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Understanding Risks in a Global Multi-Asset Class Portfolio

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FACTSET

Institutional **Investor**

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Understanding Risks in a Global Multi-Asset Class Portfolio

Managing downside risks has never been more important – or more difficult – for money managers, advisors, and their institutional and retail clients. Careful analysis is necessary to understand the risks associated with daily transactions, multi-asset portfolios, and sudden market shocks known as “black swans.”

Risk management is a challenging task within a single asset class, such as fixed income, equities, or commodities. But the challenge is exponentially greater in a global multi-asset class portfolio, where security fundamentals, market conditions, asset correlations, and risk exposures can change daily.

Another key issue in multi-asset portfolios is risk transparency. Managers, advisors, and investors must understand how the risk budget

is being allocated among different strategies and investments so that exposures can be adjusted quickly if needed.

Drawing on its leading-edge analytic tools, robust technology platform, and deep experience in serving the financial market, FactSet has developed a Multi-Asset Class (MAC) risk model that helps users understand risk factors across different asset types and classes.

“Our risk model allows clients to analyze the implications of risk exposures at the security, asset type, asset class, and fund level,” says Bill McCoy, Vice President, Fixed Income Product Manager, FactSet. “It is also a powerful tool for stress testing to model the impact of world events on your portfolio.”

Here is a closer look at how FactSet’s innovative model is helping clients manage the risks in global multi-asset class portfolios. ■

Gathering Key Data from Global Inputs

Managers, advisors, and investors rely on timely, accurate risk data from inputs around the world to make intelligent decisions about current exposures, daily trades, and portfolio allocations. Recognizing the truth in the old saying “garbage in, garbage out,” they build partnerships with service providers who can consistently deliver reliable information in the right timeframe and technical format.

For FactSet, the process of delivering that wealth of information to clients begins with a highly sophisticated data system designed to capture timely inputs from equities, fixed income securities, commodities, currencies, returns-based assets, and derivatives on a global basis.

“We gather data from multiple markets around the world, including equity fundamentals, fixed income prices and terms, commodity prices, and many other factors, and bring it all together on our platform,” says Bill McCoy, Vice President, Fixed Income Product Manager, FactSet. In the fixed income segment alone, FactSet gathers and processes data on up to 5 million unique securities every night.

But gathering that securities data is just the first phase of the process. Managers, advisors, and their clients also need relevant benchmarks and analytic tools to help measure and assess levels of risk related to those assets. For instance, there may be 200-plus analytics associated with a single fixed income security.

McCoy notes that most multi-asset managers and investors assign an appropriate benchmark to each underlying strategy, such as global equities,

FactSet's platform integrates the following data flows:

- Major equity benchmarks including MSCI, S&P, FTSE, Russell, Dow Jones, and STOXX
- Major fixed income benchmarks including Barclays, Bank of America Merrill Lynch, JPMorgan, Citigroup, and iBoxx
- More than 230 highly liquid commodity indices, continuous futures contracts, ETFs, and commodity mutual funds

custodians around the world, creating multiple streams of data.

“We have a team dedicated to making sure those data flows from clients can be put into formats for immediate analysis,” adds McCoy. “We look at the timing

TIPS, or commodities. In addition to measuring performance, those benchmarks can also indicate changes in risk exposures – a key factor in the asset allocation process.

After gathering the risk-related benchmarks and analytics, the holdings and recent trades of investors are evaluated against the risk-related benchmarks and analytics that have been collected. “That’s the most relevant data,” says McCoy, noting that FactSet works closely with clients to set up those information flows. For example, some clients have single custodians who provide one data feed, while others use multiple

of those incoming data flows and when the client needs that information, then we make the computing power available so our team can complete the job in the desired time span.”

Finally, all the information must be provided to the decision maker in a clear, accurate and understandable format. As McCoy says, “We gather the data from the pipelines, merge it with the client’s holdings, and run our analytic tools so clients get the information in a timely manner. When yesterday’s information is on your desktop first thing the next morning, you can put our analysis to good use in that day’s trading.” ■

Video: Transforming Information Into Intelligence



Deploying an Effective Multi-Asset Risk Model

Institutional investors around the world are concerned about the “normal” risks associated with their assets as well as their tail risk, the small but not insignificant possibility of a “black swan” event that could devastate one or more asset classes. That’s why financial analysts have developed the concept of value at risk (VaR), which looks at the probability of a specified loss over a certain period of time.

