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October 21, 2007

<u>Via Overnight Delivery</u>
Mr. John E. Page
Internal Auditor
South Carolina Retirement Systems
202 Arbor Lake Drive
Columbia, SC 29223

RE: INDEPENDENT REVIEW OF INVESTMENT OPERATIONS AND ACCOUNTING INFRASTRUCTURE

Dear Mr. Page,

Independent Fiduciary Services, Inc. is pleased to deliver 12 copies of its final Report on our limited scope operational review of SCRS and RSIC. We thank Ms. Boykin, Mr. Borden, the Commissioners, the staff of SCRS and RSIC, and you for the tremendous cooperation during our review.

We look forward to making our presentation of the Report as such time and date is mutually determined. We thank you for the opportunity to work for SCRS and RSIC once again. We look forward to hearing from you to schedule the on-site presentation.

Very truly yours,

Steven M. Harding

Steven M. Harding
Managing Director

Independent Fiduciary Services®

Final Report

For the South Carolina Retirement Systems
and the
Retirement Systems Investment Commission

October 15, 2008

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Introduction

The South Carolina Retirement Systems ("SCRS") retained Independent Fiduciary Services to perform an "Operational Review" of the investment accounting infrastructure and operations of SCRS and the South Carolina Retirement Investment Commission ("RSIC"). Our contract with SCRS was dated December 19, 2007. We recommended a delay in our onsite portion of the work in order that the custody conversion could be completed. SCRS and RSIC agreed to the delay.

We were hired to look at only investment accounting at SCRS and investment operations at RSIC, specifically excluding all other aspects of the two organizations, except to the extent that certain areas, such as investment policy, may come to our attention as they interact with or overlap the specified scope.

Our review consisted of document collection, analysis and interviews conducted in Columbia on July 7–9, 2008. Our reporting process included two drafts to provide the opportunity for RSIC and SCRS to comment before the Final Report was issued. We are pleased to present this Final Report.

Section I.

Detailed Discussion and Analysis

Task Area A – Investment Operations

RSIC Background

The South Carolina Retirement System Investment Commission ("RSIC") was established in October, 2005. The organization consists of two main components: (1) the independent board of Commissioners (the "Commission") and (2) its investment and administrative staff ("staff"). The Commission consists of six members with financial expertise who are exclusively responsible for investing and managing assets of five public employee pension trust funds. The Commission is fully empowered to make all investment decisions. Commission staff is organized by functions which, at the time of this review, were two: (1) Investments and (2) Administration. The Commission and staff currently have approximately $30 billion in assets under management.

Organizational Structure

Principles

An effective organizational structure should have clear lines of authority and accountability, spans of control that are reasonable for each executive or manager, and reporting ratios that neither over nor underutilize a manager. In an investment board that deals with a large portfolio of diverse assets, the fiduciary nature of the organization also requires significant levels of delegation, separation of incompatible functions, and clearly defined roles and responsibilities, especially for monitoring compliance with investment guidelines and performance measurement.

The scope of our organizational review covers the investment program and does not extend to SCRS, except for the investment accounting function, although we include comments regarding some non-investment areas where we observed an investment program impact.

In an optimally configured organization, operating managers will have a clear picture of which area is responsible for each key function, because like functions are typically grouped together. The size of the organization and the complexity of the work play a large role in determining how managers should design work processes and allocate responsibilities as they coordinate diverse organizational tasks and outputs of internal departments, and seek to optimize the flow of information throughout the organization. During our on-site interviews we questioned staff about the organizational structure and whether they clearly understood which managers/sections were responsible for the functions that impacted them and their area.

Optimally configured organizations will also have clear accountability for key functions, e.g., asset class oversight, with the exception of cross-organizational projects whose nature crosses section or department boundaries, e.g., administrative projects such as those that are personnel related.

Spans of control (i.e., the number of employees per supervisor in an organization) are measured in two dimensions: (1) reporting relationship ratios and (2) breadth and complexity of knowledge required to effectively supervise the reporting functions. At senior levels, high performing organizations generally have a manager: direct report ratio of 1:5, while at section levels for administrative/processing functions, the Federal government has set supervisor: staff ratios of up to 1:15 as targets for efficient departments. We use these standards for our baseline assessment. We also look at whether like functions are grouped together to promote economies of scope and scale and to encourage sharing ideas internally, and to support customer and stakeholder ease of access to the appropriate part of the organization.

Risks

An organization with a non-optimal organization structure is at potential risk of decreased effectiveness and efficiency, increased time to resolve issues, disgruntled employees due to lack of access to upper management or delays in receiving information or answers to issue and concerns, inability of managers to perform effectively and provide appropriate supervision and support to their staff, higher error rates due to inadequate supervision, or cost inefficiency if managers are underutilized due to errors in scope.

An organization with a fiduciary role that does not adequately consider separation of duties in its organizational structure exposes itself to risk of malfeasance and improper use of member funds and resources.

An organizational structure that does not clearly assign all key responsibilities and communicate those assignments throughout the organization is at risk of failure to comply with policies set forth by the Commission and state legal requirements, along with the risk of less than optimal resource utilization.

Observations

RSIC's function-based structure in which like transactions and activities, i.e. investment related or administrative, are combined within a section is the common practice for an investment management organization. Functionally organized entities can generally achieve efficiencies based on consolidation of similar transactions and activities.

IFS prepared an organization chart based on three separate chart sets that were provided. One chart was received from SCRS which showed where the Investment Accounting group fit within the overall organization of SCRS. Since Investment Accounting resides in SCRS, we have only depicted the function on our chart as an off page connector. (See label "C" on the chart on page 11.) That is not to minimize its importance of the accounting function but rather to focus on the investment operations at RSIC.

The other two charts we received were from the Chief Investment Officer ("CIO") and from the Administrative Director ("AD"). The CIO's chart only depicted the investment staff, titles and function. The Administrative Director's chart depicted the entire organization as of July 2008. This last chart was handed to us at the opening conference for our review. The CIO and SCRS staff had not seen the AD's chart prior to the meeting.

IFS based the chart on page 11 on our understanding of the organization by combining three charts we received. As such, it is not an 'official' chart of RSIC. Our purpose is to develop an overall picture for discussion. We realize that RSIC is rapidly changing and that the chart will not show any changes that have been made since July 2008.

RSIC has grown from inception to a new agency involving over 14 staff and six Commission members in only 30 months. These numbers reflect a time of rapid growth. With rapid growth and significant mandates comes significant change. Change has permeated every aspect of RSIC during this period. RSIC has added over 50 investment managers in the last year and has almost fully occupied its current physical office space.

RSIC still relies on several relationships stemming from its origins in the Budget & Control Board, SCRS and the State Treasurer's Office. These include reliance for important functions, e.g., investment accounting; for components of its internal control structure, e.g., financial reporting, and; for support systems, e.g., state administrative systems for personnel and procurement and SCRS for network support and data back-up and recovery. These represent significant benefits to RSIC and important relationships to manage.

The RSIC organization chart on page 10 displays clear lines of responsibility. The spans of control are well within manageable numbers. The CIO has six direct reports who collectively have about seven direct reports. The AD has two direct reports and one indirect. These structures are reasonable and allow for future growth and control in an orderly fashion.

The RISC does not have a single individual executive leading it. The Commission acts as the executive entity and has two direct "line" reports based on the chart. These are the CIO and the AD. The Commission has recently added a third direct report with the addition of the Investments Compliance Officer ("CO"). This is a "staff" position.

The "Chairman" of the Investment Commission serves as head of the organization. However, it is our understanding that the Chairman, while available as needed, is not on site each day as would a full-time executive. We understand that the Commission consciously chose this structure, aware of the potential complexity in coordination, communication, and cooperation.

We believe that the current structure has the potential to pose two problems for the Commission that should be addressed; first, the potential conflict between the two direct reporting functions of the CIO and AD and; second, the sole reporting of the CO to the Commission. These are labeled "A" and "B" on the chart on page 11.

The dual direct reporting structure (CIO and AD to the Commission) may be workable but has inherent problems.[1] Granted the Commission Chair is the authoritative head of RSIC, but without a full-time head onsite day-to-day to make important management decisions, the CIO and AD, will have to work very hard and continually at communication, cooperation and coordination in order to ensure that they are operating with exactly the same understanding of the direction and priorities that are coming from the Commission. There is a risk that the intended day-to-day co-leadership function will evolve into a de facto subordination or conflict. In the long run, we maintain that this structure will present real and continuing obstacles for the Commission because the inherent difficulties occur at the very top of the organization.

[1] The Statement of Investment Policies (8/16/07) acknowledges the need to develop written governing policies regarding the Commission-Administrative Director-CIO linkage: How power is delegated and its proper use monitored; the Administrative Director and the CIO role, authority, and accountability.

A second perceived problem lies in the Compliance Officer reporting directly to the Commission without an administrative reporting (dotted) line. The position description states that the RSIC Compliance Officer has primary responsibility: for developing, implementing and monitoring the investment compliance system; for establishing investment compliance priorities and developing and maintaining policies and procedures for the investment compliance program; for assisting in the development of investment policies and procedures; for monitoring and conducting various reviews of investment activities, and; for working with third parties such as outside auditors and regulators.

We understand the desire to have a compliance monitoring function that is 'independent' from the investment decision making function. Normally, such a position would also have a dotted line to the Executive Director (or CEO) or in-house Legal Counsel of the organization. This serves two functions. First it provides the administrative reporting line. Second, it provides a set of choices for reporting irregularities wherever they may occur. We fully support the direct report to the Commission but we think that the position should have an administrative reporting line.

Finally, the current organization chart does not include an internal audit activity. We think that it is essential for RSIC to develop an internal auditing activity at some point. Internal audit can provide *independent assurance* to the Commission on matters that are not investment compliance related, such as internal controls. Most large public investment boards have an internal audit activity. Internal audit requires certain administrative functions and by using the current internal audit infrastructure at SCRS some cost efficiencies may be obtained. However, it is of overriding importance that the internal audit activities for RSIC be performed by people who have the requisite skills and knowledge to audit a large global investment program under professional internal auditing standards.

One of the distinguishing characteristics between the Internal Audit activity and the Compliance Officer role is that, as a matter of principle, Internal Audit should have no involvement in the development of policies, procedures and systems that it may later be required to audit as this would compromise its objectivity. This is an important distinction for RSIC because the job posting clearly assigns policy making, procedures and systems development to the role of the Compliance Officer. Thus, the Compliance role becomes an auditable function.

If one person wears both hats, the Commission needs to recognize that the Compliance role cannot be audited objectively unless other resources can be employed. One option could be to have the SCRS Internal Auditor audit the RSIC Compliance Officer function. Another option could be to hire an outside firm to audit the compliance function. Still another, which we recommend below, is to establish its own internal audit function. One may ask, "But doesn't the internal audit function set its own policies and procedures, and therefore, isn't it also auditable." The answer is definitely a qualified 'yes'; because internal audit is precluded by acceptable standards of practice from setting policies outside of its own operations. The need for outside review is recognized in professional standards which require an independent quality assessment of internal audit at least every five years. Internal audit is also typically subject, to some extent, to the annual review by the external financial auditors.

