GNH CAPITAL GROUP
of Wells Fargo Advisors

Practice Thumbnail

GNH Capital Group is a premier wealth management practice focused on leveraging disruptive innovation in the quest to stair-step investors' wealth and boost the economic sustainability of their portfolios.

Our **rules-based, market-adaptive,** and **risk-controlled strategies** are **tax-aware** and designed to **filter market noise** and provide capable **navigation of market-regime shifts,** regardless of economic conditions and market vagaries. In addition, we use **computer models** in developing a full-range financial strategy that incorporates all elements of clients' financial lives.

Our practice's hallmark is *stewardship in wealth management*. We make an unwavering commitment to serve clients with dedication, diligence, and genuine care. And we have a deeply-rooted tradition of participating in the communities we serve through both organizational volunteering and direct, personal involvement.

A Wealth Management Practice Fueled by Innovation but Rooted in Respect

At GNH Capital Group, we believe that capital is the monetary manifestation of accumulated progress and the fuel of future aspirations. Because of that, it deserves and requires **not only vigilant preservation but also tenacious cultivation**.

This orientation has bestowed a distinctive character to the way we work with, advise, and invest for our clients, and we believe it sets us apart in both areas of our practice – wealth strategy and investment management.

Our practice's approach has been forged in the **academic**, **corporate-finance**, and **portfolio-management** roles of our careers. In addition, our extensive **quantitative background** and training have allowed us to be diligent students of the market history and active participants in the evolution of investment thought and practice. At GNH Capital Group, we embrace and foster disruptive technical innovation and seek to use it effectively to position our client's portfolios at the forefront of investment management and strategic wealth advisory. We invite you to explore how this can benefit you.

A Different Vision of Your Wealth

We believe that the creation and cultivation of wealth is a distinctly personal as well as a broader civilizational imperative. As such, it needs to be pursued with the utmost seriousness, skill, and dedication.

Owing to that, at GNH Group, we set as our mission not only to **safeguard** your wealth watchfully but, most importantly, to **grow** it – **responsibly, sustainably,** and even **aspirationally**. We approach this task with diligence, bringing to it many years of vigorous schooling and professional training and decades of hands-on experience.

Thinking Bigger and Attaining More by Navigating Better

Today it has become commonplace to refer to a 'goals-driven' orientation in wealth management. While this reflects an essential improvement across the industry, we believe that the focus on it is still misplaced.

Of course, wealth management must be at all times client-centric and goal-supportive, but we believe that above and beyond that, it should be first and foremost **market-aware**. This is because the market can at times be unsupportive of your goals and because your goals are rarely static – they evolve organically and can also be reshaped by external forces in ways that are tough to predict.

Instead, we believe that wise wealth management ought to **actively navigate the markets**, continuously seeking to **capture** and **retain** for investors **maximum stair-step benefits** out of their gyrations through **market-adaptive, risk-controlled,** and **tax-aware strategies**. This will allow your wealth to support your goals and even inspire their expansion.

Our Distinctive Approach

In the following five sections, we invite you to take an informative walk through the key characteristics that define our approach and the primary contrasts that differentiate it from commonplace alternatives:

1. **Adaptive Market-Regime Navigation without Assumptions and Forecasts:** Conventional portfolios rely predominantly on historical assumptions and forecasts to ascertain the payouts of various asset classes. Investors can find those assumptions deep in their financial models, while the forecasts are touted in every asset manager's outlook.

   Anchored in assumptions and forecasts, traditional portfolios gravitate heavily towards using static asset class blends (like 60/40, 80/20, etc.) in an attempt to create solutions that are both effective and tolerable for investors.

Yet, history has shown that asset classes and static blends deliver very different and quite unpredictable payouts over time. Owing to that, we believe that conventional portfolios can leave to chance the attainment of investors' goals. Like the retirees of 1999 and 2007 came to painfully discover, investors cannot rely on the kindness or predictability of the markets.

