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TAXATION OF DERIVATIVES AND NEW FINANCIAL INSTRUMENTS*

CONTENTS

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INTRODUCTION

1.   This paper examines alternatives for taxing derivatives and other newer
financial products.  Section I discusses the treatment of holders and issuers of
bonds issued at discount.  Sections II, III and IV discuss the taxation of
parties to the three basic types of financial derivatives - options, futures and
forward contracts, and notional principal contracts, including swaps.  Section V
examines the issue of straddles whether special rules should be provided to curb
tax avoidance strategies using offsetting positions.  Section VI discusses tax
problems arising from the use of derivatives and other financial instruments to
produce synthetic instruments - combinations of instruments that yield financial
results substantially identical to those of a type of instrument different from
the constituent elements of the synthetic instrument.  Section VII discusses the
taxation of financial instruments used to hedge business and investment risks.
Whereas sections I through VII focus primarily on issues a Government faces in
developing its domestic tax laws on financial products, section VIII examines
issues of international taxation affecting derivatives - the issues peculiarly
arising when the parties to a financial instrument are residents of different
countries.

2.   Frequent reference is made to the laws of the United States, which has the
most highly developed system of tax rules on financial instruments, including
derivatives.  The extensive United States response to financial innovation has
at least two causes.  First, highly developed markets for financial instruments
of all sorts have a longer history in the United States than in most other
countries.  Taxpayer demand for guidance on the taxation of new financial
instruments thus arose earlier and with greater intensity in the United States
than in many other countries.  Secondly, in the United States, political
attitudes about taxation generally favour the taxation of all economic income
from capital and vigorous responses to tax-avoidance strategies.  In many
respects, United States law represents the outer limits of what a country might
do to attack the tax problems presented by financial innovation.

I.  DISCOUNT BONDS

3.   When an instrument is issued at a discount from its face value, the return
to the instrument's holder, and the issuer's borrowing cost, include the amount
of the discount as well as any periodic payments designated as interest in the
instrument.  Annual investment returns and borrowing costs are realistically
reflected only if the discount accrues for tax purposes more or less as it
accrues economically.  Interest is compensation for the use of money and accrues
solely by the passage of time.  All compensation for the use of money - that is,
all amounts that predictably accrue to the holder of a debt obligation solely by
the passage of time - should be accrued for tax purposes in an economically
realistic manner, whether those amounts are stated as interest in the instrument
or take some other form, such as discount on the obligation's issuance.

4.   In the United States, original issue discount is accrued for tax purposes
by a constant interest method, which is described below.  Two alternatives to
this method - ratable accrual and delaying the recognition of discount income

and expenses until maturity or until the holder sells the instrument - are discussed thereafter.

## A. Constant interest method

5.    Under the constant interest method, the issuer and holder of a discount obligation annually accrue a portion of the discount as interest expense and income.  This portion is computed by applying a constant interest rate against the sum of the issue price and all prior accruals of discount.  If periodic interest payments are made on the obligation, each accrual of discount is reduced by the amount of interest payable for that period.

6.    To illustrate the application of the constant interest method to a zero-coupon bond, assume a corporation organized, managed, and operating in country x issues a bond providing for a single payment of 10,000u (10,000 units of country x's currency) five years after the issue date; the bond is purchased by a country x investor at the issue price of 6,139u.  The yield to maturity is 10 per cent compounded semi-annually. 1/  If the discount of 3,861u is accrued on a constant interest basis, the accrual for the first six months in the bond's term is 307u (one half of 10 per cent of 6,139u), for the second six months it is 322u (one half of 10 per cent of the sum of 6,139u and the first interest accrual of 307u), and so forth throughout the bond's term.  If a six-month accrual period begins in one taxable year and ends in the next, the discount accrued for the period if prorated on a daily basis.

7.    To illustrate the application of the constant interest method to an interest-bearing bond, assume interest of 300u is payable each six months under a five-year, 10,000u bond.  If the market rate of interest is 10 per cent when the bond is issued, the issue price is 8,456u (the present value at 10 per cent of semi-annual payments of 300u each for five years and 10,000u at the end of those five years).  The discount accrual for the first six months is 123u (one half of 10 per cent of the issue price of 8,456u, less the interest of 300u); for the second six months, the accrual is 129u (one half of 10 per cent of the sum of 8,456u and 123u, less 300u).

8.    An advantage of the constant interest method is that it conforms reasonably well to market forces.  In the examples, if the prevailing interest rate remains at 10 per cent, the sum of the issue price and all interest accruals will always equal the bond's fair market value.  In the first example, the fair market value of the bond at the end of the first year will be 6,768u (the present value at 10 per cent compounded semi-annually of 10,000u payable in four years), and the sum of the issue price and the interest accruals for the first year will also be 6,768u (the sum of 6,139u, 307u, and 322u).  Thus, any gain or loss realized by a holder on a sale of the bond before maturity is largely true capital gain or loss-gain or loss resulting from a shift in market values, not from the mere passage of time.

9.    A disadvantage of the constant interest method is that its administration is complex.  Issuers and holders of discount obligations must annually recognize interest expense and income computed by a methodology that is unfamiliar to many investors.  However, for most corporate debt, the complexity is not especially

burdensome if issuers are required to report interests income to their bond holders and to the tax administration.  Corporations typically have accounting staff who can do constant interest calculations with little effort.  Bondholders need only report on their tax returns the amounts reported by the issuer.

10.  A criticism sometimes made of the constant interest method is that notwithstanding its relative complexity, it is not exact. 2/  In the absence of any change in market rates of interest, a discount bond's market value usually is not identical to the sum of the issue price and prior discount accruals because the assumption of a constant yield to maturity does not fully conform to market behaviours.  Typically, the market rate of interest is lower for a shorter-term obligation than for an otherwise identical longer-term instrument (although the opposite is occasionally true, usually for only brief periods of time).  For example, the market rate of interest might be 10 per cent for five-year instruments and 9.8 per cent for four-year instruments.  The bond in the first example is a five-year instrument when issued, but is a four-year instrument one year later.  Thus, if market rates remain unchanged, the instrument's fair market value after one year is 6,820u (the present value at 9.8 per cent compounded semi-annually of 10,000u payable in four years).  If the holder sells the bond after one year, gain is recognized of 52u (selling price of 6,820u, less the 6,768u sum of the holder's cost and income accruals).

11.  This gain results solely from the passage of time and, in theory, should be accrued as interest, rather than being deferred until the instrument is sold.  However, whereas the constant interest method can be applied solely from basic facts of the instrument (the issue price and the amount of time of each payment), a more precise calculation of the accrual could be made only with market data about the term structure of interest, which often is not available.  Thus, the constant interest assumption, although inexact, is probably the only practical means of approximating economic reality.

12.  Another disadvantage of the constant interest method is that it often taxes bondholders on interest income long before they receive any cash under the bond.  However, since interest-bearing bonds are widely available, investors who lack the means to pay tax on accrued but unpaid discount can simply not invest in discount bonds, and the tax on accrued discount probably has little distortive effect on the market.

### B.  Alternatives to constant interest method

13.  There are two obvious alternatives to the constant interest method - accruing discount on a straight line basis, and recognizing discount only as it is paid.  Recall the first example used above, where a 10,000u, five-year zero-coupon bond is issued for 6,139u, producing a yield to maturity of 10 per cent compounded semi-annually.  The discount of 3,861u might either be allocated ratably to each of 10 six-month accrual periods, 368u to each period.  For most instruments, ratable accrual recognizes discount more rapidly than the constant interest method.  In the example, the discount accrual for the first six months is 368u by ratable accrual and 307u by the constant interest method.  Alternatively, the entire discount might be recognized when the bond is paid at

maturity or, for holders who sell their bonds before maturity, when the bond is sold.

14.   The advantages of ratable accrual are few.  Computationally, it is simpler than current interest method, but the computations under the constant interest method are not especially difficult, particularly if issuers are required to inform bondholders annually of the amounts of accrued discount.  The more substantial objections to the constant interest - deriving principally from the fact that holders are taxed on amounts not received in cash - apply equally to ratable accrual.

15.   Tax administration and compliance are simplified by recognizing discount only at maturity or on a sale of a discount bond.  However, if capital gains are taxed differently from other income, this solution may not be as simple as first appears.  Since discount income is a substitute for interest income, it should be taxed as ordinary income, not as capital gain.  Thus, if gains on redemptions and sales of bonds are generally treated as capital gain, the portion of a gain on sale that represents accrued discount must be separated from the remainder of the gain, and this can be done only by the discount accrual mechanisms described earlier.

