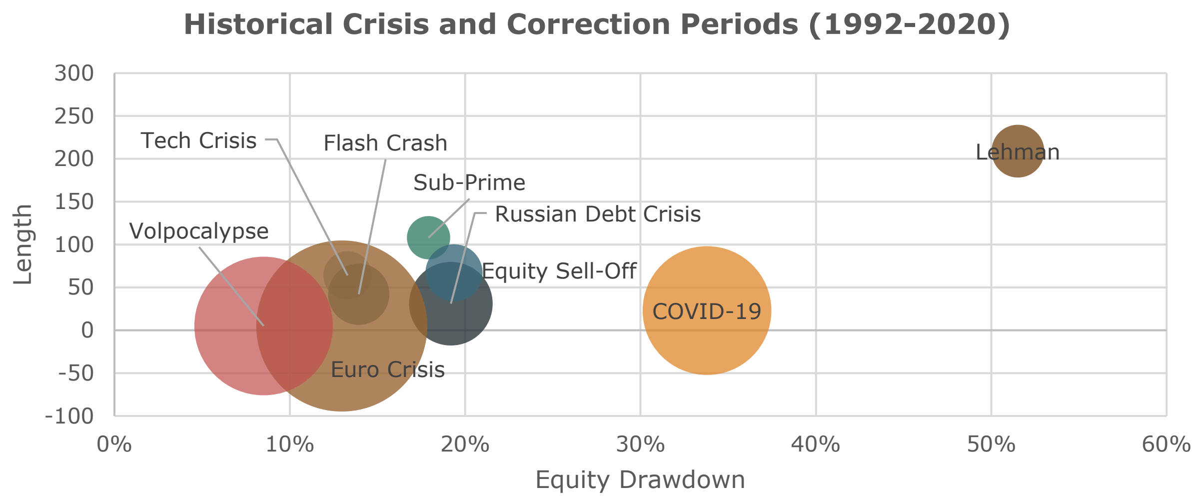



*Figure 2: Description of Crisis/Correction periods for the S&P 500 Total Return Index from 1992 to 2020. The size of each circle represents the relative speed of the crisis/correction periods where speed is defined as drawdown divided by length of drawdown. Past performance is not necessarily indicative of future results. Source: Bloomberg, AlphaSimplex.*

## The Need for Trend Speed

If things move fast, one might argue it is advantageous to be faster—even if the prediction is wrong. For trend-following strategies, this has historically been true; however, it really depends on how a crisis or correction period evolves. To consider how speed matters, Figure 3 plots the cumulative equity return during each crisis or correction period compared with the cumulative return of a representative fast or slow trend-following system. For comparison, the equity weights for both the slow and fast systems are also 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.

[3] For additional details on the distinction between a crisis and a correction, please see Kaminski 2019.

