HEDGE FUND REPLICATION: IS IT APPROPRIATE FOR YOU?

EVANSTON CAPITAL MANAGEMENT

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EXECUTIVE SUMMARY

- The investment community continues to show significant interest in hedge fund replication products.
- With lower fees, greater liquidity, and enhanced transparency, hedge fund replication products attempt to mimic the core risk and return properties of a subset of hedge fund strategies.
- Not all hedge fund replication products are created equal. “Bottom up,” security level, replication approaches offer the most hope. “Top down”, regression-based, replication approaches should be avoided.
- Bottom up replication approaches have potential for only certain types of hedge fund strategies. When obtaining exposure to those specific strategies, replication products should be considered, especially when the expected incremental value from manager selection is low and/or short term liquidity needs are high. Invest the time to understand bottom up replication approaches. It will materially improve your manager underwriting and monitoring process. If a manager is chosen over a replication strategy, make sure to benchmark the manager against the replication strategy.
- Investor liquidity rights are not always a good thing. Make sure the liquidity of the investment vehicle is consistent with the liquidity of the underlying assets and strategy, i.e., can it prudently handle many investors seeking liquidity at the same time? If the strategy was altered for liquidity reasons, make sure to understand the implications for potentially lower expected returns.
- Due to increased competition and ease of accessibility, prospective expected returns on replicator strategies will probably be lower when compared to the past. Additionally, the combination of more capital (“larger crowd”) and more liquid investment vehicles could alter the prospective volatility, correlation, and tail risk properties of replicator strategies.
- In sum, thoughtfully implemented bottom up hedge fund replication products may have a role in a larger hedge fund program. However, it’s important to have realistic prospective risk/return assumptions for these “more commoditized” strategies. Additionally, remember that many hedge fund investment strategies are subjective/discretionary and, thus, hard to replicate. As a result, strategies prone to replication, whether accessed via a bottom up replicator product or a “traditional” hedge fund manager, should only be a component, and not the entirety, of a larger hedge fund program.

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INTRODUCTION

Hedge fund replication products are a classic example of financial innovation. They attempt to mimic the core risk and return properties of a subset of hedge fund strategies within an investment form with greater accessibility and perceived better terms: lower fees, greater liquidity, and enhanced transparency. With all of these objective benefits, it is not surprising that hedge fund replication has received a lot of attention from the investment community. However, while hedge fund replication products are a "net-net" positive innovation, they are neither simple to understand, homogenous in form, nor appropriate in every situation. This paper briefly discusses the pros and cons of two major hedge fund replication approaches: 1.) "Top down" regression-based and 2.) "Bottom up" security level[1]. More importantly, it focuses on those issues that are more difficult to understand and/or underappreciated.

TOP DOWN REPLICATION

Although forgotten by many, top down replication products were first introduced in the mid 2000s. At the time, many investment professionals thought top down replication was going to be a "game changer" for the hedge fund industry. For several reasons, this turned out not to be the case.

In the typical top down replication approach, analysts ran backward looking regressions of historical hedge fund index returns on various capital market risk factors (e.g., stock indices, bond indices, commodities, stock volatility, etc.). If high regression R squares (i.e., high explanatory power) were achieved, people claimed to have "replicated" hedge fund returns. Thus, consistent with the estimated regression model, top down replicators recommended investing in a handful of capital market risk factors instead of investing in the underlying hedge fund strategies. The approach was labeled "top down" because the focus was on explaining aggregated hedge fund index returns instead of trying to understand the underlying securities and trading rules generating the hedge fund strategy returns.

The top down approach had many weaknesses. First, the backward looking regressions didn't explain hedge fund returns well prospectively. The "true" regression betas were time-varying and couldn't be approximated well by the average historical betas estimated in a backward looking regression framework. Second, even when the regression technique did an ok job explaining hedge fund return *variation*, it usually delivered a lower average return. An investment product with generally decent correlation properties but low-to-no return was understandably not that interesting to investors. Last and most important, since the top down approach was based on macro types of risk factors, the part of hedge fund returns that the regression approach did pick up offered investors the least amount of diversification benefit. Investors typically already have a lot of macro risk in their portfolios via traditional stock and bond markets. The component of hedge fund returns most valuable to investors was *unrelated* to traditional stock and bond markets, i.e., idiosyncratic.