Understanding VaR in a true multi-asset class framework is increasingly important for fund managers, advisors, and their clients. VaR, when used in conjunction with stress testing, forms the foundation of a complete risk management tool.

Louis Scott, Director, Head of Risk and Quant Research, FactSet, notes that portfolio risk modeling has come a long way since the global financial crisis of 2008. “We learned important lessons about how different asset classes react to systemic shocks,” he says. “There was a flight to quality and to safety, such as U.S. Treasuries and other sovereigns. We also saw that when high risk assets

are tanking, investors may decide not to play until the markets can regroup.”

Today, there are two widely used methods for assessing tail risk: the likelihood of a worst-case scenario and the minimum expected loss, according to Shamin Parikh, Vice President, Quantitative Analytics, FactSet. To construct either of these methods,

Scott advises of three approaches.

First is the historical method, which sorts a security’s daily or monthly outcomes from worst to best. However, this model assumes that history will repeat itself – which may or may not be true. There also may not be sufficient historical data on relatively new securities or derivatives for this approach to generate valid conclusions.

Next is the covariance approach, which uses historical data to estimate a standard normal curve that often underestimates the probability of “worst-case” returns. “While this model is often very useful, it may not provide the best assessment of risk when the markets are turbulent and moving in the same direction,” says Scott.

Finally, in many cases, the Monte Carlo approach can help analysts uncover outcomes and relationships that may occur in worst-case situations. By running multiple simulations using complex

The FactSet MAC model integrates equity, fixed income, currency, and commodity factor models to provide a full view of risk distribution at the asset level. It includes:

- Monte Carlo simulation combined with asset re-pricing for greater accuracy
- 40+ yield curves described by 17 key rate durations to span the global fixed income universe
- Spread modeling, including four orders of sensitivities for more accurate pricing at the tails of the distribution
- Full distribution of returns to derive statistics such as tracking error, expected tail loss, and skew

algorithms, the Monte Carlo method can generate tail risk probabilities for many types of investment situations that are possible but may not have ever occurred, says Parikh.

“We can create random innovations on a set of factors and do that thousands of times with the Monte Carlo approach,” says Scott. “We can also use our stress testing methodology to overweight the recent history or look at select time periods, such as the dates around oil price shocks. Then we can resample the data and create random events that look similar to those scenarios. It’s a great tool for understanding risk exposures within a MAC portfolio.” ■

The model allows detailed analysis of risk distribution at the sector and asset level.

	Absolute Risk		Relative Risk						
	FactSet Multi-Asset Class Model (USD)		FactSet Multi-Asset Class Model						
	Port. Weight	Bench. Weight	Active Weight	Standalone					
Total	100.00	100.00	--	3.49	4.43	--	3.49	1.07	0.61
Equity	60.02	40.00	20.02	3.36	4.16	0.06	5.57	0.94	0.05
Consumer Discretionary	8.61	4.08	3.63	0.42	0.52	0.05	5.17	0.11	0.03
Consumer Staples	2.08	3.92	-1.84	0.10	0.13	0.05	5.48	-0.02	-0.01
Energy	2.34	3.25	-0.91	0.16	0.20	0.07	9.75	-0.01	-0.01
Financials	13.94	6.40	7.53	0.72	0.88	0.05	5.33	0.26	0.03
Health Care	8.15	5.00	3.15	0.29	0.36	0.05	5.48	0.04	0.15
Industrials	9.41	4.13	5.29	0.59	0.73	0.06	6.37	0.22	0.04
Information Technology	10.59	7.97	2.62	0.70	0.88	0.07	7.03	0.20	0.08
Materials	4.13	1.31	2.82	0.25	0.31	0.06	6.21	0.09	0.03
Telecommunication Services	0.19	0.93	-0.74	0.01	0.02	0.07	8.99	-0.01	-0.01
Utilities	2.55	1.20	1.35	0.12	0.14	0.05	5.81	0.04	0.03
[Unassigned]	0.02	--	0.02	-0.00	-0.00	-0.01	9.61	-0.00	-0.02
Fixed Income	39.98	60.00	-20.02	0.13	0.27	0.00	1.20	0.14	0.01
ABS	--	2.03	-2.03	--	--	--	--	--	0.00
Agency	0.14	0.80	-0.66	0.00	0.00	0.00	1.25	0.01	0.01
Financial Institutions	4.73	4.88	-0.15	0.02	0.03	0.00	1.24	0.00	0.00
Industrial	33.14	35.16	-2.02	0.11	0.22	0.00	1.21	0.00	0.00
Local Authority	--	0.09	-0.09	--	--	--	--	0.00	0.01
MBS Passthrough	--	5.07	-5.07	--	--	--	--	0.04	0.01
Sovereign	--	0.10	-0.10	--	--	--	--	0.00	0.01
Supranational	--	0.11	-0.11	--	--	--	--	0.00	0.00
Treasury	--	10.21	-10.21	--	--	--	--	0.09	0.01
Utility	1.45	1.55	-0.09	0.00	0.01	0.00	1.80	0.00	0.01
[Unassigned]	0.51	--	0.51	0.00	0.00	0.00	1.51	-0.00	-0.00