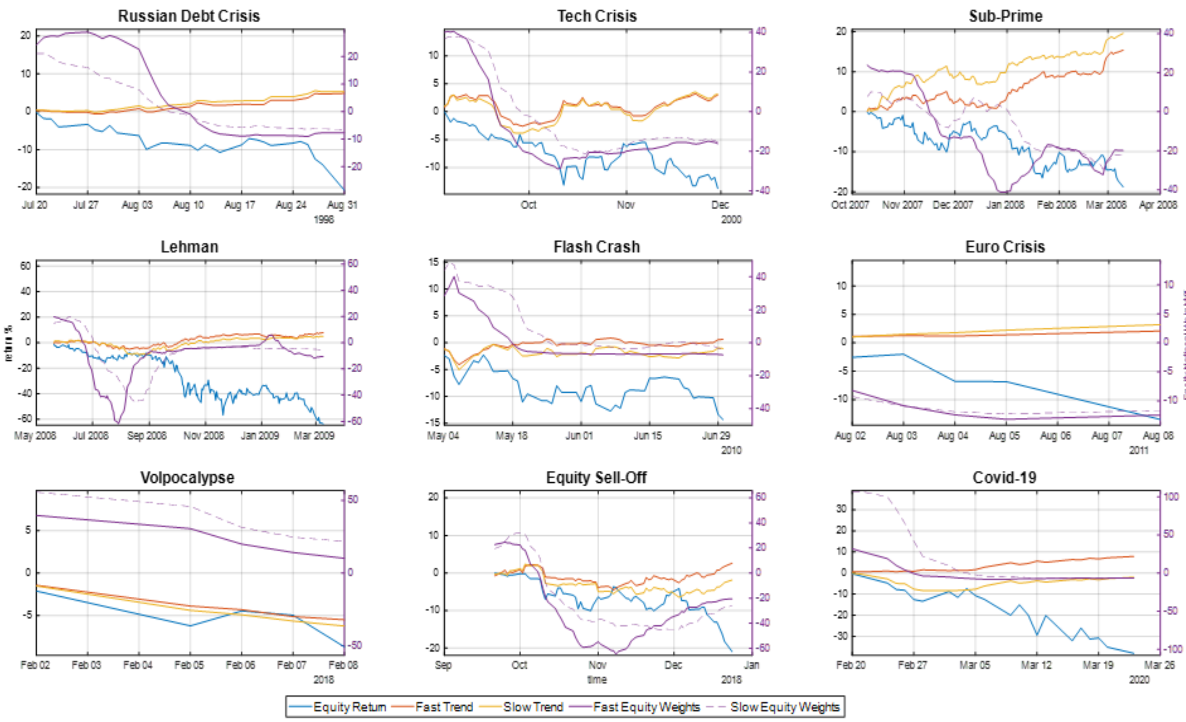



*Figure 3: Equity market returns during each crisis/correction period compared with the performance of both a fast and slow representative trend-following system. For each time period, the equity weights for both the fast and slow trend systems are plotted on the right hand side to demonstrate how these systems move with equity market price moves. Note that trend-following returns are based on a multi-asset class approach including a wide range of global futures in equity, bond, currency, and commodity futures. Source: Bloomberg, AlphaSimplex.*

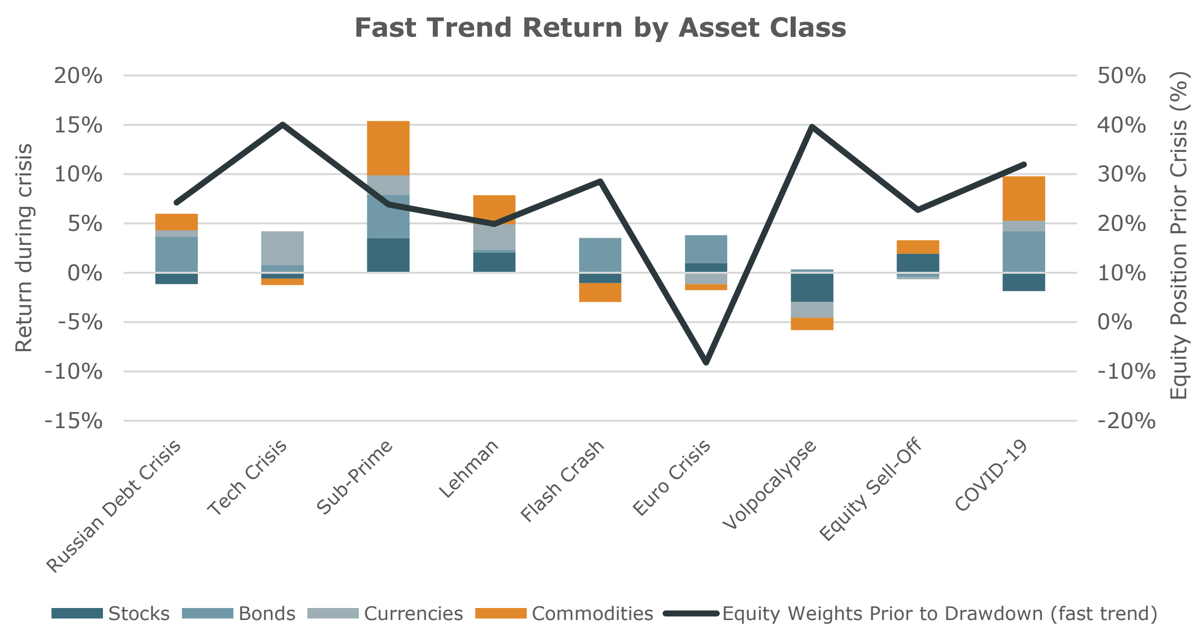
Each of these graphs demonstrates how trend-following strategies can capture crisis alpha; most of these crisis periods resulted in positive returns for the strategy, whether it is fast or slow—but there are a few exceptions. For example, during short corrections where the strategy is long equity, the 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 we saw in Figure 1, each crisis or correction is different both in depth and length. So clearly for trend-following strategies, prior positioning matters.[4] 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 in 2018 included some of the biggest equity exposures going into the events. However, since trend-

