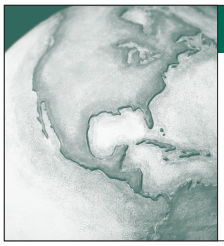

Insights on...

# TRANSITION MANAGEMENT

## UNDERSTANDING AND EVALUATING INTERIM INVESTMENT MANAGEMENT SOLUTIONS

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In a perfect world, all investment managers meet their performance expectations, asset allocation policy remains static indefinitely and few, if any, changes to the portfolio are ever required. But the market can move fast and sometimes in unexpected ways. In the real world, market conditions change, investment managers need to be replaced, assets need to be rebalanced and funds need to be redeployed to other investments on a regular basis.

Sometimes, these investment changes need to happen quickly – perhaps in as soon as a few days, with little time for planning. Being able to respond to change rapidly is critical in today's complicated and rapidly changing global markets. When this happens, there may not be sufficient time to find and hire a new replacement investment manager. This is where interim investment management becomes essential.

At its core, interim investment solutions provide temporary management of assets to gain exposure to (or hedge against) a particular class of investments or benchmark. Interim investment management, often referred to as equitization, is most often used in the following situations.

### Changes in outlook or market fundamentals

- A decision to implement a new asset allocation policy or to reduce exposure to the equity market;
- To rebalance to policy allocation targets; or
- Unexpected market changes or volatility.

### Cash needs to be invested

- A large cash disbursement may be received from an investment or as part of a spin-off or acquisition;
- Payment of cash delivered to a pension fund by the parent organization to meet funding needs; or
- Cash held for capital calls.

### Unexpected changes to the current investment manager

- The departure of key personnel at the investment firm;
- Changes in investment management style; or
- Rapid deterioration of performance.

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## CONSIDERATIONS

There is one overriding question that must be asked for any asset allocation decision.

**Will the potential benefit of restructuring be worth the cost to transition the assets?**

While this is an important question any time assets are being transitioned, it is particularly important to ask when considering an interim investment solution due to the short timeframe involved. The interim investment solution must make sense, given the holding period will usually be abbreviated. The cost to transition the assets to the interim investment must be offset by the performance or risk reduction during this time period. Sometimes, the ideal interim solution may also lead to the highest transition costs.

Like any other investment, there are several factors to selecting the best interim investment vehicle. To determine the optimal solution, the primary issues are:

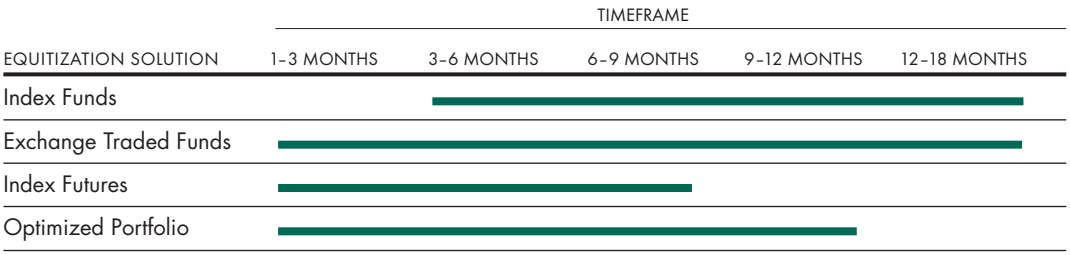
- **Timeframe** – How long do you expect to stay in the interim investment?
- **Flexibility** – Do you need readily accessible investments? Does your benchmark need a degree of customization?
- **Benchmark** – What equitization vehicle will provide best tracking to your benchmark?
- **Cost/Risk Trade-Off** – Will the cost of trading into the interim management solution be offset by the reduced risk?

## POTENTIAL SOLUTIONS

There are four core solutions that can be used to equitize a portfolio on a temporary basis: **index funds, exchange traded funds (ETFs), futures contracts** and **portfolio optimization**. Swaps are sometimes considered as well for interim investment solutions, but they are generally more expensive for time periods less than one year and have more rigid reset dates that limit flexibility to exit the position.

