

# Financial Markets and the Rise of Delegated Portfolio Management

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## 1. Introduction

In several branches of finance it is assumed that investors can be differentiated in some fundamental way. For example, many models assume that there are informed and uninformed traders in the market. Other studies assume that investors differ by their investment horizons, tax status, location, trading costs, risk preferences or endowments. It is accepted that the portfolio choices of investors, and hence the dynamic market equilibrium, reflect this diversity.

However, there are few studies of the market equilibrium which recognise that two investors can hold the same stock, in the same weight in their respective portfolios, and yet face radically different relationships between price changes in the stock and their end of period wealth.<sup>1</sup> Nonetheless, there is now a body of empirical studies which, in totality, demonstrate that the portfolio pay-offs to private investors and institutional investors differ in this way. Cohen (1998) directly addresses the question of differences in the incentives faced by private and institutional investors. He uses the US Federal Reserve *Federal Flow of Funds* data to examine the aggregate holdings of US equities by private investors and institutional investors and how they relate through time. The main finding is that institutional investors reduce their holdings of US equities and private investors correspondingly increase their holdings after rises in the market.

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<sup>1</sup> Brennan (1993) addresses the differences in the incentives faced by fund managers and private investors in a general equilibrium framework similar to that of the CAPM.

The difference in the incentives of private and institutional investors might have little impact on market outcomes if not for two facts. Firstly, because they face different state contingent pay-offs, private and institutional investors can be expected, all other things equal, to choose different portfolios and have different hedging demands. Consequently, every time a private investor delegates the management of a portfolio to an institutional investor the market equilibrium is altered.

An example can illustrate the differences in the incentives (objective function) faced by private investors and fund managers. Suppose a private investor and an institutional investor each hold 4 percent of their respective portfolios in a particular stock which realises a return of 150 percent over the following period. For the private investor the stock generates a 6 percent increase in end of period wealth, in direct proportion to the initial weight of the stock in the portfolio.

The effect of the stock return on the fund manager's end of period wealth is more complicated. Among many differences, the two principal differences are, firstly, that end of period wealth will be a non-linear function of the excess-to-benchmark return of the stock rather than a linear function of total return. Empirical studies have revealed that even though management fees generally increase linearly with the size of the fund, there is a non-linear relationship between a fund's excess-to-benchmark portfolio return and the flow of new money to the fund. Secondly, the scale of a large fund can make the manager's end of period wealth (or investment management firm value) highly sensitive to returns achieved.

The second factor affecting the importance of the difference between the incentives faced by private and institutional investors is that neither group has an insignificant role in the market. Since the mid 1960s, financial markets in the UK and US have witnessed a massive transit of the control of portfolios of financial assets from households to investment management firms. The purpose of this essay is to argue that the transfer of the control of portfolios of equities represents a significant structural change in the markets for those securities because of the fundamental differences in the incentives faced by private investors and institutional investors.

The figures presented here illustrate the rise of delegated management of equity portfolios in the UK and US. The purpose is to collate data that documents the transition of control of equities in the UK and US. The data does not explain why so many households have chosen to delegate management of all or part of their investment in equities. Nor does the data show whether the forces driving this transfer are the same in the UK and the US. Those questions are obviously of interest in their own right but are not central to the questions addressed here.

In this context, a further motivation for studying the history of the transfer of control of equities, even without studying the cause of that transfer, is to do with the effect of the rise of delegated portfolio management on long term studies of the equity market equilibrium. If the level of ownership of equities by institutional investors versus private investors significantly affects the market equilibrium, then tests of equity market equilibrium phenomena that do not account for the changing level of ownership may be mis-specified.

## **2. The rise of delegated portfolio management**

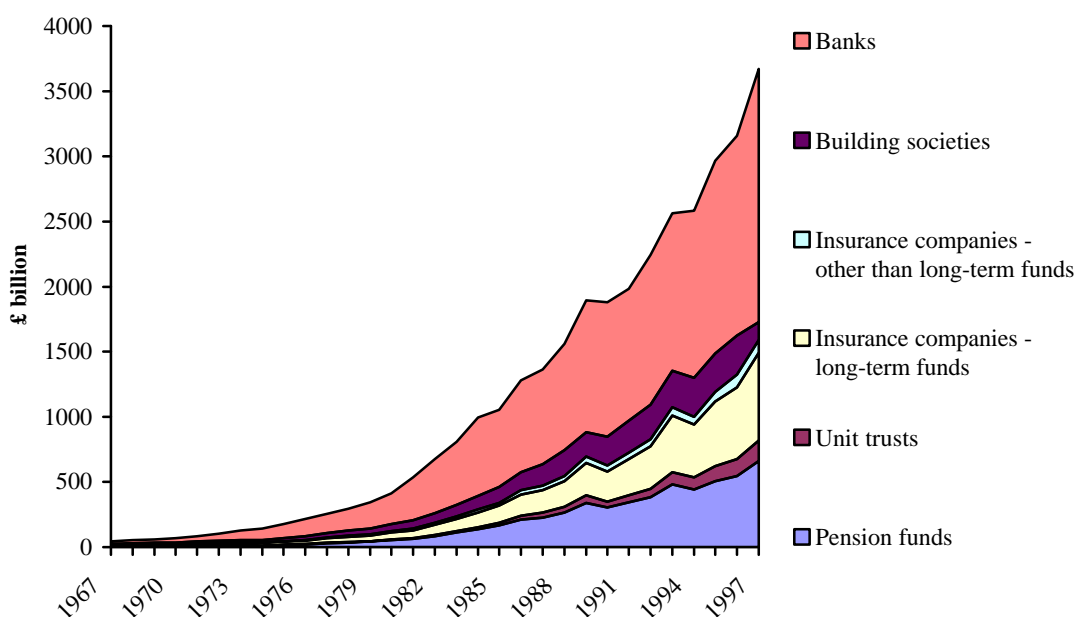
In this section a series of charts illustrate the rise of delegated portfolio management to a prominent position in the financial markets of the US and UK.

### **2.1 The UK experience**

Figure 1 shows the level of UK financial assets held by various types of financial intermediaries in the UK economy. Those intermediaries can be grouped into three principal sectors. *Investment management* encompasses pension funds, unit trusts and insurance companies. The *banking sector* comprehends UK banks and building societies. *Other sectors* are the household sector and the foreign sector.

