

# Meeting the challenge of pricing Collective Instruments

Investment Managers simply can't afford to publish incorrect prices. In times of ever increasing regulation with the need for greater transparency, the challenge is clear.

By Peter Phillips

When buying units in a collective investment the client has to be confident that the value of his or her units will move in parallel with the value of the assets of the fund. Allowing for charges and other fees, this movement will be driven by movements in the market value of the underlying asset pool. Not only is this a customer expectation, but the production of accurate prices is a regulatory duty.

## The Challenge

The Pricing function is challenged with producing accurate valuations of the fund, net of all charges and adjustments at specified pricing points during the day. Full and accurate values for all fund assets and liabilities need to be calculated, often within minutes of the funds pricing or closing point. This is akin to producing an accurate set of accounts for each fund multiple times per day. Processes are repetitive in an environment where risk of error is high, in terms of both probability and impact.

Pricing functions have been continually challenged with increasing demands over recent times including:

- Increasing volumes, greater number of funds;
- Need to reduce risk and reduce costs;
- Need to react quickly to deliver new fund structures;
- Continuing difficulty of recruiting and retaining skilled staff;
- The repetitive and boring nature of the work, dependent on manually intensive 'four eyes' checking;
- Over reliance on multiple spreadsheets using multiple data-feeds;
- Complexity leading to systems becoming difficult to maintain and control;
- More frequent and shorter time frames to verify each fund;

- Low seed capital which new funds often have, exposing inherent system weaknesses.

Add to this the fact that investment managers simply can't afford to publish incorrect prices, but are working in error prone environments. In times of ever increasing regulation, with the need for greater transparency, the challenge is clear.

## Meeting this challenge

To meet this challenge requires a more sophisticated way of working. By adopting expert systems it is possible to meet the challenge head on, maintaining total control and flexibility whilst avoiding the often hidden downsides of the alternative of Outsourcing. I will now consider the Outsourcing approach, identifying its benefits and drawbacks, the use of expert pricing in the pricing function, before moving on to look at how FundEYE provides the real alternative in the form of a system-based automated solution.

## The Outsourcing Approach

When looking for solutions to the challenges of fund pricing, companies may consider the growing trend of outsourcing their pricing operations. Outsourcing transfers some of the traditional challenges of the pricing function to the transferee, namely:

- Transferring the problems with resourcing and retaining suitably qualified and experienced staff;
- Transferring the problem of key man dependencies for key tasks;
- Avoidance of system upgrade costs;
- Transferring the continual challenge of ensuring that systems adhere to Industry best practice.

## Disadvantages of outsourcing

Experience suggests that outsourcing creates its own problems:

- Loss of control over key regulatory areas of your business;
- Loss of key business knowledge to the outsourcer;
- End to end controls can become ineffective when outsourcing is introduced;
- The increased difficulty of spotting and rectifying errors and implementing controls to prevent recurrence;
- Reduced ability to respond to the changing needs of the fast moving business;
- Longer lead times to develop new products and move with market initiatives;
- Hidden costs and delays around future developments and implementations.

Although it is possible to outsource the pricing process, it is not possible to outsource the responsibility for the accuracy of prices published and used by your organisation. The fiduciary duty remains with the outsourcer.

Outsourcing often results in the loss of key business knowledge, particularly around the interoperability and the interdependency of the various systems. This in particular can weaken the end to end control environment. Controls very quickly become poorly understood. As end to end multi-provider processes are more complex and disparate, errors become very difficult to spot. Even when clearly identified, in an outsourced operation known risk areas can prove difficult to control; responsibilities can be difficult to mitigate; key controls can fall between the gaps and not be picked up until it is too late after errors have occurred. Failure to spot errors in good time can result in substantial remedial work, client compensation and potential loss of reputation. The loss of, and the need to recreate lost knowledge, can lead to costly and fundamental redesign and duplication of large parts of the control environment.

The knock-on effects of small errors in the feeder systems can easily give rise to the 'blame game' as the true root cause is often hard to pinpoint in the disparate environment. This can put stress on the outsourced relationship. Obtaining information around suspected issues or breaches can prove problematic, as the provider has little incentive to re-allocate scarce resource or to investigate potential or suspected issues, particularly if this work is likely to bring to light weaknesses or issues in the operational process.

The cumulative effect of an investment error can be particularly laborious to resolve. When an investment error is missed and not noticed and addressed immediately, the error will quickly compound. Retrospective remedial work will be time-consuming and potentially costly. The ability to recognise and remedy such errors immediately will avoid effort, cost and the risk of damage to the organisation's reputation.

