120 T.C. No. 11

UNITED STATES TAX COURT

BANK ONE CORPORATION (SUCCESSOR IN INTEREST TO FIRST CHICAGO NBD CORPORATION, FORMERLY NBD BANCORP, INC., SUCCESSOR IN INTEREST TO FIRST CHICAGO CORPORATION) AND AFFILIATED CORPORATIONS, Petitioner v. COMMISSIONER OF INTERNAL REVENUE, Respondent

Docket Nos. 5759-95, 5956-97. Filed May 2, 2003.

F, a financial institution, enters into bilateral contracts which are a type of derivative financial product known as interest rate swaps. Most of F's swaps are of the plain vanilla type where one party (first party) agrees to pay to the other party (second party) amounts ascertained as of certain dates by applying a fixed rate of interest to a set notional amount. The second party agrees to pay to the first party amounts ascertained as of the same dates by applying a floating rate of interest (e.g., LIBOR rate) to the same notional amount. For purpose of the mark-to-market rule of sec. 475(a)(2), I.R.C., which applies to taxable years ended after Dec. 30, 1993, F reported that the fair market value of its swaps as of Dec. 31, 1993, equaled their mid-market values; i.e., the values derived through a net cashflow/present value analysis that was based on the average of each swap's

market bid and ask rates. In addition, F deferred the recognition of the difference between its valuation and the bid or ask prices which it paid or received for the swaps, treating that difference as deferred income designed to compensate it for (1) the perceived credit risks of its counterparties and (2) the estimated administrative costs to be incurred on holding and managing the swaps until maturity. F used a similar method to report its swaps income for 1990 through 1992. F ascertained the values of its swaps for each of the years 1990 through 1993 as of a date that was approximately 10 days before the last day of F's taxable year and reported that value as the swaps' fair market value as of the last day of that year. R determined that F's method of reporting its swaps income did not clearly reflect F's swaps income for any of the years from 1990 through 1993. R determined that a proper method values F's swaps as of the end of each year at the midmarket values and does not take into account any deferral for credit risk or future administrative costs. Pursuant to sec. 446(b), I.R.C., R changed F's method of accounting for its swaps income to R's "proper" method.

Held: The mark-to-market rule of sec. 475(a)(2), I.R.C., including the valuation requirement subsumed therein, is a method of accounting that is subject to the clear reflection of income standard of sec. 446(b), I.R.C.

Held, further, F's method of accounting for its swaps income does not clearly reflect its swaps income under sec. 475, I.R.C., in that F's values were not determined at the end of its taxable years and did not properly reflect adjustments to the midmarket values which were necessary to reach the swaps' fair market value.

Held, further, R's "proper" method of accounting for F's swaps income does not clearly reflect that income under sec. 475, I.R.C., in that a swap's mid-market value without adjustment does not reflect the swap's fair market value.

Held, further, to arrive at the fair market value of a swap and other like derivative products, it is acceptable to value each product at its midmarket value as properly adjusted on a dynamic basis for credit risk and administrative costs. A proper credit risk adjustment reflects the creditworthiness of both parties, with due respect to netting and other credit

enhancements. A proper administrative costs adjustment is limited to incremental costs.

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* Brief of amici curiae was filed by Leslie B. Samuels and Edward D. Kleinbard as counsel for the American Bankers Association, the Institute of International Bankers, the International Swaps and Derivatives Association, Inc., the Securities Industry Association, the New York Clearing House Association L.L.C., and the Wall Street Tax Association.

LARO, Judge: These cases were consolidated for purposes of trial, briefing, and opinion. In docket No. 5759-95, First Chicago Corp. (FCC) and its affiliated corporations, one of which was a corporation formerly known as the First National Bank of Chicago (FNBC), petitioned the Court to redetermine respondent's determination of deficiencies of $1,661,112 and $2,956,794 in the affiliated group's consolidated Federal income taxes for 1990 and 1991, respectively. In docket No. 5956-97, First Chicago NBD Corp., the successor in interest to FCC and affiliated corporations, petitioned the Court to redetermine respondent's determination of a $95,156,499 deficiency in the 1993 consolidated Federal income tax of FCC and its affiliated corporations. The latter petition placed in issue a nonnotice year, 1992, by alleging entitlement for that year to adjustments which would affect the notice year 1993.

As relevant herein, the deficiencies stem from FNBC's claim to "swap fee carve-outs" of $5,468,418 for 1990, $3,543,182 for 1991, $4,294,471 for 1992, and $5,799,724 for 1993.[1] As to swaps (defined infra p. 17) for which it was a party, FNBC valued these swaps at the mid-market values which it computed on its version of a computerized system known as the Devon Derivatives System (Devon system) (as discussed infra, FNBC's midmarket valuation

[1] Whereas the parties sometimes use the term "adjustment" to refer to the carveouts discussed herein, so do we.

using the Devon system was based on the midpoint between a swap's market bid and ask rates, or, in other words, the average of those rates). FNBC's swap fee carveout as to each of those swaps represented the difference, determined at or about the time of each swap's initiation, between the swap's midmarket value and the bid or ask price which it paid or received for the swap. FNBC treated the carved-out amounts as deferred income designed to compensate it for (1) the perceived credit risks of its counterparties (credit adjustments) and (2) the estimated administrative costs which it expected to incur in holding and managing the swaps until maturity (administrative costs adjustments). Respondent determined that the method by which FNBC claimed the carveouts was improper in that the method did not clearly reflect FNBC's swaps income in accordance with section 446[2] and section 1.446-3, Income Tax Regs. Respondent determined that FNBC was required to report its swaps income by using a method that reported each swap's midmarket value without any adjustment.

We hold that neither FNBC's method of accounting as to its swaps income nor respondent's method of accounting as to that income clearly reflected FNBC's swaps income. We direct the parties to file with the Court a computation (or computations)

[2] Unless otherwise indicated, section references are to the applicable versions of the Internal Revenue Code, and Rule references are to the Tax Court Rules of Practice and Procedure.

under Rule 155 that reflects (or reflect) FNBC's swaps income in a manner consistent with this Opinion.

FINDINGS OF FACT

I. Background

A. Stipulations of Fact

Many facts were stipulated. We incorporate herein by this reference the parties' stipulations of fact and the exhibits submitted therewith. We find the stipulated facts accordingly.

B. Briefs on CD-ROM With Appropriate Hyperlinks

The trial of these cases began on October 30, 2000, and (with recesses) concluded on November 28, 2001. The record, which includes a trial transcript of approximately 3,500 pages memorializing the testimony of 21 fact witnesses and 7 expert witnesses, consists of 43 "red" files and more than 10,000 pages of exhibits. For briefing purposes, the Court ordered the parties to file written briefs conforming to Rule 151 with copies on CD-ROM that included Hyperlinks to the relevant part or parts of the exhibits, testimony, pleadings, or stipulations relied upon for each proposed finding of fact. The written briefs, inclusive of their proposed findings of fact and objections to the other party's proposed findings of fact, totaled more than 3,300 pages. The copies of the briefs on CD-ROM were very helpful to the Court.

C. Relevant Taxpayers

1. FCC

FCC was a Delaware corporation and registered bank holding company. By virtue of its status as a bank holding company, FCC was regulated during the relevant years by the U.S. Federal Reserve Board (FRB). At all relevant times, including at the time of the filing of its petition to this Court, FCC's principal place of business was in Chicago, Illinois.

For Federal income tax purposes, FCC was an accrual method taxpayer that joined with its affiliates in the filing of consolidated Federal income tax returns. FCC filed those returns timely and on the basis of the calendar year.

2. First Chicago NBD Corp.

First Chicago NBD Corp. was a Delaware corporation and registered bank holding company. First Chicago NBD Corp. was the corporation resulting from the merger, effective December 1, 1995, of FCC with and into NBD Bancorp, Inc., a Delaware corporation and registered bank holding company. At all relevant times, including at the time of the filing of its petition to this Court, the principal place of business of First Chicago NBD Corp. was in Chicago, Illinois.

3. FNBC

FNBC was a national bank organized and existing as a national banking association under the National Bank Act, current

version at 12 U.S.C. secs. 21-216 (2000). By virtue of its status as a national bank, FNBC was regulated by the Office of the Comptroller of the Currency (OCC).

During the relevant years, FNBC was FCC's primary subsidiary. For Federal income tax purposes, FNBC was an accrual method taxpayer, and it joined in the consolidated Federal income tax returns filed by FCC.

4. Bank One Corp.

Bank One Corp. is a multibank holding company registered under the Bank Holding Company Act of 1956, ch. 240, 70 Stat. 133, currently codified at 12 U.S.C. secs. 1841-1850 (2000). It was incorporated in Delaware on April 9, 1998, to effect the merger of First Chicago NBD Corp. and Banc One Corp., an Ohio corporation and registered bank holding company. The merger was effective October 2, 1998.[3] By virtue of its status as a bank holding company, Bank One Corp. was regulated during the relevant years by the FRB. Bank One Corp.'s principal office was in Chicago, Illinois, at all relevant times.

[3] Shortly thereafter, the Court, pursuant to an unopposed motion by petitioner, ordered that the caption be changed to the present caption.

II. The Swaps Business

A. Swaps in General

1. Definition of a Swap

A swap is a bilateral agreement obligating the parties (often referred to as counterparties) to exchange at specified intervals (e.g., monthly, quarterly, semiannually) cashflows ascertained from applying specified financial prices (e.g., interest rates, currency rates) to a specified underlying amount. The specified underlying amount is either a notional principal amount which is not exchanged (as usually occurs when the subject matter of the swap is interest rates) or an amount which may actually be exchanged (as usually occurs when the subject matter of the swap is currency rates). The exchange of cashflows at the periodic intervals is sometimes referred to as "periodic payments" and is usually done on a net settlement basis. Each party to a swap bears the risk that its counterparty will default on its obligation to make a periodic payment, and, thus, that it (the party) will not receive a periodic payment owed to it by the counterparty.

2. Swaps Are Derivative Financial Products

Swaps are derivative financial products (financial derivatives). A financial derivative is a bilateral agreement the value of which is derived (as implied by its name) from the performance of an underlying asset, reference rate, or index.

Other common forms of financial derivatives during the relevant years included: (1) Interest rate guarantees such as caps, floors, and collars; (2) interest rate options; (3) swaptions; and (4) forward rate agreements (FRAs).[4] Interest rate caps, floors, and collars are contracts with notional principal amounts but not necessarily with periodic payments. Interest rate caps and floors require the seller, in exchange for a fee, to make a payment to the purchaser only if, in the case of a cap, a specified market interest rate exceeds the fixed cap rate on specified future dates or, in the case of a floor, the specified market interest rate falls below the fixed floor rate on specified future dates.[5] Interest rate options are contracts that grant one party, for a premium payment, the right to either purchase from or sell to the other party a financial instrument at a specified price within a specified period of time or on a specified date. Swaptions are options to purchase a swap in the future. FRAs are contracts with notional principal amounts that settle in cash at a specified future date on the basis of the difference between a fixed interest rate and a specified market

[4] During the relevant years, FNBC was a party to swaps as well as to one or more of these financial derivatives.

[5] An interest rate collar is essentially an interest rate cap combined with an interest rate floor.

interest rate.[6] FRAs are different from swaps in that FRAs lack periodic payments.

3. Types of Swaps in the Marketplace

Swaps in the marketplace during the relevant years consisted primarily of interest rate swaps (sometimes, IRSWs), currency swaps (sometimes, CYSWs), and commodity swaps (sometimes, COMs).[7] An interest rate swap, the primary swap at issue, is a bilateral agreement calling for the periodic exchange of interest payments ascertained by applying specified interest rates to an agreed-upon notional principal amount. A currency swap is a bilateral agreement to exchange payments denominated in different currencies. A commodity swap is a bilateral agreement to exchange cashflows ascertained by applying commodity prices to a notional quantity of a particular commodity.

B. Origin and Growth of the Swaps Market

1. Origin of the Market

The origin of the swaps market is generally traced to a currency swap negotiated between the World Bank and IBM in 1981.

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[6] A forward rate is a rate that the parties to a forward contract agree will be applied at a future date. Assume, for example, that a person agrees to borrow money 1 year from today and repay it with 6-percent interest at the end of the second year. The 6-percent interest rate is a forward rate, and the contract is a forward contract.

[7] During the relevant years, FNBC was a party to each type of these swaps. The specific swaps in dispute are FNBC's interest rate swaps, currency swaps, and commodity swaps.

That transaction involved an exchange of payments in Swiss francs for payments in deutschmarks. The first interest rate swap was negotiated with the Student Loan Marketing Association in 1982. The first commodity swap occurred in 1986.

2. Growth of the Interest Rate Swaps Market

Interest rate swaps were the most common swaps during the relevant years. In 1992, dealers generally participated in four to five interest rate swaps daily and one currency swap every 2 days. The corresponding figures for 1987 were three interest rate swaps every 2 days and one currency swap every 4 days. A dealer's use of commodity swaps during 1987 and 1992 also was less common than the dealer's use of interest rate swaps during the same years.

The outstanding notional amount of interest rate swaps worldwide totaled approximately $683 billion, $12.8 trillion, and $43 trillion at the end of 1987, 1995, and 1999, respectively.[8] The growth of the outstanding notional amount of interest rate swaps is attributable primarily to the use of interest rate swaps as an effective, inexpensive way in which to manage financial risks from interest rate fluctuations. Those who use financial derivatives in general can identify, isolate, and manage separately the fundamental risks and other characteristics which

[8] The outstanding notional principal of currency swaps at the end of 1999 is estimated at approximately $2 trillion.

are bound together in traditional financial instruments. In addition to increasing the range of financial products available, financial derivatives have fostered more precise ways of understanding, quantifying, and managing financial risk. Most institutional borrowers and investors currently use financial derivatives. Many of these entities also act as intermediaries dealing in those financial products.

C. Interest Rate Swaps

1. Terms of an Interest Rate Swap Agreement

Interest rate swaps generally require that the parties thereto negotiate and agree upon several economic terms. These terms generally include (1) a notional amount, (2) a fixed interest rate, (3) a floating interest rate index, (4) a duration (term or tenor) of the contract, (5) an effective date of the contract, and (6) a payment schedule. The parties to an interest rate swap also must negotiate a particular country's currency (or countries' currencies) in which a swap is denominated. During the relevant years, the U.S. dollar was overwhelmingly the dominant individual currency for interest rate swaps.

2. Notional Principal Amount and Related Terms

The notional principal amount of an interest rate swap is not actually exchanged but is simply the reference point for the

parties' obligations.[9] The parties to an interest rate swap agree to exchange for a set length of time (term or tenor) and as of specified intervals (payment schedule) streams of interest payments ascertained on the basis of a notional principal amount. At least one of these streams of payments is ascertained on the basis of a floating-rate index. The respective streams of payments are often referred to as "legs"; e.g., a fixed leg and a floating leg.

The party that is paying the fixed rate (i.e., receiving the floating rate) is said to have bought the swap.[10] The party receiving the fixed rate (i.e., paying the floating rate) is said to have sold the swap. The party that is receiving the fixed rate also is said to be "short" the swap, while the party paying the fixed rate is said to be "long" the swap.[11]

The trade date is the date on which the swap transaction is agreed. The effective date is the date on which the interest included in the payments begins to accrue. Once interest has begun to accrue, it continues to accrue until the day before the

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[9] Nor is the notional amount shown on either party's balance sheet.

[10] The negotiated fixed rate is sometimes called the price of the swap.

[11] Assume, for example, that C agrees to pay to B a fixed interest rate in return for B's agreeing to pay to C an interest rate that floats in accordance with a certain floating interest rate index. C is the buyer of the swap (and is long on the swap). B is the seller of the swap (and is short on the swap).

termination date. The termination date is the date on which the last payment is due. The termination date sets the maturity of the contract.

3. Different Types of Interest Rates

Swaps generally involve two types of interest rates. The first rate, a fixed interest rate, is applied for each payment date to ascertain the agreed-upon payment in the fixed leg. By definition, the fixed interest rate is fixed in that it is constant. The second rate, a floating interest rate, is applied for each payment to ascertain the agreed-upon payment in the floating leg. By definition, the floating interest rate floats in accordance with an agreed-upon index and usually changes with time.

The date on which the floating interest rate is changed (i.e., is “reset”) is known as the reset date. Except in the case of the first payment, the floating interest rate applicable to each payment period is generally set at the beginning of the interval, on the basis of the interest rate in effect 2 business days before the most recent reset date. The floating interest rate applicable to the first payment is generally set on the trade date, 2 days before the effective date.

4. Use of LIBOR as a Floating Interest Rate Index

The most common floating interest rate index for interest rate swaps is the London Interbank Offering Rate (LIBOR), the

rate of interest at which banks are willing to offer deposits (i.e., lend Eurodollars) to other prime banks, in marketable size, in the London Interbank market. In order to determine the LIBOR rates, the British Bankers' Association maintains a reference panel of banks with London offices. Each of these banks ascertains the rate at which it could borrow funds, were it to do so by asking for and then accepting interbank offers in reasonable market size just before 11 a.m. that day. The deposits have a zero-coupon structure, meaning that no interest is paid during the life of the deposits but is accrued and paid at maturity.[12] Each LIBOR rate is computed by disregarding the four highest and the four lowest rates offered by these banks and then taking the average of the others.

The LIBOR rates, when determined, are instantly communicated around the world by electronic (on-line) services such as the Associated Press/Dow Jones Telerate Service, Bloomberg, or Reuters Monitor Money Rates Service. Separate LIBOR rates are available and quoted for each standard term (e.g., 1-month, 3-month, 6-month, 12-month), and the parties to a swap may agree on any of these LIBOR rates. In most cases, the floating-rate payor pays no increment or decrement (spread) with respect to the LIBOR rate, and the rate is said to be quoted flat.

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[12] A zero rate means that interest, if paid, is paid only at maturity.

In lieu of a LIBOR rate, the parties to an interest rate swap may agree to use a less common floating interest rate index. Other common floating interest rate indices during the relevant years included the T-bill rate (the rate on the most recent issue of U.S. Treasury bills), the commercial paper rate, the bankers acceptance rate, the prime rate, and the tax-exempt rate.

5. Plain Vanilla Interest Rate Swaps

Interest rate swaps may be of the plain vanilla type. A plain vanilla interest rate swap, the simplest and most common type of interest rate swap, is a swap with standard terms and without another financial derivative as part of the agreement. One party to a plain vanilla interest rate swap (first party) agrees to pay to the other party (second party) amounts equal to a fixed rate of interest multiplied by a set notional amount. The second party agrees to pay to the first party amounts equal to a floating rate of interest multiplied by the same notional amount. The fixed and floating amounts are offset against each other as of each payment date, and the party paying the higher rate of interest remits a payment to the counterparty equal to the notional amount multiplied by the difference between the interest rates. An analogy of a plain vanilla interest rate swap is the exchange of a fixed-rate loan for a floating-rate loan. The schedule of payments on a plain vanilla interest rate swap

exactly matches the schedule of net payments on an exchange of the fixed- and floating-rate loans.

In contrast to a plain vanilla interest rate swap, a more creative interest rate swap may have nonstandard terms.[13] A combination deal (sometimes, COMB) has embedded option features such as a callable or extendable swap or a contract giving one of the parties the option, but not the obligation, to enter into an interest rate or currency swap at prearranged terms. An amortizing or accreting swap has a notional amount that decreases or increases, respectively, during the life of the transaction.[14] A basis swap has two floating legs, instead of a fixed leg and a floating leg, with each party agreeing to exchange payments determined by a different floating-rate index (e.g., one party floats with LIBOR while the other party floats with the commercial paper rate). In some swaps, the payment dates for the counterparties do not coincide, whereas in other swaps the counterparties' payments are in different currencies. There also are swaps with different fixed rates during different periods.

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[13] The expression "structured swap" is used to capture any swap with specially tailored features. Relatively new and unfamiliar types of swaps are called "exotics".

[14] An amortizing swap mimics the fixed and floating interest rate schedules on regular amortizing loans.

6. Lack of Payments at Inception

For most interest rate swaps during the relevant years, neither counterparty made a payment at the inception of the swap to effect the transaction. The entire consideration for a party's promise to make future payments to the counterparty lay in the counterparty's promise to make its agreed-upon future payments. An initial payment was not generally required to induce the counterparties to enter into the swap agreement.

One exception to the nonpayment rule was off-market swaps which required upfront payments. In an off-market swap, a counterparty agreed to receive or pay an interest rate that was significantly different than the going market rate.

7. Example of an Interest Rate Swap

To illustrate the mechanics of an interest rate swap, assume that a plain vanilla interest rate swap originated on November 29, 1992, the trade date, with the following terms:

Notional principal	$1 million
Fixed rate	5 percent per annum
Floating rate	6-month LIBOR rate
Effective date	Dec. 1, 1992
Termination date	Dec. 1, 1995
Payment dates	June 1 and Dec. 1 of each year
Fixed-rate payor	F
Floating-rate payor	L
Day count conventions	Actual/360[1]

[1]The computations as to swaps are generally based on a 360-day year, a convention that is common in banking.

The table below shows the payments on the swap for a hypothetical scenario of the 6-month LIBOR rate over the life of the swap. In this example, F has promised to pay to L a semiannual interest payment calculated on the basis of a notional principal of $1 million and a fixed 5-percent interest rate as adjusted by a ratio the numerator of which equals the number of days in the payment period and the denominator of which equals 360. L has promised to pay to F a semiannual interest payment calculated on the basis of the same $1 million amount but using, instead of the fixed rate, a floating 6-month LIBOR rate as adjusted by the same ratio. The sixth column, the net of the fixed and floating payments, is the only amount that is actually paid by one party or the other.

Payment Dates	Number of Days in Period	Fixed Payment	Hypothetical 6-Month LIBOR Rate	Floating Payment	Net Cashflow To L (To F)
6/1/1993	182	$25,278	4.0%	$20,222	($5,056)
12/1/1993	183	25,417	4.320	21,960	(3,457)
6/1/1994	182	25,278	5.130	25,935	657
12/1/1994	183	25,417	5.901	29,997	4,580
6/1/1995	182	25,278	6.210	31,395	6,117
12/1/1995	183	25,417	6.842	34,780	9,363

D. Currency Swaps

A plain vanilla currency swap involves the exchange of a series of fixed-rate interest payments denominated in a foreign currency for a series of floating-rate interest payments denominated in U.S. dollars. Other currency swaps include exchanging a fixed rate in a foreign currency for a fixed rate in U.S. dollars, exchanging a fixed rate in U.S. dollars for a

floating rate in a foreign currency, or exchanging a floating rate in a foreign currency for a floating rate in U.S. dollars.

E. Participants in the Market

The main participants in the interest rate swaps market are end users, dealers, and brokers.