Our strategies take a radically different approach—they don't rely on historical assumptions and use no forecasts. Instead, they focus on a market-adaptive and risk-controlled navigation of the markets.

With all the market gyrations, there is a good chance that such an approach would have been quite reactive, and at times overactive or downright chaotic, had it not been for our strategies' central tenant that views and treats the markets as **regimes**. In this innovative view, while examined individually and on the surface market gyrations appear unpredictable, over time, they tend to coalesce in one sustained direction or 'regime'—bullish or bearish—that only changes after registering tractable signals of regime failure and reorientation.

Our strategies track the health and continuity of the market regimes and the signs of regime change with the help of two proprietary models—one macroeconomic and the other market-based. So, while we agree that **markets are largely unpredictable,** we also believe they are **eminently navigable**.

2. **Win-Win Risk Mitigation Strategies without Win-Loss Compromises:** Our strategies address the issue of risk head-on—**investors' ultimate risk is shortfall.**

   Shortfall is the probability of running out of funds to pay bills or meet funding goals (which for high-net-worth investors, at a minimum, is represented by the going cost of capital).

   Shortfall has two sources—persistent losses or insufficient gains. And it is this duality that causes all the challenges in risk management.

   Conventional portfolios seek to mitigate shortfall by symmetrically limiting or boosting the capture of <u>both</u> gains <u>and</u> losses. We believe this is a futile exercise right from the get-go:

   Moderate/Growth & Income and Conservative /Income portfolios may appear to protect investors from steep losses, thereby reducing the risk of shortfall, but do that only at the expense of limiting portfolios gains which, in turn, we believe augments the risk of shortfall.

Similarly, Aggressive/Growth portfolios may appear to reduce shortfall by seeking higher returns but only at the expense of a much higher vulnerability to losses, which magnifies shortfall risk.

This win-loss treatment that characterizes conventional portfolios does not systematically reduce investors' ultimate risk of shortfall outside of the chance occurrence of a favorable market environment. Yet, leaving shortfall risk to the generosity of the markets is neither a desirable prospect nor an effective risk-control orientation.

This vulnerability is augmented further during periods of an adverse sequence of returns. Such unfavorable sequences occur when negative or low returns happen to be clustered early on in the tenure of disbursing portfolios or later on in the tenure of saving portfolios and magnifies decidedly the risk of a potential economic derailment.

In contrast, our strategies seek to deliver an **asymmetric treatment** by simultaneously targeting a higher capture of gains and a lower capture of losses.

Our strategies are engineered to pursue this **win-win solution** by increasing their exposure during bullish market regimes, which are characterized by a natural preponderance of gains, while lowering their exposure during periods of bearish market regimes, in which losses are prevalent. Instead of maintaining a steady exposure, like strategic asset allocation disciplines do, **our strategies aim to *average* Moderate** across an entire market cycle by balancing their assertive profile during sustained rallies with their ultra-defensive posture during sustained declines.

Of course, the success of this asymmetric treatment depends on the accurate navigation of market-regime shifts, which, in turn, depends on the accurate detection and processing of signals from the market and the economy. This marks another area of differentiation between our approach and that of conventional investment disciplines.

Traditional investment management focuses mainly on controlling volatility and drawdowns based on their raw values. Despite Wall Street's fascination with those markers, we find them to be only downstream, peripheral, and symptomatic manifestations of the ultimate risk of shortfall.

In this vein, our research has shown that the impact of various risk markers on portfolio trajectory is far from absolute and depends heavily on the status of the market regime.

Markets can go up on high and go down on low volatility. Moreover, some of the highest volatility episodes accompany the onset of significant rallies and bull markets, which are highly profitable. In bullish market regimes, volatility and drawdowns are strongly mean reverting, creating with their switchbacks the risk of costly whipsaws for conventional strategies that operate on fixed tolerance thresholds. In contrast, volatility and drawdowns tend to be cumulative during bearish market regimes and should be avoided or dampened.

