DECISION BRIEF

Selection of Rain Dog's Core Asset Classes

Scope	This *brief* describes the asset classes Rain Dog includes in the Investment Forecast Model (IFM) for forecasting, mean-variance optimization, and Monte Carlo simulation—with the rationale for each included class and for each class considered and excluded.
Author	Steve McConnell, CFP®, ChFC®
Status	Final
Date	2026-06-25

1. Summary

Rain Dog's investment forecasting, optimization, and Monte Carlo simulation all rest on the set of asset classes the model can represent. This *brief* records the asset classes Rain Dog includes and why, and the classes that were considered and ultimately excluded.

Decision. Rain Dog models 45 distinct asset classes, chosen to capture the major real-world drivers of portfolio behavior: domestic equity by size and style; eight equity sectors; developed and emerging international equity with regional granularity; the full Treasury and municipal duration ranges; corporate and floating-rate credit, inflation-linked and international bonds; real assets; and cash. To earn a place, a class must be investable, supported by long return history, and distinct enough in its return and correlation behavior to add value to the set as a whole. Redundant and weakly-supported classes are excluded; a few classes with distinctive performance behaviors but shorter histories are admitted under a reduced allocation cap rather than left out.

This *brief* covers which asset classes Rain Dog models and why. It does not cover the specific funds used to implement each exposure, which are separate decisions.

2. Scope & Application

The asset-class set is the foundation of the IFM. Every downstream result—efficient frontiers, optimized allocations, simulated retirement outcomes, and the allocations Rain Dog ultimately recommends to clients—inherits the breadth, depth, and quality of this set. A planning model can only reason about exposures it can represent, so the character of the asset-class list directly bounds the quality of the resulting advice.

Typical advisory firms and retail planning tools work from a short list of broad categories: typically 3-8 categories that are used to represent all equities, all bonds, and cash. That coarseness blurs distinct economic drivers, suppresses the correlation structure an optimizer depends on, and cannot represent the downside behavior that matters most in retirement.

Rain Dog's set is deliberately more granular and more carefully architected. The set is architected to cover the major drivers of portfolio behavior:

- U.S. equity size and style, across large, mid, and small capitalizations and value and growth styles.
- U.S. equity sectors with distinct correlation and returns behavior.
- Developed and emerging international equity, with regional granularity rather than a single broad-international bucket.
- U.S. Treasury duration exposure, short through long.
- Inflation-linked Treasury bonds.
- Corporate credit across the duration spectrum, plus senior floating-rate bank loans.
- Municipal bonds across the full duration range and into high-yield credit.
- International and emerging-market debt.
- Real assets: listed real estate, gold, and broad commodities.
- Cash and money-market reserves.

This set defines the asset classes available to the IFM's optimizer, simulator, and tax planner, and it is fully integrated into each of these.

3. How the Set Was Built

Every candidate class was judged against a consistent set of principles.

- **Investability—**Each class must correspond to an exposure clients can actually hold through a real fund or ETF. Theoretical indexes are used only to extend a return series back in time, never as the exposure itself; an index with no purchasable vehicle does not qualify.
- **Long return history—**The working standard is a minimum of thirty years of return data—enough to estimate returns, volatility, and correlations with discipline. This biases toward older funds over newer ETFs for the same exposure. A class with a shorter history is not automatically excluded; it can be admitted under an allocation cap, as Global REIT is on its roughly twenty-year series.
- **No redundancy—**Classes that are merely blends of other classes add redundancy rather than diversification and are not included. Consequently, total-market, total-bond, and total-corporate categories were not included, and mid- and small-cap blends are modeled from their style components rather than carried separately.
- **Correlation usefulness—**A class can earn its place by contributing a materially different return pattern or correlation structure. Consequently, sectors are included rather than limiting equities to Fama-French dimensions. Rain Dog's position is that exposures that meaningfully improve the efficient frontier have practical value.
- **Modeling separated from manager selection—**The set uses long, representative history for each exposure. Choosing the specific fund that implements an exposure is a separate decision, and the best long-history series for modeling is not always the best implementation vehicle.
- **Built for three engines—**The set must serve optimization, simulation, and investment-tax planning. Optimization benefits from distinct correlation structures; simulation benefits from empirical return distributions and correlation-aware sampling. Tax planning benefits from established tax-efficiency history.

4. Included Asset Classes

The included classes are grouped by category below, each with the reason it is included in the model.

4.1 U.S. Equity—Size and Style

This includes core domestic equities, split by capitalization and by value/growth style.

