Interest Rate Swaps:

Rationale and Growth

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1.Introduction

The 1980s saw the growth and development of many new derivative financial instruments. Among these were interest rate swaps, and the swap markets in Australia and overseas recorded growth rates far in excess of those in other areas of the financial markets during the 1980s.

Various explanations have been provided for the emergence and rapid growth rate of the swap markets, and the objective of this paper is to survey and assess those explanations and their implications for future development of the swap market. The following section of the paper outlines the characteristics of interest rate swaps and provides some background information on the swap market in Australia. Section 3 then surveys general theories of financial product innovation, a characteristic of which is the recognition that both an originating cause and a persistent source of value creation is required for a successful (lasting) innovation. We examine the originating causes suggested by authors of these theories as relevant for the innovation of swaps. This provides a background for the discussion in section 4 of competing explanations of swap market growth which consider where the continuing source of value lies in swaps. Previous literature has not brought together the analyses of financial innovation in general and the value creation role of swaps as a specific case. A feature of the discussion in section 4 is the comparison of parallels in the development of the swaps literature with that on corporate capital structure. Section 5 provides a summary and some speculations about future swap market growth.

2.Interest Rate Swaps

2.1The Concept of a Swap

Swaps involve an exchange of one thing for another - specifically an exchange of one series of cash flows for another series of cash flows. The series of cash flows in question are each effectively the stream of interest payments determined according to particular (different) formulae on a specified "notional" loan.

Understanding the characteristics of a swap is perhaps best helped by an example. The following example demonstrates the cash flows involved for a two year swap in which it is assumed that interest payments are made six monthly. The notional principal involved is $100, and the commencing date of the swap is 1/1/X1.

SWAP EXAMPLE CASH FLOWS

Cash flow stream 1.

Interest payments on a $100 two year loan at 16 % p.a. paid half yearly commencing 1/1/X1. The amounts involved are known in advance and are:

DATE	30/6/X1	31/12/X1	30/6/X2	31/12/X2
PAYMENT($)	8	8	8	8

Cash flow stream 2.
Interest payments on a $100 two year loan at BBR (bank bill rate) of six months previous, paid half yearly. This stream of payments is not known in advance (except for the payment at 30/6/X1) - since it depends upon future values of BBR.

Picking some arbitrary outcomes for BBR (including a BBR at 31/12/X0 of 14 % p.a. to determine the cash flow at 30/6/X1), a possible set of cash flows could be:

DATE	30/6/X1	31/12/X1	30/6/X2	31/12/X2
BBR	*12 %*	*16%*	*18 %*	*n.a*
PAYMENT($)	7	6	8	9

Swap agreement.
ABC agrees to pay the cash flow stream 1 to XYZ in exchange for receiving the uncertain cash flow stream 2. With the outcome for BBR given above the swap would involve

DATE	30/6/X1	31/12/X1	30/6/X2	31/12/X2
ABC pays XYZ	8	8	8	8
XYZ pays ABC	7	6	8	9
----------	--	--	--	--
Net payment by ABC to XYZ	1	2	0	-1

The following characteristics of the swap agreement are particularly relevant. First, the cash flow between the two parties ABC and XYZ is a net cash flow equal to the difference between the promised payments of each. Second, at the commencement of the swap, the net cash flows over the life of the swap are uncertain both in sign and size, and will depend upon the future behaviour of the BBR.

Third, the cash flows involved are exactly the same as if ABC had borrowed (and repaid) $100 from XYZ at 16 % p.a. and XYZ had borrowed (and repaid) $100 from ABC at BBR % p.a., both loans for two years with half yearly interest payments. (The exchanges of principal at 1/1/X1 and repayments of principal at 30/12/X2 exactly net out.) In contrast to the back-to-back loans described above, there is no obligation for the principal sum involved in the swap agreement. The principal amount against which the interest payments are calculated is thus generally referred to as the "notional principal". Fourth, most swaps now involve a financial institution acting as a principal, in contrast to the early years of the swap market when financial institutions acted as brokers - bringing end users together.