[4] For additional details, please see Kaminski 2019.

following strategies adapt and find trends across asset classes, we cannot simply 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 slow and fast trend systems for each crisis and correction period against the prior equity position.



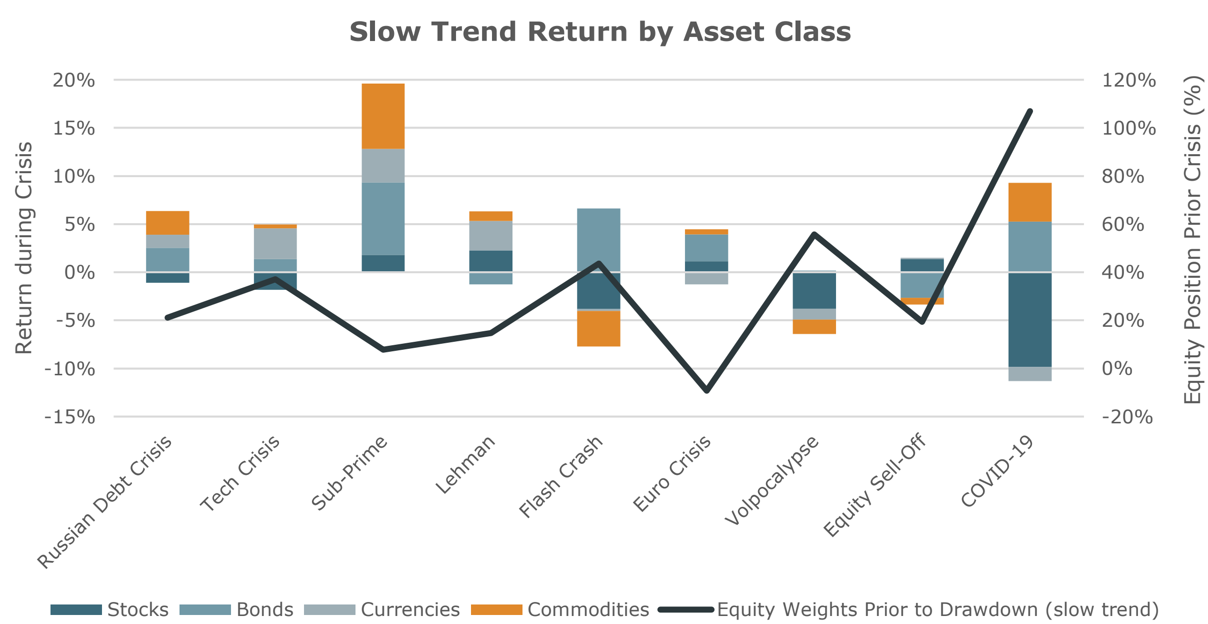




*Figure 4: Performance by asset class for both a Fast and a Slow Trend-Following generic strategy for each Crisis and Correction period. For reference, the initial equity positions for the trend-following systems are plotted for comparison. Source: AlphaSimplex.*

