Pension Funds—A Company Manager's View

Jon Exley,
Shyam Mehta
and Andrew Smith

Presented at The Great Controversy: Current Pension Actuarial Practice in Light of Financial Economics Symposium
Sponsored by the Society of Actuaries

Vancouver

June 2003

(note: The quotations appearing in this monograph are exact, except where capitalization and punctuation were changed in keeping with modern style and grammar guidelines.)

Abstract

Classical financial theory offers a normative prescription for pension fund asset allocation that rejects the widely adopted portfolio selection theory favored by practitioners in favor of close asset and liability matching. In this paper, we search for positive theory to explain actual observed behavior. We question whether the classical theory can accommodate this actual observed behavior by allowing only for issues affecting the principals (pension scheme members and sponsoring company shareholders) and conclude that it is unlikely that a full explanation can be obtained by this analysis alone. Instead we propose that the roles of agents and the interests of corporate insiders need to be considered in order to explain observed behavior. We argue that the agents involved may themselves be behaving quite rationally in terms of their own welfare, and this provides a simple explanation for actual behavior without rejecting the underlying principles of classical theory.

1. Introduction

1.1 Neoclassical Theory

A great deal has been written about alternative methods of defined benefit (DB) pension provision. Much of this work takes the view primarily of scheme members, or their trustees. More recently, there has been an increasing emphasis on the viewpoint of the investors in a company.

Existing neoclassical economic theory in the area of DB pension schemes starts with the work of Black (1980) and Tepper (1981), but draws on the pioneering work of Modigliani and Miller (1958). More recent work in the United Kingdom includes Exley, Mehta, and Smith (1997). There seems little dispute as to the basic theory behind pension provision. Important results include:

1. The cost of providing a DB pension scheme is independent (to first order) of the way it is funded, or whether it is funded at all. In particular, shareholders do not gain from an equity investment policy over bond investment.

2. Second-order effects include the credit risk of the scheme (including the risk of discontinuance), and also the possibility of leakage of surplus to members in the form of enhanced benefits. These are affected by the asset mix of the scheme. However, these effects are all zero sum, in that a gain to members is a loss to shareholders, and vice versa. So, to the extent that members and shareholders

recognize these issues, the cost will already be factored into the members' equilibrium compensation package. There is, again, no overall gain to shareholders or members from picking one investment mix over another.

3. Other second-order effects include various frictional costs, including transaction costs, capital raising and distribution costs, fund management fees, agency costs and tax. For various reasons, most of these suggest there is a very substantial joint gain to members and shareholders from investing a pension scheme in government or corporate debt securities.

The neoclassical theory is very elegant. The main conclusion for investment is that members and shareholders usually have a joint advantage in holding debt securities. However, this conclusion is at obvious variance with current practice, at least in the United Kingdom, where the majority of pension schemes hold a very significant part of their assets in equities.

1.2 Normative Versus Positive

One way of viewing this classical theory is to treat it as normative. In other words, when members of the accountancy, actuarial, legal or other professions advise company management they should point out the fallacies of the pro-equity arguments and steer them toward debt securities. However, this paper pursues an alternative route, of seeking positive theories. We seek theories that better explain current practice than existing neoclassical theories. We follow the neoclassical tradition of seeking to explain practice by examining the consequence of rationality on the part of the company managers. Comparatively little serious work has been published on understanding the perspective of these company managers. This paper seeks to redress the situation.

1.3 Management Influence on Investment Policy

In the United Kingdom, trustees typically have ultimate control of the investment policy of pension funds. However, employers tend to have significant ability to influence the attitudes of trustees, directly or indirectly, and in our experience the attitude of company management toward equity investment tends to be a very major factor supporting the current tendency for many funds to be heavily mismatched.

1.4 Overview of the Paper

The paper is divided into two main sections. In Section 2 we consider what we describe as "outside" justifications for the current equity investment policy pursued by U.K. pension funds—these represent arguments that could be advanced externally by management. In the following Section 3 we confront head on what we describe as "inside" arguments, which may be equally powerful in explaining the existing situation, but may not be presented so openly by management. We then consider some of the broader implications of our findings in Section 4 before offering some concluding remarks in Section 5.

