

PENSION FUND MANAGEMENT AND INTERNATIONAL INVESTMENT – A GLOBAL PERSPECTIVE

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Abstract

We examine the potential and actual role played by international investment in pension fund management. The paper draws largely on experience of a range of OECD countries and selected emerging market economies with established funded systems, although we also provide estimates for Trinidad and Tobago and for Jamaica. It is shown that international investment allows superior investment performance in terms of risk and return, and pension funds are well placed to take advantage of the benefits, but they typically hold low proportions of foreign assets in their portfolios.

Whereas some degree of “home bias” is likely to occur naturally, it is undesirable for regulations to enforce tighter limits on foreign assets than these market forces would suggest. The arguments favouring such restrictions are weak. The future of funding itself seems likely to be turbulent given the growing scope of asset flows and the future decumulation when ageing accelerates in OECD countries. These developments do not negate the case for international investment, but they do suggest a need to retain elements of a pay-as-you-go system, as a form of insurance.

Structure

- Introduction
- Investment considerations for institutional investors
- Issues in international investment
- International investment of pension funds in practice
- Policy issues

Introduction

- Demographic ageing (and decline of extended family) brings retirement income security to the fore
- Pay-as-you-go systems' vulnerability during ageing
- Role of international investment in a strategy of funding, notably to avoid risks to domestic capital markets
- Possible tension with other policy objectives

1 Investment considerations for institutional investors

- General portfolio considerations
 - The mean variance approach and the frontier of efficient portfolios
 - Liabilities, objectives and constraints affecting risk/return trade-off chosen
 - Constraints include not merely regulation but also liquidity needs, investment horizon, tax etc.
 - Development of investment strategy in light of these aspects. Asset allocation – including to foreign assets, most crucial aspect

- Alternatives to mean-variance, implying risk-return optimisation not sole criterion
 - Immunization – precise matching of liabilities
 - Shortfall risk – asymmetry in terms of preferences, preference to avoid downside movements
 - Asset liability management (ALM) – assets selected to have same long term characteristics as liabilities
- Investment issues for pension funds
 - Basic definitions; defined benefit (DB) and defined contribution (DC)
 - Considerations for all funds
 - Link of liabilities to labour earnings, hence need for “real assets”
 - Role of maturity – ALM considerations
 - Taxation issues

– Defined contribution funds

- Risk return optimisation, subject to risk preferences of members and maturity

– Defined benefit funds

- Wider range of risks affecting sponsor, owing to guarantee – including regulatory risks
- Investment strategies depend on nature of liabilities, whether or not indexed, and accrued or projected
- If nominal, immunise with domestic assets – if real, diversify and use ALM
- Shortfall risk important, especially with minimum funding rules

2 Issues in international investment

- Arguments favouring international investment
 - Reduction in risk compared to domestic due to:
 - Lack of correlation of national markets
 - Lack of correlation of profit share
 - Lack of correlation of demographic shifts
 - Offshore industries
 - Inflation hedge when currency depreciates
 - Domestic market poorly diversified and volatile
 - Macroeconomic, political or natural shocks
 - Size of domestic institutional investors

Table 1: Correlations of monthly percent changes in MSCI country stock indices

1970-2002	UK	US	France	Italy	Japan	Canada	Germany	Memo: EME 1987-2002	Memo: World
UK	1.00							0.33	0.68
S	0.51	1.00						0.49	0.85
France	0.55	0.46	1.00					0.36	0.64
Italy	0.34	0.26	0.47	1.00				0.28	0.45
Japan	0.37	0.31	0.40	0.35	1.00			0.37	0.68
Canada	0.51	0.72	0.46	0.31	0.31	1.00		0.52	0.73
Germany	0.44	0.41	0.63	0.42	0.37	0.37	1.00	0.37	0.60
Standard deviations									
1970-2002	6.76	4.47	6.59	7.52	6.59	5.60	5.96	6.97	4.17
1985-2002	5.21	4.50	6.11	7.54	7.37	5.31	6.39	6.97	4.37

Table 2: Relative importance of factors in explaining return on a stock

Average R-squared of regression on factors					
	Single factor tests				Joint test of all factors
Country	World	Industrial	Currency	Domestic	
UK	0.20	0.17	0.01	0.53	0.55
US	0.26	0.47	0.01	0.35	0.55
France	0.13	0.08	0.01	0.45	0.60
Italy	0.05	0.03	0.00	0.35	0.35
Japan	0.09	0.16	0.01	0.26	0.33
Canada	0.27	0.24	0.07	0.45	0.48
Germany	0.08	0.10	0.00	0.41	0.42
G-7 average	0.15	0.18	0.02	0.40	0.47

Table 3: Returns on global stock indices, 1921-96

Index	Real Return (Arithmetic)	Standard Deviation	Real Return (Geometric)
United States	5.5	15.8	4.3
Non-US	3.8	10.0	3.4
Global	5.0	12.1	4.3
Survived markets	4.6	11.1	4.0

