Structural Due Diligence, Operational Risks, and the Evaluation of Managed Account Platforms

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KEY FINDINGS

- Since the Great Financial Crisis, institutional investors have demanded more transparency and better governance in the hedge fund space. This has resulted in the growth of several different types of structures to access hedge funds.
- Some of the world's most sophisticated institutional investors are utilizing managed account platforms (MAPs). This article discusses how to conduct due diligence and evaluate a MAP.
- Different structures have different advantages and disadvantages for accessing a specific hedge fund investment. Institutional investors can obtain a structural alpha by choosing the best structural form.

ABSTRACT

The impact of the Great Financial Crisis on operational risk includes the birth of structural due diligence. Since the crisis, institutional investors have demanded more transparency and better governance in the hedge fund space. This demand has resulted in the growth of several different types of structures, including liquid alternatives via 40-ACT or UCITS funds, funds-of-one, managed accounts, and managed account platforms. Operational due diligence has extended beyond examining the noninvestment risks to include the best way structurally to access a specific hedge fund investment. The different structures have varying advantages and disadvantages, which translates to different types of operational risks. This article presents a matrix of the advantages and disadvantages of the structural forms and the concept of a structural alpha. The author examines managed account platforms (MAPs) and how to evaluate them.

The hedge fund industry and the due diligence of hedge funds have evolved considerably since 2000. In the past, industry best practices for conducting due diligence on hedge funds focused primarily on investment due diligence. By 2005, leading industry best practices included operational due diligence as an important dimension. Operational due diligence comprises everything that is not investment-related: conducting background checks, checking the quality of service providers, assessing counterparty risk, validating internal controls, examining governance, and evaluating business viability. Operational due diligence gained more attention after

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the Bernie Madoff scandal (Scharfman 2010). Operational due diligence has grown in terms of qualitative scoring methods for detecting hedge fund fraud or operational risk. (Brown et al. 2012; and Cassar and Gerakos 2010).

Since the Great Financial Crisis, there has been more emphasis on governance, transparency, and liquidity. This emphasis has led to an increase in different structures to access hedge funds, such as separately managed accounts, funds-of-one, managed account platforms, and 40-ACT and UCITS funds. A new dimension of the due diligence process has developed, *structural due diligence*. More specifically, once it has been determined that a certain hedge fund investment should be a value-add to the overall portfolio, the question arises: What is the best way structurally to access this hedge fund investment?

There is no universal optimal solution to this question. The answer depends on the specific investment and the particular investor's needs and capabilities. However, ignoring the question leaves valuable structural alpha (extracted from the choice and implementation of the structure) on the table. Moreover, the operational risks vary significantly depending on the type of structure invoked for the investment. Consequently, structural due diligence is directly linked to assessing the operational risks of the investment.

This article furnishes the classification of the different structural forms for sophisticated institutional investors (sovereign wealth funds, pensions, endowments, and foundations) to access hedge funds directly. It examines the advantages and disadvantages of the structural choices, compares their operational risks, and provides examples of structural alpha. It also dispels certain misconceptions about the different types of structures. Finally, this article gives the key criteria in the operational due diligence of managed account platforms.

FUND-OF-FUNDS

The golden era of fund-of-funds was earlier in this millennium (2001–2008). Many institutional investors would access hedge funds through a fund-of-funds (a multimanager portfolio of hedge funds accessed through a third party). Some sophisticated institutional investors would transition from fund-of-funds to directly investing in hedge funds through the hedge fund manager's fund structure.

More than 10 years ago, the Madoff debacle exposed that many so-called blue-chip fund-of-funds were more adept at marketing than they were at doing rigorous due diligence. Indeed, many fund-of-funds analysts were just going through the motions and did not have the intellectual curiosity or the work ethic to do proper deep-dive due diligence (Gregoriou and Lhabitant 2009; Thorp 2017). The fund-of-funds industry never recovered, and now there is a much smaller amount of assets in fund-of-funds. There has been a consolidation in the fund-of-funds space, and to some extent, the Darwin effect (of the strong surviving) has taken place (Preqin 2017).

In general, there are specialized fund-of-funds and some larger general fund-of-funds. While most invest directly, some deliver their product through managed accounts. Some fund-of-funds try to utilize their exceptional size and resources to get an edge (Saacks 2019). It is possible for an institutional investor to hire a fund-of-funds to do a customized product. Still, unless they are using managed accounts, they will remain vulnerable to strategy drift, style drift, and concentration risk. Under the fund-of-funds model, the institutional investor allows an outside group to select the hedge funds and construct the multimanager hedge fund portfolio.

