

2003 Pensions Convention

The Bond Market and the Scope for Swaps

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Grand Hotel, Brighton

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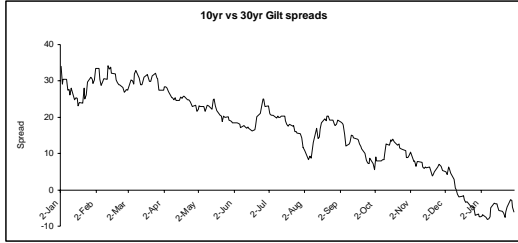
**The Sterling Bond Market and the Scope for Swaps
Agenda**

- Pension scheme asset allocation – a trend towards greater bond investment
- Recent bond market performance – the impact on credit spreads
- Structure and capacity of the bond markets
 - Sterling
 - Euro
- How will pension scheme demand be met going forward?
- Introduction to swaps
- Applications for pension funds
 - Enhancing investment returns
 - Using swaps to meet liabilities
- Examples in practice
- Risks and other features of the swap market
- Summary

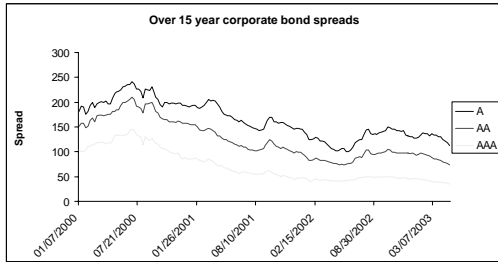
Pension Scheme Asset Allocation
Trend towards a higher bond allocation

Asset Allocation	1993	1996	1999	2002
UK Equities	56.1	53.3	51.0	39.4
Overseas Equities	24.0	21.8	24.4	25.0
Total Equities	80.1	75.1	75.4	64.4
UK Bonds	4.0	6.0	8.1	12.5
Overseas Bonds	3.8	2.9	3.6	4.0
Index-Linked	3.0	5.0	4.9	9.3
Total Bonds	10.8	13.9	16.6	25.8
Property/Other	9.1	10.9	7.9	9.8
Total	100	100	100	100

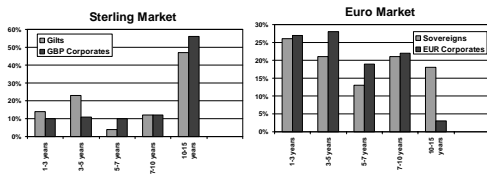
The Impact on Gilt Yields



Corporate Spread Performance

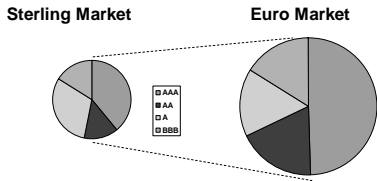


Euro versus Sterling Market Sterling offers longer maturities



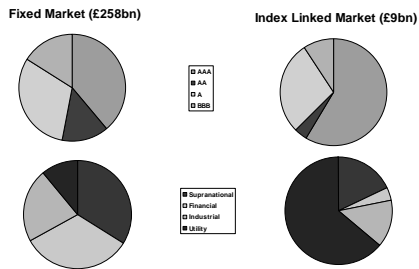
- The Sterling market is a long dated market, offering better long matching opportunities for UK pension funds
- The maturity of new issues in the sterling market are consistently longer dated than the euro market

Euro versus Sterling Market
Sterling offers greater access to credit risk

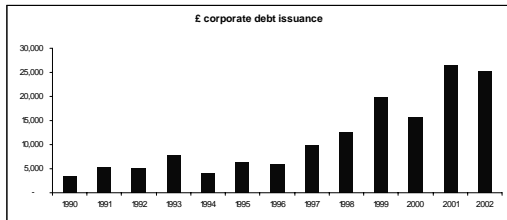


- The euro market (£945bn. equiv.) is significantly larger than the sterling market (£258bn.); hence euro market is more liquid
- The average credit rating of the sterling market is lower than the euro market; hence sterling offers higher spreads

Sterling Index Linked versus Fixed market
Index linked: a small, utility sector dominated market



UK Corporate Debt Issuance



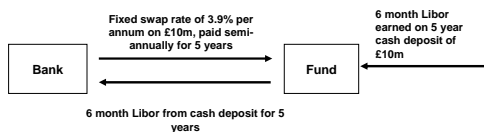
How Will Demand Be Met Going Forward?

- From increased corporate bond issuance
- Government issuance also rising
- Greater use of the Euro and Dollar markets
- But inflation-linked assets likely to remain a problem
- Greater use of the swaps markets is likely to help alleviate capacity constraints both in fixed income and inflation linked

Introduction to swaps

- What is a swap?
 - Simply an agreement to exchange two sets of cash flows
 - Usually these are equal in value but different in nature
- For example a "fixed for floating" swap
 - Consider a deposit of £10m paying a floating rate of interest
 - The floating cash flows can be exchanged for a specified fixed rate of cash flows applicable for a given period
 - This fixed rate is known as the "swap rate" for a given maturity