The following is a listing of areas where an internal auditor can be of service to RSIC:

- **Internal Control Reviews**: this includes evaluation of the adequacy and effectiveness of the organization's system of internal control.

- **Compliance Reviews** (other than Compliance with Investment Guidelines): this includes compliance with policies, plans, procedures, laws and regulations. The Internal Auditor may conduct compliance audits that include these areas and may also assess compliance with various agreements, contracts or consents.

- **Financial Reviews**: this includes review of the reliability and integrity of financial and operating information and the means used to identify, measure, classify and report such information.

- **Investigative Work**: these audits include employing procedures capable of detecting indications of fraud or unethical acts, evaluating indications or reported incidents of fraud or unethical acts and investigating when appropriate.

- **Operational Audits**: operational audits are designed to appraise the economy and efficiency with which resources are employed and review operations or programs to ascertain whether results are consistent with established objectives and goals, are being carried out as planned, and are effective.

Internal Audit may also:

- Perform Systems Development Reviews
- Coordinate Efforts of External Auditors
- Assist in Due Diligence Efforts
- Assist in Responding to External Audit Reports
- Advise on Accounting & Auditing Language in Contracts

Task Area A Recommendations 1-5
The Commission should periodically reconsider the potential problems in the current organization structure that may arise because it has two direct reports on the top line creating ambiguity as to day-to-day overall decision making responsibility. In the long run, the Commission should change the structure to establish a position that clearly serves as the head of the organization as a full-time employee.

Task Area A Recommendations 1-5
While this dual report remains, the Commission should require an emphasis on frequent and regular coordination, communication and cooperation between the CIO and AD.
The Commission should establish a dotted line report for the Compliance Officer. Since the objective is to report on investment compliance independently, the logical option is to establish administrative reporting to Legal Counsel who also serves as Administrative Director.
The Commission should regularly review the workload and effectiveness of the Administrative Director since her role and title also include Legal Counsel. We believe that eventually, if not already, the workload will be sufficient to divide between a dedicated administrative head and a dedicated Legal Counsel.
The Commission should take steps to ensure that a properly functioning internal auditing activity is established. In this regard, the Commission should consider whether to 'piggy-back' on the SCRS internal audit function, establish its own internal audit function, or assign internal auditing responsibilities to the Compliance Officer. If the latter, caution needs to be exercised in order to maintain audit objectivity if there are areas where the selected person will also develop policies, procedures and systems.
The Commission and SCRS should work together to develop memoranda of understanding (MOU) regarding the functions that are provided by SCRS or other external parties. Examples of these include investment accounting, IT support, administrative services, etc.

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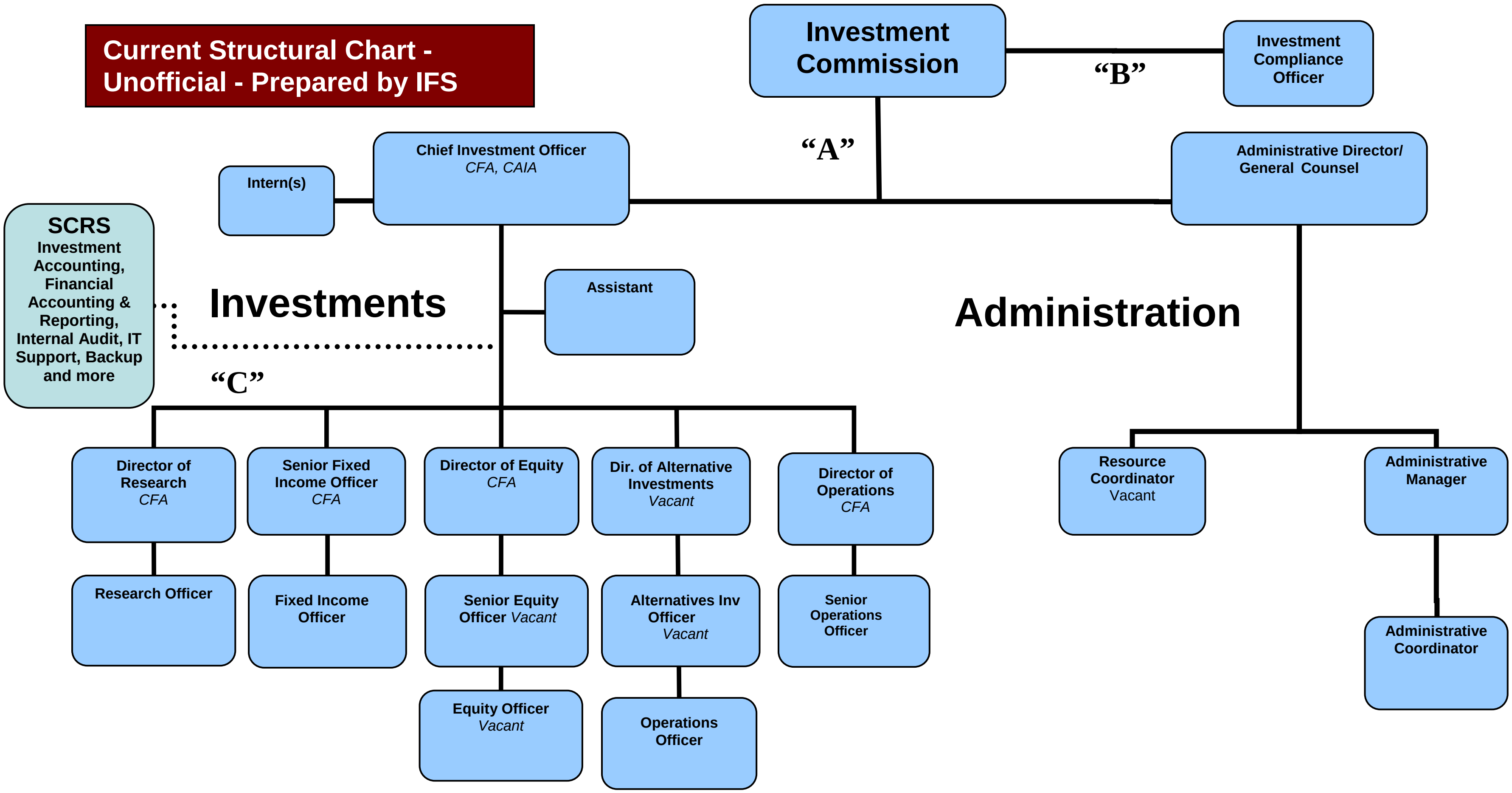
Current Structural Chart - Unofficial - Prepared by IFS



IFS based this chart on our understanding of the organization by combining three charts we received. As such, this is not an 'official' chart of RSIC. Our purpose is to develop an overall picture for discussion. We realize that RSIC is rapidly changing and that the chart will not show any changes that have been made since July 2008.

Job Descriptions

Principles

It is important for an organization to identify the responsibilities and define the skills required of its key executives, managers and staff accurately in order to develop a well-trained workforce which is essential to achieving both strategic and operational goals.

From an organizational performance perspective, job descriptions and staffing skill sets serve several important purposes. In particular, they provide important indicators to guide the determination of employee performance evaluations over a given time period as well as contributing to understanding overall staffing needs, recruiting requirements, and training and development priorities. In this sense, the clear definition of responsibilities and staff skill sets plays a fundamental role in helping the organization meet its commitments to key stakeholders and constituents.

Risks

Poorly defined position descriptions and staffing skill sets can undermine organizational performance in several ways, such as failing to identify and hire managers and staff who possess the appropriate skills and experience necessary to effectively perform the jobs required for operational and strategic success.

Observations

All of the staff at RSIC and those staff at SCRS involved with investment accounting provided job descriptions for our review.

The SCRS job descriptions (Agency/Work Unit Mission Statements) are outdated because the have specific references to systems that have changed along with the major changes that have taken place in investments. Other than that, the descriptions of functions for the Investment Accounting staff are for the most part in line with what they said they do in our interviews.

The RSIC job descriptions are less formal, but not necessarily less descriptive, than the ones from SCRS. They lacked obvious signs of concurrence by the CIO such as his signature of agreement/approval.

Task Area A Recommendations 6-7
The SCRS Investment Accounting staff job descriptions should be updated to reflect recent changes that have occurred.
RSIC job descriptions for investment staff should be prepared in a standardized format and signed and dated by the employee and CIO.

Adequacy of Resources

Principles

Resource allocation throughout an organization is one of the key tasks that management must carry out consistently. Ensuring that appropriate funds are allocated to the procurement and maintenance of systems, personnel, business unit operations, and communications are crucial to the ongoing success of a given enterprise. With regard to the investment program, some of the key considerations in this area relate to the resources allocated to items such as investment analytical software applications, Information Technology support, staffing, training and development, as well as program administration.

Risks

The lack of sufficient resources within an organization can undermine/hinder its ability to perform.

Observations

The Investment Accounting staff at SCRS is at a sufficient level and is sufficiently qualified to handle the current needs of RSIC. Generally speaking RSIC has most of the resources it needs and seems to have the ability to add the investment staff needed to implement the Commission's investment plan. Additional staff will be needed as the additional asset classes are added. This is likely to require obtaining additional office space, support staff and other support resources and tools.

We have addressed several other resource needs and solutions in our section on custody below. These include tools that are needed for monitoring alternative investments and compliance. We observed that the fixed income unit does not use a trade blotter as a permanent record of its activities. Trade blotters preserve a record of initial transactions. Trade blotters may be kept in paper or electronic form. They should be retained in accordance with State retention requirements. We also observed that the short term desk does not preserve a record of competitive bids obtained on purchases. RSIC's Bloomberg terminals can generate both of these documents. While records of competitive bidding document the process, the important control is to require competitive bidding and the purchase/sale at the best possible price.

With the addition of a Compliance Officer new tools will be needed. Many of these tools are now available through BNY/Mellon. RSIC already has Bloomberg terminals and services available. RSIC may be able to negotiate a reasonable arrangement with Bloomberg to use its compliance for the manager of the in-house fixed income portfolio who is responsible for pre- and post-trade compliance with policies and guidelines established by the Commission. The custodian has compliance modules but they are all post-trade. Using Bloomberg in conjunction with the trade order and execution can help RSIC to implement pre-trade compliance.

Task Area A Recommendations 8-10
The manager for the internally managed fixed income portfolio should maintain trade blotters as permanent records of investment transactions. Bloomberg can be used to generate these documents which should be come permanent records of the RSIC.
The short-term portfolio manager should generate competitive bid documentation and attach it with permanent records of trades executed in order to demonstrate that prices were competitive. At least three competitive bids should be sought before purchase. Bloomberg can be used to generate these documents which should become permanent records of the RSIC.
The RSIC should consider using the Bloomberg compliance monitoring module for the internally managed fixed income portfolio.

Custodial Roles and Responsibilities

Principles

A fundamental function of the banking system for many years has been the custody or holding of securities for the account of others. Often this is combined with a trust responsibility, which is a legal and fiduciary relationship. Regardless of whether trusteeship is involved, custody is an operational and financial function.

The custodian's basic responsibility is to effect receipt and delivery of securities traded by the investment managers, to collect income on those securities, and to maintain accounting records of all holdings and activities.

Large, complex institutional investors actively invest in a variety of financial instruments in many markets around the world. They need to custody their portfolios in banks providing global master trust and custody services. Investment activities cannot be accomplished within legally required time limits without maintaining an institutional trustee or custodian. The distinction is legal, not just operational.