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40-ACT AND UCITS FUNDS

Liquid alternatives via 40-ACT and UCITS funds have emerged post-crisis as another way to access hedge fund investments. Assets under management grew in 40-ACT funds in the United States, grew in UCITS funds in Europe, and increased in UCITs to a lesser extent in Asia (Mains 2014). Since these liquid alternative products are sold to retail investors, they are usually a simplified version of the hedge fund manager's main program and offer investors daily liquidity and more regulatory scrutiny at the cost of performance. There is more regulatory scrutiny because these funds are available to retail investors, whom the regulators cannot necessarily expect to be sophisticated. 40-ACT and UCITS funds tend to comingle investors' assets. In Canada, the liquid alternatives industry has seen growth since NI-82 (National Instrument 81-102 Investment Funds) was revised in 2018 (DailyAlts 2020). Investment in alternative UCITs, that is, UCITs with hedge fund strategies, exceeds 450 billion euros (HSBC 2018).

The growth of these liquid alternative products has increased the receptivity of hedge funds by managed accounts. In general, though, while there is better liquidity and regulatory oversight with 40-ACT and UCITS funds, these products have more expenses due to the increased regulatory burden and simultaneously tend to have less investment flexibility than the hedge fund manager's main program, resulting in a less attractive statistical profile. As a result, they tend to be less popular for sophisticated institutional investors who are comfortable with the increased complexity of the hedge fund manager's main program. Liquid alternatives are typically most suitable for investors who might not otherwise be able to access the alternative investment space or for new entrants to alternative investments who may not otherwise have the risk appetite for hedge funds.

POSITIVE CONTRIBUTIONS OF MANAGED ACCOUNTS

A separately managed account (SMA), also referred to as a "managed account," is a segregated investment account where by the assets are owned and controlled by the investor but there is a subadvisor who is authorized to place trades (Monforth et al. 2019). Different types of managed account solutions are examined in more detail in the next section. Before going through the different structures' anatomy, it is worthwhile to understand the positive contributions of managed accounts.

A managed account platform (MAP) refers to a service provider that provides a managed account solution. A "DMAP" is a dedicated (i.e., customized) managed account platform. Strictly speaking, a MAP provides a "DMAP" solution, but for conventional ease, we will occasionally utilize "DMAP" to mean the MAP provider, where it is understood that it is a "DMAP" solution. A "DMAP" also means that an investor's funds are not commingled with those of other investors.

The proper selection and implementation of a DMAP solution provide the investor with security. Moreover, a DMAP solution provides risk reduction. The MAP offers independent oversight and reduces business risk. In fact, if implemented correctly, the DMAP decreases the risk to essentially investment risk only.

At a high level, the MAP may be considered an independent entity conducting the hedge fund's back and middle office operations. The key difference is that the MAP is serving the best interests of the investor. The MAP provides risk mitigation of fraud, style drift, strategy drift, and concentration risk. A MAP reduces headline risk. The MAP offers additional governance, makes investments safer, and is operationally

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more efficient. Increased governance is a desirable benefit for investors (Ostrom 1990 and Williamson 2005).

While security, risk reduction, and governance are all excellent reasons for implementing a DMAP solution, the potential benefits do not end there. From the investment perspective, *not* using a MAP creates *selection* bias. Many of the smartest institutional investors understand this key point, while others are missing out.

A DMAP solution creates the following **investment advantages**:

- Increased opportunity set of managers that includes smaller and medium-sized managers
- The possibility of cash efficiency, which increases the cash reserve or allows for other possibilities such as overlay–underlay portfolio construction (i.e., portable alpha or a variant)
- The implementation of innovative fee methodologies that better align interests
- Customization that allows for superior portfolio construction and also greatly increases the opportunity set of managers
- Better liquidity
- Better ability to rebalance and adjust allocations of managers, which again allows for better portfolio construction.

Each of the above points may have many ramifications. For example, an investor that is not using a MAP is forced into investing in "one size fits all." Moreover, the investor is a "taker" if it invests in a manager's fund structure. The use of a MAP allows for customization, so the investor and manager agree to better fit the investor's needs. Each investor has unique utilities and requirements, so using a MAP is a practical and useful tool.

Investment customization may come in many different forms, such as a change of target volatility, the omission or addition of certain markets, the use of models, or the utilization of sleeves. In fact, the endless possibilities may greatly benefit the investor. This is especially true for an investor who is very skilled at the portfolio construction level, as it allows for more precision. Finally, the use of a MAP is also a good tool for implementing certain ESG criteria. n the competitive and difficult global hunt for alpha, institutional investors increasingly are seeking structural alpha through the customization of investments through a managed account solution (Williamson 2019).

BIG-PICTURE COUNTERARGUMENTS TO SEPARATELY MANAGED ACCOUNTS

Suppose the investor is taking a separately managed account from the hedge fund but not utilizing the services of a MAP. In that case, the investor is increasing complexity and potentially liability. Selecting the wrong MAP also can reduce the benefits stated earlier. An increased level of sophistication is required from the investor to utilize a managed account solution properly.