The following chart summarizes what typically are considered to be the investment time horizons for the four core interim equitization solutions discussed in this paper.

### TIME HORIZON FOR EQUITIZATION SOLUTIONS




*Source: Northern Trust*

Time horizon is certainly a key factor to consider. Still, each potential solution needs to be better understood in order to determine which may be appropriate for a particular situation.

## INDEX FUNDS

*In-kind transfers are securities that can be retained from the current portfolio to help build the new portfolio.*

### *Benefits*

- Flexible, but investment advisor may set restrictions
- Highest correlation to benchmark
- Low management fees

### *Considerations*

- Not well suited for short-term exposure
- Higher trading costs than some other interim solutions

The most obvious and straightforward method of interim investment management is to replicate the benchmark by buying the underlying constituents. This can potentially eliminate any risk or tracking error as performance should be in line with the index. In addition, larger investments into index funds likely will allow for securities to be retained in-kind between the index and target manager, once selected. Achieving index exposure through a fund purchase gives the greatest amount of flexibility. Nearly any major index can be replicated as an interim investment.

Management options for index funds vary.

- **Commingled funds** – A simple solution, provided that the fund manager will allow the fund to be used for a temporary investment. Where applicable, note that most collective and common commingled funds are not set up to manage taxable assets.
- **Separately managed account** – This is usually reserved for large investments (typically $100 million and more) or for situations where commingled funds may not be available. Since there is more work to set up the separate account, minimum fees may apply regardless of how long the assets are managed.
- **Unmanaged account** – Replicating the index by purchasing its constituents and holding it without a manager will save on management fees, but tracking error can increase over time, making this a higher-risk option. Some index families that rebalance on an annual basis, such as the Russell indexes, may be better suited for this option.

The expected timeframe of the interim investment is a consideration when replicating an index. Due to the set up work required to open accounts and buy and manage the constituents of the index, this solution usually is better suited for an intermediate- to long-term timeframe.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*Tracking error, also known as active risk, is the variance between the returns of the portfolio (or ETF in this case) and the return of the benchmark over a specific period of time, usually one year.*

## EXCHANGE TRADED FUNDS

### *Benefits*

- Wide array of products and exposures available
- Suitable for any interim time period
- Self-managed

### *Considerations*

- Liquidity varies by product
- Higher management fees than index funds
- Potential for tracking error in short term

As an alternative to index funds, ETFs provide another option for equitizing assets in transition. An ETF is a security that represents an index or basket of stocks but trades during the day like a stock. Investors can achieve exposure to all of the major global indexes via this investment vehicle. ETFs offer exposure to equities, fixed income, commodities and currencies.

ETFs are managed by an investment advisor, which allows for the buyer to leverage the advisor's fiduciary oversight rather than needing to hire a separate entity to manage index exposure. As such, ETFs are self-contained and self-managed, which can make them a good option for short-term equitization because no additional paperwork or account set up is necessary. The management fees are usually higher for ETFs than for institutional commingled funds. However, there is a wide variety of ETFs available and no minimum purchase amounts or holding period. As ETFs can be traded throughout the trading day, there is flexibility as to when to buy or sell.

There are some ETFs that are not widely held and may not have much daily trading volume. While it is possible to create additional ETFs by purchasing the underlying securities and exchanging them for shares of the ETF, this process can result in additional transaction costs and there are minimum size thresholds that must be met to do this. ETFs can also be redeemed and exchanged for their underlying security positions, but again, there may be costs associated with this which may outweigh the benefits. Creation and redemption of ETFs is not a viable solution for some asset classes.

Another potential downside of ETFs is the limited ability for in-kind transfers, which are securities currently held in the account that can be retained without any trading costs to build the new portfolio when the new manager is funded. In-kind transfers can be achieved if the ETF is redeemed for the underlying constituents, but this is only worthwhile when the benefits of in-kinds outweigh the costs to redeem as noted above.