For all these reasons, the original top down hedge fund replication approach never gained traction with investors[2]. While a few top down products still exist, we would not utilize them in a larger hedge fund program.

In effect, the bottom up replication product is akin to an actual hedge fund manager using a rules-based, quantitative approach to trading the underlying securities associated with a particular hedge fund strategy.

BOTTOM UP REPLICATION

Hedge fund replication "version 2.0," or bottom up replication, started in the late 2000s, but gained most of its popularity over the past few years. Unlike top down, the bottom up approach starts by attempting to understand the underlying securities and

1 "Bottom up" replication is sometimes referred to as "alternative beta" or "alternative risk premia."

2 "Passive Hedge Fund Replication: A Critical Assessment of Existing Techniques" by Amenc, Gehin, Martellini, and Meyfredi document the empirical failures of the "top down" approach. Additionally, Merrill Lynch, one of the original leaders in hedge fund replication, developed the "top down" ML Factor Index in 2006. As of 12/31/2013, less than $100MM of mutual fund and ETF AUM benchmark against the ML Factor Index.

trading patterns of various hedge fund strategies. If the core of *certain* hedge fund strategies have little-to-no discretion in what and how they trade, the bottom up approach "replicates" the actual hedge fund strategy using a similar set of systematic trading rules. The systematic trading rules address: Which securities do I go long or short? How much should I weight each long and short? How often should I rebalance? Bottom up replication products implement the systematic trading rules using a similar set of underlying securities traded by the traditional hedge fund manager. In effect, the bottom up replication product is akin to an actual hedge fund manager using a rules-based, quantitative approach to trading the underlying securities associated with a particular hedge fund strategy. Some classic examples are:

- Convertible Arbitrage: Buy the convertible bond and short the stock.
- Merger Arbitrage: Buy the target company and short the acquirer.
- Quantitative Equity Market Neutral: Buy high book-to-price stocks and short low book-to-price stocks, buy stocks with relative positive price momentum and short stocks with relative negative price momentum, buy low volatility stocks and short high volatility stocks, buy small cap stocks and short large cap stocks, etc. Basically, implement the findings of all the practitioner and academic papers studying risk premia observed in equity markets.
- Systematic Macro/Managed Futures/CTA (Trend Following, Value, Relative Momentum, Carry, etc.): Buy markets with positive excess returns over the last month (three months, 12 months) and short markets with negative excess returns over the last month (three months, 12 months), buy high book-to-price stock markets and short low book-to-price stock markets, buy stock markets with *relative* positive price momentum and short stock markets with relative negative price momentum, buy sovereign bonds with high carry and short sovereign bonds with low carry, buy FX forwards with high real interest rates and short FX forwards with low real interest rates, etc.

It is important to note that many hedge fund strategies, such as fundamental long/short equity, fundamental long/short credit, fundamental short equity bias, distressed, discretionary global macro, specialty strategies (e.g., non-agency RMBS), etc., are not mentioned above. These strategies are too discretionary and/or too illiquid to replicate a meaningful core with a set of systematic trading rules. While long/short equity replicators are available in the marketplace, these products are functionally a basket of two strategies: quantitative equity market neutral plus an equity derivative overlay providing partial market exposure. This is different than a discretionary, fundamental long/short equity strategy. Is this bad news for bottom up replication? No. In our opinion, bottom up replication can be a legitimate alternative to a traditional hedge fund manager, but *only* for a specific subset of strategies.

Not all bottom up replication products are created equal. Similar to traditional hedge fund manager due diligence, make sure to thoroughly underwrite the bottom up replication product.

