
Improving Pension Fund Performance

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With global pension assets projected to reach US\$12 trillion by 2000, understanding what drives pension fund performance has never been more important. The study of pension funds described in this article found that the funds, after adjustment for the incremental costs and risks they undertook, underperformed their passive policy benchmarks in the 1993–96 period by an average 60 basis points a year. We discuss three drivers of fund performance—fund size, proportion of assets passively managed, and quality of the fund’s organization design—and offer suggestions for improving pension fund performance by improving elements of the fund’s organization.

Pension fund capitalism is going global with a vengeance. A recent study projected global pension assets to reach US\$12 trillion by the year 2000.¹ The productivity of this huge investment pool will be an important determinant of global living standards in the 2010–50 period, when Baby Boomers around the world hope to enjoy their golden retirement years. Moreover, on a microeconomic level, pension fund performance is an important determinant of the expense of sponsoring a pension plan. Increasing a plan’s long-term return on pension assets can reduce pension expenses or increase pension payouts.

Therefore, development of a standardized approach to measuring pension fund performance and understanding its determinants is now critical. The study reported here addresses both the measurement of and determinants of pension fund performance. The primary goal of the study was to explore the relationship between how pension funds perform and how they are organized.²

Prior Research

Anthropologists O’Barr and Conley caused a stir in 1992 with their book *Fortune and Folly: The Wealth & Power of Institutional Investing*. The book was based on their conclusions from watching pension fund managers at nine major U.S. pension funds go about their business over a two-year period.³ Their conclusion that pension fund managers seem to be more interested in deflecting responsibility and

managing blame than in making good decisions did not sit well with the pension fund management community, but the two anthropologists clearly raised questions about pension fund management that deserved further analysis.

In response to O’Barr and Conley’s findings, 50 CEOs and senior executives of major pension funds gathered in New York on December 4, 1994, to attend a symposium on excellence in pension fund management.⁴ The symposium commenced with a surprise quiz: If you could wave a magic wand and get rid of all the barriers that stand between you/your fund and better organization performance, how much do you think your fund performance would improve? Of 50 responses, the median estimate was 66 basis points (bps) a year. In an industry where long-term asset returns are now realistically single-digit numbers, a 66 bp annual “excellence shortfall” is highly material.⁵

After they had written down their excellence shortfall estimates, the 50 executives were asked to itemize what they thought were the major barriers to achieving better organization performance. **Table 1** lists their responses. The three most frequently cited barriers—poor processes, inadequate resources, and lack of clear mission—are symptoms of ineffective decision making in an organization. So, maybe the negative reaction to O’Barr and Conley’s 1992 message stemmed not so much from their study’s content as it did from the fact that it came from industry outsiders in a rather blunt fashion. The medium blurred the message.

Measuring Pension Fund Performance

How one measures an organization’s performance

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Table 1. Barriers to Excellence

Barrier	Cited
Poor process (including structure, communication, and inertia)	98%
Inadequate resources	48
Lack of focus or of clear mission	43
Conservatism	35
Insufficient skills	35
Inadequate technology	13
Conflicting beliefs	8
Difficult markets	8
Lack of innovation	5
Suppliers	5

is intimately tied to the organization's purpose. The purpose of a pension fund is to maximize, subject to liability-related and operational risk constraints, the long-term net return on the fund's assets. The implication is that two types of risks must be monitored. One is the balance-sheet exposure created by the asset mix decision as it relates to the financial characteristics of the accrued pension liabilities. The other is the additional exposure created by how the chosen asset mix policy is implemented.

Thus, a good metric for a pension fund's organization performance must be based on a standardized calculation that adjusts the gross asset return for operating costs and risks undertaken. Such metrics have been calculated for an increasing number of pension funds in the past few years. The metrics are called "risk-adjusted net value added" (RANVA). Separate RANVAs result from the asset mix decision and from how it is implemented.⁶

Pension Fund Performance

The study described in this article involved 80 U.S. and Canadian pension funds with an aggregate asset value of US\$668 billion. The four-year (1993–96) implementation RANVAs for the 80 funds ranged from a high of more than 50 bps a year to a low of under –300 bps a year. The median implementation RANVA was –70 bps. Of course, these calculations ignore the fact that even a purely passively implemented asset mix policy would cost something to manage. If that something were a reasonable 10 bps for the median fund, the adjusted RANVA would be –60 bps rather than –70 bps.⁷

What does this –60 bps mean? It means the median fund in the 80-fund sample earned 60 bps a year less over the 1993–96 period than it needed to earn to pay for the incremental expenses and risks associated with the investment program it chose to adopt.