1. End Users

a. Typical End Users

End users are typically major corporations, government or governmental-related entities, investment funds, or other financial institutions. These end-users typically use interest rate swaps to combat interest rate movements, express market preferences through position taking, and/or reduce their cost of funding. As to the size of an end user, swaps end-user entities entering into swaps in connection with the conduct of their business must have assets over $10 million or a net worth over $1 million in order to qualify their swaps for a safe-harbor exception from most of the regulatory requirements of the Commodity Futures Trading Commission (CFTC).[15]

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[15] A swap must also meet three other requirements in order to qualify for such an exception. First, the swap may not be part of a fungible class of agreements which are standardized as to their material economic terms. Second, the creditworthiness of any party having an actual or potential obligation under the swap agreement must be a material consideration in entering into or determining the terms of the swap agreement. Third, the swap agreement may not be entered into or traded on a physical or electronic transaction execution facility in which participants can simultaneously effect transactions and bind both parties.

b. End Users' Uses of Interest Rate Swaps

i. Combat Interest Rate Changes

End users commonly use interest rate swaps to hedge (minimize) their risk of adverse changes in interest rates. Interest rate risk is the potential fluctuation in the value of a financial instrument due to a change in the level of interest rates. Whereas the market values of fixed-rate loans are exposed to significant interest rate risk, the market values of floating-rate loans are not. A fall (or rise) in interest rates causes the market value of a fixed-rate loan to increase (or decrease). The fall (or rise) in interest rates leaves the market value of a floating-rate loan unchanged; the interest payments on the floating-rate loan fall (or rise) together with interest rates.

Managing interest rate risk is an important function of financial managers in entities such as corporations and financial institutions, and an interest rate swap is a tool with which financial managers may readily change their exposure to interest rate fluctuations. Through a swap, an institution may change the nature of its liabilities from fixed-rate liabilities to floating-rate liabilities, or vice versa. A company liable on debt paying a floating interest rate, for example, may guard against a rise in interest rates by entering into a swap under which it pays a fixed rate of interest and receives a floating

rate. The swap transfers to the counterparty the risk of a rise in interest rates.[16] Likewise, a financial manager may need to increase or decrease the interest rate exposure of an entity's liabilities. The financial manager of a corporation, for example, that has assets which are positively exposed to interest rate risk (i.e., the value of the assets increases with interest rates) may seek to match this exposure with liabilities that are positively exposed to interest rate risk so as to create zero exposure in the corporation's net position.

ii. Prosper From Market Forecast

End users also use interest rate swaps to attempt to prosper from their forecast of the movement in interest rates. For example, a company that believes that interest rates will fall may enter into an agreement under which it pays a floating interest rate. In 1992 and 1993, for example, when interest rates were at extremely low levels, many companies elected to issue long-term debt at fixed rates and then enter into shorter-term swap agreements under which the company paid a floating rate. The company, in effect, converted the early years of its financing from a fixed rate to a floating rate.

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[16] An entity that borrows at a floating rate and then buys a fixed-for-floating swap of matching maturity and notional principal is said to have synthetically created a fixed-rate loan; i.e., the net of the payments on the floating-rate loan and the swap mirror the payments on a fixed-rate loan.

iii. Reduce Cost of Funding

End users also use interest rate swaps to reduce the transaction costs which are a natural consequence of raising funds. If, for example, a corporation wants to borrow at a fixed rate but has a shelf registration for commercial paper paying a floating interest rate, the corporation may be able to minimize its transaction costs by issuing commercial paper with a floating rate and then swapping the commercial paper for an obligation with a fixed rate.

2. Dealers

a. Typical Dealers

Since at least 1992, the swaps market has been almost entirely intermediated by institutions acting as dealers. Swaps dealers are generally major financial institutions (e.g., securities firms and banks such as FNBC) which hold themselves out as market-makers; i.e., entities ready and willing to take either side of a swap transaction for the purpose of earning a profit by originating new swaps.[17] On some occasions, these institutions enter into swaps in their capacity as swaps dealers. On other occasions, these institutions enter into swaps in their capacity as end users to manage the overall structure of their portfolios to minimize the net exposure to interest rate

[17] In performing this market-making function, dealers act more as principals than as agents in transactions.

movements. Swaps dealers trade with both end-users and other dealers.

b. Practice as to Swaps

Swaps dealers maintain a portfolio of swaps on their books and usually attempt to maintain a neutral, hedged position in the market. Swaps dealers attempt to maintain a neutral, hedged position either by: (1) Serving as a counterparty to opposite sides of two matching swaps or (2) managing the overall structure of the portfolio so as to minimize the net exposure to interest rate movements.

c. Price Quotations

Prices in the interest rate swaps market are quoted in the form of interest rates, and major swaps dealers (e.g., FNBC) regularly quote the bid and ask prices at which they stand ready to buy and sell plain vanilla interest rate swaps with standard maturities of 1, 2, 3, 5, 7, and 10 years. The bid price is the fixed interest rate that the dealer is ready to pay in exchange for a specified floating rate. The ask price is the fixed interest rate that the dealer demands to receive in exchange for paying a specified floating rate. The ask rate is greater than the bid rate, and the dealer’s profit when taking the opposite sides on two identical swaps is the difference between the fixed rate it receives and the fixed rate it pays.

Among dealers, it is common to refer to the spread reflected in the pricing of a swap, and the convention is to quote the fixed rate on the assumption that the floating rate is LIBOR flat (i.e., with no spread or premium attached to the floating rate). A swap, however, may be negotiated with the floating payment tied to an index plus or minus a spread; i.e., a margin.

d. Role in the Market

When the swaps market first began, every swap generally was facilitated by a dealer. The dealer was not a party to the transaction but, generally for a fee, arranged the swap by introducing the counterparties to each other and helping them to effect the mechanics of the transaction. With the evolution of the market, dealers became parties to each swap. In the early years of the market's evolution, a dealer would effect a swap transaction by warehousing the swap (i.e., entering into the swap without having entered into a matching swap but with the expectation of hedging the entered-into swap either through a matching swap or a portfolio of swaps or temporarily in the cash, securities, or futures market) until the dealer could arrange an offsetting swap with another counterparty (i.e., match a book). In the later years of the market's evolution, the dealer would simply accept a position opposite the counterparty without expecting to locate another counterparty transaction to match the first transaction.

e. Need for Strong Credit

With the evolution of the interest rate swaps market, intermediaries could during the relevant years do far more deals if they were willing to offer themselves as counterparties. Major commercial banks, as compared to investment banks, were more highly capitalized and were more willing to assume the credit risks inherent in acting as a counterparty. The importance of credit risk was a factor during the relevant years in the dominance of commercial banks as dealers; e.g., 16 of the world's 20 largest swaps dealers in 1993 were commercial banks. A dealer with a weak credit rating in the swaps market was hurt in its ability to enter into swaps.

3. Brokers

Swap brokers do not take a position or act as a principal in a swap transaction, and they do not maintain any exposure with respect to a swap. Swap brokers simply arrange for dealers to enter into interdealer swaps by matching dealers who want to effect a particular swap with other dealers who want to effect a similar swap. The clientele of a swap broker is limited to dealers; e.g., an end user may not use the services of a broker unless the end user is a recognized dealer in the interbank market. A swap broker is paid a standard fee for its services based on a percentage of the notional principal amount.

F. Market for Swaps

1. Types of Markets

a. Primary Market

Interest rate swaps are transacted in the over-the-counter (OTC) market. That market is highly competitive and includes many active dealers. Throughout the relevant years, the primary market for plain vanilla U.S. dollar interest rate swaps between counterparties of relatively good credit quality was liquid and as active, deep, and competitive as almost any other market. The fact that there was an active primary market in benchmark swaps made it possible for potential counterparties to shop around quickly for competitive terms for an interest rate swap and agree on the swap's value. The appropriate range of terms for a large interest rate swap between high-quality counterparties was at least as transparent and easily determined at a moment's notice as was the appropriate price for a comparatively large position in the most liquid equities traded on major U.S. stock exchanges.

b. Secondary Market

No active secondary market exists for swaps, other than in the case of buyouts (which occur by number of swap transactions approximately 10 percent of the time in the interbank market) and to a much lesser extent, assignments. Because of contractual

restrictions,[18] nonstandardized terms, the requirement of bearing the credit risk of a specific counterparty, and the ability to buy out a swap at the going market rate, a liquid secondary market for the assignment of swaps has never developed. When swaps were sold before maturity, e.g., when a portfolio of swaps was sold by one dealer to another, the terms were not publicly available.

2. Brokers' Dissemination of the Dealers' Quotations

a. Daily Quotations

During the course of each business day, swap brokers would contact a large number of swaps dealers (including FNBC) and request their bid and ask quotes on several plain vanilla swaps. These swaps were commonly quoted on the convention of semiannual payments and on the basis of the 6-month LIBOR floating rate and had standard maturities of 1, 2, 3, 5, 7, and 10 years. These quotations (as well as the midmarket swap curve (discussed infra p. 43) assumed that the counterparty was a dealer with a credit

[18] For example, a swap may be assigned only upon the consent of both parties thereto.

rating of AA.[19] No service reported regular and reliable quotes on swaps negotiated with lower rated counterparties.

Upon receiving these quotations from the dealers, the brokers disseminated publicly the best interdealer price quotations by way of electronic broker quotation services such as Bloomberg, Reuters Monitor Money Rates Service, or Associated Press/Dow Jones Telerate Service. These services, to which swaps dealers had access on their "dealer screens", normally made it unnecessary for a dealer to shop around when the dealer wished to enter into a swap transaction because the dealer knew that the quoted rate was a competitive price. If a dealer wanted to enter into a specific swap, the dealer could contact a broker, and the broker would call one or more dealers and confirm their quotes on the specified swap. The broker then reported back to the first dealer (the one wanting to enter into the particular swap) on the best quote that the broker had obtained. If that dealer ultimately entered into a swap agreement with another dealer supplied by the broker, the broker received a fee for its services based on a percentage of the notional amount.

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[19] Participants in the swaps market generally rated counterparties using standard credit ratings obtained from private credit rating agencies such as Moody's and Standard & Poor's (S&P). Each agency had its own set of ratings. The ratings offered by S&P for long-term debt were (from best to worst) AAA, AA+, AA, AA-, A+, A, A-, BBB+, BBB, BBB-, BB+, BB, BB-, B+, B, and B-. (For clarity, we refer only to the S&P ratings.) In 1992, most swaps dealers had a credit rating of A or better, and many of those dealers had ratings of AA or AAA.

b. No Dissemination of Actual Swap Prices

The actual prices at which swaps closed during the relevant years were not publicly disclosed. The only publicly available data on swap prices during those years was the quoted bid and ask rates in the interdealer market as to plain vanilla swaps. Those quotations were normally the best indicator of the market price at a particular moment.

c. Spreads Included in Quotations

Swap bid and ask rates in U.S. dollar denominated swaps with maturities exceeding 1 year were commonly quoted in terms of a spread to the corresponding U.S. Treasury yield. The table below lists the U.S. Treasury yield, the bid spreads quoted in the market, and the resulting bid rates as reported by Bloomberg for December 31, 1992, for U.S. dollar denominated swaps with maturities exceeding 1 year.

Maturity	U.S. Treasury Yield	Bid Spread	Swap Bid Rate
2-year	4.57%	.24	4.81%
3-year	5.06	.37	5.43
5-year	6.00	.30	6.30
7-year	6.37	.33	6.70
10-year	6.69	.32	7.01

Swap rates reported for U.S. dollar denominated swaps with maturities of 1 year or less were usually taken directly from the LIBOR deposit market. The table below lists the LIBOR deposit rates in the LIBOR deposit market as reported by Bloomberg for

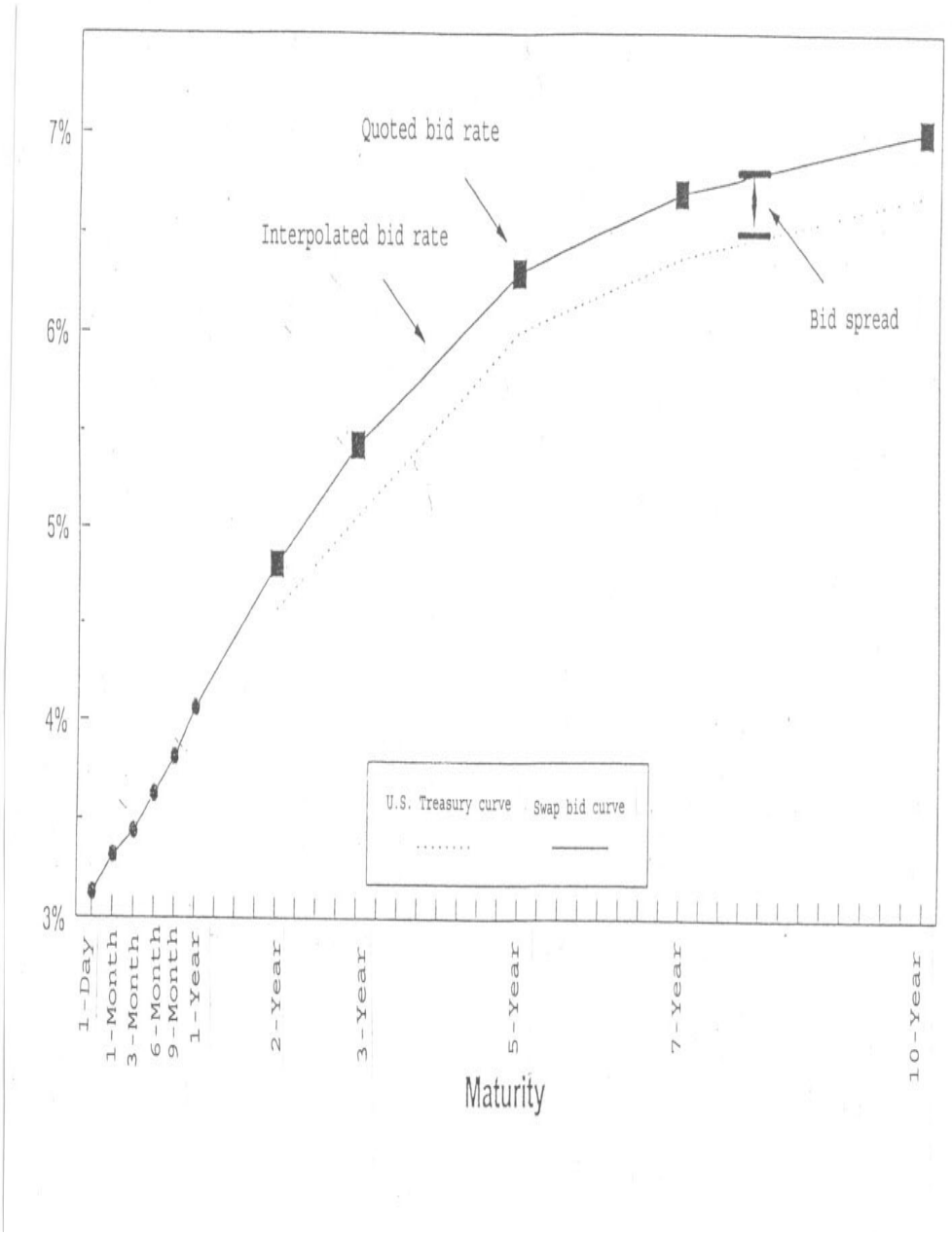
December 31, 1992, for U.S. dollar denominated swaps with maturities of 1 year or less.

Maturity	LIBOR Deposit Rate
1-day	3.125%
1-month	3.313
3-month	3.438
6-month	3.625
9-month	3.813
1-year	4.062

The LIBOR deposit rates for U.S. dollar denominated swaps with maturities of 1 year or less were combined with the swap bid rates for U.S. dollar denominated swaps with maturities exceeding 1 year to obtain a set of bid rates for short and long maturities. The complete set of bid rates for short and long maturities was plotted out on a graph to form the swap bid curve. Swap rates for nonstandard maturities were calculated by interpolating between the rates on the nearby standard maturity contracts. The table below illustrates a combination of the swap bid rates and the LIBOR deposit rates just discussed.

Maturity	Swap Bid Rate	LIBOR Deposit Rate	Swap Bid Curve
1-day	---	3.125%	3.125%
1-month	---	3.313	3.313
3-month	---	3.438	3.438
6-month	---	3.625	3.625
9-month	---	3.813	3.813
1-year	---	4.062	4.062
2-year	4.81%	---	4.810
3-year	5.43	---	5.430
5-year	6.30	---	6.300
7-year	6.70	---	6.700
10-year	7.01	---	7.010

The diagram below shows the swap bid curve drawn from these swap bid and LIBOR deposit rates.



3. Midmarket Rate

The midpoint (average) of the bid and ask rates for a specified maturity is known as that maturity's midmarket rate. The theoretical midmarket rate is the fixed interest rate for which the present value of the cashflows from the fixed leg of a swap equals the present value of the projected cashflows from the swap's floating leg. In other words, if a swap was entered into at the midmarket rate, then the present value of the fixed-leg payments would equal the present value of the anticipated floating-leg payments. When any swap with a midmarket rate is valued also using the same midmarket rate, then the swap has a theoretical net present value of zero to both counterparties.

A plain vanilla swap with a fixed rate equal to the current midmarket rate has by definition a market value of zero and is called a "par swap". It is also said to be "at-market" as opposed to "off-market". If the fixed interest rate is above the current midmarket rate, the swap is said to be "above-market" and has positive value to the party that sold the swap and is receiving the fixed payments. If the fixed interest rate is below the current midmarket rate, the swap is said to be "below-market" and has negative value to the party that is receiving the fixed payments. A swap is a zero-sum contract, so if it has a positive market value to one counterparty, it has a negative market value to the other counterparty.

4. Midmarket Swap Curve

The set of mid-market rates for various maturities is known as the midmarket swap curve. The midmarket swap curve is drawn from the averages of the bid and ask prices for swaps of standard maturities quoted in the interdealer market. At-market swap rates for all possible maturity dates can be obtained by interpolation from the midpoints between the bid and ask prices of the standard maturities as derived from the dealer quotes and reported by major vendors of financial data.

The midmarket swap curve implies a curve of forward interest rates and a curve of discount factors.[20] One curve implies a second curve if the values on the second curve can be derived mathematically from the values on the first curve. The second curve is said to be implied by the first curve, and, in the case of interest rates or discount factors, the interest rates or discount factors on the second curve are said to be implied interest rates or implied discount factors with respect to the first curve. Consider, for example, a curve of periodic interest rates and a corresponding curve of effective annual yields. Each of these curves is implied by the other. Each point on either curve can be derived by a mathematical formula from the corresponding point on the other curve. This implied concept is

[20] A discount factor states the value today of $1 to be received on a future date.

different from interpolation. Interpolation is a process by which the gaps between separated points are estimated and filled in to produce a complete curve.

The midmarket value of a swap is calculated using a mathematical model that extracts the market's forecasts for future interest rates (implied forward interest rates) from the current midmarket swap curve to determine the floating-rate payments that will be due or payable under the swap agreement.[21] The implied forward interest rates are used to project the floating-rate payments into the future. The implied discount factors are used to discount the fixed-rate payments and the projected floating-rate payments to their present value.

5. ISDA Form Agreements

The International Swaps and Derivatives Association, Inc. (ISDA), formerly known as the International Swaps Dealers Association, Inc., is a trade body that comprises swaps dealers and other participants in the OTC derivatives market. The ISDA prescribed customized ISDA form agreements for swap transactions, and these form agreements were in widespread use during the relevant years. The ISDA form agreements generally provided a

[21] As discussed infra p. 60, the midmarket value of a swap also can be calculated as the difference between the value of two specific bonds, both of which have a principal amount equal to the notional amount of the swap. The first bond is a floating-rate bond. The second bond is a fixed-rate bond paying a fixed interest rate equal to the fixed interest rate of the swap.

statement of the general conditions governing all swap contracts between counterparties to the agreements. Customized individual payment terms could be negotiated by the parties to a particular swap, and those terms would be memorialized in the form of a confirmation letter. During the relevant years, many dealers, including FNBC, required that each of their swaps have a confirmation.

The ISDA had two form agreements (collectively, ISDA form agreements); namely, the 1987 ISDA interest rate swap agreement and the 1992 ISDA master agreement (1992 ISDA form agreement). The ISDA form agreements contained a number of standard terms but also allowed the parties a great deal of flexibility in structuring specific transactions. The ISDA form agreements were relied upon in the industry as uniform and accepted contracts with easily understood terms.

Under the ISDA form agreements, a party thereto had the unilateral right to terminate a swap agreement before maturity only in the case of default. The ISDA form agreements also allowed a swap contract to be terminated before maturity in the case of certain events generally not within the control of either party; e.g., if a law was enacted that made it illegal for one or both parties to the contract to perform under the contract. A swap could also be terminated if it contained a credit trigger calling for early termination upon a credit downgrade or other

credit event. The 1992 ISDA form agreement also provided that the parties to a swap governed by that agreement could specify any other event as a termination event in the schedule or confirmation.[22]

The ISDA form agreements generally prohibited each party thereto from selling or transferring its swap position to a third party without the consent of the counterparty. The swap contract, however, could be transferred to another in the case of an amalgamation, consolidation, merger, or transfer of assets. A nondefaulting party also could transfer any payment owed to it by a defaulting party. The ISDA form agreements also permitted one counterparty to transfer its swap agreement to one of its branches or to an affiliate in order to avoid a termination event. In that case, the other counterparty could not withhold its consent to the transfer if its existing policies would permit it to enter into transactions with the transferee on the terms proposed.

The ISDA form agreements provided that where there was an early termination due to the default of one party, the payment would be ascertained by reference to quotations from leading

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[22] Notwithstanding the terms of a particular swap, a party thereto could synthetically terminate any swap by entering into an offsetting or mirror swap; i.e., a new swap with terms identical to those in the remainder of an existing swap, but with the payments reversed. The parties also could mutually agree to terminate a swap with one party paying the other in a buyout.

dealers for the replacement costs of the relevant terminated transactions. Neither of the ISDA form agreements provided specifically for the addition of a surcharge, or discount, for administrative costs adjustments when computing the amount paid on early termination due to the default of one party.

6. Assignments and Buyouts of Swaps

A party to a swap agreement seldom assigned its interest in the swap. In the rare case of an assignment, a third party was substituted for one of the two original counterparties. The third party usually made or received an upfront payment approximately equal to the market value of the swap. In these cases, the market value of the swap generally equaled the difference in the present value of the anticipated net cashflow from each of the swap's legs.

If a swap counterparty wanted to withdraw from a transaction, it usually terminated the transaction through a buyout. In a buyout, one counterparty terminated the swap by paying the other counterparty a lump-sum amount approximately equal to the swap's market value. In these cases, the market value of the swap generally equaled the difference in the present value of the anticipated net cashflow from each of the swap's legs.