Interest Rate Swap Example



Applications for Pension Schemes

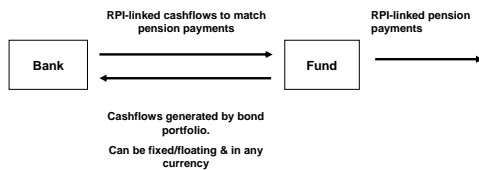
- Receiving a fixed return is a substitute for a corporate bond return
- Achieved by placing funds on deposit and receiving floating cash flows, which are then swapped for fixed cash flows
- And the end of the period the Scheme receives a return of principal (by taking the cash off deposit)
- Returns are in line with a AA rated bond yield – swaps are effectively a measure of generic bank credit
- Flexible instruments as the cash flow proceeds can be tailored to meet the specific circumstances of the fund

Different Types of Swap Contract

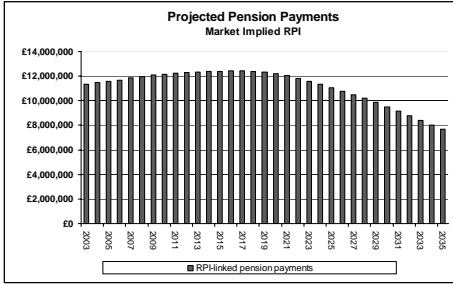
- Cash flows can be structured to meet an investor's particular needs
- For example the swap flows can be tailored to meet specific liability cash flows
- An example is where a pension scheme has inflation-linked liabilities, but owns a portfolio of fixed rate bonds
- Solution is to enter into an inflation swap:
 - Pension scheme pays fixed flows (as generated by the corporate bond portfolio)
 - Scheme receives inflation linked cash flows tailored to meet the projected liabilities of the scheme

Example of an Inflation Swap

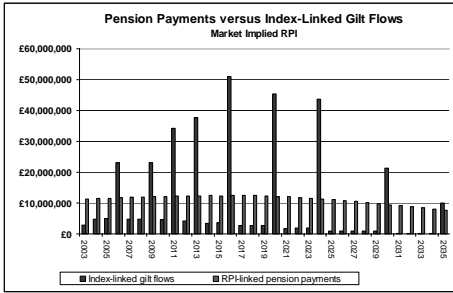
- Buy a diverse portfolio of bonds. This could be sterling fixed income or broader still, e.g. Euros or dollars
- Swap the fixed cash flows generated from the bond portfolio for either RPI or LPI linked returns



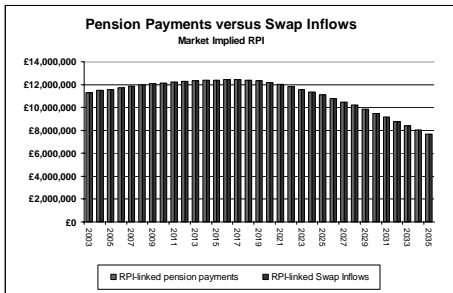
Projected Pension Payments
Example Liability Profile (Pensioners)



Pension Payments Versus Index-Linked Cash Flows



Resulting Cash Flow Match
After substituting the index linked gilts for the swap



Potential for Enhanced Returns

- Use of swaps effectively separates the asset and liability management from the investment of the assets
- The swap payments to the Scheme can be tailored to meet the liability cash flows which need to be paid
- Assets can then be invested independently – Trustees would be free to chose the most appropriate investment strategy without constraint
- Hence potential for higher expected returns through:
 - Investment in asset classes with higher expected returns (e.g. corporate bonds versus index-linked gilts)
 - Improved potential for investment manager out-performance

Corporate Bonds: Benefits & Risks Table

Bond Rating	Yield Over Gilts (per annum) (25yr spread)	Historic Default Rate Over 10 Years (per annum)	Historic Default Rate Over 20 Years (per annum)	Present Value of Performance Improvement after costs & expected losses. (Based on £100m of LPI/RPI swaps)*
AAA	0.53%	0.08%	0.10%	£3.4m
AA	0.63%	0.09%	0.14%	£4.2m
A	1.16%	0.10%	0.27%	£10m

* Costs include swap transaction costs and purchase of corporate bonds

Summary of Benefits of Swaps

- Risk reduction through the ability to tailor asset proceeds to meet liabilities
 - Only realistic way of obtaining LPI assets
 - Only realistic way to achieve a cash flow match to expected benefit payments
- Separates asset and liability management allowing potential for more efficient management of asset portfolio
 - Potential for higher expected returns

Counter-Party Risk

- Swap contracts introduce counterparty risk to the pension scheme
- This is the risk that the bank counterparty defaults while owing money to the pension scheme under the contract
- Counterparty risk can be mitigated by collateralisation – I.e calculating the mark to market exposure and passing collateral between parties to hold in the event of default.
- Reduces the counterparty risk effectively to nil
- This process is similar to margin calls on exchanged traded futures and options – collateralisation can be done daily if required

Summary

- Pension Scheme switches have put the corporate bond market under pressure recently
- Continued issuance and return to government issuance will help alleviate capacity somewhat
- Capacity constraints are most acute in inflation-linked assets
- The Swaps market is far bigger than the corporate bond market and offers significant benefits for pension schemes
- A particular area of benefit is in matching inflation-linked liabilities, particularly LPI
