Demystifying Derivatives, Overlays, Absolute Returns and Alpha Transport

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The typical investment mandate can be represented easily: "Manager Smith is an enhanced equity index manager who is benchmarked against the Russell-1000." In contrast, it is much harder to accurately represent overlay programs, because they appear complex and involve derivative instruments. This article seeks to clarify the main types, objectives, workings and advantages of overlays and related programs through a practical guide rather than an overly technical discussion. In the first section 'Overlay Objectives' we provide a description of derivative investment programs and their objectives. This is followed by a discussion of the relationship between derivatives and the stock and bond securities. We then proceed with a simplified case study to illustrate how overlays and related applications work in practice. The article concludes with a discussion of the major issues plans face when deciding how to structure an overlay program.

What is an overlay? It may be more productive to describe overlays rather than provide a formal definition. Overlays are best understood when contrasted with the most common type of investment programs, i.e., fully funded accounts (FFA). In an FFA, the owner of the account (pension plan sponsor, foundation, individual investor etc.) (hereafter the 'Plan') transfers cash to an investment advisor. Subsequently, the cash is usually fully invested. Typically, the investment advisor may invest in various instruments but the mandate specifies that the total of such investments may not exceed the Plan's contributions to the account. In contrast, overlays are understood and intended to augment investments with a value well in excess of the Plan's cash contribution to the overlay account. In fact, the overlay manager is frequently hired to affect the asset allocation of the entire Plan while the vast majority of the Plan's assets reside with FFA's at third party investment managers. Various types of derivatives are used. However, as we will see shortly, this does not necessarily imply that the Plan will be levered.

Overlays are one of many possible derivative programs. The motivations for derivative programs vary, but most often they centre on one or more of the following objectives:

1. **TAA:** The Plan employs a manager who generates alpha through Tactical Asset Allocation shifts, augmenting the effective asset allocation of the Plan.

2. **Hedging Program:** The Plan wants to hedge certain undesirable exposures which were generated by FFA's as a by-product of their process. For example, international equity managers may inadvertently generate certain currency exposures the Plan wishes to avoid.

3. **Rebalancing:** The Plan aims to realign asset class exposures with the desired policy mix at the lowest possible cost. Derivatives minimise the more costly need to transact in physical securities.

4. **Alpha Transport:** The Plan wants to maximise its access to superior active skills of one or more of its managers in certain asset classes. The Plan deliberately over-allocates to these classes to maximise alpha from the chosen strategy. The derivatives program is then designed to realign the Plan to its policy mix.

5. **Equitising or Bondising the Cash:** The Plan needs liquidity (access to cash on short notice) in excess of the Policy allocation to cash. Derivative programs are able to provide liquidity letting one have 'cash on hand' while replicating the returns on a fully funded passive stock or bond account. Our discussion will touch on each of these widely varying objectives[1].

Interestingly, the casual observer will find only little variation in the actual instruments of the different programs! Virtually without exception, the actual account will involve some futures. We therefore need a brief discussion of futures contracts.

The Relationship Between Futures and Physicals

A fully funded account invested in equities can be thought of as a positive combination of the return on cash and the equity return premium in excess of this cash return. Futures allow investors to explicitly obtain the equity return premium without the full investment of cash.

The following discussion of futures is approximate: we omit some technicalities, in order to focus on the key features of futures contracts. Consider the purchase of a futures contract on the S&P 500 Index. This contract has a notional size of 250 times the price of the index. If the index trades around 1000, the contract generates equity exposure of $250,000. It does so without absorbing $250,000 in cash. Futures are contracts and do not require a cash investment equal to the size of the contract. In other words, our $250,000 can still be invested elsewhere in cash, fixed income, real estate and so on. The choice of the allocation of the cash may have many implications and can of course result in leverage. However, if the freed-up-cash were put back into a cash instrument, the total return on the futures position combined with the cash instrument would be virtually identical to a fully funded physical equity investment:

Futures Return + Cash Return = Physicals Return

Rearranging terms, we can approximately state that:

(I) Futures Return = Physicals Return – Cash Return

The futures return will vary one-for-one with the price return on the S&P500 or any other physical security underlying the futures contract. Loosely speaking, due to this sensitivity, futures can give us exposure to the equity market. To quantify the exposure, we apply the multiplier of 250 to the price of the index.