More generally, the payments involved in an n-period swap can be described as follows. Let F represent the notional principal involved, $r_1(t)$ be the date t value of the one period risk free rate used as the floating rate indicator rate, and R_n be the fixed rate established at date 0 used in the swap. The payments made at date t by the floating rate payer under the swap (SW) are given by

$$SW(t) = r_1(t).F - R_n.F$$

which can be rewritten as

$$SW = r_1(t).F - (r_n + sp)F$$

where r_n is the n period risk free rate at date 0, and sp is the (constant) premium (determined at date 0) paid on the swap by the fixed rate payer.

2.2The Australian Swap Market

Salient characteristics of the Australian swap market are outlined in Table 1

Table 1
Australian Swap Market Characteristics

Outstandings 30/6/89	$A 174 bill
New swaps 1988/89	$A 94 bill
Market growth	35% p.a.
Swap maturity (% < 3 years)	73 %
Domestic currency percentage	75 %

Source: ANZ Bank

Swap prices are quoted by around 100 institutions acting as principals in the market. The standard market parcel is $5 million, on which bid-ask spreads for indicative quotes (as displayed on Reuters etc.) are in the order of 10 basis points. Standard swap types are 3 or 5 years against BBSW (the average bank bill rate

published at 11.00 am), with three year rates being typically quoted three monthly in arrears, and longer term swaps being six monthly in arrears.

3.Theories of Financial Innovation and Development

Various authors such as Silber (1983), Van Horne (1985), Miller (1986), Ross (1989), Finnerty (1988), and the Bank for International Settlements (1986, part iv) have provided frameworks for the analysis of financial innovations. Any theory of innovations should fulfil a number of criteria. First, it must demonstrate that the innovation satisfies particular needs, and provides opportunities for profit. In this regard, Van Horne identifies two general requirements for a viable innovation. It must either make markets more operationally efficient or it must involve market completion. This can be viewed as the value creation aspect. A second criterion is that the theory should explain why the innovation occurred when it did. In the case of swaps, this raises this issue of what forces prompted development and growth during the 1980s.

Silber considers the process of financial innovation from the perspective of a constrained maximization model of economic agents, in which binding constraints provide an incentive to find ways to loosen the constraints upon firms. As the shadow price of a particular constraint increases, the incentive to expend resources to loosen that constraint increases. Silber does not consider the primary cause of innovation of swaps, but attributes the development of interest rate futures (to which they are closely related) to increased interest rate volatility which can reduce corporate value. Likewise Van Horne suggests that the principal cause underpinning the development of the swap market was the volatility of inflation and interest rates.

The BIS suggests that a framework which distinguishes demand and supply side forces for innovations has merit. On the demand side they categorize innovations according to their functional characteristics such as `risk-transferring', 'liquidity-enhancing' etc.. Within this framework, they see swaps as providing price-risk transferrence and credit generating functions. Since, they argue, price-risk transferring innovations are more likely to emerge when perceptions of volatility are high, their perspective is similar to that of Van Horne and Silber. Credit-generating innovations which mobilize dormant sources of funds or enable new markets to be tapped are more likely to arise when demand for credit is relatively high. On the supply side of the innovation process, changed technology, regulatory pressures, and changed financial competition are all identified, as is the historical dynamics of innovation.

Miller emphasises two factors as principal determinants of financial innovation. The first is differential taxation of different sources or uses of income. The second is the role of government regulation. For Miller, the key test of a successful innovation is whether the innovation survives after the initiating force has been removed. Miller suggests that the initial force driving the development of swaps was regulation - specifically British government constraints on dollar financing by British firms and on sterling financing by non-british firms. While this is consistent with the history of currency swaps (described in BIS, 1986, pp 40-43), the relevance to interest rate swaps is less clear. However, to the extent that financial engineering associated with Eurobond issues prompted swap transactions, the indirect influence of regulation via its contribution to Euromarket development is apparent.

