



WHITE PAPER

Differentiating the Historical Data Model

How Predictive Guesswork Harms Clients and Damages Fiduciaries



From time to time, it's important to take a step back from your work as a fiduciary and look at the real differences you're helping to make in the lives of your clients. Steering a portfolio through choppy waters is never just about keeping the numbers within a certain "acceptable" range; it's about the lives that are changed as a result of what happens with those numbers.

Helping clients make the right decisions, and staying invested even when there's uncertainty, can be the difference between a retiree who gets to enjoy their golden years by catching every grandchild's soccer game—or a retiree who got scared, missed the market rally, and now has to go to work on Saturday mornings.

The work that you do is the difference between a person who gets to have a comfortable retirement versus a person who has the chance to leave enough wealth behind for their children to create a generational shift in their family's trajectory.

The work you do as a fiduciary matters. And the technology that you use to accomplish that important work matters, too.

When your clients' future is on the line, you better get your risk modeling right. And the best way to avoid missing the mark is to leverage a math-based risk modeling platform that uses market data and historical time frames to help you set expectations with clients. When you don't rely solely on math, and you start to get into predictions about how a portfolio or its holdings will perform in the future, you get away from fiduciary advice and enter the territory of prognosticators.

And who lives in the realm of prognostication? Daytime talk show hosts. That ESPN personality that always seems to pick on your team and how bad their last draft went. The person at the county fair who you pay \$5 for a palm reading.

That's not the kind of company you want to keep as an advisor.

You shouldn't have to guess when you're recommending life-changing decisions to a client. And you shouldn't have to guess if your risk tolerance engine is giving you accurate data to work with, either.

In this white paper, we're going to look at the math behind Riskalyze and a few other risk analysis solutions on the market. The difference is clear when you look at the numbers:

Riskalyze avoids predictive guesswork. For some others, that's all they've got.

TWO WAYS TO APPROACH RISK

Platforms that model investment risk have two entirely different ways to approach a portfolio and its underlying holdings.

One method is what we use here at Riskalyze. We call it the Historical Data Model, and we've built ours upon the Risk Number® and its corresponding 95% Historical Range™. This model is what we use to illustrate risk, help you support client behavior throughout their investing lifecycle, and empower fearless investing.

The word "historical" here is what's really important. We use prices to build out our model, because we believe price is truth. It's an objective way to look at how a particular investment has performed over time.

We analyze risk at the individual security level, and roll that up to an account-level or portfolio-level analysis that paints a range of what's *normal* for a portfolio historically. When clients understand *why* they're invested as Risk Number 34, they've got the confidence to hang in there, even when markets are volatile.

Other solutions try a different approach. They're more interested in trying to forecast the future and make predictions about exactly how a portfolio will behave in a complex market.

We call the approach used by other risk platforms "Predictive Guesswork." As you may have guessed, it doesn't work.

Here's a split-view look at both approaches to risk so you can clearly see the differences, using data from the 2020 market crash.



Predictive Guesswork Model

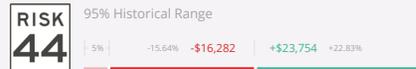
Make guesses about what will happen to a variety of factors in a complex market, and try to model the impact on a portfolio if those guesses are correct.

Approach to Stress Testing:

Here's what could happen to your portfolio as long as we're right about inflation, currency, the stock market, interest rates, oil prices, commodity prices, the impact of certain news events, a host of other assumptions, and the validity of the calculation under the hood.

Data Inputs:

Onus is on the advisor to guess a multitude of inputs, or trust the provider's guesses for how the factors might react.



Historical Data Model

Use objective data to calculate a range of historical probabilities for a portfolio, based on the actual risk in the underlying securities. Strenuously avoid subjective assumptions that can lead to guesswork.

Approach to Stress Testing:

Let's use historical data to look at your current portfolio through the lens of the 2008 bear market and see how the math says it would have behaved then.

Let's use a previous interest rate hike to see how the math says your portfolio would have behaved in that kind of environment.

Data Inputs:

Market data feeds historical scenarios to objectively paint a more stable and accurate picture of markets over the long term.

Methodology Outputs:

Somewhat of a black box.

What Happened in 2020:

One tool predicts the S&P 500 would fall by 36%.

The S&P 500 actually ended 2020 up 22%³.

Outcome:

Forecasting market downturns is akin to flashing a red, neon SELL sign in front of clients, and then asking them to remain calm.