Since 1967 the assets of financial intermediaries in the UK have expanded a great deal. Figure 2 shows the level of financial assets of UK financial sectors since 1967

**Figure 1** Level of financial assets held by UK financial sectors (£ bns)

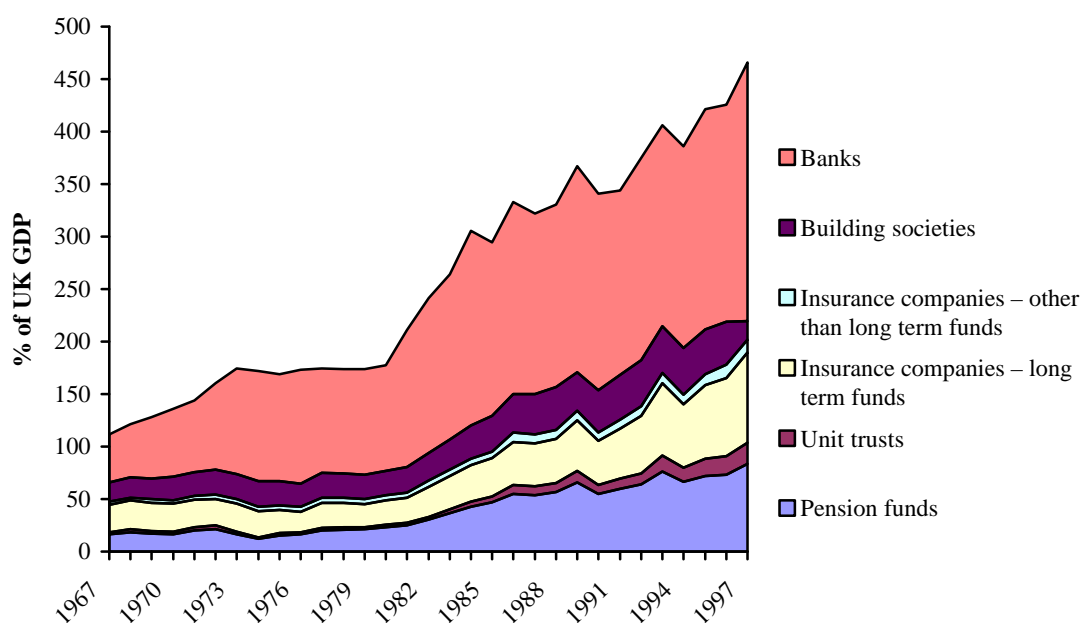


Source: Office for National Statistics – Financial Statistics

as percentages of UK GDP. The investment management sector has grown from 47 percent of GDP in 1967 to 202 percent at the end of 1997. The annualised geometric mean growth rate of the investment management sector in the period 1969 to 1997 was 15.7 percent versus 10.6 percent for nominal GDP.

Assets in the banking sector have grown at a marginally faster rate than those in the investment management sector. They grew from 64 percent of GDP at the end of 1967 to 264 percent in 1997 at an annualised rate of 15.8 percent. The assets of the banking sector include non-sterling denominated assets, and likewise for bank sector liabilities. These figures record the growth of London as a centre for international banking in the period.

**Figure 2** Level of financial assets held by UK financial sectors (% UK GDP)

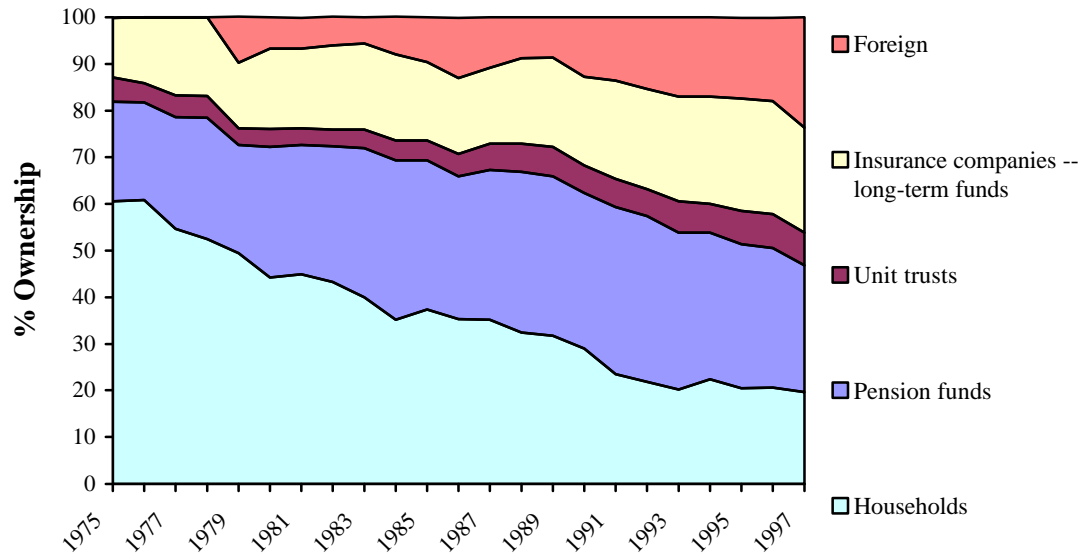


Source: Office for National Statistics – Financial Statistics

The total market capitalisation of listed UK equities grew at 15.4 percent per annum in the period 1967 to 1997. The equity holdings of the investment management sector grew at 17.6 percent per annum versus a growth rate of only 11.8 percent for the UK equity holdings of the UK household sector in the period December 1975 to December 1997. If the UK equity holdings of the investment management, foreign and household sectors are summed, then the proportion of that sum held by the household sector fell from 49 percent at the end of 1979 to 20 percent in 1997. The corresponding figures for the investment management sector are a rise from 41 to 57 percent.<sup>2</sup> The proportion of equities in pension funds rose from 23 to 27 percent from 1979 to 1997.

<sup>2</sup> Ideally the changes in the relative equity holdings of institutional versus private investors would be illustrated in terms of the percentage of the market capitalisation of the UK equity market held by each group over time, as is done when describing the rise of delegated portfolio management in the US in the next section. However, because of double counting in the Office for National Statistics equity levels series, the sum of equity holdings of the investment management, foreign and household sectors exceeds the total market capitalisation of UK listed equities in several years between 1967 and 1997. There is no straight forward way of undoing the double counting.