Extending Exposure to Other Instruments

The depth of futures markets allows us to trade inexpensively and in size. This makes futures contracts an ideal vehicle to create liquidity. However, derivatives may also involve options,

[1] *Some plans aim to generate leverage in order to achieve more ambitious return objectives. However, we find this to be the rare exception.*

swaps, warrants and so on. In these cases the sensitivity or exposure is not one-for-one. We will illustrate how to apply the 'exposure' concept more generally through a discussion of equity warrants. Equity warrants are derivatives but have been around for a very long time and many traditional equity mandates allow the manager to hold warrants. To refresh, a warrant is the right to purchase a certain number of shares in a company at a pre-set price (conversion price or in the case of options 'strike') before or on a predetermined expiration date. Warrants differ from call options in some legal aspects but warrants are economically nearly identical to call options, their more popular trading equivalent. Both warrants and call options on company XYZ feature a certain sensitivity to changes in the market price of XYZ. The degree of this sensitivity varies with the level of the market price of shares in XYZ. Unlike futures, the sensitivity is not one-for-one. If the share price of XYZ is very low (relative to the strike), the option/warrant sensitivity may be virtually zero. Suppose the warrant allows us to purchase one share for $50 in the next three months. If the stock were currently trading at $10, the warrant may be worth as little as $0.10 because XYZ would need to rise by more than $40 (or 400%) over the next three months for the warrant to end up with any economic value ('in the money'). Indeed, if the stock went up as much as 100% (to $20), the warrant's market price may still stay put near $0.10. Hence, in this case, the market price of the warrant does not move much with the price of XYZ shares. On the other hand, if the share price of XYZ were high ($100), the price of the same warrant/option could be substantial and would become very sensitive to price changes in the shares. Investors often use 'delta' to quantify the sensitivity today. For futures the 'delta' tends to be about 1.0 but other derivatives may take on almost 'any' delta value. 'Exposure' refers to the current sensitivity of the derivative to price movement in the underlying shares ('delta') scaled to size. In the case of warrants or call options, exposure is equal to the delta of the warrant/option times the size of the contract. Lets assume delta equals 0.5 currently. Furthermore, assume that the option gives us the right to purchase 100 shares of XYZ stock trading currently at $50, so the current market value of the underlying securities of the option contract equals $5,000. As delta is 0.5, our exposure equals $2,500 (=0.5*$5,000). We have defined exposure in such a way that it translates our warrant/option position to reflect the fact that it behaves as if we had purchased $2,500 worth of stock XYZ! Our profits and losses from the options position would have been identical had we invested $2,500 or 50 shares in stock XYZ paying cash for the shares (FFA). Of course, the options cost a much smaller amount than $2,500 in the market place but their value will move approximately $50 for each $1 move in the share price of XYZ.

Exhibit 1 Getting Invested.

Instruments Benchmark	Type	(a) In	(b) Transactions (= changes) Capital Absorption	(c) Exposure Amount	(e) Out	(f) Effective Asset Mix plan
Stocks						
S&P-500	Physicals		$740	$740	$740	37%
Nikkei-225	Active Manager		$360	$360	$360	18%
Bonds						
Treasury 10Yr	Physicals		$800	$800	$800	40%
Cash						
CD 3 Month	Physical	$2,000	$(2,000)	$(2,000)		
T-bills 90Day	Physical		$100	$100	$100	5%
Total Net Asset Value		**$2,000**	–	–	**$2,000**	**100%**