The potential drawbacks of implementing a DMAP include the following:

1. **The minimum size.** While there can be some exceptions, utilizing a DMAP for less than a $100 million investment is usually not worthwhile.
2. **The upfront investment in time and money.** The implementation of a DMAP builds a long-term infrastructure to access certain investments. There are costs and complexities associated with making this infrastructure. While pensions and endowments have a long-term view, carefully selecting and implementing a DMAP solution can strain internal resources and bandwidth.

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The external counsel fees on tax and structuring matters can quickly accumulate unless effectively managed.

3. **Effectively utilizing the additional transparency and data.** Although the risk management benefits (mitigation against strategy drift, style drift, concentration risk, and outright fraud) are indisputable, most groups are still grappling with effectively utilizing the additional transparency and data that MAPs offer from an investment and portfolio construction perspective. The potential for a deeper understanding of the strategy and better investment decisions is considerable with a MAP. Still, quality research and resources need to be deployed to explore this area. While technically this is not a drawback to utilizing a MAP, the investor might not realize that it takes ingenuity to capture the less obvious benefits of a MAP.
4. **Utilizing a MAP requires organizational buy-in.** Many pensions and endowments do not include MAPs in their portfolio architecture. This is especially disturbing because many of these groups are underfunded and would benefit from the additional possibilities that a MAP offers. However, there is work involved from the investor side. Understanding what a MAP is, the differences, the implementation, and how to best utilize a MAP takes time and understanding. In many cases, these groups are already overstrained and do not have the bandwidth to spend energy on this topic. Often these groups do not realize the structural alpha they are leaving on the table.

Moreover, some misconceptions about MAPs exist—such as that it decreases the investment opportunity set. These misconceptions probably play a significant role in why more groups are not utilizing a MAP.

It also is sometimes a matter of interest and priority. The CIO is usually more interested in the markets, the underlying investments, and private market deals than in understanding the structural and operational nuances of a MAP. It is more fun to be studying a deal or specific investment. This is not meant as a criticism, since the CIO has an important fiduciary duty to oversee the portfolio and processes; it is simply that the CIO is often not aware of the benefits of a MAP. CIOs must manage many priorities and projects competing for their time.

Finally, as mentioned, adding a MAP requires an initial investment in time, energy, and work. Inertia is easier, especially when there are always more immediate priority projects. If the champion of using a MAP is not at the executive level, it is unlikely that one will be used.

CLASSIFICATION OF STRUCTURAL WAYS TO ACCESS HEDGE FUNDS

Managed account investing existed before the crisis, but it was extremely rare, except in the managed futures space. Now there are many more ways to access hedge fund investments beyond fund-of-funds and 40-ACT and UCITS funds. This was driven by investor demand for more transparency, liquidity, and governance. Institutional investors who are not outsourcing the hedge fund selection process to an outside party (fund-of-funds) have six structural ways to access hedge funds:

1. Directly through the hedge fund's fund structure (comingled with other investors)
2. Funds-of-One
3. External managed account platform (EMAP), which lists different hedge fund offerings (comingled with other investors)

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4. Dedicated managed account platform (DMAP), a customized MAP solution (aka CMAP for customized MAP)
5. Separately managed account (SMA), aka managed account.
6. An internal MAP (IMAP)

Notice that the hedge fund manager controls the assets and conducts the operations in the first two structures. In the third structure (EMAP with comingled investors), the EMAP runs the operations. The fourth structure (DMAP) conducts the operations, but the investor can design the managed account solution. Most external managed account platforms also offer a DMAP if the investor makes a sufficiently large investment. The investor brings all the operations in-house in the fifth and sixth structures (SMA and IMAP).

Managed account solutions include EMAPs, DMAPs, SMAs, or IMAPs; notice that in a managed account solution, the hedge fund manager grants a managed account to an external party (either an independent group—external managed account platform—or the institutional investor itself). Suppose an investor chooses a managed account solution. In that case, it can either utilize a managed account platform (MAP) to help conduct the operations associated with the hedge fund manager's trading (the third and fourth structures) or do all these additional operations in-house (the fifth and sixth structures). In utilizing a managed account solution, the investor is taking the philosophy that it is hiring the hedge fund manager for its alpha generation and trading ability and not the operations. A managed account solution has more governance and controls than investing via the hedge fund's fund structure, since the hedge fund cannot touch (or access) the cash. Managed account solutions have grown considerably over the past 10 years and continue to gain popularity with institutional investors (Gasparro 2018).