- **Large Cap Blend—**Core U.S. large-cap exposure. Retained despite overlap with the large-cap style splits because it appears frequently in held-away retirement accounts and low-basis taxable accounts
- **Large Cap Value**
- **Large Cap Growth**
- **Mid Cap Value**
- **Mid Cap Growth**
- **Small Cap Value**
- **Small Cap Growth**

4.2 International and Regional Equity

These asset classes are selected for regional and factor granularity rather than a single broad-international exposure. Combined with the domestic sleeve, the equity coverage spans North America, Europe, developed Asia ex-Japan, Japan, and Latin America, then adds emerging markets both broadly and by sub-region. The design is deliberately nested: each region carries a distinct monetary regime, currency behavior, and sector composition.

- **International Developed ex-US—**Core developed international exposure, chiefly Europe and developed Asia ex-Japan.
- **International ex-US Small Cap—**Developed-market size exposure outside the U.S.; more domestically oriented than large international companies.
- **Emerging Markets—**Core emerging-market equity, with country, currency, political, and sector composition materially different from developed markets.
- **Emerging Markets Small Cap—**Domestic emerging market exposure that differs from broad emerging market large-cap, which skews toward exporters, state-owned enterprises, and mega-caps.
- **Japan—**A distinct market history, monetary regime, currency behavior, and sector composition.
- **Pacific ex Japan—**Developed Asia-Pacific outside Japan, with different commodity, financial, and China-sensitivity profiles.

- **Latin America—**All of Latin America, not emerging-only: commodity- and political-cycle-sensitive regional exposure distinct from emerging market Asia.
- **Emerging Markets Asia—**Separates manufacturing-, export-, and technology-heavy emerging market Asia from commodity-heavy Latin America and from broad emerging market.

4.3 U.S. Equity Sectors

Sectors add correlation structure and potential returns beyond style boxes.

- **Health Care—**Defensive demand with historically strong return characteristics and useful correlation behavior.
- **Information Technology—**Distinct high-growth, innovation-driven exposure; high volatility with historically strong returns.
- **Consumer Discretionary—**Cyclical consumer and growth exposure, distinct from staples and the broad market.
- **Industrials—**Economic- and business-cycle sensitivity.
- **Consumer Staples—**Defensive, lower-volatility equity; some overlap with health care and utilities, but useful as a low-volatility sleeve.
- **Financials—**Credit-cycle, yield-curve, and banking-system sensitivity.
- **Energy—**Equity exposure tied to the commodity cycle, with drivers that differ from most other sectors.
- **Utilities—**Defensive, rate-sensitive equity that often behaves differently from growth and cyclical sectors.

4.4 U.S. Treasury and Inflation-Linked Bonds

- **Short-Term Treasury—**Low-risk duration exposure beyond cash.
- **Intermediate Treasury—**Core Treasury duration and a key portfolio stabilizer.
- **Long-Term Treasury—**High-duration Treasury exposure, distinct from short and intermediate.
- **TIPS—**Inflation-linked Treasury exposure, distinct from nominal Treasuries.
- **Long-Duration Zero-Coupon US Treasuries—**Negative correlation with conventional asset classes and positive diversification benefit on the efficient frontier. Allocations are capped due to short time series.

4.5 Corporate and Floating-Rate Credit

- **Short-Term Investment-Grade Corporate—**Low-duration corporate credit exposure.
- **Intermediate Investment-Grade Corporate—**Core IG corporate exposure.
- **Long-Term Corporate—**Long-duration corporate credit exposure.
- **High Yield Corporate—**Below-investment-grade fixed-rate credit exposure.
- **Senior Floating-Rate Bank Loans—**Floating-rate, low-duration, below-investment-grade credit, structurally distinct from high yield bonds.

4.6 International Bonds

- **Global Bonds – USD Hedged—**Non-U.S. bond exposure without large unhedged currency volatility.
- **Emerging Market Bonds—**emerging market sovereign and corporate debt, with credit, commodity, currency, and sovereign-risk drivers distinct from U.S. credit.

4.7 Municipal Bonds

Full duration and credit coverage for clients in high tax brackets. Correlation structures are also distinct from corporate and Treasuries, and in some instances the optimizer chooses municipal bonds even in tax-preferred locations due to their correlation structures.

- **Short-Term Tax-Exempt—**Low-duration municipal exposure.
- **Intermediate-Term Tax-Exempt—**Core municipal exposure.
- **Long-Term Tax-Exempt—**Long-duration municipal exposure.
- **High Yield Tax-Exempt—**Lower-quality municipal credit, distinct from investment-grade muni exposure.

4.8 Real Assets

- **US REIT—**Core U.S. listed real estate; distinct from broad equities.
- **Global / International REIT—**Non-U.S. listed real estate. Its history runs only about twenty years, so it receives a low MVO allocation cap.

- **Gold—**Low-to-negative correlation real asset; a useful diversifier despite episodic returns.
- **Broad Commodities—**Commodity-cycle and inflation-sensitive exposure, distinct from equities, bonds, and gold.