Our strategies employ a set of sophisticated filters that seek to **de-noise**, **contextualize**, and **cluster in cohesive interpretative syndromes** the raw signs of a potential market regime shift that emanate from the economy and the market.

3. Minding the Right Errors:

As the adage goes, 'errors are the gateways to failure;' and so all strategies need to watch against accumulating many of them. However, in this area, there is a big contrast between Conventional methodologies and our Market-Regime Navigating strategies:

Conventional strategies are primarily preoccupied with the so-called "tracking error"—the degree to which their performance diverges from its assigned benchmark, most frequently specified by a strategic allocation model (e.g., 60/40 stocks/bonds).

Most strategies have a defined narrow tolerance for tracking error and frequently intervene to minimize it, even when the tracking error favors the portfolio, having increased its returns and/or dampened its risk!

Cognizant that the payouts of asset classes vary widely and unpredictably over time, our strategies consider allocation-derived tracking errors to be only contingent signals of portfolio health. Their meaning needs to be properly contextualized within the broader navigation of market regimes.

In contrast, our strategies pay close attention to and work tirelessly to minimize two critical errors whose significance has only emerged in the recent stages of the evolution of investment thought and practice—**false-positive** and **false-negative** errors.

False-positive errors are committed when portfolios heed transient, head-fake signals and unnecessarily reposition defensively within an otherwise still-constructive market environment. False-positive errors (crying wolf) abound within bull market regimes. They are the source of multiple disadvantages—costly whipsaws, punitive tax liabilities, performance drag, expensive trading friction costs, and, ultimately, incremental shortfall risk. More recently, the CoViD market crash of 2020, with its 17-day below-twenty-percent flash 'bear market' and its V-shaped ultra-short economic contraction, gave rise to many such false-positive errors.

Similarly, our strategies are focused on minimizing **false-negative errors** (blinders)—the disregarding of veritable signals of a bearish market-regime shift, which leaves portfolios open to the full brunt of a protracted generalized market downturn (cf. Global Financial Crisis of 2008/2009 and the dot.com bust of 2000 – 2002).

Traditional portfolios do not focus on the management of false-positive and false-negative errors. However, curiously enough, owning to their tracking-error mitigation programming, they are prone to committing a good deal of them randomly:

Owning to their allocation constraints, Conservative/Income-oriented and Moderate/Growth-&-Income-oriented portfolios are prone to committing a false-positive error with virtually every rebalancing downshift they do during bullish market regimes (by selling "overweight" equities to buy fixed income). They are also prone to committing a false-negative error with virtually every rebalancing upshift during bearish market regimes (by programmatically reducing 'overweight" fixed income to buy equities).

In parallel, Aggressive/Growth-oriented portfolios appear to suffer the same fate, prone to committing a false-negative error at every rebalancing upshift they do during bearish regimes (although they seem to be less inclined to false-positive errors).

False-positive and false-negative errors abound in traditional portfolios of the tactical, ‘macro,’ and ‘seat-of-the-pants’ orientation, as indicated by the record of hedge funds and the reports of the DALBAR organization that tracks follows the performance of retail investor portfolios.

We believe that the focus on managing false-positive and false-negative errors—a staple in life sciences and the practice of medicine—creates a critical differentiation between our investment offering and traditional and conventional methodologies.

On the one hand, it is startling to uncover that in traditional portfolios, the routine act of rebalancing, as a means of mitigating against allocation-derived tracking errors, more often than not, is tantamount to committing programmatically false-positive and false-negative errors!

And on the other hand, it is essential to realize that conventional portfolios’ overall shortcomings in error management are not merely affecting performance—by lowering returns and increasing measures of volatility and drawdown. They are also adversely impacting investors’ ultimate risk by increasing the probability of shortfall. As we explained in the previous section on risk, false-positive and false-negative errors are critical promoters of shortfall risk.

4. **Aft-Cast Financial Modeling vs. Hit-or-Miss Forecasts:**
While many wealth managers rely on forecast-based simulation tools to build financial plans, we know that such assumption-driven and normative tools have many limitations, and we are skeptical of their realism and utility.