- Benefits to pension funds
 - Broadening out of risk-return frontier
 - Wider range of assets for ALM purposes
 - Shortfall risk more evenly balanced
 - Immunisation mainly domestic (but imports enter consumption basket of elderly)
 - Avoid “outgrowing” market as well as risk of banking crises
- Reasons for “home asset preference” of pension funds
 - Role of liabilities
 - Systematic risks/bubbles in world markets
 - Market inefficiency and maintenance of PPP

- Information issues
- Structure of corporate ownership
- Regulation
 - Prudent person versus quantitative restrictions
 - Minimum funding and accounting rules for defined benefit
-but not “risk” per se

3 International investment of pension funds in practice

- Asset return characteristics
- Current portfolios of pension funds
- Regulation of pension funds
- Potential and actual returns on international investment
- A perspective on Trinidad and Jamaica

Table 4: UK Pension Funds: Performance relative to benchmarks

	1981–1998		1981–1989		1990–1998	
	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation
United States	-2.3	2.1	-3.7	2.0	-0.9	1.0
Japan	0.3	7.5	-2.0	9.9	2.5	3.2
Continental Europe	-1.0	3.1	-1.8	4.0	-0.2	1.6
World	-1.6	6.0	-3.1	5.1	-0.2	6.7
United Kingdom	-0.4	0.7	-0.4	0.9	-0.3	0.6

Table 5: Annual real asset returns and risks over 1967–1995

Average Real Return (and <i>Standard Deviation</i>)	Short-Term Assets	Loans	Domestic Bonds	Domestic Shares	Real estate	Foreign Equities	Foreign Bonds	Memo: CPI Inflation	Memo: Average Earnings
OECD	1.8	4.0	1.7	8.0	6.5	7.1	3.9	6.2	2.1
Average	3.5	3.6	16.8	22.5	15.4	19.0	15.5	3.7	2.9
Chile						10.4	7.8	17.6	3.2
(1980-95)						22.0	20.0	6.4	5.7
Singapore						6.2	3.9	4.0	6.9
						22.6	18.3	5.6	3.3
Malaysia						7.9	5.6	4.5	4.4
						21.5	17.0	3.6	2.9

Table 6: Pension funds' portfolio composition 1998

Percent of total	Liquidity	Loans	Domestic Bonds	Domestic Equities	Property	Foreign assets	Memo: pension provision	Memo: assets/GDP
Australia	14	4	12	43	6	18	DC	42
Canada	5	3	38	27	3	15	DB/DC	47
Denmark	1	0	59	23	6	11	DC	22
Germany	0	33	43	10	7	7	DB	15
Japan	5	14	34	23	0	18	DB	17
France	0	18	65	10	2	5	DB	7
Italy	0	1	35	16	48	0	DC	2
Netherlands	2	10	21	20	7	42	DB	116
Sweden	0	0	64	20	8	8	DB/DC	49
Finland	13	0	69	9	7	2	DB	8
Switzerland	11	0	29	17	26	17	DC	111
UK	4	0	14	52	3	18	DB/DC	87
US	4	1	21	53	0	11	DB/DC	72
Chile	15	17	44	21	3	4	DC	45
Singapore	28	0	70	0	0	0	DC	60
Malaysia	24	27	32	18	1	0	DC	51

Table 7: Foreign assets regulations for pension funds

	General approach to investment regulation	Foreign asset restrictions
Australia	PPR	No currency matching limit but tax on income from foreign assets
Canada	PPR	No currency matching limit but foreign assets maximum of 30% of fund
Denmark	QAR	80% currency matching limit; 50% limit on “high risk assets”
Finland	PPR/QAR	80% currency matching limit, 5% in non-EEA countries, 20% in currencies other than the euros
Germany	QAR	80% currency matching limit; 30% limit on EU equity, 6% on non EU equity, 5% non-EU bonds
Italy	PPR/QAR	67% currency matching limit. Securities of OECD countries not traded in regulated markets limited to 50%; non OECD securities traded in regulated markets limited to 5% (forbidden if traded in non regulated markets)
Japan	PPR	None (Since 1998 only)
Netherlands	PPR	None
Sweden	QAR	Currency matching required. Foreign assets limited to 5-10% of the fund
Switzerland	QAR	30% limit on foreign assets
United Kingdom	PPR	None
United States	PPR	None
Chile	QAR	80% currency matching limit
Singapore	[PPR]	Government invests assets at its discretion but holders are “credited” with returns equivalent to bank deposits
Malaysia	QAR	70% of assets in domestic government bonds

Table 9: Mean variance 1: estimated real returns and risks on pension funds' portfolios and on foreign assets (1970-95)

	Actual portfolios	50-50 domestic bonds and equities	20% foreign	40% foreign	Global portfolio
OECD	4.4	6.3	6.3	6.3	6.6
Average	9.6	15.7	14.7	14.1	15.3
Chile	13.0				9.1
(1980-95)	9.5				19.1
Singapore	1.3				5.1
	5.4				18.4
Malaysia	3.0				6.7
	3.9				17.2

Table 12: Shortfall risk: comparing pension fund minimum real returns with those on diversified and global portfolios (1970-95)