The mathematics of liquidity is nuanced. From a behavioral finance perspective, the value of liquidity tends to be underestimated (Bhaduri and Whelan 2008). The importance of the investor gaining control of the assets and thus having better liquidity terms is also underestimated. It should be noted that, in general, the less liquid the investment, the less the benefit of some of the features of a managed account solution. For example, cash efficiency becomes less likely, and some illiquid strategies (ABS, distressed debt) cannot be traded pari passu. However, the value of liquidity should not be underestimated. Many hedge funds impose more stringent redemption terms than are necessary, based on the liquidity of the underlying investments. Investors are often not properly compensated for this illiquidity. The hedge fund that argues that it is protecting investors from themselves invokes a convenient but asymmetric position. If the investor is so unsavvy with regard to its redemption decision, then perhaps the initial decision to enter into this hedge fund was a poor one to begin with. Moreover, the hedge fund has less information about the allocator's other investments, commitments, and opportunities, so is less equipped to make the best decision (Bhaduri 2007, Bhaduri and Art 2008, and Whelan 2009).

The six different structural ways to access a hedge fund investment have different strengths and weaknesses, and their operational risks and what should be emphasized from an operational due diligence perspective vary considerably.

If the investor is utilizing a managed account solution, the emphasis should be on the technology supporting the manager's trading program in addition to the standard operational due diligence repertoire. However, counterparty risk analysis becomes less critical since the investor (or MAP) will be selecting the counterparties.

It is worth examining these six structures in more detail.

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Directly through the Hedge Fund's Fund Structure (comingled with other investors)

The most common approach is to invest directly through the hedge fund manager's fund structure, with funds commingled with other investors. Unlike investing through a fund-of-funds, this method gives the investor direct access and communication with the manager. This is typically the easiest method, requiring the minimum time to invest. The investor does not need to do any operations since the manager has selected the service providers (prime brokers, custodian, administrator, auditors, etc.) and determined the regulatory jurisdiction.

While the investor gains convenience, though, there are many potential disadvantages with the traditional approach of investing directly through a hedge fund manager's fund structure. These include the following:

1. Investing in the hedge fund manager's fund structure typically offers the investor the least amount of control and flexibility. There is little or no customization of the investment itself. The manager selects all the service providers, so the investor has less ability to manage counterparty risk.
2. There is usually less transparency than in managed account solutions. This structure also has the maximum vulnerability to strategy drift, style drift, concentration risk, and fraud.
3. The investor typically has less favorable liquidity terms than with other structures.
4. This structure tends to be cash efficient.
5. There is one less layer of risk management and risk monitoring than in managed account solutions. Hedge funds also retain control of the assets. Therefore, there is less governance than in managed account solutions.
6. There is less transparency regarding fees and expenses that are charged to the fund. Hedge funds with low assets under management in their fund structure can charge relatively more expensive fees to the fund (measured in basis points), while those with high assets under management can hide questionable fees. Investors have less flexibility to negotiate fee discounts or implement innovative fee methodologies since side letters must be used. These are typically more limited in scope from a legal perspective (since they still must tie to the original offering memorandum).
7. Adjusting the allocation size via the hedge fund manager's fund structure is typically rather cumbersome regarding notice periods of subscriptions and especially redemptions; this means that investors cannot adapt to changes in the capital and commodity markets at a portfolio level. Consequently, investing via the manager's fund structure does not lend itself well to investors who try to do tactical tilting.

Investing through the hedge fund manager's fund structure means that the investor relies on the manager for all the operational decisions associated with selecting counterparties. Additionally, the manager has control of the assets. Consequently, all aspects of rigorous operational due diligence need to be conducted. The elements of proper operational due diligence, including conducting background checks, examining the cash control process, and evaluating counterparty risk, are well documented in the literature (e.g., Scharfman 2009).

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Fund-of-One

Investing in a hedge fund manager's program via a fund-of-one means that the investor's money is not comingled with any other investors' (One refers to the single investor). There are potential advantages and disadvantages to such an investing approach.

The fund-of-one structure allows the investor to customize the trading strategy, fee structure, and so on. One of the biggest advantages of this structure is that the investor is less vulnerable to the unwanted liquidity variation of comingled programs. This is especially important if the underlying trading program is trading investments with a wide range of liquidity characteristics. Another advantage is that a fund-of-one usually can utilize the existing ISDA master agreements that the hedge fund manager already has in place. Moreover, arrangements that the manager already has with service providers, such as the prime broker and administrator, are quickly replicated. The existing agreements usually save time and legal costs compared to managed account solutions.

One of the biggest disadvantages of the fund-of-one structure is that the trading manager still retains control of the assets. Moreover, the hedge fund manager usually selects the counterparties and is primarily in control of those relationships. This means that a fund-of-one typically has less governance than a managed account solution. Implementing the fund-of-one structure also is more time-consuming than directly investing in the manager's fund structure, and the investors' legal costs are higher than if they go into the manager's fund structure. The investor is usually paying for the fund-of-one's legal creation, which makes it expensive to redeem since there is no portability of structuring under this case. Yet another potential disadvantage with this structure is that it has limited cash efficiency since one is not cross-margining with additional hedge fund investments. Finally, the investment size tends to be large to keep the expenses charged to the fund reasonable.

