Anatomy of Equity Crises

In my recent CTA Convexity blog[1], I argued that using CTAs to achieve bond convexity and protect a bond portfolio is a much more achievable target than protecting an equity portfolio during a crisis. My argument was simple: a bond trend program tends to be much more capital efficient than an equity trend program.

As expected, this blog caused quite a stir. "Abandoning" equity crisis alpha seems so sacrilegious that many of our clients questioned my sanity for even proposing it.

Crisis alpha is important to many clients, but if we look at historic data, it's not altogether obvious which trend convexity you can rely on. Today, I will walk you through the major US equity crises in the last 65 years and dig a little deeper into the mitigation potentially afforded by three defensive, risk-mitigating strategies that you can include in your portfolio: bond trend, equity trend and long-only bonds.

TLDR,

- Bond trend has offered "first responder" protection even during higher inflation.
- Equity trend can offer strong, structural, albeit delayed, "second responder" protection.
- Long-only bond has offered "first responder" protection but not during higher inflation regimes, where most equity crises occurred.
- A CTA's overall equity crises alpha protection reflects its bond/equity allocation tilt.

Convexity & Defensiveness

We usually speak of a strategy as "defensive" if it offers "convexity": A strategy's performance depends non-linearly on equity markets. For example: CTAs performed well historically when equity was doing well, but they also performed well when equity crashed.

It is important to recognize convexity can come in two flavors: *returns convexity* and *exposure convexity*:

- *Returns convexity* comes from holding assets other than equity that historically tended to go up as equity fell. The impact during a crisis is immediate but is not guaranteed and depends on the nature of the crisis and the macro environment.

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[1] The dataset we used in this blog is defined fully in the CTA Convexity You Can Afford blog's appendix. It consists of developed market bond trend and equity trend, constructed from 1961 onwards. Trend's speed is an equally weighted 1m-3m & 2m-6m crossovers. US CPI is used and how we divide the dataset into high/low/rising/falling regimes is defined in The Eras Tour blog.

Opinion Piece. Please see important disclosures in the endnotes.

- *Exposure convexity* is an equity strategy that shorts equity when equity falls. The impact is structural but may be delayed.

For example, a long VIX strategy offers *return convexity*: Volatility does tend to rise during an equity crisis, but this is not guaranteed. Conversely, a put buying strategy offers structural short equity *exposure convexity*: as soon as equity drops, the put options' equity delta goes negative.

Anatomy of Equity Crises

Convexity sounds fancy, but to make it concrete, let us look at the ten largest US equity drawdowns:

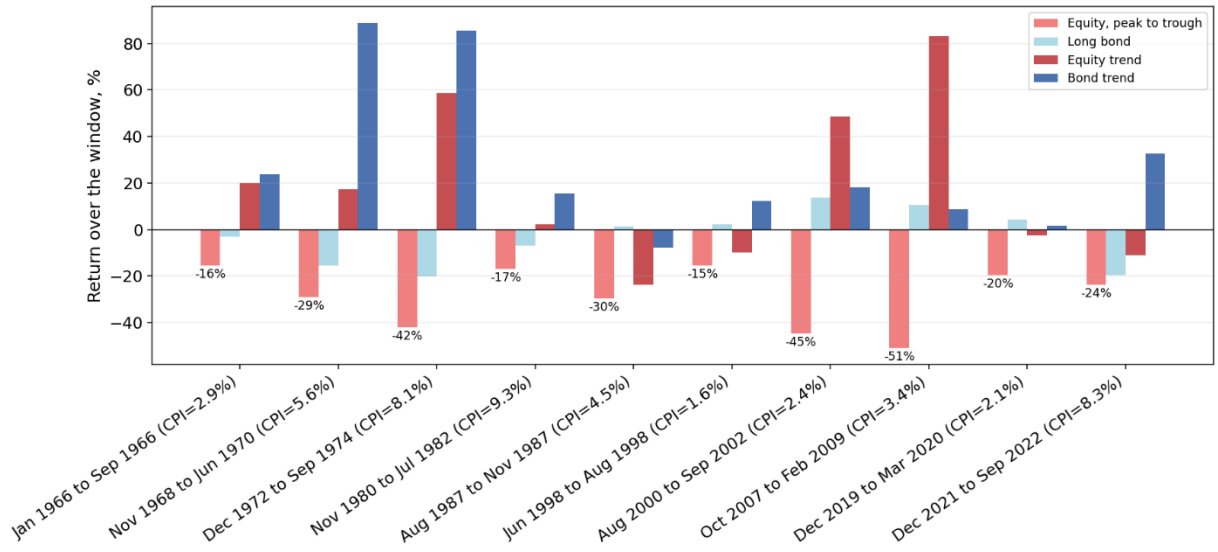


Figure 1: Performance of bonds, equity trends and bond trends during the ten worst US equity drawdowns. (1961-2026).

Can we explain why a long bond position was helpful in 2007 but not in 2021? Or why equity trend also performed poorly in the Ukraine crisis?

Long Only Bonds Protection is About Inflation

Bonds have provided *return convexity* historically, to equity drawdowns.

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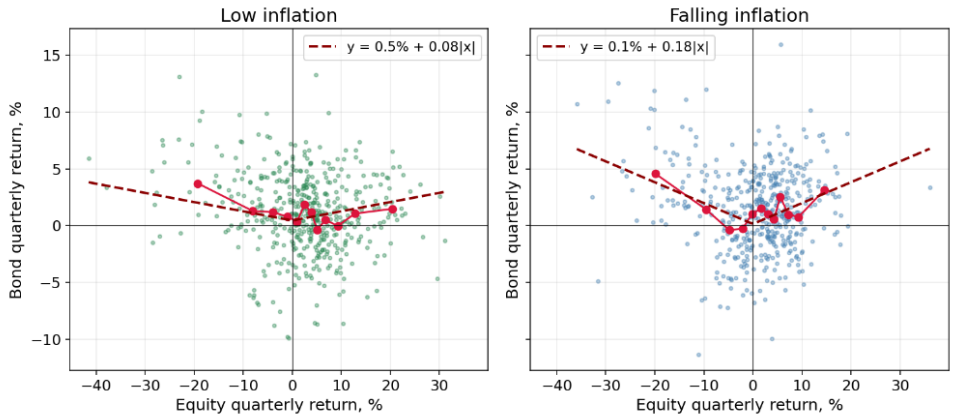


Figure 2: Bond convexity to equity returns: A 10% drop or rise in equity led, on average, to an additional rise of 0.8% or 1.8% in bonds during low/falling inflation regimes (1961-2026)

Bonds' *returns convexity* of ~0.15 is neither guaranteed nor very strong but is fairly consistent during low/falling inflation. However, during high inflation periods (and right now), return convexity has vanished. Even worse, bond-equity correlation has turned positive, so bonds also offer less diversification.

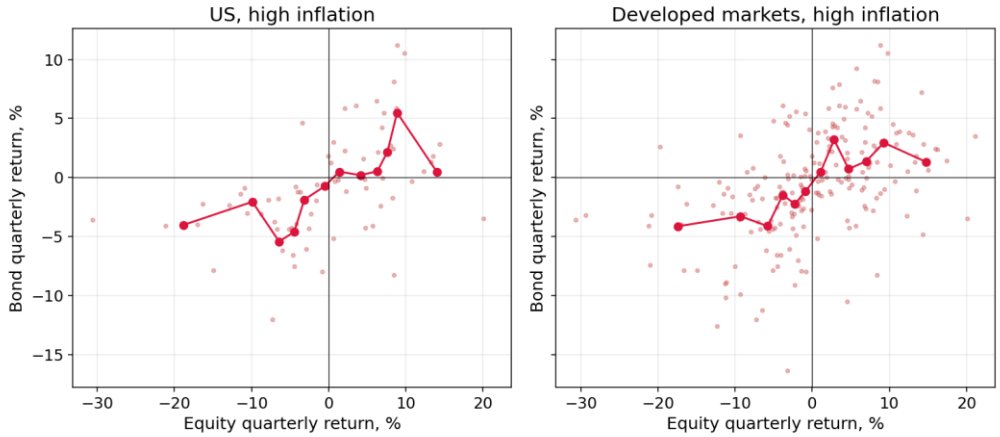


Figure 3: Bonds become positively correlated to equity in high inflation regimes. (1961-2026)

If we sort the crises by inflation, the picture becomes clear: during low inflation crises, bonds performed well, while during high inflation crises, bonds perform poorly.