If we purchased the option position today, we would be required to hand over today's premium to the seller of the option. If that premium were $600, we would have created an exposure equal to $2,500 which only 'absorbed' $600 of our cash. The main beauty and at the same time main danger of derivatives is this gap between exposures and capital absorption. The discussion of warrants and options illustrates the general fact that derivative instruments may be translated into physical exposures. We should not belittle the fact that some derivative instruments can be dauntingly complex. However, the comforting feature is that we can always think of the derivative as equivalent to a cash position plus some quantity of stock, bond, currency, etc. The translation of derivatives into exposure of some physical denomination allows us to do bookkeeping in the common currency, i.e., physicals. We will now turn to a case study of an overlay to illustrate how this is done.

THE CASE STUDY

The case is organised around three tables. In Exhibit 1, we introduce our bookkeeping method of asset values and exposures. Next, we show in Exhibit 2, a straightforward way to fund an overlay. Finally, Exhibit 3 shows how the Overlay program blends with the Plan.

A Hypothetical Plan: Getting Invested

Our plan is newly formed, funded with $2 billion ($2,000 M) initially invested in Certificates of Deposit. The Plan has decided on a Policy mix of 37% S&P 500, 18% Nikkei 225 (55% Equities Total), 40% 10yr US Treasury Notes, and 5% cash. Exhibit 1 shows the transactions the Plan executes to get to this mix.

Column "In" (a) shows starting instruments. All of the capital is initially allocated to Certificates of Deposit. We show 'transactions' in the next three columns. First, in the capital absorption (column b), we see the reallocation of capital i.e., where the money ends up. In column 'c' we make a distinction between the instrument which 'absorbs' the capital and the associated exposure to asset classes ('c'). As we are only using physicals at this point, columns (b) and (c) amounts are identical. The CD position is fully liquidated ($2,000) but notice that $100 is reinvested in TBills. Columns (e) and (f) of Exhibit 1 sum exposures from various instruments by asset class and demonstrates that the effective asset mix satisfies the Plan's desired Policy mix.

Exhibit 2 Creating Liquidity.

Instruments Benchmark	Type	(a) In	(b) Transactions (= changes) Capital Absorption	(c) Exposure Amount	(e) Out	(f) Effective Asset Mix plan
Stocks						
S&P-500	Physicals	$740	–	$740	$740	37%
Nikkei-225	Active Manager	$360	–	$360	$360	18%
Bonds						
Treasury 10Yr	Physicals	$800	$(400)	$(400)	$400	
Treasury 10Yr	Future	–	–	$400	$400	
Treasury 10Yr	**Total**		$(400)	–	**$800**	**40%**
Cash						
T-bills 90Day	Physical	$100	$400	$400	$500	
Implied Cash Libor	Future		–	**$(400)**	$(400)	5%
Cash	**Total**		**$400**	–	**$100**	**5%**
Total Net Asset Value		**$2,000**	**$0**	**$0**	**£2,000**	**100%**

EXHIBIT 3 IMPLEMENTING THE OVERLAY

Instruments Benchmark	Type	(a) In	(b) Transactions (= changes) Capital Absorption	(c) Exposure Amount	(e) Out	(f) Effective Asset Mix plan
Stocks						
S&P-500	Physicals	$740	–	–	$740	
S&P-500	Future	–	–	$150	$150	
Total S&P 500		$740		$150	$890	45%
Nikkei-225	Active Manager	$360	–	–	$360	
Nikkei-225	Future	–	–	$(150)	$(150)	
Total Nikkei-225		**$360**	–	**$(150)**	**$210**	**11%**
Bonds						
Treasury 10Yr	Physicals	$400	–	–	$400	
Treasury 10Yr	Future	$400	–	–	$400	
Treasury 10Yr	**Total**	**$800**	–	–	**$800**	**40%**
Cash						
T-bills 90 Day	Physical	$100	$(50)	$(50)	$50	
Implied Cash libor						
Cash Overlay Mgr		–	$50	$(50)	$50	
Total Cash		$100	–	$100	$100	5%
Total Net Asset Value		**$2,000**	**–**	**–**	**$2,000**	**100%**

USING FUTURES CONTRACTS TO FREE UP CASH

To facilitate sizeable payments on short notice, the Plan now wishes to increase its liquidity without altering the effective asset class mix or policy. Let's say, the Plan prefers to do so through bond futures. Thus, the Plan sells $400 in physical bonds, which, as a first step, is invested in T-Bills. The associated changes in exposure are straightforward in columns 'b' and 'c': -subtract 400 in Treasuries and add 400 in T-Bills (Exhibit 2).