The fund-of-one is somewhat of a hybrid approach between direct investing and a managed account. While some sophisticated institutional investors find the fund-of-one to be the right structure to meet their needs, a cynic might call it the worst of both worlds. The fund-of-one increases the work for the investor in terms of onboarding and implementation (compared to investing in the manager's fund structure)—yet it does not improve the control or governance that investors experience (compared to a managed account solution). The fund-of-one approach is most appropriate if the ticket size is large and the trading strategy involves many ISDA agreements.

External Managed Account Platform (EMAP), Which Lists Different Hedge Fund Offerings (comingled with investors)

Essentially, an EMAP is an account managed separately from a hedge fund and wrapped in a fund structure, making it available to suitable investors. An EMAP tries to have several hedge fund listings on its platform as its menu of choices. Done well and properly, this is a value-add to the industry. The EMAP handles the operations, compliance, and client services while the hedge fund manager is doing the trading. The hedge fund manager typically has limited power of attorney to place trades in a specified account but does not have access to the cash or assets. Thus, there is a distinct segregation of duties, and an EMAP is engineered to provide additional governance.

Before delving into the potential strengths and weaknesses of an EMAP, some general remarks about them follow.

"Managed account" is somewhat of a misnomer in that the institutional investor is investing in a commingled fund structure. This nuance is important and perhaps

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not appreciated enough by investors. Apart from the EMAP fees, service provider expenses are charged to the fund. The EMAP selects the service providers (administrator, prime broker, custodian, auditor, law firm, etc.) along with the fund's directors. Typically, the investor does not have a say in these selections.

Suppose an investor is accessing hedge funds through the manager's fund structure. In that case, it is inconsistent if the investor does not also consider utilizing an EMAP for some of its investments. Investing in a program on an EMAP is mechanically the same as investing in a hedge fund manager's fund structure. Investors are filling out a subscription form and simply experiencing the investment results. They are not subject to any additional workload in terms of creating legal contracts, operational decisions on the selection of service providers, customizing the trading program, or compliance and risk limit considerations in the manager's onboarding. Therefore, investing in a manager already listed on an EMAP is similar to directly investing in the manager.

If structured correctly, an EMAP should have a fiduciary duty to its clients in conducting compliance, risk monitoring, and operations. However, an EMAP is also a distribution channel for the hedge funds that are listed on its platform. The EMAP is trying to gain market share in the hedge fund space. Consequently, it is not fully focused on investor interests. An astute investor might try to take advantage of this fact by trying to seed an established hedge fund onto an EMAP for a fee reduction from both the hedge fund and the EMAP. This could lead to investors paying lower fees and expenses than if they were to invest in the hedge fund manager's fund structure and gaining an extra layer of risk monitoring and governance via the EMAP's services. The hedge fund gains both an allocation (via the EMAP) and an additional distribution channel, while the EMAP gains another product listing and additional assets. In general, an EMAP usually works well for small allocations. Strategically, an investor might also use an EMAP for emerging managers.

Some banks have EMAPs, but investors should be careful not to be exposed to concentrated counterparty risks of the bank or to extra fees (if the bank's prime broker or custody unit charges more than the market rate or, in the case of structuring via swaps, certain hidden costs). It is possible for a bank EMAP to gain efficiencies via its different business units and pass this along to clients. However, the client loses the ability to shop for different prices among other potential service providers.

As when investing in a hedge fund manager's fund structure, it's important to properly review the offering memorandum and subscription forms. Not all structures are equivalent. For instance, SPCs (Segregated Portfolio Companies) have never been fully tested in court regarding potential contamination. Institutional investors should confer with their own legal experts to fully understand the potential risks of any investment (whether in an EMAP or elsewhere). The EMAP might not be familiar with the investor's regulatory jurisdiction and thus could potentially go off-side in an offering. For instance, a non-Canadian EMAP may not be familiar with the National Instrument 31-103 Registration requirements that are part of the Ontario Securities Commission's regulations for entities based in Ontario that make hedge fund investments.

The potential advantages of accessing a hedge fund investment through an EMAP structure as opposed to going through the hedge fund manager's fund structure are that the EMAP provides an extra layer of risk management, increased governance, and, typically, lower minimum investment requirements, while retaining all the convenience of investing in a fund structure. In addition, for certain types of investments (such as managed futures), the EMAP might offer some cash efficiency. The investor might gain an increased scope of potential investments in emerging managers (as these managers may not yet have the institutional quality top-tier service providers or operations, whereas a quality EMAP does). The investor also gains the opportunity

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of having the EMAP as an additional partner to confer with on issues pertaining to the manager. An EMAP also offers good protection against strategy drift, style drift, concentration risk, and fraud.