Master trust and custody banks provide a wide range of operational and recordkeeping services in addition to the basics. They can manage multiple investment entities (for example separate related pension plans) through a combined set of investment accounts without violating the legal separation between the entities. Such master trust and custody banks become global when they have the direct and/or indirect capability of providing custody services in many countries linked electronically and consolidated into a single reporting system.

Pension master trust and custody is a service business provided by a limited number of banks, which requires highly complex and developed systems, and thus significant continual investments in hardware, software, communications systems and personnel. As the need to automate the process has increased, dozens of major regional banks have stopped offering pension master trust and custody services and have limited themselves to the low volume, limited reporting needs of local personal and corporate trust clients.

Modern global markets consist of many types of securities, electronic depositories, and settlement based on straight-through and near straight-through processing (essentially same day). The need for real-time, trade date portfolio information and a wide range of sophisticated analytics demand that custody banks to have very complex, sophisticated systems to support the custody operation.

Master trust and custody banks that have the capabilities to provide the comprehensive range of functions and services necessitated by large sophisticated institutional investors are referred to in the industry as the “top tier” custodians. With the completion of the merger between Mellon and Bank of New York in July 2007 and the announcement in early 2008 that Citibank was exiting the U.S. custody business, only four U.S. banks are generally alluded to as the "top tier" full service global custodians[2] because they have made the strategic decision and investment of capital to develop and maintain a competitive position in pension master trust and custody market and attract the volume necessary to support it. There may be an equal number of foreign banks in this category.

Custody is largely a network of highly automated, tightly controlled communications and reporting systems. The custody relationship involves not only electronic links, but interpersonal operating relationships among the fund, the investment managers, the brokers, and the governmental and private agencies that hold securities. These operational relationships must be working flawlessly to avoid trade fails and other loss of value.

Custody banks must maintain sets of controls over their transactions and records. The increase in automation of most transactions may result in less control over the few transactions that require manual processing.

The custodian possesses an incomparable amount of detailed information regarding a fund's assets and investments. In an appropriate control environment this information is verified, reconciled, and audited. As such the custodian's files are an excellent source of a wide range of portfolio controls and analytics that can assist investment staff's to manage their activities efficiently.

To a large extent a large, diversified investment portfolio cannot be adequately controlled except through the information held directly or indirectly in a comprehensive custody arrangement. It is only through the custody bank that data from a variety of investment managers, investing entities, depositories, and legal entities across a large number of countries is

[2] March 2008 survey of R&M Consulting rated Global and North American custody banks based on client and asset manager satisfaction. The four U.S. banks providing full custody to pension fund clients ranked as follows North American banks): Bank of New York Mellon (#1), State Street (#3), Northern Trust (#4), JPMorgan Chase (#6). The other banks provide specialty services only.
R&M Consulting in Surrey, England in their 2008 survey of overall results rated Bank of New York Mellon #5 (#1 of North American banks). Northern Trust, JPMorgan Chase, and State Street followed with global rankings of #7, #9, and #11 respectively.

accumulated in a workable structure that facilitates consolidated measurement, reporting, and oversight.

Risks

Timely and accurate completion of the fundamental tasks of securities clearance, income collection, valuation and reporting is absolutely essential to managing the investment operation of a complex portfolio and understanding the dynamics of risk and return that affect it over time.

If the fundamental custody functions are not timely and accurate, not only is financial value reduced, but elements of control are lost. Through various regulatory requirements, funds need to measure and report their assets, income, and other results. Timely and accurate valuation, measurement, and reporting are essential to meeting these requirements.

Control weaknesses, data errors, and processing flaws can lead to not only erroneous data on which decisions are made, but could result in loss of income and corporate action opportunities.

The secondary or supplemental services now available from or through custody banks offer additional means to add value and reduce operational and portfolio risk. The common thread of these services is their basis in the portfolio data fundamental to the custody function.

These secondary services tend to reflect opportunity costs. While not every available product and service is cost effective for every fund, most funds can add some degree of additional financial value by using certain processes.

Not having such services available, having inadequate or ineffective services, and/or not evaluating and where beneficial using them may lead to foregone income or acceptance of excess risk.

Observations

Introduction

In July 2007 the merger between The Bank of New York Company and Mellon Financial Corporation was effected. Banks owned by each of these bank holding companies provided high level global trust and custody services. Following the merger the outline of a plan to consolidate these services was made public. Among the essential elements of this plan was the eventual transition of the domestic custody operations for pension and other tax exempt funds to the Mellon Bank accounting, service, reporting, and control platform, including the use of Mellon's Workbench internet based reporting and portfolio management tool and the phase out of the Bank of New York systems, including Inform. While new accounts were to be generally placed on the Mellon system, existing Bank of New York accounts were scheduled to migrate over several months.

RSIC/SCRS requested to migrate as early in the process as possible. This was a sensible approach given the number of portfolio changes that were about to occur. Setting up these investment contracts directly through the Mellon structure would be significantly more efficient than setting them up as BNY accounts and later reregistering them.

Since the transition was scheduled to occur in early 2008, we deferred our review until the new arrangements were in place, rather than evaluating an expiring set of processes. At the time of our interviews and research the migration had just been completed and the first set of quarterly reports was being prepared through Mellon's systems. Our observations as to the effectiveness of the new systems are a combination of assessing activities at RSIC/SCRS and our observations of Mellon's systems in place at other public funds. Therefore a small part of our conclusions is based on the reasonable expectation that Mellon will deliver the same degree of timeliness and accuracy to RSIC/SCRS as it does for other public fund clients.

Custody Service Agreement

Under current South Carolina law the State Treasurer is statutory custodian of all state assets, including the assets of SCRS. A number of other states follow this model. States differ, however in how the State Treasurer's Office (STO) implements it. The STO needs a bank custodian to effect the securities custody, transaction, and recordkeeping functions. Some states delegate selection and monitoring of the custody bank to the responsible retirement system or investing entity. Others handle the function directly, sometimes with and sometimes without consultation and concurrence of the affected systems.

Until recently the South Carolina STO had significant direct responsibilities not only for custody, but for recordkeeping and certain investment activities. Most of this has now been delegated to one of two subordinate entities: The Retirement System Investment Commission responsible for investing the assets and the South Carolina Retirement System, responsible for managing the plan and its benefits.

The South Carolina STO still maintains responsibility for selection, contracting, and replacement of the custody bank as well as certain initial processes such as establishing accounts and setting up initial money transfer arrangements. Control implications of this structure are discussed in Task Area C below.

The STO signed a new custody agreement with Bank of New York in April 2007. The agreement uses BNY's standard Global Custody Agreement form. At that time, while the intent to merge with Mellon was publicly known, regulatory and shareholder approvals had not been obtained. Each bank continued to operate independently. The agreement covers all the basic provisions of any such arrangement.

Mellon had its own form of global custody agreement. In the consolidation process between the two banks, the Mellon documentation has been adopted for new and renewing relationships. In and of itself, while the BNY form is no longer being used, it is fully enforceable and covers the operating, fiduciary, and financial needs of the relationship.

The BNY format contract appears to fall short in the area of supplemental services provided under the agreement. It covers basic elements of the relationship but does not include the specifics of the various services also being provided. As discussed below, under the BNY Mellon structure currently in place, RSIC/SCRS is or will be receiving several additional services that were not available from BNY and are not referenced in the BNY agreement.

If STO converts to Mellon's form of agreement several supplemental agreements would executed and incorporated by attachment to the main agreement. These supplements would cover such services as securities lending, performance measurement and analytics (through Mellon Analytical Services), Workbench, and Private i (licensed through Mellon from Burgiss).

While we understand the addition of these services will not at present affect the custody fee paid by SCRS, the terms of their usage should be spelled out. The pricing exhibit which now lists the services that had been provided by BNY should list the services provided by Mellon.

Revising the entire agreement to reflect the parties' arrangement using the standard Mellon agreements is ideal, at a minimum the current agreement should be amended to incorporate those agreements for supplemental services to be provided by Mellon. A new pricing sheet should be executed reflecting those services and the fee arrangement for their delivery.

Task Area A Recommendation 11
STO, in consultation with RSIC, should execute a new custody agreement with BNY Mellon using their current forms and attachments, or at a minimum execute the appropriate supplemental agreements and amend the pricing schedule accordingly.

Services Being Provided by the Custodian

With no current contract documentation identifying the services being provided, this evaluation has to be made relative to services provided under the BNY agreement as well as those discussed with staff as being received or considered to be received.

Generally RSIC/SCRS uses the custody bank for a wide range of support and control functions. Mellon provides performance measurement services, analytics and attribution evaluations, portfolio and plan accounting, enhanced monitoring of corporate actions and class actions, benchmarking, and support in a number of accounting and reporting areas.

Certain of these functions are also performed by others. For example both NEPC and Mellon provide certain performance measurement reporting. Both Mellon and SCRS maintain investment accounting records and reconcile between manager and custodian records. Generally automated interfaces with BNY Mellon facilitate these redundancies, so that the bulk of the effort is focused on maintaining controls rather than manipulating data. These functions are operating through new systems with the transition to the Mellon platform, and remain to be tested and debugged.

It appears that the functions that were provided under the BNY agreement are being provided by Mellon, and that other services or higher levels of similar services now available are also.

Services Not Currently Used by RSIC

Top tier custody banks have leveraged on the data they maintain from their basic custody and clearing activities to provide a number of measurement and control functions that depend on that data. Survival in the custody business depends on achieving economies of scale. These additional functions are valuable management tools for plan sponsors and investment managers that can be profitably priced because they are often automated flows out of existing data.

Several of these are or may be of significant value to RSIC/SCRS. Some are presently being considered.

The current pricing under the existing contract with BNY is attractive. Except for a flat fee for certain attribution analysis and a reduced investment management fee on the short term investment fund, all custody costs are paid for out of the bank's share of an attractively split securities lending program. This pricing structure may need to be modified. Some of the additional services available are provided by unaffiliated entities and carry explicit price schedules. In addition, the reduction in publicly traded securities in favor of alternate investments reduces the pool of lendable assets, and, therefore, the volume of securities lending revenue.

In its delegation to RSIC, STO has authorized paying hard dollar fees for additional services from the custody bank. In evaluating these services, the cost benefit analysis should be built on the assumption that not all will be available at no incremental cost.

Private Partnership Monitoring

With RSIC's rapid portfolio redeployment to an asset mix with significant components of alternative investments, the very complex process of monitoring those vehicles and their investment activities is now necessary.

Significant investment in private equity partnerships is being made as well as investments in portable alpha and other hedge fund approaches, and derivative based overlay programs. These strategies involve not only contractual relationships that differ markedly from more traditional approaches, but financial exposures that are not reflected in traditional cash flow, accounting, and valuation methods.

RSIC/SCRS is currently working to obtain and implement a well regarded system designed to monitor and measure such alternative investments. Through the Burgiss Group, a company unaffiliated with Mellon, access to a suite of services including Private i and Private Informant will be put into place.

These systems provide controls over investments in limited partnerships, calculate performance using IRR methods that are more appropriate than time weighted rates of return, and generally facilitate monitoring the partnership, their general partners, and the fees they charge. Private Informant provides a look through to the underlying investments in a partnership, when that information is available.