Finnerty provides a listing of eleven factors conducive to innovation. Of these, three which are listed as particularly relevant to the development of the swaps market are: reallocation and/or reduction of risk; regulatory changes; the level and volatility of interest rates.

Ross raises the conceptual problem that most innovations are treated as derivative securities, implying that they can be priced by reference to other existing assets' prices. In this case, an argument of market completion cannot be used to justify the emergence of the innovation. Ross instead proposes that it is important to recognise the role of financial institutions in financial markets (typically ignored in asset pricing theories) and the agency problems thereby created. Innovations can emerge to solve moral hazard problems, even though they appear to offer little new in the way of contingent payoff structures. Ross argues that the structure of marketing costs then plays a significant role in determining the precise structure of the innovation.

Summarizing the message of the innovation theories, the following trends appear. One of the most common explanations for financial innovation is that of regulatory arbitrage. Where regulation prevents market participants from undertaking profitable activities, a clear incentive exists for innovative activities designed to avoid that regulation. Changes in some part of the regulatory structure, or in economic conditions which alter the cost-benefit tradeoff from avoiding regulation may then prompt innovation. However, where differential regulation affects the risk - return characteristics faced by participants in different markets, it is not clear that scope for arbitrage exists.

A second common theme is that of tax arbitrage. Where taxes distort returns, innovation to take advantage of those distortions can be expected. Such arbitrage need not wipe out the originating profit opportunities, thus providing a continuing stimulus to the innovation.

A third message is that innovations reflect changes in the most cost effective method of overcoming market imperfections such as transactions costs. Advances in technology which alter the cost structure of financial production are relevant here.

A fourth common explanation of innovation is that of market completion. Since the future is uncertain, and a complete set of contingent securities is unavailable, market participants are unable to avoid all exposure. Innovations can provide particular payoff structures which reduce the range of exposures.

A fifth explanation relies upon changes in the demand for financial services induced by changes in the economic environment. Increased volatility of financial prices, and or unprecedented levels of particular economic variables (such as inflation) are obvious candidates. An alternative possibility is that of changes in the industrial structure, altering the demand for particular services.

Finally, the cumulative progress of knowledge which increases the range of possible financial products available is also relevant.

4.Explanations of the Value in Interest Rate Swaps

The academic literature outlining explanations for the growth of the swap market has grown rapidly since the mid 1980s. In some respects it parallels the (longer and larger) literature on the relevance of corporate capital structure. Since swaps involve the creation of contingent claims on the future cash flows of the participants, as do debt-equity and lease versus buy decisions, the parallel is not surprising. In what follows, we examine major themes in the swaps literature, providing a comparison with development of the capital structure literature.

4.1Arbitraging Quality Spread Differentials

Simple explanations of the growth of the swap market explain the development of the swap market as a result of quality spread differences in various loan markets. They examine benefits of using swaps in conjunction with borrowing in a particular market. The result is to effectively convert the borrowing to a different form (e.g. from a fixed interest rate borrowing to floating interest

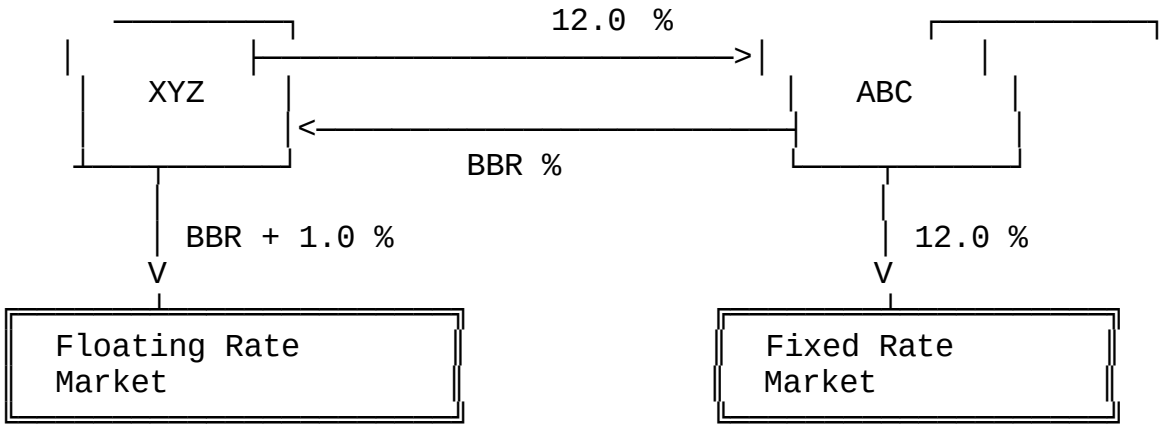
rate) on potentially better terms than would be available from borrowing directly in that form. This argument for the growth of the swap market can be found in many places, see e.g. Bicksler and Chen (1986).