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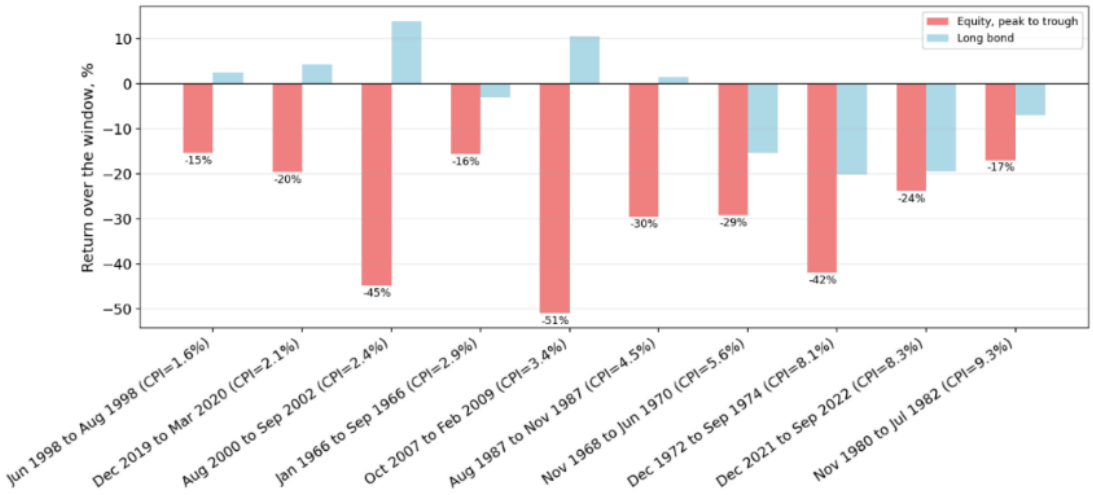


Figure 4: Equity crises and bond returns, sorted by inflation (1961- 2026)

Alas, equity drawdowns are more likely to occur during high inflation periods: your bond umbrella is likely to fail precisely when it is most likely to rain.

Equity Trend Protection is a Second Responder

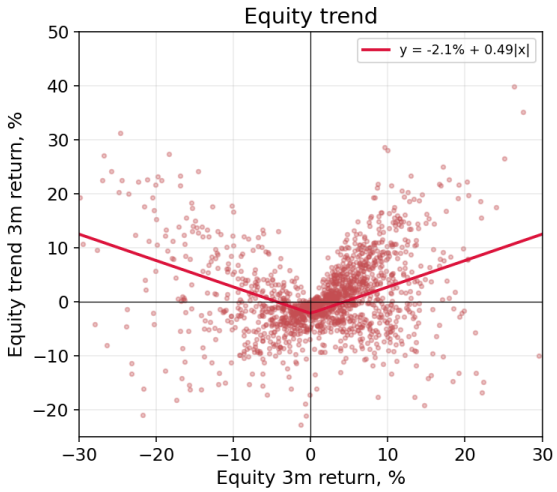


Figure 5: Equity trend's exposure convexity

Equity trend offers very good equity exposure convexity. A 15% mid-speed equity trend program has made, on average, an additional 0.5% for every 1% equity drop. That is very meaningful. This *exposure convexity* is structural to the strategy and 0.5 is fairly robust to the speed your CTA is running. The only thing you should be aware of is that it's unlikely to happen in the first quarter of a drawdown.