16.   If bondholders and issuers treat discount consistently and are taxed at the same rates, tax revenues are not affected by a Government's choice between the various alternative treatments of bond discount.  However, tax revenues can be severely depleted by rules on discount bonds that treat holders and issuers differently.  For example, a tempting solution to the discount problem is to allow issuers to accrue discount as interest expense, while permitting holders to defer recognition of discount income until maturity, on the theory that large businesses are well equipped to do the computations but investors often are not. In the first example, this solution allows the issuer of the zero-coupon bond a deduction for discount expense of 307u for the first six months of the bond's term and taxes this amount to the holder only at maturity.  If issuer and holder are both taxed at 30 per cent, the Government is out 92u (30 per cent of 307u) for four and one half years.  If the Government borrows at 10 per cent, the cost of the holder's deferral of the discount income for this six-month period alone is 51u (measured as of the instrument's maturity). 3/  Lesser, but significant, losses accrue to the Government for each of the remaining accrual periods in the bond's life.


C.  Complications in international investments

17.   Taxing discount income is particularly difficult when the holder of the bond is not a resident of the issuer's home country.  Investment income is usually taxed in the country of source (typically, in the case of debt instruments, the issuer's country of residence) by withholding taxes.  Among OECD countries, a minority (five of 22) attempt to impose withholding taxes on discount income of non-resident holders of discount bonds, and all but one of these countries considers discount income to be subject to the interest article of their income tax treaties. 4/

18.  Withholding taxes on discount income are probably not practical.  Tax can be withheld only from payments, not from accruals.  Moreover, withholding taxes are typically not imposed on gains on sales of investments, largely because it is usually not feasible for the buyer or a broker to measure the seller's gain and because a withholding tax on gross sales proceeds would impede investment flows.  A requirement that resident purchasers of discount bonds from non-residents withhold tax on discount income is especially problematical, because purchasers usually do not have knowledge of several facts crucial to the computation of the non-resident's discount income. 5/

19.  If an interest-bearing bond is issued at a discount, tax on discount income can be withheld from the interest, so long as the withholding tax on the interest and discount income does not exceed the interest. 6/  However, there is no feasible means of withholding tax from discount accruals on zero-coupon bonds.

20.  The issuer can be required to withhold tax on the discount income at maturity. 7/  However, if resident investors are taxed on discount income on an accrual basis, rather than at maturity, requiring withholding from non-resident holders at maturity is futile unless a mechanism is developed for withholding tax on discount income when a non-resident sells a discount bond.  If a non-resident holding a discount bond to maturity is taxed on discount income, but a non-resident selling a discount bond before maturity is not taxed, non-residents have a strong incentive to sell their discount bonds, rather than holding them to maturity.  Economically, there is little difference to an investor between a sale shortly before maturity and a payment from the issuer at maturity.  The result is that foreign investors are subject to tax only if poorly advised.


                          II.  OPTIONS

21.  Options come in two common varieties - options to buy (calls), and options to sell (puts).  Since an option gives the holder a benefit without any obligation, the holder usually pays a premium to the issuer (writer) of the option when the option is issued.  The amount of the premium is a function of the option price, the period for which the option will remain open, and the volatility of market prices for the underlying property.  Since the issuer holds the premium during the option's term, the time value of money is also a factor affecting the market pricing of an option.  An option may have a cash settlement feature, under which the option obligation is settled by a cash payment on the option's expiration date, rather than by an actual purchase or sale of the underlying property.

22.  In many countries, standardized options are issued and traded on established options markets.  Other options are individually designed in negotiations between the holder and issuer.

23.  Three courses of action are open to holders of options:  exercise the option by buying or selling the optioned property, let the option expire unexercised, or dispose of the option before it expires, either by selling it or

by entering into a closing transaction with the issuer that effectively cancels the option.  Tax rules on options must provide for all of these possibilities.

24.  Countries vary in their tax treatments of options.  Under one approach, which is generally followed in the United States, an option has no tax consequence to the holder or issuer until it is exercised, closed out, or lapses, when the results are as follows:

    (a)  Exercise.  If a call option is exercised, the option premium is included in the holder's cost for the property acquired and the issuer's amount realized in the sale.  For example, if a premium of 100u is paid for an option to purchase 1,000 shares of X Corp. stock for 5u per share and the option is subsequently exercised, the holder's cost for the stock is 5,100u (sum of the option premium of 100u and the exercise price of 5,000u), and the issuer of the option is treated as selling the stock for the same amount.  If a put option is exercised, the premium is included in the selling price realized by the holder on the sale and in the issuer's cost of the property acquired in the transaction;

    (b)  Lapse or sale.  If an option expires unexercised, the premium is then included in the issuer's taxable income and allowed as a deduction to the holder.  If the holder sells the option before its expiration, gain or loss is recognized equal to the difference between the sales proceeds and the premium paid.  If the holder and issuer close out the option, each party recognizes gain or loss equal to the net amount paid or received, including both the option premium and any payment made in the closing transaction.  In the United States, gain or loss on the expiration or disposition of an option is usually capital gain unless the option is held or issued in the ordinary course of the taxpayer's trade or business. 8/

25.  In other countries, the issuer is taxed on the option premium when it is received, and the exercise of the option, if it occurs, is treated as an independent transaction in which the issuer's sales or purchase price is the amount received or paid on exercise, exclusive of the option premium. 9/  If the issuer enters into a closing transaction with the holder, any amount paid or received by the issuer in that transaction is gain or loss, recognized at the time of the closing.

26.  Under the latter system, the holder is not typically allowed a deduction for the premium when it is paid, but recognizes gain or loss when the option is exercised. 10/  Under a call option (option to buy), the holder has gain or loss on exercise equal to the difference between the value of the property at that time and the total of the holder's cost, including both the option premium and the amount paid on exercise of the option.  Under a put option (option to sell), the holder's gain or loss on exercise is the difference between value of the property and the net amount received for it (the amount received on exercise, less the option premium).  If the option expires unexercised, the holder is then allowed a deduction for the premium.  If the holder disposes of the option, gain or loss is recognized equal to the difference between the amount received in the sale or closing transaction and the premium paid.

27. Neither of these approaches is without problems. The first approach, which links the option with the transaction occurring if and when the option is exercised, ignores the time-value-of-money advantage that the issuer enjoys by holding the premium during the option's term. As a result, options can be used to avoid rules requiring the accrual of interest income (including bond discount).

28. The first approach is also vulnerable to the use of straddles for avoiding tax. Assume A buys a call option on shares of the stock of X Corp. and simultaneously sells a call option on the same number of shares at the same option (strike) price, but with a slightly different maturity date. Apart from transaction costs, the premium paid on the first option approximately equals the premium received on the second, and any gain or loss on either option will be offset by a virtually identical loss or gain on the other. However, if the values of the options change at all, A might sell or close out the losing option near the end of the tax year, and replace it with a third option differing only slightly in maturity date from the option retained from the original two. This year-end manoeuvre has little effect on A's economic position, but it produces a deductible loss that will not be offset by taxable income until the options mature or are closed out during the following year. The result is a one-year deferral of tax. The straddle problem is discussed further in section V below.

29. Under the second approach, where the option is considered independent of the underlying property, the issuer is usually taxed on the option premium when it is received, while the holder is not permitted any allowance for the premium before the option is exercised or disposed of or lapses. The result is favourable for the Government, and this approach effectively discourages at least some uses of options straddle transactions. However, it discourages option transactions generally, and contradicts economic reality. An option premium resembles an insurance premium, and a tax on option premium when received is like a tax on gross insurance premiums, making no allowance for the possibility of losses.

30. The United States uses a third approach for holders of "non-equity options" - exchange-traded options on property other than individual stocks. 11/ Unless the option is identified as part of a hedging transaction, the holder of such an option is subject to a mark-to-market regime under which gain or loss is recognized annually equal to the difference between the premium paid and the option's value at the end of the year (adjusted for gain or loss recognized under this rule in preceding years). This approach avoids the deferral opportunities of the first approach and also avoids taxing issuers of options on receipts that have not fully accrued as income. However, the approach works well only for options traded on an active market providing realistic daily price quotes.

31. A fourth approach applies in the United States to options that have been identified as hedges. The treatment of hedging transactions is discussed more fully in section VII below.

32. Payments under option contracts are usually not subject to withholding taxes when made to residents of other countries. 12/

## III. FUTURES AND FORWARDS

33. A futures or forward contract is a contract to buy and sell something for a stipulated price at a designated future date. The subject of the contract may be a physical commodity (e.g., wheat or pork bellies), a currency, or a financial instrument. The subject can also be a market index or floating interest rate. The term "futures" is generally reserved for contracts traded in organized markets, subject to extensive regulation. A "forward" is a contract made outside an organized market. Under futures contracts (also called exchange-traded contracts), the exchange clearing-house is effectively the counterparty to all contracts. Under forward contracts (also called over-the-counter contracts), the counterparty is usually a bank or other financial institution.