An example will help demonstrate the argument. Company ABC has high credit standing, and can borrow for 5 years at 12 % fixed interest rate, or BBR+0.5% floating rate. Its preferred form of financing is floating rate. Company XYZ has a lower credit standing, and can borrow for five years at 14% fixed interest rate, or BBR+1.0% floating rate. Its preferred form of financing is fixed rate. The quality spread differential is 200 basis points in the fixed rate market and only 50 basis points in the floating rate market. ABC has the greatest comparative advantage in the fixed rate market which is not its preferred form of financing. XYZ has the least comparative disadvantage in the floating rate market, which is not its preferred form of financing. These details are outlined in the table below.

Borrowing Costs

for	In	
	Floating Rate Market	Fixed Rate Market
Company ABC	BBR + 0.5 %	12.0 %
Company XYZ	BBR + 1.0 %	14.0 %

The apparent arbitrage opportunity presented by the swap market can be seen by considering the following set of transactions. XYZ borrows $X in the Floating Rate Market (despite wanting fixed rate funding); ABC borrows $X in the Fixed Rate Market (but wants floating); they swap interest rate obligations so that XYZ pays ABC an amount each period calculated as a fixed interest rate on a notional principal of $X, and receives in return an amount each period calculated as a floating interest rate on the notional principal of $X. The figure below demonstrates the cash flows (as a percentage of $X) at each interest date.



The outcome of these transactions is summarized in the following table, showing the apparent saving on interest costs for both parties.

OUTCOME

	XYZ	ABC
Pays	BBR + 1.0 %	12.0 %
	12.0 %	BBR %
less		
Receives	BBR %	12.0 %
Net Borrowing Cost	13.0 %	BBR %
Alternative Cost	14.0 %	BBR + 0.5 %

Several features of this example should be considered before examining its validity in more detail. First, in practice, a financial institution will generally be the counterparty, acting as a principal in its own right. Its profit derives from the bid ask spread it makes by being on opposite sides of two equivalent swaps. Second, the fixed interest rate involved in the swap could, in the example, be determined by negotiation. In practice, the rates quoted by financial institutions reflect market conditions. Third, the gain to the parties in the swap of a 150 basis point saving on borrowing costs, equals the difference in the quality spread diferntials between the two markets.

4.2Risk Taking

Do such arbitrage opportunities exist, and can they survive the arbitrage process? In considering the first of these questions, it

is important that like is compared with like. An apparent arbitrage opportunity based on a comparison of short term borrowing cost with long term fixed rate funding may be misleading. The reason is that unless a fixed margin over the floating indicator rate is locked in for a succession of short term borrowings, short term borrowers who enter a swap paying fixed and receiving floating are exposed to the risk of a changing margin on their borrowing and thus overall cost of funding. The arbitrage opportunity may thus really reflect a risk premium. Also, as Smith, Smithson and Wakeman (1986, 1988) have argued, many apparent arbitrage opportunities based on quoted yields may be compounding the effects of option characteristics (such as call provisions) of the underlying securities. Again, the apparent arbitrage opportunity reflects a risk premium effect.