**Figure 3 Proportion of ownership of UK equity market, private versus institutional investors**

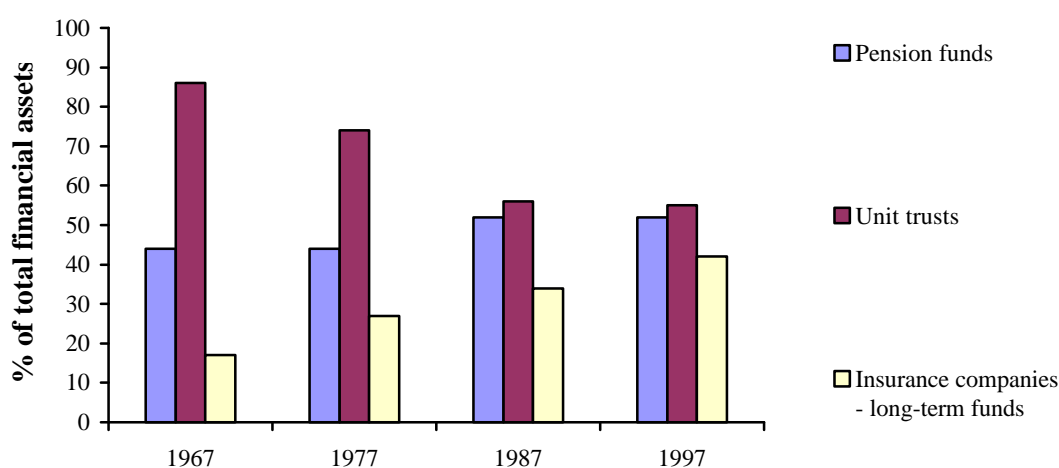


*Note: The ONS series on the equity holdings of the foreign sector begins in 1979.*

*Source: Office for National Statistics – Financial Statistics*

The corresponding figures for unit trusts are 4 percent to 7 percent, and for insurance companies (long term funds) the rise is from 14 percent to 23 percent. Figure 3 illustrates the changing proportions of UK equities held by the components of the investment management sector and the foreign and household sectors.<sup>3</sup>

**Figure 4 UK equity holdings of UK financial sectors as a % of their total UK financial assets**



*Source: Office for National Statistics – Financial Statistics*

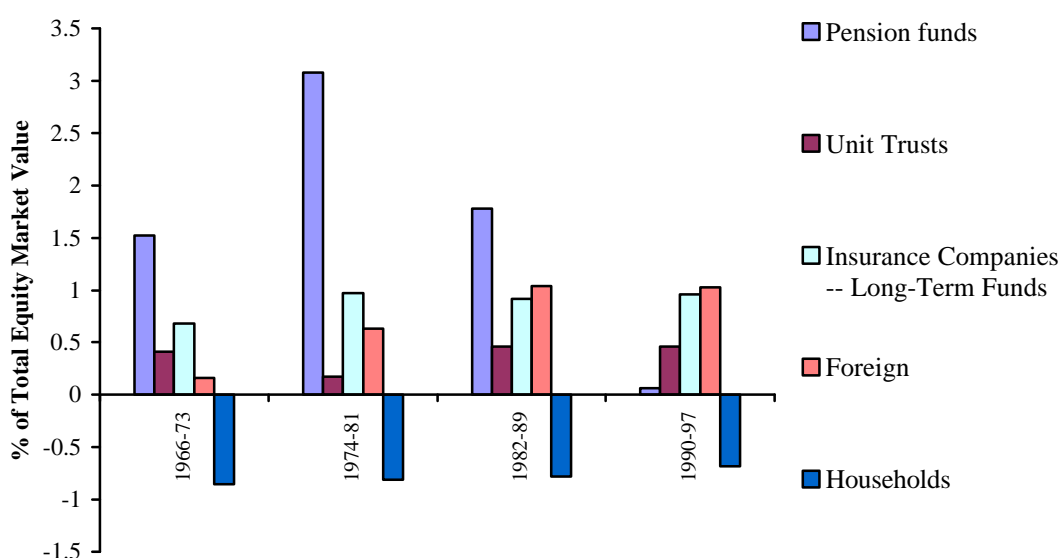
Figure 4 shows the UK equity holdings of UK financial sectors as a percentage of their total financial assets. UK pension funds have not greatly changed the allocation of their assets to UK equities over the period of interest. In 1968 their allocation was 44 percent and at year end 1997 it was 52 percent. The increase in the proportion of equities held by pension funds mostly reflects their increase in total assets managed

<sup>3</sup> The investment management sector as defined here includes insurance companies. As shown in Figure 3 insurance companies, long term funds in particular, in aggregate hold a large portion of the UK equity market. Equity portfolio management is a core competency for many insurance companies. Insurance companies are included in the investment management sector because a large part of the equities managed by insurance companies are part of the assets of pooled pension schemes managed by insurance companies or personal pension products. Other equity portfolios of insurance companies principally support the savings function of products that bundle savings and insurance services. The pension and savings related equity portfolios of insurance companies are substitutes for portfolio management that households could otherwise undertake on their own behalf without any delegation of portfolio management, which is the central interest of this section. However, it should be noted that a part of the equity holdings of insurance companies relates to risk sharing rather than savings and those equity holdings do not represent portfolios that individual households could manage on their own behalf.

rather than asset allocation change. In contrast, insurance companies have increased the percentage of their assets held in UK equities from 17 percent in 1967 to 42 percent in 1997. The increased allocation of insurance companies is consistent with their increased role as managers of pooled pension funds and products for personal pensions.

Figure 5 presents the annual net flow of equities, averaged over eight year periods, to UK financial sectors as a percentage of the total year end market capitalisation of listed UK equities. Households have been net sellers of equities in all but three years in the period 1966 to 1997. Figure 5 highlights the massive flow of equities to

**Figure 5 Net acquisition of UK equities by UK financial sectors – 8 year average annual flows as a percentage of total equity market value**



*Source: Office for National Statistics – Financial Statistics; Datastream*

pension funds from the mid 1960s through to the late 1980s. In the periods 1966-73, 1974-81 and 1982-89 the annual net purchases of UK equities by pension funds as a percentage of end of year total UK equity market value was 1.5 percent, 3.1 percent and 1.8 percent respectively. The flow of equities to insurance companies has been on a smaller scale but more consistent in time, averaging between 0.9 and 1.0 percent of total market value per annum over the periods 1974-81, 1982-89 and 1990-1997.

