Money-Weighted Rate of Return: A Calculation to Consider

State Street Global Services - Performance Services

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Introduction

Decades ago, the practice of discounting cash flows to support investment valuation began to gain popularity. Since that time, there have been numerous industry presentations and academic papers comparing money-weighted and time-weighted rate of return methodologies—many emphasizing the value of a money-weighted rate of return, and its ability to capture the asset owner perspective.

However, investment industry practice has gravitated toward time-weighted rate of return calculation as the standard for investment performance presentation at the asset owner plan level. The driving forces behind this consensus adoption include the advent of industry presentation standards, the relative processing simplicity of time-weighted returns and the prevalence of platform providers focused on time-weighted methodologies. In spite of the noted advantages of the money-weighted rate of return calculation, today’s investment officers have not been driven to present this method in their plans alongside time-weighted returns.

In this white paper, we’ll take a closer look at the widespread adoption of time-weighted methodologies, and seek to answer two questions: Could the two approaches complement one another in helping asset owners to explain and properly attribute actual economic gains or losses experienced by the plan? And could broader understanding of money-weighted returns lead to their increased adoption?

KEY TAKEAWAYS

- Although discounting cash flows for investment valuation became popular decades ago, time-weighted rate of return (TWRR) has become the industry’s default calculation.
- TWRR has emerged as the default calculation due to regulatory forces, simplicity/cost issues and stakeholder pressure.
- MWRR can complement TWRR by providing a bigger-picture view and accounting for post-crisis reporting complexities.
- By understanding the practical application and benefits of MWRR, practitioners can apply them to help answer the question, "How did we do?"
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Defining Time-Weighted Rate of Return vs. Money-Weighted Rate of Return

Before we examine how one calculation methodology became the default industry standard, it's important to define each approach to investment performance measurement. The methodology that's chosen is typically driven by the goal of the performance analysis; the approach either answers the question of how the manager is performing, or how the owner/plan is performing.

*Time-Weighted of Return (TWRR): How is the Manager Performing?*

The goal of using a TWRR is to reduce or remove the impact of factors that are beyond the discretion of the investment manager and the investment officer who oversees the investment manager. This methodology helps to make sure that the investment’s success is measured without considering the impact of contribution/withdrawal size and timing. In fact, true TWRR requires revaluation each time a contribution or withdrawal takes place.

Daily performance, which captures and uses daily revaluations, can be geometrically linked to produce TWRR for extended periods. If daily valuation is not available, a monthly IRR (modified BAI) or a monthly Modified Dietz calculation may be used. And if the TWRR must be calculated using one of these monthly estimates, GIPS standards require consistent policy for revaluation and sub-period return calculation in the case of significant cash flows. The threshold for flow “significance” is determined by the individual policies of firms and plan sponsors.

*Money-Weighted Rate of Return (MWRR): How is the Owner/Plan Performing?*

The goal of a MWRR is to measure the performance of a fund or investment in a way that includes the impact created by contribution/withdrawal activity. The MWRR represents the actual experience of the owner or plan, including the value added or removed by the size and timing of contributions and withdrawals. The investor perspective is supported through the use of a single-period IRR calculation for the period being measured. This method places a greater weight on the performance in periods when the portfolio’s investment exposure is greatest. In the case of private, illiquid investments, when a fund manager possesses broader discretion over investment contribution and distribution schedules, the IRR calculation is also the most appropriate measure of manager performance.
Comparing the Methodologies

<table>
<thead>
<tr>
<th>Performance Methodology</th>
<th>Effect</th>
<th>What It Measures</th>
<th>Money-weighted Returns</th>
<th>Time-Weighted Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective(s) Measured</td>
<td>Allocation</td>
<td>Execution Against Investment Policy</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Selection</td>
<td>Hire/Fire Manager Decision &amp; Strategy</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Timing</td>
<td>Impact of Size/Timing of Money Flows</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Manager/ GP Reporting Standard(s)</td>
<td></td>
<td>Non-Marketable Assets</td>
<td>Marketable Assets</td>
<td></td>
</tr>
<tr>
<td>Asset Owner Reporting Standard(s)*</td>
<td></td>
<td>Asset Class</td>
<td>Asset Class, Total Plan</td>
<td></td>
</tr>
</tbody>
</table>

*As of June 2015, only U.S. public funds subject to GASB 67 are required to report money-weighted returns at a plan level.

How Has Time-Weighted Rate of Return Become the Default Industry Standard?