2. Outside Considerations

In this section, we reexamine the case for equity investment by pension funds from the viewpoint of a company manager justifying his actions to shareholders or trustees.

2.1 Does Equity Investment Reduce Costs?

The first area that we analyze from the company manager's perspective is the statement that equity investment does not reduce the cost of DB pensions. Although generally true, it should be noted that, in one respect, equity investment does increase the credit risk associated with such pensions and does, therefore, reduce costs. From a classical viewpoint, this is an unconvincing argument for a number of reasons:

1. It does not explain why pension funds invest in equities rather than low credit quality bonds.

2. It does not explain why the shareholder funds the scheme at all; if he or she wants to minimize costs by maximizing default risk then pay-as-you-go makes more sense.

3. If employees acted rationally, they would demand higher pay to compensate for the default risk, indeed, since they cannot easily diversify this risk they may demand a high premium for this.

4. For credit quality to be eroded, trustees need to be persuaded to take risks even when a scheme is insolvent—if they only take risks whilst the fund is solvent (i.e., they "portfolio insure") then

the scheme can only rarely be driven into insolvency by investment losses.

These classical arguments are though rather simplistic from a practical manager's perspective. In particular, they ignore the roles of professional advisers, especially actuaries. It is still very common in the United Kingdom for the same actuaries to advise both trustees and company management (and to ignore the resulting potential conflicts of interest). Clearly, in the case of default risk, a gain to the company must be a loss to the scheme members. However, as we shall explore later, one feature of professional advice is that it may act to supply demand for theories that support particular courses of action (see Watts and Zimmerman 1986), rather than confront this obvious conflict. Thus, there will be a demand for theories that ignore the economic theory and instead create apparent gains to both parties from equity investment. Examples of these theories in the context of resolving the otherwise clear conflict between member and company interests appear widespread in the area of default risk and include:

- The use of "long-term" arguments to convince trustees that the default risks associated with heavy equity investment are limited. This would explain the puzzle in No. 1 above, since it would be much more difficult to construct theories that suggested that investment in junk bonds did not compromise security (although investment banks and some investment market professionals try!).

- The use of "actuarial assumptions" to provide formal statutory disclosures to members under the 1986 disclosure regulations. These regulations allow actuaries to use professional judgment to assert that in their professional opinion the assets are adequate, even if the fund is insolvent on a deferred annuity test. A similar story is told by the history of the Minimum Funding Requirement.

- The use of "equity returns" in transfer value calculations. These allow schemes legally to settle liabilities for amounts well below that required to secure the benefits promised. Thus, the adverse publicity attached to schemes winding up insolvent—and the potential effect on the wage demands of employees participating in similar schemes—has largely been avoided.

In fact, the latter theory can be expanded more generally to include the significant gain made by companies able to pay transfer values to early leavers based on anticipation of future equity returns without allowing for the

risk cost. Use of actuarial value methodology can enable companies/trustees to cut transfer values in half relative to the economic cost of providing deferred annuities. Again, if members can be promised a generous benefit and then persuaded to accept a transfer value that is well below the economic value of the same benefit then this is a gain made by management and/or shareholders at the expense of employees.

The true extent of this gain is open to debate, however. For example, the inadequacy of transfer values and the losses sustained by mobile employees is widely publicized and must contribute to the extent to which employees discount the value of pension benefits in pay negotiations. This in turn leads us to the inertia associated with the status quo, as discussed more generally later in this paper.

2.2 Professional Advice

The above analysis cited potential examples where particular theories promoted by actuaries might be popular with company management as a means of reducing the credit quality of pensions, and benefit levels, hence reducing costs, whilst avoiding the full knock on effects of rational employee responses.

However, one argument that might be advanced by managers to explain the destruction of shareholder value by the equity orientation of pension funds is that they are under a statutory, legal or other duty to take professional advice. Thus, even if managers knew that equity investment was suboptimal for investors and trustees, they would be constrained by professional advice to the contrary. This would open the possibility that professions with protected status might have some interest in promoting theories that maximize their fee income. In the context of pension funds it might be noted that:

1. Mismatched pension funds will generally generate greater actuarial fees, either through dealing with surplus or through remedying deficit or for the scope for professional judgment and discussion in funding issues.

