



Not Risk Parity Funds

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After an extended period of extreme calm, the world's stock markets have gotten fairly messy. The source of such a market disruption is rarely revealed, but we can reveal what it wasn't. It might not make for very satisfying reading, as most people prefer an actual answer to a this-isn't-the-answer answer. But, given how many wrong answers have been put forward, we think it's pretty important.

In a February 5 Bloomberg story¹ on the market rout, the very first sentence, in its entirety, was "Risk parity funds." We infer the phrase "full stop" was implied. A more accurate start would have been "Not risk parity funds," as we believe risk parity funds have traded very little during this recent downturn. Furthermore, if in the coming days or weeks, risk parity funds were to trade more than they have so far, perhaps because of persistently high volatility, their trading volumes would have little impact on stock market prices. Why? Because they are just not that big and don't trade as much as many seem to think.

We believe that risk parity strategies in aggregate hold about \$70 billion of global equities,² maybe even less, mostly in the form of index futures. We think it is very unlikely that more than a small fraction of that would be sold, even if very high volatility continues for a while. With their total equity holdings summing to only about 10% of one day's global market volume,³ it would be difficult to imagine risk parity managers ever selling more than a low single-digit percentage of a day's volume even if they went mad; they just don't hold enough stock.

The reason you hear about "potential selling from risk parity" and have to read a [rebuttal](#) from us every time market volatility rises is because a few years ago some bank analysts made a series of estimation errors that overstated risk parity market size, overstated the weight of equities in risk parity, and overestimated the responsiveness of risk parity positioning (how much they have to trade) to changes in market volatility. The combination of these three errors, all in the same direction, led to an exaggerated prediction of likely trading volume in a big downturn. Once a bad story gets out there, particularly one appealing to people's fears of "the machines" and other nasty things, it's very hard to stamp it out. There's a fascinating case study here on how a demonstrably false story became nearly ubiquitous - retold by pundits, politicians, investment managers, and the financial media. Estimating the realistic trading volumes and demonstrating they aren't shocking hasn't proven to be of nearly as much interest.

If risk parity isn't to blame, what about trend-following strategies? That's a little more interesting, but not a lot more interesting. Their AUM is somewhat smaller than it was a decade ago and is probably now about the same as risk parity AUM.⁴ Over time, the equity holdings of a trend-following strategy can vary a lot, potentially going from

¹ Sarah Ponczek, Elena Popina and Lu Wang, "Machines Had Their Fingerprints All Over a Dow Rout for the Ages." Bloomberg News, February 6, 2018.

² Based on AQR estimates of total risk parity industry assets and that risk parity managers hold about 40% notional exposure in equities. Risk parity assets under management are calculated by AQR and include all managers in the HFR Risk Parity Indices sourced from eVestment, Public Plan IQ, BarclayHedge, HFR, and AQR (for our assets only) and are as of 12/31/2017.

³ Trading volumes are estimated by averaging the daily trading volume, sourced from Bloomberg, for countries in the MSCI World Index in both cash and futures markets.

⁴ Trend following AUM is sourced from eVestment's estimate of Managed Futures assets as of 12/31/2017.



meaningfully long to meaningfully short, with positioning changes driven by changing risk estimates and changing market trends. The recent sell-off should certainly affect the strength and possibly the sign of some managers' equity signals (more so the ones of the managers who focus on the now negative shorter-term trends than the still positive longer term trends) and so will generate some trades. Given reasonable estimates of total equity exposure in these strategies and with some good understanding of the signal speed and trading approach of participants in this market, our expectation is that these trades also will be small in the context of equity markets. While very likely to be larger than risk parity trades, we believe that trend-following trades are also simply not going to be large enough to represent more than a single-digit percentage of any day's market volume. Adding them to risk parity trading demand, it's still just not that much.

Going beyond risk parity and trend-following, we also see fingers pointed at volatility-targeting strategies in general,⁵ which include volatility-targeting long-only equities and quantitative market-neutral equities. On the latter, these strategies are, as the name implies, market-neutral and any selling is matched by buying, so they shouldn't have broad market impact. In fact, during the infamous mass sale of these portfolios in early August of 2007, when their leverage was much higher than it is today, quantitative equity strategies were broadly unwound but the stock market was flat over the period. The market simply did not notice the quants' pain. That isn't surprising for market-neutral strategies, but sometimes press reports throw them on the list of suspects, too, probably just because quantitative equity managers also use a lot of computers. We, admittedly, know less about the scale of volatility-targeting long-only equity strategies and we understand there may have been some recent selling in them, as that's what volatility-targeting managers do when volatility goes up, but apparently it was, again, not meaningful in the context of the overall market.

The media and the analysts generally get the idea right, that risk parity and trend-following strategies tend to sell when volatility rises. But when it rises quickly, they are really selling after that spike, a distinction to perhaps explore another day. The issue is always one of magnitude and timing and people consistently get this part very wrong, usually by omitting the topic entirely. It takes an awful lot to move big global stock markets and the sizes and trading speed of risk parity and trend-following strategies just don't get you there. Yes, if they were 10x bigger we might join in the concern. But they aren't. So, no, we don't know what has caused the market sell-off, but we do know that, once again, it wasn't "the machines."⁶ Instead, we are inclined to blame those fickle humans who actually sometimes just change their mind about the right price to pay for stocks and, in the words of a famous fund manager, become the real ["hammer on the downside."](#)

⁵ It's a subject for another day, but some managers target volatility because it's an important risk management tool. Imagine the alternative, where funds, including those that employ modest leverage, don't target volatility, don't manage their risk as the market environment becomes hostile. Many feel it's better to manage exposures before portfolio risks rise to an inappropriate level.

⁶ Occam's razor would favor the simple explanation that inflation fears hit the stock and bond markets at the same time after a big run-up in stocks at high valuations combined with the simple fact that stocks are usually volatile with the last few years being uncommonly calm. But, we never feel too confident about what drives short-term market movements. All we really know is that John Pierpont Morgan was right, markets will fluctuate.



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