These two graphs show that if trend-followers are long equities going into a crisis the 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 were already positioned with lower equity exposure, perhaps due to increased equity volatility in late January. 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 indices). The key takeaway from the recent COVID-19 Crisis is the divergence in performance between fast and slow trend systems. During the one of the fastest crisis periods, being fast was clearly better while historically in other 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 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.[5] To demonstrate how this might impact returns, we compare the performance of a pure trend index (the SG Trend Index) and a multi-strategy CTA approach (the SG CTA Index). Figure 5 plots the returns of these two indices compared with the equity loss periods detailed in Table 1.

[5] This concept is discussed in detail in Chapter 16 of Greyserman and Kaminski 2014.

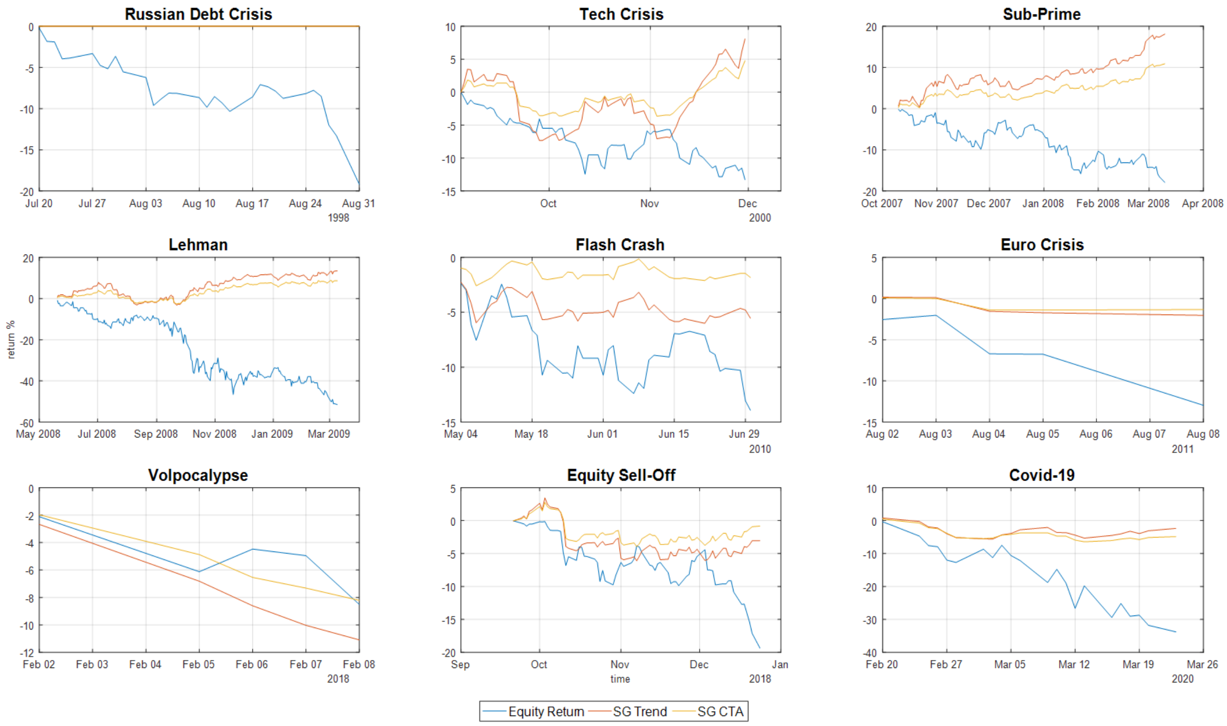



*Figure 5: Equity market returns during each crisis/correction period compared with the performance of a group of pure trend-following managers using the SG Trend Index and a group of multi-strategy CTA managers using the SG CTA Index (index information available since January 2000). Source: Bloomberg, AlphaSimplex.*