Turning Data and Analytics into Insights

A high-yield credit investor needed analytical data about how the energy-sensitive securities in her portfolio would respond to the recent decline in oil prices. An emerging markets equities fund manager wanted information to assess the risk of a downturn in China's economy. A hedge fund analyst wanted to understand the risks associated with potential tactical strategies related to the European market.

In these types of situations, managers, advisors, and investors rely on service providers who can turn data and analytics into timely insights that can give them a competitive advantage in volatile financial markets. Understanding the sensitivity of securities to market changes, creating custom benchmarks, or reviewing time-series analysis can play an important role in the decision process.

As Bill McCoy, Vice President, Fixed Income Product Manager, FactSet, says, "Managers want to see timely measures of risk on their assets, so they can keep their portfolios on a desired trajectory."



For example, a short- or long-duration manager appreciates the ability to drill down and decompose risk reports for clients. A manager who has been given a certain risk mandate can see how those risks are trending over time, providing opportunities to adjust the portfolio, says Shamin Parikh, Vice President, Quantitative Analytics, FactSet.

“Clear analytic reports help managers and investors understand their exposures

to factor and systemic shocks,” Parikh

adds. “With our platform, you can

include any type of risk statistics for

different time series at the asset or

portfolio level. It’s a versatile analytic

platform with true global coverage.”

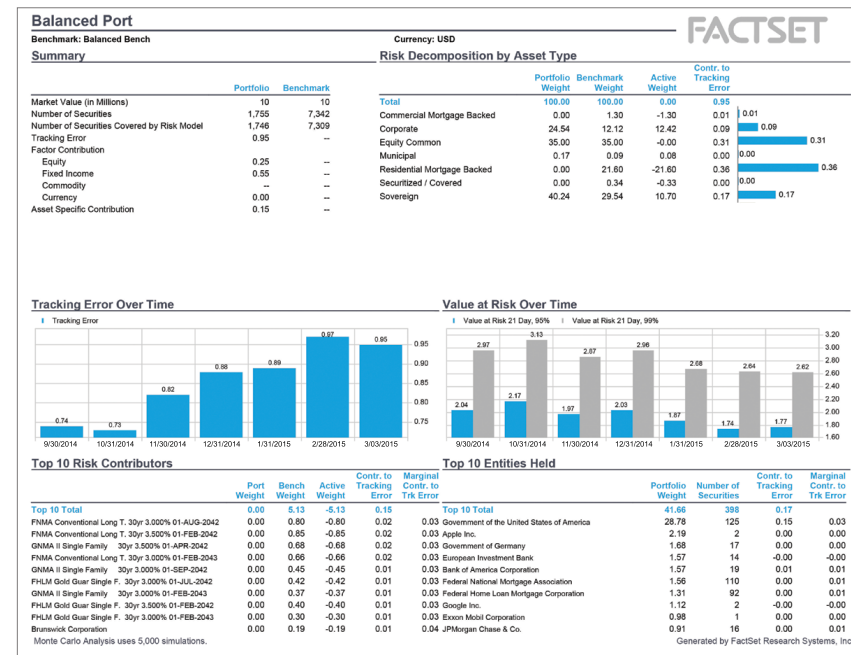
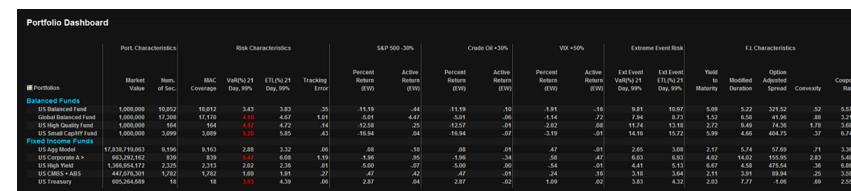
For example, FactSet provides clients with a comprehensive and configurable report that communicates the key risk characteristics of the portfolio. “We sit down with our clients and fully customize a report for their specific needs,” he says.

