

Trend PLUS Indicator

Introduction

The Trend PLUS Indicator (TPI) was developed to act as an agile risk overlay, helping preserve portfolios more quickly when markets are trending lower while still acting quickly to reinvest when markets appear to be recovering higher.

With markets seemingly moving faster than ever as technology advances and individuals receive more access to data, we wanted to create an indicator that could be more truly flexible to the ever-changing investment landscape.

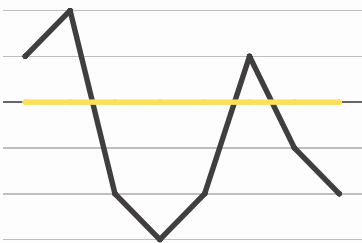
How Does Trend PLUS Work?

TPI uses a proprietary indicator that looks at various market data points to make sell / buy decisions. Specifically, the indicator analyzes broad stock market price data on a daily basis to determine the overall direction of equity markets.

By combining short, intermediate, and longer-term time frames, TPI uses price action to determine whether it should be fully invested or hedged on any given day.

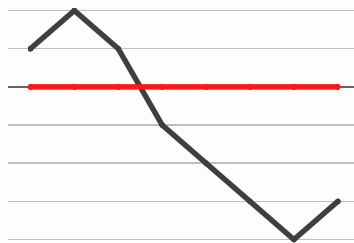
To do this, it looks at a few different thresholds:

Warning 1



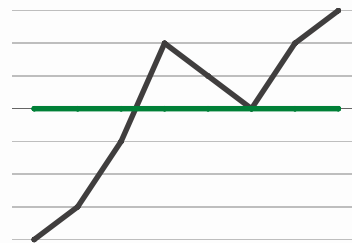
When TPI drops below the first warning level, it reduces market exposure by moving 1/3 to cash-like-securities

Warning 2



When TPI drops below the second warning level, it further reduces market exposure by moving another 1/3 to cash-like-securities (for 2/3 total)

Positive



When TPI rises above the positive threshold, it will reinvest 100% of the portfolio back into markets

Design Rationale

There are three general types of market direction:

- **Bull markets:** when market prices are consistently and definitively rising.
- **Bear markets:** when market prices are consistently and definitively falling.
- **Sideways markets:** when market prices have no clear direction, rising and falling at various times in relatively short order (getting whipsawed).

While it can be easy to classify the direction of markets in hindsight, doing so in real time presents its challenges. Various market environments can have similarities, but each period of time is unique.

There is no perfect indicator that will work 100% of the time during each type of market (bull, bear, sideways).

In our experience:

- **Shorter-term indicators** tend to react quicker during a sharp downturn or bear market and often help get reinvested quicker during a new bull market or a v-shaped recovery. In some instances this can seem like a saving grace, but there are often large amounts of false signals along the way resulting in portfolio erosion.
- **Longer-term indicators** help avoid these false rallies during a bear market, but may not react quickly enough if markets move sharply lower. Additionally, they may miss a significant portion of a new bull market or get whipsawed when there are v-shaped recoveries.

For these reasons, both longer and shorter-term indicators on their own generally lag as there are bound to be some false signals along the way.

Understanding this, the goal was to develop an indicator that used the best of each scenario while avoiding the pitfalls as much as possible. TPI was designed to have the ability to quickly move to a hedged position when trends appear unfavorable. While the indicator will exercise patience when appropriate, it also maintains the ability to reinvest relatively quickly if market conditions change direction with little notice.

Furthermore, keeping the hedge to a maximum of 2/3 to cash or cash-like securities ensures there is always a small portion exposed to the markets. This can help protect against the negative whipsaw impact sideways markets can have on a portfolio, while still achieving a large impact on downside risk if markets were to fall deeper into bear territory.

How We Use TPI

We have overlaid the Trend PLUS Indicator to create a couple additional options to our core lineup. As mentioned above, TPI will have false signals as there is no perfect predictor of market movements. Thus resulting in a lag compared to markets at times.

