**Global Multi-Asset Model: A Factor-based Methodology**

iCapital Architect uses a proprietary global multi-asset risk model (“GMAM”) to simulate portfolio returns. The Global Multi-Asset Model Methodology is premised on several assumptions and has certain inherent limitations.  See **Key Assumptions and Limitations** below for further information.

The GMAM risk model is grounded in well-established traditional academic research, modern quantitative techniques, and industry application. GMAM’s methodology is a Bayesian-based, probabilistic regression model that estimates returns of assets and portfolios using statistical methods.

**About GMAM**

The GMAM risk model analyzes the co-movement between the hypothetical performance of a user’s uploaded or selected portfolio and a set of factors, which are constructed from public market data, including third-party indices and/or baskets. GMAM leverages a framework of 13 factors that capture equity, fixed income, alternative, and other market exposures (see Table 1). GMAM presents a historical analysis of the correlation between the actual performance of the individual assets in the user's uploaded or selected portfolio and that of a set of explanatory factors through a regression. Using this regression, the model estimates the sensitivity or exposure of the asset or group of assets in a portfolio to the different factors to allow users to identify potential sources of risk and return. Using these computed factor exposures and the performance history of the factors, GMAM simulates how an asset or portfolio might have performed historically. The result of this methodology is a simulated return for portfolios that include many different types of investment vehicles, including, but not limited to, Traditional Assets (equity and fixed income instruments, ETFs, and open-end registered investment companies) and Alt Funds (closed-end registered investment companies, business development companies, or any investment fund that is exempt from registration (e.g., hedge funds, private capital funds, and private equity funds); it is not available for structured investments.

In addition to the factors, GMAM’s model considers outside information, in the form of priors, to refine and improve the model through machine learning. Priors in Bayes’ rule are the initial beliefs or assumptions about the parameters of interest before observing any data. In GMAM, priors may include subjective beliefs formed from fund due diligence about hypothetical performance. This process is rooted in Bayes' rule - a fundamental principle of probability theory that describes how to update our beliefs about an event based on new information. GMAM also accounts for assets with complex performance reporting structures, such as private capital funds. Returns for private capital funds are reported retroactively (e.g., quarterly and the returns may reflect valuations from the previous quarter) and are typically smoothed returns (i.e., less volatile than real-time reporting because the delay in reporting reduces the impact of economic factors on the valuation of assets). GMAM accounts for these return characteristics in the model to potentially generate accurate simulated returns.

The following table outlines the indices iCapital Architect uses to calculate the actual performance of each factor in this analysis.

Table 1

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| Factor Name | Index |
| Alt Commodities | Bloomberg Commodity Index |
| Alt HF Crowding | *Difference Between:*  Barclays Form 13 Filing;  Russell 3000 Total Return Index |
| Alt Oil | *Average of:*  Middle East Crude Oil;  WTI Crude Oil;  Brent Crude Oil |
| Alt Trend | Credit Suisse Managed Futures Index |
| Emerging Markets | *Difference Between:*  MSCI Emerging Markets Index (PR);  MSCI ACWI (PR) |
| Equity Market | MSCI ACWI (TR) |
| Equity Momentum | *Difference Between:*  MSCI ACWI Momentum NR USD;  MSCI ACWI IMI |
| Equity Quality | *Difference Between:*  MSCI ACWI Quality NR USD;  MSCI ACWI IMI |
| Equity SmallCap | *Difference Between:*  S&P BMI Global Small-cap PR;  S&P Global Broad Market PR |
| Equity Value | *Difference Between:*  S&P BMI Global Value PR;  S&P Global Broad Market PR |
| Fixed Credit | *Difference Between:*  Bloomberg US Corporate High Yield Index;  Bloomberg Barclays US Aggregate Bond Index |
| Fixed Duration | Bloomberg U.S. Treasury: 7-10 Year Total Return Index Value Unhedged |
| US Dollar | US Dollar Index |

**Types of Returns**

GMAM uses two types of returns: reported returns and factor-based returns.

* Reported Returns are calculated using reported historical returns of the holdings in a financial professional’s uploaded or selected portfolio. If an asset is available on the iCapital platform, reported returns are presented net of all fees and expenses. If an asset is not available on the iCapital platform, the user is responsible for uploading reported returns and it is therefore the user’s decision whether to upload reported returns net of fees and expenses.
* Factor-based Returns are generated using GMAM. This type of return is calculated based on the co-movement between reported returns of an asset or portfolio of assets and the historical values of the factors selected by iCapital, as well as other model inputs when applicable (e.g., priors), as described above. Factor-based performance does not take into account any fees or expenses that an investor actually would incur.

**Additional Key Assumptions & Limitations**

Financial professionals should be mindful of certain fundamental considerations when evaluating iCapital Architect analytics and charts that leverage GMAM’s results:

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**Index Required Disclosures**

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| **Index** | **Required Disclosures** |
| Bloomberg Commodity Index;  Bloomberg US Corporate High Yield Index;  Bloomberg Barclays US Aggregate Bond Index;  Bloomberg U.S. Treasury: 7-10 Year Total Return Index Value Unhedged | Source: Bloomberg Index Services Limited. BLOOMBERG® is a trademark and service mark of Bloomberg Finance L.P. and its affiliates (collectively “Bloomberg”). Bloomberg or Bloomberg's licensors own all proprietary rights in the Bloomberg Indices. Bloomberg does not approve or endorse this material or guarantee the accuracy or completeness of any information herein, nor does Bloomberg make any warranty, express or implied, as to the results to be obtained therefrom, and, to the maximum extent allowed by law, Bloomberg shall not have any liability or responsibility for injury or damages arising in connection therewith. |
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