Clients who sold at the bottom of the pandemic crash missed the incredible snap-back that allowed markets to recover and generate substantial return during the rest of 2020.

Value to Advisors:

Fearful clients focused on speculation.

Incentivizing the wrong behaviors.

Flawed software discounted to “free.”

Methodology Outputs:

Discussed extensively at

riskalyze.com/methodology and in a decade worth of [white papers](#)¹ and [knowledge base articles](#)².

What Happened in 2020:

Riskalyze's 95% Historical Range™ illustrated the historical likelihood of upside and downside within six months, and a reminder that there are 5% probability events that can create additional downside risk.

Still, there was no measurable increase in client portfolios falling outside of the 95% Historical Range in any six month period, even if you cherry-pick the high point before the 2020 market crash.

Methodology Outputs:

The 95% Historical Range puts the best principles of behavioral finance to work by reminding clients that loss and gain are normal behaviors for their portfolio, and reminding them of the long-term wisdom of their advisor's recommendation.

The clients supported by solid risk analytics who stayed fearlessly invested enjoyed substantial risk-adjusted returns in 2020.

Value to Advisors:

Fearless clients invested for the long term.

Harnessing behavioral science to protect the advisor/client relationship.

Incredible [return on investment](#)⁴.

Risk tolerance platforms should reduce the liability of the fiduciaries they serve, but prognostication does exactly the opposite. Let's be clear: we're not just saying that it's dangerous to deploy this model in the off chance that it produces the wrong outcome, we're saying it's dangerous because it repeatedly *does* produce inaccurate outcomes time and time again.

The biggest problem with the Predictive Guesswork Model is that nobody has been able to get it right.

Not only is the Predictive Guesswork Model fundamentally flawed, the providers who use it are **wildly inaccurate**.

Let's shed some light on some of the biggest offenders.

In a March 2020 webinar, one tool shared a risk model that said the S&P 500 should be expected to drop 24.8% in the coming year, when in fact the S&P 500 returned a positive 22%, a difference of 47%. Another webinar predicted the S&P 500 would drop 36% in the coming year, a difference of 58%!

Even more disturbing? Despite being irresponsibly wrong in their analysis, they had the audacity to publish a whitepaper rewriting that history with cherry-picked timeframes claiming their prediction was a success.

Here's a table that illustrates the danger of the Predictive Guesswork Model. It's a sample portfolio they produced with eleven holdings they tried to predict in March 2020.

Prediction vs. Actual Return on Every Holding in the Sample Portfolio

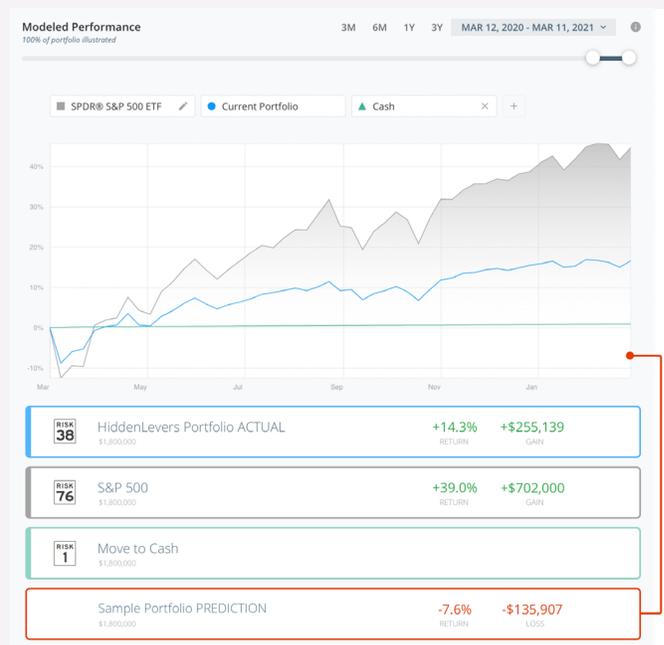
	Prediction	Return	Missed By
BEARX	+42.5%	-42.6%	85.1%
SWAN	-8.0%	+16.6	24.6%
FTRBX	-3.2%	+5.0%	8.2%
PTRX	-6.5%	-0.02%	6.5%
FCNTX	-25.1%	+50.4%	75.5%
DODGX	-25.8%	+74.7%	100.5%
TLT	+23.1%	-10.5%	33.6%
BSV	+0.5%	+2.5%	2.0%
ACWV	-13.4%	+25.8%	39.2%
SVAIX	-14.4%	+32.6	47.0%
XSHD	-14.4%	+58.7%	73.1%

March 12, 2020 - March 11, 2021

The fearful prognostication wasn't even close to what ended up occurring. Let's illustrate the delta between fearful investing and fearless investing using Modeled Performance in Riskalyze's **Detailed Portfolio Stats** feature.