As with index funds, ETFs may experience tracking error relative to the benchmark index. Tracking error, also known as active risk, is the variance between the returns of the portfolio (or ETF in this case) and the return of the benchmark over a specific period of time, usually one year. The amount of tracking error depends upon the effectiveness of the investment manager to replicate the underlying index as well as the fund fee levied. Some ETF managers may decide not to hold each and every security of the target index. They do this to avoid buying some of the smaller, less-liquid index constituents.

Because ETFs are bought and sold in the open market, they may trade at a slight premium or discount to the net asset value (NAV) of the underlying holdings. This is often the case for ETFs with less liquidity since the trading volumes are lower. Global ETF prices also tend to move away from NAV since they continue to trade even after the local markets of the underlying holdings are closed. In both cases, short-term trading of the ETF can be complicated when the ETF prices have moved from the NAV. These are situations where it may make sense to create the ETF from the underlying securities to ensure trading at NAV.

***Index futures contracts are often best used for short- to intermediate-term investment management.***

## INDEX FUTURES CONTRACTS

### *Benefits*

- Low trading costs
- Easy to leverage, as margin/collateral requirements are low
- Suitable for interim investments less than nine months
- Best for shorting, due to the ability to easily leverage

### *Considerations*

- Limited liquidity for many index contracts
- Futures agreement required
- Higher potential for tracking error
- Increased costs if held for longer than six or nine months (due to quarterly rolls)

Futures contracts are financial instruments which allow the investor to buy or sell a specific amount of a commodity or security at a specific price and time. These vehicles are best suited for short- to medium-term exposure, i.e., less than nine months. Index futures are frequently employed to attain exposure or hedge against the major equity benchmarks (e.g., S&P 500, Russell 2000, DJ EuroStoxx, TOPIX, FTSE 100, etc.). Commissions to trade futures are low compared to equity commissions, making this a key benefit. For example, the commission to buy the underlying S&P 500 index constituents would total about six basis points (at 3 cents per share), but would be less than one basis point using index futures contracts.

Futures contracts also can be purchased long or sold short with minimal capital requirements. Most contracts can require 10% – 20% combined initial and maintenance margin. This means that the majority of the investment can remain in the account ready to be used as needed without settlement delays. This also makes futures the vehicle of choice for shorting to hedge a position or reduce exposure, or when a client needs ready access to cash.

The biggest drawback for futures contracts is the limited selection available compared to ETFs. Further, many available index futures cannot be utilized due to liquidity constraints. Liquidity is high for major stock market indexes such as S&P 500, Russell 2000 and EuroStoxx. However, other contracts such as S&P 600 and Russell 1000 may not have adequate liquidity to be used as an interim investment.


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*Portfolio optimization is the process of modifying a current portfolio with the goal of simultaneously minimizing risk and maximizing target characteristics.*

Trading futures requires a fair amount of preparatory work. Before using futures, a tri-party agreement must be put into place between the investor, manager and futures broker. This agreement can often take a week or longer to effect, therefore it is advisable to put such an agreement in place early as a precaution.

Due to quarterly expiration of futures, the investor also needs to be aware of the additional costs and considerations associated with the investment vehicle. Generally, futures are rolled into the next quarter to avoid the expiration (this is a monthly process for some global index futures contracts). Since the vast majority of an index future's liquidity is in the front month contracts, positions must be rolled to the next contract every three months. After several quarterly rolls, commissions and trading costs can add up, negating one of the original benefits of using this interim investment solution. Thus, index futures contracts are often best used for short- to intermediate-term investment management.

As index futures are derivatives, there is potential for tracking error to the underlying index. This potential tracking error is created, in part, because futures prices include certain assumptions about future interest rates and dividends. In addition, there may be an imbalance between the long and short interest in a particular contract during the quarterly roll. This may result in the futures rolling cheap (more short interest) or rich (more long interest), assuming the client is long the position. The quarterly roll can therefore contribute to tracking error.

## PORTFOLIO OPTIMIZATION

### *Benefits*

- Highly customizable solution
- Maximized retention of in-kind securities

### *Considerations*

- Not well suited for longer-term interim investments
- Residual risk from the legacy portfolio

Portfolio optimization is the process of modifying a current portfolio with the goal of simultaneously minimizing risk and maximizing target characteristics. This is accomplished by selling the positions with the highest risk and replacing them with securities that create better exposure to the benchmark or intended target. The goal of an optimized portfolio is to mimic the target benchmark while at the same time reducing the turnover to reach that benchmark.