Buyouts of swaps were frequent during the relevant years, and they occurred in the case of both interdealer and end-user

swaps. The reasons for buyouts were generally that one of the counterparties had a business need to terminate the transaction or was in distress. Swaps were bought out (and initially entered into) on a swap-by-swap (rather than portfolio) basis.

G. Risks Assumed by Dealers

1. Types of Risks

Dealers entering into interest rate swaps assumed at least two types of risk; namely, a credit risk and a market risk. Credit risk was the risk of loss from the possibility that the counterparty would not perform and would default on its payment obligations. Market risk was the risk that changes in the market would affect the value of an instrument. The most common form of market risk was interest rate risk.

2. Techniques Used To Minimize Credit Risk

During the relevant years, the practice of rationing credit risk exposure to specific counterparties through credit enhancements was widespread and was an important part of credit risk management. In addition to placing limitations on the tenor and principal amount of a swap, swaps dealers such as FNBC required counterparties with lower credit quality to post collateral to support the counterparties' obligations under the contracts. Dealers such as FNBC (and end users) also sometimes inserted provisions in the underlying contracts requiring maintenance of a specified debt-equity ratio, a net worth

requirement, or a certain credit rating which, unless met, would trigger an early termination of the contract or the posting of collateral in support of the counterparty's obligations under the contract. Dealers during the relevant years generally did not adjust interest rates to account for credit risk, nor did they quote different bid and ask rates on the basis of credit rating.

3. Techniques Used To Minimize Market Risk

The market risk of interest rate swaps arose from the high level of volatility in the value of interest rate swaps. A small movement in interest rates, for example, could have a large impact on the value of an interest rate swap. Swaps dealers attempted to reduce or eliminate market risk by hedging their portfolios so that a portfolio's value would not change significantly with either a rise or fall in interest rates.

In the early days of the swaps market, dealers employed simple hedging strategies. Transactions designed to meet a customer's requirements were immediately hedged by entering into an offsetting transaction, such as a matched swap. In the later years, many dealers (including FNBC) adopted more sophisticated portfolio strategies for hedging market risks. Under this approach, all of the dealer's transactions were broken down into their component cashflows to yield a measure of the net (residual) market exposures arising from all of the dealer's positions. The residual market exposures were then hedged in

various ways such as by taking positions in the cash market (e.g., holding or selling short U.S. Treasury securities), by using interest-rate futures (which are traded on public exchanges), or by entering into swaps.

H. Dealer Spreads

1. Bid-Ask Spread

The bid-ask spread is the difference between the bid and ask interest rates which are quoted on the interdealer market. The market bid is typically the highest among a set of dealers surveyed. The market ask is typically the lowest. The market bid and market ask need not come from the same dealer's bid and ask quotations. A particular dealer's quoted bid and ask rates will often deviate from the market bid and ask rates so that the dealer's mid-rate is not necessarily the midmarket rate.

2. Bid-to-Mid Spread

The spread from midmarket (also known as the bid-to-mid spread) is the difference between the fixed interest rate that is quoted on the interbank market and the midmarket rate for a swap. The bid-to-mid spread equals one-half of the bid-ask spread.

3. Example

Assume that the market quotes a bid price of 6.5 percent (the fixed rate it is willing to pay) and an ask price of 6.54 percent (the fixed rate it is willing to receive). The bid-ask

spread is 4 basis points,[23] and the midmarket rate is 6.52 percent. If the dealer's bid price is accepted and the dealer enters into a swap under which it is paying a fixed interest rate of 6.5 percent, then the spread from midmarket is 2 basis points.

4. Significance of Spreads

The spread from midmarket that a dealer is able to obtain when it negotiates a swap provides it with the revenue necessary to cover its costs connected with the swap and, it hopes, generate a profit. When a dealer buys a swap, the dealer captures the difference between its bid on the transaction and the midmarket rate. When a dealer sells a swap, the dealer captures the difference between its ask on the transaction and the midmarket rate.

In general, a dealer did not enter into a swap unless it expected to make a profit. As two exceptions to this rule, dealers entered into swaps without profit to develop a relationship with a particular customer or to hedge their portfolio.

Dealers typically charged smaller spreads to other dealer/counterparties than to end users. A dealer that entered into an interdealer swap usually contemporaneously entered into a similar swap with an end user. The dealer typically earned a profit on the end-user swap by negotiating a bid or ask rate that

[23] A basis point is 0.01 percent.

was different than the rate that the dealer had negotiated on the interdealer swap.

5. Decline in Interdealer Spreads

For interdealer spreads as of December 20, 1993, the following table shows (in basis points) the bid, ask, and midmarket rates, and the bid-to-mid spreads for nine common swap maturities:

Maturity	Bid	Ask	Midmarket	Bid-to-Mid Spread
2-year	13.000	15.666	14.333	1.333
3-year	22.333	25.000	23.666	1.333
4-year	24.333	27.000	25.666	1.333
5-year	20.000	23.000	21.500	1.500
6-year	26.666	29.666	28.166	1.500
7-year	39.666	43.000	41.333	1.667
8-year	32.000	34.666	33.333	1.333
9-year	32.333	35.000	33.666	1.333
10-year	32.333	35.000	33.366	1.333

By 1993, the swap bid-ask spreads had narrowed from earlier years because in part of competition. Average bid-ask spreads for fixed-for-floating interest rate swaps with 2-, 5-, and 10-year tenors narrowed from 4 to 4.5 basis points in July 1991 to 2.5 to 3 basis points in July 1993.

III. Valuing Swaps

A. Relevant Valuation Standards

The three relevant valuation standards are fair market value, market value, and fair value.

1. Fair Market Value

The term “fair market value” is typically used in the economics and business/tax worlds. The term is generally understood in its simplest form to mean the price at which property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy and sell and both having reasonable knowledge of relevant facts.

2. Market Value

The term “market value” is a term of art in the swaps industry. This term is generally understood in its simplest form to mean the present value of the anticipated cashflows, calculated according to a series of generally accepted conventions for using market data and using midmarket swap rates. The market value of a swap is typically calculated the same way for all swaps, without regard for the credit rating of the counterparty and without incorporating an extra adjustment for credit risk or future administrative costs.[24]

3. Fair Value

The term “fair value” is typically used in the accounting world and is directed to the needs of financial statement

[24] The common industry practice of valuing swaps does not consider differences in the credit ratings of investment grade counterparties.

users.[25] The meaning of this term is similar to, but is not necessarily the same as that of, the term "fair market value". "Fair value" is broader than and may include "fair market value". The objectives of each of these two concepts also are distinct.

B. Mark-to-Market Accounting

Swaps dealers generally attempted during the relevant years to mark their swap positions to market daily. The concept of mark-to-market accounting requires that the market value of an asset such as a swap be recorded on the balance sheet at each financial reporting date and that any changes in market value from one reporting date to the next be currently reflected in income or loss.

C. Devon System and the Devon (Midmarket) Value

1. Devon System

FNBC and most other dealers used the Devon system in order to ascertain their valuations for their mark-to-market accounting systems. The Devon system was developed and marketed by an independent software company named Devon Systems International, Inc.[26] The Devon system was during the relevant years the most

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[25] Most State statutes also usually define the term for purposes of valuing dissenting stockholders' appraisal rights and, sometimes, for purposes of valuing property in cases of marital dissolution. As discussed below, that definition is not applicable here.

[26] SunGard Systems International, Inc., a subsidiary of SunGard Data Systems, Inc., acquired Devon Systems International, (continued...)

commonly used commercially provided integrated front and back office processing and risk management system for financial derivatives. One of the Devon system's important functions was to take real time feeds of market rates and provide pricing of various securities and instruments.

2. Devon (Midmarket) Value

The Devon system calculated each swap's mid-market value by reference to zero-coupon yield curves. The Devon system used the two following types of inputs to calculate the midmarket value of a swap: (1) Transaction information and (2) market information. The transaction information was generally the information set forth in the trade ticket and was typically provided in the confirmation letter.[27] The transaction information included the notional amount, the tenor, the fixed interest rate, the floating interest rate, the payment dates, and the payment formulas. The

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[26](...continued)
Inc., in 1987. Devon Systems International, Inc., changed its name to SunGard Capital Markets, Inc., in 1992. On Jan. 2, 1998, SunGard Data Systems, Inc., acquired Infinity Financial Technology, Inc. (IFT), a financial derivatives trading and risk management company. SunGard Data Systems, Inc., merged IFT and its existing related Renaissance Software and SunGard Capital Markets to form a new operating group named Infinity, A SunGard Company. Infinity now maintains and licenses the Devon software.

[27] Each FNBC trader filled out a "trade ticket" for each transaction in which he or she had responsibility. This ticket, which listed all of the essential facts of the transaction, was then transmitted to the back office to input those facts into FNBC's Devon system and to prepare the related confirmation letter.

market information was data on the sets of interest rates prevailing in the financial markets on the valuation date.

The Devon system calculated a swap's midmarket value in two steps. First, the system used the market data to calculate a set of discount factors and forward rates. Second, the system ascertained the present value of the net cashflows over the life of the swap. The forward rates were used to translate the uncertain future cashflows on the floating side of a swap into expected future cashflows. The discount factors were used to reduce the fixed and expected floating cashflows to their present values. Summing the present values of the various cashflows produced the swap's total present value.

During the relevant years, midmarket values could be calculated under the Devon system with precision and agreement, and midmarket values were readily agreed upon for those swaps for which sufficient information was provided. The calculation of midmarket value was critically dependent on the assumptions made about future interest rates.

3. Yield Curve

a. Overview

The yield curve defined the yield (interest rate) available in the market for a given maturity on an instrument that met the definitions used in the construction of the yield curve. The yield curve, which was usually a zero-coupon yield curve

appropriate to the index on which the swaps were based (e.g., LIBOR-based swaps required LIBOR yield curves), (1) forecast the floating interest rates on each date relevant to a swap agreement and (2) determined the discount rate that should be used to compute the present value of each payment (fixed and floating) due under the swap agreement.

b. Constructing the Curve

In order to construct a yield curve, a user had to make at least three critical decisions. First, the user had to decide among the large amounts of available market information, such as LIBOR deposit rates, Eurodollar futures prices, swap bid and ask quotes, and yields on U.S. Treasury securities. The user had to choose, for example, whether the 1-year point on the yield curve would be based on LIBOR rates, Eurodollar future rates, or some other rate. Because these rates fluctuated during the day, the user then had to decide the time of day at which the rates would be collected, for example, at 11 a.m. or 2 p.m. Because the market data produced only a series of points corresponding to the maturities available in the market, the user then had to decide on a model that connected the dots in order to interpolate where the floating interest rate would be on the particular dates specified in each swap agreement.

c. Imprecise Measure

The midmarket value computed using dealer-constructed yield curves was a constructed, rather than an observed, number and was not absolutely precise. Two dealers could calculate different midmarket values for the same swap, although the differences should not have been that large. Disparities could have resulted, for example, because (1) the dealers relied on different market indicators (e.g., one relied on futures prices while the other relied on LIBOR), (2) the dealers used different software with different interpolation techniques, or (3) the dealers relied on prices quoted at different times during the day. As to the latter, a small movement in interest rates of just one basis point during a day could affect the midmarket values, and the price of a swap could change within a few hours. During the first quarter of 1990, for example, it was not unusual for interest rates to move 10 basis points or more in a single day.

D. Market Value

1. Net Present Value--Forward Rate Pricing

The market value of a swap is equal to the net present value of the expected net cashflows. The forward rate pricing approach calculates this net present value in two steps. First, the expected net cashflows are determined. Second, these expected cashflows are discounted to produce a present value.

a. Expected Cashflows

The table below shows the forecasted future cashflows as of December 1, 1992, on the swap illustrated supra p. 27. The implied forward rate of 4 percent used for the first floating payment is specified when the swap is originated. The remaining implied forward rates are derived from the midmarket swap curve. The forecasted cashflows for the floating side are calculated by multiplying the implied forward rate by the notional principal and then multiplying the product by a ratio that equals the number of days in the payment period divided by 360.

Payment Dates	Number of Days in Period	Fixed Payment	Implied Forward Rate	Forecasted Floating Payment	Forecasted Net Cash Flow From (To) FNBC
12/1/1992					
6/1/1993	182	$25,278	4.000%	$20,222	($5,056)
12/1/1993	183	25,417	4.262	21,664	(3,753)
6/1/1994	182	25,278	5.098	25,772	494
12/1/1994	183	25,417	5.813	29,549	4,132
6/1/1995	182	25,278	6.379	32,250	6,972
12/1/1995	183	25,417	6.921	35,180	9,763

b. Discounting Expected Cashflows

The table below shows the calculation of the present value of the forecasted future cashflows of the swap. The second through fourth columns show the forecasted fixed, floating and net cashflows on the swap just discussed. The fifth column shows the discount factors for each cashflow. The total present value of the swap is $10,148 as of December 1, 1992.

	Forecasted				Present Value		
Payment Dates	Fixed Payment (from FNBC)	Floating Payment (to FNBC)	Net Cash Flow (to FNBC)	Discount Factor	Fixed Payment (from FNBC)	Floating Payment (to FNBC)	Net Cash Flow (to FNBC)
6/1/1993	$25,278	$20,222	($5,056)	.9852	$24,903	$19,922	($4,981)
12/1/1993	25,417	21,664	(3,753)	.9643	24,509	20,890	(3,619)
6/1/1994	25,278	25,772	494	.9401	23,762	24,227	465
12/1/1994	25,417	29,549	4,132	.9131	23,207	26,980	3,773
6/1/1995	25,278	32,250	6,972	.8845	22,359	28,526	6,167
12/1/1995	25,417	35,180	9,763	.8545	21,718	30,061	8,343
Total	—--	---	---	---	140,458	150,606	10,148

2. Floating-Rate Note Method

An alternative approach finesses the need to forecast expected cashflows. It works on the analogy between the swap and a pair of bonds, one of which has a fixed rate and the other of which has a floating rate. This method relies on the assumption of which the floating-rate bond is worth its face value on the effective date or on any reset date. Since the market value of the swap is equal to the difference between the value of the floating leg and the value of the fixed leg, and since the value of the floating leg is known, the problem is to determine the value of the fixed leg. This does not require the use of a forward curve.

The floating-rate note method is useful when (1) the terms of the swap are plain vanilla and (2) the valuation date is a reset date. In other cases, a correct implementation of the floating-rate note method requires additional steps which are comparable to those employed in the forward rate pricing approach. The two approaches yield the same result in all events.

3. Value at Origination

Swaps generally originate close to par, at a rate approximately equal to either the prevailing market bid or ask, depending upon which side of the swap the dealer is on. The small initial divergence from par is the dealer's profit on making the market. When a dealer buys a swap at the prevailing market bid rate, it will have a positive value. The dealer does not typically pay this positive market value to the counterparty but keeps it as the profit on origination. Similarly, when a dealer sells a swap at the prevailing market ask rate, it will also have a positive value which is the dealer's profit on origination.

Whereas dealers generally originated swaps at prices near the prevailing market bid and ask rates, a particular dealer at any given time could set a higher or lower bid or ask rate for a given maturity swap, thereby producing a higher or lower profit on that swap. The dealer's ability to set the higher or lower rate depended upon the dealer's own business situation, on the risk structure of the dealer's entire portfolio, on the profile of the dealer's full set of counterparties, and/or upon other commercial considerations. Dealers seldom agreed to a rate on a swap which gave the swap a negative value at origination, unless the dealer was seeking to develop a client relationship and was

ready to incur an upfront cost in pursuit of longer term sources of profit.

4. Change in Market Value

A swap may originate at par and become an above-market swap on account of a fall in interest rates. A swap also may originate at par and become an above-market swap without a fall in interest rates. The latter occurs if the term structure is upward sloping so that short-maturity swaps are negotiated with a lower fixed rate than long-maturity swaps. Because the fixed rate is typically constant over the life of the swap, a decline in the swap's remaining maturity means that the swap's fixed rate is above the at-market rate for a newly originated swap with the identical remaining maturity. Assume, for example, that the 2-year swap rate is 5 percent, the 3-year swap rate is 6 percent, and the 4-year swap rate is 7 percent. Assume further that a 4-year swap is initiated at par (i.e., at a fixed rate of 7 percent). Assuming that the swap rates remain the same at the end of the first year, at the beginning of the second year, the 7-percent fixed rate on the remaining 3-year swap now exceeds the 6-percent rate for a newly originated 3-year swap. The swap is considered above-market relative to newly originated swaps which have a par rate of 6 percent.

E. Primary Financial Reporting Methods

1. Overview

The primary financial reporting alternatives for valuing nonhedging swaps are amortized cost, current market value, and lower of cost or market value (lower of cost or market). The latter two alternatives use market value information and allow unrealized gains and losses to be either (1) recognized as current income on the income statement or (2) accumulated on the balance sheet in a separate component of shareholders' equity until realized.

2. Amortized Cost

Under the amortized cost method, the initial cost of a typical interest rate swap is zero; swaps generally have no cashflow at inception. On each financial reporting date, income or loss on the swap is accrued in an amount equal to the portion of the next scheduled cashflow that reflects the elapsed time as of the reporting date. An offsetting entry is made to a receivable or payable, which is the only balance sheet evidence of the swap. On cashflow dates, entries are made to record the cash received or paid, reverse the receivable or payable, and record the balance as income or loss. Income over the life of the swap equals the total cashflows.

3. Current Market Value

Under a current market (or mark-to-market) valuation, entries are made to record the market value of the swap on the balance sheet at each financial reporting date. Changes in market value are reflected in income or loss, as are cashflows. Because the sum of changes in market value over the life of the swap must be zero, the income over the life of the swap again equals total cashflow.

4. Lower of Cost or Market

Entries under the lower of cost or market generally follow the entries made under the amortized cost method, with the added step that, at each financial reporting date, the swap's amortized cost value (if any) is compared with its market value. If current market value is below the amortized cost value, an entry is made to adjust the recorded value to an amount equal to the market value. All adjustments to or from market value are treated as income or loss. The lower of cost or market method recognizes losses in market value below the amortized cost value, and gains to the extent that they recoup previously recognized losses. The lower of cost or market does not recognize gains in market value above the amortized cost value.

F. Relevant Standards of the FASB

1. The FASB and GAAP

The Financial Accounting Standards Board (FASB) is the professional organization primarily responsible for establishing financial reporting standards in the United States. The FASB's standards are known as Generally Accepted Accounting Principles (GAAP).

2. Initial Role of Market Values in GAAP

Under GAAP, market values initially played a limited role in shareholder reporting. GAAP uses predominantly transaction-based valuation; i.e., valuation established in an actual transaction by the reporting entity. The primary advantage of transaction-based valuation is reliability; accountants view values established in arm's-length transactions as less subjective and more easily verified than values produced without such transactions. The primary disadvantage of transaction-based valuation is that values can become outdated, thus rendering the information less relevant to investors. If a company issued a bond at par, for example, transaction-based valuation would report the bond on the company's financial statements at its issue price. If interest rates fell, the market value of the bond, and thus the market value of the company's liability, would rise. This rise in value would not be recognized in the

company's transaction-based reports, although it would most likely be an important factor in valuing the company.

3. SFACs

From the late 1970s through the mid-1980s, the FASB issued a series of statements known as "Statements of Financial Accounting Concepts" (SFACs) in an effort to define a conceptual framework within which accounting standards could be developed. These statements did not discuss mark-to-market accounting explicitly. However, SFAC No. 5, issued in December 1984, allowed for the possibility that assets and liabilities could in certain cases be revalued on the basis of current market value in the absence of a new transaction. These cases could occur if the current price information was "sufficiently relevant and reliable to justify the costs involved".

Though the transaction-based approach remained dominant, the SFAC No. 5 criterion for using current market value allowed a wide range of practice. The FASB listed three examples of valuation at current market value from then-current practice: (1) Some investments in marketable securities, (2) assets expected to be sold at prices less than previous carrying amounts, and (3) some liabilities that involved marketable commodities or securities, such as obligations of writers of options. These examples were limited to circumstances where either (1) shareholders had suffered a decline in value from the

historical transaction-based valuation or (2) the item had a ready market in the form of an organized exchange so that the cost of obtaining objective and verifiable pricing information was minimal, as was the uncertainty about whether the reporting entity could find a buyer.

4. Change in Accounting Treatment

Until recently, accounting for non-exchange-traded financial assets had typically been on the basis of amortized cost. For a traditional fixed-rate loan, for example, the amortized cost value of the loan would be (1) the original amount lent, net of any repayments, plus (2) accrued interest at the contractually specified rate. With the exception of actual default, amortized cost valuation was not sensitive to changing market conditions such as changes in interest rates or changes in the asset's credit risk.

Financial innovation during the 1980s and 1990s created a need for better information than reported by the traditional transaction-based system. With encouragement from the Securities and Exchange Commission (SEC), the FASB began in the early 1990s to consider greater use of market values in accounting for financial instruments.[28] One concern with the transaction-based

[28] Before 1990, financial accounting standards mentioned swaps only in the context of hedging. Statement of Financial Accounting Standards (SFAS) No. 52 mentions currency swaps used as hedges to reduce risk from currency fluctuations and discusses

(continued...)

system was that new financial instruments created potentially large risks not reported on the balance sheet. Forward contracts, for example, typically require no exchange at inception, so the transaction-based value would be zero at inception and would remain zero until maturity. At maturity, the cash settlement would determine income or loss, without any value ever appearing on the balance sheet.

A second concern with the transaction-based system was that firms could sell appreciated on-balance-sheet investments to report gains and leave investments that had declined in value reported on the balance sheet at their original cost. A third impetus for increasing the use of market value information in financial reports was the greater acceptance of theoretical models and the wider availability of financial data to support more reliable and informative reports. For example, although models of option pricing existed in the academic finance literature in the 1970s, their acceptance in accounting practice began only in the mid-1980s.

5. SFASs

From in or about March 1990 through June 1998, the FASB worked on its financial instruments project. As part of that

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[28](...continued)
the appropriate accounting for such hedges. SFAS No. 52 does not discuss the appropriate accounting for nonhedging swaps such as those at issue.

project, the FASB issued four statements each known as a "Statement of Financial Accounting Standards" (SFAS).

a. SFAS No. 105

In March 1990, the FASB issued SFAS No. 105, "Disclosures of Information about Financial Instruments with Off-Balance-Sheet Risk and Financial Instruments with Concentrations of Credit Risk". SFAS No. 105 required the footnote disclosure of the extent, nature, and terms of financial instruments such as swaps which had off-balance-sheet risk. SFAS No. 105 did not require disclosure of the related market values.

b. SFAS No. 107

In December 1991, the FASB issued SFAS No. 107, "Disclosures about Fair Value of Financial Instruments", effective for fiscal years ended after December 15, 1992. SFAS No. 107 required footnote disclosure of the fair value of financial instruments for which it was practicable to estimate fair value but did not require formal recognition in the financial statements. SFAS No. 107 defined the fair value of a financial instrument as

> the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale. If a quoted market price is available for an instrument, the fair value to be disclosed for that instrument is the product of the number of trading units of the instrument times that market price.