Another version of the risk taking argument is presented by Cooper and Mello (1991), who focus upon the seniority of claims in a default situation. The default risk faced by stakeholders in a firm which has outstanding claims with payoffs dependent upon interest rates depends upon the covariance between interest rates and firm asset values. Issuing fixed rate debt means that default risk of that debt will depend only upon the variability of firm asset values. Issuing floating rate debt and a swap which involves paying fixed creates a different payoff structure for bondholders (depending upon the seniority ranking of swap counterparties and bondholders). Thus, apparent arbitrage opportunities may reflect instead the risk premium effect.

4.3Irrelevance arguments

In many respects, the comparison of borrowing costs based on quality spread differentials is akin to the approach to capital structure pre Modigliani and Miller (1958). Then, a lower apparent interest cost of debt finance was interpreted as suggesting that debt finance was a cheaper source of capital. Among their other contributions, M-M turned the focus of attention onto the question of the effect which changes in capital structure had on present value. In a perfect capital market, the effects were zero, and differentials in the explicit cost of equity capital and debt were seen to be compensation for differences in risk of the contingent cash flows. The subsequent literature has thus turned to an examination of `imperfections' in a search for the value created by capital structure choices.

In a similar fashion, the analysis of credit market arbitrage involving swaps must note that comparison of borrowing rates is inadequate to assess whether an arbitrage opportunity exists. What is necessary is to examine the NPVs of the transaction. Pursuing the example used above, consider the following portfolios constructed by ABC and XYZ. (Note that ABC would pay BBR +0.5% for a floating

rate loan, therefore the NPV of such a loan at BBR is some positive amount x. This assumes that ABC has the same estimate of the appropriate default premium as exists in the floating rate market. Note also that this example assumes particular discount rates for the swap transactions which give it a zero NPV at inception, and that these discount rates may not accurately reflect the credit risk in the swap.)

ABC's Action	Discount Rate	NPV
Borrow $100 fixed @ 12%	12%	0
Swap equivalent		
Lend $100 fixed @ 12%	12%	0
Borrow $100 floating @ BBR	(BBR + 0.5)%	+x
Outcome		+x >0

XYZ's Action	Discount Rate	NPV
Borrow $100 floating @ BBR+1%	(BBR+1)%	0
Swap equivalent		
Lend $100 floating @ BBR	(BBR+1)%	<0
Borrow $100 fixed @ 12%	14%	>>0
Outcome		>0

The implication of these calculations is that ABC will endeavour to borrow fixed at 12% and XYZ will try to borrow floating at BBR+1%. Those actions will drive up the relevant borrowing rates until the comparative advantages have disappeared. In this respect, the exploitation of arbitrage opportunities whould lead to the reoval of those opportunities.

A more fundamental issue is that posed by Turnbull (1987). If capital markets are perfect, repackaging financial claims on an agent as occurs with a swap, can only involve a transfer of value (if the transaction is mispriced) and not an increase in the agent's value. Since a swap involves two parties, any gain by one must be at the expense of the other in a perfect capital market. Thus Turnbull suggests the possibility that swaps may be a zero sun game. This clearly has overtones of an irrelevance proposition (like M-M). The apparently lower cost of a swap based borrowing transaction is illusory, since it ignores the indirect effects of the swap. As in M-M, where use of `cheaper' debt is offset by induced increases in the cost of equity, here apparent differentials reflect risk premia which will change with changes in financial structure, or for which differential costs reflect differential risks. The issue can also be likened to the issue of gains from the lease versus buy decision.

The notion that value can be created by such financial engineering relies not on different costs of capital, but on imperfections such as taxes and bankruptcy costs and the use of leasing as a method of best exploiting these imperfections.

The trend then in the literature has been to search for the source of gains from trade in financial contracts - gains which must rely upon some form of market imperfection. Taxes, transactions costs, regulation, bankruptcy costs, asymmetric information, agency issues, interrelationships between investment and financing decisions and between financing decisions and customer relationships are all candidates.