4.9 Cash

- **M2 / Money Market—**Cash-like reserves and low-risk holdings; included for modeling fidelity. It is not usually a return-maximizing allocation, but it can be in extremely conservative portfolios.
- **M1 / Bank Drafts, Checking Accounts—**Not investable via Rain Dog's optimizer, but useful for modeling client's cash holdings.

5. Background & Research

Measured against a standard planning-tool asset-class set, the additions that distinguish Rain Dog's set are senior floating-rate bank loans, emerging-market small cap, the regional international and emerging market splits, the eight sector equity assets, full municipal duration and credit coverage, and the real-asset sleeve of listed real estate, gold, and broad commodities. Each adds a driver or correlation structure that a coarser set cannot represent.

The design principle is to mirror how markets actually decompose into distinct drivers, so the optimizer can find genuine diversification and the simulation can reflect real downside behavior—rather than forcing client portfolios through a small number of broad buckets that hide those distinctions.

6. Asset Classes Considered and Excluded

Each class below was considered and set aside for the stated reason. None were rejected as poor investments; each failed one or more of the model's practical tests.

6.1 Equity

- **Broad U.S. Total Market—**Largely redundant with the size and value/growth exposures included in other asset classes.
- **Mid Cap Blend—**Can be reproduced with high fidelity from mid-cap growth and mid-cap value.
- **Small Cap Blend—**Can be reproduced with high fidelity from small-cap growth and small-cap value.
- **Broad International—**Largely redundant with developed ex-U.S. equity.
- **Europe Equity—**Largely redundant with developed ex-U.S. equity.
- **Materials Sector—**Behavior not sufficiently distinct from energy, industrials, and broad commodities.
- **Communication Services Sector—**Composition overlaps heavily with technology and large-cap growth.

6.2 Fixed Income

- **10-Year Treasury—**A point on the curve, not a distinct class once short, intermediate, and long Treasuries are included.
- **Total Corporate Bond Index—**Largely redundant with the short, intermediate, long, and high-yield corporate exposures.
- **U.S. Total Bond Market—**Overlaps heavily with Treasuries and corporates modeled separately.
- **GNMA / Mortgage-Backed Securities—**Legitimate exposure, but incremental behavior judged too second-order relative to intermediate Treasuries and IG bonds.
- **International Developed Sovereign Bonds—**Potentially interesting asset, but has insufficient investable history to serve as reliable input to Rain Dog's mean variance optimization.
- **Unhedged International Sovereign Bonds—**Currency volatility made it behave like a bond/currency hybrid rather than bond diversification; no clear role in optimizer.
- **Emerging Market Local-Currency Bonds—**Potentially interesting asset, but it has insufficient investable history to serve as reliable input to Rain Dog's mean variance optimization.
- **Developed ex-U.S. Corporate Bonds—**Not sufficiently distinct from other asset classes considering existing hedged global bond and credit exposures.
- **Developed ex-U.S. High Yield Bonds—**Behavior is not sufficiently differentiated from the combination of existing U.S. high yield and emerging market bond exposure.
- **Distinct High Yield Rating Buckets (BB/B/CCC)—**Conceptually useful, but separate products are specialized and unnecessary for the core model.

6.3 Real Assets and Other

- **International Real Estate Funds with Mostly U.S. Exposure—**These are redundant with the combination of US REIT and Global REIT.
- **Hedge Fund / Liquid-Alt ETFs—**Typically too fund-specific and too short-lived to model reliably; plus exposure overlaps with modeled equity, credit, rate, and commodities.

7. References

7.1 Related Documents

- Rain Dog Financial, Investment Forecast Model documentation.
- Rain Dog Financial, Rain Dog's Mean Variance Optimization *Decision Brief* —defines the per-class allocation-cap mechanism referenced here for short-history classes.
- Rain Dog Financial, dedicated portfolio strategy *Decision Brief*.

7.2 Data Sources

- YCharts—historical asset-class return series (as modeled by specific funds) and fund profiles.
- Morningstar—historical asset-class return series (as modeled by specific funds) and fund profiles.
- Portfolio Visualizer—historical performance of asset-class combinations, such as small cap growth + small cap value composed to duplicate small cap blend.

7.3 References

- Modern Portfolio Theory—Markowitz mean-variance framework.
- Post-modern portfolio theory—downside-focused risk measures.

8. Notes & Disclosures

Rain Dog Financial® is a trade name of Rain Dog LLC.

This brief is prepared first for Rain Dog's internal documentation purposes and second for compliance and record keeping purposes. It is also shared with current and prospective clients for sake of offering transparency into Rain Dog's methods and approach. It is informational and does not constitute individualized investment advice. Investing involves risk, including possible loss of principal.

Revision history

Version	Date	Change	By
1.0	2026-06-25	Initial issue.	SCM