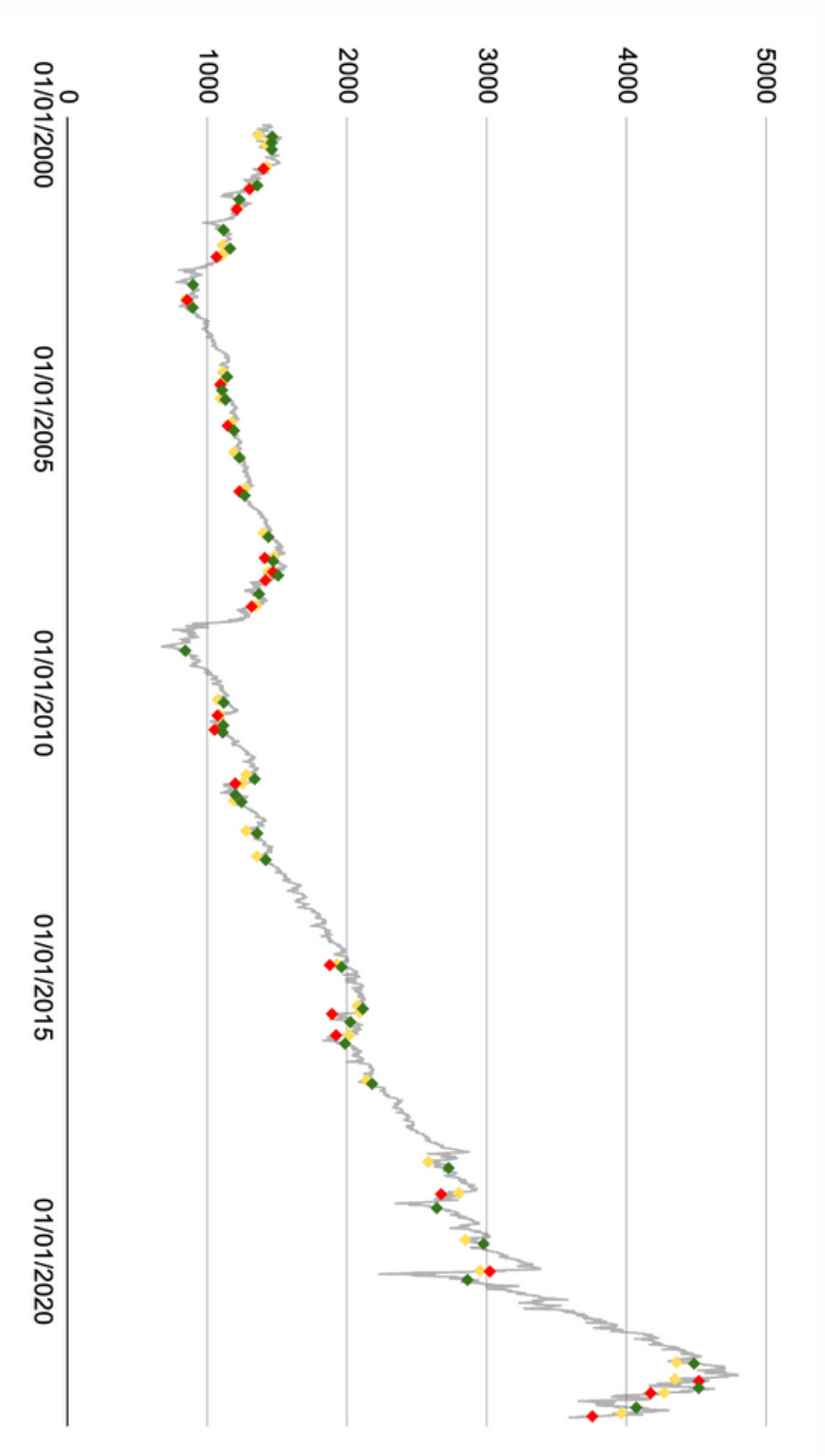
However, for clients who are risk averse and want to focus more on portfolio preservation (and who are comfortable sacrificing some of the upside during a bull market for the potential to hedge risk more quickly), Trend PLUS can help achieve this goal.

As shown in the graph on the next page, the TPI can help manage volatility and downside risk during periods of market stress and uncertainty. Specifically, the indicator aims to reduce drawdowns in periods such as the

- 2000 - 2002 dot-com-bubble
- 2008 financial crisis
- 2020 pandemic
- 2022 inflationary bear market

The indicator also maintains the ability to help mitigate volatility in v-shaped markets (such as 2011, 2015, and 2018), with a relatively quick reentry trigger to help minimize the negative impact of fast-moving markets.

Trend Plus Indicator In Practice



All data illustrated is hypothetical (the data does not represent actual client accounts) and is provided for informational purposes only, with the purpose to illustrate how the indicator may have acted during various past market environments using the S&P 500 Index as a market proxy.

The information presented is not investment advice - it is for educational purposes only and is not an offer or solicitation for the sale or purchase of any securities or investment advisory services. Investments involve risk and are not guaranteed. Be sure to consult with a qualified financial adviser when making investment decisions.

Trend Plus Indicator Trigger Dates

 **Warning 1 (1/3 Hedge)**

 **Warning 2 (2/3 Hedge)**

 **Positive (Reinvest)**

3/8/2000	-	3/17/2000
4/18/2000	-	4/26/2000
5/12/2000	-	6/8/2000
9/26/2000	10/9/2000	1/25/2001
2/9/2001	2/16/2001	4/25/2001
6/15/2001	6/27/2001	11/7/2001
2/11/2002	-	3/6/2002
4/12/2002	4/29/2002	10/25/2002
1/27/2003	1/31/2003	3/21/2003
5/6/2004	-	6/8/2004
7/16/2004	7/27/2004	9/1/2004
10/25/2004	-	11/2/2004
3/28/2005	4/18/2005	5/19/2005
10/6/2005	-	11/10/2005
5/25/2006	6/14/2006	7/10/2006
3/9/2007	-	4/3/2007
8/7/2007	8/16/2007	9/5/2007
11/12/2007	11/14/2007	12/6/2007
-	1/7/2008	4/4/2008
6/17/2008	6/23/2008	4/3/2009
2/12/2010	-	3/2/2010
5/21/2010	5/24/2010	7/27/2010
8/16/2010	8/24/2010	9/10/2010
6/8/2011	-	7/6/2011
8/2/2011	8/4/2011	10/17/2011
11/21/2011	-	12/1/2011
6/4/2012	-	6/19/2012
11/14/2012	-	12/7/2012
10/9/2014	10/14/2014	10/27/2014
7/2/2015	-	7/22/2015
8/14/2015	8/25/2015	10/15/2015
1/5/2016	1/8/2016	3/2/2016
10/21/2016	-	11/15/2016

Trend Plus Indicator Trigger Dates



Warning 1 (1/3 Hedge)



Warning 2 (2/3 Hedge)



Positive (Reinvest)

4/2/2018	-	5/11/2018
10/18/2018	10/25/2018	1/23/2019
8/15/2019	-	9/9/2019
2/28/2020	3/5/2020	4/28/2020
10/11/2021	-	10/18/2021
1/26/2022	2/8/2022	3/24/2022
4/22/2022	4/26/2022	7/28/2022
9/1/2022	9/22/2022	11/11/2022

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