#### *The need for an oversight system*

An often overlooked fact is that even in an outsourced environment there is still a need for a quick, effective and light touch oversight system to ensure, not only that the outsourcer is providing an accurate service, but that the end to end control environment operating across multiple platforms and multiple sites continues to operate effectively. To achieve this, a system is required that is capable of operating in a retrospective manner using minimal data feeds and capable of being run by operators with a minimum of expert knowledge of the complex pricing environment.

Maintaining oversight of outsourced operations requires a different approach and a different system to that adopted within traditional Pricing Control systems. This requires an approach that

relies on expert systems and sophisticated algorithms producing detailed exception reports with the minimum inputs in terms of data feeds and operational overhead.

To date it has not been possible to provide this independent level of comfort without repeating large elements of the traditional pricing process. FundEYE addresses this need.

### **Using experts in the Pricing Function**

Due to the complexity of systems and the need to produce prices within very short time frames, traditional systems tend to manage the inputs of the systems rather than the outputs. Final signoff of prices remains relatively low tech relying on the specialist knowledge of a small number of key highly skilled and experienced individuals. These pricing experts, through many years of experience, have the ability to spot when a price "looks wrong" when compared to either the movement in the asset pool value or to some predetermined market indices. By simultaneously balancing market movements, changes in the value of the asset pool, aspects of the wider pricing environment and the nuances of each fund, they have developed the ability to spot when a price 'looks wrong' and requires further investigation.

#### *System weakness of relying on the personal approach*

This awareness has served traditional systems well in the past.

However, this approach contains some inherent flaws. Market indices are a crude estimation of how a particular market has moved and the movement of the value of a fund's asset pool contains many movements that are not related to the asset market movements. Even if market benchmarks were of sufficient accuracy, no matter how good or how

experienced the operator, this approach can only provide comfort that the price does not look wrong – this is not the same as saying that the 'price is demonstrably right'.

In such a system, due to the quick turnaround required to publish prices, even when a suspect price is spotted, there is often insufficient time to review the numerous sequential checks of the pricing process in time to meet the publishing deadlines. The clunkiness of systems means that ad hoc transaction reports need to be produced. This again relies on the experience of the user to know where to look in the process for the most likely cause, as often there is no time to review each step of the process and verify that the price is in fact right.

Traditional systems have an over-reliance on ensuring that the transactional aspects of the system have operated correctly. The control environment is effectively weighted toward the feeder systems, placing reliance on the fact that all errors have been trapped at input. Such controls tend to be labour intensive and manual in nature, often termed 'four eyes checking', as processes and controls often require double checking or double keying.

**It is not possible to outsource the responsibility for the accuracy of prices published and used by your organisation.**

Although the above checks are of value, they are limited in their approach. They consider each step of the process in isolation. To provide accurate validation of prices, an end to end approach is required - one that has the ability to independently verify that the feeder systems and processes have operated correctly and to demonstrate that the process as a whole has operated correctly.

**Automating the analysis**

I stated earlier that the expectation of the customer is that their investment will move in line with the underlying fund investments. In a perfect world the price should exactly mirror any movement in the underlying asset pool. The over-arching check should therefore be to check that the fund price is exactly in line with the movement of the fund's actual asset pool. Any difference between the asset pool and the fund price movement must be analysed in detail before a price can be signed off with any confidence. By automating this analysis, funds can be signed off to higher levels of accuracy than previously achievable, in shorter time frames utilising significantly less resource.

The key to signing off a fund is therefore to identify the market index or comparator against which to measure the fund price movement. This is not as straightforward as one might first expect.

I have explained why the use of indices or benchmarks is not accurate enough for price validation in isolation and the raw asset pool movement will be compromised by elements that are not market-movement related. To calculate a true index for a fund it is necessary to account for a number of factors, including individual asset price movements, asset mix, trades, the price movement of each individual asset, corporate actions, choice of market feeds,

corporate actions and so on.

So, to determine the magnitude of the market driven movement in the underlying asset pool we must account for:

- Net trades in the fund (trading cash is not considered part of the asset pool);
- Loss or gain on trade compared with the prior period valuation;
- Effect of corporate actions;
- Relative mix of assets;
- Market movement of each asset;
- The non-asset elements of the overall fund value.