2. Equity investment itself generates fee income in the monitoring and selection of investment managers.

In reality, however, the relationship between adviser and management is likely to be more symbiotic. This is because managers often have the power to appoint advisers. Therefore, there will also be a tendency of advisers to find

theories that are popular with management. The equilibrium position here is of interest. If there are significant barriers to new entrants then a cartel could develop between advisers, all of whom would agree to promote a theory that maximized their own wealth, whether or not management liked what they said.

In this instance, management could claim to be powerless to act other than in the way they are advised, whether or not this represented the best interests of investors. However, this appears to be an unrealistic model. A more plausible model would reflect the power that managers often have to hire and fire advisers. This will tend to encourage advisers to promote theories that strike a balance between the interests of the advisers and the interests of management. Of course, as noted previously, in many respects the interests of managers and consultants coincide (see, also, Smith and Thomas 1998).

A more novel explanation of why management might follow the advice of professional advisers, even if at first sight it ran against investors' interests might be the potential option value created by professional indemnity cover. Indeed, it is interesting to compare, for example, the fees paid for an asset and liability study of a pension fund with the option value associated with the possibility of litigation should the strategy fail.

For example, in the event of the assets falling by more than 50 percent subsequent to the study, there may be some attempt to claim back the losses from the professional firm that gave the advice that was deemed to have persuaded the trustees to take such large risks. For example, we could view this option to claim these losses as a form of put option (where the payout is the difference between a 50 percent trigger, say, and the initial 100 percent of fund value), applying over a three-year period (a typical interval for such studies). Using a conservative 15 percent volatility, typical values of this option for a £100m fund might be in the region of £125,000, well in excess of the fees usually charged by advisers. Of course such claims may only have an incidence or success rate of 10 percent, but the numbers are interesting in the context of this discussion.

2.3 Other Legal Issues

In addition to the requirement to take professional advice and employ professional advisers in certain capacities, investment decisions taken by managers will be judged against legal precedents in the context of requirements such as "prudence." In this respect, company managers could rightly observe that such case law as exists on this matter suggest that acting

in a similar way to others in a similar position is likely to be a safe stance and that acting differently could expose them or their companies to expensive litigation.

2.4 Wider Interests

Another argument that might be explored by company management is the wider interests of shareholders. For example, subscriptions to lobby groups such as the CBI or the Institute of Directors, or political donations have no immediate value to investors, but the wider interests served by these payments are assumed to more than compensate for this. In a similar way, it can be argued that the concentration of equity investment in the hands of large institutional shareholders such as pension funds has been beneficial to investors as a whole.

Prior to this concentration, individual share ownership was very diverse, making it difficult for shareholders to act collectively. In this environment, management, rather than shareholders, tended to control companies. With the growth of institutions, shareholder power has correspondingly increased and has been used to force changes on management that could not otherwise have been achieved. This growth of shareholder power has been cited as a significant factor in the spectacular performance of the Anglo-Saxon stock markets, and economies, over recent years relative to the rest of the developed world.

Thus, management could possibly argue that by placing equity in the hands of these large institutions they are selflessly promoting shareholder power, possibly at the expense of their own influence.

2.5 Signaling

Signaling is an economic phenomenon that has been used to explain other behavior by markets and management that apparently run against the neoclassical economic theory. For example, the observed tendency of share prices to rise on the news of a share buy back or share split has been attributed (Brealey and Myers 1996) to the positive message that this signals about internal confidence that managers have about company prospects. Likewise, the tendency of companies to continue to pay traditional dividends, despite the tax disadvantages, has been attributed to the role that hard cash dividend commitments play in signaling the confidence of management.

It, therefore, seems appropriate to consider the potential signaling implications associated with pension fund investment. For example,

management might argue that a change in pension fund investment policy might be misinterpreted. Investors may associate a sharp change in policy as a sign that something has gone wrong—for example, that a large deficit has emerged that is hidden by the accounting numbers, or maybe that the management has suddenly become risk-averse because there are some other large risks lurking in the company that have not been disclosed.

