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International diversification of
institutional investors
by
E P Davis

September 1991

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The object of this Technical Series of Discussion Papers is to give wider circulation to research work in the Bank's Economics Division, and to invite comment upon it; any comments should be sent to the author at the address given below.

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Contents

Abstract

This paper assesses the causes, nature and implications of the recent expansion of cross border investment by life insurance companies and pension funds. Two complementary approaches are adopted; an analysis of experience of institutions in five OECD countries and in depth interviews with fund managers in London. Among the key results are that regulations often prevent institutions benefiting from optimal portfolio allocations; that herding and short termism may need to be addressed in an international as well as domestic context; and the focus of institutions only on markets in advanced countries means such flows have few implications for development of ldcs. Prospects for further growth and deregulation of institutions make the implications of growing importance.

1 Introduction

This paper examines the role played by life insurance companies and pension funds in the international reallocation of saving. The approach adopted covers both positive and normative aspects, with particular focus on the role of regulatory restrictions on international investment, microeconomic and macroeconomic costs and benefits, and on the contrast between theory and practice of fund management. The analysis draws mainly on the experience of five major countries, namely the United Kingdom, Germany, the US, Japan and Canada, where as shown in Charts 1 and 2 the institutional sectors have enjoyed differing degrees of success in recent decades [see also Davis (1988) (1991)]. However, parallels are drawn with France wherever possible.

The paper is structured as follows; Section 2 outlines the business of life insurance and pension provision; Section 3 assesses the reasons why international investment might be attractive to asset managers; Sections 4 and 5 discuss the experience of life insurance and pension fund sectors in cross border investment, and explores the reasons for differences observed; Section 6 assesses the implications of growing international investment; Section 7 probes methods of international portfolio management in theory and practice, reporting the responses of London fund managers to a questionnaire on attitudes to international investment. This section illustrates how managers behave in a relatively unregulated setting (which may thus be relevant to other countries' institutions in the future), as well as illuminating managers' views on some of the theoretical and empirical questions raised in the rest of the paper. A summary is provided and policy implications are discussed in Section 8.

2 The nature of life insurance and pension business

It is appropriate to commence by outlining the nature of life insurance companies' and pension funds business, since this determines the nature of the liabilities against which foreign assets may be held. It is also important to assess the determinants of the growth of the sectors, which influences the size of portfolios which may be invested in foreign assets. With these analyses as background, the section concludes by offering data on the actual size and growth of life insurance and pension fund sectors in the countries studied.

(a) Life insurance

Traditionally, life insurers has been mainly concerned with the provision of security to the household sector in terms of income to dependents after death. However, life insurance is now often used as an instrument for pure saving over long periods. As a result of these functions, life insurers have long term liabilities. Thus long-term assets (including foreign assets) may be held as a counterpart. Technically, life insurers face little liquidity risk[1] barring that related to early surrender of life policies or heavy demand for policy loans.[2] With the exception of these cases, premature withdrawal of funds is either difficult or impossible and life insurers receive a steady inflow of funds in the form of premiums.[3] Individuals rarely fail to make such contributions. The principal risks relate to, first, actuarial estimates of death rates and, second, rates of return on the asset portfolio.

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(1) This does not, of course, mean that liquid assets are not required - firms will generally find it prudent to hold such assets to cover periods of net outflows of funds. This is particularly the case for firms whose business shows no clear growth trend.

(2) Both of these types of withdrawal can be discouraged by offering suitably unattractive terms.

(3) Single premium policies are often also available.

What type of products do these institutions offer? Three basic types may be distinguished; term policies, saving policies and pension funds. A term policy provides insurance cover for a specified period against the risk of death during that period. Term policies can be renewed, but at a more advanced age purchasers of life insurance will face higher premium rates because the risk of death is greater. A term policy does not tend to provide large sums to a life company for investment. Accumulation of financial assets is only sizeable in the case of policies which have a saving as well as an insurance element. Examples are "whole life" policies, which offer a lump sum to dependents on death, whenever it occurs, in return for a constant annual premium, "endowment" policies, which offer a similar lump sum after a fixed period or "investment linked" policies where returns are related to the performance of mutual or other funds. In each case the lump sums arise from the premiums paid plus accumulated capital gains, dividends and interest.

There are differences between types of life policy in the nature of the obligation borne by the life insurer, which in turn has consequences for the nature of competition in the industry and may also influence approaches to international investment. In the case of a term policy a fixed sum is promised, thus implying a fixed liability for the firm which may be exactly matched by corresponding assets.(4) This is also true of some whole life and endowment policies. In these cases sharp declines in asset values can lead to problems of solvency for life insurers, asset allocation tends to be conservative and competition tends to be in terms of premia offered in relation to the sum insured (eg US, Canada). But often (eg in the UK) saving policies are "with profits" ie the total amount insured rises over time at a rate dependent of the profitability of the assets of the insurance company. As noted, the return may also be directly linked to a specific investment fund (investment linked policies). Obviously the policyholder takes a risk with such a policy that the fund will perform badly. In contrast, the life insurer takes

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(4) In practice firms are likely to trade assets to try to obtain a higher return than could be achieved by a buy-and-hold strategy - to attract new customers, earn profits for shareholders and because managers' remuneration is often linked to performance.

fewer risks of solvency.(5) There is, nevertheless, a market discipline on this process, namely that firms which provide poor outcomes to policyholders will find it difficult to attract further business, because life insurers tend to compete on their past success in gaining high returns and/or consequent ability to charge lower premia.

Certain aspects of competition are restricted in some countries by regulation. In Germany, for example, the premiums life insurers can offer and even their overall profitability are strictly regulated (see Hammond and Kay (1985)) surpluses being largely distributed to policy holders. Product design is also restricted. Thus although the mechanism of competition on past performance applies, the focus of competition in such cases is also at point-of-sale (ie via large sales forces).

(b) Pension funds

Pension funds discussed in this paper are always funded - ie assets are built up over the working life to pay pensions on retirement. The comments regarding the long term nature of the assets, liquidity risk and regular contributions adduced for life insurance above apply strongly to pension funds. There are two main types of pension scheme; first defined contribution schemes, whereby contributions are fixed, but benefits vary with market returns. This contrasts with defined benefit schemes where an undertaking is made to pay a defined percentage of average or final salary as pension. After retirement the pension may be fixed in nominal terms, indexed at the discretion of trustees or formally indexed.(6) Defined benefit schemes impose a greater risk for the sponsoring firm as there may be an obligation to top up the scheme when asset returns are low. (There are offsetting benefits in terms of reduced labour turnover etc.) The

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(5) Though solvency risk is not absent - once declared, annual bonuses cannot be clawed back by the life company.

(6) As reported by Bodie (1989) (1990) indexation is rare in the US, but is much more common in the UK, where a minimum (5%) level of indexation is now mandatory.

greater risk in the case of defined contribution scheme is borne by the holder. Most of the liabilities of pension funds per se relate to defined benefit plans; defined contribution plans are often run by life insurers.

There are two further key differences between life and pension business that should be noted. First, the contractual annuity aspect of pension funds entails the preclusion of early withdrawals. This is not true for life insurance where most policies may be cashed in, albeit at some loss to the policy holder in terms of return (and also often in terms of taxation). To compensate for loss of liquidity, holders of pension claims must be rewarded with higher returns, which funds are able to supply because contractual annuities allow a greater risk to be taken on the asset side. Second, taxation of pension funds is typically lighter than for life insurance (partly to compensate for the preclusion of early withdrawals). Pension funds are typically tax exempt and contributions made out of untaxed income, while life insurance premia are paid out of taxed income - although life insurance as well as pension funds have significant fiscal privileges in countries such as Germany and Japan.

(c) Determinants of growth

Besides defining the nature of business, it is also relevant to note determinants of demand, as this influences the magnitude of portfolios and hence the overall economic importance of the sector. Demand for long term saving is likely to depend on income growth (old-age security appears to have a large income elasticity of demand), demographic factors (the proportion of the population in the high-saving groups, typically aged 35-65) and the degree of old-age protection offered by the state on a social security pay-as-you-go basis. Continued income growth, the "aging of the population" [See Hagemann & Nicoletti (1989)] and growing lack of confidence in pay

as you go pension schemes[7] are all positive factors for long term saving which have stimulated growth over the past decade and are likely to continue to operate in the future. Tables 1 and 2 below show the varying incidence of these factors in the 6 countries analysed. The aging of the population in Japan and current generosity of French and German state pension systems are notable.

Table 1: Percentage of population over 65

	1990	2020	Percent Change
US	12.2	16.2	32.8
UK	15.1	16.3	7.9
Germany	15.5	21.7	40.0
Japan	11.4	20.9	83.3
Canada	11.4	18.6	63.2
France	13.8	19.5	41.3

Source: OECD

Table 2: Pay-as-you-go welfare and institutional investment ($ thousand)

	Income per capita	State pension	Company benefits	% of income	Life and Pension assets/GNP
Germany	19.2	8.7	3.9	65.2%	21.5%
France	16.9	8.5	N/A	50.0%	13.2%
UK	14.5	7.0	N/A	48.1%	88.6%
US	20.8	9.5	N/A	45.9%	55.9%
Japan	22.9	4.6	4.8	41.0%	29.8%

Source: Salomon Bros

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(7) Many individuals anticipate that promises will be scaled down in the light of the burden of such schemes on future wage earners and/or government borrowing. Some governments such as the UK and France have already sought to promote private pensions via extra tax incentives in the light of the future burden of the state scheme.

As for the share of life insurance companies and pension funds in total long term saving, this depends on factors such as taxation (relative to other forms of saving),[8] state provision of pensions and attitudes of the personal sector to types of saving but also on the attractiveness of policies offered in terms of product design, risk and return, which may in turn be influenced by regulation [an analysis of these factors in five major countries is given in Davis (1988)].

(d) Current size of the sectors

The sale of the various life and pension products under the stimuli indicated has led life insurers and pension funds to a strong position in personal portfolios. As shown in Table 3, in all the countries illustrated, life insurance assets[9] account for at least 7% of personal sector financial wealth, although a large proportion of US business represents pension claims. The UK shows the highest ratio, namely 22%. In terms of absolute size, the US sector is the largest, followed by Japan and the UK. Measured against GNP, assets range from 10% (France) to 43% (UK). The size of pension fund sectors shows greater dispersion. UK, US and Canadian funds are markedly larger than their life insurance counterparts, while the German,[10] French and Japanese sectors are small.