The process of portfolio optimization starts with a portfolio analysis to determine the tracking error of the current portfolio relative to the benchmark. Next, the portfolio holdings are analyzed to identify the portion of the current portfolio that is contributing the largest component of active risk. The final step is to develop trade scenarios that sell certain risk-contributing securities and replace them with securities that bring the tracking error down to the desired level.

This solution potentially maximizes in-kinds, reduces trading costs, manages risk and provides a reasonable performance return versus the benchmark. But, it is not optimal in every situation. An optimized portfolio solution is most applicable when the initial portfolio contains securities that overlap with the benchmark or intended exposure. Optimization is not a viable solution when starting with cash or changing to a new benchmark. It often does not work well in situations where the legacy portfolio is highly concentrated or there is a high tracking error relative to the benchmark. For example, when the annualized tracking error exceeds 7%, an optimized portfolio may not represent much of a cost savings relative to just buying the index itself.

This customization allows for a better reconciliation of cost versus risk. But, similar to equitizing with index funds, ETFs and futures, the equitization can create high turnover and increased costs. At times, the costs can be high enough to offset the benefits of this interim investment solution.

On the downside, trading costs associated with the optimization may be more than other solutions. This is most commonly seen when optimizing a legacy portfolio versus a disparate target benchmark.

As a variant to replicating an index through the purchase of a fund, it is also possible to create an optimized slice of the index. An optimized slice of the portfolio is one that represents the exposure of the index but that does not hold all the securities involved. The Russell 2000 index exposure, for example, can be built effectively without buying all 2000 names. This can also be done in conjunction with the legacy portfolio to maximize in-kind security retention.

## SUMMARY

The goal of an interim investment solution is to provide an immediate asset allocation which best reflects the investor's investment philosophy or changes in the market. It also provides peace of mind and makes available the valuable resource of time to search for, investigate and hire the best permanent manager.

Making interim investment decisions can be challenging for two reasons. First, the decision often needs to be made and implemented quickly. Second, the trade-off between transition cost and benefit is particularly important because the solution is normally not a permanent one. The bottom line is there is no perfect solution. Instead, all options should be considered to determine the most appropriate route in each situation.

This paper continues with two case studies that illustrate the considerations that need to be taken into account when evaluating interim investment solutions.


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## INTERIM INVESTMENT SOLUTIONS – CASE STUDIES

The following case studies provide examples of when interim investment solutions may be needed and the considerations taken into account when comparing the alternatives. The first case study, Interim Investment Selection, describes the situation when investors need to quickly exit current holdings but are unsure how to manage exposure during the selection process for the target holdings. The second case study explores portfolio optimization in detail.

### *CASE STUDY #1: Interim Investment Selection*

Selecting an appropriate interim investment solution will be contingent upon a number of variables. This case study provides an example of the process involved in selecting an interim investment strategy.

#### Situation

On September 30, 2005, an investment manager with a highly concentrated large-cap value style announced that the founder of its largest fund and two key portfolio managers were leaving the company. This value-oriented portfolio was heavily concentrated with approximately 30 total positions. The fund, which had more than $6 billion at the time of the announcement, was managed by the same team for 20 years. No new portfolio managers were named to replace the outgoing ones. Investors took note. In the year following the news release, the fund shrank as investors withdrew more than $2 billion.

The exit of key management staff and ensuing outflows from the fund clearly had an impact on performance. From the time of this announcement until the end of the first quarter 2006, the fund had a total return of 2.66%, compared to 6.38% for the S&P 500 and 7.41% for the Russell 1000 Value, the benchmark for this fund.

Institutional investors who were able to leave the fund early experienced minimal impact to performance. Others who were not able to exit as quickly saw their performance suffer as a consequence.

#### Interim Investment Options

Faced with this scenario, investors in the fund had three options.