Although these arguments may have some merit, they should not in our opinion be overstated. For example, another "signaling" argument is that a disclosure of something that other companies know how to hide is a sign of a company that is short of slack in its accounts, or preparing for something worse—otherwise, it would just hide the troublesome number like everyone else. However, recent examples have disproved this in the case of executive share options- the exemplary disclosure of true economic reserves for these by Boots plc resulted not in skepticism by the market, but by a rise in share price. The lesson then, seems to be that provided the reason for any change in investment policy is stated and explained clearly, managers should not necessarily be fearful of such signaling effects. We return to this issue later in section 4.

2.6 Inertia

Signaling costs are an example of the wider issue of inertia, which we also touched upon previously. Essentially, if there is an established status quo and there are costs associated with moving away from it (cost of communication in the case of signaling), then the benefits gained must outweigh the costs. Another example of these costs is the need to renegotiate contracts based on the previous situation. If the existing investment policy erodes the credit quality of pension benefits, or, on the other hand, if members have benefited substantially from the surplus generated by equity investment, then other aspects of their remuneration will have to be adjusted if they are to be left unaffected by a change in investment policy.

This is one reason why particular conventional policies may persist long after they appear to be justified by any rational theory. For example, there is a widespread theory, often promoted by investment consultants, that more "mature" schemes should invest more heavily in bonds. There appears to be no logical rationale for this focus on maturity and yet if it is universally expected that a scheme will invest more heavily in bonds as it matures then there may be inertia costs associated with adopting different policies. For example, pensioners may have made no allowance for the possibility of gaining further benefit improvements after retirement. This means that if the fund continues to take risks out of which pensioners gain, then this is a

windfall profit for members which has not been allowed for in the compensation package received during their working life.

3. Insider Considerations

3.1 The Role of Corporate Managers

The previous section assumed that corporate managers were either considering the merits of equity investment from the perspective of the shareholder or were constrained externally (by the requirement to take professional advice, for example) to act in certain ways. This is consistent with early attempts at a financial theory that assumed that managers sought to maximize shareholder wealth. The theory is that if managers fail to maximize shareholder wealth then shareholders will find another manager.

However, it has become clear that this is not the whole story (see Jensen and Meckling 1976). Where managers are not owners, there is an incentive for managers to maximize their own wealth rather than that of shareholders. It is costly for shareholders to monitor managers, so it is cost effective for shareholders to accept some contrary behavior from managers they retain. Of course, the costs arising from this behavior (so-called *agency costs*) are reflected in the cost of capital to the company, and also in the equilibrium remuneration of the manager.

We set out below a number of possible areas where the interests of management and shareholder may diverge. To the extent that these effects exist, they do, therefore, potentially add to the inertia associated with any status quo, since not only will employee contracts potentially require renegotiation, but the remuneration of management also needs to be reassessed.

3.2 Direct Interest in Pension Scheme

The most obvious insider issue is the extent to which managers themselves participate in company pension schemes. Although limited by the earnings cap, this potentially gives management an interest in generating surplus within a fund.

3.3 Preference for Rewarded Risk

Another issue is that managers will prefer to take diversified equity risks to nondiversified business risks. If both risks have the same "beta" then

they will both have the same expected payoff, but the nondiversified business risk may be several times larger.

Furthermore, it is possible that an individual manager's personal exposure to the equity market may be limited, as a result of personal borrowing or other transaction costs. He or she may find it cheaper to gain additional equity exposure via the impact of the company's pension fund performance on his or her own remuneration.

This effect is compounded by the optionality afforded by opaque accounting standards (described below). This optionality gives managers advance warning of the build up of large losses, so they can switch jobs before the losses are revealed in full. Alternatively, if the investment policy is successful, they will tend to hold on to their job rather than pass on the benefits of hidden profits to new management.