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(8) Taxation of pension funds tends to make them particularly attractive, although there are also tax advantages to life insurance in several of the countries studied. Individual securities investment tends to be relatively unattractive - especially for foreign asset holdings.

(9) Valued according to national accounting conventions.

(10) Funded pension schemes are small in Germany partly because of the importance of "direct commitments" - pension reserves held on the sponsoring firm's balance sheet - which amount to 10% of GDP. Other national regulators would consider this to be a form of self investment implying high concentration of risk, and actually limit such investment to a low proportion of pension funds' portfolios. In practice, German "direct commitments" tend to be insured separately.

Table 3: Stocks of life insurance and pension fund assets 1988

	Life Insurance			Pension Funds		
	Stock of assets(end 1988)$ bn	% of personal sector assets	% of GNP	Stock of assets (end-1988)$ bn	% of personal sector assets	% of GNP
UK	358.6	21.5%	42.6%	387.8	23.2%	46.0%
US	1068.9	8.8%	22.0%	1646.7	13.2%	33.8%
(life insurance business only)	(302)	(2.5%)	(6.2%)			
Germany	214.6	14.7%	18.0%	41.1	2.4%	3.5%
Japan	734.7	11.7%	25.2%	134.1	2.1%	4.6%
Canada	106.7	11.5%	21.8%	130.9	14.1%	26.7%
France	95.8	10.6%	10.2%	27.7	3.1%	3.0%

Sources: National Flow-of-Funds Data

Turning to annual flows of investment (Table 4), US pension funds have the largest inflows at $181 billion - a magnitude that exceeds personal saving.(11) UK and Canadian inflows to pension funds are proportionately also extremely large. As regards life insurance, inflows to Japanese firms are the largest, at $136 billion, which if sustained suggests the Japanese sector might in due course become the largest life insurance sector. However, US flows are also sizeable, at over $100 billion. The other sectors show flows of $10-$20 billion, which though considerably smaller than in the US and Japan are nonetheless comparable with other macroeconomic magnitudes (eg a UK balance of payments deficit in 1988 of $26 billion and a German surplus of $48.2 billion).

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(11) Saving is of course a net concept while pension fund flows are gross.

Table 4: Flows of life insurance and pension fund assets 1988

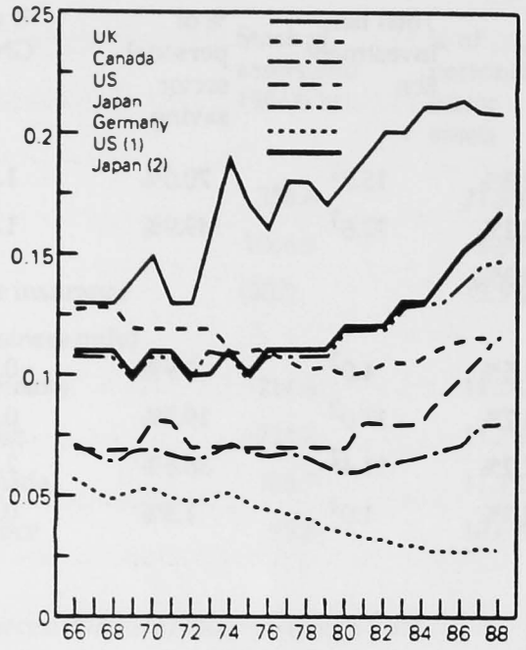
	Life Insurance			Pension Funds		
	Total net investment $ bn	% of personal sector saving	% of GNP	Total net investment $bn	% of personal sector saving	% of GNP
UK	18.7	83.3%[3]	2.3%	15.7[1]	70.0%	1.8%
US	102.5[1]	71.0%	2.1%	72.6[1]	49.9%	1.5%
(life insurance business only)	(12.9)[1]	(8.9%)	(0.3%)			
Germany	17.7[2]	17.1%	1.5%	4.0[2]	3.9%	0.3%
Japan	139.1[2]	49.7%	4.7%	17.0[2]	19.5%	0.6%
Canada	10.4[1]	35.4%	2.2%	11.4[2]	38.8%	2.4%
France	22.0[2]	33.0%	2.3%	1.0[1]	1.5%	0.1%

Sources: National Flow-of-Funds Data

Notes:
1 Flow
2 Difference of stock (ie may include some revaluations)
3 The large balancing item in the UK national accounts means this ratio may be inaccurately measured.

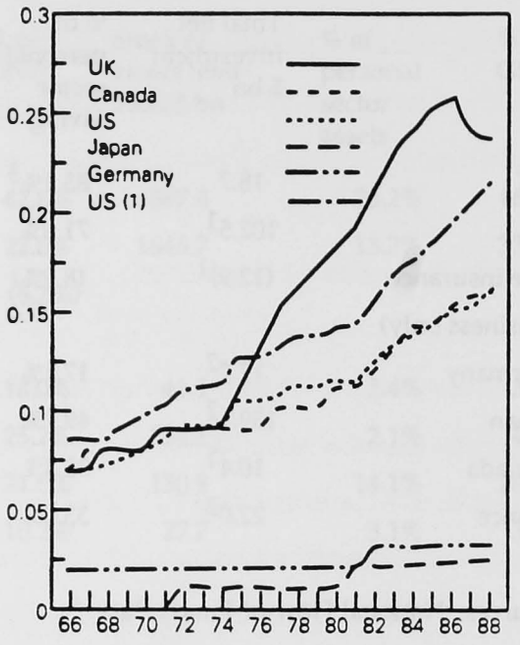
What of the longer-term evolution of life insurance and pension claims? As shown in Chart 1 overleaf, life insurance claims have increased as a proportion of personal-sector financial assets over the last two decades in the UK, Germany and Japan. In contrast, the share of life insurers in Canada and the US has declined, though US insurers have held their own by taking on an increasing amount of pension claims. Meanwhile pension fund claims have grown in all countries (Chart 2) albeit most strongly in the UK. The large size and rapid growth of life insurance and pension funds indicates a sizeable pool of funds potentially available for international investment. The following sections assess the reasons why such investment might be attractive to institutional investors, and the extent to which it has actually occurred.

Chart 1: Share of life insurance in personal sector assets



(1) Life insurance business only
(2) Including postal life insurance

Chart 2: Share of pension funds in personal sector assets



(1) Including pension funds managed by life insurance companies

3 Why international investment?

A discussion of the reasons why international investment might be attractive to long term institutional investors must begin with an assessment of asset managers' objectives. Subject to the constraints imposed by the type of liabilities outstanding, fund managers generally aim for a high return at a given level of risk; in the case of life insurance and personal pension schemes, a superior performance is likely to lead to more business, while for company pension funds reduced contributions may be required of the parent company. Since funds' liabilities are typically long term, managers may concentrate their portfolios on long-term assets yielding the highest returns. Risks on such assets are reduced by pooling, ie diversifying the portfolio across instruments the returns on which are imperfectly correlated. Modern portfolio theory suggests that pooling can eliminate unsystematic risk resulting from the different performance of individual firms and industries but not, in a national market, the systematic risk resulting from the performance of the economy as a whole.(12) Such risk is minimised by holding the global portfolio.

In this context, international investment may improve the asset manager's performance in several ways. Crucially, to the extent national trade cycles are not correlated the investment of part of the portfolio in other markets can reduce systematic risk(13) for the same return. In the longer term, the profit share in national economies may move differentially, which implies that international investment hedges the risk of a decline in

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(12) See, for example, Frost and Henderson (1983).

(13) Some would cite the crash of 1987 as suggesting markets now move together and there is no benefit to diversification. Bertero and Mayer (1989) showed that heightened correlations during the crash were slow to subside. However, as shown in Financial Times (1988) correlations between different markets, though high during the crash, are rather low at normal times. Indeed, a number of academic studies over the long term have shown that investors free to choose foreign assets may obtain a better risk/return trade off than if they are restricted to assets of one country. (See Levy and Sarnat (1970), Solnik (1974), Adler and Dumas (1983), Meric and Meric (1989)).

domestic profit share and hence in equity values.(14) There may be industries offshore (oil, gold mining etc) which are not present in the domestic economy, investment in which will reduce unsystematic risk even if trade cycles were correlated. If the domestic currency tends to depreciate (as in the UK), real returns on foreign assets will be boosted correspondingly and vice versa for appreciation (though in the long run, real returns will be equalised if purchasing power parity holds). Other economies (eg Japan) may be more successful in terms of growth than the domestic economy and offer higher total returns. Similarly, there may be a higher marginal productivity of capital in lower-wage countries (eg Korea) which may be attractive to investors.(15) In the special case of Japanese life insurers investment in foreign assets provides a hedge against the possibility of a catastrophic domestic earthquake. Again, if oil prices change it is best to hold assets in both oil exporters (who benefit from an oil price rise and lose from a fall) and importers (vice versa). A high dependency on oil would imply a higher weighting towards oil producers. Finally, in the case of "unit-linked" life or pension policies related to foreign-currency mutual funds, all assets will in any case be held abroad (ie foreign investment may be driven from the liabilities side).

These arguments may, of course, apply to different degrees in the cases of equities, property and bonds. They apply most precisely to equities, although one counter-argument is that a great deal of diversification may be obtained by investment in the domestic market if firms carry out a large amount of foreign direct investment. Bond markets are perhaps more globally integrated and hence there is less benefit from

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(14) This will be of particular importance to defined-benefit pension funds where liabilities are tied to wages and hence rise as the profit-share falls. Similarly, at an individual firm level, investment in competitors' shares hedges against a loss of profits due to partial loss of the domestic market.

(15) Technically these results imply inefficiency and/or slow adjustment of global capital markets. Feldstein and Horioka (1980) suggested this was certainly the case prior to 1980, though more recent research has shown a weakening of this result.

diversification out of domestic markets. Indeed, if uncovered interest parity holds, total returns on bonds net of exchange rate changes will equalise. However, so long as markets are not totally efficient and globally integrated, international bond investment should show benefits (there remain a currency risk premium on some bonds - often related to inflation or high government deficits). Property, while in principle a real asset similar to equity, is less liquid and more reliant on imperfect local information. Hence it may be more risky [see Plender (1982)].