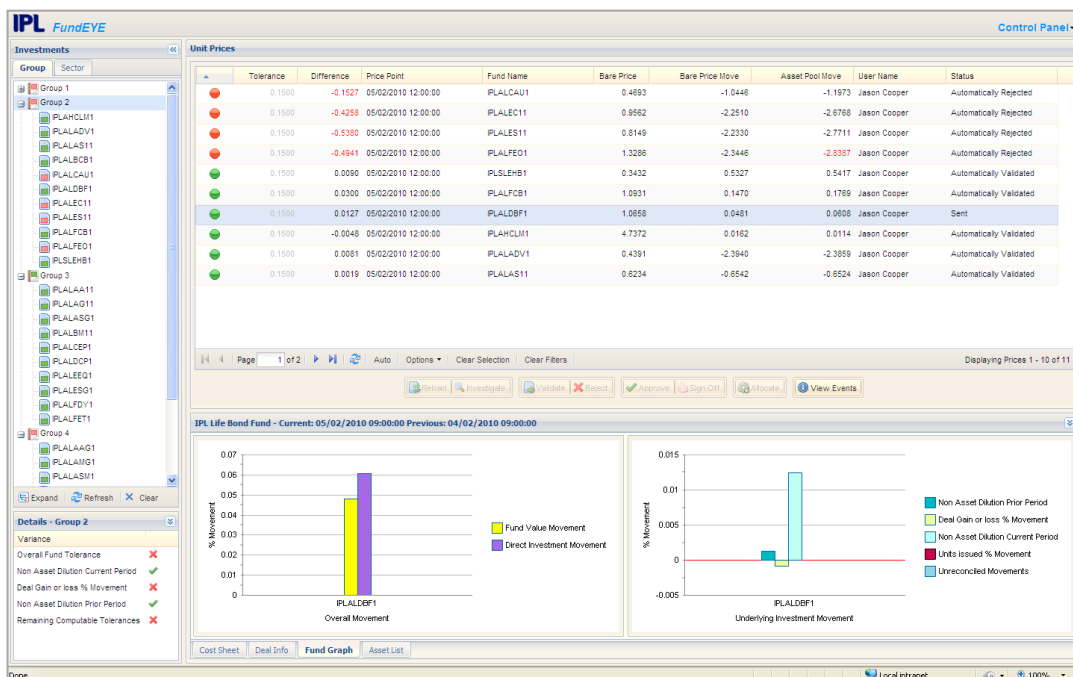
Having determined the market driven movement of the underlying assets, any difference between this and the unit price will be attributable to the non-asset elements of the fund valuation. The magnitude and the impact on the price of each of these non-asset movements must be calculated and verified in order to sign the price off. Where the movements cannot be verified as permissible

under the fund rules then the issue will need to be escalated for investigation.

FundEYE provides the real alternative in the form of a system-based automated solution.

**The FundEYE solution**

Through the development of sophisticated algorithms and analysis tools, FundEYE has captured many years of unit pricing experience to produce a process that first validates the movements in the underlying asset pool and then produces a full analysis of all the non-asset movements of the fund and provides a full audit and analysis of these movements enabling rapid exception-based



signoff.

FundEYE is the first system of its kind that is capable of providing a full analysis of all the elements of the fund NAV that need to be taken into consideration to accurately signoff unit prices without the need for manually intensive and error prone processes.

FundEYE's expert verification system can review all the key aspects of a fund's constituent parts to quickly and accurately analyse the movements that make up the fund NAV. Detailed tolerance reports highlight by exception any area of the fund NAV that requires validation or manual signoff.

FundEYE pre-processes all audit reports thus enabling the operator to quickly and accurately drill down and identify the appropriate element of the fund price to either validate the output as correct or to recycle the process to correct the offending transactions or control failures.

FundEYE can take an end to end view across all the period processes using complex algorithms to interrogate the interaction of various elements of the pricing process. It is platform independent which means it can be integrated with any Investment Management System. Minimal volumes of data are extracted and cross referenced to produce targeted analysis reports enabling sign off by exception, minimising user involvement and overhead.

The lean nature of the data extracts FundEYE needs to operate the embedded expert algorithms means that FundEYE can be used equally to verify both in-sourced and outsourced operations, without the need to review all the transactional systems necessary in the more traditional approach. Verification of the outsourced processes can be undertaken by novice users with a minimum of

experience or training. FundEYE therefore removes much of the risk inherent in both the in-sourced and the outsourced pricing operations.

FundEYE will provide the following additional benefits:

- Inherent adherence to industry best practice;
- Clarity of process;
- Improved staff morale;
- Frees up time of skilled staff to investigate suspect prices which might otherwise be overlooked.

FundEYE's ability to verify fund prices over days, weeks, months or years means it is the only tool on the market capable of analysing and monitoring market drift over multiple pricing periods.



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