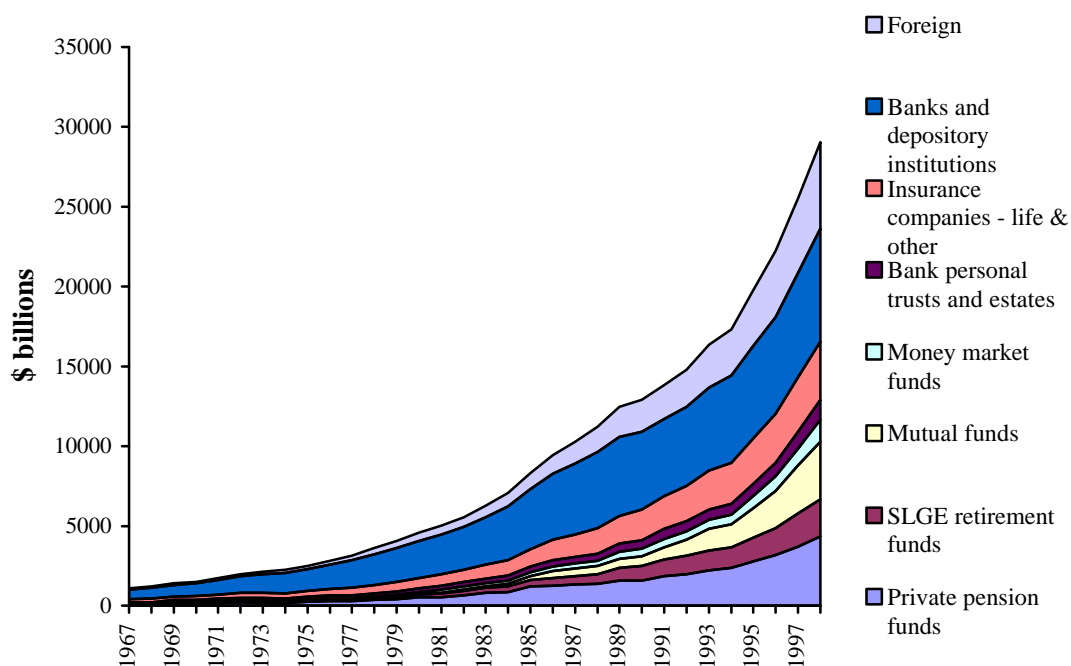
Flows to unit trusts have been consistent and positive in each period but at a lower level than pension funds and insurance companies. Nonetheless, unit trust holdings have grown at 17.3 percent per annum from a low base.

## 2.2 The US experience

Figure 6, shows the financial asset levels of the various US financial sectors at year end in the period 1967 to end of year 1998. These sectors are a subset of the financial sectors defined in the US Federal Reserve's *Flow of Funds* publication. They are the sectors which hold a large volume of financial assets; other than, households, non-profit organisations, and federal government agencies. For the

**Figure 6** Level of US financial assets held by US financial sectors (\$bns)

Source: *The US Federal Reserve Flow of Funds*

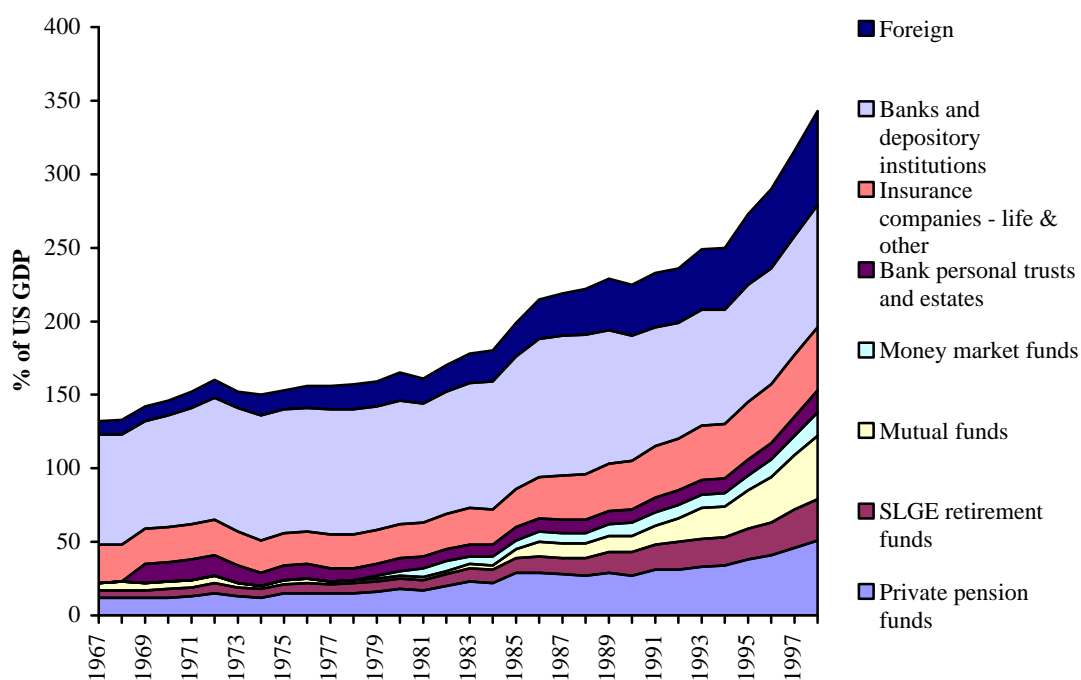


purpose of this section the sectors can be grouped as follows. Pension funds of both public and private organisations, plus mutual funds and money market funds, plus bank personal trusts and estates make up the *investment management sector*. Commercial banks and the savings institutions combined constitute the *bank sector*. The *insurance* and *foreign* sectors remain separate sectors. Figure 7 depicts the level of financial assets of the different sectors in nominal terms.

There is a degree of double counting in Figures 6 and 7. At the end of 1998, private pension funds held \$564 billion in mutual fund shares, \$58 billion in money market funds and \$31 billion in deposits with the bank sector. Insurance companies held \$31 billion in mutual fund shares and \$112 billion in money market fund shares. For simplicity this double counting is only considered in what follows where its effect is material to the discussion.