Drivers of Fund Performance

What causes the excellence shortfall, the negative

RANVA, in pension funds?

Size and Passive Proportion. Previous research uncovered a statistically significant positive association between RANVA and two fund characteristics—fund size and proportion of the fund passively managed (Ambachtsheer 1996; Scheibelhut 1997).

"Bigger is better" in pension fund management for two reasons. First, with increased size come increased economies of scale and lower unit operating costs. Perhaps more importantly, with increased size comes the ability to support a full-time professional management team dedicated to producing positive RANVA.⁸

The positive relationship between RANVA and the proportion of the fund passively managed probably arises because high fund proportions subjected to passive management are good proxies for high levels of understanding by a fund's governing and managing fiduciaries that (1) financial markets are generally informationally efficient and that, (2) therefore, active management can be successfully applied only at the margin, rather than to the entire fund.

Adding Organization Factors. The 50 senior pension fund executives in 1994 fingered poor decision processes, inadequate resources, and lack of mission clarity, rather than size and proportion of assets passively managed, as the culprits in poor fund performance. Therefore, we decided to develop a standardized metric that would capture the quality of the design of a pension fund's organization and that could be related to RANVA. Only with such a metric could we test directly the 1994 assertions by the pension fund executives that organizational barriers reduce pension fund excellence and contribute to return shortfalls relative to the costs expended and the risks undertaken.

Following discussions with experts in the organization design field, we developed a questionnaire that asked pension fund CEOs (we are using "CEO" as a generic term for "senior pension fund executive") to score statements about their organization on a scale from 1 to 6, with 1 indicating total disagreement with the statement and 6 indicating total agreement. All the statements were fashioned so that high levels of agreement (i.e., high scores) indicated perceptions of a strong organization design. The questionnaire contained 45 statements, which were organized into three sections reflecting the three basic dimensions of organization design—governance (16 statements), planning and management (12 statements), and operations (17 statements).

The questionnaire was sent to the 127 pension fund CEOs for which we had continuous 1993–96 data, which were necessary to calculate the four-year RANVA performance metrics for the funds. With 80 of the 127 CEOs completing the questionnaire, the research project achieved a high response rate—63 percent.

The following estimated equation confirms that a positive relationship exists between organization performance, fund asset size, and proportion passively managed in the 80-fund sample (*t*-statistics in parentheses):⁹

$$\text{RANVA} = -2.1\% + 0.4 (\text{Size}) + 0.8 (\text{Passive}).$$

(-4.7) (2.8) (1.9)

$$R^2 = 0.15.$$

Note that both the Size and the Passive coefficients are positive and their *t*-values indicate a high degree of statistical significance. The estimated equation explained 15 percent of the variance in RANVAs among the 80 funds.

Next, we introduced the 80 CEO scores as a third explanatory variable; the CEO score (CEO) in each case was defined as the average score assigned to the 45 organizational statements. The results of this regression were

$$\text{RANVA} = -3.4\% + 0.3 (\text{CEO}) + 0.3 (\text{Size}) + 0.7 (\text{Passive}).$$

(-4.7) (2.2) (2.6) (1.8)

$$R^2 = 0.21.$$

When the CEO score was added, the proportion of RANVA variance explained rose to 21 percent. The CEO score *t*-statistic indicates a statistically significant positive relationship with pension fund performance as measured by RANVA. In short, organization design quality as identified by the CEO scores appears to be a powerful additional factor in fund performance.¹⁰

To continue our study, we turned to the eight pension funds that sponsored the 1997 organization study. Of the eight, seven funds were part of the 80-fund research universe. We measured the statistical relationship between RANVA and the subjective CEO perceptions of organization design quality for these seven study sponsors and found the following:

$$\text{RANVA} = -3.3\% + 0.7 (\text{CEO}).$$

(-1.8) (1.9)

$$R^2 = 0.41.$$

Note that, even though the sample size is only seven, the relationship is strong enough to produce a *t*-statistic of 1.9 on the estimated RANVA/CEO score coefficient.