In this Figure, 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 like the Flash Crash, the Equity Sell-off in 2018, and the Volpocalypse in 2018. Since the composition of managers and their strategies change over time further research may be necessary to pinpoint what strategies or approaches outside of trend might be driving these differences.[6]

In order to visualize the relative performance differences between a pure trend and multi-strategy approach, Figure 6 plots a visual circle for each crisis period. The shaded circles indicate times when pure trend outperformed multi-strategy; and the clear circles indicate times when multi-strategy outperformed trend. The size of each circle indicates the relative magnitude of outperformance or underperformance of pure trend versus multi-strategy.

[6] See also Kaminski and Sinnott 2019.

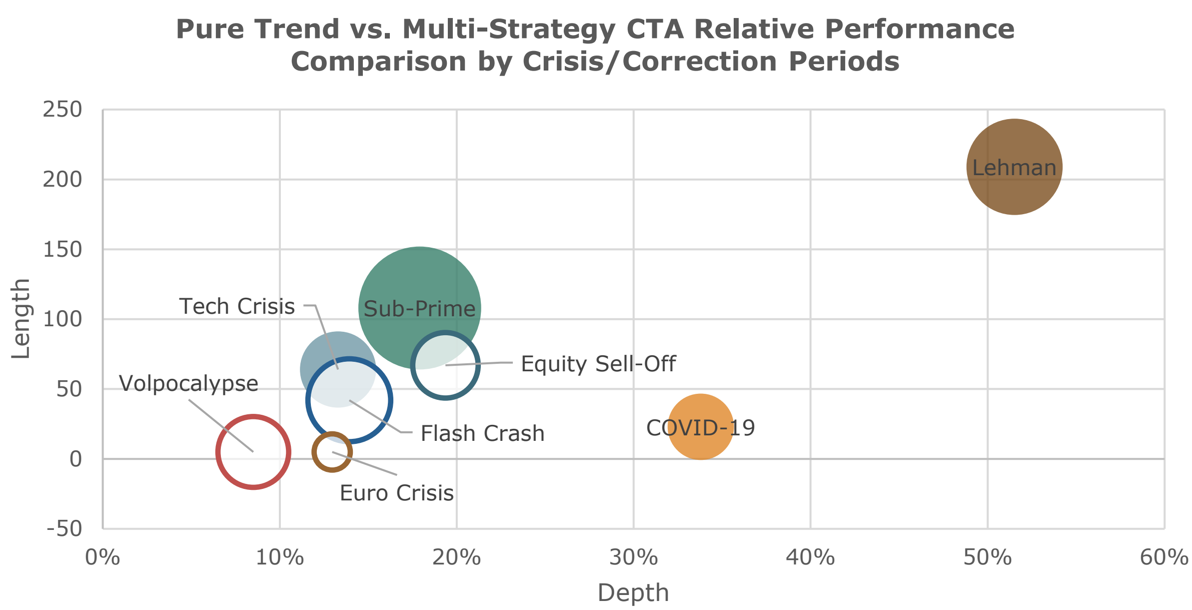



*Figure 6: A visual representation of the relative performance difference between pure trend (using the SG Trend Index) and multi-strategy CTA (using the SG CTA Index) approaches. The shaded circles demonstrate when pure trend outperforms and the clear circles show when multi-strategy outperforms. The size of the circles represents the magnitude of the return differences during each crisis or correction period. Past performance is not necessarily indicative of future results. Source: Bloomberg, AlphaSimplex.*

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.

## Navigating the Recovery or Phase II

There are two potential outcomes after a drawdown: a recovery or a secondary phase of the crisis. To consider different recovery periods, Figure 6 plots the performance of a fast and slow trend following strategy after each crisis or correction period.