34. Because the rights and obligations under a futures or forward contract are mutual, it is not common for either party to pay a premium to the other when the contract is made. 13/ However, exchange-traded contracts typically require each party to a contract to make a margin deposit with the exchange. The margin is initially 1 per cent to 5 per cent of the amount of the contract, but it is adjusted daily under a mark-to-market procedure by which each party's margin account is increased or decreased by the amount by which the contract's value changed from the preceding day.

35. Although futures and forward contracts usually provide for physical delivery of the underlying item, they are often closed out before the delivery date or settled for cash on the delivery date. 14/ Some contracts provide exclusively for cash settlement, rather than physical delivery. A closing transaction or cash settlement consists of a cash payment by the losing party to the gaining party equal (in the case of a cash settlement) to the difference between the spot market price for the underlying item on the delivery or settlement date and the contract price.

36. The relationship between the spot and forward price of an item is a function of the time value of money (including both interest and storage costs for physical commodities). For example, if the futures price of wheat exceeds the sum of the spot price and the cost of carrying the wheat to the settlement date, arbitragers can profit by making futures contracts to sell and covering their obligations under the contracts by buying wheat at the spot price and holding it for delivery under the futures. Arbitrage transactions thus keep the spot and forward prices near time-value equilibrium. The forward rate under a currency contract is a function of spot exchange rate and the prevailing interest rates on obligations issued in the two currencies.

37. Futures and forwards can be used as highly leveraged vehicles for speculation. For example, if the initial margin is 1 per cent of the contract amount, a futures contract is a means for reaping the entire benefit of a rise in the market price of an item with an investment of 1 per cent of the item's value. The risk of loss is equally great.

38. More often, futures and forwards are used for hedging. For example, if a person owns property and intends to sell it at a particular time in the future, the person can protect against declines in the property's market value by making

a futures or forward contract to sell.  Conversely, if a person anticipates a need to purchase property at a particular future time, a futures or forward contract to buy protects the person against the risk of rises in the market price.

39.  Countries vary widely in their treatment of futures and forwards, but three basic approaches - a realization approach, a mark-to-market approach, and a matching approach for hedging transactions - predominate.

40.  Under a realization approach, neither party to a contract recognizes gain or loss until the contract is concluded or disposed of by a sale, closing transaction, cash settlement, or delivery at maturity.  On a sale, closing transaction, or cash settlement, each party recognizes gain or loss equal to the amount received or paid.  On a physical delivery, the selling party has gain or loss equal to the difference between the amount received and the seller's cost or other tax basis for the property sold, and the buying party's cost for the property is the contract price.

41.  Under the mark-to-market approach, gain or loss on a contract outstanding at the end of a taxable year is recognized in an amount equal to the contract's fair market value on the last day of the year, appropriately adjusted for any gain or loss recognized on the contract for earlier years.  For contracts sold or closed out during the year, the gain or loss is the amount paid or received, adjusted for gain or loss recognized for earlier years.  For exchange-traded contracts, the mark-to-market approach is facilitated by the fact that the contracts are marked-to-market daily by the exchange.

42.  Under the matching approach, which is described more fully below in section VII, the tax treatment of a contract held as a hedge is coordinated with the taxation of the position being hedged.

43.  The United States uses all of these approaches.  The realization approach is the general rule.  However, the mark-to-market approach usually applies to foreign currency contracts traded in the interbank market and to regulated futures contracts (contracts that are traded on a national securities exchange or a board of trade regulated by the Commodity Futures Trading Commission and that are marked-to-market daily under exchange or board rules). 15/  The matching approach applies to a contract held as a hedge, whether it would otherwise be subject to the realization or mark-to-market rules, if the hedge is identified in the taxpayer's records when the contract is made.

44.  Payments and other transfers under futures and forward contracts are usually not subject to withholding taxes when made to residents of other countries. 16/

## IV.  NOTIONAL PRINCIPAL CONTRACTS

45.  A notional principal contract is an instrument requiring one party to the contract to make payments to the other, and perhaps vice versa, in amounts calculated by applying a specified rate or index to a "notional" principal amount.  An example is an interest rate swap under which for a particular period

(say, five years), A agrees to make quarterly payments on 1,000u to B at the 90-day London Interbank Offered Rate (LIBOR) as of the date of payment, and B agrees to make simultaneous payments to A of 25u each (one fourth of 10 per cent of 1,000u).  Because the payments in this case are simultaneous, they are offset, and only one payment of the net amount is made each quarter. However, the payments need not be simultaneous.  For example, A might be required to make quarterly payments, while B's obligation might be annual, in which case netting is possible only for one set of payments each year.

46.  Notional principal contracts can be made as speculations on market changes, but they are more often used to hedge market risks.  B might make the contract in the example because it has borrowed 1,000u at a variable interest rate tied to the LIBOR and wants to eliminate the risk of interest rate fluctuation.  B's variable interest payments under the loan will be offset by the variable payments it receives from A under the swap, and B's ultimate obligation consists of the payments at 10 per cent fixed interest to A under the contract.  A might be an investment bank that will lay off the risk in another transaction. Alternatively, B might be an investment bank, and A might be an investor that holds a 1,000u bond paying interest at the LIBOR, but wants instead to receive interest at a fixed rate.  Typically, a notional principal contract is made by a company or investor with a financial institution.  The financial institution usually attempts to hold a balanced portfolio of contracts in which offsetting positions effectively eliminate all market risk.  Occasionally, a financial institution acts as broker in making a notional principal contract between two customers.

47.  Other notional principal contracts include the following:

   (a)  Other types of swaps, including

   (i)   Equity swaps:  A pays amounts equal to the dividends on 100 shares of X stock, B pays amounts equal to the dividends on 100 Y shares, and the parties exchange payments at maturity equal to the values at that time of the notional amounts of stock;

   (ii)  Commodity swaps:  for five years, A annually pays 100u to B, and B pays to A 40 times the price of a bushel of corn on the payment date;

   (iii) Currency swaps:  for five years, A annually pays $100 to B and B simultaneously pays 1,000u to A;

   (iv)  Basis swaps:  one party's payments are based on one index and the other's on another index;

   (b)  Cap - one party makes periodic payments equal to a notional principal amount times the excess (if any) of a particular varying rate or index over a stipulated fixed rate, and the counterparty makes a single payment when the contract is made or a series of fixed payments. For example, suppose A, who has borrowed 1,000u at the 90-day LIBOR, is willing to absorb the risk of limited increases of the LIBOR but wants to be protected in the event the LIBOR rises above 10 per cent.  To do so, A buys a cap from B under which B agrees to make a

payment to A each quarter equal to one fourth of the product of 1,000$\underline{u}$ and any excess of the LIBOR for the quarter over 10 per cent;

(c) <u>Floor</u> - same as a cap, except that the periodic payment is the notional principal amount times the excess of the fixed rate over the variable rate (e.g., 1,000$\underline{u}$ times the number of percentage points by which the LIBOR on the payment date is less than 5 per cent). A floor might be purchased by an investor who, for example, holds a 1,000$\underline{u}$ bond paying interest at the 90-day LIBOR and who is generally willing to bear the risk of interest rate fluctuation but wants to be protected against the possibility of the LIBOR falling below 5 per cent;

(d) <u>Collar</u> - one party is simultaneously the recipient of the periodic payments under a cap and the payor of the periodic payments under a floor, or vice versa.

48. The basic payments under a notional principal contract are periodic, but one of the parties may make a lump-sum payment when the contract is made, at the end of the contract period, or at some other time. For example, under a cap or a floor, one party usually makes a single fixed payment, and the other party assumes an obligation to make periodic payments. Also, a swap, where both parties make periodic payments, may be off-market, in which case the party benefiting from the market deviation makes a compensating payment to the other in addition to that party's periodic payments under the agreement. Assume the market equates variable rate interest at the 90-day LIBOR with a five-year fixed rate of 11 per cent, but A and B make a five-year agreement to swap the 90-day LIBOR for fixed interest at 10 per cent. A and B will agree that the party making the fixed payments must also make a lump-sum payment, probably when the contract is made, to compensate for the below-market rate of the fixed payments. If the fixed interest payments are at, say, 12 per cent, the compensating lump-sum payment would be made by the payor of the variable payments.

49. In most countries, periodic payments under a notional principal contract are recognized as made (as income by the recipient and deductions by the payor). Countries vary in their treatment of non-periodic payments. In some countries, non-periodic payments, like periodic payments, are treated as income to the recipient and deductions for the payors when made. In other countries, non-periodic payments are amortized over the instrument's term.

