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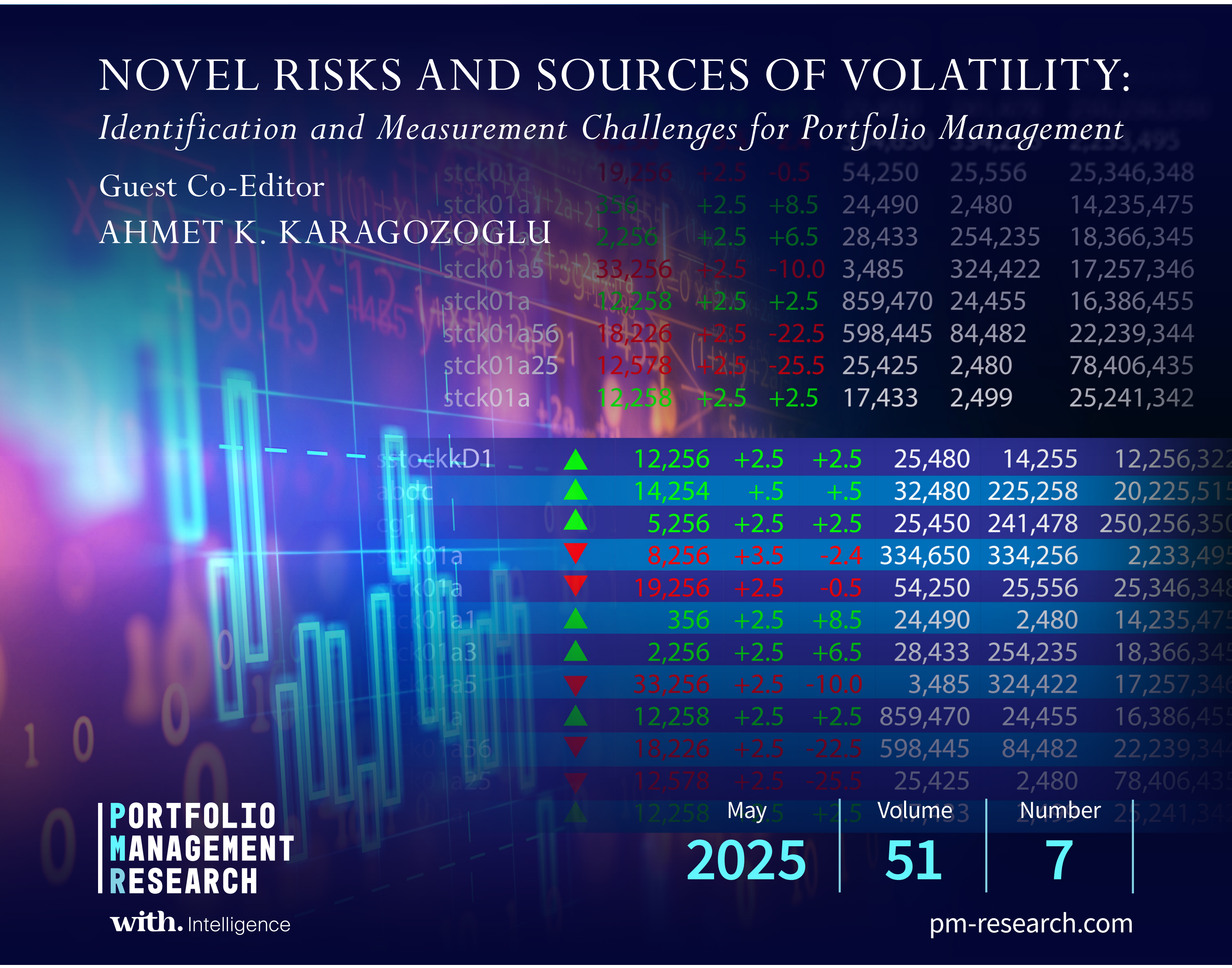

NOVEL RISKS AND SOURCES OF VOLATILITY:
Identification and Measurement Challenges for Portfolio Management

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Invesco

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Frank J. Fabozzi: What do you see as the most significant novel risks emerging in the current asset management landscape?