It should be acknowledged that international investment poses additional risk compared with domestic investment. Exchange rate risk means that the returns from foreign assets may be more variable than for domestic instruments, especially in the short-term. [Use of hedging instruments such as forwards, futures and options can to a certain extent reduce the risk, see BIS (1986), but the price of these instruments may offset part of the gain from foreign investment in terms of return, they may only be available for short periods, and life insurance regulations or trust deeds for pension funds often limit their use.] Transfer risk may affect the ability to repatriate returns, though this is unlikely to be a problem in advanced countries. Settlement risk in less developed securities markets may be large, with a high proportion of delayed or failing transactions. Liquidity risk that transactions move the market against the fund may be significant in narrow overseas markets. But settlement, liquidity and transfer risks may be avoided by appropriate choice of markets, and exchange rate risk, viewed in the context of modern portfolio theory rather than in isolation, is judged by many commentators to be unlikely to offset the benefits of offshore investment in terms of returns and diversification.

Some further caveats are in order; the above discussion assumes that fund managers seek an improved risk/return tradeoff, and international diversification may be a suitable way to achieve this. There are several reasons why institutions may not seek to do this. First, life insurers may have precisely defined liabilities (except for actuarial

uncertainty) as in the case of term policies,[16] in which case precise matching of liabilities with assets (eg domestic government bonds) may be the preferred strategy to eliminate risks to solvency.[17] Matching with foreign assets will be less precise given exchange rate risk (assuming liabilities are denominated in domestic currency). (This argument equally applies to investment in assets eg equities property.) Second, the company may offer life policies with precisely defined returns, perhaps due to regulation, which again encourages a cautious investment policy based on domestic assets. In most countries[18] these two arguments apply somewhat less to pension funds, though it is notable that even for pension funds the diversification is not pursued to its logical conclusion namely the global portfolio. This can be justified by the existence of long term deviations from purchasing power parity, which means currency mismatching can involve risk, especially for a mature fund. Finally, foreign investment may be forbidden by the authorities, due to exchange controls,[19] on "prudential" grounds, particularly in the case of life insurers, or by fiscal means. The appropriateness of such regulation is questioned below.

As background to the analysis of foreign investment presented here, data are presented in Table 5 which show estimates of the mean and standard deviations of real total

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(16) ie policies providing insurance for a fixed sum for a specified period against the risk of death during that period.

(17) In practice firms are likely to trade assets to try to obtain a higher return than could be obtained by a buy-and-hold strategy, both to attract new customers and earn profits for share-holders.

(18) However, Bodie (1989) suggests US regulations which impose asymmetrically heavy penalties on under - as opposed to overfunding may lead defined-benefit pension funds to adopt immunisation strategies based on fixed interest securities in order to match assets to the present value of benefits implied by the guaranteed floor. Only above this level is investment in equities - and foreign assets - optimal. More generally, a defined-benefit fund which is terminated (ie closed to new members) will switch to bonds as obligations become of shorter duration.

(19) None of the six countries analysed currently have exchange controls, although France only abolished hers recently. In the EC it is inconsistent with the Capital Movements Directive.

returns in domestic currency that foreign assets have provided over 1967-85 in six major countries, together with those for domestic assets (source: BIS). The returns shown are interest/dividends/rent plus capital gain less inflation for bonds, equities and property, and real interest rates for loans, mortgages and short term assets. Effective exchange rate changes and domestic inflation are also added/deducted from nominal total returns on foreign assets (ie the returns are those from unhedged exposures). The (crude) proxies used for returns on foreign assets in foreign currency are the average nominal total return on bonds and equities for the other four countries, in each case.

Table 5: Characteristics of real total returns (annual averages), 1967-85

Mean (standard deviation)
of real total return (domestic currency)

Per cent	United States	United Kingdom	Germany	Japan	Canada	France
Loans	3.1 (3.1)	-0.3 (5.0)	6.0 (1.7)	0.2 (4.4)	3.2 (2.6)	1.5 (2.6)
Mortgage	4.0 (3.3)	0.4 (5.0)	4.3 (1.1)	2.2 (5.1)	4.7 (2.6)	3.0 (2.5)
Equities	3.1 (14.1)	7.4 (19.1)	7.6 (17.6)	9.4 (18.0)	5.0 (17.7)	7.8 (24.0)
Bonds	-0.3 (15.7)	2.3 (21.2)	5.0 (6.3)	2.0 (14.4)	-0.3 (12.4)	-0.4 (13.0)
Short-term assets	1.7 (2.6)	0.3 (5.0)	2.7 (1.9)	-1.3 (4.8)	1.5 (2.8)	1.4 (3.1)
Property	3.4 (6.3)	5.1 (12.8)	4.4 (3.2)	6.6 (7.5)	3.5 (5.7)	-
Foreign bonds	1.6 (12.2)	0.9 (14.4)	1.7 (9.2)	-1.2 (12.0)	3.0 (11.7)	1.9 (11.7)
Foreign equities	6.7 (15.5)	5.6 (15.2)	5.1 (16.0)	2.8 (16.2)	7.6 (14.2)	6.7 (13.0)

The results can be summarised as follows: real total returns in domestic currency on foreign equities have been high in the US and Canada compared with domestic equities, and comparable for France, the UK and Germany. Only for Japan (perhaps a "special case" given its own economic success) was the total return on foreign equities significantly lower than for domestic equities. In the case of bonds, the return was higher for foreign-currency bonds in France, the US and Canada, comparable for the UK and less for Germany and Japan. Of course, Germany and Japan have had structurally appreciating currencies which tends to reduce the return on foreign assets. The standard deviations for foreign assets are lower than for the corresponding domestic assets in each case except German bonds, benefits of diversifying across foreign markets more than offsetting exchange rate risk.

Calculations of correlations between real total returns (not shown) suggest there are several negative correlations between yields for foreign and domestic assets for the US and Germany, although those between domestic and foreign bonds and equities are positive. Nevertheless, since the latter are generally far below unity for all countries, they still indicate some potential benefits to portfolio diversification via international investment.(20)

Table 6 below illustrates the real returns and corresponding risks from holding portfolios split evenly between bonds and equities, one with no foreign assets, one with 10% foreign equities, 10% foreign bonds. In each case the standard deviation was lower, and for the US, France and Canada the real return was higher for the internationally diversified portfolio. This implies that an unhedged internationally-diversified portfolio unequivocally dominates a purely domestic portfolio. In the other cases a trade off of risk and return is implied.

Table 6: Mean (standard deviation) of real total returns on diversified portfolios

per cent	Domestic[1]	Domestic & international[2]
United States	1.4 (12.1)	1.9 (11.4)
United Kingdom	4.9 (16.4)	4.5 (14.9)
Germany	6.3 (11.2)	5.8 (10.5)
Japan	5.7 (14.2)	4.7 (12.5)
Canada	2.4 (11.9)	3.0 (11.1)
France	3.7 (16.3)	3.8 (14.6)

1 50% domestic equity, 50% domestic bonds
2 40% domestic equity, 40% domestic bonds, 10% foreign equity, 10% foreign bonds

Howell and Cozzini (1989) (1990) suggest that an optimal level of international diversification can be estimated for institutions from any one country. This is based on the "openness" of the economy, and thus its exposure to output and inflation shocks. A proxy for this is the average share of foreign trade in total GNP, which for the major

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(20) French and Poterba (1990) calculate an average pairwise correlation between six major equity markets of 0.502 over 1975-89.

countries is around 20%. Alternatively, if total final expenditure is felt a superior denominator, the ratio is 17%. As shown in Table 7, the actual share is far below these for most countries. The authors point out that members of a currency area such as the ERM are in principle less exposed to external inflation shocks than these trade proxies suggest. In fact, 2/3 of ERM countries' trade is within the bloc, suggesting a need for less exposure. On the other hand, lower currency risk should make assets within the bloc perfect substitutes. (In fact these are numerous barriers to investment within the ERM, as discussed below.)

Table 7: International investment and import penetration (1988)

	International asset share of institutional portfolios		Imports/GDP	Imports/TFE
	Life Insurance	Pension Funds		
US	3.5%	3.8%	13%	11%
UK	9.5%	13.9%	27%	21%
Germany	0.6%	0.4%	27%	21%
Japan	14.2%	7.0%	10%	9%
Canada	2.2%	5.3%	26%	20%
France	2.0%	4.0%	21%	18%

4 Experience of international investment - life insurers

How have life insurance sectors approached foreign asset markets to date? In none of the countries studied was international investment by life insurers sizeable before 1980, though 3-4% of UK, US and Canadian firms' assets were internationally invested prior to this date. Since 1980, foreign investment has grown sharply in the UK and Japan. In both countries, foreign exposure is now 10-15%. In contrast, life firms in the US and Canada have not expanded their external assets and companies from France and Germany have tended to invest little abroad. It is important to probe the reasons for these differences in order to assess prospects for international investment.

Table 8: Percentage of foreign assets in life insurance companies' total assets

	UK	US	Germany	Japan	Canada	France
1980	4.3	4.0	0.6	2.7	3.3	-
1985	12.5	3.5	0.7	9.3	2.1	-
1986	11.9	3.2	0.7	11.7	2.7	-
1987	9.1	3.4	0.6	13.7	2.1	2.3
1988	9.5	3.5	0.6	14.2	2.2	2.0

Table 9: Foreign assets of life insurance companies end-1988

	Foreign assets ($bn)	Percent of total assets	Foreign bonds as percent of foreign assets	Foreign equities as percent of foreign assets
UK	34.2	9.5%	18%	82%
US	40.3	3.5%	(90%)*	(10%)*
Germany	1.2	0.6%	83%	17%
Japan	104.0	14.2%	79%	21%
Canada	1.9	2.2%	18%	82%
France	1.9	2.0%	(50%)+	(50%)+

* Division based on market estimates (equities are not separately identified in the data).

\+ Estimated

In both the UK and Japan, exchange controls were abolished at the turn of the decade, after which international investment expanded sharply (see Table 8). At end-1988 UK life companies held 10% of their assets overseas, Japanese 14%; the totals were

equivalent to $35 billion and $104 billion respectively (see Table 9). In the UK, life insurance regulations stipulate that liabilities in any currency that exceeds 5% of the total must be matched at least 80% by assets in the same currency.(21) The general approach to regulation is that firms have to prove to the supervisory authorities at regular intervals that they meet statutory solvency requirements. In addition there is maximum disclosure of information to ensure solvency can always be easily assessed, together with a fund based on compulsory levies to cover insolvency of firms. In Japan, the permissible proportion of the portfolio invested offshore has been progressively liberalised, reaching 30% in 1987. Hence the constraint is not currently binding for the average fund.

There are contrasts in the types of foreign assets held by UK and Japanese firms. As they do domestically, UK firms tend to invest mainly in equities in a wide variety of national markets, while the Japanese have tended to concentrate on bonds, notably from the US, despite severe losses due to exchange rate changes. At the end of 1988, UK firms held 8% of their portfolios in overseas equities and 2% bonds. For Japanese firms the corresponding figures were 3% and 11%.