A recently expanding issue affecting alternative investments is valuation. These investments have to be reported at fair value rather than historical cost or at hybrid values as has been the practice. In addition, some regulatory authorities may require investors to obtain their own fair value determinations and not rely on those provided by general partners. This whole issue is in flux, and it is not yet certain what specific requirements will apply to which types of investors.

Task Area A Recommendation 12
RSIC and SCRS should establish a staff coordinating committee including input from its auditors, accountants, consultant, legal counsel, and custody bank to monitor developments affecting fair value accounting for real and financial assets and to develop and implement systems and sources of data necessary to comply.

Guideline Monitoring

RISC is also establishing the use of Mellon's Performance Monitor. This system is applied to manager accounts and portfolios of traded securities to test them against established portfolio guidelines. The system can not only test individual securities characteristics on a generally pre-settlement basis, but can test certain overall manager account and whole portfolio exposures. These systems are fully dependent on developing rules by which the testing is done. They are good, but not perfect. Because they often flag what turns out to be false positives (often due to a trade delay or a temporary timing mismatch) each item identified requires further investigation before action is taken.

Generally this system can be used not only to monitor outside equity and fixed income managers, but can be applied to internally managed funds. It may also be able to be used to monitor commingled funds, including securities lending collateral accounts and STIFs, when look through capability is available and used.

Currently compliance for the internally managed portfolios is done by the portfolio managers. While this may be effective, it is not fail-safe. Establishing a compliance function over these portfolios incorporating Performance Monitor controlled by the compliance officer or other person not investing the portfolios would provide a much higher degree of control.

Task Area A Recommendation 13
Establish a daily portfolio control over internally managed accounts using Portfolio Monitor and/or other applicable tools independent of the investment process.

Securities Lending Monitoring

Securities lending program monitoring is limited generally to controlling the cash flows, the securities on loan, and the revenue splits. These are all critical measures. They appear to be in place and effectively implemented.

Another approach to securities lending is to measure the effectiveness of the program. This is complex and highly subjective, yet not impossible. The essence is to compare the volume of securities on loan and the spreads or margins earned on the loans to some reasonable and applicable benchmark.

The difficulty lies in the variability of demand for securities loans. No matter how fair a lending agent's allocation system is, and no matter how adept the agent is at getting the best, most profitable loans on its books, the process is demand driven by the borrowers and the securities they want.

RSIC obtains through Mellon a quarterly report issued by Robert Morris Associates, a well known supplier of support services to banks. This report provides overall industry loan volumes and spreads for a wide range of markets and securities. Some insight into whether a loan program is competitive can be gained by comparing the program to the industry.

More detailed and specific information can be obtained through both this provider and through Astec Consulting[3], a firm specializing is collecting and measuring securities loan activity for lenders and agent banks. Some of this information can be obtained by participating in the cooperative data program. The more specific information requires subscription.

[3] IFS has no affiliation or business relationship with the named firm.

Obtaining such data and tracking securities loan activity and pricing may prove valuable. However the value is a function of the available pool of lendable securities. As the supply of traded securities shrinks in favor of commingled and partnership assets, the economics may become unfavorable.

The same issue may affect the overall custody contract pricing, which is currently paid for almost entirely by securities lending revenue. This is discussed below.

Task Area A Recommendation 14
RSIC should evaluate the cost effectiveness of participating at some level in the Astec Consulting lender cooperative in order to better measure its securities lending program.

Back Office Investment Management Services

All of the top tier custody banks provide back office services to unrelated investment managers. Many investment management firms and in-house asset management units have determined that maintaining their own back office is not cost effective.

Services provided include a wide range of clearance and control processes. These services are fully isolated from custody operations. Issues ranging from trade confirmation to clearance to pricing to reconciliation are handled as independently as if they were still done by the investment manager's own staff. However, because of the large volume of business such units can handle, more efficient systems and tools are affordable.

RSIC continues to manage short and long term fixed income portfolios in-house. This function requires back office processes that consume staff time and resources. Outsourcing this administrative function to one of the banks that provide such services may be cost effective and enable the individuals handling clerical and administrative functions to move to more value-added activities. The outsourcing could be to Mellon or to another qualified provider; there is no particular advantage or disadvantage to using the same bank as handles custody.

Task Area A Recommendation 15
RSIC should evaluate the cost effectiveness of outsourcing the back office operations of its internally managed investment portfolio. IF RSIC decides to outsource these functions then it should no longer need the QED system. Staffing and monetary resources related to maintaining QED and back office support functions can be re-deployed to address other needs within RSIC.

Custodial Compliance with Contractual Services

With only one month of experience on the Mellon platform, the quality and timeliness of reports and services cannot yet be fully assessed. This will need to be monitored over the next several months. There are a number of indications, however, that Mellon will be highly compliant and will be responsive to any material issues brought to its attention.

Mellon developed a reputation for customer service prior to the BNY merger. The combined company has expressed the intention to continue this approach. Experience with other customers has been consistent with this intent.

While a transition between one platform and another within a single institution is less complex than the process to change custody banks, it is nevertheless complex. RSIC/SCRS staff has had high praise for the transition to the Mellon platform and set of services. There have been few problems, and those were efficiently handled. Mellon has provided extensive on-site and off-site training.

A large part of Mellon’s product delivery is via Workbench. This system has been in place for several years and is considered to be equal or better is range of services and ease of use to the internet delivery systems offered by other banks. Thus the client, RSIC/SCRS is to a large extent in control of the form, timing, and delivery of reports and services.

As mentioned above, the current set of custody contracts does not fully recognize the set of services being or soon to be provided. An important aspect of monitoring the provision of contracted services is to track services received, their timeliness, and their accuracy.

Task Area A Recommendation 16

In addition to conforming the custody contract to reflect the full set of services, RSIC should establish a monitoring program to track each service, when it is received or available on Workbench to be received, and whether there were any problems with the information and services. RSIC and the custodian should then review any adverse issues and establish procedures to correct them.

Appropriateness of Services Provided by the Custodian

RSIC's investment program is rapidly evolving into as complex a structure as any other similar size public fund. Such a change from a conservative base in so short a period of time is complicated. The alternative investment structure that will constitute a large portion of the fund is by its nature one that takes time to mature and function in an orderly way, given the pattern of funding investments through capital calls and disbursing realized gains through distributions.

Obtaining and maintaining staff to handle these investments as the program continues to grow in complexity may be a challenge, thus putting added burden on existing staff. New policies and procedures need to be developed to handle the new investment types. The eventual addition of real estate will bring in an added layer of complexity. This process may be constrained not only by the requirements of the hiring process, but by capacity constraints in management, office space, and other requirements.

In this environment, the use of whatever reasonable tools that can ease the burden by automating work tend to be cost effective. RSIC/SCRS is or will be using several services to monitor and manage investment operating processes and risk. This is appropriate and prudent.

As the system gains experience with these tools and the procedures through which they are being used, opportunities will be identified to modify the set of services. At present, however, this set of services appears fully appropriate.

Other Services

Given the current mix of investment type and structures, the tools being supplied generally cover the RSIC/SCRS' needs. As these needs evolve, new tools will likely need to be added.

RSIC expects to further diversify its alternative investments program into real property. Real estate investments, even when made through limited partnership vehicles similar to those used for private equity and hedge fund investments carry a different set of risk monitoring concerns. Current tools may be able to handle these investments, but others may be more effective.

In order to maintain an ongoing control over investment and operational risk, RSIC/SCRS should continue to evaluate the effectiveness of its controls and be alert to other established and newly developed tools for measuring and monitoring risks and returns.

Task Area A Recommendation 17
RSIC/SCRS should jointly establish a process to periodically evaluate the set of services provided by the custody bank and other outside service providers relative to the needs and growth of the portfolio structure and mix of assets and to recommend changes and additions in that set of services.

Task Area B – The RSIC and SCRS Accounting Infrastructure

Investment Accounting: SCRS Functions and Custodial Functions

Principles

Timely and materially accurate accounting for investments is a critical function in managing a portfolio and in evaluating and reporting the financial health of a retirement system. In essence the entire investment process is built in layers on a base of such information.

Investment accounting information feeds two primary functions: portfolio and financial reporting and portfolio management. These differ more in the level of detail and timing and the ways the information is used than in what is needed.

Information for reporting feeds the financial statement process and the processes for quantitative analysis of performance and risk. While it may be collected daily, it is usually processed only monthly.

Information for portfolio management is used by active investment managers to control portfolio structure and to identify trading and investment opportunities. It is also sometimes used to monitor investment managers for compliance to investment guidelines. It must be daily and often essentially real-time. This timing is a significant difference from the reporting need and is most often the reason why portfolio managers do not use the investment accounting system for investment decision support.

The custody bank gathers the basic information through its holdings data and its security receive and deliver functions. Security prices are collected – often daily – from a series of reliable and recognized sources.

The basic functions of a custody accounting system are to record transactions involving portfolio securities. These transactions are reported by the client's investment managers through the street's[4] clearing, settlement, depository and delivery systems. Internally managed portfolios often typically are accompanied by an in-house investment accounting system. Several parties are involved executing, confirming or dk'ing[5] the transactions. This includes buying and receiving, selling and delivering, collecting income, and recording other changes in holdings.

Accounting is integrally connected to operations. To a large extent, transactions involving directly owned listed securities held in recognized securities depositories are administered automatically, and posting of accounting systems is a component of that process. The resulting portfolios of securities are priced via subscriptions to multiple recognized pricing securities, sometimes as often as daily.

Modern investing frequently structures investments through secondary vehicles. These include mutual funds, exchange traded funds, bank collective funds, insurance company separate accounts, limited partnerships, real estate operating companies, etc. These commingled funds are essentially conduit vehicles, investing a single portfolio on behalf of several participating investors. The investor typically is invested in the conduit vehicle, not in the underlying securities held by the conduit.

Conduit vehicles usually maintain a separate custody relationship for its investments. That custodian and/or the general partner or manager of the conduit vehicle determines the values and reports them to each participating investor's custodian. Thus there is created a separation of control and also frequently of detail in the information provided.

[4] i.e., Wall Street and the securities and investment community
[5] Dk is street jargon for "don't know" the transaction. When a transaction is dk'd it is rejected.

Risks

Accounting information on income and holdings, including realized and unrealized gains, is essential to maintain investment control and to manage risk.

Accounting information typically feeds other processes, including investment functions, control functions, and financial and regulatory reporting requirements.

If timely and accurate information is not available where it is needed in appropriate form, the viability of the whole system is at risk. Accounting is measurement, and that which is not measured is neither understood nor controlled.

Observations

SCRS maintains the QED investment accounting system for the portion of the portfolio that is managed in-house by RSIC. The QED system requires manual entries of trades. SCRS Accounting generates monthly reports from the QED system as verification of the monthly general ledger interface posting from BNY Mellon to SAP.

BNY Mellon maintains a fully functional portfolio accounting system integrated into its internet based Workbench system. This system provides a mechanism through which certain types of transactions can be initiated and all actual and pending transactions can be easily viewed, and checked.

The system is flexible at the user level, enabling individual users to create, process, and download reports quite easily.