SFAS No. 107 stated that the amounts computed as "market value, current value, or mark-to-market" value under the then-existing

requirements satisfied the fair value requirements of SFAS No. 107.

As relevant herein, the FASB allowed a variety of methodologies for estimating fair values, including the use of midmarket values if any adjustments thereto were likely to be negligible or not cost effective to estimate reliably. The FASB recognized in SFAS No. 107 that quoted market prices did not exist for custom-tailored instruments such as swaps and recommended that "an estimate of fair value might be based on the quoted market price of a similar financial instrument, adjusted as appropriate". In illustrating an acceptable disclosure under SFAS No. 107, SFAS No. 107 gives the following description of swap valuation: "The fair value of interest rate swaps * * * is the estimated amount that the Bank would receive or pay to terminate the swap agreements at the reporting date, taking into account current interest rates and the current creditworthiness of the swap counterparties."

c. SFAS No. 119

In October 1994, the FASB issued SFAS No. 119, "Disclosures about Derivative Financial Instruments and Fair Value of Financial Instruments". SFAS No. 119 required footnote disclosure of the nature, terms, and fair values of financial derivative instruments. SFAS No. 119 was not effective for any

of the relevant years, and it did not prescribe specific methods for arriving at fair value.

d. SFAS No. 133

In June 1998, the FASB issued SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities". SFAS No. 133 required non-hedging derivative instruments such as swaps to be reported at fair value on the balance sheet, with gains and losses included in current earnings. SFAS No. 133 was not effective for any of the relevant years, and it did not prescribe specific methods for arriving at fair value.

G. Methods of Valuing Swaps

During the relevant years, the three main methods which dealers used to value their swaps portfolios were the bid-ask method, the midmarket method, and the adjusted midmarket method.

1. Bid-Ask Method

The bid-ask method was essentially a market comparables approach to valuation. Some dealers used this method, and it was recognized as a valid method by the Group of Thirty (G-30) (discussed infra p. 76) and the OCC. Under the bid-ask method, each swap generally was valued by (1) identifying the generic swap to which it was most comparable, (2) ascertaining the bid or ask price for that generic swap, and (3) adjusting the ascertained price to reflect any differences between the generic swap and the swap being valued. Bid prices were used to value a

long position (swaps where the dealer received the fixed rate), and ask prices were used to value a short position (swaps where the dealer paid the fixed rate). The bid and ask prices were both interdealer published quotes rather than the dealer's own quotes.

2. Midmarket Method

The industry practice from 1990 through 1993 was to use the midmarket value to value portfolios and to report separately the adjustments described below.[29] As discussed above, the midmarket value was the net present value (positive or negative) of the anticipated cashflows which the parties had agreed to exchange. A positive value meant that the dealer expected to be a net receiver of future payments. A negative value meant that the dealer expected to be a net payer.

3. Adjusted Midmarket Method

During the relevant years, the adjusted midmarket method was a common method used by dealers to value their portfolios, and it was recognized as a valid method by the G-30. Under this method, a dealer calculated the midmarket value of the swaps in its portfolios and then made certain adjustments. The type of these adjustments varied between and among dealers. Depending on the dealer, adjustments were made for factors which included credit

[29] Most people in the industry during the relevant years referred to the midmarket value of a swap as its "market value".

risk, future administrative costs, hedging costs, investing and funding costs, closeout costs, and liquidity (each discussed infra p. 81). During the relevant years, there was no standard practice in the market as to the specific adjustments taken by dealers.

H. Nontax Purposes for Which Dealers Value Swaps

1. Overview

Swaps are valued for a number of nontax purposes. These purposes include regulatory reporting, risk management, management reporting, financial reporting, and pricing.

2. Regulatory Reporting

National banks such as FNBC had to value their financial derivative portfolios in reports submitted to their principal regulator, the OCC. During the relevant years, the primary focus of an OCC examination of a bank dealer department was to determine whether the risk management systems employed by the bank assured timely recognition of risk-taking and losses and did not permit an overstatement of income. In contrast with the Commissioner's audits of a taxpayer's Federal income tax return, OCC examinations did not focus on understatements of income or of value. OCC examiners were instructed to examine closely the recognition of income associated with financial derivatives positions to ascertain that the bank under examination had not overstated its income. The OCC preferred valuation methodologies

and income reporting that resulted in a bank's taking significant reserves, deferring income recognition, and using conservative carrying values for swaps. The OCC's role as regulator of the bank was to oversee the risk management systems employed by the bank.

The OCC endorsed valuing financial derivative portfolios at adjusted midmarket values and considered the adjustments "holdbacks" (i.e., reserves) designed to provide for likely future costs and to attribute trading income to the appropriate source of income. This endorsement reflected the OCC's acceptance of a 1986 recommendation of the Basel Committee on Banking Supervision (Basel Committee) that banks should build a cautious bias into their estimates of the replacement costs of off-balance-sheet instruments. Neither the OCC nor the Basel Committee provided specific guidelines for calculating midmarket value adjustments. The OCC did require banks to take into account changes in counterparty credit quality in swap revaluations. In making credit adjustments to midmarket values, it was the view of the OCC that the credit adjustment was typically calculated by formulas based on the counterparty credit rating, maturity of the transaction, collateral, netting arrangements, and other credit factors.

In 1994, the FRB expressed concerns about the potential for income manipulation by use of midmarket adjustments.

3. Risk Management

Swaps dealers needed to value financial derivatives to measure the performance of their financial derivatives trading operations and to measure and to ascertain how to hedge the market risks in their portfolios. Traders were responsible for maintaining the portfolios they managed within various risk limits. The traders needed to know their exposure to long-term and short-term interest rate movement positions in order to assure that they did not take on unacceptable levels of risk.

Swaps dealers such as FNBC used midmarket values for daily risk management purposes. The purpose of these valuations was to measure the day-to-day change in the value of the portfolio and to quantify the impact that particular interest rate movements would have on the value of the portfolio. These calculations were used to monitor risk positions (i.e., how much unhedged market risk a trader could assume) and to identify where hedging was needed. Swaps dealers such as FNBC did not rely upon their credit adjustments to risk-manage their swaps and did not use their administrative costs adjustments for risk management.

4. Management Reporting

Each month, swaps dealers such as FNBC prepared a management report for the financial derivatives profit center that included interest rate swaps. The monthly management reports contained a profit-and-loss statement and a balance sheet. On its balance

sheets, FNBC valued its swaps at midmarket values and reflected its credit and administrative costs adjustments in a reserve account. Copies of these reports were sent to senior management, the OCC, and the FRB.

FNBC's upper management did not rely upon any of the adjustments used for tax purposes. In making presentations to its Board Examining Committee on the profitability and status of its swaps business, FNBC relied on midmarket values. FNBC reported to its Board Examining Committee that it made a reasonable profit from the difference between the swaps market and the customer.[30]

5. Financial Reporting and Pricing

Swaps dealers such as FNBC valued their swaps for financial reporting and pricing purposes. FNBC did not rely upon its credit adjustments in pricing its swaps.

I. The G-30

1. Overview

The G-30 is a private, nonprofit international body that comprises very senior representatives of the private and public sectors and academia. It was organized to deepen understanding of international economic and financial issues and to examine the choices available to market practitioners and policymakers. It

[30] FNBC also did not rely upon its credit adjustments to set employee bonuses.

is supported by contributions from private sources such as banks and nonbank corporations. During the relevant years, the chairman of the G-30 was Paul Volcker.

2. G-30's Review of Industry Practices

The G-30 establishes study groups, committees, and subcommittees to study various matters of interest to the international financial community. In 1992, the G-30 commissioned an authoritative review of industry practices and performance with respect to financial derivatives. The G-30 did so in order to define a set of sound risk management practices for dealers, end users, and regulators. Later that year, the G-30 established a Derivatives Project Steering Committee, which, in turn, created a working group of specialists (working group) in the financial derivatives field.

The working group conducted a comprehensive study of financial derivatives and financial derivatives markets drawn from the experience of market participants. In July 1993, the working group issued its report (G-30 report), entitled "Derivatives: Practices and Principles". The G-30 report focused on bank regulatory concerns and generally defined a set of sound risk management practices for dealers and end users. The working group followed that report with various surveys published in 1994 as to industry practices. These surveys were incorporated into the G-30 report.

3. G-30 Report

The G-30 report set forth an unofficial but authoritative review of industry practices and performances, mainly for the benefit of the risk management activities of dealers and end users. The G-30 report included a primary section on recommendations and the following additional and integral parts:

Appendix I	Working Papers, dated July 1993
Appendix II	Legal Enforceability, Survey of Nine Jurisdictions, dated July 1993
Appendix III	Survey of Industry Practices, dated March 1994

Follow-up Surveys of Industry Practice, dated December 1994

As to the valuation of financial derivatives, Recommendation 3 of the G-30 report stated:

> Recommendation 3: Market Valuation Methods
>
> Derivatives portfolios of dealers should be valued based on mid-market levels less specific adjustments, or on appropriate bid or offer levels. Mid-market valuation adjustments should allow for expected future costs such as unearned credit spread, close-out costs, investing and funding costs, and administrative costs.

The G-30 report explained as to this recommendation:

> Marking to mid-market less adjustments specifically defines and quantifies adjustments that are implicitly assumed in the bid or offer method. Using the mid-market valuation method without adjustment would overstate the value of a portfolio by not deferring income to meet future costs and to provide a credit spread.
>
> Two adjustments to mid-market are necessary even for a perfectly matched portfolio: the “unearned credit spread adjustment” to reflect the credit risk in the portfolio; and the “administrative costs adjustment” for costs that will be incurred to administer the

> portfolio. The unearned credit spread adjustment represents amounts set aside to cover expected credit losses and to provide compensation for credit exposure. Expected credit losses should be based upon expected exposure to counterparties (taking into account netting arrangements), expected default experience, and overall portfolio diversification. The unearned credit spread should preferably be adjusted dynamically as these factors change. It can be calculated on a transaction basis, on a portfolio basis, or across all activities with a given client.
>
> Two additional adjustments are necessary for portfolios that are not perfectly matched: the "close-out costs adjustment" which factors in the cost of eliminating their market risk; and the "investing and funding costs adjustment" relating to the cost of funding and investing cash flow mismatches at rates different than the LIBOR rate which models typically assume.
>
> The Survey reveals a wide range of practice concerning the mark-to-market method and the use of adjustments to mid-market value. The most commonly used adjustments are for credit and administrative costs.

The G-30 report does not provide an objective standard as to the calculation, measurement, or testing of either the unearned credit spread (i.e., the credit adjustment) or the administrative costs adjustment.

4. BC-277

Later in 1993, shortly after the G-30 report was issued, the OCC released Banking Circular 277 (BC-277), entitled "Risk Management of Financial Derivatives". This document addressed the valuation of financial derivatives and was sent to the chief executive officer of every national bank. In relevant part, it stated on the cover page:

PURPOSE

This banking circular provides guidance on risk management practices to national banks and federal branches and agencies engaging in financial derivatives activities. The guidelines in this circular represent prudent practices that will enable a bank to conduct financial derivatives activities in a safe and sound manner. National banks engaged in financial derivatives transactions are expected to follow these guidelines. * * *

* * * * * * *

SCOPE

Financial derivatives transactions currently represent a relatively small portion of the total credit, market, liquidity, and operational risk to which most banks are routinely exposed. However, because of their complexity, many banks involved in financial derivatives transactions have developed sophisticated approaches in managing those traditional types of risk. These guidelines reflect such approaches and, therefore, represent sound procedures for risk management generally. Therefore, to the extent possible, they should be applied to all of a bank's risk-taking activities.

As to the valuation of derivatives, BC-277 stated:

4. Valuation Issues

Banks that engage in financial derivatives activities should ensure that the methods they use to value their derivatives positions are appropriate and that the assumptions underlying those methods are reasonable.

Dealers and active position-takers should have systems that accurately measure the value of their financial derivative portfolios. The pricing procedures and models the bank chooses should be consistently applied and well-documented. Models and supporting statistical analyses should be validated prior to use and as market conditions warrant.

The best approach is to value derivatives portfolios based on mid-market levels less adjustments.

> Adjustments should reflect expected future costs such as unearned credit spreads, close-out costs, investing and funding costs, and administrative costs. Most limited end-users (and some traders) may find it too costly to establish systems that accurately measure the necessary adjustments for mid-market pricing. In such cases, banks may price derivatives based on bid and offer levels, provided they use the bid side for long positions and the offer side for short positions. This procedure will ensure that financial derivatives positions are not overvalued.
>
> Banks adopting mid-market pricing should recognize that mid-market prices are not observable for many instruments. In those cases, banks should derive unbiased estimates of market prices from prices in similar markets or from sources that are independent of the bank's traders. The bank's operations staff should develop procedures to verify the reasonableness of all pricing variables or, if that is not possible, should limit the bank's exposure through position or concentration limits and develop appropriate reporting mechanisms.
>
> Traders may review and comment on prices. When material discrepancies occur, senior management should review them. If, in an extenuating circumstance, senior management overrides a back office estimate, it should prepare a written explanation of the decision.

IV. Adjustments to Midmarket Value

A. Overview

The credit adjustment and the administrative costs adjustment are the primary adjustments in dispute. The total of these adjustments in the industry exceeds $1 billion per year. Dealers during the relevant years also reported adjustments to midmarket value for the following: (1) Provision for current closeout costs of net open positions, (2) provision for future hedging costs (portfolio rebalances), (3) adjustment for odd

cashflows, (4) adjustment to reflect borrowing and lending rates for in- or out-of-the-money positions, (5) liquidity, and (6) model risk. We discuss the adjustments recognized by the parties and/or experts.

B. Administrative Costs Adjustment

1. Overview

The adjustment for administrative costs represented those expenses which a dealer expected to incur in the future in holding, managing, and administering its existing swap portfolio to maturity. The adjustment reflected the dealer's operation, maintenance, and staffing of the support functions and limited trading personnel, including the personnel needed to execute swap transactions to service the existing portfolio, process payments on the swaps, determine and execute the appropriate hedges as to the swaps, and monitor the credit standing of counterparties. The adjustment reflected the appropriate data feeds, software licenses, activities needed to support the trading floor, and associated space costs.

2. Dealers' Practice

Dealers did not take administrative costs into account for purposes such as pricing and trading. Negotiations among dealers were over the total price of a swap, and dealers did not separately negotiate an administrative costs component of the spread from midmarket value.

3. Use of Dealer's Own Costs

Dealers calculated their administrative costs adjustments on the basis of their own internal estimates of future costs. There was neither a market standard for administrative expenses related to swaps, nor a market standard (or market data) for an administrative costs adjustment whether on a swap-by-swap or portfolio basis.

Dealers did not know the level of administrative (or other) costs experienced by other dealers. That information was generally regarded as proprietary and was not public.

C. Adjustment for Counterparty Credit Risk

1. Overview

A party to a swap was exposed to credit risk. The party's credit risk was the potential change in the market price of the party's position in the swap due to the credit quality of the counterparty. The event of a default by the counterparty lowered the market price of that position, and the danger of default was the ultimate source of credit risk. Short of an actual default, a downgrade in the counterparty's credit rating could also affect the market price of the party's position in the swap. Credit risk included the danger that the market price of the party's position in a swap would fall because of a downgrade in the credit rating of the counterparty.

Although the notion of midmarket adjustments for credit risk was recognized in the swaps market, there was no publicly available data as to the impact that credit quality had on swap prices. The publicly reported bid and ask rates were commonly considered valid for counterparties rated AA, and counterparties with other ratings that negotiated around these quotes did not publicly report the prices which they negotiated. Those negotiated prices, therefore, could not be distilled into a set of swap curves for different credit qualities.

2. Common Method of Calculating Adjustment

There was no consensus during the relevant years about either the model or the methodology that should be used to calculate a credit adjustment on swaps. Many bank dealers calculated their credit adjustments on the basis of a formula that referenced (1) each counterparty's credit rating, (2) the bank's estimate of expected losses for that credit rating, and (3) a loan equivalency amount.

a. Counterparty Credit Rating

Most bank dealers had well-established internal credit risk-rating systems which were developed for purposes other than calculating a credit adjustment on a swap. Many dealers applied these credit ratings to ascertain their credit adjustments for swaps.

b. Expected Loss Factor

On the basis of historical experience, bank dealers generally ascertained a loss factor for each credit rating. The loss factor represented the bank's estimate of its credit losses for each dollar of credit exposure in that credit rating. The loss factors were generally derived from the bank's experience with loans to borrowers with the respective credit ratings.

c. Loan Equivalency

i. Overview

A bank would typically establish a credit limit for each customer, and the loan equivalency measurement of credit exposure was used by banks in applying credit limits. The loan equivalency amount focused on the bank dealer's expected credit exposure from a specific counterparty with which it had entered into one or more swaps. The loan equivalency amount represented the amount of the counterparty's credit limit, as established by the bank, that was consumed by each swap. In other words, the exposure model determined the number of swaps that the bank could enter into with the counterparty and stay within the prescribed credit limit.

ii. Types of Credit Exposure

The concept of credit exposure was broken into current credit exposure and potential credit exposure. There also is a third type of credit exposure known as "expected exposure".

A. Current Credit Exposure

A bank dealer's current credit exposure on any day was the net present value of the amount that the bank expected to receive under a swap agreement as ascertained from current interest rate projections. In other words, a bank's current credit exposure was the midmarket value of a swap, to the extent that the midmarket value was positive.

B. Potential Credit Exposure

A bank dealer's potential credit exposure was the most that it could lose on a swap. Although it was possible to ascertain the amount that a bank would lose if interest rates reached unthought-of heights such as 20 percent or higher (or, in other words, a bank's "maximum exposure"), banks generally did not consider their maximum exposure because they did not believe that interest rates would rise to those unexpected levels. The concept of potential credit exposure was reformulated to measure the most that a bank could lose with a set level of confidence (e.g., a 95-percent certainty). The degree of conservatism increased with an increase in the number used as the confidence level; e.g., the use of a 20-percent confidence level was less conservative than the use of a 50-percent confidence level.

The G-30 report recommended that potential credit exposure be calculated using broad confidence intervals (e.g., two standard deviations) over the remaining terms of the

transactions. An interval of two standard deviations corresponds to a 95-percent confidence level.

C. Expected Exposure

Expected exposure is the mean exposure which is used for valuing credit risk.

iii. OCC's Position

BC-277 stated that for risk management purposes every bank should have a system to quantify "current exposure ('mark-to-market') as well as potential credit risk due to possible future changes in applicable market rates or prices ('add-on')." BC-277 stated further that "This methodology should produce a number representing a reasonable approximation of loan equivalency, that is, the amount of credit exposure inherent in a comparable extension of credit."

iv. Methods Used To Calculate

Complex models were used to measure credit exposure for interest rate swaps. Initially, some swaps dealers measured potential exposure using a scenario approach. They would analyze a limited number of future interest rate scenarios and track the value of the swap over time to determine the maximum amount at risk if the counterparty were to default. Under this approach, the worst case scenario was regarded as the potential exposure. This approach had many deficiencies, and, by the 1990s, most dealers were trying to develop more sophisticated tools.

One common approach during the relevant years for estimating credit exposure was a Monte Carlo simulation. The basic idea of this approach was to construct a mathematical model to simulate thousands of variations of future movements of a certain interest rate (e.g., 6-month LIBOR rate) and, for each variation, to calculate the credit exposure at numerous points (e.g., every 3 months over the life of the swap). The model generated a probability distribution of exposure amounts for each swap, which was used to calculate maximum exposures for multiple confidence intervals.

3. Market Data for Pricing Credit Risk of Bonds

The credit quality of an issuer of bonds affects the fair market value of the bonds. If a bond is traded, this relationship can be directly observed in the price of the bond.

Data on the market prices of traded bonds can be used to estimate the fair market value of nontraded bonds, inclusive of any premium or discount that should be applied for credit risk. Public databases exist which gather information on the traded prices and yields for bonds with different credit ratings and at different maturities. This information is gathered, and an index of yields is constructed. The value of a nontraded bond is calculated by discounting the promised cashflows at the yield for the index of comparably rated bonds with the same maturity.

The observable quality spread in the bond markets makes it possible to calculate an appropriate adjustment for credit quality. Assume, for example, that a U.S. Treasury bond priced at $101.25 would have an estimated fair market value of $99.83 if, instead, it was a like bond issued by an AAA-rated corporation. The $1.42 difference between the two bonds is the credit adjustment for an AAA-rated bond issuer. If the same bond would have had an estimated fair market value of $98.91 if it had been a like bond issued by an A-rated corporation, the $2.34 difference between the price of the Treasury and A-rated bonds is the credit adjustment for an A-rated bond issuer. The 92-cent difference between the estimated fair market values of the AAA-rated bond and the A-rated bond is the incremental credit adjustment as of the date of valuation.[31]

D. Other Adjustments

1. Investing and Funding Costs

The G-30 report recommended an adjustment for investing and funding costs for portfolios that are not “perfectly matched”. This adjustment, the G-30 report stated, relates to “the costs of funding and investing cashflow mismatches at rates different from the LIBOR rate which models typically assume”. This adjustment is also mentioned in BC-277.

[31] The market price of credit risk fluctuates over time.

2. Closeout Costs (Liquidity)

The G-30 report recommended an adjustment for closeout costs. The closeout costs (liquidity) adjustment reflects the cost to buy out, assign, or otherwise unwind one or all of the reporting entity's swaps.

The need for a closeout costs adjustment is relatively strong in some cases. Midmarket pricing from models based on the prices of benchmark instruments that are liquid overstates the pricing of assets that are exotic, or infrequently traded, or have a limited set of potential buyers. Such assets should be marked down for their liquidity.

During the relevant years, no sound or implementable approaches existed as to close out costs adjustments. Nor did many entities (including FNBC) make closeout costs adjustments during those years.

3. Dealer Margin

The fair market value of a swap (inclusive of profit) is not normally zero at inception. Dealers capture profits on the origination of swaps, especially swaps with end users. As a result, the fair market value of a swap between a dealer and an end user is generally positive at origination. The midmarket value of a swap at origination often includes the present value of the dealer's expected profit on the transaction.

The adjusted midmarket method generally did not include an adjustment for the dealer's profit margin. Nor did FNBC's implementation of that method include such an adjustment.