The biggest potential disadvantage of accessing a hedge fund investment through an EMAP structure is that the investor typically has less control than with most other managed account solutions. There is an extra layer of fees since the investor pays both the EMAP and the hedge fund manager. However, this can be offset by an established EMAP that can secure other discounts in its operational setup.

There will be a tracking difference between a program listed on an EMAP and the manager's fund structure of that program (Cao et al. 2016). The tracking difference for less-liquid strategies might be high. The EMAP might potentially have high fund expenses.

In an EMAP, the product listings are ring-fenced, so it is not possible to cross-margin the investments of different managers; this means there is less cash efficiency than in a customized solution. An EMAP typically offers little or no customization in service providers utilized (thus reducing the ability to control counterparty risk). The investor needs to conduct due diligence on the EMAP itself. The EMAP's efforts are not fully focused or aligned with the investor since it is also trying to raise assets. If the EMAP has a fund-of-funds product, this could potentially compete with the investor for the capacity of the hedge fund. Some EMAPs might be overstating their listings (including listings that have no assets, attempting to give the impression that they are larger than they are). Finally, some EMAPs are limited to only managed futures.

An EMAP should have the ability (operational infrastructure, technology, human capital, etc.) to deliver a customized solution to an investor if the investment size is sufficiently large. Thus, a firm that is offering an EMAP can also be a DMAP. Along these lines, some fund-of-funds that built expertise in the managed accounts space also have expanded to offer managed account platform services (EMAP or DMAP).

DMAP for Dedicated MAP Solution (aka CMAP for Customized MAP)

An old adage of due diligence suggests that investors trust but verify. Without a managed account solution, it is not possible to verify, and the investor is vulnerable to strategy drift, style drift, or concentration risk, which can happen quickly. Investing in the fund structure of large, so-called blue-chip hedge funds does not protect investors from this vulnerability.

Amaranth was a multi billion dollar blue-chip multi-strategy hedge fund that degenerated to a single trader taking a huge position in natural gas, betting that a hurricane would hit. When it did not, Amaranth lost almost all its assets in a few days. This was bad news for a large pension fund, which after conducting lengthy due diligence, had made a $75 million allocation to Amaranth in January 2006; the fund blew up eight months later. This is not meant to discount the quality of the fund's due diligence, but rather to highlight that investing via the manager's fund leaves one vulnerable to strategy drift, style drift, and concentration risk, all of which occurred with Amaranth (Chincarini 2007 and Till 2008).

A case like Amaranth should not happen in a managed account platform, since the investor has full transparency into the positions and can detect the strategy drift, style drift, and concentration risk. Moreover, a managed account approach protects against frauds such as Madoff.

First, in the onboarding process, it is standard for the Investment Management Agreement to include the exact domain of contracts allowed to be traded by the manager and the respective global exposure limits of these contracts. While the investor is not dictating to the manager how to trade, this part of the onboarding process is an important part of the investor's due diligence on the manager. Amaranth would have

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had to state the maximum number of natural gas contracts it could trade per million dollars and would be legally and contractually bound not to exceed that exposure.

Moreover, a DMAP would give investors full transparency into the positions so they could detect the build-up of natural gas contracts in a timely fashion. Due to owning the assets, the investor would be able to redeem from Amaranth at any time, and would do so the moment the concentration risk started to occur (i.e., as Amaranth exceeded the natural gas contract threshold). Most likely, it would have become evident that strategy and style drift were occurring since Amaranth had shifted from a truly multistrategy fund to more energy-focused, and the use of the DMAP would have saved the investor from the Amaranth debacle.

Of course, this is assuming that Amaranth would have been willing to grant a managed account. Madoff refused to give investors transparency and did not give investors managed accounts. Investors should be wary if a manager refuses to grant a managed account. However, certain hedge fund strategies do not lend themselves as well for managed accounts.

In utilizing a DMAP, one still needs to integrate the risk and positions with investments that are done outside of the DMAP. This can be done by interfacing with external software systems for the most cost-effective solution.

A DMAP's business strategy is to fully focus on institutional investors, since it is not comingling investors and hence is not a distribution channel for a hedge fund but rather truly customized for a single client. For the DMAP, an important decision is whether to comingle the investments or ring-fence each investment. The comingled approach is more suitable for liquid investments. It offers many advantages, such as reduced expenses and more cash efficiency. And it lends itself better to reporting and analysis. The DMAP has a series of nuanced customized areas for which the client can be involved congruent to its preferences.

In some ways, a DMAP helps the investor create a proprietary trading desk, except that its "traders" are external hedge fund managers situated anywhere in the world. With a DMAP service provider, the investor is a centralized risk management, technology, and operations hub. The DMAP builds a customized structure and processes that can be utilized for the long term, even if the investments are changed.