The system data comes largely from investment activity initiated by RSIC's investment managers (purchases and sales), SCRS (contributions and payments), and market activity (income and corporate actions). Valuation for both QED holdings and BNY/Mellon holdings are largely derived by feeding valuations from a number of recognized external pricing sources into the system and matching it to holdings data.

Mellon's systems in this regard are fully developed and functional. Their standard procedures include adequate and recognized methods for determining a fair value for securities that are not readily priced by standard services. Prices are tested and verified.

The BNY/Mellon accounting system provides automatic feeds to a number of subsidiary systems at Mellon, including performance measurement and analytics systems provided through Mellon Analytical Services and Portfolio Monitor which provides controls against violations of portfolio guidelines.

The system measures cash availability based on transactions posted and expected to close and clear on a given day (settlement). Cash thus available for investment is swept into a designated Short Term Investment Fund (STIF). Since some activity cannot be posted until it occurs (certain foreign markets and certain income payments where the amount is not determinable, for example), Mellon provides other overnight investment vehicles to minimize the amount of cash not bearing interest.

Alternative Asset Accounting

The basic accounting systems typically do not work in the same manner when dealing with a number of alternative assets and strategies. Many such investment strategies are packaged into commingled entities and managed by a general partner or investment manager.

Such entities invest in multiple underlying investments and divide the beneficial ownership among multiple investors. Accounting for such assets in a custody bank accounting system is single line. Activity within the entity does not directly involve the investor, only capital contributions (calls) and distributions generate transactions.

Typically the general partner or investment manager determines a value for the entity periodically – generally quarterly – and communicates it to the investor and the custody bank. More formal, sometimes audited, reports are often issued annually and include reconciliation of each partner's capital account.

Valuation practices in many of these funds have traditionally been conservative when the underlying assets are not readily valued independently. Private equity, real estate, and similar difficult to value or appraised assets have been carried at cost unless an independent event such as a subsequent sale of similar securities or a public offering has established a supportable basis for a write up or write down. Recent changes in accounting rules will require such funds (and many other assets and liabilities) to be valued a fair value.

These issues cannot be directly handled by any accounting system. Mellon offers a set of advanced alternative asset management tools that cover a number of management and control functions and measurement activities under the umbrella of Private Investment Services. These include basic functions on an outsourced basis, premium support and control services including relative performance measures and transactional management (capital calls, data management, and document management), and advanced analysis services through a contractual relationship with Burgiss' Private i suite.

Special tools such as Private i are designed to monitor and oversee such investments. Because Burgiss monitors many funds for many investors, they are able to obtain and verify data more quickly and accurately than individual investors.

Task Area B Recommendation 1
RSIC/SCRS should evaluate the potential benefits of utilizing some of the several outsourced alternative asset control tools available through Mellon, Burgiss, and other providers.

Single line assets of this type are reconciled between the GL and Mellon only with respect to the single line values and the cash flows.

Limited partnership investments frequently pose problems with timing of valuations. General partners often need time to handle all the partnership accounting before they can determine value and partner interests. In many cases values are dependent on further sources, such as appraisals, especially in real estate funds. SCRS instituted an accounting policy in April 2008 under which partnership investments will be carried at cost. However, this policy still requires that the market value of the partnership investments will be determined based on the general partner’s quarterly statements. These values may not be received prior to the SCRS’ deadlines for its reporting. Thus while the policy adequately covers timely determination of book value, it may not adequately assure timely determination of market.

Monthly Mellon has only until the end of the subsequent month to post values and other changes. If values are not available, tentative values must be kept in the system. Fiscal year end poses an even more serious issue. Data must be audited by the end of the second following month (August) and fiscal year end financial information must be complete by September 30.

This problem is often insurmountable. Many funds use a delayed reporting system. One method is to carry partnership values at the prior quarter’s stated value adjusted for current quarters cash flows. As long as this is done consistently, the distortion in values and particularly rates of return is minimal. Others add an additional step of adjusting only the year end value. The important factors are that for accounting purposes the method is applied consistently and that for performance measurement the timing differences are factored in.

The policy as currently written may not be adequate to cover all the reporting needs. Expanding the policy to handle delayed market value reporting on a consistent basis for both interim and fiscal year end values is necessary.

Task Area B Recommendation 2
SCRS should modify the Accounting Methodology for Private Equity Managers Policy to account for partnership and other commingled fund valuation delays and apply it consistently.

Custodial Bank Investment Accounting System

Principles

An important factor in the maintaining of investment accounting information is the Official Book of Record (OBOR). Reasonable values for assets in a complex market do differ, so one set of data must be agreed on and used for all subsequent purposes to assure that the analytical results and measurements are consistent.

Given its closeness to the raw data and its primary role in collecting and verifying that data, custody banks are frequently, although not always, designated the Official Book of Record. Any set of data that differs in any material way should be adjusted to the values carried in the OBOR which serves as the control. All subsidiary analytical systems should feed off the OBOR rather than other sources. This typically entails monthly reconciliations from managers to the custodian and often, to accounting systems maintained in tandem at the investor client.

A sometimes overlooked aspect of custody accounting information is timing and sequence of transactions. Many investment funds use month end data and monthly valuations. However, date specific information is still needed for determining eligibility for certain events such as dividends, voting rights, and corporate actions. Accounting systems often post correcting entries due to any of several problems with initial entries. If correcting entries are not date sequenced correctly, the system may not recognize the status of a position on a critical date.

One aspect of the OBOR that is becoming critically valuable is maintaining access to an unbroken record of assets and transactions to support identifying and filing claims relative to class action litigation. It has become a fundamental reality of our society that actions potentially leading to the recovery of losses will occur. Investors must learn of these actions, determine if they qualify for the "class" based on whether and when they held or traded the subject security, and decide whether to opt into the class or pursue other recourse.

Pursuing these opportunities requires access to a long history of specific portfolio and transactional data. For a large, active fund this involves extremely large data yet easily searchable bases. This information is an ordinary component of the records maintained by the custody bank, but requires other actions to maintain it elsewhere. The top tier custody banks subscribe to services that report class actions and automatically scan client data to test eligibility.

This access breaks down when a fund changes custody banks. Copying the full history of holdings and transactions is not ordinarily included in transition, because the volume is too large and often requires reformatting. Difficulties in this area are a primary reason for keeping the same custody bank.

Changing custodians requires a transition that is an enormously complex task. Even moving from one top tier custody bank to another, where both have highly sophisticated recordkeeping systems, is a daunting task. Additionally, the visible and hidden costs of transitioning from one custodian to another are easily hundreds of thousands of dollars. For these reasons, most institutional investors change custodians very infrequently unless there is a material reason that compels change.

Certain data resident in the custody records may be critical. Information on securities held and traded over a many year historical period may be necessary to make claims under class action lawsuits brought on behalf of investors. Systems within custody to identify and retriever such records in precise detail are needed to enable the Fund to maximize the value of such claims. This becomes particularly complex when a prior custodian held assets during the claim period. Commonly such data is not available to successor custody banks and is no longer available through any automated mechanism.

Risks

No information, or the worse situation of inaccurate information, may lead to incorrect conclusions and incorrect actions.

Inordinate delays may occur in obtaining information and may result in decisions occurring too late to react to situations.

Failure or delay in providing the information to those who need it to make decisions is in some ways worse than not having the information at all. While the financial result may be the same, the frustration of knowing that critical information existed but was not made available adds its own level of possible organizational consequence.

Discontinuity in the determination of information risks, erroneous output and inappropriate decisions may result. Changes in record keepers and recordkeeping systems can inflict discontinuities on the stream of information.

Given the degree that the custody bank and its systems and procedures are critical to maintaining a complete and consistent set of information, changing custody banks for reasons other than quality or availability of needed services is expensive and disruptive.

Observations

Custody Bank Capabilities

BNY Mellon's basic custody accounting system is the core of its functions as the RSIC custody bank. In its functionality all such systems perform the same tasks: posting trades and settlements and accruing and posting income and expenses. Holdings are assembled into portfolios and valued.

Mellon's capabilities in this area are equal to the highest standards in the industry. Mellon has been favorably cited by independent evaluators for the quality of its operations.

This system, supplemented by feeds of security pricing and characteristics data, in turn feeds a number of other functions. Mellon Analytical Systems (originally a joint venture with Russell) takes feeds from Mellon's accounting systems as well as other custody banks and other sources of market information and provides a range of performance measurement, benchmarking, and analytical services. In addition to use by many plan sponsors, many investment consultants and other financial advisors use MAS as a back office for these evaluations for their clients.

Investment Accounting for Alternative Assets

Basic accounting and measurement systems were initially developed for traditional listed securities. Alternative asset strategies raise several different issues.

Accounting is at its heart a record of flows and changes in value. When accounting for alternative strategies, the focus remains on those flows. Value and risk changes not tied to transactions and documented unrealized valuation effects are hard to capture.

Many such strategies are effected through independently structured and custodied investment entities, including commingled investment funds and limited partnerships. Standard accounting typically records these as line item assets. The entire fund is carried as a single value. Cash flows into and out of the entity are recorded, but cash flows and securities transactions within the entity are not.

Mellon has the capability of drilling through such commingled vehicles and reporting individual holdings on a pro rated basis, if the manager or general partner makes the data available. Mutual funds and many commingled accounts allow this look through. Alternative investment vehicles, particularly private equity and certain other strategies that depend on confidentiality of strategies do not.

Alternative asset strategies also pose singular reporting and valuation concerns. External cash flows – capital calls, fees, and distributions – involve transactions with the custody bank and are automatically accounted for. Valuation of the holdings and activity inside the funds are not. Mellon, like all other custody banks, must rely on information from the general partner or other asset manager to provide values and information on unrealized gains and losses.

It is critical to recognize that while actively traded, public securities are to a large extent continuously marked to fair value, alternative structures are limited to values determined through separate processes by general partners. These values are more difficult to verify.

The nature of its cash flows and valuation changes causes alternative asset performance to be distorted if measured by traditional time weighted rate of return methods. Although not a perfect measure of return either, a calculated internal rate of return is the most reasonable measure for these assets. This is not a function performed within a custody investment accounting system.

Separate systems geared toward this asset class and providing a number of additional controls are the best source of managing and measuring those strategies. Burgiss' Private i suite of tools is a leading example of these systems.

Books of Record

Financial filings with the State and its agencies and data included in the System's annual financial reports are fed by the SAP G/L system. Investment activity is one component of the SCRS GL system, though obviously an important one. However, since the SAP GL system is not an investment accounting system it is not capable of recording holdings and transactions in detail. Hence the need for separate investment accounting systems to act as subsidiary ledgers to the SAP general ledger system that develops balance sheet and income statement reporting.

SCRS maintains its own parallel investment accounting system called QED which serves as the subsidiary ledger accounting for RSIC's internally managed assets. For the internally managed portfolios, summary investment activity is verified to the GL manually from transactional data from the QED system.

Mellon's investment accounting system also serves as a subsidiary ledger for all other assets, i.e., not internally managed. Investment activity from Mellon is posted to the GL primarily by download from Mellon via a Workbench function. The data then undergoes a thorough process of reconciliation against Mellon's investment manager account statements to assure completeness and accuracy. This process does not confirm the accuracy of the data, only its consistency across the two systems. Accuracy of the data is primarily addressed through manager reconciliations, discussed below.