These differences may partly be traced to differences in liabilities. UK life insurers offer mainly "profit sharing" savings products(22) in a liberal market where maximisation of total returns is crucial. In Japan, returns are generally regulated (albeit often at a level above the prevailing domestic bond yield), there are few with-profits policies and until 1989 returns to policy holders could only be paid out of dividends and interest rather than capital gains, thus encouraging investment in high yielding foreign currency bonds. Since other forms of saving have also been regulated there has been little pressure to change this pattern. However, historical experience of losses on dollar

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(21) Since most liabilities are in sterling, this means that up to 80% of assets must also be in sterling.

(22) ie, policies where the total amount insured rises over time at a rate dependent on the profitability of the assets of the insurance company. As discussed in section 2, these effectively transfer some risk from the company to the policyholder, and reduce risks to solvency from market fluctuations.

bonds and the recent removal of controls on competing bank interest rates, as well as new accounting rules allowing distribution of capital gains, may change this situation towards more investment in equities. The concentration of Japanese investment in the US has traditionally been explained in terms of the size of the market in relation to inflows - no other market has the liquidity to withstand the weight of money from Japan (without prices soaring)[23] - as well as lack of knowledge of other markets. Again, there is some evidence that attitudes of life insurers to this question are now changing.

In the other countries, life insurers are constrained by regulations from holding sizeable proportions of foreign assets, ie firms are not free to expand foreign asset holdings even if they wish to do so. For example, in the US legal controls on portfolios enforced by state laws limit overseas investments to 3% of life insurance portfolios[24] (as well as limiting equity to 20% of portfolios, preventing use of futures and prohibiting investment in low rated bonds). However, pension funds in separate accounts are exempt from these controls, which explains why the share of foreign assets in US life insurers' portfolios is estimated to be 3.5% ($40.3 billion). Similar restrictions apply in Canada, where at end-1988 only 2.2% of assets (equivalent to $1.9 billion) were foreign.

In Germany the Law on Insurance Supervision specifies that assets held to meet contractual insurance liabilities[25] (more than 90% of the total) must be one of 12 specified types, and foreign assets are excluded from the list (in addition, no more than 20% of assets may be in equity and 5% in commercial property). Technically, 100%

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(23) Such an explanation assumes that all funds behave in a similar manner - which does in fact appear to have been the case.

(24) This was recently increased to 6% in New York.

(25) Contractual liabilities include reserves to cover obligations under outstanding life insurance policies and reserves for profits allocated to policyholders in the current year.

matching of domestic currency life insurance liabilities with domestic assets is required. Foreign assets may also not exceed 5% of other assets (ie those reserves allocated for future bonuses). Partly as a consequence of these regulations, the share of foreign assets in German portfolios is low ($1.4 billion or 0.6% of the asset stock). In France, 100% matching of life insurance liabilities to assets is required, as in Germany, also 34% must be in public bonds. It is important to note that all these regulations are prudential in intention rather than being exchange controls[26] (none of these countries have exchange controls).

Several other European countries have restrictions on life insurance assets similar to Germany and France. In Italy foreign currency assets are limited to the size of foreign currency liabilities. These portfolio restrictions may imply little scope for cross border investment even when exchange controls are abolished. The Netherlands, by contrast, has a liberal regime: there are no restrictions on asset holdings or solvency requirements, though account must be made regularly of firms' asset/liability positions. In the Netherlands, 5% of life insurers' assets are foreign, but in their public bond portfolios 38% are foreign currency.

The arguments against portfolio restrictions are implicit in the discussion of modern portfolio theory given above (Section 3) - that foreign assets in a properly diversified portfolio may increase return for a given risk. Of course, the risk to solvency of insurance companies from variability of returns is less, the greater the degree of profit sharing in total liabilities. It can be argued that the success of UK life insurers and the decline of life insurance in the US and Canada (see Chart 1) is at least partial evidence that foreign asset restrictions (and other portfolio restrictions) can render the sector

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(26) Under EC rules any controls other than those on prudential grounds are forbidden. Moreover, even some of these may be contrary to the "framework" insurance directives, which will introduce uniform rules on investment, valuation, diversification of assets, currency matching etc (and which will probably be at the liberal end of the spectrum).

uncompetitive in a competitive[27] financial system.[28] Such a competitiveness argument does not account for the success of the German and French life insurance sectors (see Chart 1 and Table 3). This may partly be related to fiscal advantages, low returns on other types of saving, and the conservatism of savers. Moreover, due to entry barriers to foreign firms, the success of the sector has largely benefited domestic firms (the regulatory regime effectively protections the domestic industry). However, 1992 and the single market (when the Life Insurance Directive, ensuring cross-border competition, is passed) may threaten the success of German (and French) domestic firms unless portfolio restrictions are eased. This will be particularly the case as EC firms will be able to operate under "home" country regulation thus allowing foreign firms to compete under less stringent regulation (though the framework insurance directive noted above will in any case ease regulation throughout the EC). It will also depend on the more successful EC firms not being taken over by bid-proof but less competitive rivals from more regulated national markets, and their implicit threat neutered.

It is open to debate whether US, Canadian, French and German life insurers would immediately invest heavily offshore if unconstrained by portfolio restrictions. In North America, returns offered by life insurers to policy holders are quoted in monetary rather than "real" terms (ie a fixed sum is promised rather than, as in the UK, a more general understanding being reached that returns will be maximised). This may partly be a reaction to the regulations themselves, which prevent firms from investing large

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(27) ie, where other institutions such as pension funds or mutual funds are more lightly regulated.

(28) Further evidence for this hypothesis was provided in Price Waterhouse (1988), which gave the following estimates for the potential falls in life insurance prices as a result of completing the EC internal market; Belgium 78%; Germany 5%; Spain 37%; France 33%; Italy 83%; Luxembourg 66%; Netherlands -9%; UK -30%. The countries with the weakest controls on foreign investment (UK and the Netherlands) are those with the lowest prices of life insurance. This may of course be correlated with other aspects of financial regulation (eg entry barriers to foreign competition).

proportions of their life insurance reserves in assets such as equities offering real returns. However, product regulations in the US do not prevent the sale of "with profits" policies. The launch of unit linked policies (linked to equity mutual funds) in the early 1980s was unsuccessful, suggesting consumer resistance. Moreover, it is notable that US pension funds, which are relatively unconstrained in their portfolio distributions, have invested a small proportion of their assets outside the US. (US institutions have historically had a tendency to regard the domestic market as sufficient for their investment needs.)

In Germany, regulation ensures that premiums paid are typically similar between companies, while profitability is regulated and product design is restricted [see Hammond and Kay (1985)]. When the new EC directives enforce liberalisation, even if products remain the same, the incentives to invest overseas might be low but nonetheless positive (higher returns would attract new investors). But it is more likely that - if permitted by parallel removal of controls on products - the nature of the product would change in the absence of asset regulation, thus encouraging far more investment offshore by life insurers. For example "investment linked" policies tied to foreign asset portfolios might develop.(29)

These pressures, as well as the already-enormous cross border investment by UK and Japanese firms and the demographic and other factors stimulating growth of long term saving mean prospects for international investment by life insurers are buoyant. In the next section we make a parallel assessment for pension funds.

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(29) Bishop (1989) has argued strongly that German portfolio restrictions are a hidden form of exchange control and should be abolished under the 1992 programme, as now indeed seems likely under the framework insurance directive. Bishop suggests that were deregulation to occur, up to 10% of German life insurers assets might be held internationally. There are similar pressures in the US and Canada, especially given the declining share of life insurance products in personal sector portfolios (see Chart 1).

5 Experience of international investment - pension funds

There are both similarities and contrasts with life insurers' approach to international markets, which may in turn be related to factors such as the nature of liabilities and differences in regulation. UK pension funds' external assets were already sizeable in 1980, having reacted more strongly than life insurers to abolition of exchange controls the previous year as well as already holding sizeable quantities of foreign assets financed by back-to-back loans. The only other significant holder was the Canadian sector. Since 1980 UK holdings have increased sharply as a proportion of funds' portfolios, while US and Japanese holdings have also grown. In contrast, the Canadian sector has expanded its holdings to a relatively minor extent, and German and French holdings remained minimal over the decade.

Table 10: Percentage of foreign assets in pension funds' total assets

	UK	US	Germany	Japan	Canada	France*
1980	8.2	0.7	0.4	0.5	4.1	5.0
1985	14.7	2.2	0.8	5.4	5.2	5.3
1986	16.8	3.2	0.7	7.5	5.3	5.8
1987	13.3	3.4	0.7	7.9	5.2	4.2
1988	13.9	3.8	0.4	7.0	5.3	4.0

* Percent of securities holdings only
\+ Estimated

Table 11: Foreign assets of pension funds end-1988

	Foreign assets ($bn)	Percent of total assets	Foreign bonds as percent of foreign assets	Foreign equities as percent of foreign assets
UK	53.8	13.9%	6%	94%
US	62.8	4.0%	14%	86%
Germany	0.2	0.4%	93%	7%
Japan	65.2	7.1%	(50%)+	(50%)+
Canada	6.9	5.3%	7%	93%
France	1.2	4.0%*	15%	85%

* Percent of securities holdings only
\+ Estimated

The outturns for 1988 are shown in Table 10. For the UK, US and Canadian sectors, holdings now comfortably exceed those of their counterpart life insurers, both because

the sectors are larger (Table 3) and because portfolio shares are higher. The opposite is true in Japan, although total external assets still amount to a sizeable $65.2 billion equivalent. But perhaps the most interesting contrasts came in the composition of external holdings. Foreign equity holdings are larger than bonds for the UK, US, Canada and France and equivalent for Japan. Only in Germany is a very cautious strategy evident. While for the UK and Canada the contrast with life insurers is a question of degree (life insurers also specialise in external equities, as shown in Table 11), the US, France and Japan show considerable differences with life companies.

These differences in share and composition may partly be related to differences in liabilities. The duration of a defined-benefit pension fund's liabilities is typically extremely long. This is reflected in use of long duration assets such as equities in both the domestic and external portfolios in the Anglo Saxon countries (and to some extent in Japan). Liabilities defined in terms of future earnings require assets that keep up with inflation and economic growth, such as domestic and foreign equities. And defined-contribution funds also have an incentive to invest in equities to maximise returns.