Between December 1969 and December 1998 the total financial assets in the sectors reported in Figure 6 grew at a geometric average rate of 11.0 percent per annum. In

**Figure 7 Level of US financial assets held by US financial sectors (% US GDP)**



Source: *The US Federal Reserve Flow of Funds*

the same period nominal US GDP grew at 7.7 percent per annum. The 11.0 percent growth rate of financial sector assets is not simply the result of high asset returns in this period. To see this consider the following factors. The percentage growth figure is derived from holdings of assets with high and low historical returns and periods of high returns to financial assets and periods of low returns. Moreover, a 31 year period must be a significant portion of the investment horizon of many investors,

meaning that funds flow out to meet the savings objectives of investors as well as flowing in.<sup>4</sup>

The growth of total assets masks the disparity in growth of the different financial sectors. The growth rates of the investment management sector and foreign sector, at 13.3 and 15.0 percent respectively in the period 1969 to 1998, are much higher than those of the bank sector and insurance sectors at 8.2 percent and 9.9 percent.

The structural change in financial intermediation that has occurred in the US is also apparent in Figure 7. In 1969 the combined financial assets of private pension funds, state and local government pension funds, mutual funds, money market funds and bank personal trusts and estates, amounted to only 35 percent of the GDP of the US.<sup>5</sup> By the end of 1998 that figure was 152 percent of GDP.<sup>6</sup> In contrast, the combined financial assets of commercial banks, savings and loans institutions, mutual savings banks and credit unions increased only modestly as a percentage of GDP, going from 73 percent in 1967 to 83 percent at the end of 1998. In 1969, the market value of financial assets held by the US investment management sector was less than one half that of the bank sector. At the end of 1998, assets under investment management exceeded the bank sector's assets by 82 percent. This change in the ratio of value of assets controlled by investment managers versus banks represents a fundamental change in the flow of savings to productive projects and the governance and oversight of capital in the US economy.

US gross domestic product (GDP) It is clear that delegated portfolio management in the US (the bottom five series in Figure 7) has grown rapidly as a proportion of GDP only since the early 1980s, and that growth has continued through 1998. The growth

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<sup>4</sup> Poterba (1998) looks at the question of whether de-cumulation of financial assets by 'baby boomers' as they grow older and leave the workforce will lead to a reduction in asset returns. He finds little support for large scale de-cumulation in the foreseeable future.

<sup>5</sup> 1969 is the beginning date for this comparison because that is the year in which Federal Flow of Funds reports the assets of bank personal trusts and estates as a separate series rather than including them in the assets of the personal sector.

<sup>6</sup> These figures are adjusted for the double counting discussed previously in section 2.

in assets under management reflects, and at the same time may have been a cause of, the high returns to US financial assets since 1980.<sup>7</sup>

### **US retirement savings**

Pension reserves, which are financial claims of US households, have risen from \$195 billion (23 percent of GDP) at the end of 1967 to \$8,770 billion (103 percent of GDP) at the end of 1998. Those 1998 household claims are the liabilities of private pension funds (\$4,355 billion), state and local government pension funds (\$2,371 billion), life insurance companies (\$1,401 billion) and the US Federal Government (\$643 billion).<sup>8</sup>

Of the \$3,233 billion invested in mutual funds and money market funds at the end of 1996, \$334 billion was from the 401(k) plans of private pension funds (counted here as part of private pension fund assets), and a further \$620 billion was invested by households in mutual funds through Individual Retirement Accounts (IRAs). The volume of funds invested under Keogh plans (for self employed persons) is tax data that is not readily available. Therefore, putting the Federal Government and insurance company liabilities to one side, the percentage of financial assets held by the investment management sector, that arise from corporate, government or household, tax preferred pension schemes, was at least 74 percent at the end of 1996.

### **US equity holdings by sector**

Figures 8 and 9 presents the percentage of direct ownership of the US equity market by private versus institutional owners. In 1969, 69 percent of the US equity market was directly held by households, 26 percent by US institutional investors and 3 percent by foreigners. By the end of 1998 those figures were 41 percent, 51 percent and 7 percent respectively.<sup>9</sup> Figure 8 shows that the migration of equities from household portfolios to institutional portfolios shows little sign of abating. Figure 9 shows the change since 1969 in the percentage of the US equity market held by the different components of the investment management sector. In particular, the figure

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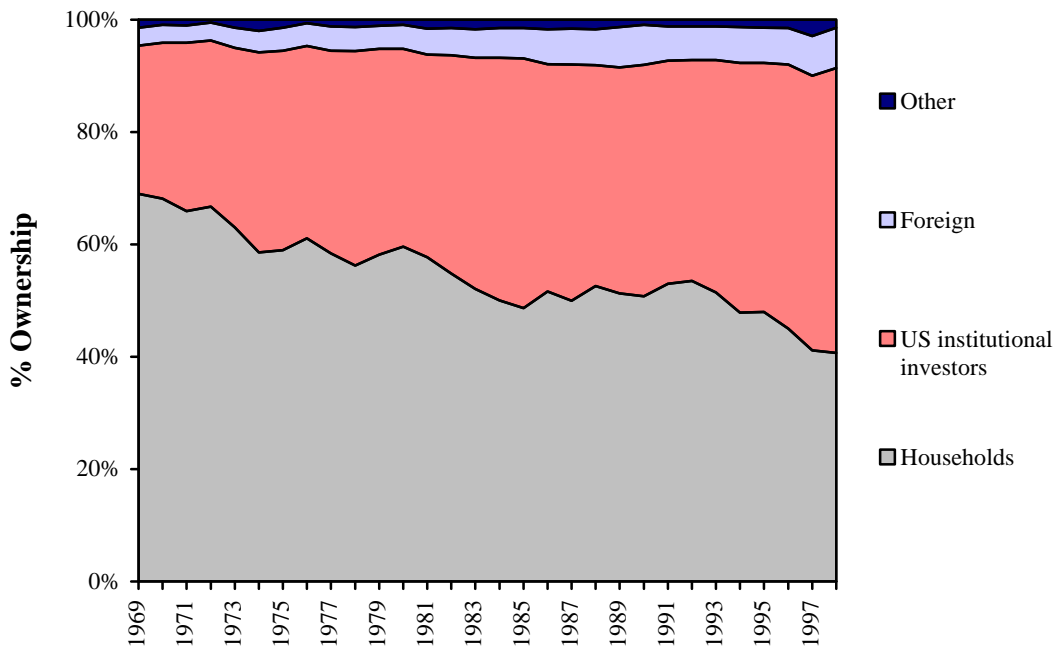
<sup>7</sup> Warther (1995), Edwards and Zhang (1998) and Edelen and Warner (1999) find a strong relationship between flows to US mutual funds and returns to US financial assets.

<sup>8</sup> Source is the Federal Reserve *Flow of Funds*, Fourth Quarter 1998.