Generally the problem is that management will tend to dislike nonsystematic risks that they personally cannot easily diversify and prefer systematic risks, especially if they have an option to walk away unscathed from the consequences. Another possible advantage of systematic risks is that all company managers will fail collectively, which may be preferable to failure in isolation. This dislike of nonsystematic risks may explain the popularity of "efficient frontier" analysis of pension funds, which is otherwise meaningless from the shareholder's perspective (see Exley, Mehta, and Smith 1997). By contrast investors prefer management to take nonsystematic business risks that investors can diversify at a portfolio level. There is no advantage to shareholders from management taking pure systematic risk.

3.4 Scope for Creative Accounting

However, in our opinion, the biggest incentive by far for managers to support the current investment policy of pension funds is the scope for creative accounting afforded by equity investment.

The clearest illustration would be for a pension scheme that was insolvent on discontinuance (the assets being insufficient to purchase current and deferred annuities) but that could easily be disclosed as being in surplus on a "realistic" ongoing basis (see, for example, Thornton and Wilson 1992 and discussion). A move to a matched investment policy would make it more difficult (but not impossible) for the actuary to disguise this position from trustees. An equity-oriented strategy leaves the actuary with ample scope to overstate the asset values, or understate the liability values, relative to market

valuations. What manager would not prefer that the additional contribution requirement be delayed until after he or she had retired or left the firm?

However, such activities do not necessarily go unnoticed. The landmark speech by Arthur Levitt (1998) identifies five popular "illusions" perpetrated by managers in an attempt to manipulate accounts to meet expectations. Of these, four are directly relevant to the activities of company management in relation to pension funds. In summary, these are:

1. ***Big Baths.*** Generally this is the practice of taking a big "exceptional" hit to set up a reserve from which future smooth profits can be drawn. Alternatively, smooth profits are drawn first until finally an excuse is found for a large exceptional loss in the future, which clears up a past string of hidden losses. Equity invested pension funds provide an ideal vehicle for playing this game. The flexibility given in the valuation of pension liabilities allows "big baths" to be taken at will, either in advance or in arrears. In intervening years the company management can benefit from the upward impact of the equity risk premium whilst using the smoothing flexibility to hide the equity risks.

2. ***Cookie Jar Reserves.*** This is the practice of stashing away accruals in good times using hidden reserves and then releasing them again in the bad times. DB pension schemes generally, and equity invested ones in particular, provide large numbers of "cookie jars" into which to store reserves. Being the single most subjective estimate (realistic ranges for the equity risk premium range from 1 percent per annum to 10 percent per annum in excess of bonds), a basis that allows any element of estimation of equity returns is a veritable pantry.

3. ***Materiality.*** It is interesting to compare Levitt's (1998) comments on the abuse of "immateriality" to hide material effects with the IASC (1996) 10 percent corridor and the Accounting Standards Board's equivalent proposal to allow actuaries to adjust the allowance for equity returns anywhere in the region of 0 percent to 1 percent per annum. Both of these seem to suggest that provided that the movement in equity markets is within a certain range (roughly 10 percent) it can be regarded as immaterial and ignored. The reality of course is that a £1bn movement in a £11billion fund is not immaterial simply because it is only a single-digit percentage of the fund.

4. ***Revenue Recognition.*** The practice of taking advance credit for revenue not yet actually earned is particularly relevant to equity invested pension funds that then discount their liabilities using an element of future excess equity returns. Of course pension scheme actuaries often invent a notional equity investment policy when preparing their valuation and so this may not be a factor, but management would probably find it more difficult to pass such practices under the noses of some auditors if the fund was invested in bonds.

It may be questioned whether the manipulation of earnings in this way to meet "city" expectations could actually be in the shareholders interest. Indeed, there seems to be some confusion on this issue. For example, we understand that one of the professional bodies supposedly representing U.K. pension fund managers has, rather curiously, given support to the smoothed actuarial approach of the existing U.K. accounting standard. The agency issues associated with Fund Management are of course themselves complex. Although a full analysis is beyond the scope of this paper, points to note are:

1. Fund managers are not ultimate investors, but agents acting on behalf of clients, many of whom are themselves company managers.

2. Fund managers place great importance on issues of investment "process" and "style." A possible reason for this is that retaining and winning business is their primary goal, rather than investment success. By focusing on process and style issues, clients can be encouraged to look beyond performance numbers—so if the manager's investment policy fails, he or she can claim that at least the process worked, or the style was simply out of fashion. However, these processes and styles tend to rely heavily on book values and earnings that would be severely affected by any move to reduce smoothing of accounting numbers. Thus, fund managers may be wedded to the continuation of historic practices.