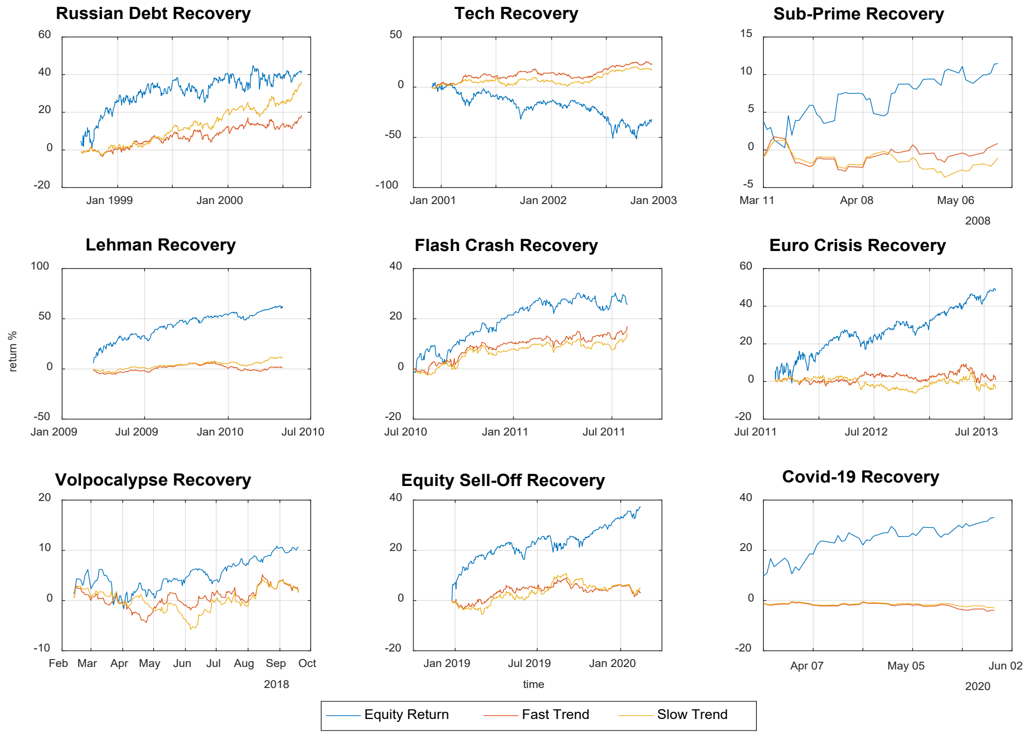



*Figure 6: Equity market returns during recovery periods versus the performance of a fast and slow representative trend-following system. Source: Bloomberg, AlphaSimplex.*

From this graph we can see that after most periods, trend-following has weathered the recovery period less well than equity markets, which is not surprising. The exception is the tech bubble, which faced a second, third, and fourth phase of crisis. In this Figure, we see that for most periods, as markets change and navigate recovery, the faster trend systems seem to be more adept in navigating market moves. To compare these results with actual manager returns, Figure 7 plots the recovery periods for the SG Trend and SG CTA Indices during the same crisis and correction periods.