For example, the so-called “efficient frontier,” representing the set of portfolios with the highest return for every level of risk, has dramatically shifted over the years in unpredictable ways. A “comfortable” 8%-risk portfolio needed to have a 30/70 stock/bond allocation in the 2000s but a 70/30 in the 2010s—all determined only in retrospect! With such wild and unpredictable shifts, the lesson of history is clear: investors cannot ensure that they will be able to cover their recurring expenses or meet their funding objectives with the variable payouts of traditional strategic asset allocation portfolios.

Conventional Financial planning resorts to simulations, scenario analyses, and stress tests based on artificial datasets populated by forecasts and projections or featuring isolated historical episodes (like the oil embargo, the Gulf War, or the crash of 1987).

As a result, conventional planning suffers from limited economic realism, is vulnerable to selection biases, is riddled with blind spots, and remains heavily constrained by its asset and economic projections as well as by the assumptions that underpin its statistical engines.

In contrast, we prefer to use sophisticated *"aft-cast"* models that are free from economic, asset, and statistical assumptions.

Aftcast financial planning walks forward a specified time window across the actual historical market record. The window is calibrated to reflect the investor's horizon. As an illustration, a 20-year aftcast study begins by determining the portfolio viability during the 1900-1919 passage, followed by 1901-1920, all the way to the 102nd passage of 2002 – 2021.

The sliding time frame generates a wide-ranging resampling of conditions which is critically important. This methodical splicing of the historical record supplies a sweeping set of alternative investment paths. Each path reflects a distinct investment climate, anchored in a different sequence of returns, with all of them being irreducibly complex and eminently realistic.

For instance, take the 1929 crash, which gave rise to a generational secular bear market. Or 1983, which launched history's longest bullish market regime. Each would exert a very different impact and require a very different investment plan if it were to happen at the beginning of a lengthy savings stretch, 20 years ahead of retirement, or in the beginning, the middle, or near the end of1983 a 20-year retirement stretch. Aftcast captures all those distinctions.

Aftcast studies preserve the unequaled richness and natural flow that characterizes the complex interrelations amongst the myriad of economic and market variables that collectively shape the performance of portfolios and determine investors' wealth outcomes.

Aftcast augments our capability to outline and track a great variety of contextually complex pathways of wealth formation with historical realism. This helps us give our clients **actionable strategic advice that opens up new**

horizons for them and creates **portfolios that remain resilient across market cycles**.

5. **Portfolio Management Beyond Pie-Charts:**
At GNH Capital Group, we believe that, while capital markets are our civilization's most powerful engine of wealth creation, they are not necessarily benign or benevolent at all times. Moreover, the markets can behave atypically to their long-run historical averages during the investors' particular tenure.

Owing to that, we make it a point to remain **unbiased** and **agnostic. We eschew the temptation to forecast the markets**—an exercise that many interdisciplinary studies show to be relatively futile. Instead, we practice **watchful adaptation** and **vigilant risk management**—two modalities that human intelligence excels in. Such an **unconstrained investment orientation** goes beyond Wall Street's "pie-chart" portfolios, and we believe it gives investors a decisive edge—in particular:

What our portfolios are not about:

- We do **not** practice "buy-and-hold" or "blanket indexing" since we find that markets are not constantly random but exhibit tractable regime shifts.

- We do **not** adhere to "strategic asset allocation," as we are keenly aware that asset class payouts are not stable or predictable over time but vary by the market regime. In our opinion, investors cannot rely on the wildly variable payouts of static portfolio blends to pay for recurring expenses or meet their ongoing funding goals.

- We are **not** "tactical asset rotators" or "market timers" since we find that markets are not continuously trending, and most shifts end up being transient and mean-reverting, reflecting pure market noise and exposing investors to whipsaw risk, friction costs, and tax inefficiencies.