50. The treatment of periodic payments has not been considered problematical, but non-periodic payments have proven to be more difficult to classify. If non-periodic payments are treated as income and expense as they are received, the parties to the contract are treated symmetrically, but taxpayers might nevertheless utilize this treatment as a means of reducing tax. For example, if a company has a loss carryover deduction that is about to expire, it might make an off-market interest rate swap under which it receives a lump-sum payment when the contract is made. The inclusion of the payment in income when received does not increase the company's tax because the income is absorbed by the loss. The company will make larger periodic payments than it would have under a market-rate swap, but the deductions for these payments can be deducted against income for the years in which they are made. As a result, the life of the loss carryover is effectively extended.

51.  Also, the recognition of lump-sum payments as made and received might disrupt the markets for notional principal contracts.  If an investment bank holds a balanced portfolio and amortizes lump-sum receipts on a realistic basis, it essentially has no net income or loss from the contracts (apart from the margin it extracts as its profit) because deductions for payments will roughly equal income from receipts.  On the other hand, if lump-sum receipts are income as received, the bank may have artificial net income when its portfolio is expanding and artificial net losses when the portfolio is contracting in size.  This artificial income and loss may make dealing in notional principal contracts less profitable than it would be under tax rules treating receipts more realistically, or it might cause investment banks to charge customers more than they otherwise would.

52.  These problems can be addressed by requiring taxpayers to amortize lump-sum payments under notional principal contracts, but reasonably realistic amortization schemes are complex.  For example, in the United States, lump-sum payments are usually amortized by reference to market prices for forward contracts and options equivalent to the taxpayer's rights under the notional principal contract. 17/  For this purpose, a swap is considered analogous to a series of cash-settled forward contracts, and a lump-sum payment under a swap is allocated over the contract's life according to the market prices for the analogous forward contracts.  This method is illustrated by the following example:

> A swap contract requires A to make three annual payments to B of $2,350 each (the notional principal amount 1,000 bushels of corn times $2.35, the current price for corn) and B to make simultaneous payments to A equal to 1,000 times the spot price for corn on the payment dates. 18/ When the contract is made, the forward prices for corn are $2.40 for a one-year forward, $2.55 for a two-year forward, and $2.75 for a three-year forward.  Because A's fixed payments are below market, A pays B $535 when the contract is made.  This non-periodic payment is amortized by treating it as a loan from A to B that B will repay, with interest, in three payments of $50 in one year (1,000 times the excess of the one-year forward price of $2.40 over the $2.35 price at which A's fixed payment is pegged), $200 in two years (1,000 times excess of $2.55 over $2.35), and $400 in three years (1,000 times excess of $2.75 over $2.35).  The non-periodic payment of $535 equals the present value of these three payments at a discount rate of 8 per cent compounded annually.  Each assumed payment is divided between a time-value component (determined at 8 per cent) and a principal component, as follows:

| Year | Assumed payment | Time-value component | Principal component |
|------|------|------|------|
| 1 | 50 | 43 | 7 |
| 2 | 200 | 42 | 158 |
| 3 | 400 | 30 | 370 |
|   | 650 | 115 | 535 |

The principal component is treated as a periodic payment under the swap, and the time-value component is disregarded.  A's periodic payment to B for the first year is thus deemed to be $242 (sum of $235 actually paid at the end of the first year and $7 amortization of the upfront payment); the deemed periodic payments for the second and third years are $393 (sum of $235 and $158) and $605 (sum of $235 and $370).  The periodic payments, enhanced by amortization of the non-periodic payment, are treated as income of the recipient (B) and deductible expense of the payor (A).

53.  This procedure is complex because it requires both extensive information about market transactions and considerable computational sophistication.  Since most notional principal contracts are large transactions constructed by major financial institutions, this complexity is not often troublesome for taxpayers.  Moreover, the forward rates used by the parties in determining the amount of the lump-sum payment can be the basis of the allocation if they are "reasonable".

54.  However, in some situations, the parties' pricing of the contract is not based on forward rates, and comparable forward rates may not be available.  The United States Treasury therefore provided an alternative "level payment method", under which the lump-sum payment is amortized as though it were the present value of a series of equal payments falling due simultaneously with the periodic payments under the contract.  This method is illustrated by the following example.

An interest rate swap requires A to make five annual payments to B of $11,000 each (11 per cent of the notional principal amount of $100,000) and B to make simultaneous payments to A equal to the product of $100,000 and the one-year LIBOR on the date of payment. [19]  When the contract is made, the LIBOR swaps even on the market for fixed interest of 10 per cent.  B, who gets 11 per cent in this off-market swap, therefore pays a "yield adjustment fee" to A when the contract is made of $3,791, which the parties computed as the present value at 10 per cent of five annual payments of $1,000 each (11 per cent of $100,000, less 10 per cent of $100,000).  Under the level payment method, the allocation to the first year is $621 - the assumed payment of $1,000, reduced by the time-value component (10 per cent of the yield adjustment fee of $3,791).  This amount is recognized as a receipt by A and a payment by B in addition to the periodic payments for the year.  Similarly, the allocation to the second year is $683 ($1,000, less the time-value component computed as 10 per cent of the excess of $3,791 over the principal component of $621 for the first year), to the third year is $751, and so forth.

55.  If the lump-sum payment is made other than when the contract is made (e.g., at the end of the contract term), the level payment method is applied as though the contract provided for a lump-sum payment at the outset equal to the present value of the payment actually required.

56.  Payments under notional principal contracts are generally not subject to withholding taxes when made to residents of other countries, but some countries apply withholding taxes to such payments in at least some circumstances. [20]

## V.  STRADDLES

57.  The United States has found it necessary to provide special loss deferral and capitalization rules for "straddles".  Assume A buys a call option on shares of the stock of X Corp. and simultaneously sells a call option on the same number of shares at the same option (strike) price, but with a slightly different maturity date.  Apart from transaction costs, the premium paid on the first option very nearly equals the premium received on the second, and any gain or loss on either option will be offset by a virtually identical loss or gain on the other.  However, if the values of the options change at all, A might sell or close out the losing option near the end of the tax year and replace it with a third option differing only slightly in maturity date from that of the original two.  This year-end manoeuvre also has little effect on A's economic position, but it produces a loss that, if allowed as a tax deduction, will not be offset by taxable income from the options transactions until the remaining options mature or are closed out during the following year.  The loss can therefore be deducted against other income, effectively producing a one-year deferral of tax. The United States Congress found this result unacceptable.

58.  Since 1981, United States law has generally disallowed any deduction for loss on the sale, exchange, or closing of a "position" in actively traded property to the extent that the loss is offset at year-end by an unrealized gain in an "offsetting position". 21/  The disallowed loss is carried forward and is allowed in the succeeding year, except to the extent it is offset by unrealized gain in an offsetting position held at the end of that year.  In the example, the loss realized by selling or closing out one of the options in the first year is deferred until the offsetting option is exercised, sold, or closed out.

59.  The actively traded property comprising a straddle may, for example, be a commodity, a debt instrument, a futures or forward contract, or a notional principal contract. 22/  Stock may also be part of a straddle, but only if the offsetting position is an option.

60.  Offsetting positions exist "if there is a substantial diminution of the taxpayer's risk of loss from holding any position with respect to personal property by reason of his holding one or more other positions with respect to personal property (whether or not of the same kind)". 23/  For example, if A holds 100 shares of the stock of X Corp. and also has a put option on 100 shares of X stock, the positions are offsetting because the put option, which can be exercised to sell the stock for the strike price if the stock's value falls below that amount, substantially diminishes A's risk of loss on the stock. Thus, if the stock's value increases above the strike price of the put and A allows the put to expire unexercised, while retaining the stock, the loss sustained on lapse (the amount of the option premium) is not deductible to the extent of the unrealized gain in the stock.  The put does not eliminate all risk of loss; for example, if the value of X stock remains constant, A will lose the option premium without reaping any offsetting benefit.  However, the straddle rule applies if an offsetting position produces a "substantial diminution" of the risk of loss; an elimination of risk is not necessary.  Moreover, the positions may be considered offsetting even if the strike price under the put is less than the stock's value when the put is acquired and the put therefore does not protect A from all risk of loss on the stock.