But also there are contrasts in regulation. US pension funds are subject to a "prudent man rule" which requires the managers to carry out sensible portfolio diversification; there are no limits on portfolio distribution. UK pension funds are subject to trust law and again follow the "prudent man" concept; they are not constrained by regulation in their portfolio holdings. (Although in both countries trustees may impose limits on portfolio distribution.) Japanese funds face non-binding ceilings on holdings (currently 30%) similar to those of life insurers. In contrast Canadian funds have till recently faced limits on the share of external assets (but not their composition) as tax regulations limited foreign investment to 10% of the portfolio, and 7% for real estate. A tax of 1% of excess foreign holdings was imposed for every month the limit is exceeded. In 1990 it was announced that the limit would be raised to 20% over 1990-95. Meanwhile German funds remain subject to the same panoply of regulation as those for life insurers as outlined above. Given the nature of the liabilities, such restrictions are even less justified for pension funds than for life insurers. In France certain pension funds are

constrained by fiscal regulation to invest solely in domestic assets - implying even tighter control than in Germany.

Even within these parameters, there remain further contrasts between sectors that warrant discussion. Despite freedom to invest externally, US pension funds' external asset holdings are a far smaller proportion of the portfolio than in the UK and Japan. As noted, it may be that they consider the domestic market to be sufficient for their needs, although the growth in share of external assets suggests this view is changing. (Tables 5 and 6 certainly suggest that such a shift would be justified). As shown in Table 7, exposure of the economy to external shocks is relatively low. The lower portfolio share of Japanese pension funds (run by trust banks) than life insurers may partly relate to the less aggressive approach to diversification of the former, though also a greater focus on real long term gains may have justified (ex post) a concentration of trusts on the domestic equity market.

Since in most countries pension funds are less restricted than life insurers in their international investment, prospects for growth in international investment via portfolio reallocation are less buoyant. Nevertheless, shares generally remain below exposure to shocks of the domestic economy (Table 7) and portfolios continue to grow strongly (Table 4). Moreover, the heavy constraints on European funds (as well as success of ERM in stabilising exchange rates) may entail sizeable potential for cross border investment following deregulation there.

6 Implications of international investment

It has been suggested that international investment may be attractive to institutional investors as a means to reduce risk for given return. Indeed, it can be suggested in some cases that returns gained by international investment may be an important component of an investing sector's success - as in UK life insurance compared to the US and Canada. It may also have macroeconomic and microeconomic implications for the wider economy.

In a macroeconomic context, international investment may be an important conduit for saving to flow to countries with demand for capital in excess of domestic saving (and hence balance of payments deficits). As shown in Table 12, the magnitude of gross flows is certainly sufficient to finance payments deficits, even if focus is only put on equities. The following discussion analyses the differing arguments for several country groups; countries in the third world, middle income countries, the EMS and the G3.

Table 12: Equity flows[1] and current account deficits ($bn)

	1987	1988	1989
Net equity flows	4.0	21.1	92.3
Gross equity flows	1344.0	1212.6	1598.1
Ownership of foreign equities	520.4	625.0	830.0
World current account deficit	186.7	177.8	194.3

Source: Salomon Brothers

1 Includes merger and acquisition activity as well as institutional investment.

The countries most in need of such inflows are those in the process of economic development - which in a free market economy (as opposed to planning and autarky) may require a long period of trade deficits and capital inflows, as in the US in the 19th Century. The marginal product of capital - and hence investment returns - should be highest in such countries. Again in principle, unlike banks, life insurers and pension funds are particularly suitable vehicles for such inflows, as they are potential long-term holders who will not be forced to suddenly withdraw their assets due to short term demands for funds.

Two cases can be distinguished. On the one hand, due to such factors as the debt crisis, exchange controls, illiquidity, or even limits on inward investment, institutions have not tended to invest in third world countries. Significant structural changes in the global conjuncture and/or some form of official guarantee would seem to be required if this situation is ever to change. The argument regarding development also holds, however, for middle income countries such as Korea, Turkey, Greece and Spain, for whom restrictions and transfer risk are lower and who are thus recipients of institutions' funds. Indeed Franklin et al (1989) suggest that a prolonged period of capital flows from Germany (with its ageing population) to low-wage countries in the EC like Spain and Greece will be a feature of the next decades. Moreover, the number of "emerging markets" in which institutional funds are invested continues to increase, ie the margin between acceptable and unacceptable risks is flexible.

More generally, the potential effects of imbalances between advanced countries may be ameliorated by capital flows. It can be argued [Bishop (1989)] that pressures for realignments within the ERM may be greater to the extent that limits on foreign investment remain. His argument is as follows; it is generally accepted that cross border regional policy and other structural trade adjustments will be necessary in developing the internal market. If the resulting imbalances are financed by long term institutions they may act as stabilising speculators, who can balance out long term gains from higher relative interest rates in countries with deficits against the risks of realignment (a counterargument is presented below). In contrast, a bank or corporate treasurer with a short time horizon may act as a destabilising speculator, shifting funds instantly in response to exchange rate risk, given the much lower potential interest return than for the life insurer or pension fund both due to the short holding period and the shorter term assets held.

Finally, institutional investors (notably in Japan) have played a key part in financing trade imbalances between the G-3 countries over the 1980s. Although this can prevent potentially undesirable instability in exchange rates, it does not remove the obligation of countries to adjust their macroeconomic (and microeconomic) policies (to the extent that they are responsible for trade imbalances by, for example, depressing national saving relative to investment).

Table 13: Asset Shares of Pension Funds End-1989

	US Funds	UK Funds	Japanese Funds[1]
US	-	31.0	66.0
UK	12.1	-	9.4
Japan	34.7	25.0	-
Continental Europe	39.0	35.0	12.5
Other	14.2	9.0	12.5

1 All financial institutions; holdings exclude Japanese euro-warrants.

Source: Salomon Bros

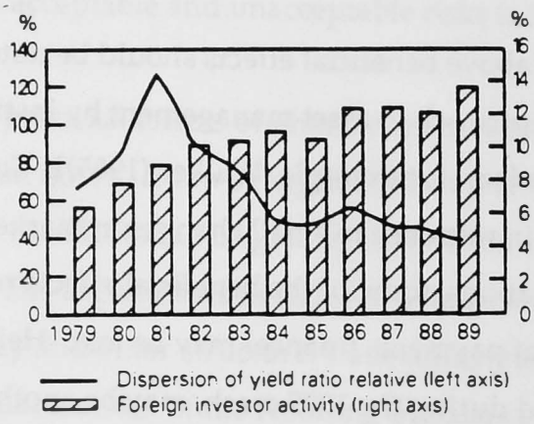
To illustrate these arguments, Table 13 shows the distribution of equity holdings by UK, US and Japanese institutions. Concentration on the major markets is apparent.

One counterargument to the above beneficial effects should be noted, which arises from the increasingly short-term approach to asset management by institutions often noted in the Anglo-Saxon countries [see, for example, Walker (1985)]. To the extent that institutions shift their assets in response to small changes in market conditions and associated short-term expectations, some of the beneficial effects relating to stabilisation of asset prices (and balance of payments finance) may be lost. Heightened contagion between markets, as revealed during the 1987 crash, may be another undesirable side effect of such short termism. In each case increased market liquidity and use of derivative instruments such as stock index futures and covered warrants as well as country funds can facilitate sudden wholesale shifts of funds between markets (by considerably reducing costs, eliminating settlement problems etc). It is notable that for many of the major investors, turnover of stocks is well over 100% per year - "long term" flows may be a misnoner (see Table 15).

As well as helping finance development directly, the arbitrage process inherent in international securities investment should enhance the efficiency of capital markets, by equalising total returns (and hence the cost of capital) between markets. Such a process occurs as investment managers shift between over - and undervalued markets (where such judgements are subject to local accounting and interest rate differences). Increased

efficiency enables capital to flow to its most productive use and for savers to maximise their returns. There is some evidence that international investment has tended to reduce the dispersion of returns (proxied in Chart 3 by the yield ratio) although a longer run of data and more disparate economic performance between countries would be needed to prove it.

Chart 3: Dispersion of yield ratio and foreign investor activity



Asset market effects are not confined to the transnational level. International investment may also help to relieve excessive pressure on domestic asset prices. In the mid-1980s the Japanese equity market might have been even more buoyant - perhaps dangerously so - if institutions could not invest offshore while repatriation may have limited more recent declines. In the UK, the 1981 appreciation of sterling, which damaged the domestic economy, might have gone much further in the absence of capital outflows from UK institutions. The Swiss life insurance sector has been accused of distorting the housing market, as a result of which constraints on foreign and securities investment have been relaxed.

Willingness to allow international investment may also help free trade - countries may be more willing to accept the deficits that may accompany free trade if they know finance is likely to be available. Finally, one can argue domestically that it may be distributionally undesirable not to permit institutional investors, who cater for the poor and middle income, to maximise returns if the rich can invest directly offshore (ie there are no exchange controls). One could note the attractiveness of high-yielding Australian dollar bonds to continental European retail investors in this context.

7 International portfolio management - theory and practice

This final section seeks to illuminate the above discussion of theory and aggregate data by an assessment of how fund management by life insurers and pension funds is actually performed. A series of (8) interviews were conducted with fund managers based in London, to clarify the use made of these techniques in practice as well as to provide details on attitudes of fund managers to some of the theoretical and empirical questions broached in the rest of the paper. As noted above, UK institutions are both large in relation to the economy and the rest of the financial system and also extremely active international investors, facing relatively light regulation. As such, their behaviour may be indicative of future conduct in more regulated markets. UK institutions are estimated to have held 25% of foreign-held equities in 1989, or 2% of global capitalisation. Those interviewed - who shall obviously remain anonymous - control an estimated £110 billion in assets. As background, Tables 14, 15, 16 and 17 summarise the recent performance of UK institutions, in terms of returns, activity, asset mix and flows. Returns have typically been below the relevant indices (Table 14) and the shortfall is much greater than in the UK domestic market; activity and turnover have increased steadily (Table 15); funds have been underweight in Japan and overweight in Europe (Table 16); and flows are very volatile (Table 17). The questionnaire is appended.