V. Los Alamos Project

In 1994, the Commissioner entered into a contract with the Los Alamos National Laboratory under which the Los Alamos scientists (including quantum physicists and mathematicians) were to develop in the form of software a sophisticated model to assist the Commissioner in valuing interest rate swaps, currency swaps, and other financial derivative products for which mark-to-market reporting was required under section 475. This software was intended to produce a narrow range of values for swaps that a revenue agent could use as a litmus test for ascertaining whether a more thorough audit would be necessary as to a dealer's valuation of its swaps. The Commissioner contemplated that a more detailed audit would be required if the dealer's valuation fell outside the range of values.

The Los Alamos team was to address during the first 12 months of the project the following nine issues:

1. Address security and disclosure issues. –- Some of the data required in the model development must use sensitive unclassified information about taxpayers' market transactions. Procedures must be put in place to handle these requirements.

2. Determine how the various forms of tax information data are handled and its impact on models. –- For example much of the data on transaction is only available in paper format. In this case

statistical methods need to be used to account for the transactions; this will need to be allowed for in the models.

3. Many of these models will require historical data on price, interest rates, economic indicators, company reports and analyst estimates. This data is available from several vendors who need to be identified and form of feeds established.

4. Develop pricing models for interest rate and currency swaps, allowing proper determination of zero coupon rates and pricing based on the floating and fixed rate side. Perform benchmarking.

5. Identify list of other significant derivatives for which to begin modeling efforts. –- Discuss with the IRS which of the many derivative securities should be focused on. This activity will help set the framework for model development of subsequent securities.

6. Determination of platform to use in the field. It is strongly recommended that this be a windows driven system. Many of the models developed will require a large computing platform. The way to handle this is to have a software package on the field agent’s computer that would remotely log into the larger machines.

7. Non-linear models for interest rate yield curve predictions. –- Yield curve models are central to the valuation of these securities, issues associated with these must be addressed early in the game.

8. Credit risk models and their incorporation into swap pricing. -- In a similar fashion to yield curve models credit risk or the risk of defaulting on a contract must be addressed.

9. Implement a working system that has a basic set of models with the look and feel of future systems. -- Test in house a beta version of system to be implemented.

The Los Alamos team spent the most time for the software project on developing strong foundations for pricing plain vanilla swaps, which were the bulk of instruments traded in the market. The Commissioner believed that strong foundations for building models in these instruments had to be established first before models could be built for the more complicated nongeneric products.

After having spent more than 3 years and at least $2.6 million on the Los Alamos Project, the Commissioner suspended the project in late 1997 primarily because of budgetary constraints. There were internal concerns about computer spending during this time and a particular concern about additional funding for the project because any product that was developed would require subsequent budgeting for costs connected to Los Alamos's need to fine-tune the product.

VI. FNBC's Swaps Business

A. Overview

FNBC began dealing in interest rate and currency swaps in 1983 and began dealing in commodity swaps in 1989. To date, FNBC has traded in at least 17 currency markets, including U.S. dollars, Canadian dollars, Australian dollars, deutschmarks, sterling, yen, Swiss francs, ECU's, and pesetas. FNBC is an innovator of interest rate products and is a leading provider in

commodity derivatives including commodities such as oil, zinc, copper, and natural gas.

On the basis of notional principal amounts outstanding, FNBC was the 16th largest swaps dealer in the world in 1993. On a consolidated basis, the notional principal amounts of FNBC's outstanding swaps at the end of 1990, 1991, 1992, and 1993 totaled $59.4 billion, $78.8 billion, $84.5 billion, and $114.9 billion, respectively. For all of FNBC's worldwide interest rate derivative business, its return on equity for global derivative products in 1992 and 1993 was 30 percent and 33.9 percent, respectively.

During the relevant years, FNBC entered primarily into interest rate swaps. As of July 31, 1993, approximately 95 percent of the total number of deals in FNBC's portfolio were plain vanilla swaps and options.

B. Trading Desks

During the relevant years, FNBC had swap trading desks in Chicago, London, Tokyo, and Sydney. The swap traders at the Chicago trading desk handled primarily interest rate swaps denominated in U.S. or Canadian dollars and, to a lesser extent, currency swaps, commodity swaps, and combination swaps. The Chicago office also traded many products other than swaps including, but not limited to, interest rate guarantees, FRAs,

Government securities, municipal bonds, high yield debt, and asset-backed securities.

The Chicago office booked (i.e., held and risk-managed) all swaps the notional principal amounts of which were denominated in U.S. or Canadian dollars. Swaps booked in Chicago but originating outside of FNBC's Chicago office (e.g., at the London office[32]) were known as "linked deals". Linked deals are a type of internal contract that transfers the external exposure on a swap, as well as the responsibility for cashflows and market risk, from one FNBC trading office to another. In order to book in Chicago a deal originating in another office (e.g., London), FNBC entered into a mirror swap with the origination office to transfer the swap from the origination office to Chicago. Carveouts for linked deals were claimed at the linked office; i.e., the office that held and risk-managed the swap.

C. Swaps Operations Personnel

1. Overview

During the relevant years, FNBC's swap operation was divided into a front office and a back office. The front office consisted of (1) traders, (2) marketers, (3) financial engineers who designed new instruments and structured transactions, and (4) the support staff for the first three categories of

[32] The London office specialized in the trading of European and Asian currencies.

employees. The back office (also known as the swaps operations group) ensured the integrity of the paperwork on FNBC's swaps and other multiple trading products. The back office, among other things, verified that swap master agreements were executed, that confirmations on swap transactions were received, and that periodic payments on swaps were properly transacted.

2. Traders

a. Function

FNBC's traders were the individuals who on behalf of FNBC negotiated and entered into swap transactions with other dealers or brokers. In order to effect these transactions, FNBC's traders usually dealt directly with the brokers or with their (FNBC's traders') counterparts at the other dealers. In swaps with other dealers, including brokered transactions and those swaps which a dealer entered into for its own use (e.g., to hedge its own books), the FNBC trader usually determined the final price for the swap and was authorized to enter into the transaction without specific credit approval if sufficient credit limits had already been established for the counterparty/dealer. If the counterparty was strictly an end-user, as opposed to a dealer acting either as a dealer or as an end user, the FNBC trader would not deal directly with the counterparty. Rather, a marketer would handle negotiations with the counterparty after

checking with the trader as to the potential pricing of the transaction.

During the relevant years, FNBC generally required its traders to use ISDA documentation for its swaps, and its swaps were subject to ISDA conventions.

b. Number Employed in Chicago

FNBC's Chicago swap operation employed three traders of interest rate swaps and one other individual, the head of the trading desk, who supervised these three traders. Two of the three traders traded U.S. dollar denominated interest rate swaps, and the third trader traded Canadian dollar denominated interest rate swaps. One of the two traders of U.S. dollar denominated interest rate swaps traded short-term swaps, and the other traded long-term swaps.

c. Practice as to Quotations

FNBC's traders typically quoted the same bid and ask rates for all potential counterparties rated A- or better. FNBC's bid and ask quotes were driven by the market bid and ask quotes and the risk position of FNBC's portfolio. FNBC's traders agreed to the terms of a plain vanilla interest swap in a matter of seconds.

In pricing potential swap transactions, FNBC's traders attempted to determine where the market was at that time and, given their views on interest rate movement, price their swaps on

the basis of supply and demand. They gauged the market by looking at various sources (e.g., yields on Treasury securities, broker quotes of swap spreads over relevant Treasury instruments, and Eurodollar futures prices) to determine points on the interest rate yield curve. Some of the requisite information underlying these sources was reflected in FNBC's Devon system. FNBC's traders often used the information provided by the Devon system as a starting point in pricing.

d. Risk Management Responsibility

Each FNBC trader was responsible for maintaining his or her aggregate positions within various market risk parameters. The traders risk-managed their portfolios subject to the trading limits set by those market risk parameters. In risk-managing their portfolios, the traders used daily risk profiles and Devon-system-generated daily profit and loss statements for swaps. These profiles and statements listed midmarket values and did not include administrative costs adjustments or credit adjustments. FNBC's traders were limited on the amount of interest rate exposure that they could assume on behalf of FNBC by a risk point system. That risk point system was based upon the profit/loss estimates that FNBC's Devon system provided given a certain basis point movement in interest rates.

Whenever FNBC and a counterparty reached agreement on the price of a new swap, the trader would begin the process of

attempting to hedge some or all of the market risk taken in the transaction. The trader usually hedged its swaps with other swaps as well as with futures and Government securities such as Treasury securities. In some cases, the trader decided to leave a position unhedged for a period of time or did not enter into a specific hedging transaction. In those cases, the transaction was already adequately balanced, in whole or in part, by other transactions in the trader's portfolio or was entered into to balance the existing portfolio.

3. Marketers

a. Function

FNBC's marketers were the individuals who on behalf of FNBC negotiated and entered into swaps with nondealer end users. In order to effect these transactions, FNBC's marketers dealt directly with the nondealer end users, but only after checking with a trader as to the potential pricing of the transaction. The marketers were assigned groups of customers (e.g., financial institutions) and were responsible for locating nondealer customers that wanted to enter into swaps. The marketers promoted FNBC's swaps business to its end-user customers and educated potential clients on the products FNBC offered and how the products could help the clients.

b. Practice as to Quotations

FNBC's marketers negotiated the best price (within the limits set by a trader) for any swap with a nondealer end-user but needed the approval of an FNBC trader for any negotiated price as to the swap. The marketer would communicate to an FNBC trader the terms of a proposed swap for a nondealer end-user customer and obtain a price quote. The marketer could build in an additional spread but could not decrease the price quoted by the trader without the trader's approval.[33] The trader had to sign the trade ticket and, in so doing, took on all responsibility for risk-managing the swap. The marketer had no responsibility for risk management.

4. Relationship Managers

Each customer of FNBC had an assigned FNBC relationship manager who was responsible for generating business from the customer and overseeing FNBC's dealings with the customer. The relationship manager was not part of the group that included swap traders and marketers. Marketers worked with the relationship managers to explain to customers how they could benefit from using FNBC's swap products. Relationship managers had overall responsibility for all of the customers' transactions (e.g., bond

[33] A client that received many services from an FNBC marketer might allow the marketer to add to the spread to pay for the services.

issuances, letters of credit, loans, financial derivative transactions).

5. Credit Officers

An FNBC credit officer was assigned to each swap counterparty. Before a swap could be entered into with that counterparty, the credit officer had to approve the counterparty's credit and give the counterparty a credit exposure limit (credit line). Credit officers did not work in the swap department and were not part of the group that included swap traders and marketers. Nor was the credit approval process a function of the swap traders and marketers.

The credit line for financial derivative products was known as the variable exposure product (VEP) limit (VEPL). If a VEPL had already been established for a counterparty, and a new swap was within that limit, then no additional credit approval was needed. If the credit exposure of a swap exceeded the available VEPL, or if no VEPL had been approved, then the trader had to obtain credit approval from the credit officer.

D. Weak Credit Rating

FNBC was a major participant in the swaps market during the relevant years but was considered in that market to have weak credit. FNBC's credit rating was downgraded to A- in or about the fall of 1990. This downgrade was generally viewed poorly among persons or entities dealing with or considering dealing

with FNBC, and it hurt FNBC's ability to enter into new swaps. FNBC's end-user customers were worried about having periodic payments that would be due to them from a lower rated dealer. Some banks required collateral provisions in their swap agreements with FNBC because they were a better credit risk than FNBC and were not allowed to take on any risk.

E. Quoting a Price

FNBC's practice at the start of each business day was to announce to brokers its bid and ask quotations on interdealer generic swaps. During the course of the day, FNBC's traders would receive calls from brokers informing the traders that the brokers had a particular dealer that wanted to enter into a swap at one or more of FNBC's quoted rates. The broker would not identify the other dealer until FNBC agreed in principle to the terms of the swap. Once FNBC learned the other dealer's identity, it would decide whether to go forward with the swap, in view of the other party's credit rating and the credit limit that FNBC had established for the counterparty.

FNBC generally went through two steps in deciding what price to quote on a specific swap (whether with a dealer or an end user). First, FNBC calculated (usually on its Devon system) the midmarket rate that would result in both legs of the swap having the same present value. Second, FNBC added (or subtracted) a spread to arrive at its ask (or bid) price. In pricing a swap,

the spreads which FNBC factored into its traders' bid and ask quotes were constrained by competition. On most transactions, particularly those with other financial institutions and large corporations, the customer obtained quotes from many different dealers, and FNBC was unlikely to get the business if another dealer offered better terms. Where FNBC dealt with an end user on a transaction that was particularly customized, or where the customer was not likely to obtain prices from other sources, FNBC's marketers sometimes sought to realize additional profit on the transaction by quoting a larger spread. FNBC's marketers usually were not able to get a larger spread from FNBC's end users. In the rare cases where they were able to get a larger spread, it was in the nature of a fee for the cost of explaining swaps to the customer or for other services.

F. Buyouts

FNBC's interest rate swaps were easily terminated during the relevant years by way of buyouts. FNBC regularly and continuously sought to, and did, buy out swap transactions in which it was a party.

Both end users and dealers came to FNBC to buy out their swaps with FNBC. FNBC's traders and marketers were asked to (and did) quote prices for early termination of swaps by way of buyouts. FNBC marketed its swaps to customers as financial instruments that could be easily bought out or terminated at

market value; i.e., the difference in the present value of the anticipated net cashflows from each of the swap's legs. FNBC required as a matter of practice that the buyout price be at least the midmarket value. FNBC was willing to enter into buyouts at the midmarket value even if there was not a profit to FNBC.

Approximately 12 percent of FNBC's swaps business in March 1993 was buyouts. Approximately 23 percent of FNBC's swaps business in June 1993 was buyouts.

G. Swaps Outstanding at Yearend

Without consideration of any swaps booked in the London branch, FNBC had 1,020 interest rate swaps (without an embedded feature) outstanding at the end of 1991; 1,290 at the end of 1992; and 1,147 at the end of 1993. Without consideration of any swaps booked in the London branch, FNBC had 19 commodity swaps outstanding at the end of 1991; 19 at the end of 1992; and 52 at the end of 1993.

H. Swaps in Issue

The parties have settled all pleaded issues with respect to swaps booked through FNBC's London branch, and no issues have been raised as to swaps booked through the Tokyo or Sydney office. The swaps at issue originated at the Chicago trading desk or were booked through FNBC's other desks and linked to the Chicago desk. The disallowed amounts encompass all adjustments

on all swaps which were on the books of FNBC's Chicago office at each yearend and all adjustments used to reduce FNBC's swaps income.

With respect to all of FNBC's swaps which it designated as interest rate swaps, 95 percent of them were plain vanilla U.S. dollar denominated interest rate swaps with standardized terms. The remaining 5 percent were mainly exotic swaps that included: (1) Amortizing or accreting swaps; (2) constant maturing swaps (i.e., an interest rate swap in which the floating rate is tied to a long-term constant maturity Treasury bond yield); (3) basis swaps; and (4) forward-start swaps (interest rate swaps that specify a future start date). The remaining 5 percent also included Canadian dollar denominated interest rate swaps, all of which, during the relevant years, were plain vanilla. During 1993, FNBC generally entered into fewer than 10 Canadian dollar denominated interest rate swaps a week.

During 1990 and 1991, the counterparties to FNBC's interest rate financial derivative products were from the following categories:

	1990	1991
Bank dealers	33%	32%
Bank end users	16	21
Corporate end users	30	26
FCC, FNBC and its branches, its affiliates, and its own subsidiaries	21	22
	100	100 (rounded)

VII. FNBC's Financial Accounting Practice

During the relevant years, FNBC's financial accounting practice with respect to the pricing and valuation of commodity swaps, currency swaps, and combination swaps did not differ significantly from its financial accounting practice with respect to interest rate swaps. FNBC used a three-step process to determine the value of its swaps for financial accounting purposes. First, on a swap-by-swap basis, FNBC generally calculated each swap's midmarket value (usually from the Devon system but sometimes from the midmarket swap curve) and recalculated these midmarket values daily. Second and third, FNBC calculated credit and administrative costs adjustments as to the swaps. FNBC's administrative costs adjustments (which were computed on a portfolio basis) included an adjustment for hedging and may have included an adjustment for funding and cost of capital. FNBC did not take an adjustment for the cost to close out (liquidate) its swaps.

VIII. FNBC's Practice as to Its Valuation of Its Swaps

A. Financial Reporting Position

The 1993 Annual Report of FNBC and its parent FCC described their accounting policy for financial derivative instruments as follows:

> **Accounting for Derivative Financial Instruments**
>
> Derivative financial instruments used in trading and venture capital activities are valued at prevailing

> market rates on a present value basis. Realized and unrealized gains and losses are included in noninterest income as trading account profits, foreign exchange trading profits and equities securities gains. Where appropriate, compensation for credit risk and ongoing servicing is deferred and taken into income over the term of the derivatives. Any gain or loss on the early termination of an interest rate swap used in trading activities is recognized currently in trading account profits.

This description related exclusively to the income statements and the balance sheets. It is different from the description used for the fair value disclosure in the footnotes, which omitted any reference to adjustments for administrative costs and/or credit risk. FNBC used midmarket values for SFAS No. 107 footnote disclosure purposes, and it used adjusted midmarket values for other financial reporting purposes.

B. Uses of Valuation

FNBC was required to value its swaps in conformance with regulatory accounting principles (RAP), GAAP, and Federal income tax laws. Tax considerations were not a factor when FNBC determined how it would calculate the value of its swaps, and FNBC did not consult with anyone to ascertain whether its adjustments were appropriate for section 475 purposes. Tax considerations were not mentioned when the valuation methodology was presented to FNBC and its parent's board of directors. Midmarket values were used in the presentation to the board.

There is no line item on any report that FNBC filed with the OCC that set forth, or specifically identified, the amount of

administrative costs or credit adjustments FNBC reported for regulatory purposes.

C. RAP/GAAP

In some cases, RAP can differ from GAAP, with RAP/GAAP differences referring to the differences between the reporting required for regulatory purposes and the reporting required for GAAP. FNBC conducted RAP/GAAP reconciliations.

IX. FNBC's Calculation of Midmarket Value

A. FNBC's Devon System

1. Overview

FNBC first used the Devon system in 1989. FNBC was one of the first users of the Devon system, and Devon modified its system specifically for FNBC. FNBC's customization of its Devon system changed repeatedly from 1989 through February 1993. FNBC's Devon system never took into account the bilateral nature of swaps or FNBC's relatively weak credit rating for a dealer in the interdealer swaps market.

FNBC needed the Devon system to handle the thousands of transactions it had on its books. FNBC used the Devon system to calculate a midmarket value for each of its swaps. FNBC also used its Devon system to value all of its other financial derivatives. In the relevant years, FNBC's Devon system used discount factors for entities with the equivalent of AA credit ratings. The Devon system's use of a discount rate applicable to

an AA-rated entity took into account the risk of nonpayment of the cashflows by an AA-rated entity.

2. Role of FNBC's Devon System

The Devon system had a critical role in FNBC's risk management and hedging operations. The Devon system was used by FNBC's Chicago office traders to risk-manage and to hedge their swaps. The Devon system calculated not only the current mid-market value for the book, but also how much the value would change with particular interest rate movements.

B. Accounting for Devon Value

At least monthly, FNBC recorded the change in the midmarket value of a performing swap in two pieces.[34] The first piece, described by FNBC as the accrual,[35] reflected a proportion of the next scheduled net cashflow. This accrual of interest was computed by multiplying the amount of the net interest payment by a fraction. The fraction's denominator was the number of days in the payment period (the period between the scheduled cashflows or

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[34] FNBC removed "nonperforming VEP transactions" (discussed infra p. 148) from its trading portfolio and valued these swaps at a "modified lower of cost or market".

[35] In the accounting sense, an "accrual" is the process of recognizing noncash events or circumstances as they occur, not necessarily when cash is paid or received. Accrued assets or liabilities and the related revenues, expenses, gains, or losses represent amounts expected to be received or paid in the future. Common examples of accruals include (1) purchases and sales of goods or services on account and (2) unpaid but incurred amounts of interest, rent, wages, salaries, and taxes.

from the start of the swap to the first scheduled cashflow, if that was the first period). The fraction's numerator was the number of days in the accrual period. If the next scheduled net cashflow was a cash receipt, then FNBC basically recorded an increase in a receivable and a corresponding entry for realized trading income. If the next scheduled net cashflow was a cash payment, then FNBC basically recorded an increase in a payable and a corresponding entry to realized trading loss. FNBC reduced the receivable (or payable) when the scheduled net cashflow was received (or paid).

The second piece, described by FNBC as the revaluation, recorded the change in the midmarket value minus the accrual just discussed. The sum of the two pieces equaled the change in the midmarket value. At the first valuation date after the start of the swap, the change in midmarket value equaled the midmarket value (i.e., the previous value was zero). If the change in the midmarket value minus the accrual was an increase, then FNBC recorded an increase in its asset balance for swaps and a corresponding entry for unrealized trading income. If the change in the midmarket value minus the accrual was a decrease, then FNBC recorded a decrease in its asset balance for swaps and a corresponding entry for unrealized trading loss.

An effect of this manner of accounting for the midmarket value was that no single account recorded the midmarket value of

a swap. Rather, the midmarket value was the cumulative sum of accruals plus revaluations which related to the swap.

C. Early Closing Date

FNBC did not value its swap portfolio as of its yearend (or its last business day) but as of a date slightly before yearend (early closing date). Typically, the early closing date was on or about the 20th day of the month; e.g., FNBC determined the value of its portfolio as of December 31, 1993, on the basis of the midmarket values on December 20, 1993.[36] FNBC adjusted its books for periodic payments made during the period between the early closing date and yearend, but did not adjust its books for changes in valuation from the early closing date to yearend. FNBC did not consider those changes in valuation material from the viewpoint of the entire operations of FNBC (and not just from the viewpoint of FNBC's swaps operation).

FNBC had an internally imposed accounting schedule that dictated its use of the early closing date. FNBC had a rigid deadline under which it would close its books on the second business day after the end of a month. In the early 1990's, FNBC attempted to value its swaps as of the last day of the month but

[36] Significant valuation changes occurred from the close of business on Dec. 20, 1993, through the close of business on Dec. 31, 1993. In the case of one swap, for example, FNBC reported that the midmarket value for that swap was $104,233 as of Dec. 20, 1993. The swap had a midmarket value of $97,721 as of Dec. 31, 1993, or, in other words, a decrease of 6.2 percent in the 11 days.

encountered problems under which it had difficulty meeting its 2-business-day deadline. The Devon system, for example, did not automatically post to the general ledger, and thousands of entries had to be entered manually each month. Because FNBC was unable to enter all of these entries correctly within 2 business days after the close of the year, it established the early closing date.