61.  The straddle rules are complex and difficult to enforce.  The taxpayer's
purpose in acquiring the offsetting positions is not relevant.  Assume B, a
United States resident, purchases a bond denominated in Japanese yen and, to
protect against currency risk, simultaneously enters into a forward contract to
sell yen; the term of the forward contract is shorter than the bond's term, and
B realizes loss on the forward when it matures.  Because the loss on the forward
is offset by currency gain in the yen position represented by the bond, it is
nondeductible, at least in part, even if B promptly enters into another forward
contract to continue the protection against currency risk.  The ultimate
result - deferral of the loss deduction until the offsetting gain is realized -
is not unreasonable, but the accompanying record-keeping burden may be more than
B bargained for in acquiring the investment. 24/

62.  Conversely, if a taxpayer's purpose in acquiring offsetting positions is to
defer tax by a straddle strategy, the taxpayer is likely to keep records that do
not call attention to the connection between the two positions, thus leaving for
the tax auditor a difficult job in making the connection required for the
application of the straddle rules.  The auditor's task is even more difficult if
the property underlying the two positions is not identical (e.g., stock in a
mutual fund invested in all stocks in a particular index and a cash-settled put
option on the index).

63.  The straddle rules also defer deductions for interest and other costs
incurred in financing or carrying any position (leg) of a straddle. 25/  Assume
A purchases silver and simultaneously enters into a futures contract to sell an
identical amount of silver in 18 months; the purchase is financed with borrowed
money, and A's costs in carrying the silver include interest on the borrowing
and storage and insurance costs. 26/  The futures price for the silver
approximates the sum of A's purchase price and the interest, storage, and
insurance costs for 18 months.  The futures contract thus guarantees A
reimbursement of the carrying costs as well as offsetting the risk of loss from
a drop in silver prices.  The United States Congress concluded that the carrying
costs, as well as any loss on a closing out of either the silver position or the
futures contract, should be deferred until income from the straddle transaction
is recognized.  However, a consequence of the capitalization of carrying costs
is greater complexity for taxpayers and tax auditors, who must identify both the
positions comprising a straddle and the interest and other costs "properly
allocable" to property included in the straddle.

64.  The United States straddle rules apply only to United States citizens and
residents and to non-residents engaged in business in the United States.  They
do not affect United States withholding taxes and thus have no application to
non-resident investors in the United States who are not engaged in business in
that country.

65.  Much of the complexity of the straddle rules derives from Congress' efforts
to frustrate avoidance strategies.  For individual investors, these efforts seem
to have largely succeeded.  However, United States-based multinational
corporations may have less difficulty in avoiding the straddle rules.  For
example, if a domestic affiliate holds one leg of the straddle and a foreign
affiliate holds the other leg, the straddle rules apparently do not apply,
because domestic and foreign affiliates cannot join in a consolidated return.

66.  Few, if any, countries other than the United States have adopted tax rules
to curb straddle strategies.  The United States experience probably proves that
compliance and enforcement complexity is an unavoidable consequence of any
effective effort to deal with straddles.  This experience may also establish
that straddle strategies, if not limited by anti-avoidance rules, can impair a
country's ability to tax income from capital.

67.  In the United States, gains and losses on most instruments used in
straddles are capital gains and losses, 27/ and capital losses are generally
deductible only against capital gains.  Thus, straddles, if not curbed by the
straddle rules, would usually be effective only to defer tax on capital gains.
A country that does not tax capital gains may encounter fewer difficulties with
straddle transactions if it categorizes straddle losses as capital.

68.  However, countries that want to have effective taxes on capital gains are
likely to find these taxes increasingly compromised by straddles.  Straddle
strategies are abetted by the relatively low margin requirements and transaction
costs for many derivatives.  In the absence of straddle rules, a taxpayer
wanting to shelter a large gain from tax can often defer the capital gains tax
indefinitely by engaging in a series of straddle transactions involving huge
nominal amounts but having a cost to the taxpayer that is not large in relation
to the deferred tax.


VI.  SYNTHETIC INSTRUMENTS

69.  In many contexts, derivatives can be used to convert an investment in one
type of property into an investment with characteristics indistinguishable from
property of another type.  If the tax rules for the two types of property are
different, this use of derivatives allows a taxpayer to combine the economic
consequences of one type with the tax consequences of the other type.  This
problem has at least two aspects - mischaracterization of income, and avoidance
of realization rules.


A.  Mischaracterization

70.  Assume T purchases silver and simultaneously enters into a futures contract
to sell an identical amount of silver.  The forward price of silver equals or
closely approximates the sum of the spot price for silver and the costs
(interest, storage, and other expenses) of holding silver until the delivery
date; whenever the prices in the spot and forward markets depart from this
relationship, arbitragers enter the market to restore the relationship.  Since T
holds both silver and a contract to sell silver, T will not be affected by
changes in the price for silver, but the spread between the price paid in the
spot market and the price to be received under the futures contract guarantees a
profit compensating T for the time value of the investment in silver.  T's
ownership of the silver and the contract put T "in the economic position of a
lender because he has an expectation of a return from the transaction which in
substance is in the nature of interest and he undertakes no significant risks
other than those typical of a lender". 28/  A lender's return (interest income)
is usually taxed as ordinary income.  However, T's profit will be in the form of

gain on the sale of the silver, and gains on sales of investments are usually
capital gain.  If T's profit qualifies for a preferential capital gains tax
rate, this back-handed way of investing in a debt instrument allows ordinary
interest income to be converted into capital gains.

71.  The simplest solution to this problem is to tax capital gains at the same
rates as ordinary income.  This solution might be seen as allowing the tail to
wag the dog since the taxation of capital gains has traditionally been seen as a
much larger issue than the taxation of derivatives.  However, as taxpayers
become more sophisticated in investment strategies, the use of derivatives to
avoid unwanted tax characterizations will become more common, and the capital-
gains/ordinary-income distinction might become a dividing line between well
advised and poorly advised taxpayers, rather than a line separating different
types of income.

72.  The United States has pursued more limited responses to the problem.  In
1993, the United States Congress adopted a provision taxing as ordinary income
all or part of the gain on a "conversion transaction". 29/  The hallmark of a
conversion transaction is that "substantially all of the taxpayer's expected
return from [the transaction] is attributable to the time value of the
taxpayer's net investment in such transaction". 30/  An example is an
acquisition of property and the making of a contemporaneous contract to sell the
property.  A straddle (two or more offsetting positions in exchange-traded
property) is also a conversion transaction if the expected return is
attributable to the time value of money.  The silver transaction described in
the paragraphs above was cited by Congress as an example of a conversion
transaction.

73.  Gain on a disposition or termination of any position included in a
conversion transaction (the silver or the futures contract in the example) is
ordinary income, except to the extent it exceeds the "applicable imputed income
amount".  The latter amount is interest on the taxpayer's investment in the
transaction (the purchase price of the silver), computed at 120 per cent of the
prevailing yield on United States Treasury securities of like term. 31/  In the
example, if the futures contract is made through a clearing-house of a major
board of trade, the interest rate implicit in the contract is likely to be no
higher than the rate imputed by the statute, and the investor's gain, whether it
occurs on a sale of the silver, a sale or closing of the futures contract, or
both, will probably be ordinary income in whole.

74.  A more mechanical system applies in the United States to synthetic
instruments constructed with currency contracts.  Assume B, a United States
person, has $1,000 to invest in a one-year debt instrument; the prevailing
interest rates are 8 per cent in the United States and 2 per cent in Japan, and
the spot exchange rate is $1 equals 100 yen.  If B invested in a United States
instrument, the investment would accumulate to $1,080 after one year.  However,
B (a) converts the $1,000 to 100,000 yen, (b) purchases a one-year 100,000 yen
debt instrument at 2 per cent interest, and (c) makes a forward contract to sell
100,200 yen in one year.  The forward rate is $1 equals 94.44 yen, 32/ and B
will thus have $1,080 after one year (102,000 yen at 94.44 yen per dollar).  The
$80 profit consists of interest of $21.18 (2,000 yen at 94.44 yen per dollar),
and currency gain of $58.82.  Under United States law, currency gain is ordinary

income unless it arises from a forward or futures contract or option that is held for investment <u>and is not part of a straddle</u>. <u>33</u>/  Since the forward contract in the example protects B against the risk of currency loss on the yen note, the note and the forward contract are offsetting positions - a straddle. B's income from the transaction is thus ordinary income, just as it would have been if B had invested in a United States instrument.

75.  The United States solutions to these problems are complex and incomplete. The practical alternatives to these solutions are, on the one hand, eliminating from the income tax laws any distinction between ordinary income and capital gains and, on the other hand, allowing taxpayers a free hand to alter tax characterizations at will through the use of derivatives.  As derivatives become more widely available and understood, the latter alternative will probably become increasingly unpalatable to countries that either exempt capital gains from tax or tax capital gains at rates much lower than ordinary income.