Next, Exhibit 2, column 'c' also shows the effect of entering into $400 of 10Yr Treasury Note futures contracts. While this does not require reallocation of cash in column 'b', effective exposures do change. We use the relationship between futures, cash and physicals (equation I) for bookkeeping purposes in Exhibit 2. From equation I, the bond futures position is equivalent to $400 of physical bond exposure less $400 in cash exposure. We record the latter as a negative or short exposure position in 'Implied Cash' at -$400. While the instruments and their absorption have changed, the summary exposures in Exhibit 2 show that these transactions do not change any of the bottom line net asset class exposures in the effective mix (column f). Up to this point, the impact of the use of derivatives is rather innocuous! The Plan now has $500 M in cash instruments (though only $100 M in cash exposure!). At this point, the plan decides to hire a tactical asset allocation overlay manager.

INTRODUCING THE OVERLAY MANAGER

While ignored thus far, futures positions do in fact require that we post a modest amount of margin, i.e., actual cash instruments. Hence, the overlay manager will need some actual cash to facilitate the overlay. Exhibit 3 assumes a cash transfer to the overlay manager of $50 million. The objective of the tactical asset allocator is to affect the exposures in columns (c) and (e), as well as the percentages in column (f), based on the manager's short or intermediate term expectations. This overlay manager is bearish on Japanese equities but bullish on US stocks. The overlay manager chooses to have an equal amount of long and short futures positions. The long position in S&P 500 futures of $150 M generates -$150 M in Implied Cash. On the other hand, the short Nikkei futures position generates a positive $150 M in Implied Cash. As a result, the changes in the Implied Cash Libor exposures "cancel out" and there is no net entry in Exhibit 3 for the Implied Cash Libor. However, the overlay manager has significantly impacted the global composition of equities in the Plan in column (f), without touching existing investments.

EXHIBIT 4 ABSOLUTE RETURN STRATEGY

Instruments Benchmark	Type	(a) In	(b) Transactions (= changes) Capital Absorption	(c) Exposure Amount	(d) Out
Nikkei-225	Active Manager	$360	–	–	$360
Nikkei-225	Future	–	–	$(360)	$(360)
Total Nikkei-225		**–**	–	**–**	**–**
Alpha					$$$
Implied Cash libor	Future		–	$360	$360

STRATEGIC REBALANCING

Overlay managers are often asked to perform strategic rebalancing. Most Plans have a target policy mix with specific percentage asset allocations. As markets move, the Plan's policy mix will deviate from its target mix. This is frequently referred to as 'drift'. Such deviations can be corrected by trading physical securities. Alternatively, for large institutional accounts, this can be done at lower cost by setting aside a portion of the Plan's assets in cash to facilitate such adjustments (rebalance) through the overlay manager. One could work backward from Exhibit 3 and insert policy mix allocations in column (f) to find the exposures and derivatives positions necessary in column (c) to obtain the appropriate exposures. Sometimes overlay managers are asked to combine the task of tactical reallocations and strategic rebalancing.