A DMAP is simply a customized EMAP that does not comingle investors. Consequently, the positive attributes of an EMAP, such as increased governance, risk monitoring, and protection against strategy drift, style drift, concentration risk, and fraud, are all true for a DMAP as well. Additionally, a DMAP offers the investor the potential advantages of cash efficiency and full transparency of positions and transactions. This transparency yields a deeper understanding of the trading program, which helps create a positive feedback loop in ongoing due diligence and monitoring. It gives the investor more control over counterparties and expenses. It also allows for easy adjustment in trading exposures and thus is useful for investors who wish to do tactical tilting. A DMAP solution also dovetails well with a more consistent framework in risk measurement (Rahman 2019).

The potential disadvantages of a DMAP are similar to an EMAP, with the added burden that the initial setup and implementation processes for onboarding the first few managers require more time than the other types of structures mentioned earlier. Tracking error in a DMAP is usually less of an issue since the investments often are customized. Using a dedicated managed account platform (DMAP) solution often has some misconceptions from different areas within the investor's organization.

One common misconception among investment teams is that the use of managed accounts limits the opportunity set. This is false because there has been a steady increase in the number of managers willing to grant a managed account. It is usually only the very largest managers that do not offer managed accounts. It is fair to ask how much value the investment team or consultant is adding if it *only* selects the most

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well-known and largest managers to invest in? Utilizing a managed account platform allows the investment team to choose smaller and intermediate-sized managers that may not have the operational infrastructure required for an institutional investor. Moreover, an investor is building a portfolio, and a DMAP may allow for the possibility of a customized program. This increases the opportunity set since a hedge fund that is "mostly" suitable for an investor's portfolio might become "fully" suitable via a customized program through a DMAP. The combination of mostly utilizing managed accounts (via a DMAP) and occasionally investing in the manager's fund (comingled with other investors) increases the opportunity set for the investment team.

A misconception common to operations teams is that using a managed account platform takes away jobs. This is false as the MAP performs some of the operational and compliance decisions the hedge fund manager makes in its fund structure. For instance, the MAP selects the prime broker(s) and negotiates those contracts. A good MAP adds governance and synthesizes information—and so empowers the investor's operations team. The investor's internal back and middle offices benefit by partnering with a good MAP. Moreover, in a DMAP solution, the operations team may gain new decision-making responsibilities.

A common misconception from some executive teams is that managed account platforms are expensive. This is false since a DMAP should *save* money. Done correctly, a DMAP offers structural alpha thst more than offsets the cost.

A DMAP can create structural alpha by increasing the opportunity set of the types of managers available for investment. The cash efficiency benefits from invoking an overlay–underlay portfolio construction also can help create alpha (Bhaduri 2010). Designing and implementing innovative fee methodologies also can create alpha. A DMAP can save on the expenses charged to the fund structure; it can eliminate the need for expensive external risk systems that are a weak substitute for gaining actual positional level transparency; it allows for easier rebalancing. As part of the overall portfolio strategy, a DMAP can allow for tactical tilting or additional hedge. A DMAP reduces the risk of loss from fraud, strategy drift, and concentration and lowers the frictional costs of rebalancing and tilting.

While installing a DMAP requires careful upfront implementation, it does help to reduce the operational due diligence burden in subsequent investments. This is because the DMAP conducts much of the hedge fund's back and middle office operations, and the hedge fund does not have control of the assets.

Separately Managed Account (SMA)

Simply taking a separately managed account (SMA) without building a significant operational infrastructure is risky. The area of managed futures is the easiest for utilizing an SMA. They are included in the list of potential structures as a matter of completeness.

An SMA might suit a sophisticated family office whose internal compliance requirements do not require a fund structure. The investor is placing more focus on having lower expenses from service providers.

Build an Internal MAP (IMAP)

Investors can choose to build a DMAP themselves rather than utilize an external party. This requires the investor to have a much larger internal team of professionals since the workload on operations, legal and compliance, and risk management increases significantly. Robust technology is required to synthesize the information that comes from the transparency of a managed account. Thus, to build an IMAP the investor must build sophisticated technology to support the managed

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accounts intelligently. Building high-quality, industrial-strength software is difficult and expensive. It is easy to underestimate the effort and cost to build the technology and operational infrastructure required for an IMAP.

EVALUATION OF MAPs

This section gives the key criteria for conducting due diligence on MAPs. Ideally, a MAP should retain its independence and remain unconflicted in its selection of service providers. It should have strong financial backing and a good understanding of the investor's perspective. And the MAP's team should have their egos in check and recognize that the investments are ultimately the investor's decision.