Mellon's records are treated as the Official Book of Record (OBOR). A custody bank's records tend to be the most thoroughly audited and confirmed set of portfolio data. They tend to be managed through more rigorous systems, have more than adequate backup and redundancy, and generally are the basis for most derivative analyses and actions. Thus there are logical reasons to choose that set of data as OBOR. Using the custody or trustee bank is typically a best practice for these and other reasons, except in cases where the custody bank is changed frequently or where the portfolios are almost entirely internally managed. Generally speaking, the larger the pool of internally managed assets, the easier it is to justify the cost of maintaining and in-house investment accounting system.

The migration from BNY to Mellon is a special case of custody transition. As mentioned above, the most long lasting effect of changing custody banks is a discontinuity in the long term record of holdings and transactions. This is mostly applicable to class action lawsuits.

In such situations once the existence of the legal action is recognized, eligibility as a claimant must be identified. This typically involves ascertaining whether the fund held and/or traded a particular security during a particular time. This involves searching the custody data base.

Since these actions generally derive from an incident or situation affecting the security or its issuer, a similar process is involved regardless of whether the action is being pursued on an individual, lead plaintiff, or member of the class basis.

Banks must maintain this data in full for a number of years. Consolidating data in one location is usually not feasible, due to volume and formatting issues. When custody banks are changed, the data is kept at the old bank. Since the account at the old bank is not active, it may not be automatically scanned for every new litigation situation.

The BNY Mellon situation is somewhat different. Although old holdings and transaction data will be maintained on the BNY platform and on its internet system, INFORM, that system will be hyperlinked to Workbench. Both systems will be searchable by the bank or the client.

Investment Managers' Accounting Functions

Principles

With the investment activity occurring through the efforts of various types of investment managers, those managers require real time portfolio information. Thus every manager maintains some form of portfolio accounting.

The manager is also the entity in the overall mix that has the most up to date information – true trade date. The custody bank may have some trade date information, but often works with delayed (often trade date plus one) data.

The custodian, however, is the only entity that is in a primary position to put all data into a uniform format and medium and to audit or verify it.

With the custodian's uniform data forming the basis for all measurement, analysis, and aggregation activities, it is critical that the data the custodian is providing to the plan sponsor and its advisors is complete and accurate to a material extent. This can only be assured through a rigorous process of reconciling data between the managers and the custody bank.

All top tier custody banks have some form of manager reconciliation in place. However, the process and the primary responsibility are not the same. Some banks control the process themselves. Others delegate responsibility to the investment managers.

Reconciliation needs to cover all the components of portfolio change that affect value and measurement of returns and other statistical characteristics. Thus the measures to be reconciled must, at a minimum, include securities holdings, value at cost, value at market, purchases and sales, earned and paid income, and fees and other charges, all as of the proper date.

For all these measures except market value there should be no differences. Market value depends on a number of factors that tend to result in small differences. Certain securities trade in distributed markets that do not publish definitive closing prices. Many bonds trade in this way. Others have definitive closing prices, but more than one that might reasonably be used due to, for instance, trading on different exchanges with different closing times. A growing trend toward round-the-clock trading of certain securities further complicates the process.

As long as market values are coordinated and accepted as reasonable, and as long as all "cash flow" transactions reconcile fully with no quantity or timing differences, the resulting book of record will accurately reflect the investment program and the statistical calculations will fall into a narrow range.

Typical time weighted rates of return that are widely used for measuring performance self correct minor differences in market values.

Private equity and other alternative investments face a similar need. Because they typically use their own, separate custodial relationship, responsibility for reconciliations is outside the reach of the plan sponsor or the primary custody bank. These underlying investments also pose more complex problems for valuation. Historically many such investments are carried at cost rather than fair market value. Many also are not actively traded in an open market place or are unique, such that values can be obtained only through the somewhat subjective and only periodic process of appraisal.

Reconciliation between managers (e.g. general partners) and the custody bank on such investments is frequently limited to external cash flows (capital calls, distributions, and fees) and confirming that the values claimed by the general partner were properly booked. Some partnerships disclose underlying holdings, some do not.

Risks

Inaccurate or incomplete data on portfolio activity leads to inaccurate statistics on which the major decisions of portfolio management and plan management are made. Nothing within the realm of plan management is more important than using data that is correct in all material ways.

Errors in holdings, transactions, and cash flows could result in distortion of investment risks, trade errors, delivery fails, and inappropriate portfolio management. Material errors in valuation may lead to making wrong decisions on manager retention or termination.

Observations

BNY Mellon has built into its normal custody processing for traded securities one of the more rigorous manager reconciliation processes. Individual trades are reconciled as they are reported and affirmed. In addition every investment manager is required to reconcile to custodian data monthly and to report those results by a specific deadline to BNY/Mellon and SCRS Investment Accounting. Copies of individual reconciliations are maintained in SCRS imaging files.

Actively Traded Securities

Mellon's typical reconciliation process requires the manager to access data from Workbench following each month end. Mellon staff then works actively with each manager to identify and investigate all items out of tolerance. Final reconciling items are documented in a reconciliation letter that is part of the month-end report package.

Mellon and SCRS Investment Accounting staff take direct responsibility for assuring that the managers complete and submit reconciliations on time. In addition they actively pursue discrepancies that are not sufficiently explained.

This process is further controlled through a series of daily reconciliations that to identify and correct transactional differences immediately, rather than waiting until month end.

Mellon also uses an internal pricing unit to determine the most effective pricing source for every security. That is generally the pricing source, but is confirmed by two other pricing sources when possible.

Alternative Investment Instruments

Alternative asset investments are much harder to price. Underlying asset holdings may not be available. Many holdings are private securities that have no active, reliable pricing sources, especially in the short run.

As a matter of investment accounting, custody banks must rely on general partners to provide reasonable values. The process followed by the general partner needs to be separately evaluated as part of pre-investment due diligence. Confirmation that the process is being followed often requires a combination of active involvement with the partners, such as through participation in advisory boards, and utilization of independent alternative investment monitoring services, such as Private i.

Mellon's reconciliation process is generally limited to confirming that values entered into the custody accounting system match the partnership statements, reconciling all cash flows, and identifying and questioning significant period to period changes not otherwise explained.

RSIC Internal Portfolios

Mellon works with its custody clients' internal investment operations on an equal basis with outside contract investment managers. RSIC maintains its portfolio accounting on QED. This system is the basis for performing its monthly reconciliation with Mellon.

Reconciliation covers security positions, cost, market, and accrued income. Security positions (identification, quantity) and cost are based on trades, and should never vary for any settled position.

RSIC uses Mellon as its source of securities pricing and Bloomberg as its source of income accruals. Thus the manager and custody bank securities pricing sources are essentially the same. However, due to the nature of securities pricing and the market for such prices, this seldom results in a materially problematic situation. As described above, Mellon confirms its primary pricing source with two others, which wrings most errors out of the process. Additionally, most pricing services ultimately go to similar sets of brokers and market makers to get pricing data. In reality even though fixed income pricing is hard to determine with precision, the system provides reasonable prices.

Task Area C – Internal Control Structure over Investment Operations

Internal Controls

As part of the review, IFS requested RSIC and SCRS management to complete internal control questionnaires for investments. We recognize the effort required and we thank staff for the thorough job completing them. Our purpose was to have staff help us to identify controls and control weaknesses. We were not tasked with a review of the operations of the Commission. To the extent that some of these observations relate to the day to day operations of the Commission versus the day to day operations of the investment staff, we are not able to expand upon the observations or basic recommendations. Based on the answers to the ICQs, we observed that the system of controls in place for investment operations could be enhanced in the following areas not otherwise discussed in the sections of this report:

Observations from the Internal Control Questionnaire	
ICQ Area	**Observation**
I. A. 8	There is no Audit Committee at RSIC.
A.10 & K.3	RSIC Travel and Education Policy does not *require* members to participate in ongoing education.
H. 4	Watch list criteria and monitoring processes need to be formalized
II. B.1	The Personal Securities Trading (PST) policy may need enhancement
I.3	Exception reporting could be enhanced
V D.6	Controls over accounts payable may need to be enhanced.
VI. C. 4	Manager reporting process may need review.

Task Area C Recommendations 1-7
RSIC should consider the addition of an audit committee. However, if the full Commission effectively takes on the duties typically assigned to an audit committee, then a separate committee would not be necessary.
RSIC should consider enhancement of the travel and education policy to encourage members and staff to participate in continuing education in relevant areas. The policy should set forth processes for trustees and key staff to obtain access to programs providing information about developments related to investment of pension fund assets. It should be tailored to the specific travel constraints, if any, imposed by statute.
The manager monitoring policy should also include watch list criteria. RSIC has hired in excess of 80 managers. With this many managers, established criteria help to make the monitoring process less subjective. The watch list provides a valuable tool for the Commission to stay informed on the status of managers that have issues that have been identified by the Commission (in the criteria) as important. We think this enhances accountability of the fiduciaries.
The Commission should develop a Personal Securities Trading (PST) policy as part of its overall ethics policies. We have provided a sample PST policy for your review at Exhibit B.
Management should develop an exception reporting system. While fiduciaries typically delegate investment authority, they must also implement and maintain adequate monitoring systems to ensure that the delegation of authority is properly carried out. Management by exception can help the CIO and the Commission focus on the things that have been identified as important or significant to monitor. This may also be referred to as a performance dashboard, but usually includes more that investment performance metrics, i.e., operational metrics would also likely be included.
RSIC should review controls over the A/P vendor master file and account set up to make sure incompatible functions are adequately separated. Incompatible functions include initiation of a check, signature, bank reconciliation, establishment of bank accounts, set up of approved vendors, and physical access to check stock and signature plates. These should be appropriately separated.
Investment manager reports should be reviewed to make sure managers are providing all the data necessary to monitor compliance required in the investment policy.

Control Structure

Principles

The primary role of the system of internal controls in the investment area is to provide management with reasonable assurance that investment operations are effective and efficient, reliably reported, and in compliance with applicable laws, regulations and management's specific policy directives. Likewise, in the benefits area the primary role of the system of internal controls is to provide management with reasonable assurance that benefits are administered effectively and efficiently, reported reliably, and in accordance with applicable laws, regulations, and management's direction.

The control environment, risk identification, analysis and assessment, control activities and procedures, the system of information management, and communication comprise the essential components of the internal control structure of an organization.

Risk

The risks of weaknesses in internal control are numerous. They can range from outright theft to internal fraud, inefficiency, non-compliance, or simple error; all of which can result in loss of assets, failure to pay benefits timely, and damage to the System's reputation.

Observations

We observed an extremely positive attitude toward internal control at RSIC and at SCRS. Senior management appears to set a 'tone at the top' that fosters an excellent attitude and respect by staff toward internal control.

Staff in all areas we interviewed reported direct involvement by management, adequate supervision, top level reviews and approvals, good physical controls over access to assets, and adequate performance measurement systems.

Important duties seem to be appropriately divided and segregated among staff and departments to enhance internal control and this area has greatly improved as RSIC has added staff.

The significant risks in the investment department appear to be appropriately identified. Analysis and control of risks is improving as RSIC adds staff and systems.

Risks appear to be addressed at asset class level. There is no combining enterprise risk management process.