ABSOLUTE RETURN STRATEGIES

A Plan may currently employ a very talented Japanese stock selector who is considered highly likely to outperform the local market. What if our plan likes the manager's skill, but is leery about the prospects for Japanese equities in general? In order to reduce risk or to express a negative opinion on the Japanese equity market, derivatives can be used to eliminate the systematic equity and/or currency exposures through the short sale of futures and forwards. Currency hedging programs are more common but the equity exposure may be eliminated just as easily. In Exhibit 4, a $360 M negative entry for Nikkei Futures serves to negate the systematic market exposure. If the Japanese equity exposure were eliminated through the futures markets in this way, then the total return of the stock selector and overlay manager combined will sum to a synthetically generated cash exposure. The stock asset class exposure disappears; however, the stock selection alpha remains intact, either enhancing or reducing the synthetic cash return. If one fully funded advisor executes both the stock selection and the elimination of the asset class exposure, it can be referred to as an absolute return strategy. It is 'absolute' and a 'pure pursuit of alpha', because the direction of equity and fixed income markets should not systematically affect the total return of the account: there is no net exposure to risky asset classes. The neutral return is the cash return.

ALPHA TRANSPORTATION

The absolute return strategy as just discussed may be complemented with the creation of new exposure to risky asset classes. For

EXHIBIT 5 ALPHA TRANSPORT STRATEGY

		(a)	(b)	(c)	(d)
			Transactions (= changes)		
Instruments Benchmark	**Type**	**In**	**Capital Absorption**	**Exposure Amount**	**Out**
Nikkei-225	Active Manager	$360	–	–	$360
Nikkei-225	Future	–	–	$(360)	$(360)
Total Nikkei-225		**–**	**–**	**–**	**–**
Alpha					$$$
S&P - 500	Future	–	–	$360	$360
Implied Cash libor	Nikkei Future		–	$360	$360
	S&P Future			$(360)	$(360)
Cash					—

example, as an additional step, the advisor may purchase S&P 500 futures contracts to obtain US Equity exposure. We then have transported alpha in the Japanese equity asset class to the S&P 500 (Exhibit 5). The short position in Japanese equity futures and the long position in US Equity futures are not created to express a view on these asset classes, but rather to transform our asset class exposures back to its neutral policy mix. In the current modified example, the plan's policy mix does not allow Japanese equities. As the example illustrates, the transport target does not need to be the complete composite benchmark policy mix for the Plan. In this case the Japanese advisor's allocation was funded with moneys that were targeted for large cap US equities. Hence, there is a need to purchase S&P futures to bring the Plan back to the policy mix, but there is no need to purchase other components of the overall policy mix. The alpha is transported from the Japanese equities asset class to US large cap equities.

FINE-TUNING THE IMPLEMENTATION OF OVERLAY PROGRAMS

Overlay programs typically involve a portfolio of derivative positions. While it is critically important to establish the quantitative goals of the overlay program, such mandates also need specification in terms of acceptable portfolio characteristics and risk management.

CONTROLLING THE RISK OVERLAY MANAGERS MAY TAKE RANGES

Exhibit 3 showed the overlay manager generating gross futures positions of $300, thereby materially exceeding the cash allocated to the manager ($50). The impact on exposures at the Plan level is a sizeable 7.5% points. This begs the question: what is the maximum position the overlay manager should be allowed to have?

There are various ways to define and curtail the *modus operandi* for the overlay manager. In our experience, the boundaries are always independent from the amount of cash transferred! While this appears counter-intuitive, there is a perfectly sound reason. The cash transferred is only linked to the capital absorption, that is to 'where we have deposits.' However, at the end of the day the Plan is interested in exposures, precisely because they represent the true economic sensitivities of the Plan. Thus, risk management is best defined in terms of exposures. One common way to curtail exposures involves the use of acceptable over- and under-weights ('ranges') applied to an agreed upon notional amount. The notional amount of the mandate together with other risk control parameters will determine the size of positions the manager can take. The notional amount could be set equal to the total plan value of $2,000m. Alternatively, it would be perfectly reasonable if the overlay manager agreed to manage to a predetermined notional amount of for example $500Mln, supported by $50Mln in cash transferred. The Plan could mandate the acceptable ranges of active positions. For example, the maximum active position for the overlay account could be 30% for any of the four exposure types. This would render the Nikkei position in Exhibit 3 right at the boundary (0.30*500=150). The Plan would know that its overall exposure to the Nikkei would always fall between 10.5% and 25.5% with a midpoint of 18%. A predefined set of ranges in combination with a chosen notional amount would fully define the Plan's exposure ranges. Ranges may also be appropriate if one is concerned about leverage. While the use of the term 'leverage' is ambiguous, avoiding leverage is sometimes assumed to mean that the overall Plan needs to avoid a net short exposure in any asset class. Setting ranges for the overlay program can indeed accomplish the avoidance of leverage defined this way.