Arthur J. Leiz: The use of the term "novel" in your question has me thinking, if a risk isn't novel, is it "ordinary"? Generally, I don't tend to bucket risks such as "those are novel" and "these are ordinary." When a risk emerges, we've seen it in most cases, but it can emerge in a manner that we haven't seen. It's more about different manifestations of risks, rather than entirely new ones. I know what you're getting at, but I would characterize it slightly differently: what keeps me up at night?

Regulatory risk is always on my mind, both compliance with existing regulations and the risk associated with ever-evolving regulatory regimes. With respect to new regulations, even the best-intentioned rules, if not implemented carefully, can result in regulatory arbitrage, potentially stifle innovation, limit the availability of product choice, and ultimately hurt clients. That's why I believe in responsibly engaging with regulators and fostering an open dialogue.

ESG is also an area that needs to be considered. First, there's the reputational risk associated with ESG, which comes in several forms. One relates to regulatory risk, which results from the newness and evolving nature of the ESG regulatory landscape. The other is the risk that firms that take policy stances on ESG risk being out of sync with the views of some of their clients. On this point, I think large global asset managers should avoid taking policy positions on ESG. Their role is to create financial products that help clients achieve their objectives, whether they align with ESG principles or not.

Technology is another area of focus. It's imperative to stay ahead of technological advancements, including systems, data management, tooling, models, and, of course, artificial intelligence (AI), which has many aspects to consider.

Lastly, I'm worried about what I don't know, or what I am missing. I like to think we have the right approaches, techniques, tools, and models to manage the risks we're taking; however, the market isn't rational or predictable. There is a famous quote by John Maynard Keynes that I keep in the back of my mind, "Markets can remain irrational longer than you can remain solvent." I like this quote because as a risk manager, complacency is never acceptable. A risk manager needs to expect the unexpected, which includes irrational behavior. Throughout my career, I've heard people say, "That price has to revert" or "Don't worry, we've already experienced a four standard deviation event—it can't get any worse." Trust me. It can always get worse.

Fabozzi: To what extent do geopolitical risks contribute to portfolio volatility, and how do you account for them in your decision-making process?

Leiz: Geopolitical risk as a driver of portfolio volatility is one of those certainties in life, much like the inevitability of growing old. This isn't a new or emerging risk; it's a constant factor that must be considered. Now, you don't have to be a risk professional to recognize that we're currently living through a period of heightened geopolitical risk. These risks are not confined to isolated regions of the world; they are widespread and pronounced.

To manage these risks, it's first necessary to identify potential geopolitical risks, understand where portfolios are exposed to these risks, and assess the likelihood and potential impact if these risks should manifest. This involves scenario analysis.

Geopolitical risk assessments are part of a practical risk management framework. Prudent portfolio management involves diversifying investments to mitigate exposure to any single geopolitical event, monitoring global developments, and, of course, being prepared to adjust investment strategies as situations evolve. It isn't possible to avoid geopolitical risk, but seeking to mitigate the potential impact is possible.

Fabozzi: What role do behavioral factors, such as investor sentiment, play in driving volatility today compared to the past?

Leiz: Behavioral factors such as investor sentiment have always played an important role in markets. Investor sentiment is another way of characterizing a straightforward Economics 101 concept: supply and demand. Investor sentiment drives asset pricing and volatility yesterday, today, and in the future.

Information and the extent to which it is known across markets are always imperfect. Information can be widely dispersed, but how it is interpreted is another matter entirely. However, information asymmetry leads to pricing anomalies that could represent profitable opportunities for investors. What has changed is the speed at which information can be transmitted and the breadth and number of people who can receive that information.

A more recent variation of behavioral factors manifested in a manner we haven't seen before. I'm referring to the meme stock phenomena that occurred in January 2021. There were three factors that coincided in somewhat perfect unison and really contributed to certain single-stock volatility: 1) large short positions, 2) the advent of platforms that facilitate access to the market, and 3) the crowdsourcing of views.

For a risk manager, that was a very interesting time. Small short positions or underweights of a size that wouldn't warrant much attention in the past suddenly represented outsized risks. Risk management always requires adaptation, so my team had to get creative and harness multiple pieces of data and indicators to manage that specific risk. However, this is not exactly a new risk, but one that manifested differently. In the past, we would have called it cornering the market. At the time, we didn't know if this was a unique event or if it could persist. History now shows this wasn't a permanent situation or one that would become more widespread. Nevertheless, that risk still lurks beneath the surface, and it could certainly happen again.