Table 14: Long Term Returns 1981/89

		1981	1982	1983	1984	1985	1986	1987	1988	1989
USA	- WM	15.2	13.7	30.9	21.9	2.8	12.2	-20.1	17.1	45.7
	- FT-A USA*	19.4	43.8	36.5	33.0	5.6	15.7	-17.0	21.2	46.5
	- Relative Return	-3.5	-4.2	-4.1	-8.3	-2.7	-3.0	-3.7	-3.4	-0.5
Japan	- WM	48.1	24.8	54.1	23.1	6.3	82.8	-0.8	28.8	22.2
	- FT-A JAPAN*	36.5	16.7	41.0	45.6	16.4	84.9	14.8	41.4	16.0
	- Relative Return	8.5	6.9	9.3	-15.4	-8.7	-1.1	-13.6	-8.9	5.3
Cont Europe	- WM	4.0	30.1	43.0	17.6	53.5	44.9	-31.4	24.3	51.6
	- FT-A EUROPE (Ex UK)**	11.6	23.1	41.9	24.2	60.9	51.0	-29.3	24.8	49.0
	- Relative Return	-6.8	5.7	0.8	-5.3	-4.6	-4.0	-3.0	-0.4	1.7
WM Overseas		16.3	27.3	40.5	21.1	10.8	37.2	-18.5	23.4	40.3
World Index (Ex UK)**		20.9	32.0	37.9	32.3	12.9	40.8	-9.3	31.0	31.5
Relative Return		-3.8	-3.6	1.9	-8.5	-1.9	-2.6	-10.1	-5.8	6.7
Memo: Relative Return on UK Equities		0.5	1.2	-0.5	-1.6	-0.5	-1.2	-0.8	-1.0	-0.1

* Local indices up to 1987, FT-AW series indices from 1988.
** MSCI up to 1987

Source: WM

Table 15: Activity and Turnover For UK Pension Funds (percent)

	1982		1983		1984		1985		1986		1987		1988		1989	
	Act	Turn	Act	Turn	Act	Tur	Act	Turn	Act	Turn	Act	Turn	Act	Turn	Act	Turn
USA	59	85	88	71	81	88	77	91	77	88	122	123	93	98	137	146
Japan	53	81	111	131	85	98	99	106	164	204	160	191	137	153	149	165
Cont-inental Europe	40	56	88	93	78	91	72	130	83	117	100	107	92	119	103	147

Source: WM

Activity is the element of turnover in excess of net investment of new money. Both activity and turnover are expressed as percentages of average capital employed by funds in the sample.

Table 16: Asset Mix For UK Pension Funds - End Year (%)

		1981	1982	1983	1984	1985	1986	1987	1988	1989
USA	- WM	56	57	51	51	48	38	38	33	30
	- World Index (Ex UK)*	55	61	59	58	53	42	36	33	34
Japan	- WM	23	23	28	26	25	26	25	30	24
	- World Index (Ex UK)*	21	19	19	22	24	34	43	49	45
Cont-inental Europe	- WM	7	9	9	9	17	25	25	26	35
	- World Index (Ex UK)*	12	11	11	11	16	18	14	12	15
WM Overseas % of Total Assets		12	14	17	16	17	20	14	16	21

* MSCI up to 1987, FTAW Index from 1988

Source: WM

Table 17: Net Overseas Investment (£ millions)

	1982	1983	1984	1985	1986	1987	1988	1989
USA	657	227	-144	794	1206	131	-446	983
Japan	271	568	-158	246	-1318	-2904	907	1421
Continental Europe	72	-9	55	775	1437	814	1316	4187
Total	1000	786	-247	1815	1325	-1959	1777	6591
Other Markets	94	161	-96	75	254	987	16	1208
TOTAL OVERSEAS	1094	947	-343	1890	1579	-972	1793	7799

Source: WM

The section is structured as follows. As background in section (a) we outline the various methods of portfolio allocation between national markets. Section (b) outlines the responses to the interviews, first in summary and then in more detail. Section (c) assesses some of the main implications of the responses.

(a) Approaches to international portfolio allocation - theory

As noted in Section 3, portfolio management is typically a two-stage process, with a strategic decision regarding allocation to different assets and national markets being followed by a lower-level decision over the precise assets to be held within these broad categories (and where the latter decision may include passive indexation of the market). Here we focus on the choice of national markets as a strategic decision, holding the asset share constant. The currency element is also ignored. The discussion relates largely to equities, although similar choices are required for bond portfolios. Given its illiquidity, property presents a rather different set of issues (and has proved unpopular with institutions in recent years). Four approaches to international portfolio allocation can be distinguished.

(i) Discretionary allocation

The fund manager allocates his portfolio between national markets on a discretionary basis, although in making such a choice he is likely to take into account factors such as economic forecasts, recent behaviour of equity markets and the behaviour of other fund managers. The precise nature of these influences is clarified in the interview section (b). In theory a "contrarian" approach to markets is likely to maximise returns (ie selling when others are buying or when markets have fallen). In practice powerful forces tend to lead to "herding" of managers to the same market or "positive feedback trading".(30)

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(30) Cutler, Poterba and Summers (1989).

(ii) Tactical asset allocation

This approach selects national markets according to the current levels of key benchmark ratios of asset returns relative to their long run equilibrium level. For example, in the case of equities the market would look attractive when the reverse yield gap of bond yields less earnings or dividends yields is low relative to past experience. Once this position is reversed, disinvestment occurs (or alternatively a switch into bonds in the same national market). Such an approach has the merit of simplicity, and tests reveal that such rules of thumb may significantly boost portfolio returns [Davies and Wadwhani (1988)]. In effect, it enforces a contrarian approach on fund managers, so that they buy when others have sold and the market appears unattractive.

(iii) International indexation

Instead of shifting between markets, an alternative approach is to divide the portfolio between national markets according to their weight in a global index such as Morgan Stanley International. The theoretical basis of such an approach is the efficient markets hypothesis, that all available information is already in the market price of an asset, so any active management will on average make no profit and incur transaction costs. 17% of US pension funds' international assets were under passive management of this type in 1990.

(iv) International portfolio optimisation

A number of institutions utilise portfolio models which seek to distribute assets across different national markets in order to optimise the trade off between return and risk. Inputs for such models are typically historical levels of risk, return and correlations between markets as shown in Table 5. The model then derives the (multi-dimensional) tradeoff between the characteristics of the various national markets (the efficient portfolio frontier) on which an appropriate point can be chosen, depending on the institution's approach to risk and return (as well as other factors such as the desired duration of the fund's liabilities).

(v) Implications of the approaches

If followed as a sole guide to portfolio management, the approaches outlined above may lead to very different distributions as well as responses by the fund manager to changing market and economic developments. For example, a sharp rise in asset values in one national market would lead a contrarian fund manager, or one following tactical asset allocation, to sell and transfer funds to lower-valued markets or assets. In contrast, an index fund would slightly increase its holdings in that country, in response to the increase in weight in the global index. Given such an increase has relatively little effect on long-run portfolio optimisation there would be little effect. Finally, a fund manager subject to "positive feedback trading" would sharply increase his weighting. The interviews reported in (b) cast light, inter alia, on these predictions.

(b) Portfolio allocation in practice

The responses can be summarised as follows:

- The main motive for international investment is risk reduction.

- Discretion is the main strategy adopted in asset allocation.

- Fund managers believe markets to be efficient (and returns to be equalised) in the long term but not the short term. However, some of their behaviour (unwillingness to use global indexation even as a benchmark) appears to contradict this.

- Managers are unwilling to follow through the implications of historic returns, risks and covariances, as this would lead to a very low weighting for UK shares. This is partly due to fear of currency mismatching (although with efficient global markets this should not be a cause for concern).

- The decision process is a hierarchical one, beginning with bonds vs equities, then domestic vs international, then choice of blocs (N. American, Europe, Japan) then choice of country, then choice of stock. At each level a strategic benchmark is set from which allocations can diverge in the short term for tactical reasons.

- Competitors' strategies have a powerful influence, given pressure from trustees not to underperform the median fund. This can have effects at each stage of the decision progress.

- Exposure to ldc securities markets is minimal, and expected to remain so. The vast majority of funds remained in the three "blocs".

- Derivatives are seen as increasingly useful means of reducing transactions costs in asset allocation as well as for hedging.

- Implications of 1992 had already been taken on board in an increased weighting to Europe. ERM and prospects for EMU had few additional effects as yet.

A more detailed description of the responses follows.

(i) Benefits of international diversification

All of the interviewees suggested that diversification to reduce risk for a given return was the main benefit of international investment, because of imperfect correlation between indices. A related argument (for equities) is that the main risk for domestic equities (relative to wages on which pensions are based) is decline in the profit share. This could be hedged by international investment, as profit shares do not move together. Some noted the importance of certain sectors which are only available in foreign markets. Others also pointed out that UK firms are themselves highly dependent on foreign markets as well as themselves carrying out foreign direct investment and therefore some international diversification is obtained by investing in the UK stock exchange.

Hardly any suggested that there were benefits in terms of higher returns to be reaped by international investment. This implies that global markets are generally felt to be efficient, with risk adjusted returns expected to be equalised at least in the long run (although they did not deny the possibility of short run misalignments which offer benefits to tactical switching, nor the historic benefit reaped from the long term depreciation of sterling).

This expected efficiency is a contrast with earlier periods when markets were more segmented (as is reflected in Table 5) and probably reflects the activities of international investors themselves in equalising returns over the 1980s. Indeed, when asked directly whether markets are efficient, or whether there are still anomalies, most confirmed a view that efficiency is increasing. Anomalies in Japan were noted by some - which may reflect asset values and the domination of home investors. Accounting differences can also cause anomalies. Some highlighted possible short run divergences in returns which may result from the activities of international managers themselves. Markets may come rapidly in and out of favour, or there may be a panic. Markets are often driven up by "herding" behaviour of international funds, while domestic fund managers may compound the process. Weight of money can easily cause markets to move independently of the arrival of new information.

One manager distinguished investment risk and business risk. The former is addressed by risk reduction as discussed above. The latter is more a problem of producing the required competitive returns. Funds need to invest in foreign markets if others do so, to keep the business (for pension funds) or to remain competitive in terms of bonuses (for life insurance).

Finally, it was acknowledged that anomalies could persist in emerging markets, that could make investment worthwhile despite the problems (discussed below).

(ii) How is the share of foreign assets chosen?

Most of the managers made a distinction between the strategic and tactical decisions (as outlined in Section 3 above). There would be a basic "benchmark" level of international assets, from which the actual allocation could diverge to take advantage of short term market opportunities. Here we focus largely on the choice of benchmark.

The selection process could include assessments based on portfolio optimisation models (though in practice their suggestions - of up to 100% foreign assets - are rarely followed, partly due to the influence of liabilities). A variant of optimisation was to carry out stochastic modelling, testing out the implications of investment rules probabilistically. The covariances and returns would be based on historical data except where there seemed good reason to adjust them (eg UK gilts might be expected to yield more than they had in the past). Again, some managers would assess appropriate exposure by reference to estimates of diversification benefits in terms of risk reduction based on historic correlations of markets (which accrue fairly rapidly).