WHAT IS THE ROLE OF TRACKING ERROR?

Tracking error is typically defined as the annualised standard deviation of the return difference between the account and its benchmark. While not appropriate in all situations, tracking error is often a useful metric in risk management. The tracking error metric is attractive in various ways:

- Tracking Error provides an intuitive interpretation which grasps aggregate exposures and the risk profile of the overlay account in a single number: if the tracking error is 2% we expect to end up no worse than 2% under the benchmark in approximately five out of six years, even if the manager has no skill.
- Tracking error has the potential of being more efficient in the allocation of the risk budget than the use of asset class ranges because it explicitly considers the risks and co-movement of assets and currencies. Tracking error is an aggregate risk metric for a portfolio rather than a partial constraint or range by asset class.
- Tracking error can be rather informative to the plan as the average expected tracking error summarises the risk taking over a full cycle whereas ranges only limit potential extremes (which may or may not be reached frequently).
- Using tracking error rather than ranges may also facilitate better decision making. Many Plans accept more liberal ranges on individual positions once it is understood from the agreed upon tracking error that the overlay manager introduces rather modest expected return deviations from the aggregate policy mix for the total portfolio. This may enhance returns because managers could be left with more operating freedom for a given risk budget.

DO WE NEED TO EQUITISE EXPOSURES?

The overlay manager in Exhibit 3 should probably have a cash benchmark: when the account is in neutral there are no active non-cash exposures and the account should yield the cash return on $50 million. However, in many cases, the overlay manager is asked to 're-generate' the exposures that freed up the cash in the first place. In our example, the overlay manager received $50 Million in cash coming from the sale of bonds, and the mandate would specify that the manager holds $50 Million in bond futures at all times irrespective of his views.[2] Hence, in some sense Treasury bonds become the benchmark. Likewise, equity exposures would need to be generated if the overlay manager were funded from equities. This is often referred to as Equitising the cash in the case of equities, and 'Bondising' in the case of bonds. It is now clear that the decision whether to equitise or bondise depends on the source of the cash funding. In our example, the Plan would fund the overlay account from bonds, so either the Plan itself or the overlay manager needs to bondise $50 Million. It is possible to fund the overlay account from an asset mix that equals the composite benchmark of the Plan, but more often than not this

[2] *Of course, this assumes that the plan did not bondise exposures on its own.*

involves inefficiencies, for example through increased transactions cost. Finally, there can be funding from a combination of asset classes with weightings that are partly—but not identically—derived from the full Plan's benchmark. This is sometimes referred to as a 'Carve-Out'.

Long-Short Equity, Market Neutral, Hedge Funds

At the risk of outstaying our welcome, we characterise two more terms from Overlay Speak. Long-Short equity strategies are fully funded accounts, which invest in equities but also borrow and sell ('short') other physical equities. If the long positions are equal in total size to the borrowed position, there is no systematic equity market exposure. This is another incarnation of the absolute return concept. Sometimes the long positions are approximately twice the funding of the account whereas the sum of the borrowings is approximately equal to the account's funding. In this case the market exposure is approximately equal to the funding of the account. Higher ratios are possible also. The term market neutral is most often employed where the manager expects to have time-varying market exposure, which can be net long or short at any point, but is expected to be 'neutral' on average over the cycle. 'Hedge Funds' can do any or all of the above. While often presumed, the label 'Hedge Fund' implies nothing about the investment strategy of the fund! It simply means that the fund satisfies certain criteria which allow it to remain 'unregistered'.