### B.  <u>Avoidance of realization rules</u>

76.  Under most income tax laws, gains and losses on investments in property are recognized only when realized by a sale, exchange, or other disposition of the property.  Thus, a holder of appreciated property is not taxed on the appreciation so long as the property is held, but a capital gains tax may be incurred if the holder sells the property and reinvests the sales proceeds in other property.  By the use of derivatives, it is often possible to obtain the economic equivalent of a rollover of investments but without making a sale or exchange that triggers a capital gains tax.

77.  Assume individual E, an employee of X Corp., owns substantial amounts of X stock, which was acquired by the exercise of employee stock options and which comprises the majority of E's wealth.  E wants to have a more diversified investment portfolio but would incur substantial capital gains taxes on selling X stock and reinvesting in securities of other firms.  E enters into a swap agreement with an investment bank under which, for a period of five years, E will pay the bank amounts equal to the dividends on 1,000 X shares and the bank will pay to E amounts equal to the dividends on a specified basket of stocks of other companies (when the agreement is made, the basket of stocks has the same value as 1,000 X shares); at the end of these five years, E will pay the bank an amount equal to the value of 1,000 X shares at that time, and the bank will pay E an amount equal to the value of the basket of shares.  The economic result is the same as though E had sold 1,000 X shares and reinvested the proceeds in the basket of shares.  However, E has made no sale or exchange of X shares, and thus incurs no capital gains tax.

78.  Few countries, if any, have addressed the realization-avoidance potential of derivatives.  Any effort to address the problem would quickly encounter a frustrating reality:  Given the great variety and flexibility of derivatives, rules prescribing particular results for particular investment techniques could easily be avoided.  For example, suppose a rule were adopted declaring that the making of an equity swap of the sort illustrated in the above paragraph shall be treated as a sale or exchange of the stock that is the basis for the taxpayer's payments under the swap (1,000 X shares in the example) to the extent that the

taxpayer owns such stock when the swap agreement is made. The effect of this rule would be to eliminate equity swaps without solving the problem, because numerous other techniques can be used to obtain the same results. For example, a short sale of X stock, combined with an investment in the basket of stocks, has the same effect as the equity swap, and at least in the United States, the making of a short sale against the box is not a realization event. A sale of a call option on X stock, combined with a purchase of a put on X stock and a futures contract on the basket of stocks, also has the same effect.

79. The realization-avoidance problem could be attacked effectively only by a rule that treats a taxpayer as having sold property whenever the taxpayer enters into one or more transactions that have the effect of offsetting the benefits and burdens of the taxpayer's ownership of the property. But such an approach is also beset by numerous problems. E's five-year equity swap looks a lot like a sale of X stock combined with an investment in the basket of stocks, but would such a characterization be fair if the term of the equity swap was six months? If a six-month swap is not a realization event, what should be done about a taxpayer who enters into a series of six-month swaps extending over, say, five years and thereby accomplishes the same results as E? Would the proposed rule apply only when the offsetting positions eliminated all risks and benefits of ownership or when these risks and benefits are substantially eliminated? If the latter, how is the line to be drawn between substantial and insubstantial? Whatever rules were settled on, would tax auditors have the sophistication and time to sort through taxpayers' records to determine whether and how the rules applied?

80. A more comprehensive, and perhaps simpler, approach to the problem would be to require all substantial investors to use a mark-to-market system for exchange-traded securities, requiring unrealized gains and losses to be recognized annually and thereby eliminating the realization rule. This is a radical solution because it would change the entire system of dealing with gains and losses on property in order to frustrate a particular avoidance technique. However, as the availability and understanding of derivatives expands, the application of the realization rule may become increasingly arbitrary, and Governments may be pushed to consider radical alternatives to the rule.


VII.  HEDGING

81. Derivatives are remarkably effective as instruments for gambling. Using derivatives, investors can take large positions with cash investments as small as 1 per cent of those positions; their investments can double, triple, or more, or be wiped out, by relatively small changes in the value of the positions.

82. However, a much more common use of derivatives is for hedging against risks arising from business activities or investments. A manufacturer of products from corn might make futures contracts to buy corn to ensure that its manufacturing profits will not be impaired by rises in the price of its basic input. 34/ An export seller of goods might make a forward contract to sell foreign currency to be received in a sale in order to protect its profit on the sale from erosion by currency fluctuation. A company that has borrowed in the currency of country x but reports its profits in the currency of country y might

make a series of forward contracts to purchase X currency with Y currency to cover its payments under the loan, thereby eliminating the possibility that borrowing costs might be increased by an unfavourable change in the exchange rate.  A bank that makes long-term loans from funds received as short-term deposits might acquire a variety of derivatives positions to mitigate the resulting interest-rate risk.

83.  One of the more important steps a Government can take to facilitate productive uses of derivatives is to formulate tax rules allowing gains and losses from derivatives held as hedges to be coordinated, both in character and in time, with the income and loss from the transactions being hedged.  The United States Treasury adopted hedging rules in 1994.  They are briefly described below as a means of highlighting the crucial issues and outlining one set of responses to those issues. 35/

84.  The United States rules apply only to transactions made in the normal course of the taxpayer's business, primarily to reduce either or both of two types of risk:

        (a)  The risk of price changes or currency fluctuations with respect to property held or to be held by the taxpayer, provided that gain or loss on a disposition of the property cannot produce capital gain or loss;

        (b)  Risks of interest rate or price changes or currency fluctuations with respect to obligations of the taxpayer, both current and anticipated, whether arising from borrowings or business operations. 36/

The rules do not apply to a hedge of a dividend stream, the overall profitability of a business unit, or other business risks that do not relate directly to interest rate or price changes or currency fluctuations. 37/

85.  The risks of a taxpayer's business are judged by looking at the business as a whole.  For example, if the prices of products the taxpayer manufactures from corn vary directly with the price of corn, the business probably is not subject to a price risk, and if so, purchases of corn futures cannot be justified as a hedge.  However, the taxpayer's judgement on these matters is usually respected. A hedge of a particular asset or liability or pool of assets or liabilities is generally considered to reduce overall risk if it reduces risk with respect to those assets or liabilities and is reasonably expected to reduce the overall risk of the taxpayer's operations. 38/  Similarly, if the taxpayer has a programme that, as a whole, is reasonably expected to reduce overall risk, the risk-reducing effect of each instrument acquired as part of the programme need not be demonstrated.

86.  The character rules for hedges apply to an eligible transaction only if it is identified as a hedge in the taxpayer's records before the end of the day on which the transaction is entered into. 39/  Also, substantially contemporaneously with entering into the hedging transaction, the taxpayer must identify the item, items, or aggregate risk being hedged, usually by identifying the transaction creating the risk and the type of risk that the transaction creates. 40/

87.  The policy underlying the identification requirement is twofold.  First, it is probably not feasible to apply the hedging rules mandatorily to all transactions serving hedging functions because, given the quantity of derivatives transactions made by many taxpayers, it is not possible for tax auditors to police a mandatory requirement.  Secondly, although the identification requirement effectively makes the character rules elective, the requirement that the identification be made on the day the transaction is entered into precludes taxpayers from using the rules selectively - applying them when they turn out to be advantageous and otherwise disregarding them.

88.  Gains from transactions identified as hedges are generally ordinary income, even if the transactions do not qualify as hedges or the identification is defective. 41/  Loss from a hedging transaction is ordinary loss if the transaction fully qualifies and the identification is made in accordance with the rules, but loss is characterized without regard to the transaction's hedging function if the rules are not fully complied with.  Since the hedging rules apply only to hedges of risks arising in the ordinary course of business, the ordinary characterization of gains and losses from hedging transactions usually matches with the characterization of income from the property and activities being hedged.

89.  The United States hedging rules also deal with the timing of the recognition of income or loss from hedging transactions, but without prescribing detailed timing rules.  Generally, taxpayers' accounting methods for hedging transactions must clearly reflect income, and this standard requires that taxpayers "reasonably match the timing of income, deduction, gain, or loss from the hedging transaction with the timing of income, deduction, gain, or loss from the item or items being hedged". 42/  The matching requirement, which applies whether or not a hedging transaction is identified as such, often is not satisfied by accounting methods that recognize hedging gains and losses as realized.

90.  For example, if a taxpayer hedges an aggregate risk, rather than matching particular hedges with the risks from particular transactions, the taxpayer might use a mark-and-spread method, under which hedges are marked-to-market at least quarterly and gain or loss from hedges is allocated over the period for which the hedging transactions are intended to reduce risk. 43/  Gains and losses on hedges of inventory must generally be taken into account at the times they would affect income if treated as parts of the costs of the goods being hedged. 44/  Although the rules require coordination of the treatment of gains and losses from hedging transactions with the treatment of income or loss from hedged activities and property, it is not permissible to merge hedges into the accounts for hedged items.  For example, gain or loss on an inventory hedge cannot be included in the inventory accounts.