<sup>9</sup> Where *institutional investors* means the investment management sector plus the insurance sector.

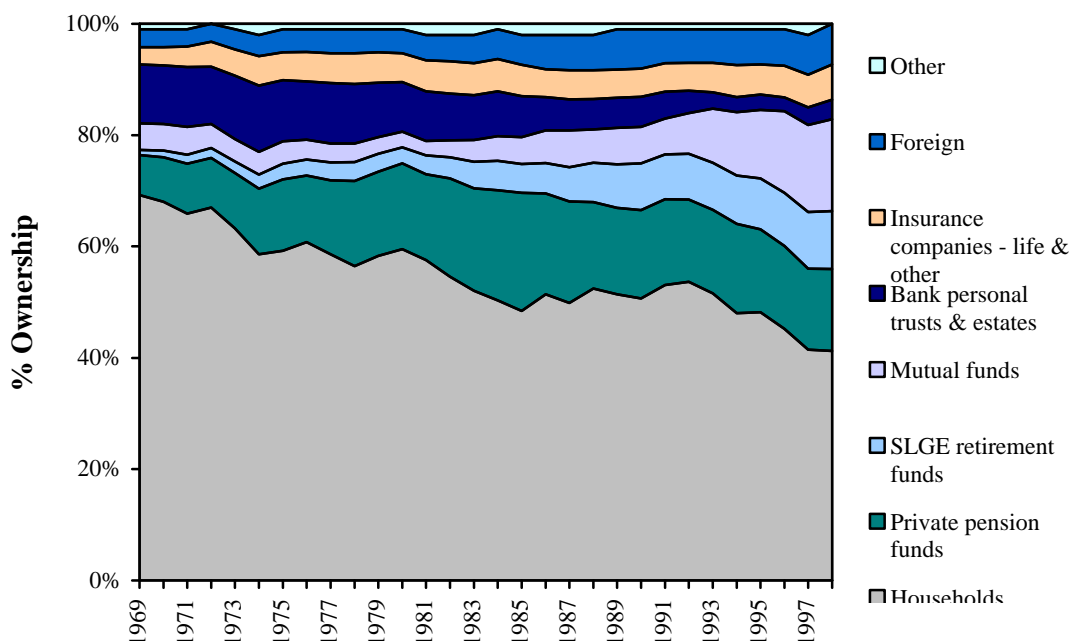
highlights the decline in the importance of bank personal trusts and estates as equity managers and the rise of mutual funds and SLGE retirement funds.

**Figure 8 % Ownership of US equity market, private versus institutional**



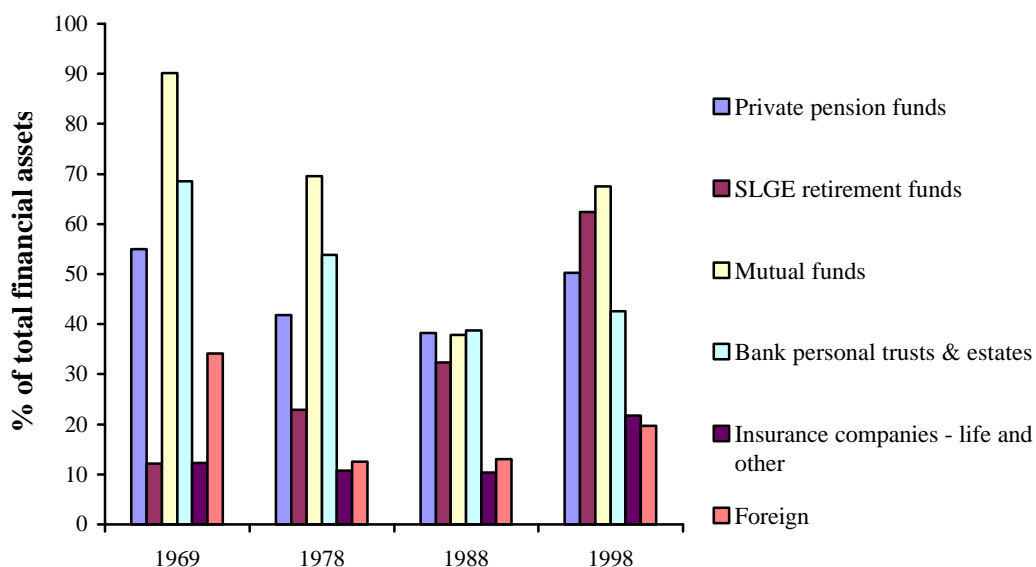
Source: The US Federal Reserve Flow of Funds

**Figure 9** % Ownership of US equity market, private versus institutional, by institutional type



Source: *The US Federal Reserve Flow of Funds*

**Figure 10** US equity holdings of financial sectors as a % of their total US financial assets



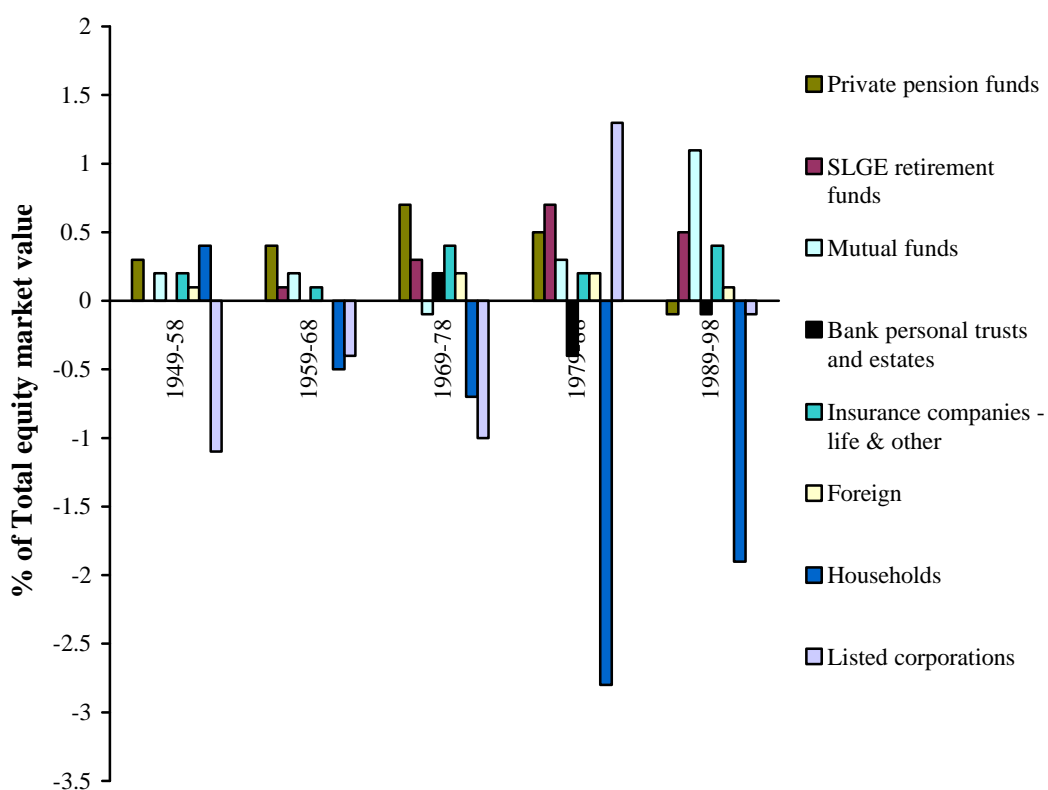
Source: *The US Federal Reserve Flow of Funds*

