Learning from Near-Miss NAV Events

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BACKGROUND

This white paper examines two NAV near-miss events where different service providers came close to failing to produce a daily NAV on time and examines how fund companies handled this situation in the post-2015 environment. Barrington interviewed representatives of eight fund companies and reviewed the firms' processes prior to 2015, the changes they have made since 2015, and their own reflection on their performance in the near-miss situation. Firms shared learning points and additional future plans.

Where it started: In August 2015, BNY and their fund accounting system provider experienced a system issue that kept them from calculating NAVs for a week on one install, impacting a group of their clients. (For more information, see Barrington's White Paper, *An Extraordinary Week: Shared Experiences from Inside the FA System Failure 2015*).

While only a limited number of BNY's clients were impacted, the events in August 2015 were closely examined by fund companies, fund boards and service providers across the industry. Since 2015 most fund companies have reexamined their approach to oversight and contingent NAVs. Service providers have taken different avenues, but many have put into place an independent contingent NAV calculation capability (some service providers are providing this as part of their service, while others are charging clients for this additional capability). There are also a number of technology providers that have entered the fray.

Quick NAV Calculation Review: The US mutual fund industry generally calculates the Net Asset Value ("NAV") between the market close at 4:30 and a cut-off at 6:30 every business day. It is a very tight timetable for a complex process and requires considerable resources. If there is difficulty calculating a NAV, which does happen, there is a procedure where the fund accounting group (in-house or with a custodial bank if the work is outsourced) notifies different parties that the NAV will be late. This notification is not a formalized system; it is generally a phone call to the fund company and/or distributor, warning them of the delay.

While individual fund companies or providers have had problems from time to time, there was no precedent for a provider to miss calculating NAVs for a week.

What is a Near-Miss: A near-miss arises when there are complications that require extra time and the NAVs are not reported by the 6:30 cut-off. In this case, the final NASDAQ cut-off is 8:30. A near-miss occurs when the NAV is finally reported just before this final cut-off for the day. Since

August 2015, some fund companies have determined that they will submit a contingent NAV if their internal or external fund accounting group is unable to calculate the official NAV.
Background: The BNY event raised an awareness that, now that fund companies mostly manage shareholder accounts through omnibus arrangements, a late NAV has become a processing issue not just for the fund company but also for the broker/distributors since they process most client positions and trades. Since fund companies depend on broker/distributors for distribution of their products, these relationships are of key importance.

> The rationale for the calculation of a Contingent NAV came out of the August 2015 event. During that event, distributors pressed fund companies to report a NAV, even if not 100% accurate, rather than just a stale price, or the last official NAV. In an effort to maintain a good relationship with distributors, fund companies have worked to comply. In the near-miss situations examined in this research, the demand/request from the distributors remained consistent: they wanted an updated NAV, even if it was not 100% accurate.

During the August 2015 event, only one fund company had a contingent NAV process in place. Some of the other impacted fund companies were able to very quickly put a contingent process in place and began to provide estimated NAVs several days into the event.

Once the event was over, most fund companies began a review of their current procedures and considered other approaches. Additionally, many industry providers of fund accounting services began to examine the issue. Some custodians, BNY included, offer this service to their clients as a part of the existing service. Firms participating in this research indicated that some service providers, including STT, intend to charge a fee for this service.

WHAT IS THE DIFFERENCE BETWEEN OVERSIGHT AND CONTINGENT NAV?

Generally, an Oversight process starts with a prior day NAV calculated by the internal or external fund accounting agent and performs a risk-based evaluation of the accuracy of the key elements of the calculation. The risk-based aspect ensures that the process focuses on the components that have the greatest likelihood to contribute to an error.

Fund companies use a variety of approaches that range from no oversight effort to a full duplication of the fund accounting process. Regardless of the specific approach, most firms do have an organized strategy to perform checks on the NAV components.

The Contingent NAV is a relatively new concept to most firms, tracing its roots to the events of August 2015. It starts with the last known NAV and then presumes that no further data is available from the official fund accounting group. The Contingent process needs to be able to operate independently and over multiple days.

There are three approaches to the Contingent NAV calculation:

Benchmark: The use of one or more benchmarks or clones to model the performance of the fund since the last NAV. Any firm can use this process, but it is especially appealing to firms that use third-party advisors.

This approach utilizes a regression analysis to determine what basket of benchmarks are accurate predictors of a fund's NAV. A fund firm may make these calculations themselves or they may depend on a pricing vendor to assist them with this process. The regression model needs to be updated or checked as the underlying portfolio changes.