Reasonable control activities appear to be present in the SCRS accounting area. For example, investment accounting staff diligently performs monthly manager reconciliations. In RSIC, important control activities are in place at high level/high risk areas such as allocation of assets, monitoring portfolio performance, and reporting. Control activities at more detailed day-to-day levels are still developing as the organization matures and as the new custody systems are implemented.

There is no internal audit function at RSIC. While internal audit exists at SCRS and at the B&CB, the role of internal audit in RSIC needs clarification. A recommendation above addresses this concern.

Information systems and communication between SCRS and RSIC are reported to be improving and management of SCRS and RSIC understand the importance of open communication and transparency between the two organizations. This is extremely important to maintain. The best course is to be as open and transparent as possible.

Monitoring is performed through standard and ad-hoc periodic reporting, through normal staff functions, through internal and external auditing and through special external audits such as the subject of this report. However, investment monitoring systems need enhancement because of the change in custody platforms and because of the rapid addition of numerous investment managers.

Generally speaking, it appears that employees are empowered and feel that they 'own' and are personally accountable for processes. This 'soft' control benefits the SCRS and RSIC by encouraging employees to take full responsibility for their work. RSIC's risk monitoring process could be enhanced by developing a risk identification matrix. Such a tool can form a significant component of an enterprise risk management program that we discuss below.

Enterprise Risk Management

Principles

To ensure that risks throughout the organization are addressed, RSIC can implement enterprise risk management (ERM). ERM is a structured and coordinated entity-wide risk management approach to identify, quantify, respond to, and monitor the consequences of actual and potential events.

A properly functioning *enterprise* risk management process[6] (which incorporates controls designed to mitigate risk) can help the Commission and staff to achieve the pension fund's established performance and return targets, achieve service goals and objectives, and prevent loss of resources.

[6] Committee of Sponsoring Organizations of the Treadway Commission (COSO). *Enterprise Risk Management – Integrated Framework*. Enterprise risk management is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.

Enterprise risk management helps ensure effective reporting on controls to senior management and compliance with laws and regulations, and helps avoid damage to the Commission's and the Systems' reputation and associated consequences.

While the financial services industry began implementing ERM over ten years ago, the public pension investment business is just catching up. In the past few years several U.S. public funds have implemented ERM. A prime example for reference might be the Washington State Investment Board.

Risk

In the absence of an enterprise risk management process, risks and opportunities that confront the investment program may not be properly or completely addressed. Insofar as assets are internally managed, enterprise risk management takes on greater significance.

Observations

RSIC does not have an enterprise risk management system.

Task Area C Recommendation 8
The CIO and Director of Administration should consider implementing an Enterprise Risk Management framework for RSIC.

Safeguarding New Asset Classes

Alternative assets investments reside in different structures than publicly traded securities. The latter in the United States and most foreign countries are registered – usually in the custodian bank's nominee name – and held in electronic form in a central private or governmental depository. Traded options and futures that are part of certain new investment strategies also carry this form of safeguard.

Any physical securities that may be held are held by the custody bank, Mellon, in their vaults. While these instruments are far less common than they were a few years ago, there are a sufficient number of physicals that the custody banks continue to maintain secure facilities and procedures to handle them. Physical securities often exist for restricted stock and certain bonds.

Private assets typically do not enjoy this structure. Investments that are currently made by RSIC in these areas are represented by contractual documents. These are limited partnership interests or subscription agreements.

Protection of underlying assets is the responsibility of the general partner or investment manager. Where those underlying instruments are either electronic or physical securities, the custodians of those entities follow similar controls and procedures as does Mellon for RSIC's investments.

One of the tools offered by Burgiss related to the Private i and Private Informant discussed earlier is Private i Front Office. This is to a large extent a very effective tool for managing the private partnership document review and due diligence process. In addition to its worth from an investment standpoint, its document handling capabilities may be useful as an accessible source for both working and archival purposes.

The one area that will be of concern is real estate. While RSIC has not yet commenced real estate investing, the asset allocation plan calls for that to be added.

Real estate investments are structured by large funds such as RSIC/SCRS in some combination of three ways: commingled open ended funds or group trusts owning many diversified properties, limited partnerships managed similarly to limited partnerships for alternative investments, and direct property investments.

Real estate investments bear different sets of risks and operating concerns. They are tangible, while securities are contractual rights. Real estate is potentially responsible for risks beyond its own worth, chiefly in environmental areas. Thus real estate holdings should be held in special purpose holding companies in order to protect one asset from the liabilities of another. Partnerships and funds normally do this. Confirming this is the case is part of the due diligence process.

RSIC has indicated that their current plans do not include any direct investment in real estate. If RSIC ever decides to enter the real estate sector via individual holdings, it will need to develop policies to isolate one property from another and to control the many contractual and ownership documents involved in real estate direct ownership. While these are not technically negotiable instruments, their physical protection is important. Typically the custody bank maintains original contracts and deeds in its vaults, in a similar manner to physical securities.

Investments in real estate through limited partnership and collective funds have similar carrying value and market value concerns as private equity. In a sense they can be more critical, since real property funds obtain periodic property appraisals and mark the funds to those values. This leads to more frequent changes in value than is typically the case with private equity funds.

RSIC and SCRS will need to expand the private equity accounting and valuation policies that are in place or being developed to apply to both partnerships and commingled funds holding developed and developmental real estate.

In addition the due diligence and documentary review of real estate investing vehicles may be more complex than private equity investing vehicles. To a large extent this is driven by the complexity of the underlying properties and their relative illiquidity. Either existing policies covering alternatives in general will need to be expanded to cover real estate vehicles or separate policies will need to be developed.

In a similar manner as limited partnerships investing in private equity and other alternatives, investments in real estate partnerships involve contracts. Custody policies often require that originals of such documents are held in the custody bank vaults, in a similar manner as real property deeds and physical stock certificates are. Copies are normally held by the fund in physical and/or electronic form.

We understand that RSIC is working with the State Department of Archives on a records retention policy. The procedures ultimately developed will need to recognize the custody bank role, the need for working copies at RSIC and SCRS (both of whom should have full access), all the normal concerns about off site backup (including consideration of internet based backup of electronic files), transportation security, any myriad other details. It is a critical function and should be pursued diligently.

Task Area C Recommendations 9-10
RSIC should establish a set of processes and controls over investments in partnership and commingled fund real estate investments prior to commencing those activities.
RSIC should continue the process of developing a policy and process for safeguarding and for disseminating supporting documents.

Section II.

Review Methodology, and Limitations on the Report

IFS specializes in evaluating the organization, administration, and investment programs of pension systems using combined expertise in investment practices, fund operations and fiduciary responsibility. In operation for more than 20 years, we have performed similar evaluations for numerous other public and private pension funds.

The Report sets forth guiding principles or established standards against which we measured existing practices and procedures at RSIC and SCRS. In some cases the principles are a benchmark of industry best practice standards and emanate from authoritative industry publications; in other cases the standard may be one that we have deemed an industry or 'best' practice based on our experience performing similar reviews.

The analysis leading up to this Report progressed through the following stages:

Document Collection

The first stage in our process was the collection – with the staff's cooperation – of information regarding the investment program, operations and practices. This phase was conducted during May through July 2008.

Analysis & Interviews

The next stage of our process, which continued throughout the project, was analysis. Throughout the process, we coordinated and integrated our efforts and maintained communication with the SCRS internal auditor. On-site interviews were conducted in July.

During this phase of the process we conducted face-to-face interviews with staff from SCRS, RSIC and the Treasurer.

Draft and Final Reports

The written report also progressed through several stages. We submitted several drafts of the report to the internal auditor who distributed the report for comments. These comments were discussed with the internal auditor before finalizing the report.

This process of draft, comment and redraft enabled relevant parties to point out matters that, in their view, were either factually or conceptually inaccurate, incomplete or misleading, and enabled us to obtain additional information and prepare our Final Report, taking into consideration all relevant comments. The final product reflects the combined analytical and writing efforts of a diverse team of professionals.

Report Caveats

This Report should be read and evaluated with several caveats in mind.

First, the subjects addressed in this Report are inherently judgmental and not susceptible to absolute or definitive conclusions. When we express a judgment or make a recommendation, we also set forth the observed conditions and rationale that led us to that viewpoint. Many of our conclusions are less in the nature of definitive recommendations than they are alternatives for SCRS and RSIC to consider.

Second, in conducting this review, we necessarily relied on oral and written representations of the people we interviewed and on the contents of relevant documents and other written information we obtained. Where appropriate, we sought to cross-check and verify information among different interviewees and across documents, but this process was limited. We were not hired to detect or investigate fraud, concealment or misrepresentations and did not attempt to do so. We were not hired to, and did not attempt to conduct a formal or legal investigation or otherwise to use judicial processes or evidentiary safeguards in conducting our review. Our observations and conclusions are based upon our review of documents, the interviews we conducted with the staff, independent analysis, and our experience and expertise.

Third, this Report does not and is not intended to provide legal advice.

Fourth, our observations are necessarily based solely on the information we considered as of and during the period we performed our review. Our Report cannot and does not attempt either to assess the manner in which any of our recommendations may be implemented or observed in the future, or predict whether RSIC's investment practices, as represented to us, will be observed in the future. Nor does our Report supplant or reduce the ongoing independent fiduciary duty of the Commission to prudently manage, structure and evaluate the investment program and related investment policies and procedures.

Fifth, our review was not intended to include an exhaustive or comprehensive review of the substantive or procedural aspects of the overall investment program or its constituent asset classes.

Sixth, our approach to various organizational issues in the Report is informed by our knowledge of public pension policy, from the perspective of participants and beneficiaries. We have not attempted to assess these issues from every conceivable practical and political perspective across all aspects of South Carolina state government.

Finally, although we discussed our initial findings and conclusions with, and submitted two Draft Reports for comment, the final form and content of this Report reflects the independent judgment of IFS. The extent to which our Report and recommendations may be adopted or implemented by SCRS or the Commission is their decision.

Exhibit A

Background on IFS

For over 20 years, IFS has offered customized investment consulting services to institutional investors, with a unique focus on public funds and defined benefit plans. We specialize in evaluating the governance and investment processes, practices and procedures of complex investment programs. In that regard, we assist institutional investors to develop and implement prudent, risk-controlled measures designed to achieve best practice standards in their governance and investment programs. IFS is a registered investment adviser under the Investment Advisers Act of 1940.

From incorporation in 1987 until 1996, IFS was a wholly-owned subsidiary of a major Wall Street banking institution. On October 1, 1996, senior officers purchased the firm and changed the name of the firm to Independent Fiduciary Services, Inc. Without exception, all of the firm's employees and clients then continued with the re-named firm.

Our firm has two offices, its headquarters in Washington, D.C. and a New York/New Jersey metro office in Newark, N.J., with a total staff of 36 full-time employees. Our staff includes investment professionals experienced in fund governance and in structuring and overseeing investment portfolios, as well as experts sensitive to the standards of prudence and loyalty that apply to public fund decision-making. Our team's experience comes from both the public and private sectors.