Next, of the seven sponsor pension funds, we were able to conduct in-depth analysis of organization design on six funds. From this in-depth analysis, we constructed a separate, objectively derived metric for measuring organization design quality that was completely independent of the subjective CEO score.

The metric, called “OD scores,” was based on the framework for analyzing organization design pioneered by Jaques (1996). The heart of the framework is time-span analysis, which identifies the complexity of the roles required to successfully govern, manage, and operate an organization. An important application of time-span analysis is to identify objectively how many “layers” an organization should have, how many it actually has, and how good the fit is between ideal and actual. The result is the organization’s “layering score.” A score of zero would indicate complete organization layering disaster; a score of 100 percent would indicate organization layering nirvana. A similarly derived “delegation score” measures how well work is delegated. A delegation score of zero would indicate complete delegation chaos; a score of 100 percent, complete delegation clarity among all members of the organization.

In our study, each fund’s OD score is the average of the fund’s layering and delegation scores. The six OD scores ranged from a low of 31 percent to a high of 51 percent, with an average of 41 percent. The average OD score for a comparative sample of 15 non-pension-fund organizations that included more than 5,000 manager/employee relationships was much higher than 59 percent. This finding is yet another indication that significant scope exists to improve organization design quality in the pension fund management field.¹¹

The following shows the estimated statistical relationship between RANVA and OD score in the six-fund sample:

$$\text{RANVA} = -2.2\% + 0.05 (\text{OD score}).$$

(-2.4) (2.4)

$$R^2 = 0.60.$$

Despite the fact that the sample size has dropped to six, the relationship fit has improved enough ($R^2 = 0.60$) to push the RANVA/OD score coefficient *t*-statistic up to 2.4, indicating a high degree of statistical significance.

Although the power of these findings is limited by the smallness of the samples, they contain an important message: Pension fund CEOs apparently have a good enough feel for the quality of their organization design that their relative perceptions

correlate positively with relative organization performance. When these perceptions are replaced by more scientifically based, objective measures of organization design quality, the correlation between design and performance is even stronger. This evidence is persuasive that the direction of causality is from good organization design to good organization performance, not the other way around.

Research Findings and 1994 Opinions.

How do the 1994 opinions of the 50 senior pension fund executives about excellence shortfall compare with the findings of the 1997 organization design research?

Recall that the 80 CEO scores that rated organization design quality were based on the average of how each CEO scored 45 statements about organization design. When we correlated each of the 45 individual statement scores separately with the organization's performance, only 11 of the 45 statements passed the statistical significance test. Thus, these 11 statements, displayed in **Exhibit 1**, warrant a closer look.

Collectively, the 11 statements in Exhibit 1 closely match the perceived barriers to organization excellence cited in Table 1. The new 1997 list contains clear echoes of the top three barriers cited in 1994—poor decision processes, inadequate

resources, and lack of mission clarity. Statements 7, 13, 14, 15, 28, and 37 relate to the quality of the organization's decision processes; Statements 9 and 24 relate to the adequacy of resources; and Statements 2, 19, and 22 relate to mission clarity. For each of these statements, high CEO scores on the questionnaire were, on average, associated with high 1993–96 organization RANVA performance and low scores were associated with low performance.

Note also in Exhibit 1 that six of the statements are governance related, four are planning and management related, and only one is operations related. We confirmed these relative rankings in importance for pension fund performance statistically by averaging the scores assigned to the 16 governance, 12 planning and management, and 17 operations statements on each CEO questionnaire. This averaging process provided a single CEO governance, planning and management, and operations quality score for each of the 80 funds in the research universe. When these CEO scores were regressed separately against the fund RANVAs, the respective R^2 s for the organization design elements were 0.10 for governance, 0.08 for planning and management, and 0.01 for operations. Good governance mattered most, with good management a close second.