The sample portfolio they predicted would be **-\$135,907** is actually a Risk 38 portfolio that ended up **+\$255,139** — that is — *if* the client didn't panic and sell.

Imagine this scenario...



You've dialed up a look into what the markets might do in the future with a stress test provider, and what you see is a big red sign that says "SELL." Even if you don't necessarily see it in those terms, it's highly likely that the average investor would see a \$135,907 loss in their portfolio as a trigger for a fearful investing decision.

Looking at the markets in this way doesn't build confidence in a financial plan, it does the opposite. No matter its intention, the Predictive Guesswork Model produces fearful investors.

The fairly conservative Risk Number 38 portfolio shown above demonstrates this much better. Here's how the conversation should've gone:

"As a reminder, you're a Risk Number 38, and historically, that's never beaten the market when things are up. When we say 'the market,' we're talking about the S&P 500, and that's a Risk Number 76. On the other hand, history tells us that a Risk Number 38 is going to lose a whole lot less than the market does overall when things are down. Are you still comfortable at a Risk Number 38?"

What would've transpired had that been the conversation? Well, you would've been right. There were just a few more days of volatility, and that portfolio held up compared to the S&P 500. The year to come saw a 14.3% return that — while it didn't beat the market — presents a staggering delta above what a fearful move to cash would've been.

And a move to cash at the bottom would've made sense if the data told you you'd be down 7.6% on March 11, 2021. We'd rather be the green line than the red dot, too.

But the delta between a fearful decision and a fearless one — over a quarter million dollars in this case — could ultimately have become the difference between an early retirement and a delayed one.

The Predictive Guesswork Model doesn't give the client a 95% Historical Range—they only get red numbers. That signal undermines the value of you as an advisor.

PREDICTING THE FUTURE IS A FOOL'S GAME

At Riskalyze, we stick to what we know best: math.

Unlike the different tools on the market, we just don't think there's any rational justification to say that you can futurecast portfolio performance by pulling the right ten levers on a calculation. The market demands a greater respect than that.

The ability to mash multiple doomsday scenarios together doesn't do much to help things, either. We all know what the fall of Rome looked like.

Some products claim to "crash test" portfolios effectively, but they will make you guess what will happen to:

- Inflation
- Currency
- The stock market
- Interest rates
- Oil prices
- Commodity Prices
- The impact of certain news events
- And the list goes on...

That's a lot of guesswork. But hey, if you pull *all* those toggles in just the right way, *some* of the analysis might be correct.

Then again, maybe not. Here's another one of these "crash tests" that played out in real life.

Another tool predicted that if oil were to drop 50%, that three different funds would therefore be down between 22% and 38%.

Then — rather inconveniently — oil actually *did* drop 50% shortly after. All three funds went **up**.

	Prediction	Return	Missed By
VIG	-22.0%	+4.0%	26.0%
DVY	-27.0%	+5.4%	32.4%
ABCAX	-38.0%	+7.5%	46.5%

50% Oil Drop (6/12/2014 - 1/2/2015)

Even if an advisor had been lucky enough to guess the price of oil correctly, this tool still would have gotten it completely wrong, all because of bad methodology.

So, what does sound methodology look like?

GETTING RISK RIGHT

Up to this point, we've spent a lot of time laying the case for why Predictive Guesswork is wrong. But it's equally important for you to understand what it means to get risk right.

We know that you can solve poor decisions and fight fear by introducing better behavior, and you introduce better behavior with objective, historical data. When you do that effectively, you empower clients to make fearless investing decisions that lead to positive long-term financial outcomes.

Getting risk right means that clients understand advice from the start. Communication becomes simple, because an advisor is sharing quantitative, truthful information instead of subjective predictions or old-school, generic terms like "You seem like a 'moderately aggressive' investor."