The Role of Benchmarks

As investment professionals we employ the term benchmark frequently, but what is a benchmark? Clearly it is some standard of comparison, but with what purpose? Sometimes, 'benchmark' means the Plan's most efficient asset mix given its liability structure. At other times, the benchmark is the passive return bogey that the active manager needs to beat to demonstrate added value or skill, or to simply satisfy Plan officials. In some situations the benchmark tells us where the account would be if all assets were fairly valued (neutral or normal mix). Benchmarks have been used for even more purposes. It should not surprise us that a single benchmark cannot carry the burden of serving all these objectives well. Depending on the circumstances and the question we are trying to answer we may pick different benchmarks. Specifically, we feel that it can be very confusing to introduce the policy benchmark for the Plan as the explicit performance/benchmark for the overlay manager. To determine skill, the manager's return can often more easily be compared to a cash benchmark (or to an equitised/bondised benchmark as discussed). In this case, the value added equals the actual return on the account net of an assumed cash return on the amount of cash transferred to the overlay manager. Net returns in dollars, euros or other base currency are then best compared to the notional amount of the program to make percent return comparisons. Plan benchmarks policy ranges can separately help identify any implied constraints for the Overlay manager. Suppose the benchmark for Japanese equity is 18%, with an acceptable range from 17% to 19%. This would imply a maximum downward variation of $20Mln (up or down 1% of $2 billion) at the Plan level. Given the notional amount of $500 m for the overlay we would need to specify a maximum underweight of 4% (20/500) for the overlay manager. As managers, we sometimes encounter policy range requirements that legitimately constrain us as the overlay manager. However, it is not clear why Overlay programs should be heavily influenced by the composition of the Plan's policy benchmark. Overlay programs can perfectly perform their assignments using a benchmark which primarily considers the source of its funding and any need for equitisation/bondising.

The Final Details: Margins, Cash in a Dash

In an effort to keep our exposition from becoming overly complex, we have so far ignored a number of important details. Futures exchanges require market participants to provide cash collateral when we enter a new futures position (initial margin). When we purchase (sell) a futures contract, we promise to pay the counterpart should the futures contract's price fall (rise). One is in fact required to post additional collateral on a daily basis to anticipate settlement of the position's embedded losses where applicable ('mark to market'). To facilitate this process, the overlay manager was given a certain amount of cash at the outset, $50 M in our example. The overlay manager will monitor and manage the cash buffer on a daily basis. While the initial buffer significantly reduces the chance of needing additional cash infusions from the Plan, it is still important that a set of agreed upon operational procedures is in place: The Plan must transfer some additional cash on a next day basis should the initial buffer be fully depleted. A timely transfer is critical as the Exchange may close out positions and hence alter exposures in sub optimal ways should the cash not become available 'in a dash'. Overlays are becoming increasingly popular, as they are very flexible and economical programs to achieve desired exposures. The role of derivatives in these programs can be understood and the associated risks can be controlled effectively with straightforward guidelines. Although managers would be delighted to help structure any of the details, they clearly cannot decide on such items as the size of the mandate and related issues. Hence, the Plan would need to decide on:

- The Account Size or Notional Amount of the Program (e.g. €2 billion).
- The maximum allowable positions by asset class/category (e.g. Total Equity, Bonds, Cash +30% and -30% each; Any country stock, bond or currency asset +20/-20% etc.).
- Agreeable tracking error, if applicable (e.g. 3.5% on average with a maximum expected tracking error of 5.5%).
- The source of cash to be transferred to the manager and any desirable Equitising/Bondising (€50Mln; Track 10-year US Treasury).

While derivative programs can be intimidating at first, they can be understood when we link the futures instrument to physical securities and the concept of exposure. Armed with this knowledge, Plans can importantly benefit from the use of overlay and similar strategies.

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