	Actual portfolios	50-50	20% foreign	40% foreign	Global portfolio
Australia	-33	-42	-40	-38	-31
Canada	-17	-21	-22	-23	-26
Denmark	-15	-29	-29	-28	-33
Germany	-9	-20	-19	-23	-34
Japan	-22	-31	-34	-37	-45
Netherlands	-10	-27	-26	-25	-29
Sweden	-36	-25	-22	-20	-23
Switzerland	-11	-28	-29	-30	-31
United Kingdom	-36	-46	-42	-38	-26
United States	-21	-22	-23	-24	-26
OECD average	-21	-29	-29	-29	-30
Chile (1980-95)	-3				-22
Singapore	-11				-34
Malaysia	-16				-43

**Table 13: Asset price changes in Asian markets, 1 July 1997 to 18 February 1998
(percent)**

	Equity market	US\$ exchange rate
Indonesia	-81.2	-73.5
S Korea	-32.3	-48.1
Thailand	-47.9	-43.2
Malaysia	-59.0	-33.2
Singapore	-45.0	-13.2
Hong Kong	-36.6	0

Table 14: Asset-Liability Management 1: comparing pension fund real returns and global portfolio with real average earnings (1970-95)

	Real average earnings less:	Actual portfolios	50-50	20% foreign	40% foreign	Global portfolio
Sweden	1.4	0.8	6.6	6.3	5.9	5.0
	3.5	9.7	16.6	14.2	12.3	11.3
Switzerland	1.5	0.2	0.8	1.1	1.3	2.1
	2.1	5.6	16.0	14.8	14.1	14.9
United Kingdom	2.8	3.0	1.8	2.1	2.3	3.1
	2.3	10.5	13.1	12.5	12.1	12.6
United States	-0.2	4.8	4.6	5.3	5.9	7.8
	1.9	9.9	11.4	10.9	10.9	13.4
OECD	1.7	2.7	4.6	4.5	4.6	4.9
Average	2.7	6.9	13.0	12.0	11.4	12.6
Chile	3.2	9.8				5.9
(1980-95)	5.7	3.8				13.4
Singapore	6.9	-5.6				-1.8
	3.3	2.1				15.1
Malaysia	4.4	-1.4				2.3
	2.9	1.0				14.3

Table 15: Asset-Liability Management 2: correlations of returns with inflation and average earnings

		Actual portfolios	50-50	20% foreign	40% foreign	Global portfolio
OECD	Inflation	-0.41	-0.33	-0.34	-0.34	-0.32
Average	Earnings	-0.12	-0.15	-0.17	-0.18	-0.19
Chile	Inflation	0.11				0.16
Singapore	Inflation	-0.97				-0.20
Malaysia	Inflation	-0.96				-0.55

Table 16: Caribbean return estimates

	Trinidad and Tobago			Jamaica		
1970-95	Real return	Risk	Correlation with inflation	Real return	Risk	Correlation with inflation
Bonds	-4.6	7.0	-0.68	-9.8	19.8	-0.80
Equities	na	na	na	-8.2	31.4	-0.03
Short term assets	-6.0	5.8	-0.93	-5.9	13.8	-0.77
Inflation	11.1	4.5	-	20.8	16.5	-
50-50 domestic	na	na	na	-8.7	17.5	-0.5
Global portfolio	3.4	18.3	-0.48	2.6	26.9	-0.42
NIS funds	-2.5	na	na	-6.2	na	na
1980-95						
Average earnings	-2.2	5.3	-	na	na	-
Global portfolio	6.8	18.7	-	5.7	29.7	-
NIS funds	-1.3			-5.3		

4 Policy issues

- Portfolio regulations bearing on international investment
 - Do they reduce risk for beneficiaries?
 - EU Commission: “(they are) in the way of optimisation of the asset allocation and security selection process, and therefore may have led to sub-optimal return and risk taking”
 - Particular problem for pension funds as link to average earnings requires trade of risk and return – and evolving liabilities require flexibility
 - Not appropriate either for DC or DB
 - Encourage governments to treat funds as source of finance
 - Inexperienced regulators and asset managers – should only be temporary

- Non-risk based arguments for emerging markets
 - Capital outflow controls – should be only temporary
 - Ease transition burden of moving from pay-as-you-go?
 - Boost domestic capital markets – but also feasible via openness to foreign inflows
- Prudent person rules superior for both EME and OECD
- Some longer term risks to funding
 - Demographic patterns and international capital flows
 - Possible bubbles in EMEs during accumulation – underlines need to invest globally
 - Possible fall in global asset prices during decumulation
 - need to retain some pay-as-you-go
 - would not be avoided by domestic investment
 - develop domestic pension fund sectors also as a bulwark against eventual withdrawal of OECD funds
 - financial stability implications

Conclusions

- International investment allows superior investment performance, aiding benefit security
- Some “home bias” natural but regulations should not enforce domestic investment
- Awareness of demographic risks to capital markets needed
- Poor real returns on domestic assets in Jamaica and Trinidad underline benefits of international – and costs of regulation/home bias