In conducting a MAP evaluation, the following should be the key areas of due diligence focus:

Governance

- Is the MAP acting as a fiduciary?
- Is the MAP independent and conflict-free in selecting service providers (administrator, custodian, prime brokers, auditor)?
- Is there a strong board for the existing fund structure(s) of the MAP?
- Ideally, the MAP should have no competing business lines with its investors. What is the strength and reputation of the leadership (i.e., management committee)?
- What is the firm's culture?

Business Viability and Management Strategy

- What is the history of the organization, and how much experience does it have?
- What is the state of accounting (cash flow analysis; strength and health of balance sheet; etc.)?
- How much diversity of revenue does the firm have?

Risk Management/Risk Measurement/Risk Monitoring/Risk Reporting

- What are the risk processes for the preboarding and onboarding of managers, and the ongoing risk processes?
- What is the strength and depth of the risk team?
- How strong are the risk analytics and quantitative risk techniques?
- Does the risk team have an understanding beyond numbers and statistics?
- How much interaction does the risk team have with operations and compliance?
- What is the ongoing monitoring from the risk lens?
- Is there a 24-hour risk desk? (And if not, why not?)

Operations

- What is the quality of the onboarding of managers?
- Does the onboarding process retain rigor and speed?
- Does the MAP follow EDIME ("every day is month-end")?
- Do the daily operations of the MAP include a reconciliation among the prime broker, administrator, and trading manager?

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- What kind of operational oversight of managers is there from the operations lens?
- How rigorous is monitoring the cash cushion and margin consumption (alongside the risk team)?
- Are there strong internal controls for cash controls?

Legal and Compliance

- How much legal expertise is there in-house?
- What kind of network of global legal relationships does the firm have?
- Does the firm have a culture of compliance, including its existing policies and ongoing education?
- How skilled is the crafting of legal agreements?
- How good is the ongoing monitoring of the trading managers from the legal/compliance lens?

Technology

Ideally, the technology should support the firm's different functional units (risk management, operations, legal and compliance (example: compliance calendar), client services/client reporting). In addition, the technology should be able to run the business (secure storage, encrypted email, and databases).

Client Reporting/Client Services

- Is there a secure web portal for reporting to clients?
- Does the firm provide quality reports, conference calls, and regular meetings to its clients?
- Is there excellent client service and responsiveness?
- Is there a willingness to customize for each client and be a good partner?

Research

- How rigorous is the due diligence on managers?
- What is the ongoing monitoring from a research lens?
- How good are the origination and the sourcing of manager ideas?
- How advanced and innovative is the fee analysis?

SUMMARY

Structural Alpha

This article has illustrated that there may be many ways to access hedge funds structurally. Intelligent matching of structures with investments leads to a better return or structural alpha. Institutional investors who ignore the choice of structures are leaving structural alpha on the table.

Structural alpha can be significant. For instance, if a DMAP is invoked for appropriate managers, the investor might gain structural alpha through the following:

1) lower expenses charged to the fund
2) emerging managers accessed (increased opportunity set)

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EXHIBIT 1

Canonical Properties of Structures

Type of Structure	Comingled with Other Investors?	Counterparties Selected by Investors?	Operations Done by:	Assets Controlled by:
1. Hedge fund's fund structure	Yes	No	Hedge Fund	Hedge Fund
2. Fund-of-One	No	No	Hedge Fund	Hedge Fund
3. External Managed Account platform (EMAP) that lists different hedge fund offerings (comingled with other investors)	Yes	No	MAP	Pro rata investors with the MAP having a fiduciary duty to oversee activities
4. External MAP customized solution (aka DMAP for dedicated MAP or CMAP for customized MAP)	No	Yes	MAP + Investor	Investor
5. Separately managed account (SMA)	No	Yes	Investor	Investor
6. Build an internal MAP (IMAP)	No	Yes	Investor	Investor

3) customization of the hedge fund (such as eliminating or adding a sleeve), leading to an increased opportunity set and superior portfolio construction possibilities
4) innovative fee methodologies invoked at each manager level
5) cash efficiency
6) ability to tactically tilt portfolio in an easier way (less "friction" in subscriptions and redemptions)

CONCLUSION

This article gives a brief history of the different ways investors structurally access hedge fund investments, from FoFs to investing directly through the manager's fund structure. It explains how the Great Financial Crisis of 2008, coupled with the Madoff fraud, made institutional investors demand better liquidity, transparency, and governance from their hedge fund investments. This, in turn, led to the growth of several types of structures to access hedge funds. The article reviews the different types of structures and the corresponding advantages and disadvantages to investors and provides examples of structural alpha. Since managed account solutions have become increasingly important, the article also furnishes a blueprint for evaluating a managed account platform and provides positive reasons and counterarguments for utilizing a dedicated managed account platform. It should help institutional investors better understand the landscape of structural hedge fund access. The article establishes how and why structural due diligence is a natural extension of operational due diligence.

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