Recently, our Performance Services team conducted an informal survey at a gathering of some of the most influential plan sponsor investment officers in North America. All of the attendees were aware of the methodological difference between time-weighted and money-weighted returns, and most confirmed that they reported performance using both methodologies for their non-marketable asset programs. Yet none of them expressed an interest in adoption of a second reporting standard for money-weighted returns for their respective plans.

Why? The drivers behind the industry’s singular adoption of time-weighted rate of return as its default calculation methodology are well known:
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Regulatory and Industry Forces

In the 1980s, investment officers responsible for the reporting of institutionally-owned assets reached an informal consensus that the cumulative, annualized time-weighted return was the most appropriate way to report investment and plan performance to stakeholders. This was consistent with the presentation of investment performance by institutional asset managers. And while other return methodologies have been adopted or adapted for use among certain asset classes, since that time none has risen to challenge the ubiquitous, time-weighted return.

In fact, currently in the U.S., only public funds subject to Governmental Accounting Standards Board (GASB) regulation are obligated to report a return other than the time-weighted return. The first formal signs of change appeared in the 2012 GASB-mandated additional performance reporting standards for public funds, stated in its statement 67 (effective for fiscal years starting after June 15, 2013).

In 2013, CFA Institute published the Global Investment Presentation Standards (GIPS) for Asset Owners. In the document, CFA Institute acknowledged that the time-weighted return is both an industry presentation standard and a requirement for asset owner GIPS compliance. However, it also noted the value of the money-weighted returns as an indicator of how the timing of fund flows affected overall plan profitability.

Outside of the U.S., the Canadian Securities Administrators (CSA) has also introduced CRM2 mandating the reporting of money-weighted returns as a component of client reporting. CRM2 is expected to go into effect in July 2016. Similar proposals are also under consideration by other country-specific regulatory bodies.

Simplicity and Cost

The typical investment office’s purpose and structure have evolved since the 2008 financial crisis. Distinct investment operations units now work with investment management teams and coordinate reporting with custodians and other back-office providers. Stakeholders with budget control have tightened purse strings, and each product subscription and staff commitment must serve a purpose. Since investment policy is by definition stable, few asset owners rely on historical data for plan management. For practitioners to take notice, the data must not only be interesting, but also necessary or immediately useful for reporting purposes.

It has become common practice in institutional investing to evaluate asset managers and plans using only the time-weighted return for “apples to apples” comparison. Given the various roles and perspectives of those reviewing performance, the appeal of a singular presentation method is easy to understand. However, this oversimplification assumes that all of the important factors driving investment outcomes can be explained
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adequately with the time-weighed return. Yet modern plan governance models are characterized by complex, multi-level institutions that include policymaking agents, executive oversight committees and investment program management teams. Fiduciary responsibility is shared to make sure that current and future needs are met in transparent ways, to the greatest extent possible.

If we are to properly attribute outcomes in the asset owner investment process, we need to know which parties have control and responsibility throughout this process. For example, investment program managers and executive oversight committees may not have any control over contributions to and withdrawals from the plan, so the TWRR will be the most appropriate way to measure execution within their policy definition. But they also operate within a broader institutional context, with the fiduciary responsibility to account for the economic performance of assets including the impact of money flow size and timing. In that case, to answer the question, “How did we do [collectively],” we must use the money-weighted return.

With these questions, it’s clear that while TWRR has become the default due to its simplicity, when selecting the appropriate investment performance reporting measures, it’s also critical to consider a more comprehensive decomposition of the institutional structure, the investment process and the diverse audience.

Stakeholder Pressure

In our own recent survey, even the public fund investment officers, who now must report a form of money-weighted return alongside TWRRs due to GASB statement 67, explained that their use of MWRR was driven solely by that regulatory compliance. One director of investment services at an organization not currently required to report MWRR explained that it is the stakeholders that are most resistant to adopting MWRR: “We’ve been told to present performance data in certain formats to fulfill various obligations. A lot of my staff’s time and effort goes into supporting these internal requirements. Sure, it’s great in theory to have additional data available to explain the effect of the company’s contribution and withdrawal timing on the overall plan results, but this would add cost and require time and effort to explain to everybody why we’re doing it, even though it’s not required for our pensions under the Employee Retirement Income Savings Act (ERISA).”

This survey also revealed that while money-weighted returns are not actively being used to present plan investment performance, many institutions are using an economic value add or absolute rate of return to augment and supplement presentation. This provides transparency to the actual growth or decrease of assets net of cash inflows/outflows for the period. The irony is that, similar to the challenges of presenting a money-weighted rate of return alongside a time-weighted rate of return, this has the potential to present seemingly contradictory outcomes in cases where cash flow timing results in economic losses while time-weighted rates of
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When they’re asked why this is being supported but not extended to include a money-weighted rate of return, investment officers indicate that presenting a relative rate of return (time-weighted) alongside a monetary absolute gain/loss is perceived as easier for investment board consumption than potentially presenting two differing rate of return values.