4.4 Reducing Transactions Costs

A particular benefit of the development of the swap market is that it aids a separation of the exposure management and financing cost objectives. Companies can tap financial markets in which they have good borrowing prospects, and independently utilise swaps for exposure management purposes.

Swaps are a suitable weapon for interest rate exposure management for the following reason. By entering an interest rate swap, a particular exposure to interest rates is created. For example, a fixed rate payer has an asset (the swap) which will increase in value if interest rates increase (cash inflows will increase while outflows remain unchanged). If rates fall, the asset declines in value for the fixed rate payer. For the floating rate payer on the other side of the swap, the exposure is the opposite.

Consider then a corporate which has modelled its exposure to interest rates and calculated that higher interest rates will reduce its profitability (and lower rates increase profitability). (That exposure will reflect both the effect of changes in interest rates on operating revenues and costs, and on rates paid and received on variable interest rate borrowings and investments.) Suppose the exposure has been quantified, and it is believed that each 100 basis point increase (decrease) in interest rates will reduce (increase) the current value of the firm by $1 mill.

To the extent that this exposure is seen as undesirable and should be offset, a simple solution is at hand. Find (and invest in) a financial asset which has an equal and offsetting exposure, i.e. one for which a 100 basis point interest rate increase (decrease) causes a $1 mill. increase (decrease) in the asset's value. Being the fixed rate payer in a swap contract for an appropriate notional principal and appropriate maturity can generate this result.

In practice, the exposure management task is not quite this simple. Management horizons have to be specified, yield curves twist (preventing the establishment of a simple link between the level of interest rates and asset values), and measuring actual (and defining an appropriate) exposure is no easy matter.

Despite that, the benefits of swaps are clear. Swaps enable financial managers to change the nature of their interest rate obligations (or receipts) from a fixed interest rate to a floating rate basis, or vice versa, to greater or lesser degree as desired. Moreover, the cost of those exposure management transactions is extremely low. Standard documentation, a deep and liquid market, and competition amongst financial institutions resulting in a low bid-ask spread, are all relevant in this regard.

4.5.Completing Markets and asymmetric information

Arak et al (1988) suggest that swaps provide a way of completing markets by providing a way in which companies can undertake borrowings with a particular set of exposures which are not otherwise available. Specifically, they suggest that a borrower can, by using the swap market, create an exposure to movements in its own credit rating, without simultaneously creating an exposure to market interest rate fluctuations.

They note that conventional loan arrangements provide borrowers with three choices, involving a mix of exposures to own credit rating changes and market interest rate changes. Table 2 illustrates the nature of these arrangements.

Table 2

Loan Type	Exposure to movements in	
	Own Credit Rating	Market Interest Rates
Multi-period, fixed rate	No	No
Multi-period, floating rate (linked to indicator rate)	No	Yes
One-period (short term rollovers)	Yes	Yes

What can be noted in Table 2 is that one possible combination of exposures is missing: that of an exposure to own credit rating but not to market interest rates. Arak et al. suggest that the swap

market provides a solution to this market incompleteness, which is achieved by borrowers borrowing on a single period basis (intending to rollover each period, and entering an interest rate swap paying fixed and receiving floating.

This observation raises the possibility of the swap market providing a source of value for firms where asymmetric information exists. Management knowledge about likely future changes in credit rating which are not known to the market may warrant use of the swap market to create an exposure to one's own credit rating but not to market interest rates.

4.6Resolving Agency Costs

A similar strategy for a borrower, of borrowing short and entering a swap, is suggested by Wall (1989) but for different reasons. He suggests that the swap market may enable high risk firms to reduce agency costs without incurring interest rate risk.