Viviana Vieli, Portfolio Analytics Specialist, FactSet, says managers and investors benefit from reports that provide both an overall view of the

portfolio and the ability to examine the granular results.

“You can change the forecast horizon, adjust the confidence level, and drill down into specific factors,” she adds. “Investors appreciate the flexibility of being able to create any report they want within a stable solution that does not change over time. Our model also shows managers how the numbers were derived, so they can use the same tools to explain the findings to their end users.” ■

Portfolio analysis is presented in a multi-portfolio view and as a custom, presentation-ready PDF.



Going Beyond Numbers To Predict Trading Risk

Today, a multi-asset class (MAC) risk model is far more than a tool for reporting risk numbers. It allows managers, advisors, and investors to analyze the implications of potential trades at the security, asset type, asset class, and fund level. It can also indicate predictive risks in a variety of markets and assess the impact of any shock on equities, bonds, commodities, and currencies simultaneously.

“Our risk model opens stress testing up to a new range of asset classes,” says Bill McCoy, Vice President, Fixed Income Product Manager, FactSet. “You can sample shocks from a variety of markets and assess the impact of any shock on equities, bonds, commodities, and currencies simultaneously.”

Noting that FactSet’s background as a data gathering and data delivery company gives its experienced research team a wide view of the global markets, McCoy says, “We have the internal knowledge base to understand the informational needs of our clients. At the same time we have the technology – the data, the model, and the output – to deliver powerful analytics in a timely fashion. That’s why clients around the world are benefiting from the FactSet advantage.” ■

About FactSet

FactSet helps the world's best investment professionals outperform. For more than 35 years, financial professionals have relied on FactSet's streamlined solutions and unmatched client support to get their jobs done, better. FactSet's global datasets, powerful analytics, and comprehensive data feeds let users stay ahead of market trends, access extensive company and industry intelligence, and monitor performance of their equity and fixed income portfolios in the office or on the go. Headquartered in Norwalk, Connecticut, FactSet conducts operations with over 6,900 employees in 35 global office locations. Learn more at FactSet.com, and follow us on Twitter @FactSet.

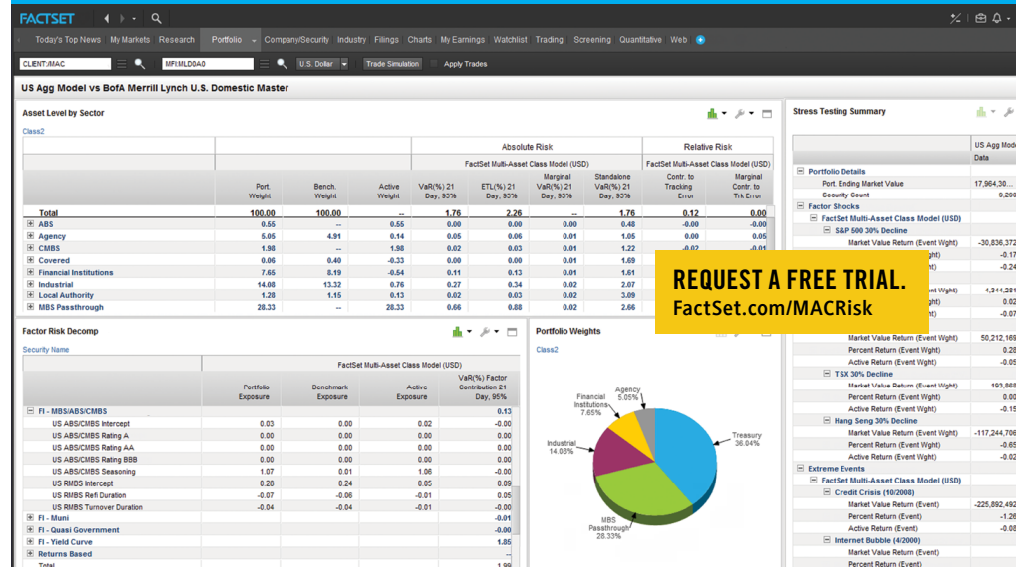
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Portfolio managers need the right tools to stay on top of the changing financial landscape. That's why more than 92% of the largest asset management firms in the U.S. use FactSet to analyze performance, markets, and risk. Gain alpha with a system that combines the best in portfolio analysis with the best in research tools.

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