Firms that use benchmarks in their contingent process frequently employ a wider array of benchmark types and a higher proportion of bespoke (complex) benchmarks.

Bespoke benchmarks will include blends of several financial benchmarks and other inputs. Firms may also use a clone fund, generally a UCITS or SMA product with the same portfolio strategy as a benchmark. Firms augment this process to estimate derivatives or fair value pricing impacts to the NAV.

Limited Risk-Based Fund Accounting, ABOR: This approach is an abbreviated version of a full general ledger fund accounting process and updates a prior NAV by incorporating data that has the greatest impact on the NAV's daily performance. Categories updated may or may not include all the following:

- Trade activity
- Pricing of holdings
- Corporate Actions
- Dividends
- TA/ Cap stock
- Expenses

IBOR: Firms with an investment (middle office) accounting solution can convert (adjust) their IBOR data to represent an estimated NAV, or ABOR, and thus obtain a contingency calculation. The process involves adjusting the IBOR to an ABOR for the known differences in calculation methodology. This process is also used to calculate class-level NAVs, required for Contingency. The IBOR can also used to provide data to a Limited Fund Accounting process by suppling the 'data that has the greatest impact on the NAVs daily performance' to improve accuracy.

Many firms use IBOR data sources in addition to their ABOR pricing vendor.

Barrington recently surveyed 17 fund companies to get a better idea of the most common current approaches shadow and contingency NAV practices. This group answered four questions:

1. Level of Shadow Accounting Process	
Detailed Shadow Accounting	6
Overview Shadow Accounting	6
No Shadow Accounting	5
2. Frequency that Contingency is Calculated	
Daily Contingent Process	7
Occasional Contingent Process	5
Vendor Solution	2
No Contingent NAV	3
3. In-House or Service Provider Solution	
In-House Solution	12
Vendor Solution	2
No Contingent NAV	3
4. Approach to Contingent NATV Calculation	
Benchmark	1
IBOR	6
Fund Accounting/ABOR	7
No Contingent NAV	3

Firms with an in-house middle office are much more likely to run a contingent NAV process daily because they already have the pricing data. Firm where the middle office is outsourced would incur a material cost for the pricing feed. As a result, most of these firms run their contingent process less frequently. A number of firms that operate their contingent process daily report that the frequency of operation and review of the results, has improved their accuracy.

Of the 12 firms supporting a shadow accounting process, 7 complete the process prior to when the NAV is submitted each day and 5 complete their review the following day.

Contributors to Complexity: There are a number of additional issues that can add to the complexity of a contingent solution, including:

- Fair Value pricing
- Derivatives
- Illiquid global securities
- FX forwards pricing
- Sub advisors and access to timely holdings data
- Complex Corporate Actions
- Classes and any liabilities per series
- Complex Fixed Income Instruments
- Liquid alt funds
- Portfolios with a large number of positions

NEAR-MISS RESEARCH

Recently, Barrington conducted interviews with fund companies that were involved in one of two near-miss NAV events with service providers. The first occurred on April 1, 2016 with Brown Brothers and the second involved State Street in March of 2017. Both situations involved a process or module locking up the fund accounting system and delaying the delivery of NAVs. In both cases the NAVs were delayed but delivered that evening prior to the final 8:30 cut-off.

Barrington interviewed eight firms and the results of the interviews are reported by question in aggregate:

1. **Did your firm have a shadow and/or contingent NAV process prior to August 2015?**

All firms had a shadow accounting process prior to August 2015, and only two firms had some level of contingent NAV calculation. However, this is not a surprising result as most fund firms had not considered a contingent process necessary prior to August 2015, and some firms that had a very robust process would not have considered submitting their own calculation if the vendor had failed to calculate the official NAV by cut-off.

2. **How did your firm react to the events of August 2015?**

Reactions to the BNY events were mixed. Half the firms did not change their approach and the other four either put a process into place or expanded the current process (Of the two firms that already had a contingent process, one kept their existing process unchanged while the other put more resources into the process they supported).

Most firms discussed the events with their service providers and several reported that their vendor told them 'it could never happen to us'. In light of the subsequent near-miss events, this comment was concerning.

Additionally, the SEC released a guidance memo in June 2016 titled 'Business Continuity Planning for Registered Investment Companies' which provided further pressure to act. However, since the release of this document, many firms report feeling that this guidance is no longer of significant concern.

> Prior to the Near-Miss events examined in this research, five of the eight firms had a process in place where they would potentially submit a contingent NAV if their service provider was unable to complete the NAV calculation.