This trend is not just the inevitable result of institutional investors having more money under management. Figure 10 displays the US equity holdings of US financial sectors as a percentage of their total financial assets. The increased demand

of institutional management for US equities reflects three major trends. Firstly, state and local government employee funds have increased their aggregate portfolio weight in equities from just 7 percent in 1967 to 62 percent in 1998 as depicted in Figure 10. Consequently, the percentage of the US equity market held in these funds has risen from 0.5 percent in 1967 to 10.3 percent in 1997. The asset allocation change in state and local government employee funds represents a major change in risk borne by the tax payers who ultimately insure those funds.<sup>10</sup>

Secondly, the percentage of the US equity market held by private pension funds increased from 6.1 percent in 1967 to 14.5 percent at the end of 1998. The increase occurred despite the fact that asset allocation to US equities of private pension funds

**Figure 11 Net acquisition of US equities by US financial sectors – 10 year average annual flows as a percentage of total equity market value**



Source: *The US Federal Reserve Flow of Funds*

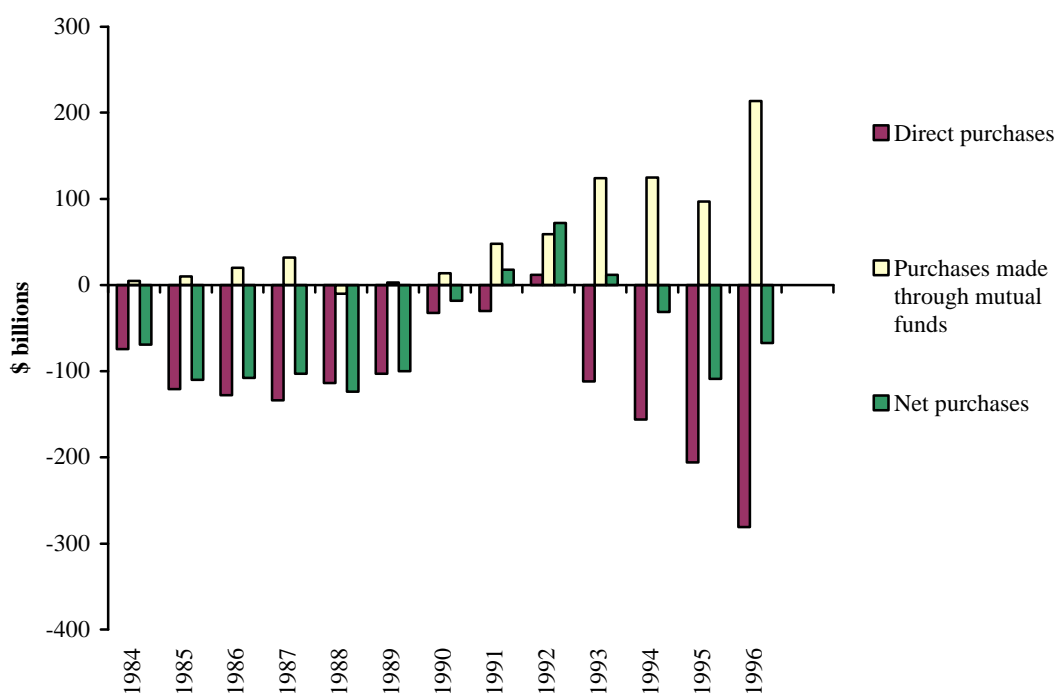
<sup>10</sup> State and local government employee (SLGE) funds are not insured by the US Pension Benefits Guarantee Corporation (PBGC).

increased only slightly over the period. Such is the scale of the increase in assets of private pension funds.

Finally, a huge volume of money has flowed into US equity mutual funds in the 1990s. In the period 1991 to 1998 the value weighting of US equities in the aggregate portfolio of US mutual funds has increased from 38 percent to 68 percent. Further, the percentage of the US equity market held by these funds has increased from 6.4 percent to 16.3 percent. In just seven years in the 1990s, an additional 10 percent of the US equity market came under the control of mutual fund managers.

Figures 11 and 12 illustrate the dynamic process by which equities have been transferred year by year from the household sector to institutional investors. Every

**Figure 12 Acquisition of US equities by US households (\$ bns)**



*Source: Investment Company Institute, Mutual Fund Fact Book 1996*

year since 1977 US households have been net sellers of US equities.

Figure 11 captures the flows of equity ownership between the different categories of owners in five periods since 1949. For each category of stock ownership, the annual net flow of equities, as a percentage of the total capitalisation of the equity market, is averaged over 10 year periods and presented in Figure 11. In the period 1949-58 listed corporations were the only net sellers of stocks, all other categories including households were net buyers. Listed corporations were net sellers in each 10 year period except 1979-88; a period when US corporations undertook massive share repurchase programs. In each of the four periods after 1958 households were net sellers of US equities. In the period 1979-88 the average annual sale of equities by US households was 2.8 percent of the end of year total market capitalisation of US listed equities.

Figure 11 shows the transit of equities from household portfolios to mutual funds accelerating through the 1990s. Figure 12 however, shows that the reduction in exposure of US households to US equity market risk is in part offset by the ownership of US mutual funds by US households. In 1996 direct purchases of US equities by US households was -\$281 billion but after accounting for household ownership of mutual funds the reduction was only -\$67 billion.