FNBC's use of its early closing date was approved by FNBC's chief accounting officer, and the stub period adjustments (those adjustments for the period extending from the early closing date until the yearend date) were discussed with FNBC's outside auditors. FNBC's auditors concluded that FNBC's financial statements presented fairly, in all material respects, FNBC's financial position at yearend.

X. FNBC's Administrative Costs Adjustment

A. Overview

FNBC made an internal forecast of future administrative costs which it expected to incur in administering its existing swap portfolio to maturity. For Federal income tax purposes, FNBC considered the present value of these costs an adjustment to the midmarket value of its swaps. FNBC ascertained its forecast by (1) projecting future costs to manage the current portfolio of swaps and interest rate guarantees; (2) reducing the projected costs in each future year by the proportion of the current

portfolio that would mature before the start of the future year, as ascertained from a "rolloff" schedule; (3) discounting the future costs to present value; and (4) assigning 30 percent of future costs to interest rate guarantees and the remaining 70 percent to swaps.

FNBC's finance department was responsible for computing the administrative costs adjustment. Its objective was to ascertain the costs attributable to administering the existing swaps over their existing life, assuming that there were no new deals. As of the end of the quarter, FNBC (through its finance department) calculated the administrative costs adjustment on a portfolio (rather than swap-by-swap) basis; i.e., FNBC determined the administrative costs for the entire portfolio and did not compute or allocate those costs to individual swaps. FNBC did not calculate a per-swap administrative expense amount.

For the relevant years, the amounts of the administrative costs that FNBC estimated were needed to manage its swaps to maturity were as follows:

Year	Estimated Administrative Costs
1989	$4,271,337
1990	5,253,337
1991	3,318,920
1992	3,843,770
1993	4,832,469

For Federal income tax purposes, FNBC reported the annual increases or decreases to these estimated administrative costs as

administrative costs adjustments to its midmarket values. FNBC reported the following amounts for administrative costs adjustments (with the negative amounts decreasing the midmarket values and the positive amounts increasing the midmarket values):

Year	Administrative Costs Adjustment
1990	($982,000)
1991	1,934,417
1992	(524,850)
1993	(988,699)

The administrative costs adjustment's net effect on income was to decrease (or increase) income per books by the net increase (or decrease) in the aggregate balance of the administrative costs adjustment.

B. Calculation of the Adjustment

FNBC's administrative costs adjustment reflected FNBC's estimate of the aggregate of: (1) Its future budgeted costs (both direct and indirect) for its swaps business, (2) its future budgeted costs (both direct and indirect) for the allocable portions of the costs of the back office to manage FNBC's swaps to maturity, and (3) the allocable future budgeted costs of the nontrading departments of FNBC that FNBC believed would be necessary to support its swaps business in managing the swaps to maturity. For purposes of the administrative costs adjustment, all of these future estimated costs were adjusted upward by an inflation factor and then present valued. The inflation factor

for future costs was 3.5 percent for 1992 and the first three quarters of 1993 and 4 percent for the fourth quarter of 1993. These inflation factors were consistent with the inflation factors built into FNBC's budgeting process. The present values of these estimated expenses, as adjusted by the inflation factor, were computed by using the same zero-coupon yield curve that was used in computing midmarket value.

In order to reflect the fact that its swaps matured, FNBC (through its finance department) prepared a roll-off schedule showing the number of its swaps that matured each year and, going forward, the number of those swaps that would be in place each year until the entire portfolio had matured. The roll-off schedule was used to estimate the number of years that FNBC would be incurring expenses for swaps that had not yet terminated. In the later years, the estimated costs were reduced in proportion to the declining number of swaps that would still be in existence. The maturity estimates did not take into account the percentage of FNBC's swaps that were bought out each month.

The present values of the expenses, after they had been adjusted for inflation, were then allocated between the swap portfolio and the interest rate guarantee portfolio. FNBC then attributed to the existing swaps the percentage of the resulting estimated expenses, as adjusted, that bore the ratio of the existing swaps to total swaps. The amount of the difference

between the administrative costs adjustments for the current quarter and the previous quarter was the amount that FNBC claimed on its books as a portfolio adjustment for the current quarter's deferral.

C. Preparation for the Adjustment

The starting point in calculating the administrative costs adjustment was the swap department's annual budget, as approved by the swap department's senior management. In order to arrive at the amount of salaries, bonuses, and benefits (collectively, personnel costs) to allocate to its administrative costs adjustment calculation, FNBC multiplied its personnel costs by a fraction. The fraction's numerator equaled the number of full-time equivalent employees (FTEs) estimated to be required to maintain the portfolio to maturity.[37] The fraction's denominator equaled the total budgeted trading department FTEs. FNBC also allocated to the management of the existing swap portfolio the same percentage of direct costs.

The number of FTEs estimated necessary to maintain the current portfolio to maturity changed during the relevant years as shown below:

[37] The finance department ascertained the level of staffing needed to manage the existing portfolio by interviewing primarily the head of the trading desk.

Beginning quarter	Ending quarter	FTEs estimated to maintain portfolio	FTEs budgeted in trading department	Percentage of FTEs used to maintain portfolio
1/1/90	3/31/91	-	-	Unavailable
4/1/91	9/30/91	1	8	12.5%
10/1/91	12/31/92	1.5	15	10
1/1/93	9/30/93	2	26.5	7.5
10/1/93	12/31/93	2	24	8.33

At the end of 1993, for example, the front office consisted of 24 individuals working as traders, trading assistants, marketers, or managers. Seven of the 24 individuals were traders of interest rate products (more specifically, 1 was the desk head, 2 were traders of U.S. dollar swaps, 1 was a trader of Canadian dollar swaps, 2 were traders of interest rate options, and 1 was engaged solely in modeling). The remaining 17 individuals were financial derivative marketers and trading assistants. For purposes of the fourth quarter of 1993, FNBC’s finance department ascertained that managing the current portfolio of interest rate swaps, commodity swaps, swaptions, and interest rate guarantees would require 2 of the 24 employees (i.e., 8.33 percent). The duties of the FTEs would include making sure that the portfolio remained risk balanced (which would be primarily the responsibility of traders and trading assistants) and attempting to transfer some or all of the portfolio to other swaps dealers (which would primarily require the time of traders and trading assistants, with participation of other trading department personnel as needed). FNBC attributed 8.33 percent of the budgeted front

office personnel costs to the management of its portfolio. FNBC also allocated to the management of its portfolio 8.33 percent of the related direct costs.

The swap department's annual budget included as "indirect costs" amounts that were charged to the swap department by other areas of the bank. The finance department conducted interviews to determine what percentage of each item was attributable to the management of the existing swap portfolio. The percentages used for 1993 were 62 percent of the credit department costs, 25 percent of legal services, 50 percent of audit and finance, 0 percent of R&D, 0 percent of marketing, and 0 percent of corporate utilities. FNBC also charged to the swaps department the indirect costs of additional departments.

The total of all of the expenses attributable to the management of FNBC's existing swap portfolio represented FNBC's estimate of the total costs of administering its existing swap portfolio for the upcoming year.

D. Expenses Included in the Adjustment

1. Direct and Indirect Budgeted Costs

The direct and indirect costs of the swap front office used to calculate the administrative costs adjustment included office rent, traders' salaries and bonuses, all front office expenses, certain miscellaneous costs, costs connected with the Devon system, and retirement and other benefits for front office swap

personnel. FNBC did not include the total amounts of these costs but only the portions needed to manage its existing portfolio. FNBC's administrative costs adjustments for the front office may also have included hedging expenses.

2. Amounts From Other Areas of FNBC

FNBC's administrative costs adjustment for swaps also included costs from other departments, including: (1) Computer systems; (2) accounting; (3) facilities management; (4) credit process review department; (5) corporate staff from other departments; (6) systems development; (7) general manager; (8) service products group; (9) risk management administration; (10) financial analysis; (11) corporate and institutional banking; and (12) other service charges. These costs, to the extent allocated to swaps and interest rate guarantees, included: (1) Charges from FNBC's law department, audit department, data processing center, allocable rent (occupancy area), cost to hedge the swaps in existence to maturity, and telephone costs; (2) charges from FNBC's credit policy group, which set policy on all customer credit transactions, including loans, leasing products and derivatives; (3) charges from management for the credit policy group in addition to other charges from the credit department of FNBC; (4) charges from FNBC's treasury management group which was responsible for corporate customer cash and other accounts; (5) charges from FNBC's facilities management section,

which maintained the floors, etc., for FNBC's building, and charges for maintenance of electronic and computer equipment; (6) charges for data processing systems, virtual memory and mainframe computer systems; (7) charges from FNBC's commercial bank credit area; (8) charges from FNBC's internal mail and corporate staff; (9) charges from FNBC's internal audit department and finance department; and (10) charges for high level expenditures for top level executives such as, but not necessarily, a corporate jet.

XI. FNBC's Credit Adjustment

A. Overview

At the inception of each swap, FNBC (through its finance department) determined an initial credit adjustment for that swap. While the midmarket values for each swap were recalculated annually to determine yearend swap values, FNBC never recalculated its credit adjustments for its swaps.

1. Initial and Subsequent Methods

For the relevant years, FNBC used two different methods to calculate its credit adjustments. It used one method from 1990 through the third quarter of 1992. It used a second method for new swaps that arose in the fourth quarter of 1992 through 1993. As to the two methods, FNBC considered the first method to be the more accurate but also believed that the first method was more error prone.

2. First Method

Under the first method, FNBC calculated and recorded a credit adjustment for each swap. FNBC amortized each swap's credit adjustment over the life of the swap as ascertained by its maturity date. In the event that a swap was terminated or bought out, FNBC included in income all of the remaining credit adjustment attributable to that swap.

3. Second Method

Under the second method, FNBC stopped amortizing the credit adjustments on a per-swap basis over the life of the swap and began applying an aggregate approach of amortization based upon the life of all of the swaps considered initiated in each quarter. For this calculation, FNBC considered each swap to be initiated 1 month after the date when it was actually initiated.

Each quarter, FNBC amortized the credit risk into income on the basis of the life of all the swaps considered initiated during the quarter. FNBC did not make any adjustments in the case of occurrences such as early terminations, changes in mark-to-market amounts, or changes (positive or negative) in the credit rating of a swap counterparty.

a. Methodology

Under the second method, FNBC ascertained its initial credit adjustment through a three-step process. First, as to each swap, FNBC calculated a credit exposure measurement (CEM) amount as of

the last day of the quarter in which the swap was considered initiated; e.g., if the swap was actually initiated on a day that fell between March 1 and May 31, the initial credit adjustment was calculated on June 30.[38] Second, FNBC assigned the swap counterparty to one of its credit risk rating classes (discussed infra p. 133) and ascertained the corresponding CRESCO[39] loss reserve factor from the credit rating that FNBC had assigned to that CRESCO loss reserve factor.[40] Third, FNBC multiplied the swap's CEM amount by the counterparty's CRESCO loss reserve factor to arrive at the swap's initial credit adjustment.[41]

For the period beginning in the fourth quarter of 1992, FNBC accounted for its credit adjustment as follows. First, on the quarterly basis, FNBC reduced income by the credit adjustment for the group of swaps originating in the quarter (with the 1-month

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[38] The CEM determined how much of the credit limit was consumed by each swap.

[39] The acronym "CRESCO" refers to the Credit Strategy Committee, a committee consisting of the most senior officers of FNBC, including the chairman, the president, the chief financial officer, the chief credit officer, and the chief economist.

[40] FNBC also referred to the CRESCO loss reserve factor as the loan loss reserve factor.

[41] For example, if the counterparty had a credit rating of 2, the corresponding CRESCO loss reserve factor during most of 1993 was .05 percent. Therefore, if a swap with this counterparty had a CEM of $1 million, the swap's initial credit adjustment would be $500 (0.05% x $1 million).

lag)[42] and correspondingly reduced the value of assets on the balance sheet. Second, FNBC amortized the credit adjustment back into income on a straight-line basis. FNBC's stated policy was that, on schedules before June 1993, it would amortize the credit adjustments into income over the average term of deals executed during the quarter for the applicable product.[43] For June 1993 and after, FNBC's stated policy was that it would amortize the credit adjustments into income over the weighted average term of deals executed during the quarter for the applicable product in the quarter. FNBC actually computed the weighted average term for the applicable product only in the fourth quarter of 1993. For the remaining quarters of 1993, FNBC calculated the weighted average term for all products combined.

b. Effect of Methodology

Under FNBC's procedure, the credit adjustments for swaps with shorter-than-average lives, relative to others originated in the same quarter, were amortized into income over a longer term than the life of the swap. The converse was true for swaps with longer-than-average lives. For example, as to the first point, FNBC had a swap with an individual amortization period of 4

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[42] The December 1993 credit adjustment to the swap portfolio did not include 32 swaps that FNBC actually originated in December 1993. The inclusion of those swaps would have added $106,769 to the credit adjustment calculation.

[43] Examples of FNBC's applicable products were interest rate derivatives, currency derivatives, and foreign exchange options.

quarters that FNBC amortized into income over 10 quarters. As to the second point, for example, FNBC had a swap with an individual amortization period of 56 quarters that FNBC amortized into income over 10 quarters.

B. Swaps in Issue for 1993

1. Identification of Swaps

For purposes of its 1993 credit adjustment calculations, FNBC treated 488 swaps as commencing in 1993. These swaps are identified as follows:

Category	Number Outstanding At Yearend 1993	Number Treated As Commencing in 1993
IRSWs	1,147	387
CYSWs	unknown	67
COMSs	52	18
COMBs	unknown	16
		488

2. Duration of Swaps

The 488 FNBC swaps had specific durations as follows:

Duration in Months	Number	Duration in Months	Number	Duration in Months	Number
1	17	26	8	54	2
2	3	27	3	57	2
3	8	28	2	59	3
4	3	29	6	60	36 or 37
5	3	30	5	61	1
6	11	31	2	63	2
7	3	32	3	65	1
8	4	33	3	70	4
9	11	35	7	72	1
10	3	36	53 or 54	78	1
11	1	37	3	79	2
12	78	38	3	83	2
13	1	39	1	84	16
15	1	42	5	85	1
17	1	43	1	89	1
18	9	45	5	90	1
19	3	46	1	119	2
20	9	47	1	120	4
21	6	48	16	124	2
22	6	49	1	168	2
23	7	51	1	173	1
24	81	52	1	Total	488

3. Credit Adjustments Claimed

For 1993, FNBC calculated per-swap credit adjustments with respect to 418 of the 488 swaps. The amount of the credit adjustment calculated by type of swap was as follows:

Category	Number	Credit Adjustment
IRSW	387	$718,978
CYSW	67	100,884
COMS	18	7,782
COMB	16	154,351
Total	488	981,995

In 1993, FNBC decreased its swap values reported for 1993 by credit adjustments totaling $981,995. Of the 488 swaps, (1) 9 were a risk class 1 and had a credit adjustment totaling $6,764; of these, 8 were interest rate swaps, with a combined credit carveout of $6,235; (2) 179 were a risk class 2 and had a credit adjustment totaling $257,654; of these, 135 were interest rate swaps, with a combined credit adjustment of $102,311; (3) 26 were currency swaps with a combined credit adjustment of $11,197; (4) 9 were combination swaps with a combined credit adjustment of $141,527; (5) 8 were commodity swaps with a combined credit adjustment of $1,498; and (6) 1 was a swaption with a credit adjustment of $1,121.

As to the total credit adjustment of $981,995: (1) $93,203 arose from transactions that were not in existence on

December 31, 1993;[44] (2) $264,418 arose from transactions with counterparties rated AA or better; (3) $94,421 arose from swaps that had a tenor of 9 months or less;[45] (4) $167,109 arose from swaps on which FNBC did not expect to be the net receiver of cash; and (5) at least $6,338 arose from swaps that were known to have the risk of nonpayment of cashflows offset, in full or in part, by other swaps with the same counterparty.

When FNBC reported credit adjustments on swaps where it had more than one swap with the same counterparty, FNBC did not check to see whether the swaps were mirror or partially offsetting swaps. Credit risk credit adjustments should not be taken on mirror swaps. Credit risk also is reduced on partially offsetting swaps.[46]

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[44] Of the 488 swaps, 55 had a stated maturity of on or before Dec. 31, 1993, and 47 of them terminated on or before Dec. 20, 1993. For 1993, the initial credit adjustments claimed for those 55 swaps totaled $93,203.

[45] Sixty-three of the 488 swaps had tenors of 9 months or less. No credit adjustment was claimed on 12 of these 63 swaps. FNBC reported initial credit adjustments totaling $94,421 on the remaining 51 transactions and amortized those adjustments over the following periods:

Quarter of Deemed Origination	Amortization Period (months)
1st	39
2d	33
3d	45
4th	90

[46] A partially offsetting swap is a swap that offsets, in

(continued...)

C. Components of the Second Method

The three components that entered into the calculation of FNBC's initial credit adjustment under the second method were the: (1) CEM amount, (2) credit risk class rating, and (3) CRESCO loss reserve factor. Each of these components was developed separately and independently for purposes other than valuation and was not used in combination with the other two components for any other business purpose. FNBC developed the CEM amount to measure credit exposure for purposes of risk management and banking regulatory requirements. FNBC developed the risk class system for commercial loan purposes to evaluate the creditworthiness of a borrower. FNBC developed the CRESCO loss reserve factors to meet banking regulatory requirements on loss reserves and capital adequacy requirements.

1. CEM Amount

a. Overview

Expected cashflows from an interest rate swap can vary as interest rates change. When the expected cashflows from a swap change, the credit exposure of one counterparty to the other counterparty usually changes. FNBC's CEM amount statistically measured FNBC's maximum potential loss (and not expected exposure) on a swap, over its tenor and at a preselected cutoff

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[46](...continued)
part, the market and credit risk of another swap.

number (confidence level), if the counterparty to the swap were to default without recovery by FNBC. The CEM amount at the inception of a swap was significantly higher than the current exposure at the inception of the swap; i.e., the CEM amount was a measure of the maximum that FNBC might receive (lose) on the swap in the future, within a certain confidence level, while the current exposure was a measure of the current value of the swap.

During the relevant years, FNBC ascertained its CEM amounts for financial derivatives by using a system called the VEP system. FNBC's VEP system recalculated the CEM amount at least annually. For transactions where the mark-to-market amount exceeded the CEM amount, the CEM amount was recalculated monthly. FNBC calculated the CEM amount for all swaps. A swap that had a negative value (FNBC was the net payor) always had a CEM amount that was greater than zero.

b. Hsieh Model

FNBC's initial VEP system was developed for it in the late 1980s by David A. Hsieh (Hsieh). Hsieh designed FNBC's VEP system for risk management purposes to measure credit exposure on interest rate and currency products in a manner consistent with the rules of the FRB. The VEP system was designed specifically for products with a tenor greater than 18 months and had problems calculating the CEM amount for swaps with shorter maturities.

FNBC had retained Hsieh in 1987 to develop for it a model to measure credit exposure for interest rate and currency swaps. In 1988, Hsieh produced a paper which described the model (Hsieh Model) that he developed for FNBC. The Hsieh Model used quarterly historical interest and exchange rates, and the resulting volatilities, correlations, and covariance, to perform a Monte Carlo simulation to estimate a distribution of 10,000 possible outcomes for each quarter throughout the term of a given swap. Hsieh developed two programs for FNBC in 1988. The first program used the simulation model on an individual transaction basis. The second program used the same statistical model but did multiple transactions with the same counterparty and took into account the netting of offsetting transactions with the same counterparties. FNBC did not during the relevant years use the second program.

c. FNBC's VEP System

i. Evolution of the System

FNBC's VEP system during the relevant years had evolved from the initial version designed by Hsieh. Each version of FNBC's VEP system was based upon the Hsieh Model. The first versions were formulated on tables and were not accessible to traders via direct computer link; i.e., on line. The first table version was a table of values at different confidence levels. The second table version was a series of tables by product, maturity, and

confidence level. Each of the table versions produced the maximum number within the chosen confidence level.

The next series of versions of the VEP system were on line. The first version of the on-line system allowed traders to pull up information on their screens. Traders input details of trade, and the machine calculated the exposure numbers based upon the tables then in use. The resulting CEM amount was then added to the customer's existing credit exposure. During 1993, traders could for purposes of discussions have used tables to calculate the CEM amount or they could have gone on line. For actual transactions, FNBC preferred that the traders and marketers use the on-line system.

ii. Effect of the System

FNBC's VEP system allowed traders and marketers to do business without going to the credit department if a VEP credit limit had been established for that customer and if the new swap would not exceed that credit limit. It allowed FNBC to move away from each swap's being individually approved by the credit department.

The VEP system permitted the establishment of VEPLs, under which multiple VEP transactions with the same counterparty were permitted as long as the VEPL was not exceeded. A VEPL was required to be renewed at least annually. Once a VEPL was approved, traders and marketers could conduct transactions with

the approved counterparty without additional approval from the credit management area so long as the credit exposure for the transaction did not exceed the VEPL at the time the transaction was initiated. This system enhanced the ability of FNBC to determine whether sufficient credit limits were available to do new transactions.

VEP transactions could also be approved deal by deal with counterparties that had availability under existing Internal Guidance Limits (IGLs) approving business with the customer. FNBC's IGL was an internal preapproved agreement on the amount of credit capacity FNBC would make available to a customer and how it was to be allocated among types of transactions, e.g., loans or letters of credit. The VEPL was an allocation of part of the IGL to financial derivative transactions with a customer.

iii. System's Operation

FNBC's VEP system could calculate the credit exposure for many types of financial derivatives, including interest rate swaps, currency swaps, commodity swaps, FRAs, interest options, currency options, and long-term foreign exchange. The VEP system generally employed a Monte Carlo simulation model using 10,000 potential variations of quarterly interest rates over the remaining term of each swap and produced a distribution of 10,000 amounts representing values/credit exposures at any future

date.[47] In order to translate this plethora of numbers characterizing the exposure into a single number, FNBC selected and applied an 80-percent confidence level during the relevant years to ascertain a maximum credit exposure through time for this confidence level.[48] The CEM amount was useful for risk management purposes in that it alerted management when a portfolio's potential exposure was increasing, it identified the portions of the portfolio with the greatest exposure, and it allowed management to identify the most potentially dangerous swaps for special attention. The CEM amount was not an accurate price of credit risk and was inappropriate for pricing or valuation.

FNBC's VEP system overstated FNBC's credit exposure in that the system did not consider collateral and other security or the offsetting losses with the same counterparties based on legally enforceable termination and netting rights. FNBC reported this deficiency in its 1993 annual report. That report acknowledged that credit exposure amounts might be overstated since those amounts did not take into account collateral, other security, or termination and netting rights.

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[47] The important characteristics of the distribution of possible outcomes of some swaps could be calculated directly and did not require a Monte Carlo simulation.

[48] Initially, FNBC calculated the CEM amounts at a 95-percent confidence level but reduced that level to 80 percent in 1989.