Underpinning Wall's argument is the recognition that financing and investment policies of low rated firms may not be independent, because of agency costs. As Myers (1977) and others have suggested, a firm with debt outstanding may 'underinvest' (reject positive NPV projects) because much of the benefit may flow to current bondholders in the form of reduced probability of bankruptcy. The likelihood of such agency cost occurring (or their magnitude) will increase with the maturity of debt outstanding. Firms issuing short term or callable debt will face lower agency costs, because of the recontracting that will occur after the firm's investment strategy is revealed.

Wall considers a firm issuing short term debt at a cost (ST) given by:

$$ST = (r_1 + \pi(x))F$$

where r_1 is the one period risk free rate, $\pi(x)$ is the risk premium on one period debt given that the firm follows investment strategy x, and F is the principal involved. The critical factor is that the risk premium $\pi(x)$ is less than would be required if the company were to borrow long term, because of the agency problems involved. The payments made under the swap (SW) are given by

$$SW = r_1(F) - (r_n + sp)F$$

where r_n is the n period risk free rate, and sp is the (constant) premium paid on the swap by the fixed rate payer.

The net cost of the short term borrowing and the swap is given by:

$$NP = ST - SW$$
$$= (r_n + \pi(x) + sp)F$$

Even though the company has locked in a fixed cost of funding on a long term basis, it has achieved this without any increase in the risk premium which would have occurred through long term borrowing. (Note that this gives a similar result to Arak et al, but links the variable premium to actions of the firm. Note also, that it assumes that the higher ranking counterparty does not suffer equivalent increased agency costs by borrowing fixed - although its higher credit rating should preclude that.)

Wall notes that there are other methods of overcoming agency costs, including issue of convertible notes, borrowing short term etc., but that each has costs. Borrowing short term involves exposure to interest rate volatility, and thus (much like the capital structure choice based on tax versus bankruptcy costs) users of swaps to overcome agency costs will be trading off higher risk premiums of long term debt, interest rate exposure of short term debt, and premiums involved in using the swap market.

4.6.Exploiting tax and regulatory arbitrage opportunities.

Differences between borrowing costs in different markets may arise because of particular national tax system characteristics or because of regulation. In these circumstances, arbitrage opportunities such as those identified above exist and can be exploited by use of the swap market. The exemption of $A Eurobond interest from withholding tax, the tax evasion of the mythical "Belgian dentists", and different national tax systems are all relevant in this regard. So also are regulatory requirements on long term fixed interest public issues which may involve issuers in extra costs. Borrowing under a floating rate facility from a financial institution and entering a swap to receive floating and pay fixed may prove cheaper, once all those costs are considered.

5. Conclusion

The preceding analysis of the value created by swap transactions in conjunction with the discussion of the motives for innovation of swaps raises the question of the likely future growth of the swap market. Some of the original factors prompting innovation have disappeared or diminished in importance. International capital markets are now less disjoint, and greater international regulatory harmony appears to be occurring in financial markets. On the other hand interest rate volatility is no less evident. The value creation roles of swaps which appear to remain as particularly significant are that of a low cost vehicle for exposure management decisions and that of a `completer of markets'.

While swaps are viewed as a derivative instrument, and thus appear an unlikely candidate to be classed as a completer of markets, the arguments of Ross are important here. While the payoff structure of swaps can be largely replicated using primary securities, institutional characteristics of financial markets are important in providing a rationale for continued growth of swaps. The transactions costs associated with changing interest rate exposure via primary market transactions reflect institutional responses to market imperfections such as agency costs and imperfect information. Swaps provide a low cost method of achieving the same result in institutional markets.

But if the principal remaining source of value creation lies in reducing transactions costs of exposure management, one unanswered question remains. While swaps provide a mechanism for borrowers (and investors) to change interest rate exposure, it is unclear why that cannot be done directly by negotiation with counterparties. In the case of public borrowings, an explanation can be easily found in the form of the problems of negotiation costs with a multiplicity of lenders. But where, as in Australia, so much of financing is institutionalised, the motive seems less clear. A story remains to be told of why financial institutions and their customers prefer the use of swaps to the alternative of loans in which customers have the option to switch between fixed versus floating interest rate determination.

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