3. Did the Fund Board get involved after August 2015?

Two firms did not discuss these events with the Board, but in these cases the board didn't meet until a number of months after the event when the event had been discussed outside a formal board meeting, and the firm didn't see the discussion as necessary. Five firms notified the board and one invited their vendor to meet with their Board.

4. How was your firm impacted by the Near-Miss NAV event and how did your firm react?

The firms interviewed were impacted at varying degrees. First, some firms' NAVs were delayed less than others. Some firms were migrated over to a pricing system that in one event caused much of the problem; yet, in all cases, the NAVs were delayed.

Of the firms that did not have a contingent capability, they mostly reported that they remained in contact with the vendors and waited to see if the service provider would report the NAVs on time.

The reports from the firms with a contingent process were different, in that these firms were now trying to determine when and how to use their contingent process.

In all cases, and with both service providers, the reports are that the notification process has some problems, not all of which can be solved:

a. All firms were told that they were not notified until as late as 6:00. Because of transparency issues, these firms are not clear on when the service providers knew there was an issue.
b. Updates are reported from as frequently as every 20 minutes to as long as two hours.
c. Client relationship people generally make these calls and they provide 'very confident reassurance and no detail' on the problems. Clients are convinced that these client relationship people are telling the fund companies everything they know, but the details available are lacking. What fund companies would like to know is if more actual information is available.

> The level of confidence provided by the service provider led several firms with a contingent process to delay starting their internal process until it was too late to act. These firms all noted that they are building into their policy and procedure manual a cut-off time to kick off the contingency process if NAVs have not been received, no matter what the vendor communications indicate.

Of the five firms that have a contingent process, the automation levels of the process range quite substantially. One firm only needs 10 minutes to run a process, while two need an hour and two need 4-5 hours. Given that the NYSE closes at 4 pm, and the cut off for many distributors for NAVs is 8:00 or 8:30, the last two firms need to know if there are processing issues at or before the close of the market. The firms needing an hour both have now set their deadline time at 6:00; the firm that only needs 10 minutes to run the process nonetheless set a schedule that allows them an hour to be ready to submit prices to their distributors and transfer agent.

> Transfer agents such as DST have a 11:00 deadline. However, now that most accounts are held omnibus, the key delivery of NAVs is to distributors. Distributors generally have a deadline of 8:00 or 8:30, and some have contracts that require the NAVs earlier or they will be billed a re-processing fee.

On a normal day, most NAVs are delivered by 6:00 to 6:10. In both of the near-miss situations we examined, the NAV delivery started as early as 7:00 or 7:30 and some reported the last delivery at 8:10. One firm reported that half their NAVs were officially 'late'. Several firms report being billed for fees by the distributors or platforms.

Even after the fact, these fund companies report that getting transparency from their service provider has been elusive. One reported an 'underwhelming response' to the situation. Most didn't learn until much later the problems that caused the issues; what they did learn was very high-level. What firms report concluding is that they can't trust the communications from the service provider. They need to empower their staff to follow specific time schedules if their NAVs are late.

> Firms also found that their KPIs/SLAs, mostly being templates provided by their service provider, do not cover this type of situation. In hindsight, fund firms find that this is an obvious flaw, because on-time delivery of NAVs is the fundamental aspect of the service.

5. Was the Fund Board notified of the Near-Miss situation?

Involvement with the Fund Board over the near-miss was low level. The board was either not notified or notified by e-mail or at the next meeting. No firm reported this to be a large issue with Board members.

6. **Finally, were firms with a contingent NAV process happy with the results and will the firm be making more changes to the contingent process?**

Most firms with a contingent plan reported that their biggest error was not having a specific implementation timetable, which they are correcting by putting such a timetable into place.

One firm reports a fast-track development of an improved process (this is a firm with a relatively fast process already). Two other firms report additional resources will be allocated to their process.

Of the three firms without a contingent process, two report looking at vendors with the intent to put a vendor/service provider solution in place and the other firm will remain without a solution

Another issue reported by fund firms is a review of the process to both notify distributors of a late NAV and to distribute NAVs. Some firms did not have a process in place to notify distributors and had to scramble.

The second issue is that having put a contingent NAV process in place is not enough. Many firms depend on their service provider to deliver NAVs and those firms may not be able or willing to deliver the contingent NAV calculated by the fund company. Plus, there may not be time available for this relay of data. These firms suggest that fund companies need to establish their own NAV delivery process and they need to keep their delivery instructions updated.

For more information on Barrington's work on oversight and contingent NAV, or on our broad array of services, please contact Hubbard Garber at hgarber@barringtonp.com or 617.482.3300.