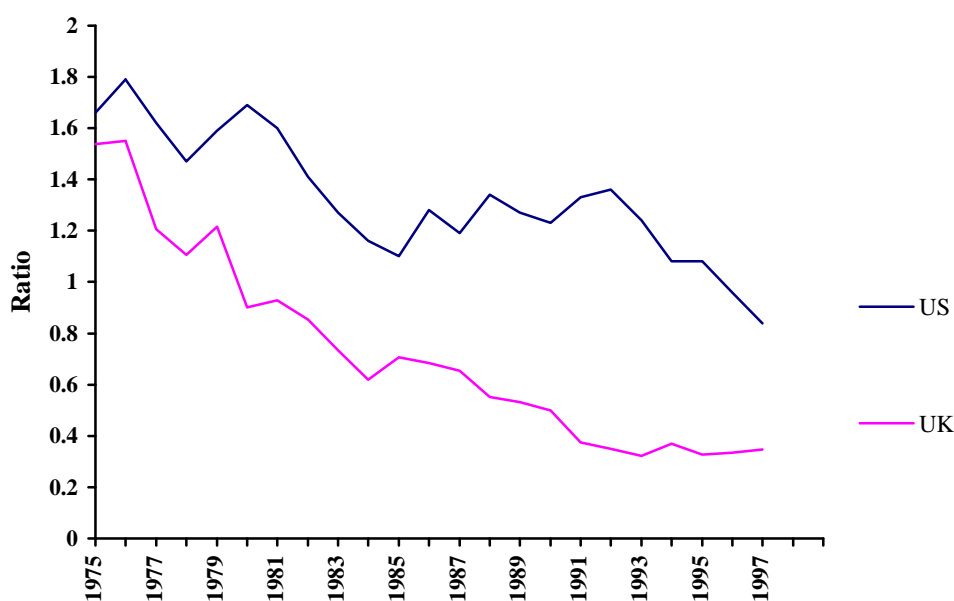
There is no readily available breakdown of foreign investment in US financial assets into investments of foreign private investors and foreign institutional investment. However, given the large fixed cost associated with active overseas investment it is reasonable to assume that a high percentage of foreign held US financial assets are controlled by foreign institutional investors. In fact, because of the now substantial position of foreign investors in US financial assets, the proportion of the US financial markets controlled by institutional investors may be understated here.

### **2.3 Implications of UK and US data**

The UK and US data suggest that the observed large scale delegation of the management of equities portfolios is driven by some aspect of saving for retirement. In both countries the growth of portfolios managed for the provision of retirement income is a large part of the total growth of institutional equity portfolios. A natural question is why private investors have chosen to save for retirement income through institutionally managed portfolios rather than just manage their own portfolio.

Asymmetric information, taxes, transactions costs and administrative costs explain much of the demand for financial intermediation in general and each of those factors may be important here. The UK and the US data discussed above shows that since 1967 there has been a substantial transfer of control of equities from private investors to institutional investors in both the UK and the US. Figure 13 shows the ratio of household sector domestic equity holdings to institutional domestic equity holdings in both the UK and the US from 1975 to 1996. At the beginning of that period the UK ratio was 1.55 and the US ratio 1.66.

**Figure 13** Ratio of household domestic equity holdings to institutional domestic equity holdings in the UK and the US



Source: Office for National Statistics – Financial Statistics  
The US Federal Reserve Flow of Funds

The UK ratio of private to institutional equity holdings fell rapidly in the next four years, principally as a result of pension fund buying of domestic equities in the UK, as depicted in Figure 7. The UK ratio continued downward to 0.35 by year end 1997. The US ratio fell to 0.8 at the end of 1998. However, during the period year

end 1985 to year end 1992 the US ratio rose from 1.10 to 1.36. It has been in steep decline since then.<sup>11</sup>

Whilst the UK ratio of private to institutional domestic equity holdings was only slightly below that of the US ratio in 1975, in 1996 it was less than one half that of the US and has been little changed since 1991. The decline in the US ratio shows no sign of abating. In both 1997 and 1998 the net sales of equities by US households exceeded \$500bn.

A comparison of Figures 2 and 7 shows that in both the US and the UK the rapid rise of investment management assets as a percentage of GDP began in the early 1980s. The future path of the ratio of private to institutional equity holdings in the US and UK is not clear. We should anticipate that corporate and government pension plans will become more mature in their liability structure over time. In which case the net contribution to these funds will fall as beneficiary payments increase. Moreover, as the structure of their liabilities matures, pension plans can be expected to hold a greater portfolio weight in bonds and credit market instruments, to match asset income to a more precisely estimated liability stream.

### **3. Concluding remarks**

The purpose of this essay is to highlight the importance of the rise of delegated portfolio management. The massive transfer of the control of financial assets in the UK and US is documented in a series of figures. The essay is concerned with the decisions of private investors and institutional fund managers. It is contended here that private and institutional investors are fundamentally different in at least one way – they face different incentives. Further, that we expect the decisions taken by private and institutional investors to reflect this difference.

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<sup>11</sup> Figures 10 and 13 taken together pose an interesting question. The percentage of US listed equities, by market capitalisation, owned by US households was 58.2 percent at year end 1979 falling to 40.7 percent at the end of 1998. In the first 10 years of that period households were net sellers of 2.8 percent of the market to other parties. In the next 10 years the figure averages to 1.9 percent. This result is made possible in part by the volume of IPOs in this period. In an IPO, an entrepreneur may be counted as a household which is selling a newly listed equity. The part of the IPO retained by the entrepreneur increases the recorded equity ownership of households.

Once the data is presented it becomes clear what is driving the shift to delegated portfolio management in the US, the growth in pension money managed by institutional investors. The transition of household ownership of US equities from 69 percent of the market in 1969 to 41 percent at year end 1998 is explained largely by three structural ownership changes. State and local government employee funds have taken their holding of US equities from near zero to over 10 percent of the market as their assets grew to 28 percent of GDP and their US equity allocation grew to 62 percent, between 1967 and 1998. Private pension fund holdings have increased from 6 to 14 percent of the US equity market in the same period. US mutual funds held 4 percent of the US equity market in 1983, 7 percent in 1990 and 16 percent in 1998.

For researchers of financial asset markets, the historical perspective of the rise of portfolio management is important. If the level of institutional ownership affects market outcomes then it should be recognised that important empirical finance studies span the period in which the level of institutional ownership is changing rapidly. This point is typically not recognised in empirical studies of financial markets.

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