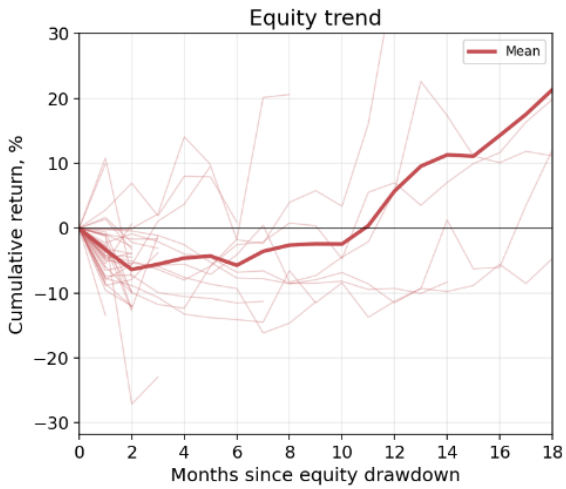


Figure 6: Average equity trend performance as a function of time from start of a drawdown (1961-2026)

Almost by definition, equity drawdowns follow peaks. Which means that trend is likely to be long when a drawdown begins. Initial performance for equity trend is inevitably poor as a CTA must adjust its equity exposure to a drawdown. But once it turns, it will provide meaningful protection. We can see that clearly if we sort historical crises based on their duration: Equity trend is most helpful during prolonged drawdowns.

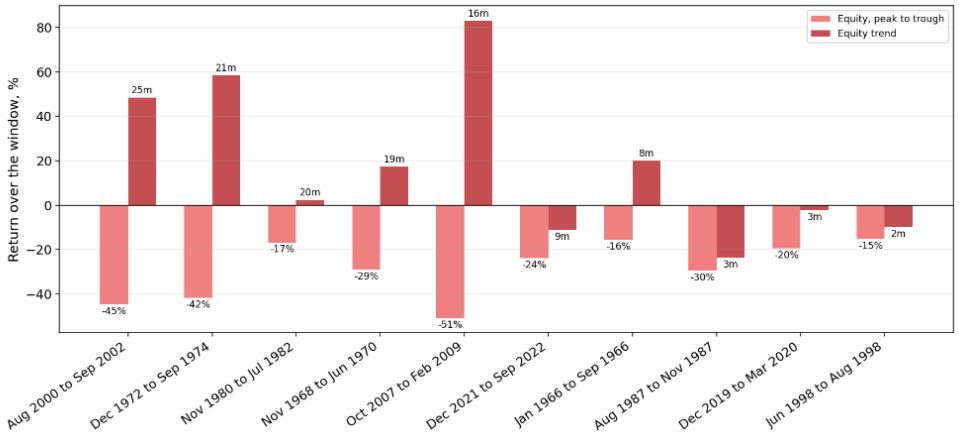


Figure 7: Equity crises and equity trend returns, sorted by length of crisis (1961-2026)

Bond Trend Protection is an All-Weather Generalist

Historically, bond trend offered *returns convexity* to equity drawdowns.

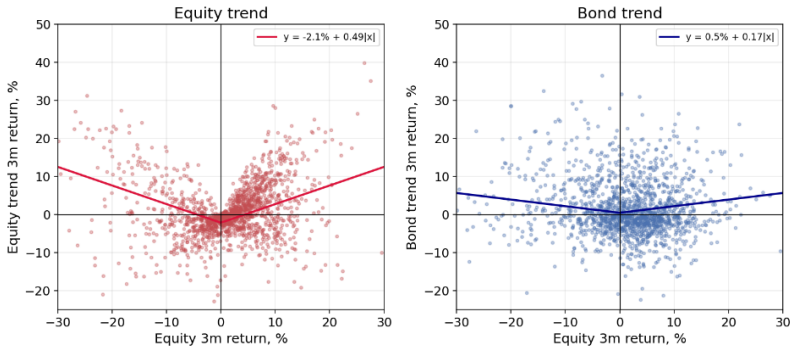


Figure 8: performance of equity trend (lhs) and bond trend (rhs) as a function of underlying moves in equity (1961-2026)

Equity exposure convexity is obviously stronger, but bond trend does offer some benefits:

- Bond trend's return convexity has been as strong as holding a long bond position (about 1.5% to 2% of performance for a 10% decline in equities)
- Bond trend's return convexity has been consistent across inflation regimes.