In choosing the benchmark some of the managers noted the Salomon's research (quoted in Section 3) which suggests an optimal level of international assets should be chosen according to the exposure of the economy to international shocks (though the precise indicator chosen was the share of imports in the consumption basket that pensioners will buy).

A third, and potentially linked approach is to choose the asset mix on the basis of the liabilities. As noted, for life insurers in the UK there is in any case a limit to mismatching of 20% - although none of the life managers interviewed found this a binding constraint. Pension funds are not so restrained, but most still retain an awareness of the dangers of mismatch, as the size of "final salary" depends on UK growth and inflation and purchasing power parity may not hold except in the very long run. Others took an opposing view, suggesting that given efficient markets and the growing linkages between the prosperity of different countries, currency mismatching was reasonable so long as the fund held real assets.

A fourth influence was the behaviour of other fund managers. Most of the managers, but particularly those who are managing funds on behalf of other firms, felt some pressure not to underperform relative to their peers, for fear of losing the contract. Indeed some trustees set an explicit objective to managers not to underperform the median fund - obviously impossible for all managers.(31) (In contrast,

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(31) It can be argued that this is a form of market failure, where each set of trustees seeks to ensure a competitive performance, but thereby drives down returns from fund managers as a whole.

overperformance is not rewarded commensurately, ie there is a strong asymmetry in outcomes.) Such behaviour is reinforced by frequent use of benchmarks such as the CAPS median performance indicator (for small funds). Managers who could afford to act more freely, perhaps due to their firm's reputation, still felt a need to know the consensus in order to act in a contrarian manner.

There was an interesting contrast between life and pension funds. The latter felt most closely bound by these constraints (the need to match the median fund) while for life there is felt to be a longer time horizon, because returns paid out are blurred by bonuses and smoothing, and hence a more aggressive stance can be adopted. The constraint for life is to produce returns to policy holders consistent with their expectations; that there should be adequate capital resources generated; and that bonuses should be competitive.

Again, tolerance of trustees was an important factor for some. One manager noted an "education process" that had led trustees by successive steps to tolerate 40% exposure, the desired level of the fund managers all along.

Finally, some noted that factors such as witholding taxes and country risk restrain international diversification, while hedged international assets should be counted as domestic, so actual holdings could differ from those noted. Hedging was not very common, however, as is discussed below.

The outcomes of the choices varied widely. On the one hand life insurers would often hold relatively low percentages - typical figures of 5-10% were quoted. Pension funds quoted figures of well over 20%, with one fund suggesting that it would be desirable to hold 60% on the basis of historic risks, returns and covariances. Again, this relates to the difference in liabilities, with pension fund claims being defined in real terms while life insurers' obligations, even with profit sharing, are basically nominal.

As regards the range within which tactical decisions could be made, these were often extremely wide, 15-35% or 12-30% being among those quoted. The implication of such ranges - and the activity data in Table 15 - is that turnover may be high. Only one manager noted the problems transactions costs - seen as higher in foreign markets - could cause for performance and suggested this could be one reason for the

underperformance of many funds implied by Table 14. But WM (1990) suggest that a purchase and sale in foreign markets costs 1.4%, which though higher than for UK equities (0.9%) is far below the shortfall of performance. Lack of information on foreign markets, or agency problems in subcontracting management of funds in foreign markets could help explain the underperformance.

(iii) How are international markets chosen?

Given the benchmark and tactical range, how do the mangers choose which country to invest in? Again, a form of 'decision tree' could often be discerned, with core holdings in the three major markets of North American, Europe and the Far East, but switches occurring for tactical reasons. Not that the core holdings were static - they could also change for reasons of longer term opportunity (relative growth and decline etc).

Choice of the core holdings would sometimes use measures such as market capitalisation or the GDP index. However, use of indexation on a "world" basis alone was rare - the managers' view was that it would make them put most of their funds into the most expensive market. This is of course counter to the efficient markets hypothesis, that suggests indexing internationally should be as optimal as within a market - and would reduce 'herding'. It may be that managers are unwilling to index mainly for fear of losses in the transition (see Table 16).

In a related comment, one manager noted the phenomenon of "base drift" in benchmarks. Although in theory firms should rebalance regularly to their previous benchmark, in practice there tends to be a shift to the market which is appreciating. All the funds stay in the new position because competitors are there, and it becomes the new norm. Again, life funds may be less susceptible to such drift as there is less information on where the competitors are.

Indexation might be used in some individual markets where the managers lack expertise - often in the form of an investment trust.

Again, though portfolio optimisers (basing suggested exposures on historic risks, returns and covariances) might be used, they would be for background information rather than determining the ultimate decision. A further factor of importance is the exposure of companies in a given market to other economies (although this should be reflected in historical covariances). Again, choices of other managers have a major influence. Liabilities could also enter the picture given prospects for EMU (as discussed below, this increases the attraction of European markets) - although most managers said liabilities' influence did not extend to country allocation. Liquidity (in particular ability to sell quickly in a crisis) was often felt of overarching importance. Liquidity of course facilitates 'herding' and short termism. In making core or strategic decisions several funds used teams of outside advisers as well as their own expertise.

In choosing core holdings managers would often think in terms of blocs rather than individual countries, particularly in the case of Europe. This way of thinking is aided by the development of benchmark indices such as the MS Europe less UK world index or the new Eurotrack index (in North America and the Far East the benchmark would more typically be the US or Japanese indices). Growing international integration of economies was also felt to make the concept of blocs a useful one. For example, one manager said he would select a European portfolio by concentrating only on areas of national comparative advantage, hence German manufacturing, French commerce etc. Others noted the importance of durably fixed exchange rates. Use of blocs was also driven by the institutional structure of fund management, which would often have teams of managers for each bloc, to which the senior managers could delegate choice of national markets.

As for tactical decisions, these would typically be guided by discretion rather than any more mechanistic approaches, although it would be informed by considerations such as yields on bonds and equities both relative to historical averages and to the ratio in other markets, as well as macroeconomic forecasts of currency movements and local returns. Some groups had a more formal structure to guide the tactical decisions of choice of national market and individual stocks, whereby "fair values" would be chosen according to a range of criteria (projections, history, and for individual firms quality of

management). One firm used an equity market valuation model which would use estimates of influences on investor expectations to test the impact of various scenarios on the market. The firm would then apply probabilities to the scenarios, giving a range of expected return on each asset and probability of outperforming the benchmark. Such a technique could also aid search for outlying markets (over or undervalued) under a broad range of possible outcomes and enable the fund to consider switches on this basis.

The domestic interest rate for each country was used by some managers to deflate returns in their tactical choice. This would mean that Australian equities would need to be expected to perform for better than Japanese (for example) to be attractive. This approach implicitly assesses the market in local currency terms, separate from the currency decision.

The current outcome of this choice of market (December 1990/January 1991) was typically in the region of 50% Europe, 25% North American and 25% Japan. All of the managers were very much focussed on Europe, illustrating the way in which funds tend to move together (for the various reasons outlined above). The main argument for such a shift was growth prospects relative to the other blocs (1992, German reunification etc), although other factors such as a need to find a home for funds shifted out of UK gilts and the diminishing currency risks with the UK movement into ERM were also mentioned. Some noted the heightened volatility in European markets arising from the dominance of foreign investors as grounds for caution. But other markets were viewed even more unfavourably. Many saw Japan as still overvalued despite the sharp fall in equity prices in 1990.

(iv) Portfolio Distribution: Equities vs Bonds

Where does the choice of instruments (bonds vs equities or property) come in relation to the international diversification decision? Do funds choose the former first or the latter? For most funds, it seemed that the strategic bond/equity choice comes first before the currency choice, though some choose them simultaneously. But bonds were in any case seen as a fairly marginal asset, especially by pension funds (life insurers were more interested in bonds, to match liabilities, although as noted above, UK life insurers' focus on equities is much greater than most life insurance sectors). This

reflects the real/capital uncertain nature of pension fund liabilities requiring assets of very long duration for which equities are ideally suited. Bonds were often seen as a source of liquidity, a substitute for cash or an instrument to be selected only when expected changes in interest rates are propitious. They were suitable as a core holding mainly for "defined payment" pension funds, which are more common in the US, and where a given nominal sum is promised.

If funds did choose to hold bonds, they would typically be UK rather than overseas. Some justified this in terms of the cost of resources in employing an international bond specialist relative to the potential gains. Others were prepared to hold foreign bonds in the right market conditions, but would have a benchmark holding of zero. Only one fund claimed an active preference for foreign bonds, being willing to hold up to 5%. Foreign bond holdings would be hedged much more often than equities (on the basis of inability to forecast short term currency movements), thus making them effectively behave as domestic assets.

(v) Emerging Markets

The willingness of institutions to invest in emerging markets gives an indicator of the potential for international securities investment to help the development process. In general, funds were wary of ldc markets, rarely being willing to commit more than 1% of their portfolios. Such sums were seen as a gamble, accepting the risk that money might not be easily retrievable.

Markets which were mentioned were SouthEast Asia (most often) while some funds counted peripheral European markets such as Greece, Spain and even Italy in this category. There was some mention of Latin America and India. Eastern Europe was largely seen as irrelevant to institutions, though its development might help the profits of some West European firms, and some funds were now being set up for Hungary and Poland. To generalise, countries (and hence their securities markets) seem to need a fairly high existing level of development to be seen as attractive.

The reasons for unwillingness to enter emerging markets always included illiquidity - it is difficult to withdraw or indeed to put much money in. Second, settlement problems were often severe. Political instability would be an obvious disincentive, as would any lack of clarity in respect of property rights (would firms suddenly be nationalised without compensation? Will the tax regime change? Will capital controls be imposed?) It was seen as expensive and time-consuming to add the expertise needed to have internal management of an emerging markets portfolio. This was particularly so given the small sums invested ("the main gains are made in the major markets"). Meanwhile, the alternative vehicle of closed end mutual funds (investment trusts) was seen as costly. However, they are the only way of gaining exposure to certain markets such as Korea. Finally, some expressed doubt that returns on equity would be sufficiently high to compensate for risk even if these problems did not arise.

(vi) Derivatives in International Investment

A few years ago most funds were unable to use options and futures due to restrictions in their trust deeds. Such restrictions have been eased in many cases in recent years, while the tax regime has also made them more attractive (they are counted as investments and not trading instruments and hence are tax free to pension funds). Finally, many managers now see futures and forwards (but not options) as rather cheap - one quoted a price for buying a stock index future as 1% less than the corresponding basket trade.