- **Neither** are we Endowment-/Matrix-/Shotgun-style investors, attempting to position portfolios for all conceivable eventualities with a potpourri of small allocations across the entire asset spectrum, as we find such mosaic portfolio architectures to be dilutive and blind to actual market-regime shifts.

What our portfolios are all about:

- **Market-Regime Navigation and Noise Processing**. Market regimes impose a large-scale bullish or bearish equilibrium on the market activity. While this is easy to see in retrospect, it is pretty challenging to detect in real-time, as the status of the market regime is obscured by the constant fluctuations of the unfolding market activity.

  That is why our strategies devote a great deal of sophisticated resources and attention to filtering out the noise embedded in the raw signs that emanate from the market and the economy.

- **Factor (<u>not</u> Asset) Allocation.** Our research has shown that there is very little economic reality in traditional categories of holdings—like sectors, industries, styles, domiciles, etc. And because of that, we do not find them reliable portfolio building blocks.

  For instance, bonds are not always low-risk income workhorses (especially in low-to-negative interest rate environments and during credit crises). The market segmentation into sectors and industries is mostly a carry-over from the labor taxonomies of a by-gone era. And various geographic differentiations (like International, Emerging, Frontier, Pacific Rim, etc.) may have geopolitical significance, but hardly any enduring market identity (besides, one investor's home-county investment is another investor's foreign holding). And other commonplace categories that routinely populate investor statements, like "Alternatives" or "mutual funds," conflate asset classes with investment structures.

  Our strategies structure their exposure first and foremost across investment **factors**. We believe this has many distinctive benefits—as an illustration:

  Factors have a stable economic identity over time. They continuously identify investments that, for instance, are trending (Momentum factor), are economically healthy (Quality factor), have a capitalization advantage (Size factor), are steadier (Low Volatility factor), or inexpensive (Value factor). This continuity allows investors to calibrate more accurately their portfolio exposures (e.g., Value is always Value). On the other hand, the economic behavior of traditional categories of holdings fluctuates a great deal, introducing noise and risk in investor portfolios (e.g., Energy can be a Value play in one decade but a Momentum play in another; Real Estate can shift from being predominantly a High-Quality to being just a Low-Value area).

Also, factors cut across traditional allocation categories, clustering holdings from various sectors, industries, and asset classes in a dynamic way that, from an investment perspective, is far more interpretative, tractable, and actionable.

- **Continuous triage of investment options and ideas.** There is no shortage of ideas and tools for building and running portfolios in finance. It would seem that there can be "as many strokes as there are folks." However, investors quickly discover that not all 'strokes' lead to robust and sustainable portfolios. There is a pressing need for a continuous reevaluation of everything old and an ongoing assessment of everything new.

  At GNH Capital Group, we believe that the evolution of factor research provides a **unifying framework** that helps clarify, vet, and organize the key discoveries and advancements that have punctuated the history of finance in a cohesive, nested progression. Without such an integrating framework, the fledging concepts of Modern Portfolio Theory, the startling findings of Behavioral Finance, today's innovative ideas, and tomorrow's breakthroughs look more like a smorgasbord of optionalities—often at odds with each other—rather than a cohesive set of tools that can help investors build portfolios with more robust and risk-controlled performance.

  Investors need to be keenly aware that many of yesterday's ideas that still fuel traditional portfolios are the products of the 1950s, 1960s, and 1970s. Back then, finance theories (like CAPM/Capital Asset Pricing Model or the Efficient Market Hypothesis) were by necessity normative and insular, only thinly and selectively supported by empirical evidence, as they were developed in the absence of large organized datasets and without rigorous computerized analysis and testing.