Good governance is critical to good pension

Exhibit 1. Eleven Drivers of Organization Performance in the 80-Fund Universe

Statement Number	Statement
<i>Governance</i>	
2	My governing fiduciaries have good mechanisms to understand and communicate with plan stakeholders.
7	My governing fiduciaries do a good job of balancing overcontrol and undercontrol.
9	Our fund has an effective process for selecting, developing, and terminating its governing fiduciaries.
13	My governing fiduciaries and related committees use their time efficiently (focused and do not waste time).
14	There is a high level of trust between my governing fiduciaries and the pension investment team.
15	There is a clear allocation of responsibilities and accountabilities for fund decisions between the governing fiduciaries and the pension investment team.
<i>Planning and management</i>	
19	I can describe our vision of where we should be in the future.
22	I can describe our fund's strategic positioning (how we provide better value to stakeholders than alternatives).
24	I can describe our resource plan (obtaining and optimally utilizing the required human, financial, and information technology resources).
28	Developing our asset mix required considerable effort on the part of myself and the governing fiduciaries; it reflects our best thinking.
<i>Operations</i>	
37	My organization uses its time efficiently (well-focused and does not waste time).

fund performance probably for two reasons. First, the governance function can be carried out dimly in the pension fund industry for a long time because no obvious self-correcting mechanisms for bad governance exist. Second, only good governance can foster the mission clarity, ensure the resource adequacy, and attract and retain the excellent management team necessary for achieving good pension fund performance. Good governance establishes the context necessary for success in other areas of organization design.

Improving Pension Fund Performance

The top teams of the eight pension fund organizations that sponsored the 1997 study came together in a December 1997 symposium to discuss how these findings might be used to improve organizational performance. Some of the key conclusions they reached regarding goals, governance, and organization design are as follows:

Consensus and clarity about pension fund goals and strategic positioning

- Clarifying the “pension deal” between the employer and the employees would often be helpful, but the task is usually difficult to achieve. The clearer it is how risks and rewards are allocated among pension plan stakeholders, the easier it is for the governing fiduciaries to establish an appropriate asset allocation policy. Surprisingly, how risks and rewards are allocated in practice among various classes of plan members and the plan sponsor in defined-benefit plans is often not clear. In that case, plan fiduciaries are often reluctant to open up the Pandora’s box necessary to achieve clarity.
- Public fund managers should regularly survey plan members to identify their needs and perceptions and should develop direct, simple strategies for communicating with members.
- Corporate fund managers need to integrate the services they provide with respect to defined-benefit and defined-contribution plans. Functionally, the treasury side of the corporation usually manages the financial and investment dimensions of defined-benefit plans whereas the human resources side usually manages defined-contribution plans—often completely outsourcing the task. This situation can lead to very different management approaches and inconsistencies in how monitoring and oversight responsibilities are discharged in the two types of plans.

Effective governance

- Strategies to improve the performance of the board of governing fiduciaries have a high payoff. One strategy is to provide governing fiduciaries with high-quality education. Another is to have the board evaluate its own effectiveness, which will help the board focus on “doing the right things” rather than simply “doing things right.” (Right things include deciding the fund’s mission, selecting the pension fund CEO, clearly delegating management authority, and monitoring outcomes against plans.) Another strategy is to have the managing fiduciaries present clear and comprehensive business plans to the board, which can then discuss and sign off on the plans and clearly delegate implementation responsibilities to the managing fiduciaries.
- Strategies designed to raise the quality of candidates for governing fiduciary would have a high payoff but are usually difficult to implement.

Improved organization design

- One step for improving organization design is to make a clear distinction in the pension fund organization between management work (e.g., business planning, resource planning) and professional work (e.g., portfolio management, selection and monitoring of external managers) and then focus on building strong management skills within the organization.
- Ensuring that the organization has the requisite number of layers is important. Appropriate positions should be established in the proper layers, and accountability and authority should be delegated clearly.
- Organization goals should be clear, and compensation should be related to achievement of the goals because aligning the economic interests of the people in the pension fund organization with the interests of plan members and the sponsor is critical to achieving the desired outcomes.

One issue that plays a particularly thorny role in improving fund performance is the size of the fund. Because even the smallest of the eight pension fund organizations studied in depth as part of this research project manages assets in excess of US\$20 billion, the issue of size did not arise in this analysis. Previous findings, however, clearly showed that large funds have a comparative advantage over small funds in producing positive implementation RANVAs.¹² What are small funds to do?