2. Credit Risk Ratings

a. System of Risk Classification

Like most banks, FNBC had during the relevant years a well-established system of evaluating and classifying credit risks. FNBC used this system for all transactions including loans, swaps, and any of its other products. FNBC's credit officers established a customer's risk class rating on the basis of FNBC's evaluations of the creditworthiness of the customer and the industry in which the customer did business. FNBC re-rated its customers at least annually. FNBC's credit officers were independent of the business units responsible for originating transactions.

FNBC's credit risk classification system used numbers from 1 to 9. Risk class 1 was the best credit quality and carried with it minimal risk. Risk class 9 was the worst credit rating and was considered to be a loss. Risk classes 1 through 3 were considered investment grade,[49] counterparties in risk class 4 were generally considered to be acceptable bank quality assets which required greater management attention, and counterparties in risk class 5 were considered undesirable. FNBC did not enter

[49] The finance department performed the credit adjustment calculation on spreadsheets. The CEM amounts and credit ratings shown on the spreadsheets were derived from information provided by the credit department. If the risk class rating was not provided by the credit department, the finance department would use a risk class 3 rating. The finance department did not always use the most current risk factors.

into swaps with counterparties in a risk class lower than 5. FNBC generally asked for collateral for counterparties in risk class 4 or 5.

FNBC's risk class ratings generally corresponded to the S&P public debt ratings. Under FNBC's risk classification system, FNBC's risk class ratings were listed as approximately equivalent to the following S&P ratings:

Risk class	S&P rating
1	AAA or AA
2	AA or A
3	A or BBB
4	BB or B+
5	B+ or B

The credit classes of the counterparties to the 488 swaps at issue for 1993 were as follows:

Risk class	Counterparties
1	47
2	192 or 193
3	200 or 201
4	45
5	3

FNBC's internal risk class rating for itself was downgraded from risk class 2 to risk class 3 at some point during the relevant years because of bad performance.

b. Credit Procedures

FNBC used the same credit evaluation and risk classification procedures for swaps as it used for loans and other transactions involving the extension of credit. FNBC assigned risk class

ratings to the facilities of a customer.[50] The credit officers assigned a risk class rating to each facility with each customer.[51] The rating would reflect not only the creditworthiness of the customer, but also the risks associated with a particular transaction. Risks included the tenor of the swap, the industry in which the customer did business, and the creditworthiness of the customer. The risk classification rating for a facility could take into account the presence of various credit enhancements supporting the transaction, such as a pledge of collateral or a guaranty. Tax considerations were not taken into account when assigning credit ratings.

FNBC had a systematic procedure for determining the risk classification ratings. Before a new facility could be approved (and at least annually thereafter), the credit officers would review the customer's financial statements, news reports, public debt ratings, and other information, and would meet with the relationship manager. For customers that were large enough to use swaps, there would typically be at least three people from the credit department involved in the evaluation: A credit

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[50] A facility was a written document entitling FNBC to enter into credit business with a customer up to a stated maximum amount of exposure.

[51] A swap counterparty could have more than one rating in that (1) the counterparty could have more than one facility and (2) different facilities with a single customer could be rated differently.

analyst (who would compile the information and prepare a written analysis), a junior credit officer, and a senior credit officer. The credit officers also would consult with the relationship managers and marketers before assigning a risk classification.

FNBC's credit officers set a potential counterparty's risk class rating by first referencing the counterparty's public debt rating. FNBC could rate a counterparty differently than its public debt rating but generally did not give the customer a risk class rating higher than its public debt rating.

c. Review of Risk Classifications

FNBC regularly reviewed the credit ratings of its customers. Credit officers and relationship managers would regularly review the customer's financial statements and news reports relating to the customer and would hold discussions with the customer. Reviews would also occur each time the customer sought additional credit which was not covered by established credit limits. Formal credit reviews of each customer would occur at least annually.

The credit risk classifications were reviewed both internally and externally. Internally, a unit of the bank known as "Credit Process Review" (CPR) would review the ratings assigned by the credit officers and the thoroughness of their analysis. CPR did not always agree with the ratings and the analysis of the credit officers and would sometimes upgrade or

downgrade the risk class ratings. Externally, the OCC's bank examiners would review certain of the risk class ratings assigned by FNBC, particularly those assigned to major credits. The OCC did not review all risk class ratings assigned, and the OCC did not always agree with the risk class rating assigned by FNBC.

3. CRESCO Loss Reserve Factors

a. Loss Reserves

Banks were required to establish loss reserves for expected credit losses. These reserves were ascertained for each transaction by applying the following three factors: (1) The expected credit exposure, (2) the probability of default by the counterparty, and (3) the percentage of loss in the event of default by a counterparty.

b. CRESCO

CRESCO was FNBC's overseer with respect to credit risk appetite, its credit risk policies and procedures, and the portfolios of credit risk that resulted from its activities. For each risk classification, FNBC established a CRESCO loss reserve factor to estimate its rate of credit losses for financial accounting and everyday business purposes. This factor was reviewed periodically by CRESCO.

The determination of the CRESCO loss reserve factor involved many subjective estimates and business judgments. The loss reserve factor was based on historical commercial loan loss

experience, including real estate loans for certain periods at issue. Management judgment also was applied to evaluate whether past experience was likely to be an effective guide to future loss experience for commercial loans in light of changes in procedures or underwriting standards.

The CRESCO loss reserve factors were not determined with a view toward using those factors for valuation purposes or in calculating a credit adjustment. The CRESCO loss reserve factors were used by FNBC in assessing the adequacy of its loan loss reserves. Loan loss reserves were the amounts set aside for credit losses that FNBC incurred in the ordinary course of business. FNBC's allowance for loan loss reserves contained no specific accrual for swap credit risks.

c. Accuracy of CRESCO Loss Factors

In August 1992, CRESCO adopted the following loss reserve factors for non-real-estate transactions (e.g., a swap):

Risk rating	Reserve Factor
1	0.00%
2	0.05
3	0.25
4	0.45
5	1.60

Before that time, the loss reserve factors for non-real-estate transactions were:

Risk rating	Reserve Factor
1	0.05%
2	0.10
3	0.20
4	0.75
5	1.50

In calculating swap credit adjustments, FNBC did not commence using the new factors until the second quarter of 1993.

d. Same Factors Applied to Loans and Swaps

FNBC (and other banks) used the same loss reserve factors for swaps as it used for loans. Swaps were considered to be less risky than loans by FNBC's traders and legal department. By virtue of the ISDA form agreements, FNBC's legal department believed that swaps allowed for protection superior to loans against bankruptcy stays. The ISDA form agreements also provided for netting; i.e., as discussed infra p. 142, the right of a nondefaulting party to offset transactions in the event of a counterparty default. Most of FNBC's ISDA form agreements also provided for other credit enhancements, such as cross-default and other credit triggers. FNBC also had collateral for many of its swaps in addition to the credit enhancements and netting provisions.

e. FNBC's Credit and Tenor Enhancements

FNBC used credit and tenor enhancements to reduce credit risk on its swaps. In the case of at least some counterparties considered by FNBC to be risks, FNBC reduced the tenor limit for swaps with that counterparty, required that the counterparty

agree that its swaps with FNBC would be terminated early if the counterparty's public debt rating was downgraded to below investment grade, required the counterparty to secure its performance mainly by establishing a debt service reserve account, or did all of these things. In at least one other case, FNBC required that the counterparty agree to maintain: (1) Adequate books under GAAP and, in certain cases, to permit FNBC to inspect and audit its books, inventory, and accounts; (2) certain levels of tangible net worth; (3) certain cashflow coverage ratios; and (4) certain interest coverage ratios. The counterparty also had to agree: (1) To maintain a certain capitalization ratio; (2) not to engage in any business operations substantially different from and unrelated to its present business activities; (3) not to create, assume, or suffer any liens, except certain permitted liens; (4) not to liquidate, dissolve, or enter into any merger, or sell, transfer, assign, or otherwise dispose of assets in a single transaction or series of transactions, except, generally, in the ordinary course of business; (5) not to make any acquisitions except under the terms set out in a revolving credit agreement; (6) not to enter into certain operating leases; (7) not to prepay, defease, refinance, or repurchase certain indebtedness; and (8) not to enter into certain inventory repurchase agreements.

D. Static Instead of Dynamic Procedure

FNBC used a static rather than dynamic procedure to ascertain its credit adjustment. With a static procedure, the credit adjustment for each swap is calculated once, usually at the inception of the swap, and then amortized on a straight-line basis. With a dynamic procedure, the credit adjustments for each swap are redetermined periodically over the life of the swap, on the basis of a new calculation of the loan equivalent amounts and taking into account changes in credit ratings, market conditions, and other developments. FNBC's static methodology for calculating the credit adjustment did not account for changes in interest rates, credit quality, credit exposures, or credit risk ratings. Nor did it account for early terminations or subsequent chargeoffs.

FNBC's practice of straight-line amortization instead of revaluing the credit risk is inconsistent with the G-30 report's suggestion to adjust a credit adjustment dynamically. The cases in which one might expect a credit adjustment to be sizable (e.g., after the inception of a swap, when the fair market value could most likely deviate the most from midmarket value) are the very cases that are not captured in a static valuation system. A dynamic approach must be used to capture the actual market value of credit risk at a date later than the inception of a swap.

E. Netting

1. Types of Netting

a. Closeout Netting

When a dealer has several swaps with a single counterparty, it is common for some of the swaps to have positive value and for others to have negative value. If the counterparty were to default, it would owe money to the dealer with respect to some swaps, and the dealer would owe money to the counterparty with respect to other swaps. In the event of a bankruptcy proceeding, a dealer would want to offset the positive-valued swaps against the negative-valued swaps. Otherwise, the dealer might have to pay in full its obligations to the counterparty on the negative-valued swaps, while possibly receiving little or no payment on the positive-valued swaps. Such a right of setoff is called closeout netting.

Closeout netting is an enforceable right, and market participants placed significant stress on the use of netting agreements. Closeout netting occurs where the counterparties agree that, in the event of a default or triggering event, all contracts between the counterparties will be terminated at the option of the nondefaulting party, and the reciprocal claims under the contracts will be netted. By facilitating closeout netting and its legal enforceability, the ISDA form agreements

lowered credit risk because the parties could take advantage of offsetting transactions in the event of counterparty default.

For purpose of determining the closeout netting price, the 1992 ISDA form agreement allowed two methods of ascertaining the closeout netting settlement amount. The first method was the "Market Quotation" method. The second method was the "Loss" method. Neither method provided specifically that the settlement amount should take into account the credit risk of the counterparty or administrative costs.

b. Single Transaction Netting

The ISDA form agreements provided that payments in the same currency and with respect to the same swap were automatically netted. This type of netting is known as single transaction netting.

c. Multiple Transaction Netting

The ISDA form agreements provided that the parties could in certain circumstances elect a net amount that would be payable for two or more transactions. This type of netting is known as multiple transaction netting. Multiple transaction netting applied where the payments on more than one swap with the same counterparty were due on the same day and in the same currency.

2. Netting in the Industry

During the relevant years, netting was commonly available to estimate current exposure, and market participants placed

significant stress on the use of netting agreements. The OCC also encouraged the use of netting agreements. As part of the credit approval function, the OCC expected credit officers to assess the availability and impact of credit exposure reduction techniques such as netting.

Pursuant to BC-277:

> **In order to reduce counterparty credit exposure, a national bank should use master close-out netting agreements with its counterparties to the broadest extent legally enforceable, including in any possible insolvency proceedings of such counterparties.** * * *
>
> * * * * * * *
>
> The advantages of such netting arrangements include a reduction in credit and liquidity exposures, the potential to do more business with existing counterparties within existing credit lines, and a reduced need for collateral to support counterparty obligations. * * *

3. Status of Netting Arrangements

Before 1990, prior law arguably allowed a U.S. bankruptcy trustee or liquidator either to accept or to repudiate individual contracts among a portfolio of financial derivatives, depending on their profitability to the bankrupt party. The trustee or liquidator could arguably enforce only those swaps that had positive value.

In 1990, Congress amended then 11 U.S.C. section 362(b)(14) (now section 362(b)(17) (2000)) and added to the Bankruptcy Code 11 U.S.C. section 560 to limit a bankruptcy trustee’s avoidance powers. These sections exempted swap agreements from the

automatic stay and permitted swap participants to net positions in the setting of a bankruptcy. Congress passed the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA), Pub. L. 102-242, 105 Stat. 2286, 1 year later. Under 12 U.S.C. sections 4401-4407 (2000), which were enacted as part of the FDICIA, netting provisions are viewed by the CFTC as designed to assure the enforceability of netting among specified financial institutions and among members of clearing organizations for CFTC-regulated exchanges. By enacting the FDICIA, and the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, Pub. L. 101-73, 103 Stat. 277, each applying to failed depository institutions, Congress reduced systemic risk by providing a high degree of legal certainty that netting provisions would be upheld in insolvency proceedings in the United States.

In the case of a foreign entity counterparty, netting was not always enforceable. Of the 488 swaps at issue for 1993, 173 were with foreign counterparties. Of those 173, 119 were with counterparties that hailed from countries which the G-30 report concluded had enforceable netting arrangements.[52] Of the

[52] The G-30 report referenced legal memoranda prepared by counsel familiar with the laws of nine countries discussing issues of enforceability in Australia, Brazil, Canada, England, France, Germany, Japan, Singapore, and the United States. In each case, netting arrangements were considered by counsel to almost certainly be enforceable in bankruptcy or insolvency

(continued...)

remaining 54 swaps (173 - 119), 9 were with counterparties that did not ultimately hail from a G-10 or European Union country. Many, if not most, of FNBC's swaps with foreign counterparties were with other dealers, who while not subject to U.S. bankruptcy laws, were extremely well capitalized and were most unlikely to default on their obligations.

4. Practicability of Accounting for Netting

If a dealer had a legally enforceable netting agreement with a counterparty, then it would be preferable for the dealer to calculate the credit exposure for all of the swaps with the counterparty on an aggregate (i.e., netted) basis. This was the recommendation of the G-30 report. During the relevant years, FNBC was capable of measuring credit exposure on an aggregate (netted) basis by way of the program designed for it by Hsieh in 1988.

5. Impact of the Failure To Account for Netting

FNBC's failure to account for netting produced large and systematic biases. FNBC's failure to take netting into account produced substantial large exposures that were larger than the actual risks under the individual agreements.

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[52](...continued)
proceedings.

6. FNBC's Use of Netting Provisions

FNBC went to great lengths to include netting provisions in all its swap agreements, and most of FNBC's swaps were subject to enforceable netting agreements.

XII. FNBC's Adjustments Were Designed To Defer Income

A. Overview

FNBC's credit and administrative costs adjustments were designed to defer expenses to match income, not for valuation purposes. FNBC's adjustments were made to defer its compensation and to allocate the compensation over the life of the swap.

B. FNBC's Policy Statements

FNBC's policy statement on credit adjustments for swaps was contained in FNBC's draft Financial Accounting Policies Manual (FAPM) No. 397. FAPM 397 characterizes credit adjustments as deferral accounting to prevent all income from being recognized up front. According to that document: "By marking-to-market VEP transactions at the mid-point between market bid and offer, all income that results from the bid/offer price differential would be recognized at the inception of the transactions, unless deferral accounting is used to properly recognize certain income." Thus, as to the credit adjustment, "An appropriate amount of income is calculated and deferred at the inception of each VEP transaction * * * to provide for compensation for inherent credit risk over its life."

On July 23, 1993, FNBC's Control Department issued FAPM 396, entitled "Nonperforming Variable Exposure Product Transactions".[53] In relevant part, this document established the policies for dealing with a swap (or other variable exposure product) if the counterparty had not made a payment which FNBC had an unqualified right to receive. According to FAPM 396, FNBC's policy was to account for swaps with a past due periodic payment using a "'modified' lower of cost or market". FAPM 396 stated further that changes in the value were recognized in the applicable trading profits account currently as losses or gains (only to the extent of prior losses). FAPM 396 further stated that the modified lower of cost or market accounting treatment might occur when (1) payment that FNBC had an unqualified right to receive had not been made when due and (2) it had been determined that the contract is nonperforming.

XIII. FNBC Had No Schedule M Adjustments

There were no Schedule M adjustments on FNBC's tax returns with respect to swaps booked through FNBC.

XIV. Nature and Amount of the Proposed Disallowances

The audit of FNBC's 1990 and 1991 taxable years commenced in December 1992. The assigned agent's focus during the audit was

[53] A contract was considered "nonperforming" if it was determined that a counterparty would probably not fulfill its cashflow (or other exchange) obligation under the terms of the contract.

set primarily on FNBC's accounting for swaps and other notional principal contracts. The agent proposed to disallow the credit and administrative costs adjustments taken by FNBC. The notice of proposed adjustment (Form 5701) and attached explanation of items (Form 886-A) justified the disallowance on the ground that, by reflecting such adjustments, "FNBC is, in effect, taking a current deduction from taxable income for expenses which, for the most part, will be incurred in future taxable years". Respondent's notices of deficiency disallowed the amounts shown therein with respect to the credit and administrative costs adjustments because the "carve-out expenses does [sic] not clearly reflect income in accordance with section 446 of the Internal Revenue Code".

XV. Petitioner's Facts Set Forth in Its Petition

As relevant herein, petitioner's petition set forth the following facts to support its allegations of error as to 1990 and 1991:

> (s-1) One of the ways that the Bank [FNBC] makes a profit by selling or purchasing an interest rate swap contract is through its ability to purchase a swap at the lower bid price and sell the swap at the higher offer price while its customers must purchase a swap at the higher offer price and sell it at the lower bid price.
>
> (s-2) The compensation that results from the bid/offer rate differential should neither be all currently recognized in income at the inception of a swap, nor all deferred over the life of a swap. Instead swap compensation should be allocated between current and deferred income recognition based on when

it is earned, (i.e., a portion up front and a portion over time). Based on an analysis of what the bid/offer rate differential represents, the Bank values its swap contracts using the mid-point between market bid and offer rates. The difference between this valuation and a bid or offer price paid or received by the Bank is treated as deferred income designed to provide compensation for inherent credit risk and periodic administrative costs related to the swaps.

(s-3) The basis for making an allocation between current and deferred income recognition is that a reasonable estimate can be made of the amount allocable to the inherent credit risk and periodic administrative costs associated with the swap transaction.

(s-4) At the inception of each swap, the Bank defers an appropriate amount of income to account for inherent credit risks and periodic administrative costs related to the swap. The amount deferred to account for interest credit risks is determined by multiplying the Credit Strategy Committee's (CRESCO) loss reserve factor times the credit exposure amount of the swap. The result is restated as a per annum credit deferral and is deferred via the swap revaluation process. The Bank revalues interest rate swaps which are used in trading strategies to market value at least once a month. The per annum credit deferral is recognized in income on a straight line basis over the life of the swap agreement. The rationale for the income deferral for the inherent credit risk is to defer an appropriate amount of income to match compensation paid to assume credit risk over the period of the risk.

(s-5) An additional amount of income is deferred on the entire swap portfolio to match compensation paid to assume periodic administrative costs. Administrative costs include an allocation of direct and indirect expenses of the swap management, trading and operations areas.

Petitioner's petition as to 1993 also set forth facts in support of its allegations of error as to that year. In relevant part, petitioner's petition for 1993 repeated the facts set forth

in the first five paragraphs above (but did so using the letter "c" instead of "s").

XVI. Pretrial Order of August 14, 2000

On August 14, 2000, the Court issued the following pretrial order:

> For cause, it is
>
> ORDERED that each of the parties shall file no later than September 5, 2000, a memorandum [issues memorandum] setting forth--
>
> (1) (a) The issues of fact (including any issues subsidiary to ultimate issues) and (b) the issues of law (including any issues subsidiary to ultimate issues) to be resolved by the Court. Such issues should be set forth in sufficient detail to enable the Court to decide the case in its entirety by addressing each of the issues listed.
>
> (2) A clear, complete, and concise exposition of each party's position and the theory underlying that position with respect to each of the issues that are set forth pursuant to (1) above. In this regard, each party shall include a statement in narrative form of what each party expects to prove.
>
> (3)(a) an indication as to whether expert witness testimony is anticipated, (b) the nature of the expert witness testimony, if any, and (c) the questions the parties are expecting to ask the witness on which to opine.
>
> It is further
>
> ORDERED that the statement of issues set forth pursuant to (1) above shall control the admissibility of evidence at trial and evidence offered at trial will be deemed irrelevant unless it pertains to one or more of the issues set forth pursuant to (1) above. It is further
>
> ORDERED that neither party will be allowed to advance a position or theory underlying that position

> with respect to any of the issues set forth pursuant to (1) above that is different from the positions or theories set forth pursuant to (2) above.

On September 5, 2000, each party filed with the Court an issues memorandum.

XVII. Expert Testimony

At trial, each party called expert witnesses in support of its and his respective position. In addition, the Court for the first time appointed its own experts under rule 706 of the Federal Rules of Evidence to testify as to the relevant subject matter.

A. Identity and Qualifications

1. Experts Retained by Petitioner

Petitioner presented the testimony of two experts, Charles Smithson (Smithson) and Robert P. Sullivan (Sullivan). Smithson was qualified by the Court as an expert in financial economics, financial derivative products, and risk management. He has a Ph.D. in economics from Tulane University and is the managing partner of a financial consulting firm specializing in risk management. He is affiliated with the ISDA and served for a number of years as a director on its board. His concentration is in the management of financial risk, and he has written a number of books and articles on that subject.

Sullivan was qualified by the Court as an expert in financial derivatives, including the generally accepted

accounting standards for financial derivatives, the valuation of financial derivatives, and the risk management of financial derivatives. He is a partner in one of the large multinational accounting firms, and he specializes in the accounting treatment of financial derivatives. He has a bachelor of science degree in business administration from Merrimack College and is a certified public accountant in Massachusetts and New York.

2. Experts Retained by Respondent

Respondent presented the testimony of three experts: Patricia O'Brien (O'Brien), John Parsons (Parsons), and Owen Carney (Carney). O'Brien was qualified by the Court as an expert in accounting. She holds a bachelor's degree cum laude in mathematics and economics from Cornell University and an M.B.A. and a Ph.D. in accounting and econometrics from the University of Chicago. She is a professor of accounting at the University of Waterloo and has also taught at the University of Rochester, the Massachusetts Institute of Technology, the University of Michigan, the University of Chicago, the University of Helsinki, and the University of Amsterdam. She has chaired the accounting group at London Business School, coauthored a book on accounting, and served on the editorial boards of the Accounting Review and the Journal of Accounting and Public Policy.

Parsons was qualified by the Court as an expert in financial economics, valuation, financial derivatives, and risk management.