Stakeholder Roles & Perspectives

<table>
<thead>
<tr>
<th>Role</th>
<th>Examples</th>
<th>Direct Influence on Investment Process &amp; Decisions</th>
<th>Concern with Investment Policy &amp; Execution Success Evaluation (TWRR)</th>
<th>Concern with “How did I/We Do?” View (MWRR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Oversight</td>
<td>Investment Board, Central Bank, CEO, University President</td>
<td>Oversight of Investment Policy - Oversight of Allocation &amp; Manager Selection Strategy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Investment Program</td>
<td>CIO, Investment Committee</td>
<td>Definition &amp; Execution of Investment Policy - Definition &amp; Execution of Allocation &amp; Manager Selection Strategy</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio Management</td>
<td>External Portfolio Manager, Internal Portfolio Manager</td>
<td>Execution of Investment Strategy - Manage Asset to Strategy</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>End Owner / Beneficiary</td>
<td>State Retiree, 401K Participants, Government, Citizens, University</td>
<td>Control Flows - Only Within Defined Contribution Retirement Plans</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
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Can MWRR Add Value to Today’s Performance Reporting?

If cost containment has become one of the most long-lasting imperatives following the financial crisis, so too is the need for preparedness to report plan asset performance under all conditions. A market dislocation in the fall of 2008 was followed by a paper recovery less than six months later, mirroring other global financial shocks across time. But for plan sponsors reporting diversified pools of asset performance on time-lagged, historical bases, this time was truly different. Many investment officers were surprised to discover that their total fund performance, when expressed in cumulative, time-weighted terms, contradicted the apparent economic losses on accounting statements. During the flight to quality, as losses on public equities, corporate debt and mortgage-backed securities mounted, general partners continued to report pre-crisis values on private equity, venture capital and real estate investments to custodians. Smaller, but directionally positive-to-neutral private asset programs acted as an unintentional stabilizer, helping to create soft landings for marketable asset programs and plan performance at the public market bottom. Drawdowns and contributions to pay current and future beneficiaries continued as a practical matter of business, magnifying “real” return distortions while forcing decision-makers to make tough choices concerning asset allocations. For many plans, the public market recovery of spring 2009 that erased sub-zero performance on a time-weighted basis provided some comfort, but failed to erase the earlier economic losses on lower-asset bases.

With this complex situation, the time-weighted performance methodology fails to present a complete picture, not only as a representative measure of economic outcomes, but as a metric to properly disaggregate the outcomes from conscious asset allocation decisions by investment committees. In a defined benefit plan structure, the economic surplus or deficit represented by the difference in performance can be attributed to the real-world plan management governance process. In simple terms, this effect could be attributed as:

Money-weighted Rate of Return = Time-weighted Return + Plan Governance Effect

In a single-factor model (value added), the effect could be shown in the following way:

Total Value Added = (Conscious Allocation + Plan Governance) + Manager Selection + Interaction

While money-weighted returns represent the full or true economic outcomes that drive decision-making above the investment office level, time-weighted returns provide a complementary—and necessary—perspective on active plan management decisions that are generally under the control of investment committees and staff.
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From Theory to Practice: Could broader understanding of money-weighted returns yield greater adoption?

In light of recent efforts to increase performance-reporting transparency by global pension funds, we expect that pressure from regulators and industry associations will lead to the greater use of plan level reporting of money-weighted returns for periods one year or greater as a best practice—and possibly as a requirement.

Anecdotally, we know that a major obstacle to embracing this in practice is the need for support, coherent explanation/education and effective presentation—not more academic debate—when it comes to MWRR's benefits. The industry has done exceptional work in detailing various rate of return methodologies and the appropriate conditions for their use. But sitting side-by-side with practitioners and providing a deeper explanation of the current challenges and context may help advance the use of money-weighted rate of returns in plan sponsor performance presentation. And a deeper understanding of the audiences to whom investment performance is being presented may help practitioners understand and better translate numeric measures into practical business concepts. Conceivably, this could even evolve into a new performance attribution practice, like the one cited in this paper, or a new medium for investment performance presentation.

Whether they are mandated or not, money-weighted rates of return help investors more fully answer a critical question: "How did we do?" We're ready to help you address these challenges confidently. Our robust performance solution set now includes total plan money-weighted return capabilities to help asset owners increase transparency, decompose return drivers, and improve investment officers’ confidence in presenting plan governance factors that fall beyond the scope of program execution.

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