1. Do nothing and hope the fund would rebound.
2. Exit the fund and hold cash until a new manager could be found.
3. Exit the fund and use an interim investment solution to maintain exposure.

The third option was the most logical choice for investors who wanted to exit the fund but still participate in the market. When selecting this option, a decision needed to be made whether to use index futures, portfolio optimization, ETFs or index funds as vehicles to maintain target benchmark exposure. In this type of scenario, investors tend to benefit from partnering with a transition manager who can assist in the selection of an interim investment vehicle.

Often, the process of selecting the most optimal interim investment solution is best started by eliminating options that obviously will not work. The first interim investment choice that was ruled out in this case is index futures contracts. That's because the index contract for the benchmark Russell 1000 Value seldom trades, and total open interest in these contracts historically has been very small. (As a point of reference, it was only $56.9 million on December 12, 2008.) In addition, trading costs would have been prohibitively high due to low liquidity. Russell 1000 contracts could have been substituted but this would not have attained the appropriate value-oriented benchmark exposure.

Portfolio optimization was ruled out in this situation because the legacy fund holdings were highly concentrated with fewer than 30 equity holdings. The benchmark Russell 1000 Value index contains more than 600 names. Optimization was nearly impossible in this instance because specific stock risk in the legacy portfolio was high. Because of this concentration, there were not enough different names in the legacy portfolio to work with in order to attain benchmark exposure while minimizing risk.

For this situation, the decision came down to index funds or ETFs. The legacy fund portfolio had little overlap with the benchmark (less than 10% of the portfolio could have been retained in-kind) and the Russell 1000 Value ETF had sufficient volume, so transaction costs were similar for both products. An index fund would be better for a timeframe longer than six months or for a larger amount of money ($50 million or more). An ETF would be preferable for a shorter time period – three months or less – since it is easier to set up and buy, and no investment management agreement would have been needed. The selection of index funds versus ETFs in this example was ultimately based on the size of the interim investment and estimated length of time needed to find and hire a new large cap value manager.

### *CASE STUDY #2: Portfolio Optimization*

The use of portfolio optimization as an interim investment solution can be a complicated but extremely valuable solution. The following case study illustrates how this option is considered and how a transition manager can assist in implementation.

#### Situation

A plan sponsor held an actively managed, diversified small cap portfolio that was suffering from poor performance. The benchmark for this particular portfolio was the Russell 2000 index and the predicted tracking error (PTE) was 4.67%. (Recall that tracking error is the expected annualized variance in performance between the portfolio and the benchmark index.) The overlap in holdings between the current portfolio and the Russell 2000 index was 12.6%. This represents the percentage of securities – generally referred to as in-kind securities – that are identical between portfolio and benchmark index.

The plan sponsor decided to terminate this small cap manager and search for a replacement manager. As the plan sponsor expected the new manager search to take four to six months, they were interested in a cost-effective solution that maintained benchmark exposure but allowed them to terminate the current manager as soon as possible.

If the plan sponsor hired a transition manager to sell the current portfolio and replicate the benchmark Russell 2000 index, transition costs would have been as high as 57.8 basis points (bps). This cost estimate included all aspects of a transition, including commissions, taxes, market impact, spread and opportunity cost. While the solution does, indeed, achieve the goal of full replication of the benchmark index, the costs involved with this solution are rather high. This solution is summarized as the "base" scenario.


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### *Optimization Scenarios*

To get a better gauge of the potential solutions, the transition manager presented three different optimized portfolio scenarios with various levels of PTE. An optimized portfolio solution uses the current holdings to build index-like exposure. These are summarized in the table below.

| SCENARIO | DESCRIPTION | TRACKING ERROR | IN-KIND % | ESTIMATED TRANSITION COST |
|---|---|---|---|---|
| Base | Pro-rata slice of benchmark | 0.0% | 12.6% | 57.8 bps |
| 1 | Optimized to 2.0% PTE | 2.0% | 58.8% | 28.9 bps |
| 2 | Optimized to 1.5% PTE | 1.5% | 41.1% | 40.2 bps |
| 3 | Optimized to 1.0% PTE | 1.0% | 33.2% | 46.3 bps |