91.  The hedging rules supersede several inconsistent rules that might otherwise apply to transactions used as hedges.  For example, futures contracts and currency forward contracts are generally subject to a mark-to-market requirement and gains and losses from these contracts are arbitrarily classified as 40 per cent short-term capital gain or loss and 60 per cent long-term capital gain or loss, 45/ but neither the mark-to-market rule nor the characterization rule applies to contracts properly identified as hedges. 46/

VIII.  INTERNATIONAL ISSUES

A.  Withholding taxes

92.  Under the present practices of most countries, payments to non-residents under derivatives and other unconventional financial instruments are generally not subjected to withholding taxes.  As noted above:

(a)  Discount income of foreign holders of discount bonds is nominally subject to withholding taxes under the laws of several countries, and this tax is permitted under the interest articles of many income tax treaties, but compliance with these withholding taxes is likely spotty at best;

(b)  Payments under options and futures and forward contracts are rarely subject to withholding taxes when made to residents of other countries;

(c)  Payments under notional principal contracts are generally not subject to withholding taxes when made to residents of other countries, but a few countries apply withholding taxes to such payments in at least some circumstances.

93.  The issue of withholding taxes on payments under derivatives is a conundrum for which there is no satisfactory solution.  On the one hand, derivative transactions, if not subject to withholding taxes, may be used to avoid withholding taxes on dividends and interest.  For example, if a country x resident owns stock of a country y corporation, dividends on the stock are likely subject to a country y withholding tax.  However, the country x resident can achieve the same economic result without the withholding tax by purchasing stock of a country x corporation and making an equity swap agreement with a country y bank to swap cash flows from the X corporation stock for the cash flows under the Y corporation stock.

94.  As another example, assume the prevailing interest rates are 2 per cent in country x and 8 per cent in country y, and the currency exchange rates are 100ux (the country x currency) for 1uy (the country y currency) on the spot market and 94.44ux for 1uy on the one-year forward market; A, a resident of country x, wants to invest 1,000uy at the 8 per cent rate.  If A acquires a one-year, 8 per cent, 1,000uy bond issued by a country y person, the interest of 80uy will likely be subject to withholding in country y.  However, A might achieve the same result by purchasing a one-year, 2 per cent, 100,000ux bond issued by a country x person, and simultaneously entering into a one-year forward contract to exchange 102,000ux for 10,080uy (102,000/1,080 is 94.44).  In the latter transaction, A has no interest income from country y sources and thus is not subject to any country y withholding tax on interest.

95.  However, it is not likely that country y could recoup the withholding tax in either of the foregoing examples by imposing a withholding tax.  In the first example, if country y imposes a withholding tax on swap payments on the theory that they substitute for dividends from a country y corporation, the withholding tax can probably be avoided by making the contract with a country z bank.  Even if numerous countries follow country y's lead in taxing swap payments, there will always be a country z wanting to be a tax haven in such transactions.

96.  Moreover, it is not clear that country y should be concerned that foreign investors obtain the economic equivalent of dividends or interest from country y sources through the use of derivatives.  Country y retains the ability to tax all dividends paid by country y corporations and all interest paid by country y issuers, and the object of its withholding taxes is presumably to reach income produced by economic activities in country y.  This objective does not require that country y tax a shadow, created by financial wizardry, even though that shadow has all the appearances of dividends or interest from country y persons.

97.  The emerging practice of a few countries to impose withholding taxes on swap payments, but not on payments under options and futures and forward contracts, is likely to be especially destructive and self-defeating.  Notional principal contracts are not a unique breed.  Virtually anything that can be done by a notional principal contract can also be done by one or more options, futures, or forwards. 47/  The likely effect of withholding taxes on swap payments is a skewing of international transactions in derivatives, without any material amounts of tax being collected.

98.  On the other hand, the clothing of derivatives can be used to cloak transactions that should be subject to withholding taxes.  Assume A, a country x resident, enters into a swap agreement with B, a country y resident, under which A transfers to B 1,000u when the contract is made and B promises to transfer 80u to A on each of the first, second, third, and fourth annual anniversaries of the date of the agreement and 1,080u on the fifth anniversary.  This transaction is simply a five-year, 8 per cent loan of 1,000u by A to B, and the 80u payments by B should be taxed as interest.  If country y's tax laws include a substance-over-form doctrine, its withholding tax on interest should apply to these payments.  If country y does not have a substance-over-form doctrine and does not impose withholding taxes on swap payments, it is vulnerable to this charade.  However, the extension of the withholding taxes to all swap payments, including the vast majority that are not artificially constructed to avoid tax, seems to be a poor solution to the problem.

99.  Concern has also been expressed about the potential for avoiding tax through the derivatives transactions, directly or indirectly, between related persons.  For example, if a country x corporation engages in a derivatives transaction with an affiliate in country y, the parties might, as a tax avoidance ploy, agree to terms that deviate from those prevailing in the market.  The solution to this problem lies in an arm's length requirement, either in the internal laws of countries X and Y or in an income tax treaty between them.  But, suppose the X corporation and the Y corporation each enter into derivatives transactions with an unrelated bank in country z, a tax haven.  Both of these transactions might be off-market on terms that make the Z bank whole (what it loses on one contract, it gains on the other) but have the net result of reducing the aggregate tax burden of the X and Y corporations.  The solution to this problem is probably a more sophisticated use of an arm's length rule, although enforcement of the rule would be complicated by the difficulty tax auditors would inevitably encounter in identifying abusive transactions.

B. <u>Distortions resulting from country-to-country
variations in internal laws</u>

100. Distortions might arise when the residence countries of the parties to a
derivatives transaction follow different rules in taxing the transaction.
Assume A, a resident of country x, purchases a cap from Bank B, a resident of
country y; under the agreement, A pays 600<u>u</u> to B when the contract is made, and
B agrees to make 12 quarterly payments to A equal to the product of 25,000<u>u</u> and
any excess of the 90-day LIBOR on the date of payment over 9 per cent. <u>48</u>/
Under the laws of country x, all payments under a notional principal contract,
including lump-sum payments, are taxable income to the recipient and deductible
expense to the payer when made.  Under the laws of country y, periodic payments
are recognized as made and received, as under the laws of country x, but a
lump-sum payment is amortized over the contract's term.  Specifically, B
recognizes the 600<u>u</u> as taxable income in three instalments - 55<u>u</u> for the first
year, 225<u>u</u> for the second year, and 320<u>u</u> for the third year.  Neither country
imposes a withholding tax on any payment under the contract.

101. The lack of symmetry in the treatments of the lump-sum payment in countries
X and Y may not be a problem.  Each party to the contract is taxed in the same
way as it would have been taxed if that party had made the contract with a
resident of its home country.  The lack of symmetry thus may neither encourage
nor discourage either party from dealing internationally, rather than locally.

102. However, it is possible that the tax rules may be reflected in the pricing
of the contract.  That is, in domestic transactions where the lump-sum payment
is made at the outset of the contract, the cap price may be higher in country x
than in country y so as to reflect the larger present value of the tax on the
recipient of the lump-sum payment; the opposite may be true when the lump sum is
payable at the conclusion of the contract term.  If so, the discrepancy between
the tax rules in countries X and Y provides an incentive for a country x
resident to purchase the cap from a country y resident when the lump sum is up
front and from a country x resident when it is payable in arrears.

103. It seems unlikely that tax rules (other than those imposing withholding
taxes) are reflected in the pricing of derivatives.  In the absence of
withholding taxes, each party to the contract is taxed in its home country on a
net basis, and the amount of tax thus depends on the amounts of associated
expenses.  When investment banks maintain balanced portfolios and bank customers
use derivatives as hedges, net income or expense from derivative payments is
probably a small percentage of the payments.  In any event, this percentage
varies from bank to bank and customer to customer.  In the United States, many
users of derivatives (e.g., pension funds) are tax-exempt.  The lack of a
uniform relationship between the gross amounts of derivatives payments and the
taxes on those payments makes it unlikely that tax consequences are passed from
party to party in the pricing of derivatives.

IX.   CONCLUSION

104. Derivatives pose a basic dilemma for tax policy makers.  Because
derivatives are sophisticated financial instruments, unsophisticated tax rules
can simultaneously facilitate the use of derivatives in tax avoidance strategies
and hinder useful market activities in derivatives.  On the other hand, greater
sophistication in tax rules carries the price of greater complexity for both
taxpayers and the tax administration.  Tax rules that perfectly mirror the
market probably are not practically possible.  Governments must try to achieve a
balance where the tax rules do not impose a crushing burden in the form of
either unrealistic tax results or unrealistic compliance burdens.