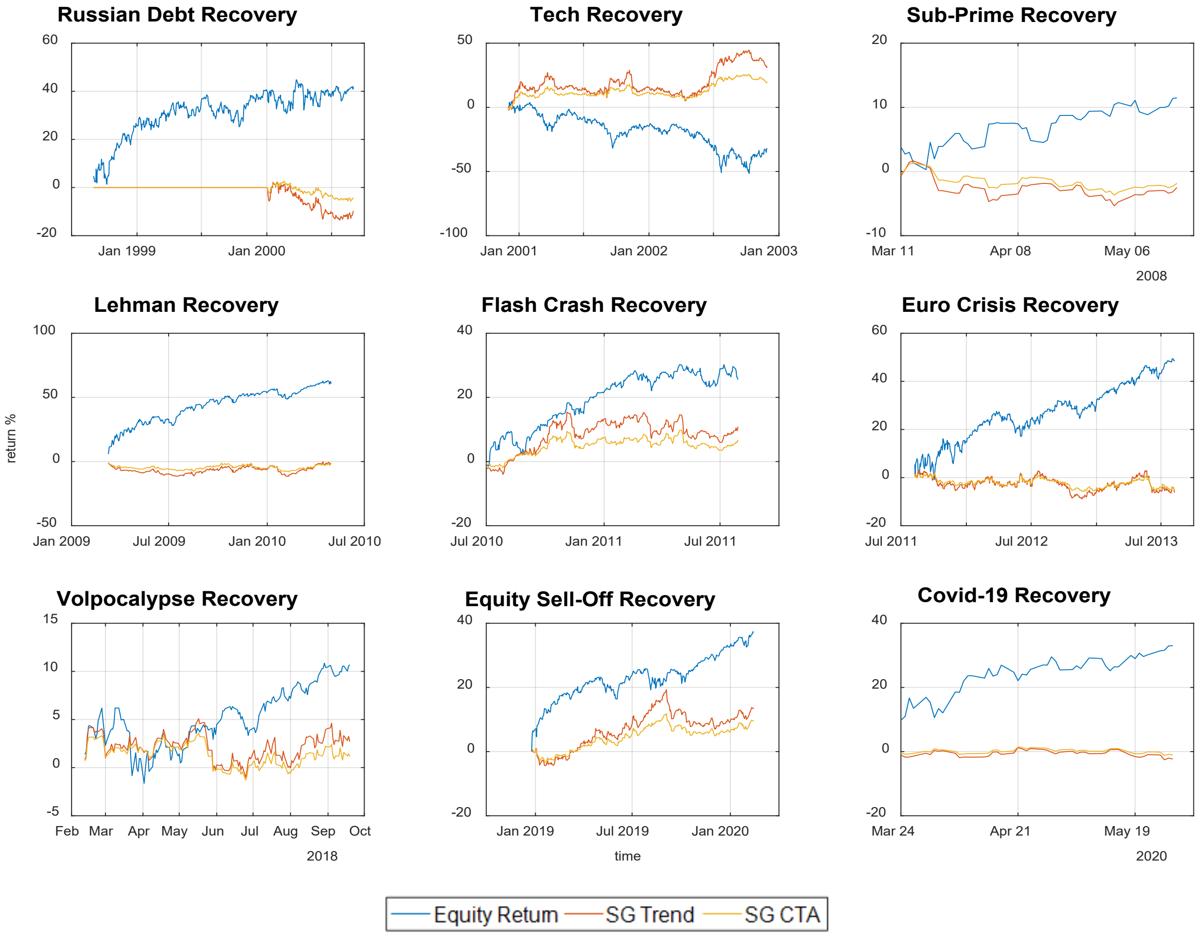



*Figure 7: Equity market returns during recovery periods versus the performance of the SG Trend and SG CTA Index (index information available since January 2000). Source: Bloomberg, AlphaSimplex.*

Figure 7 resembles Figure 6, and we can see that in general trend managers tended to navigate recovery slightly better than multi-strategy approaches. The Tech Recovery, which had subsequent additional drawdowns, could suggest how trend-followers might react if the current COVID-19 crisis should enter a Phase II or other subsequent phases. Other examples give some insights to how the strategy will react to a strong recovery. Since the trough of the COVID-19 crisis, trend-following strategies have remained somewhat flat, but the future remains to be seen.

## Conclusions

2020 has been a challenging market environment for most investment portfolios. Few strategies seem eager 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 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. What still remains unclear is where we will go from here, whether markets will experience a recovery or face a second or third wave of losses. One thing holds true: when it comes to "crisis alpha," everyone likes the alpha but no one likes the crisis.

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