BOTTOM UP REPLICATION VS. TRADITIONAL HEDGE FUND MANAGER

For the subset of strategies prone to replication, bottom up replication products should be considered alongside traditional hedge fund managers. The decision to go with a replicator will depend on your manager selection skill and short term liquidity needs. When the expected value add from manager selection is low and/or short term liquidity needs are high, a thoughtfully executed replication product becomes more viable.

Some investors would never choose a replication product based on the belief that "alpha[3] is being left on the table." Perhaps this argument is naive. It suggests that a) many managers produce alpha and b) alpha managers are easy to identify ex ante. In our opinion, very few managers generate net of fee, positive alpha. More importantly,

3 In this particular case, alpha is defined as the return component not explained by the associated replication strategy.

it is extremely difficult to identify these managers ex ante. This does not mean you should avoid a traditional hedge fund manager. We are suggesting that most investors are overconfident when it comes to their manager selection skills. Among other things, most people are "fooled by randomness" by placing too much weight on ex post, past returns – returns that had an approximately 50% chance of being positive by luck alone. Protect yourself and be humble when comparing bottom up replication to a traditional hedge fund manager.

Not all bottom up replication products are created equal. Similar to traditional hedge fund manager due diligence, make sure to thoroughly underwrite the bottom up replication product. What is the group's experience in trading the underlying securities and strategy? Where and how do the systematic trading rules deviate from the traditional hedge fund manager's approach? Where are broad based indices used in lieu of trading the underlying, single name security? What is the target risk level for the product? Is the liquidity of the underlying assets and strategy compatible with the investment form's (e.g., mutual fund) liquidity terms? Are the fees competitive relative to alternatives? How should the product's back-tested results be adjusted for "data snooping"?

In the end, treat the bottom up replication product like any other hedge fund manager. Come up with realistic, conviction-adjusted risk and return assumptions for all the competing alternatives and choose the one that best meets the overall portfolio objectives subject to the institution's resource constraints. There is one caveat, however. If a traditional hedge fund manager is chosen over an appropriate replicator product, for assessing manager skill, make sure one of the managers' benchmarks is the replication alternative on a risk-adjusted basis. Since the replication product is a viable alternative, i.e., opportunity cost, this is a better way of assessing the manager's true alpha capabilities.

THE BENEFITS OF UNDERSTANDING BOTTOM UP REPLICATION

Whether you are one of the few folks with a long, complete, audited track record of excellent manager selection capabilities or a mere mortal, invest the time to fully understand bottom up replication. It will dramatically improve your manager due diligence and monitoring processes.

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Within the subset of strategies that are more replication prone, it is critical to measure and assess the differentiated component of a manager's process and return. This cannot be done without fully understanding the process and return of the replicator alternative. The replicator alternative will inform the types of questions to ask, the types of data to request, and the types of performance attribution/risk analytics to run. Asking the manager if he/she is mainly just implementing a "well known" trading strategy is unlikely to lead to a transparent, fair and balanced answer. This is not because the manager is necessarily dishonest. It is because we all tend to err on the side of claiming "we are providing something special," which psychologically sounds much better than "we are providing a commodity service."

Even within the subset of strategies that are less replication prone, the knowledge from bottom up replication is helpful. First, some "discretionary" managers are "closet quants" implementing systematic trading strategies/screens that overlap well with the replication crowd. In order to successfully "smoke" these managers out, you need to fully understand bottom up replication. Second, many discretionary managers consciously or subconsciously have a systematic component to their investment process. It may or may not have some overlap with the replicator crowd. If it does have some overlap, it is important to understand the magnitude of the overlap to assess "value add/differentiator" type questions. If it does not currently overlap, it is important to assess the likelihood that it will eventually become "public knowledge" and be incorporated in various replication products.