Get risk right, and client trust becomes so much easier to build and keep. It becomes the difference between a client who trusts the path they're on because their advisor has set expectations accurately, versus the client who always wants to chase their friend's "hot stock tip."

Get risk right, and always acting in a client's best interest becomes simple and easy to prove. Firms can demonstrate how they weave together portfolio risk with risk tolerance, risk capacity and the long-term plan. It's all connected, and none of it is based on faulty futuristic guesses.

There are three keys that illustrate the difference between the Riskalyze methodology for getting risk right and the Predictive Guesswork model that gets risk wrong.



Key One: Price is Truth

First, we believe that "price is truth." As you've seen in the example above, the worst abuses in financial advice come when we try to replace what the markets actually did with subjective assumptions and guesswork.

Respect for the markets means sticking to the truth of what the markets actually did with investments.

Because price is truth, that requires us to continually recalculate the Risk Number and all our analytics at the security level.

We reject the lazy approach that almost everyone else takes, which is to map every security to an asset allocation, and assume those securities will march in lock-step together.

History tells us that's not true—and that's why it's not possible to truly document best interests if you're doing risk at the asset allocation level. Because we've built all this sophistication under a simple and easy-to-use product, many advisors don't even fully understand the sophistication of what they're using every day.

We can deliver deep analytics because we're committed to doing risk right. We have a risk and methodology team dedicated to developing and refining our calculations in a way that nobody else even attempts.



Key Two: Data Selection is Critical

The second key to getting risk right is in how data selection is used. It's not just about what goes into the data calculation, though; it's also about what might get left out by some risk solutions.

Anytime you look at analytics, you need to know what data goes into calculating them. In the first key we looked at asset class vs. security level data. But what about timeframes?

Most use an arbitrary 1, 3, 5 or 10 year look-back period. And what do those date selections conveniently leave out? 2008!

Riskalyze purposefully uses a data set that includes 2008, because if you remember: volatility spiked tremendously, and all correlations went to 1.

We've seen it time and time again in evaluating the quality of our analytics—using the right data and ensuring that good, bad, and sideways markets are included will set you and your clients up for success instead of disappointment.



Key Three: We're With Math

Finally, competing approaches don't have a quantitative way to calculate an investor's appetite for risk.

Instead, they lean on arbitrary, outdated stereotypes based on the investor's age, time horizon, and market sentiment. Riskalyze uses an academically-validated objective approach, built on top of a [Nobel Prize-winning framework](#)⁵, and leveraging the real dollar amounts that your clients can relate to.

There are a small cohort of guesswork practitioners out there, primarily those who don't want their clients to understand the true risk in their portfolios, who attack the science of our approach and claim "it's impossible to get any true measurement of a client's risk tolerance."

We know that the opposite is true, of course. It is possible to get a true measurement of client risk tolerance. It's also true that it's possible to correctly set expectations and align investments with that risk tolerance, without relying on poor attempts at prognostication to do it.

It's all possible because if we rely on math-based decision making that bases risk tolerance on relevant dollars, and bases investment analysis on a Historical Data Model, we can operate in the realm of objective truth instead of subjective guesswork. That's the only type of work Riskalyze will ever do. It doesn't introduce additional liability onto the advice you provide, and it doesn't try to pinpoint future performance.

It simply gets risk right.

Math provides the solution for life-changing decisions.

The Historical Data Model of risk analysis is empowering tens of thousands of advisors to set better expectations with clients, grow their businesses by harnessing the curiosity of the Risk Number, and document their fiduciary care.

Visit [riskalyze.com](https://www.riskalyze.com) to get a full guided tour and see our bulletproof methodology in action.

¹ <https://www.riskalyze.com/whitepapers>

² <http://kb.riskalyze.com>

³ Actual results of the S&P 500 index for 2020.

⁴ <http://riskalyze.com/casestudies/up>

¹² <https://blog.riskalyze.com/riskalyze-101-what-is-prospect-theory>

Riskalyze is the company that invented the Risk Number®, which powers the world's first Risk Alignment Platform and was built on top of a Nobel Prize-winning academic framework. Advisors, broker-dealers, RIAs and asset managers use the Riskalyze platform to create alignment between clients and portfolios, leverage sophisticated analytics to increase the quality of their advice, automate trading and client account management, and access world-class models and research in the Riskalyze Partner Store — all with the mission of empowering the world to invest fearlessly. To learn more, visit [riskalyze.com](https://www.riskalyze.com).



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