Fabozzi: How has the integration of artificial intelligence and machine learning introduced new risks or mitigated existing ones in asset management?

Leiz: It's almost impossible to have a conversation these days without someone bringing up the topic of AI. So, I'm not surprised you're asking about it. This is an important question.

There is the Hollywood version of AI risk, like a rogue trading model causing a systemic meltdown. While this isn't impossible, it's not the first thing I think of when it comes to AI. One of the areas I tend to think about if there were any element of AI in models, is the importance of a robust model risk oversight framework. AI innovation, which seems to be moving at a breakneck pace, will require oversight to keep up. Specifically, good risk management involves having the ability to test model assumptions, both inputs and outputs, and ensure appropriate controls are in place. Retaining intuition—an understanding of what the variables represent, why they're included in a model, and how they might affect outcomes—is a key challenge here. Once you lose the intuition and the understanding of when or why models might fail, you open yourself up to failures in risk management.

A significant commercial risk related to AI is the danger of being left behind. The pace of AI innovation is incredibly rapid and firms that fail to adopt and integrate these technologies risk losing their competitive edge. This is also true in the field of risk management, where AI can increasingly be leveraged for enhanced predictive analysis, aiding in the creation of relevant scenario analysis and helping to identify emerging risks.

Finally, I would say that one of the most important aspects of AI to understand is that it relies on quantified data and collected information. AI will be able to do a great many wonderful things for us. However, there's a tremendous amount of important information across an economy or within capital markets that drives asset prices and risks that don't lend themselves to summarization, aggregation, or quantification. In that context, AI will become increasingly important in advancing risk management capabilities, but it should never be the only resource we rely on for risk management.

Fabozzi: Have you encountered liquidity-driven risks in recent years? If so, how have they been managed?

Leiz: Liquidity risk is an area that requires constant vigilance; it's almost always the one risk that "gets you." A long-only portfolio that holds assets that materially depreciate in a short period of time, while unfortunate and one that represents an awful client experience, is still a portfolio that will continue to exist—albeit at a lower value. However, take that same portfolio, and let's assume it allows daily redemptions, and because of that lousy client experience, redemptions occur. This isn't a problem if the assets are sufficiently liquid, but it is a big problem if that's not the case. That is liquidity risk.

Now, let's assume the asset manager identified that the portfolio holds illiquid assets and decided that an open-ended fund structure—one that allows daily redemptions and subscriptions—is inappropriate, so they made it a closed-end fund. The liquidity risk that we previously identified has been mitigated. However, if the manager decides to use leverage, we have liquidity risk again. Or, if the fund trades derivatives that require daily margin moves—again liquidity risk.

Liquidity risk is any liability an investment vehicle may face, specifically: 1) redemption risk, 2) risk associated with explicit leverage, and 3) cash event risk (a.k.a. margin risk), which all ties back to asset liquidity.

Have I encountered liquidity-driven risks? Yes, of course. A more recent event that stands out is March of 2020, at the onset of the COVID pandemic. Credit products in general saw a drop in liquidity as banks, acting as liquidity providers, saw their balance sheets fill up. The liquidity challenges were pronounced in the commercial paper (CP) markets, both in the primary and secondary markets and the Federal Reserve had to step in. CP secondary market illiquidity led to issues in funds that ordinarily wouldn't be at the top of your list of concerns.

How do I manage liquidity risks? The most effective approach I've found is to have a process and a plan. In terms of process, you need to think about managing liquidity risk at an investment product's different life cycle phases. Liquidity risk management starts before a product is even launched. It begins at the design phase. In terms of the plan, firms like Invesco operate in numerous jurisdictions and manage various investment vehicle types. Each place has different rules, constructs, and liquidity tools at your disposal. You need to know what those are and the waterfall tools you will deploy. I put that in a playbook that sits close at hand in my desk drawer. Lastly, you need early warning indicators and to constantly stress your assumptions.

You may have guessed that liquidity risk is a topic near and dear to my heart. I'm a recovering trader/market maker. My very first job in the risk field was in liquidity risk.

Fabozzi: How do novel asset classes, such as cryptocurrencies or private debt, contribute to overall portfolio risk and volatility?