105. In the international sphere, derivatives, discount bonds, and other
financial innovations put withholding taxes at risk.  A country probably cannot
impose withholding taxes on payments under any of the common types of
derivatives without excluding that country's investment bankers from the
international derivatives market.  Discount income on domestic bonds held by
non-residents can, in theory, be subject to withholding taxes as interest, but
there probably is no practical means for collecting any material amounts of
withholding tax on this income.  Through the use of discount bonds and
derivatives, non-resident investors can obtain virtually any desired financial
result without incurring withholding taxes.  Revenues from withholding taxes can
therefore be expected to decline as investors become more knowledgeable about
these financial instruments.

Notes

1/    That is, if 6,139u were deposited in an account bearing interest at
the rate of 10 per cent compounded semi-annually, the account would grow to
10,000u in five years.

2/    Bankman and Klein, Accurate Taxation of Long-Term Debt:  Taking Into
Account the Term Structure of Interest, 44 Tax L. Rev. 335 (1989).

3/    The sum of 92u and interest thereon at 10 per cent compounded
semi-annually for four and one half years is 143u.

Another way of expressing this comparison is that the deferral diminishes
the present value of the tax on the holder from 92u to 59u (the present value at
10 per cent of 92u payable in four and one half years), thereby reducing the
effective tax rate on this accrual from 30 per cent (92u/307u) to 19 per cent
(59u/307u).

4/    OECD Committee on Fiscal Affairs, Taxation of New Financial
Instruments 58 (1994).

5/    Among OECD countries, only two require resident buyers of discount
bonds to withhold tax from the purchase price when the seller is a non-resident.

6/    Among OECD countries, the United States is apparently the only one
that does this.  United States Internal Revenue Code (IRC)

sects. 871(a)(1)(C)(ii), 881(a)(3)(B).  However, discount income, like express interest, is exempt from United States withholding taxes if the bond is held as a portfolio investment.  IRC sect. 871(h).

7/    Among the five OECD countries that impose withholding taxes on discount income, all require withholding when a discount bond is redeemed from a non-resident holder.

8/    More completely, the option holder's gain or loss on the sale, closing transaction, or lapse of the option is capital gain if the underlying property is or would have been a capital asset, and for non-corporate taxpayers, the preferential rate for long-term capital gains (at present, 28 per cent) applies to a gain, if capital, only if the option was held for more than one year.  IRC sects. 1234(a), 1234A.  For the issuer of an option on stocks, bonds, commodities, or commodities futures, gain or loss on a closing transaction or on the option's lapse is treated as short-term capital gain or loss unless the option was issued in the ordinary course of the issuer's business.  IRC sect. 1234(b).

9/    See OECD Committee on Fiscal Affairs, Taxation of New Financial Instruments 20-21 (1994).

10/    Under one variation of this approach, the holder amortizes the option premium as a series of deductions over the instrument's life.

11/    IRC sects. 1256(a), (b)(3), (g)(3).

12/    None of the 22 countries responding to a survey of OECD countries reported imposing withholding taxes on payments under options, although some reserved the right to reclassify such payments as interest in appropriate cases and to subject the reclassified payments to withholding taxes.  OECD Committee on Fiscal Affairs, Taxation of New Financial Instruments 53 (1994).

13/    Occasionally, over-the-counter contracts are made "off market" - at prices different from the prevailing forward price for the subject-matter of the contract.  When this is done, the party advantaged by the market deviation makes one or more compensating payments to the other party to the contract.  In most countries, the tax rules for futures and forwards make no provision for these payments, and taxpayers often treat them in whatever way they find advantageous.

14/    An exchange-traded contract can be closed out by the contract holder purchasing an opposite contract (e.g., a contract to purchase if the original contract was a contract to sell) covering the same quantity at the same price and with the same delivery date.  An over-the-counter contract can be closed out by negotiation with the counterparty.

15/    IRC sect. 1256.

16/    None of the respondents to a survey of OECD countries reported imposing withholding taxes on payments under futures and forward contracts. OECD Committee on Fiscal Affairs, Taxation of New Financial Instruments 48 (1994).

17/ United States Treasury Reg. sect. 1.446-3(f).

18/ The example is taken from sect. 1.446-3(f)(4) Ex. 7 of the income tax regulations of the United States Treasury Department.

19/ The example is taken from sect. 1.446-3(f)(4) Ex. 5 of the United States income tax regulations.

20/ Among the 22 respondents to a survey of OECD countries, only Greece taxes all payments to non-residents under notional principal contracts. In Ireland, such payments are nominally subject to withholding tax, but payments by banks doing business in Ireland are usually exempted. Australia and Canada sometimes tax notional principal contract payments as interest. Such payments are taxable in the United Kingdom when made to any foreign person other than a bank carrying on business through a permanent establishment in that country, but if the recipient is a resident of a country having an income tax treaty with the United Kingdom, the payments are exempted under the "other income" article of the treaty unless the income is attributable to a permanent establishment of the recipient in the United Kingdom. OECD Committee on Fiscal Affairs, Taxation of New Financial Instruments 53 (1994).

In the United States, payments under notional principal contracts are treated as income from sources in the country of the recipient's residence. Treas. Reg. sect. 1.863-7(b)(1). Since United States withholding taxes only apply to income from United States sources, this rule has the effect of exempting payments to non-residents.

21/ IRC sect. 1092(a)(1). For a more complete description of the straddle rules, see Boris I. Bittker and Lawrence Lokken, Federal Taxation of Income, Estates and Gifts (Boston, Little, Brown, 1990), 6th ed., para. 45.3.

22/ IRC sect. 1092(d).

23/ IRC sect. 1092(c)(2).

24/ The record-keeping burden is increased by rules requiring that a "successor position" to a closed-out loss position be taken into account in determining when the loss is deductible. Treasury Reg. sect. 1092-1T(a). Assume the yen moves in the opposite direction after the first forward matures and is replaced by the second forward, with the result that the unrealized currency gain in the yen position represented by the bond disappears. However, the value of the second forward simultaneously rises, and B's loss on the first contract continues to be non-deductible for the following year to the extent of unrealized currency gain in the second forward.

25/ IRC sect. 263(g).

26/ This example is taken from S. Rep. No. 144, 97th Cong., 1st Sess., reprinted in 1981-1 CB 412, 473.

27/ However, currency gains and losses are ordinary income or loss, except when they accrue on a forward contract, futures contract, or option that the

taxpayer holds for investment and elects to treat as a capital asset and that is not part of a straddle.  IRC sect. 988(a)(1).

28/  H.R. Rep. No. 111, 103rd Cong., 1st Sess. 636-37.

29/  IRC sect. 1258(a).

30/  IRC sect. 1258(c).

31/  IRC sect. 1258(b).

32/  The forward rates in currencies are set so that an amount invested at the prevailing interest rate will accumulate to the same value at the forward date, regardless of the currency in which it is invested.  In the example, the forward rate must be such that a dollar investment ($1,000 plus $80) will have the same value as a yen investment (100,000 yen plus 2,000 yen).  This condition is satisfied by a one-year forward rate of $1 equals 94.44 yen (102,000/1,080 = 94.44).

33/  IRC sect. 988(a)(1).

34/  Corn Products Ref. Co. v. Commissioner of Internal Revenue, 350 US 46 (U.S. Sup. Ct. 1955).

35/  For a fuller description of the hedging rules, see Boris I. Bittker and Lawrence Lokken, op. cit., 1995 Supp., para. 45.8.

36/  Treasury Reg. sect. 1.1221-2(b).

37/  TD 8555, 1994-33 IRB 9, 11.

38/  Treasury Reg. sect. 1.1221-2(c)(1).

39/  Treasury Reg. sect. 1.1221-2(e)(1).

40/  Treasury Reg. sect. 1.1221-2(e)(2).

41/  Treasury Reg. sect. 1.1221-2(f)(1).

42/  Treasury Reg. sect. 1.446-4(a).

43/  Treasury Reg. sect. 1.446-4(e)(1).

44/  Treasury Reg. sect. 1.446-4(e)(3).

45/  IRC sect. 1256(a).  A preferential rate of 28 per cent is provided for net long-term capital gain of non-corporate taxpayers.

46/  IRC sect. 1256(e).

47/  Recall the United States practice of setting amortization schedules for lump-sum payments under notional principal contracts with reference to market prices for the options or forwards most closely analogous to the contracts.

48/  The example is taken from Treasury Reg. sect. 1.446-3(f)(4) Ex. 1.


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