*Source: Northern Trust*

- **Scenario 1:** The first scenario created an optimized portfolio with a 2.0% tracking error to the benchmark. In this 2.0% PTE scenario, 58.8% of the portfolio could have been retained in-kind from the legacy portfolio. The level of in-kinds was high compared to the base scenario because many more securities in the current portfolio would be retained with no need for trading. As a result, the potential transition costs fell to 28.9 basis points.
- **Scenario 2:** An optimized portfolio was created with a predicted tracking error of 1.5% in the second scenario. The trade-off for this tighter-tracking-error, lower-risk strategy was a decrease in the in-kind potential. Here, 41.1% of the legacy portfolio could have been retained in-kind, resulting in potential costs of up to 40.2 basis points. Although this was still a less-expensive option than the base scenario of purchasing all the underlying securities in the benchmark, it had higher costs but less risk than scenario 1 over the holding period.
- **Scenario 3:** With a 1.0% tracking error target in this scenario, in-kinds fell to 33.2% as more of the higher-risk names would need to be sold to lower tracking error. Costs under this scenario rose to 46.3 basis points since a larger percentage of the portfolio would need to be traded. This scenario presented the least of amount of risk among the optimized portfolios, but the greatest amount of transition costs because more trading would be necessary to build this lower-risk portfolio.

When looking at the various scenarios, it is easier to understand the cost/risk trade-off when considering a portfolio optimization trade. An investor needs to determine which type of trade provides the lowest cost with the most appropriate tracking.

In this situation, the plan sponsor was comfortable with a tracking error of 2.0%, which was still considerably lower than the tracking error of the outgoing small cap. In this instance, scenario 1 provided the best fit from a cost/risk perspective.

In general, as the interim time period is relatively short, it is prudent to consider rebalancing the optimized portfolio periodically as market conditions change. This helps ensure the portfolio maintains its appropriate tracking to the benchmark. Once a new investment manager is hired, the transition manager will coordinate the process of exiting the interim investment solution and purchasing into the target portfolio.

*Northern Trust Transition Management*

## QUICK REFERENCE GUIDE: INTERIM INVESTMENT SOLUTIONS

The chart below can provide preliminary guidance on the type of interim investment solution that may be most appropriate given various criteria. For more information, please contact the Northern Trust Transition Management Group at 312.557.5713 or NTGI_Transition_Management@ntrs.com.

### INDEX FUNDS

| TIMEFRAME | FLEXIBILITY | TRADING COST | OPPORTUNITY COST RISK | MANAGEMENT FEES |
|---|---|---|---|---|
| **Long- or Intermediate-Term** | **Medium** – wide range, but restrictions may be set by the investment advisor | **High to medium** – generally tighter spreads than ETFs; however, high turnover to buy | **Low** – closest tracking error | **Low** |

### ETFS

| TIMEFRAME | FLEXIBILITY | TRADING COST | OPPORTUNITY COST RISK | MANAGEMENT FEES |
|---|---|---|---|---|
| **Long-, Intermediate- or Short-Term** | **High** – widely available and readily available | **High** – normal commissions and spreads apply; high turnover | **Low** – ETFs are representative of the underlying index | **High** |

### INDEX FUTURES

| TIMEFRAME | FLEXIBILITY | TRADING COST | OPPORTUNITY COST RISK | MANAGEMENT FEES |
|---|---|---|---|---|
| **Intermediate- or Short-Term** | **Low** – limited number of products available and new legal agreement often required | **Low** – minimum commission costs | **Low to medium** – assumptions must be made on interest rates and dividends | **Medium** |

### OPTIMIZED PORTFOLIOS

| TIMEFRAME | FLEXIBILITY | TRADING COST | OPPORTUNITY COST RISK | MANAGEMENT FEES |
|---|---|---|---|---|
| **Intermediate- or Short-Term** | **High** – fully customizable based upon benchmark and risk tolerance | **Medium** – less turnover compared to other options | **Low to medium** – tracking error is based upon risk tolerance | **Low** |

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