3. It is conceivable there is widespread failure to appreciate the irrelevance of headline accounting numbers among U.K. pension fund managers. Certainly the failure of U.K. pension fund managers both to appreciate the potential of certain sectors of the U.S. stock market, and their general rejection of certain rapidly growing sectors of the U.K. market on "valuation" grounds (hence, the outperformance by index tracking funds), suggests that the relevance of standard accounting measures such as price/earnings

ratios may require fundamental reappraisal. For the reasons described in No. 2 above, such failures are likely to persist for longer among agents than among actual investors.

4. Fund managers may grasp the importance of maintaining company management's support for pension fund equity investment, given the fees earned by equity managers. Any change in accounting that lessened corporate management's appetite for taking large off-balance-sheet equity risks might, therefore, be unwelcome, even if as a consequence share analysts were kept in the dark about the true financial position of the companies concerned.

Instead, therefore, we would suggest that greater attention be paid to the views of actual investors, rather than agents such as fund managers. In particular, Warren Buffett (1999) provides on his Web site some unequivocal views on the practice of smoothing earnings. For example:

> " ... a significant and growing number of otherwise high-grade managers ... have come to the view that it's okay to manipulate earnings to satisfy what they believe are Wall Street's desires. Indeed, many CEOs think this kind of manipulation is not only okay, but also actually their duty.
>
> "These managers start with the assumption, all too common, that their job at all times is to encourage the highest stock price possible (a premise with which we adamantly disagree). To pump the price, they strive, admirably, for operational excellence. But when operations don't produce the result hoped for, these CEOs resort to unadmirable accounting stratagems. These either manufacture the desired 'earnings' or set the stage for them in the future.
>
> "Rationalizing this behavior, these managers often say that their shareholders will be hurt if their currency for doing deals—that is, their stock—is not fully-priced, and they also argue that in using accounting shenanigans to get the figures they want, they are only doing what everybody else does. Once such an everybody's-doing-it attitude takes hold, ethical misgivings vanish.

> "Unfortunately, CEOs ... tend to become addicted to the games they're playing—after all, it's easier to fiddle with the scorecard than to spend hours on the practice tee—and never muster the will to give them up."

Unsurprisingly perhaps, Buffett concludes with a swipe at auditors that actuaries would do well to heed:

> "Clearly the attitude of disrespect that many executives have today for accurate reporting is a business disgrace. And auditors, as we have already suggested, have done little on the positive side. Though auditors should regard the investing public as their client, they tend to kow-tow instead to the managers who choose them and dole out their pay ('Whose bread I eat, his song I sing.')."

It is difficult for us to add a great deal to these forthright views of Buffett (1999). We suggest only that the views of such investors should deserve greater weight than the reported views of fund managers and that the use of pension funds to manipulate earnings in line with "city" expectations, may be of benefit to company management, but does not serve the interests of shareholders.

4. Is anyone fooled?

We have mentioned many ways in which reports, either to shareholders, or to scheme members, may contain information that falls short of transparent disclosure. It is important to consider the effect of this disclosure, and its implications for the rationality of the various parties to a pension promise.

Particular questions to which we seek answers are:

1. Are scheme members or trustees fooled by actuarial reassurance of scheme security? Can they believe "long-term" arguments that equity investment increases security? Or do they see through the whole process?

2. Are shareholders genuinely fooled by creative accounting disclosures. In other words, are managers smart enough to mislead financial markets by their disclosures, leading to over or under valuation of a companies' shares?

3. Are company managers fooled by actuarial advice that equity investments reduce cost? Or are they aware of the economics, and simply give support to the actuarial mumbo-jumbo because a challenge to the economics would also challenge managers' ability to manipulate accounting numbers?

4. Are actuaries displaying ignorance when they make misleading economic statements about cost reduction from equity investment? Have they been seduced by early simplistic arguments? Another alternative is that actuaries have been aware of the Modigliani and Miller propositions for years, but have kept the results deliberately under wraps for fear of eroding a valuable stream of consulting income.