Small funds would seem to have two options.

The first option is to focus on choosing an asset mix policy and then simply implementing the policy completely passively. The second option is to recognize that the fund is too small to hire its own team of full-time professional managing fiduciaries and, therefore, to outsource this function.

Avoiding a Global Shortfall

We close with a sobering calculation: If the measured median 60 bp excellence shortfall of the 1997 study is applied to the projected US\$12 trillion in global pension assets, the result is an annual dead-weight economic loss of US\$72 billion. The world can ill afford the accumulation of annual losses of this magnitude as it marches toward its 2010–50 date with generations of retired Baby Boomers. To avoid such a disaster, the message of this article is clear: The governance and management of the world's pension assets must be in strong hands. Only pension fund organizations with clear missions, effective governance, and good organization

design can make global pension fund capitalism work.

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Notes

1. See Griffin (1997). The projections were based on data supplied by InterSec Research.
2. The 1997 study was sponsored by eight major pension funds, and the implications of the study were discussed at a symposium held for the top teams of the eight organizations in Toronto, Canada, on December 9, 1997.
3. In addition to the book, see O'Barr and Conley's *FAJ* article (1992b). Another version of their story appears in Machen (1993). The nine U.S. pension funds scrutinized by O'Barr and Conley were not identified.
4. The symposium proceedings were written up for the participants by Ambachtsheer, Boice, Ezra, and McLaughlin (1995).
5. Using the rule of thumb that, depending on the duration of pension liabilities, a 1 percent return increment can reduce long-term pension expense by 10–20 percent, the 66 bps represents a 7–14 percent reduction in long-term pension expense or the ability to fund a 7–14 percent higher level of pension benefits.
6. The RANVA measure was introduced in Ambachtsheer (1996), which used data on 98 pension funds for which four years of continuous performance and cost data were available from the Cost Effectiveness Measurement database. The RANVA measure is analogous to the economic value added (EVA) measure developed by Stern Stewart & Company for noninvestment companies; that is, RANVA starts by segmenting gross fund return into liability, asset mix policy, and implementation components. The asset mix policy and implementation return components are reduced to reflect their respective costs of implementation. The result is the fund's net value added by the asset mix decision and the net value added by implementation of the decision. Finally, each of the two net values added is reduced by risk penalties based on estimates of the policy's and the implementation's values at risk multiplied by the sponsor's cost of risk capital. The cost of risk capital was arbitrarily set at 15 percent, both in the original 1996 study and in the 1997 study on which this article is based. For a more complete discussion of the RANVA metric, see Ambachtsheer and Ezra (1998) and Ambachtsheer (1998), and for a more complete discussion of measuring the operating costs of pension funds, see Ambachtsheer (1994).
7. Note that the median excellence shortfall estimate of the 50 pension fund executives in December 1994 was –66 bps—an amount remarkably close to the actual RANVA experience reported here. Apparently, senior pension fund executives have a good feel for the actual cost of excellence shortfall in a typical pension fund.
8. Ambachtsheer and Ezra (1998) defined “small” as funds with assets under US\$500 million and “large” as funds with more than US\$1 billion in assets; they considered funds with assets of US\$500 million to US\$1 billion to be in the gray area.
9. The two key coefficients are 0.4 for Size, and 0.8 for Passive. The former implies that for every 10-fold increase in fund size, RANVA improved by an average 0.4 percent, or 40 bps. The latter implies that for every 10 percentage point increase in proportion of the fund passively managed, RANVA improved by an average 0.08 percent, or 8 bps. The constant term has no strong economic interpretation.
10. Although some multicollinearity existed between the three explanatory variables, it was not high. The largest correlation coefficient (0.22) was between fund size and proportion passively managed. The 80 CEO scores ran from a low of about 3 to a high of close to 6. The CEO score coefficient in the equation is 0.3. Thus, on average, the difference between low and high CEO scores was “worth” a 0.9, or 90 bp, improvement in RANVA (i.e., 3×0.3).
11. The global database of OD scores was assembled by Capelle Associates and currently includes data on more than 5,000 manager and employee relationships in 15 organizations worldwide.
12. Ambachtsheer and Ezra provide a more detailed discussion of the small-fund issue.

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