Leiz: This is an interesting question. I wouldn't lump cryptocurrencies and private debt into the same category. I wouldn't say private debt, which is more commonly called private credit, is a novel asset class. It might be novel to some investors, but it's not new. It's been around for decades; there's just a lot more talk about it these days given investors' focus on alternatives. Invesco has been in the private credit business for 30+ years and has a longstanding and successful track record in managing vehicles that invest in the asset class.

That said, I believe what you're getting at is that there are certain characteristics to consider that may be different from other asset classes. As a risk manager, I always say, the details matter. Small things can become big problems. I like understanding the "plumbing" and what's happening beneath the surface. I use this approach regularly, whether for a new strategy or product or a new asset type in a fund.

I used this approach when considering the risks associated with cryptocurrency ETFs. Cryptocurrencies have some idiosyncrasies that are different from other asset classes, specifically settlement, custody and trading. By understanding the "plumbing," tracing the asset through its lifecycle, and understanding the details, you can identify new risks and put controls in place to mitigate those risks.

Fabozzi: What are the key risks associated with allocating to alternative investments like hedge funds or private equity?

Leiz: The risks associated with alternatives are very much the same that I would apply to public markets, specifically market, liquidity, and counterparty risk. Though I will note that alternatives and, more specifically, private market assets, do have heightened valuation risk. Private markets don't necessarily have the same price discovery and transaction transparency as public markets. Asset prices convey important valuation and risk information. Many investors don't appreciate the value of the regular and ongoing pricing information in public markets until a repricing event occurs for an asset that isn't priced regularly. Those repricing events can be pretty drastic, especially if prices have to catch up to ongoing risks that haven't been considered.

This is why investors should be cautious of marketing claims of lower correlations and lower risks when considering private market assets. The economic relationships between public and private assets don't disappear just because you don't mark-to-market regularly. A well-known Ayn Rand quote is relevant for private market investors, regardless of whether you love or hate Ayn Rand. That quote says: "You can avoid reality, but you cannot avoid the consequences of avoiding reality." Let's be clear: I believe that alternatives are an important asset class and deserve proper consideration in asset allocation decisions.

Now, there is another overarching risk that I didn't mention: manager selection risk. We know that alternatives, private credit, and private equity are in demand. A simple Google search will yield countless articles touting the benefits and encouraging the push into alternative markets. Invesco has been active in this space for decades, and I think we are very good at it. However, not everyone is. To meet this demand, asset managers and new firms are rushing into this space. While investor choice is increasing, the quality of those choices should be considered carefully. This means there's an increasing need for a robust due diligence process when selecting a manager.

Fabozzi: Are there specific risk management tools or methodologies you rely on for identifying and mitigating emerging risks?

Leiz: This question reminds me of a quote by Nobel laureate Dr. Albert Szent-Gyorgyi, who once said "Innovation is seeing what everybody has seen and thinking what nobody has thought." This perfectly encapsulates risk management and the quest to identify emerging risks before they've fully materialized. We use a combination of process, which I think is the more rigid side of risk management, and creativity, the innovative and analytical aspect that drives research and ultimately leads to potential insights.

I always tell my team that risk management is about not accepting the status quo: question everything. Look around corners, turn over rocks, and search for things no one sees. Don't just process data—interpret it and connect dots.

A widely used staple of risk management is stress testing. Stress testing exercises allow us to explore extreme but plausible market shocks and can help uncover unforeseen risks. By simulating adverse conditions, we can assess the resiliency and vulnerabilities of our portfolios.

Scenario analysis is another essential tool. The first step in scenario analysis is to construct the narrative that you want to test, which is usually a statement or series of statements. For example, you might want to understand the potential impact of an election on your portfolios. You could add a sticky inflation environment to the narrative if you wanted to test multiple variables. Constructing the market impacts to test your portfolios against can be challenging and requires a combination of art, experience, and skill.

Collaboration and communication are also key elements. Effective risk management cannot be done solely by sitting in front of a computer. It's essential to connect with investors and other market participants to hear about what they're saying and thinking about. This is where you might gain access to some of the critical risk information that isn't in the data or incorporated in risk models. There is much to learn from others, and engaging with diverse perspectives can provide valuable insights.

These methodologies, combined with a mindset of curiosity and questioning, a commitment to innovation, and forward thinking, are all critical aspects of staying ahead of emerging risks.

Disclosure

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