The latter observation is very interesting and is due to the fact that during higher inflation, the absolute correlation between bonds and equities increases, causing bond-trend to "track" equity markets better.

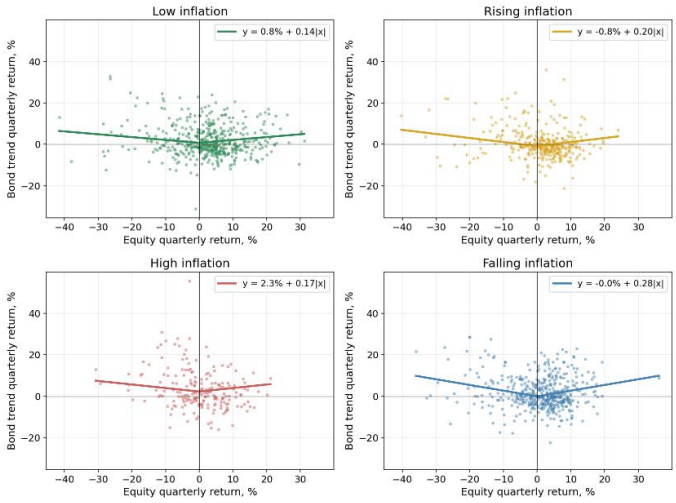


Figure 9: performance of bond trend as a function of underlying moves in equity in four inflationary regimes (1961-2026)

In past crises, absolute correlations tended to rise even further, making bond trend offer an even higher convexity.

Opinion Piece. Please see important disclosures in the endnotes.

Epilogue

Historically, CTAs have offered a two-layered defense: A “first responder” defense provided by its bond trend exposure sleeve, combined with a “second responder” exposure convexity provided by its equity trend sleeve.

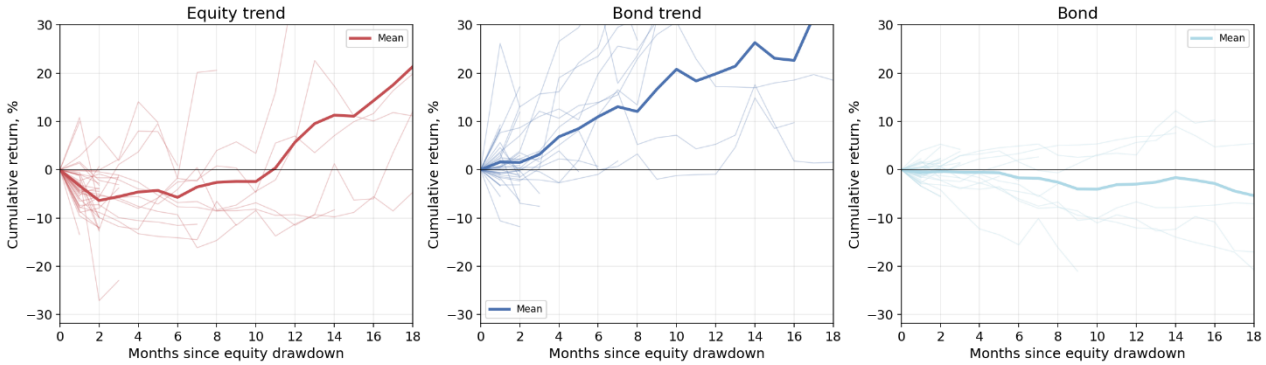


Figure 10: Average response to US equity drawdowns as a function of drawdown duration (1961-2026)

True crisis alpha is an overlay of multiple defensive moats. Each of them is likely to offer support at different times and in different macro environments. The composition of your defensive book should reflect what you expect the next equity drawdown to look like and where your current vulnerabilities are.

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