Of those able to use them, the most active mangers found stock index futures extremely useful for tactical asset allocation. Although they do not replace actual holdings, and it would be costly to roll them over as long run holdings, they enable rapid shifts into markets to occur, which would later be translated into stocks. Also temporary adjustments in exposure could be obtained by purchase and sale of index futures without any transaction in the underlying ('overlay strategies').(32) Such an approach has the advantage of avoiding disturbance of underlying long-term portfolios and facilitating separation of responsibility for stages of the investment process. Such managers also took the view that stock index futures could be a useful place to put

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(32) See Cheetham (1990).

cashflow, as it ensures the manager is always invested and not subject to the risk of missing an upturn. This view has been reflected in the decline in equilibrium cash holdings. The introduction of the Eurotrack (non UK) future was seen as helpful to this approach as it would mean all three blocs would have associated stock index future contracts.

Others suggested that even if they were not used for tactical moves, stock index futures could aid "core" shifts between national markets, limiting the degree of market movement against the fund by taking advantage of higher liquidity and (possibly) basis risk. Alternatively adjustment of stock positions within national markets is facilitated by holding futures in the interim between selling one stock and buying the other.

It should be emphasised that most of those interviewed were less active than this, though it could be the way fund management will develop in the future (and as discussed in Davis (1988) strategies employing derivatives are very common in the US). Awareness of the benefits of stock index futures in terms of gaining rapid entry to a market and avoiding liquidity problems appears to be fairly widespread. Their benefits in hedging specific exposures were also appreciated. However, lack of expertise,(33) or a general preference for stock selection rather than "holding the market" were among the reasons they were not used in practice.

Another use of derivatives is to hedge currency risk (typically by use of forward contracts). As noted above, many of the funds would hedge exposures in foreign bond markets by this means. It was felt relatively pointless to hedge longer term assets such as equities, especially given the cost. Indeed the currency exposure is part of the diversification benefit (as well as being very difficult to forecast). Again, it was felt

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(33) Such a problem is akin to a lump sum investment needed to enter a new activity in any industry. The firm will enter only when the excess profitability is sufficient to cover the sunk cost - but once the cost is sunk the firm will be willing to continue with the activity even if profitability is lower. This is a form of "hysteresis".

positioning of the portfolio in certain companies or industries in a foreign market gave much more control than when investing in bonds, which are closely correlated and sensitive to macroeconomic shifts.

(vii) Settlement Risk

At the time of the bull market preceding the crash, a great deal was heard about settlement problems, especially in markets such as the Italian. In general, these are felt to have receded - partly due to the end of the bill market though settlement was still felt to be more complex in foreign markets. This was felt true in Japan as well as Europe (registration, for example, was seen as time consuming).

(viii) EC Developments

Would developments such as 1992, ERM entry by the UK and the prospect of monetary union make a major difference to investment strategies? Most of the comments focussed on ERM/EMU; as noted, the prospect of 1992 (mergers, economic growth etc) has already provoked something of a shift both out of the UK and from the US/Japan to Continental European markets.

UK accession to the ERM was not felt to have a major effect on strategic asset allocation yet, as there was little confidence that the current sterling rate could be held (note that historically sterling's long term depreciation has been a major positive influence on UK institutions' international diversification). If UK competitiveness is badly hit by the fixed exchange rate, this could prompt some short term reallocation. But generally, features such as German reunification was seen as clouding the benefits of the ERM. A longer term issue that has been mooted by some commentators is whether UK fund managers will switch back from equities to bonds if inflation falls sharply (for example, if relative returns in the UK come to resemble Germany ones in Table 5). One suggested this would be the case for all formerly inflation prone EC countries, and as a result they were switching to UK and French bonds. This phenomenon was also acknowledged by other managers but not seen a major consideration at this stage.

EMU was even further away from current horizons, but managers perceived that if it came about the EC would be a region and not a country. This could lead to a further shift from UK to European equities.(34)

(ix) Use of Markets

The success of the International Stock Exchange in London in taking business from other European exchanges has been a prominent feature of recent years [Pagano & Roell (1990)]. But in our sample, those asked tended to state a preference for local markets rather than London's offshore SEAQ exchange for their foreign equity transactions, as they felt keener prices could be obtained.

(c) Implications

The analysis has implications both for the theory of the benefits of international investment for fund managers outlined in section 3, and for the wider implications for the world economy set out in section 6.

As regards the benefits, fund managers appear to act in accordance with the view that international investment reduces risk, though there appear to be barriers to pursuing this to its logical conclusion and holding the global portfolio. These do not relate to regulation or even attitudes of trustees, but rather a belief that a degree of matching of assets and liabilities is desirable, resulting from a lack of belief in purchasing power parity.

Fund managers' attitude to efficient markets is partly ambiguous; they assume global markets are efficient in the long run, but do not adopt global indexation to take advantage of this. They assume inefficiency in the short run, and hence that profits can be made by discretionary management (such actions may, of course, be necessary for long run global efficiency).

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(34) The offset to benefits of EMU may be that there will be less of a reduction in risk from diversification if cycles move together.

As regards the implications for the wider economy, it is evident that global investment by UK institutions shifts in response to excess returns, and hence can help finance of countries where saving is inadequate, in the process of which global returns will tend to be equalised. But there are two important caveats.

First, the highlighting in several cases of the importance of "following the crowd" suggests that herding into markets and consequent increasing volatility may be an important phenomenon. The use of stock index futures could make such shifts even more rapid. The normative implications of this depend partly on the impetus for such movements. It could in principle have the useful effect of disciplining national governments to avoid inflationary policies. But this might require an excessively long term approach. The funds might rather take advantage of such an episode to ride (and expand) the growth in securities prices caused by such policies. Volatility caused by international investment could be seen as undesirable in itself, increasing the cost of funds by discouraging investors. Again, overshooting of equilibrium levels as a result of "herding" rather than shifts in response to news are not consistent with market efficiency. And it is doubtful that such strategies optimise the return available to the fund beneficiaries. In effect, optimisation in terms of risk and return is subordinated to desire to match the median fund, whatever its strategy.

Second, it is evident that fund managers have little interest in small or emerging markets, partly because they lack liquidity. Hence institutional investment, while an important source of international capital flows, is unlikely to aid the development process. Banking flows, foreign direct investment by companies or official lending are a more likely source. We can relate this partly to the comparative advantage of bank vs market intermediation. The latter is rarely used by new or small firms (and, in this case, ldcs) who lack reputation, and for whom fixed costs of securities issue (or, in this case, development of securities markets) are too high. Instead, funds tend to flow between the major markets in Europe, North America and the Far East. The "bloc" approach means that especially for Europe, choice of national markets is of secondary importance.

8 Conclusions

Drawing together the results of this paper, it has been shown that there are sizeable differences in international investment by the institutional sectors in the major OECD countries. This relates obviously to the size of the sectors, but also to regulation, liabilities and more general differences in fund managers' attitudes to global diversification. These results imply that many institutions obtain a less desirable risk/return tradeoff than is possible by using the full opportunity set. Meanwhile even in the most unregulated sector (the UK) there appear to be limits to the perceived benefits of overseas investment, as well as tendencies to volatile shifts in portfolio allocations which are not necessarily related to market fundamentals.

The survey offers a number of conclusions. First, it seems clear that given the benefits in terms of reduced risk of international investment to portfolio managers restrictions on foreign investment for life insurers and pension funds are not justified. Alternatives are a "prudent man rule" enjoining sensible portfolio diversification (as applied to pension funds in the US), a low degree of currency matching as for life insurers in the UK or no formal regulations with frequent statement of asset/liability positions, as in the Netherlands. Some regulations preventing excessive concentration of risk in foreign assets may be warranted (to prevent losses such as those incurred repeatedly by Japanese life insurers on US bonds).

Moving to the macro level, it would appear that theoretical benefits arising in terms of equalisation of returns via movement of capital to its most profitable use are limited to the most advanced (and large) countries. Funds are unwilling to invest in ldcs even when markets are available. Without securities markets there is no interest at all - hence Eastern Europe is unlikely to benefit.

Even for the most advanced countries, barriers to international investment must themselves imply a degree of inefficiency in global capital markets. Moreover, it appears there is a risk of destabilising capital flows arising from tendencies of institutions to "herd". Although such phenomena are explicable in terms of incentives and institutional structure, they seem to have little relation to market rationality which

would tend to support a more "contrarian" approach. Such herding may lead to higher volatility in equity markets, which by deterring marginal investors may raise the cost of capital. Not that such risks should be exaggerated; over the long term there is some evidence of equalisation of returns, which may be related to increased international capital flows.

Prospects for international investment by institutional investors are good; UK and Japanese funds continue to grow strongly; 1992 is likely to increase pressure on major European countries to remove their portfolio restrictions, and there is similar pressure in the US and Canada. Increased personal incomes, pressure on state benefit systems and changing demographic patterns are likely to increase the need for long-term saving. Given these trends, the benefits and costs outlined above are unlikely to diminish.

The policy implications of this paper include the following:

- so long as funds are obliged to diversify, other portfolio restrictions are not justified and should be removed; forthcoming EC directives on life and pension fund business will address this issue;

- liberalisation of product regulations as well as portfolios may be preconditions for increased international investment by life insurers in the EC, so that they may be enabled to offer profit sharing policies that can benefit from international investment; however, the Life Insurance Directive may need to be passed with home country regulation of firms, and international competition between firms in the EC intensify, before liberalisation is forced on certain countries;

- "short-termist" problems of rapid switches between markets are likely to be of importance in an international context as well as in national markets. It is likely to have a greater incidence on volatility the smaller the market and the less active are domestic investors. General policy actions to reduce them (such as turnover taxes) would probably just drive business offshore. But a possibly workable alternative for small ldc markets is to only permit foreign investment via closed-end funds.

- Currently, the development process is unlikely to be aided by institutional flows, except at a very late stage. Public sector, banking and direct investment flows are more likely to help initial stages of development. This may imply a need to reduce the risks inherent in private long-term portfolio investment in ldcs (improved securities market infrastructure to improve settlement or liquidity; reductions in transfer risk, perhaps via the multinational institutions).

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Bank of England Discussion Papers

	Title	Author
1-5, 8, 11-14, 16-17, 19-22, 31	*These papers are now out of print but photocopies can be obtained from University Microfilms International*[a]	
6	'Real' national saving and its sectoral composition	C T Taylor A R Threadgold
7	The direction of causality between the exchange rate, prices and money	C A Enoch
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