FINANCIAL INNOVATION & ENHANCED LIQUIDITY: IMPLICATIONS FOR EXPECTED RETURN & RISK

One of the stated benefits of bottom up replication products is better liquidity terms for investors. Yes, this is a preferred outcome for investors, but only when the liquidity terms of the investment vehicle are consistent with the liquidity of the underlying assets and strategy. When underwriting a bottom up replication product, remember to spend ample time on this potential liquidity mismatch issue during both normal and stressed market environments. For example, assess how the product would perform when many investors seek liquidity at the same time - a common occurrence in stressed markets. In order to better meet this "asset-liability" liquidity condition, some replication strategies have altered the amounts and types of securities utilized in the set of systematic trading rules. This is a good thing, but it does not come free. Many strategies garner a nontrivial amount of expected return by taking on some form of illiquidity risk. This is true even for many public equity-based strategies. Thus, if the strategy was altered for liquidity reasons, make sure to understand the implications for potentially lower expected returns.

As stated earlier, we believe bottom up hedge fund replication is a "net-net" positive innovation for investors. However, the focus mainly on fees, liquidity, and transparency (all positive consequences of financial innovation) provides an incomplete picture. A strategy that is now "public" and easily accessible will have different forward looking risk and return properties than the original, private, inaccessible strategy. Due to increased competition and ease of accessibility, prospective long run expected returns on replicator strategies will probably be lower when compared to the past. Additionally, the combination of more capital ("larger crowd") and more liquid investment vehicles (e.g. daily liquidity mutual funds, ETFs, etc.) could alter the prospective volatility, correlation, and tail risk properties of replicator strategies. There is a large body of literature dedicated to understanding the interactions between limits to arbitrage and capital market features, such as "crowds" and relying on funding that can be easily withdrawn, that could amplify non-fundamental risk. Some extreme, real life examples of these non-fundamental risks include the 1987 stock market crash, 2007 quant meltdown, and 2008 liquidity crisis. These risk and return comments, which apply to both the replication products and those traditional hedge fund managers trafficking in "replication prone" strategies, are not meant to scare anyone. We mention them because they are important and they tend to be overlooked.

Due to increased competition and ease of accessibility, prospective long run expected returns on replicator strategies will probably be lower when compared to the past.

CONCLUSION

In sum, thoughtfully implemented bottom up hedge fund replication products may have a role in a larger hedge fund program. However, it's important to have realistic prospective risk/return assumptions for these "more commoditized" strategies. Additionally, remember that many hedge fund investment strategies are subjective/ discretionary and thus, hard to replicate. As a result, strategies prone to replication, whether accessed via a bottom up replicator product or a "traditional" hedge fund manager, should only be one component of a larger hedge fund program. In other words, do not let the debate over hedge fund replication versus traditional hedge fund managers be too much of a distraction from your larger problem – the composition of the rest of your hedge fund portfolio.

ABOUT THE AUTHOR

Mr. Hecht is a Vice President and Senior Investment Strategist at Evanston Capital Management, LLC ("ECM"). Prior to joining ECM, Mr. Hecht served in various portfolio manager and strategy roles for Allstate Corporation's $35 billion property & casualty insurance portfolio and $4 billion pension plan. He also had the opportunity to chair Allstate's Investment Strategy Committee, Global Strategy Team, and Performance Measurement Authority. Mr. Hecht also served as an Assistant Professor of Finance at Harvard Business School. His research and publications cover a variety of areas within finance, including behavioral and rational theories of asset pricing, liquidity, capital market efficiency, complex security valuation, credit risk, and asset allocation. Mr. Hecht previously served at investment banks J.P. Morgan and Hambrecht & Quist, and as a consultant for State Street Global Markets. Mr. Hecht has a bachelor's degree in Economics and Engineering Sciences from Dartmouth College and an MBA and Ph.D. in Finance from the University of Chicago's Booth School of Business.

EVANSTON CAPITAL MANAGEMENT

Founded in 2002, Evanston Capital Management, LLC (ECM) is an alternative investment firm with approximately $4.8 billion in assets under management. ECM has extensive experience in hedge fund selection, portfolio construction, operations and risk management. The principals collectively have more than 75 years of hedge fund investing experience, and the firm has had no turnover in senior or mid-level investment professionals since inception. ECM strives to produce superior risk-adjusted returns by constructing relatively concentrated portfolios of carefully selected and monitored hedge fund investments.

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