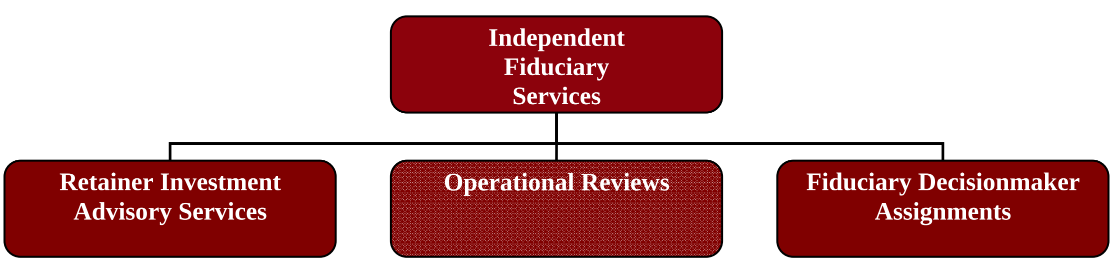
Our firm is not owned by or affiliated with any brokerage, insurance company, investment manager or other entity; we truly are independent.

Our analysis and advice is totally free of conflicts of interest that may arise from affiliations with investment managers, brokerage firms or other financial services firms. To that end, IFS does not offer or sell products to investment managers to assist them in their proprietary businesses, does not solicit or accept fees for placing client assets with investment managers, does not charge investment managers a fee to be included in our databases or in any searches we conduct, and does not receive any products or services from investment managers on a soft dollar basis. We believe doing so could compromise our objectivity. IFS is paid only in hard dollars.

Moreover, to eliminate even the potential for conflicts of interest, we will not seek or accept any on-going retainer investment consulting assignments with KTRS. Therefore, you can be confident that our recommendations are not motivated by a desire for future work.

IFS has developed broad and deep experience performing "Operational Reviews" for public funds.

We pioneered the "operational review" and are the pre-eminent firm in the country specializing in this type of work. Successfully completing an operational review requires expertise across several distinct but intersecting areas, including for example, fiduciary responsibilities, investment practices and processes, risk management and internal controls. Thus, a distinguishing – and, we believe, unique – feature of IFS is the *combination* of services we provide, and the expertise we have developed, through our three lines of business, or "practice areas." The intersection of our business lines provides IFS with the distinctive skill set essential to understanding the varied aspects of an investment organization's operations from top to bottom. Currently IFS has over 80 clients across our three business lines.



Investment consulting within these three practice areas is our only business and makes IFS the firm of choice to perform your Operational Review.

Operational Review Practice Group: The Operational Review Practice Group has performed operational reviews (also known as a "fiduciary audit" or "performance audit") of dozens of public funds located throughout the country. As a result, we have evaluated a broad range of governance and investment subjects, including, for example, governance, organizational structure and resources, adequacy of staffing, investment-related matters, such as asset allocation, investment policies, investment consultant responsibilities, investment management structure, investment performance, investment performance reporting, performance benchmarks, due diligence procedures, costs and fees, brokerage and trading, investment accounting practices, trust and custody arrangements, securities lending programs, and other investment-related practices and procedures. Each public pension system that we have evaluated has a unique organizational structure, culture and history. Therefore, with each successive operational review that we perform, we enhance our depth of knowledge and skill relating to common and best practices among public funds.

Retainer Investment Advisory Services: Within our Retainer Investment Advisory Practice, IFS provides clients with on-going advice and recommendations regarding investment policies, asset allocation, investment manager selection, risk management, portfolio monitoring and subjects related to these broad topics. We currently provide on-going retainer consulting services to over 60 plans with investment assets totaling more than $19 billion. IFS has provided these services on a continual basis for over 20 years. These retainer assignments generally involve ERISA-covered plans, although a few clients (e.g., endowments, corporate treasury assets, etc.) are not subject to ERISA.

Fiduciary Decisionmaker: On these assignments, IFS serves as an independent fiduciary decisionmaker. In some situations, we are retained as an "independent fiduciary" under ERISA to cure various conflicts of interest between a plan and a plan sponsor; other times we cure conflicts between a financial intermediary's commercial self-interest versus its fiduciary duty to ERISA clients. In some of these situations, IFS serves as an on-going "named fiduciary" decisionmaker – relieving normal plan fiduciaries of their responsibility and potential liability, to the maximum extent possible by law.

Exhibit B

Sample Ethics Policy Language – Personal Trading

Employees may buy or sell a publicly traded security of an issuer which is held by RSIC but may not engage in a personal securities transaction on a day during which he/she knows or reasonably should know that RSIC has a pending buy or sell order in place in that same security (directly or through an investment manager or other fiduciary or agent). Employees may not knowingly buy or sell a security within at least ___ calendar days before or ___ calendar days after a trade in that security by or on behalf of RSIC. Any profits realized on such trades within the stated period are required to be disgorged. [*The "black out" time period varies. Our firm requires seven and three days, respectively.*]

Employees with a personal securities account ("PSA") shall direct each financial institution with whom the employee maintains such an account to send monthly statements directly to [the RSIC Compliance Officer] for accounts in which the employee has a direct or indirect beneficial ownership interest. All reports will be kept strictly confidential.

Employees may not under any circumstances accept offers by reason of their position with RSIC to trade in any security or other investment on terms more favorable than available to the general investing public

Exhibit C

Summary of Recommendations

Set forth below are summaries of all the recommendations from the second draft of the report. They are listed in the order they appear in the report. The Task Area of each recommendation or related series of recommendations is set forth below as well, for ease of reference.

Number	Recommendation	Page
Task Area A: Investment Operations		
1	*The Commission should periodically reconsider the potential problems in the current organization structure that may arise because it has two direct reports on the top line creating ambiguity as to day-to-day overall decision making responsibility. In the long run, the Commission should change the structure to establish a position that clearly serves as the head of the organization as a full-time employee.* *While this dual report remains, the Commission should require an emphasis on frequent and regular coordination, communication and cooperation between the CIO and AD.*	9
2	*The Commission should establish a dotted line report for the Compliance Officer. Since the objective is to report on investment compliance independently, the logical option is to establish administrative reporting to Legal Counsel who also serves as Administrative Director.*	10
3	*The Commission should regularly review the workload and effectiveness of the Administrative Director since her role and title also include Legal Counsel. We believe that eventually, if not already, the workload will be sufficient to divide between a dedicated administrative head and a dedicated Legal Counsel.*	10
4	*The Commission should take steps to ensure that a properly functioning internal auditing activity is established. In this regard, the Commission should consider whether to 'piggy-back' on the SCRS internal audit function, establish its own internal audit function, or assign internal auditing responsibilities to the Compliance Officer. If the latter, caution needs to be exercised in order to maintain audit objectivity if there are areas where the selected person will also develop policies, procedures and systems.*	10
5	*The Commission and SCRS should work together to develop memoranda of understanding (MOU) regarding the functions that are provided by SCRS or other external parties. Examples of these include investment accounting, IT support, administrative services, etc.*	10

Number	Recommendation	Page
6	*The SCRS Investment Accounting staff job descriptions should be updated to reflect recent changes that have occurred.*	13
7	*RSIC job descriptions for investment staff should be prepared in a standardized format and signed and dated by the employee and CIO.*	13
8	*The manager for the internally managed fixed income portfolio should maintain trade blotters as permanent records of investment transactions. Bloomberg can be used to generate these documents which should be come permanent records of the RSIC.*	15
9	*The short-term portfolio manager should generate competitive bid documentation and attach it with permanent records of trades executed in order to demonstrate that prices were competitive. At least three competitive bids should be sought before purchase. Bloomberg can be used to generate these documents which should become permanent records of the RSIC.*	15
10	*The RSIC should consider using the Bloomberg compliance monitoring module for the internally managed fixed income portfolio.*	15
11	*STO, in consultation with RSIC, should execute a new custody agreement with BNY Mellon using their current forms and attachments, or at a minimum execute the appropriate supplemental agreements and amend the pricing schedule accordingly.*	21
12	*RSIC and SCRS should establish a staff coordinating committee including input from its auditors, accountants, consultant, legal counsel, and custody bank to monitor developments affecting fair value accounting for real and financial assets and to develop and implement systems and sources of data necessary to comply.*	24
13	*Establish a daily portfolio control over internally managed accounts using Portfolio Monitor and/or other applicable tools independent of the investment process.*	25
14	*RSIC should evaluate the cost effectiveness of participating at some level in the Astec Consulting lender cooperative in order to better measure its securities lending program.*	27
15	*RSIC should evaluate the cost effectiveness of outsourcing the back office operations of its internally managed investment portfolio. IF RSIC decides to outsource these functions then it should no longer need the QED system. Staffing and monetary resources related to maintaining QED and back office support functions can be re-deployed to address other needs within RSIC.*	28
16	*In addition to conforming the custody contract to reflect the full set of services, RSIC should establish a monitoring program to track each service, when it is received or available on Workbench to be received, and whether there were any problems with the information and services. RSIC and the custodian should then review any adverse issues and establish procedures to correct them.*	29
17	*RSIC/SCRS should jointly establish a process to periodically evaluate the set of services provided by the custody bank and other outside service providers relative to the needs and growth of the portfolio structure and mix of assets and to recommend changes and additions in that set of services.*	30

Number	Recommendation	Page
Task Area B: The RSIC and SCRS Accounting Infrastructure		
1	*RSIC/SCRS should evaluate the potential benefits of utilizing some of the several outsourced alternative asset control tools available through Mellon, Burgiss, and other providers.*	36
2	*SCRS should modify the Accounting Methodology for Private Equity Managers Policy to account for partnership and other commingled fund valuation delays and apply it consistently.*	37
Task Area C: Internal Control Structure over Investment Operations		
1	*RSIC should consider the addition of an audit committee. However, if the full Commission effectively takes on the duties typically assigned to an audit committee, then a separate committee would not be necessary.*	50
2	*RSIC should consider enhancement of the travel and education policy to encourage members and staff to participate in continuing education in relevant areas. The policy should set forth processes for trustees and key staff to obtain access to programs providing information about developments related to investment of pension fund assets. It should be tailored to the specific travel constraints, if any, imposed by statute.*	50
3	*The manager monitoring policy should also include watch list criteria. RSIC has hired in excess of 80 managers. With this many managers, established criteria help to make the monitoring process less subjective. The watch list provides a valuable tool for the Commission to stay informed on the status of managers that have issues that have been identified by the Commission (in the criteria) as important. We think this enhances accountability of the fiduciaries.*	50
4	*The Commission should develop a Personal Securities Trading (PST) policy as part of its overall ethics policies. We have provided a sample PST policy for your review at Exhibit B.*	50
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6	*RSIC should review controls over the A/P vendor master file and account set up to make sure incompatible functions are adequately separated. Incompatible functions include initiation of a check, signature, bank reconciliation, establishment of bank accounts, set up of approved vendors, and physical access to check stock and signature plates. These should be appropriately separated.*	50

Number	Recommendation	Page
7	*Investment manager reports should be reviewed to make sure managers are providing all the data necessary to monitor compliance required in the investment policy.*	50
8	*The CIO and Director of Administration should consider implementing an Enterprise Risk Management framework for RSIC.*	54
9	*RSIC should establish a set of processes and controls over investments in partnership and commingled fund real estate investments prior to commencing those activities.*	57
10	*RSIC should continue the process of developing a policy and process for safeguarding and for disseminating supporting documents.*	57