It is our contention that the popularity of equity investment can be explained without requiring anyone to be fooled. At least, we do not require any agents knowingly to disregard information when acquiring that information would make them better off. However, we do recognize that the acquisition of information has a cost. Agents may, therefore, knowingly fail to inform themselves if the cost of acquiring the information outweighs the benefits to the agent.

However, the growing regulatory role of the actuary has undermined some of this requirement to demonstrate expertise or independence. Demand for individual actuaries is not so elastic to the ability to demonstrate these qualities. Consequently, fewer resources are spent on showing expertise and independence. The former characteristic is evident in that pension actuaries rarely consider it worth their while to educate themselves in financial economics. The reduced appeal of independence is evidenced by the fact that consultants increasingly compete on aspects that appeal to the sponsor in pension matters—for example, in advocating bases that are "realistic" rather than "prudent" (see Thornton and Wilson 1992 for the concept of a "realistic" valuation).

The response from rational trustees is predictable. The increase in complexity in pension matters, and the increased incentive for consultants to curry favor with sponsors, greatly increase the costs to trustees of monitoring their actuaries. Furthermore, as the legal responsibilities of trustees become more tightly defined, trustees manage their own legal risk by demonstrating compliance with procedures, rather than demonstrating understanding. All of this leads to a reduced acquisition of information by trustees. Instead, trustees and members will rationally anticipate the way in which the dice are loaded against them, and place a correspondingly low value on pension promises. In

this way, the cost of producing incomplete or misleading information falls back on the sponsor or its shareholders.

We now move on to consider whether shareholders are fooled by creative accounting. There is considerable evidence that accounting-based trading rules fail to produce out-performing equity portfolios. This suggests that accounting information does not fool shareholders, but is instead rationally priced by a more or less efficient market. However, this does not mean that managers have no incentive to manipulate, or that the market can detect manipulating managers. Quite the reverse—the market rationally expects managers to manipulate as far as they can, and price on that basis. The manager still has an incentive to manipulate, in that, if he or she stops manipulating, he or she will receive no credit for it, and so erodes his or her own compensation.

This suggests equilibrium, where most managers manipulate. However, it also suggests that, since managers bear the cost of their own manipulations, managers will have an incentive voluntarily to contract with shareholders in a way that reduces their own freedom. The favorable response to the recent disclosures of share option liabilities by Boots plc, referred to previously, may provides an example of the benefits of this voluntary behavior.

It is interesting to consider whether managers are fooled by their own manipulations. We are aware of some managers who understand the economic reality, but have an incentive to produce misleading numbers as long as lax accounting standards will permit. However, for many managers it is not cost effective for them to educate themselves as to whether equities reduce cost. What counts for them is that, according to their accounting numbers, they can disclose reduced cost to the outside world. The arguments for cost reduction lie in the "long term," which means that no manager is likely to be confronted with conclusive evidence during their term in office. For the same reason, actuaries have little incentive to inform themselves about the economics of long-dated cash flows. Although the substance of debate is ostensibly long term, all the parties face short-term objectives. In the short term, it matters little to the actuary whether his theories are right or wrong.

Another interesting question relates to the tax angle. There is a net gain to the tax collector from pension schemes investing in equities. This being the case, one would expect the other parties would collude to minimize the tax collector's slice of the cake. However, as we have outlined, the pensions market exhibits high information and negotiation costs. As a result, each party may fear that the reduction in tax will be more than offset by the cost of

concessions granted to other parties in order to structure the tax arbitrage. It is possible to construct many other examples of this principle. Where a market is transparently run, it is difficult for the tax collector to collect taxes, because any minor loophole will be quickly exploited by adept financial engineers. This provides an incentive for the tax collector to target those areas that are bogged down in complex negotiation between many different parties. Pensions are one obvious area; inheritance tax is another.

All of this might seem to be good news for actuaries. There is a great deal of misinformation out there, and there are many managers out there who end up bearing the cost of their own incentive to manipulate numbers. These managers have an incentive to contract with investors to retain independent monitors. Actuaries may seem well placed to provide such an independent service.