  In addition, those early conceptualizations were focused on the mid-20th century world and do not reflect the subsequent transformations that have radically changed the modern economy, the markets, and the world societies—the collapse of communism, the emergence of globalized markets, the rise of the worldwide consumer class, the enhanced role of central banks, the big shift to share-buybacks, the leadership of tech and innovation (from smartphones, remoting technologies, and virtual reality to immunological therapies and just-in-time logistics)— to mention a few. It is a different world out there, so it is imperative that investor portfolios set aside yesterday's embryonic, obsolete, or falsified investment ideas and replace them with their thoroughly-vetted modern successors. After all, investors who would not set foot in the office of a dentist stuck in the 1960s should not rely on portfolios built and managed based on ideas from decades ago, including Wall Street's favorite "pie-chart" or "paint-by-numbers" formulaic portfolios.

For all these reasons, at GNH Capital Group, we are diligent students of the theory and practice of factor investing and active participants in its evolution. Our work on that front has provided us with considerable insights that are reflected in our investment philosophy and embedded in the mechanics of our strategies. The following section provides a partial overview:

- **Propelling investment knowledge forward.** Since the 1950s, three generations of academic and industry research on the sources of investment returns have furnished us with a shortlist of systematic market exposures with enduring and well-vetted economic significance, known as **factors**.

  Factors have been staples of academic research, where they are seen as explanatory of the overwhelming portion of investment returns. And they are also utilized across the industry in performance attribution to analyze the sources of all investment track records.

  Factor research has unfolded in three waves or generations:

  The first generation began in the 1950s with the identification of the **Market Factor** (Markowitz 1952; Sharpe 1964; Fama, 1970). From then on, the list of factors gradually expanded with thousands of studies repeatedly testing and vetting the economic reality of each new addition.

  The second generation brought us two critical add-ons to the single Market factor—**Value** (Fama & French, 1992, 1993) and **Size** (Banz, 1981).

  The third generation of factor discoveries was kickstarted with the identification of **Momentum** near the end of the last century (Jegadeesh & Titman; Carhart, 1997). This era also furnished us with the factors of **Low Volatility** (Ang, 2006) and **Quality** (Novy-Marx, 2013).

  For some years now, the leading edge of this research tradition has begun to cross into a new era—its fourth generation. The emphasis is not as much on identifying and leveraging a larger cohort of factors but on the better organization, integration, and meta-analysis of the factor universe.

Our strategies are an offspring of the fourth generation of factor research. Their crucial contribution to this wave has been their understanding that, although factors are the ultimate drivers of investment returns, **the productivity and expression of factors are dictated by the status of the market regime and its shifts**. This innovative view has significant implications for the way we structure and manage our portfolios:

Factor productivity varies over time, with periodic ebbs and flows of relative outperformance and phases of dramatic instability, like the 'bear' phases of the Market factor, the 'traps' we see in Value, and the 'crushes' that we observe in Momentum. As trackers of the market regime—its health and shifts—our strategies are well-positioned to steer portfolios towards the strengthening factors and away from weakening ones.

Similarly, our strategies understand that the signals associated with the health of factors are regime-dependent. As an illustration:

Volatility spikes and deep drawdowns can signal for the Market factor either danger (like they did in 2008) or opportunity (like we saw in 2018 and again in 2020), depending on the health of the market regime. And a record-breaking underperformance of Value vis-à-vis Growth (persistent over the last years) can signal either an impending reversion to the mean or a continuation of that trend, again, depending on the status of the overall market regime.

Those critical differentiations cannot be easily made from the perspective of individual factors or through pair-wise comparisons, but they become far more visible and tractable once the status of the overall market regime is determined. Our strategies are engineered to exploit this advantage and minimize the erroneous false-positive (crying wolf) and false-negative (blinders) signals that render conventional fixed (aka 'strategic') asset allocation portfolios vulnerable to, respectively, costly whipsaws and sustained declines.

Our Invitation to You

At GNH Capital Group, we believe our strategies' mission is to wrestle out of the market gyrations consistent stair-step wealth benefits for investors. We commit steadfastly to pursuing this mission with diligence and excellence. We invite you to contact us to learn more about our approach's distinctive benefits.

We are looking forward to connecting with you!

On behalf of GNH Capital Group's entire team,

Kostas

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CAR-0523-03954

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