However, any actuarial association faces a classic "free rider" problem. It is in the interest of all members to maintain a reputation for independence and expertise. However, the cost of acquiring expertise falls on each member, and a rigid adherence to independence may seem to confer a competitive disadvantage relative to those who are more flexible. This creates a survivorship process whereby more flexible professionals prosper, with the result that ultimately the reputation for independence and expertise is undermined. This opens the way for a new professional association that can devise more effective ways of bonding its members' behavior.

It is important to appreciate that this is a positive approach to information and accounting. We have investigated these ideas because they seem to explain current practice. They are far more successful in explaining behavior than competing theories that claim, for example, that professionals act in the public interest. Someone may have an incentive to present information in a certain way, or an incentive not to acquire information. This does not imply that the person is a bad person. Positive theory says nothing about whether behavior is good in some spiritual sense; it merely seeks to explain.

5. Concluding remarks

Corporate managers could cite to outsiders a number of secondary reasons why they continue to support equity investment by pension funds, contrary to the normative, neoclassical theory. However, one main justification appears to be an insider effect whereby management prefers to maintain the significant ability to manipulate earnings associated with equity invested pension funds.

According to key commentators such as Buffett (1999), the tendency of corporate managers to use "creative accounting" to meet expectations is increasing. (Interestingly the same period of declining probity identified by Buffett has also seen the pension funds of corporate America move out of bonds into equities, often on the back of asset and liability studies by consultants.)

However, just there was a backlash against creative accounting as in the 1960s where, according to Buffett (1999), "most investors of that period knew who was playing games and, to their credit, virtually all of America's most-admired companies then shunned deception," there are also changes on the horizon today. In particular, the SEC, led by its chairman, Arthur Levitt, seems determined to get corporate America to clean up its act.

It appears likely that the United Kingdom will again follow any trend toward greater probity led by the SEC and it seems important for the public respect of actuaries that the U.K. actuarial profession is seen to be at the leading edge of this move, rather than a laggard.

Managers have, of course, been exposed to many years of viewpoints expressed by the actuarial profession that equity investment is beneficial. It should not be forgotten that there is a time cost required to absorb new ideas and this could also be a powerful factor in explaining resistance to change. A switch to a matched strategy would generate substantial tax and agency cost savings to shareholders. Whatever the transitional issues, in our view it is likely that this would result in significant share price improvements and consequently be of ultimate benefit to managers. We hope that the current reluctance on the part of some managers to countenance change will be short-lived.

References

Buffett, W. 1999. http://www.berkshirehathaway.com/letters/1998pdf.pdf .

Black, F. 1980. The tax consequences of long-run pension policy. *Financial Analysts Journal* 36: 21–8.

Brealey, R.A., and S.C. Myers. 1996. Principles of corporate finance. McGraw Hill.

Exley, C.J., S.J.B. Mehta, and A.D. Smith. 1997. The financial theory of defined benefit pension schemes, *British Actuarial Journal* British Actuarial Journal 4 213-383.

International Accounting Standards Committee (IASC). 1996. Exposure draft 54: Accounting for employee benefits. London: International Accounting Standards Committee.

Jensen, M.C., and W.H. Meckling. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3(4): 305–60.

Levitt, A.1998. The numbers game. Speech presented to New York University's Center for Law and Business. http://accounting.rutgers.edu/raw/aaa/newsarc/pr101898.htm

Modigliani, F., and M.H. Miller. 1958. The cost of capital, corporation finance and the theory of investment. *American Economic Review* 48: 261–97.

Smith, A.D and G. Thomas. 1998. Positive theory and actuarial practice, *The Actuary* (October) available at http://www.guythomas.org.uk/pdf/posth.pdf

Tepper, I. 1981. Taxation and corporate pension policy. *Journal of Finance* 36: 1–13.

Thornton, P.N., and A.F. Wilson. 1992. A realistic approach to pension funding, *Journal of the Institute of Actuaries.* 119: 229–312.

Watts, R.L., and J.L. Zimmerman. 1986. *Positive accounting theory*. Upper Saddle River, NJ: Prentice Hall.