He holds a bachelor's degree in economics from Princeton University and an M.B.A. and a Ph.D. in economics from Northwestern University. He is employed as a vice president with an economics consulting firm, where a significant part of his consulting work on risk management has focused on the calculation of discount rates that measure the risk of particular assets and the valuation of assets. He has worked as an expert for the FRB's Board of Governors and the International Trade Commission. He has published articles on hedging and liquidity in publications such as Derivatives Quarterly and Risk Magazine.

Carney was qualified by the Court as an expert in the manner in which the OCC regulates national bank activities, including financial derivatives, and the particular manner in which the OCC regulates financial derivatives. He worked for many years in the OCC and was trained and worked as a lead national bank examiner for the OCC (this involved a 4- to 5-year on-the-job training process and testing before he could be an examiner-in-charge of OCC bank audits as a commissioned national bank examiner). He has served as the Chief of the OCC investment securities division, worked on the task force that drafted a banking circular, drafted sections of the OCC's handbook on bank securities dealers activities, and been responsible for OCC policy development relating to national banks' financial derivatives activities.

3. Experts Appointed by the Court

The Court-appointed experts are J. Darrell Duffie (Duffie) and Barry S. Sziklay (Sziklay). Duffie was appointed by the Court as an expert in the field of financial economics and financial derivatives. He holds a Ph.D. in engineering systems from Stanford University, a master's of economics (economic statistics) from the University of New England (Australia), and a bachelor's of science in engineering from the University of New Brunswick (Canada). He is employed as the James Irvin Miller Professor of Finance at Stanford University's Graduate School of Business, where he teaches courses in the doctoral, executive, and MBA programs and has been a member of Stanford's finance faculty since 1984. He teaches and conducts research in various subject areas, including the market valuation of securities, and he spends a significant portion of his teaching and research focusing on the market valuation and management of credit risk. He has consulted and written a multitude of articles and books on subjects related to financial derivative securities, fixed-income pricing, risk management, and credit risk.

Sziklay was appointed by the Court as an expert in the field of fair market value and GAAP. He holds a bachelor's degree in accounting and economics from Queens College and is a certified public accountant in New York, New Jersey, and Florida. His practice focuses on business valuation, and he has a specialty

designation in business valuation issued by the American Institute of Certified Public Accountants. He has spoken and written on the topic of business valuation.

B. Procedure Used by the Court To Appoint Our Experts

As mentioned above, the Court for the first time appointed experts under rule 706 of the Federal Rules of Evidence. In so doing, the Court generally followed the following procedure. First, in September 2000, before the commencement of trial, the Court informed the parties' counsel that we believed that: (1) The cases involved a significant, complex, and novel big-dollar issue that was widespread in the financial industry and (2) in deciding this issue, it would be helpful to the Court to obtain opinions from one or more experts appointed by the Court under rule 706 of the Federal Rules of Evidence.[54]

One week later, the Court met with counsel to discuss the mechanics of retaining one or more Court-appointed experts. At that time, the Court suggested to counsel that: (1) They could provide to the Court either separate lists or a joint list of potential experts or (2) the Court could conduct its own

[54] The Court noted that we have become all too accustomed to hearing testimony elicited from experts that merely followed the litigating position of the retaining party and lacked any true benefit to the Court. E.g., Neonatology Associates, P.A. v. Commissioner, 115 T.C. 43, 86-87 (2000), affd. 299 F.3d 221 (3d Cir. 2002); Auker v. Commissioner, T.C. Memo. 1998-185; Estate of Mueller v. Commissioner, T.C. Memo. 1992-284; Jacobson v. Commissioner, T.C. Memo. 1989-606; cf. Laureys v. Commissioner, 92 T.C. 101, 129 (1989).

investigation into potential experts. The parties agreed that the Court should conduct its own investigation. Subsequently, the Court, with the permission of the parties, compiled a short list of potential experts that might be suitable for Court appointment and, outside the presence of counsel but with both counsels' consent, interviewed each of these potential experts posing questions regarding their expertise, availability, cost, and potential conflicts of interest. Following these interviews, the Court chose Duffie and Sziklay. The Court informed the parties as to our choice and discussed with the parties a consensus of questions to be posed to the experts for their opinions.

Later, on October 30 and 31, 2000, the parties met with the Court in chambers and agreed to stipulate the duties and procedures that the Court would use in appointing the experts. On November 20, 2000, the Court filed the parties' stipulation as to that matter. (We attach that stipulation hereto as appendix A.) On the same day, the Court issued an order appointing the experts and directed each party to submit to the Court for filing a list of specific questions for the Court's experts. On December 4, 2000, the Court filed respondent's proposed questions for the Court-appointed experts. On December 5, 2000, the Court filed petitioner's proposed questions for the Court-appointed

experts. The Court also filed on December 5, 2000, a supplement by respondent to his proposed questions.

After the conclusion of the testimony by all other witnesses, including the parties' experts, Duffie and Sziklay were each furnished with the complete trial record up to that point, and they each submitted a written report. Thereafter, petitioner submitted a joint rebuttal report on behalf of Smithson and Sullivan, and later, after that report was excluded from evidence, separate rebuttal reports on behalf of each expert. Respondent submitted to the Court the separate rebuttal reports of O'Brien and Parsons. The Court-appointed experts then submitted their rebuttal reports. The trial was resumed, at which time the parties cross-examined the Court-appointed experts and presented the rebuttal testimony of their own experts.

Respondent challenged the admissibility of Sullivan's rebuttal report. Respondent asserted that the report was inadmissible because it was tainted in its preparation by the significant participation of petitioner's counsel. By order dated January 15, 2003, we excluded Sullivan's rebuttal report from evidence. We noted that Sullivan has never explained to our satisfaction that the words, analysis, and opinions in that report were his own work. We ruled that petitioner, as the proponent of the expert testimony, failed to establish the report's admissibility by a "preponderance of proof." See

Daubert v. Merrell Dow Pharm. Inc., 509 U.S. 579, 592 n.10 (1993).

OPINION

I. Overview

These cases address the Federal income taxation of financial derivatives. Congress has required for approximately the last 10 years that taxpayers participating in certain types of financial derivatives report the value of those derivatives at their fair market value. The taxpayers subject to this valuation requirement are plentiful, and the tax dollars affected by this requirement reach into the billions, if not the trillions.[55]

Congress chose cognizantly not to promulgate explicit rules mandating valuation methods for this purpose. H. Conf. Rept. 103-213, at 616 (1993), 1993-3 C.B. 393, 494. Congress opted instead to delegate to the Department of the Treasury (Treasury Department) the authority to promulgate these rules while advising the Treasury Department that "the conferees expect that the Treasury Department will authorize the use of valuation methods that will alleviate unnecessary compliance burdens for

[55] As to the regularity of interest rate swap transactions, it has been noted by the Court of Appeals for the Seventh Circuit, the court to which an appeal of these cases would typically lie, that "'The swaps dealers--mostly banks--that create, market, and broker these [interest rate swaps] deals have made billions.'" Caisse Nationale de Credit Agricole v. CBI Indus., Inc., 90 F.3d 1264, 1267 n.1 (7th Cir. 1996) (quoting Greising, "Chicago's Swaps Sweepstakes", Business Week, June 14, 1993).

taxpayers and clearly reflect income for Federal income tax purposes." Id. The Treasury Department has never prescribed the referenced valuation rules.

We proceed to interpret section 475, the provisions of which we set forth in appendix B.[56] These provisions were added to the Internal Revenue Code by the Omnibus Budget Reconciliation Act of 1993, Pub. L. 103-66, sec. 13223, 107 Stat. 481, effective with taxable years ended after December 30, 1993.[57] We are the first court to opine upon section 475 in any regard.

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[56] Petitioner argues, in part, that we should interpret sec. 475 favorably to it because the Treasury Department has failed to fulfill Congress's mandate to prescribe regulations interpreting the valuation requirements of that section. We reject this argument. In the absence of regulations, we construe the statutory text in light of all pertinent evidence, textual and contextual, of its meaning. See Commissioner v. Soliman, 506 U.S. 168, 173 (1993); Crane v. Commissioner, 331 U.S. 1, 6 (1947); Old Colony R. Co. v. Commissioner, 284 U.S. 552, 560 (1932). See also White v. United States, 305 U.S. 281, 292 (1938), where the Supreme Court rejected a similar argument, stating:

> We are not impressed by the argument that, as the question here decided is doubtful, all doubts should be resolved in favor of the taxpayer. It is the function and duty of courts to resolve doubts. We know of no reason why that function should be abdicated in a tax case more than in any other * * *

[57] Sec. 475 was amended in the Taxpayer Relief Act of 1997, Pub. L. 105-34, sec. 1001(b), 111 Stat. 906, to redesignate old sec. 475(e) as sec. 475(g) and to add new sec. 475(e) and (f) to allow dealers in commodities and traders in securities and commodities to elect mark-to-market accounting. That amendment is not applicable here. Id. sec. 1001(d)(4).

Section 475(a) requires that a "dealer in securities" report its securities at the end of the taxable year by using one of two mark-to-market rules set forth in that section. See also sec. 1.475(c)-1(a)(2)(i) and (ii), Example (1), Income Tax Regs. (a swaps dealer is a "dealer in securities" within the meaning of section 475). The first rule requires that a dealer include in its inventory the fair market value of each security held in its inventory at the end of the taxable year. The second rule requires that a dealer recognize gain or loss on each other security held at the end of the taxable year as if the security had been sold for its fair market value on the last business day of that year.

By its terms, section 475 does not apply to FNBC's 1990 through 1992 taxable years. FNBC, however, claimed that it was reporting its swaps income for those years using a mark-to-market method, and respondent has never disallowed FNBC's use of such a method. See generally sec. 1.471-5, Income Tax Regs. (permitted dealers in securities to value their securities inventories at market for taxable years before the effective date of section 475). We believe under the facts herein, including especially that FNBC's methodology for reporting its swaps income was substantially the same in each of the years 1990 through 1993, that our decision as to 1990 through 1992 flows correspondingly from our analysis of the mark-to-market rules of section 475.

Petitioner attempts in its opening brief to raise an issue that its methodology is permissible for 1990 through 1992 because, it asserts, that methodology met the reasonableness requirement of Notice 89-21, 1989-1 C.B. 651. Notice 89-21, 1989-1 C.B. at 652, clarifies that swaps income from lump-sum payments should be spread over the life of the swap "using a reasonable method of amortization." We decline to consider this issue. Petitioner has raised the issue on brief in violation of our August 14, 2000, order, see Estate of Maggos v. Commissioner, T.C. Memo. 2000-129 (Court held that a party would not be entitled to raise an issue not set forth in a memorandum filed by that party in response to a similar order of this Court), and we find credible respondent's assertion on brief that he justifiably relied upon our August 14, 2000, order in preparing for and conducting the trial of this case. We also agree with respondent that he would be prejudiced were we now to decide whether petitioner's method of accounting for its 1990 through 1992 swaps income met the reasonableness requirement of Notice 89-21, supra.

II. Does Section 475 Involve a Method of Accounting?

A. Overview

For each relevant year, respondent determined that FNBC's method of accounting for its swaps (more specifically, its treatment of the adjustments) did not clearly reflect its swaps income. Accordingly, respondent determined, he was entitled to

change FNBC's method of accounting for its swaps income to a method of accounting that did clearly reflect that income. Respondent argues that his method of accounting under which each of FNBC's swaps is valued at its midmarket value clearly reflected FNBC's swaps income for each relevant year.

Petitioner replies that FNBC properly reported its swaps income for each relevant year. Petitioner observes that FNBC: (1) Calculated and reported as swaps income the mid-market values of its swaps and (2) offset that reported income by adjustments for credit risk and administrative costs connected with the swaps. Petitioner alleged in its petition that FNBC's adjustments were necessary to defer income to match related expenses. Petitioner clarifies on brief that the adjustments were necessary to reflect the fair market value of FNBC's swaps under its mark-to-market methodology.

Petitioner argues that these cases are a "valuation case", as opposed to a method of accounting case, and that FNBC's valuations must be sustained because its underlying methodology was reasonable. Alternatively, petitioner argues, the fact that FNBC's methodology was reasonable means that it must prevail even if these cases are a "method of accounting case". According to petitioner, a reasonableness standard controls our decision because (1) FNBC's valuations were recurring and business in nature, (2) FNBC's valuations were the result of an exercise of

its business judgment, (3) the valuation of swaps is a novel and complex issue, (4) the Treasury Department has yet to fulfill a congressional mandate to issue regulations on the valuation of financial derivatives under section 475, and (5) FNBC's methodology is supported by the legislative history of section 475. FNBC's methodology was reasonable, petitioner asserts, because: (1) That methodology was recognized by the industry, regulators, and accounting profession as the best approach for valuing financial derivatives, (2) FNBC's valuations met the fair value standard of accounting, a standard, petitioner contends, that is identical in all pertinent respects to the concept of fair market value, and (3) whereas an undervaluation of swaps would have lowered reported earnings, FNBC had strong incentives not to undervalue its swaps and to report strong earnings.

B. Identification of a Method of Accounting

We decide first whether the reporting of income under section 475, inclusive of the valuation requirement subsumed therein, is a method of accounting. Respondent argues that such reporting of income is a method of accounting. Petitioner argues that such reporting of income is not a method of accounting but is a question of valuation. We agree with respondent.

Although the Internal Revenue Code does not define the term "method of accounting", the regulations do. Those regulations provide that the term "method of accounting" includes both:

(1) The overall plan of accounting for gross income or deductions and (2) the treatment of a material item. Sec. 1.446-1(a)(1), Income Tax Regs.; see also FPL Group, Inc. & Subs. v. Commissioner, 115 T.C. 554, 561 (2000). The regulations provide further that an item is material if it involves the proper timing of income or expense; i.e., when an item is included in income or is taken as a deduction. Sec. 1.446-1(e)(2)(ii)(a), Income Tax Regs.; see also FPL Group, Inc. & Subs. v. Commissioner, supra at 561; Wayne Bolt & Nut. Co. v. Commissioner, 93 T.C. 500, 510 (1989). As construed by the courts, section 1.446-1(a), Income Tax Regs., serves to classify as a "method of accounting" the consistent treatment of any recurring, material item, whether that treatment be correct or incorrect. E.g., FPL Group, Inc. & Subs. v. Commissioner, supra at 561; H.F. Campbell Co. v. Commissioner, 53 T.C. 439, 447 (1969), affd. 443 F.2d 965 (6th Cir. 1971).

Here, FNBC's reporting of income under section 475 is a method of accounting in that it involves the proper timing of income and expenses connected with FNBC's swaps. Section 475(a)(2) mandates for each taxable year that the fair market value of FNBC's swaps be considered received as of the end of the last business day of that year, and that any gain or loss be currently recognized. Thus, under the statute, FNBC's valuation method affects the timing of its swaps income in that the method,

if improper, would either accelerate or postpone the recognition of that income. See Knight-Ridder Newspapers, Inc. v. United States, 743 F.2d 781 (11th Cir. 1984).

Our conclusion is further supported by a line of cases under section 481 dealing with inventory. Those cases are pertinent in that FNBC's swaps are analogous to inventory and section 481 defers to section 446(e) to define a change in method of accounting. Three of the seminal cases are Hamilton Indus. Inc. v. Commissioner, 97 T.C. 120 (1991), Wayne Bolt & Nut Co. v. Commissioner, supra, and Primo Pants Co. v. Commissioner, 78 T.C. 705 (1982). In Hamilton Indus. Inc. v. Commissioner, supra, the taxpayer attempted to shield the recognition of gain on inventory acquired in a bargain purchase by treating that inventory and subsequently acquired raw materials and manufactured goods as a single item of inventory under the LIFO method. The Court concluded that this practice was unacceptable for tax purposes and constituted a change in method of accounting. Id. at 127. In Wayne Bolt & Nut Co. v. Commissioner, supra, the taxpayer had used for a number of years a sampling method for determining the value of its ending inventory. When the taxpayer actually took a complete physical count of its inventory, it discovered that approximately $2 million worth of inventory that had been previously written off was actually still in inventory. The taxpayer increased its opening and ending inventories in order to

correct this problem. The Court held that this correction was a change in the method of accounting that, under section 481, required the taxpayer to recapture in income the cost of items mistakenly written off in prior years. Id. at 513. In Primo Pants Co. v. Commissioner, supra, the taxpayer consistently valued its inventories as a percentage of cost when its inventories should have been valued at full cost. The Court held that deferral of income until final closing inventory was corrected was a timing question that constituted a change in accounting method. Id. at 725; accord Dearborn Gage Co. v. Commissioner, 48 T.C. 190, 197-198 (1967) (concluding that the exclusion of overhead costs in valuing inventory is an erroneous method of accounting involving a material item); Hitachi Sales Corp. of Am. v. Commissioner, T.C. Memo. 1994-159 (a change from an improper method of valuing inventory to a proper valuation method is a change in method of accounting), supplemented T.C. Memo. 1995-84.

We find in the legislative history under section 475 further support for our conclusion that the instant issue involves a method of accounting. That history, although considered to be secondary when interpreting the statutory text, is most useful when it comes to discerning a statute's intended purpose. Bob Jones Univ. v. United States, 461 U.S. 574, 586 (1983); Albertson's, Inc. v. Commissioner, 42 F.3d 537, 541 (9th Cir.

1994), affg. 95 T.C. 415 (1990); Booth v. Commissioner, 108 T.C. 524, 569 (1997). We understand from the legislative history that Congress intended that the mark-to-market rules under section 475, including the valuation requirement subsumed therein, be considered a method of accounting. In fact, the House Committee on Ways and Means even articulated in its report a specific provision as to the procedure to be used by taxpayers who were required to change their methods of accounting to comply with the legislation. H. Rept. 103-111, at 666 (1993), 1993-3 C.B. 167, 242. This provision refers to "A taxpayer that is required to change its method of accounting to comply with the requirements of the provision", a "section 481(a) adjustment", and the need to account for the section 481 adjustment through the "principles of * * * Rev. Proc. 92-20", 1992-1 C.B. 685, the revenue procedure that governs the changes in method of accounting in general. These references, we believe, are most consistent with our conclusion that the applicable mark-to-market rule is a method of accounting.

We also bear in mind Congress's placement of section 475 in part II of subchapter E (chapter 1) of the Internal Revenue Code, a part that is entitled "Methods of Accounting". This placement, of course, is by no means dispositive. Sec. 7806(b). This placement, however, can surely not be ignored. Sec. State Bank v. Commissioner, 214 F.3d 1254, 1257-1258 (10th Cir. 2000), affg.

111 T.C. 210 (1998). Such is especially so where the legislative history of section 475 identifies the applicable mark-to-market rule of that section as a method of accounting applicable to securities dealers and also provides explicit rules under which taxpayers may change their methods of accounting to comply with the mark-to-market requirement. E.g., H. Rept. 103-111, supra at 666, 1993-3 C.B. at 236, 242.

III. Burden of Proof

Petitioner argues that respondent bears the burden of proof as to any method of accounting issue because, petitioner asserts, the notices of deficiency are arbitrary and excessive as to respondent's method for reporting FNBC's swaps income. According to petitioner, respondent's method set forth in the notices of deficiency is the midmarket method, and it is only respondent who disputes that sound economic principles lead to the conclusion that the fair market value of a swap is not its midmarket value. Respondent argues in rebuttal that petitioner bears the burden of proof. First, respondent asserts, the notices of deficiency are neither arbitrary nor excessive as to the method of accounting issue. Second, respondent asserts, petitioner has previously acknowledged to the Court that it bears the burden of proof and, in any event, has raised this issue untimely.

We agree with respondent that petitioner bears the burden of proof as to the method of accounting issue. Indeed, petitioner's

counsel has already acknowledged this fact and, in any case, has raised this issue untimely and in contravention of our pretrial order dated August 14, 2000.

As to the acknowledgment, the following colloquy occurred between the Court and the parties at the beginning of trial:

> THE COURT: * * * let me just make sure that the Court's understanding that the burden of proof in this case is on the Petitioner. Is that a correct understanding?
>
> MR. SCHIFFMAN: Yes, Your Honor.
>
> THE COURT: Counsel?
>
> MS. GILBERT: Yes, Your Honor.

It was only when petitioner filed its brief with the Court that it argued for the first time that the burden of proof was on respondent. Petitioner's raising of this issue in its brief was untimely, prejudicial to respondent, and in violation of the referenced pretrial order. See Estate of Maggos v. Commissioner, T.C. Memo. 2000-129.

Even if the issue as to the burden of proof was properly before the Court, the notices of deficiency were neither arbitrary nor excessive under the facts at hand, including, especially, that petitioner failed during the audit to provide to respondent adequate substantiation to support its return position. In Mitchell v. Commissioner, 416 F.2d 101 (7th Cir. 1969), affg. T.C. Memo. 1968-137, for example, a taxpayer who lacked adequate records argued that the burden of proof was on

the Commissioner. The Court of Appeals for the Seventh Circuit disagreed. The court stated that shifting the burden of proof to the Commissioner "would be tantamount to holding that skillful concealment of income by failure to keep records and destruction of the original documents from which income could be reconstructed would be an invincible barrier to proof." Id. at 102. The Court of Appeals for the Ninth Circuit ruled similarly in Clapp v. Commissioner, 875 F.2d 1396 (9th Cir. 1989). There, the court rejected a taxpayer's argument that a significant disparity between the amounts in a notice of deficiency and the amounts in a stipulated judgment was proof that the Commissioner's determination was arbitrary. The court noted that the discrepancies were simply the product of the taxpayer's refusing to cooperate with the audit. Id. at 1402; accord Am. Fletcher Corp. v. United States, 832 F.2d 436, 442 (7th Cir. 1987) (Cudahy, J., concurring) ("Taxpayers are required to keep adequate records to support their declaration of taxable income, and have no grounds for protest if the Commissioner imposes a workable accounting method when confronted with inadequate records.").

Petitioner asserts that respondent is required either to introduce into evidence FNBC's swap records or to advance alternative computations in order to legitimize as other than arbitrary or erroneous his determination as to the credit and

administrative costs adjustments. We disagree. Petitioner either controls or has controlled all of the documents necessary to support its claim to the credit and administrative costs adjustments. Whereas petitioner has chosen not to introduce those documents into evidence, it is not now incumbent on respondent to do so. As the Court of Appeals for the Seventh Circuit stated in Pfluger v. Commissioner, 840 F.2d 1379, 1383 (7th Cir. 1988), affg. T.C. Memo. 1986-78, while rejecting a similar argument:

> They [the taxpayers] willfully refused to cooperate with the audit. They cannot thereby force the Commissioner to resort to "averages" to estimate the deductions that they could have taken. If that were the case, nobody would cooperate with an audit. The use of estimates could often result in allowance of more deductions than the taxpayer was actually entitled to take; if it did not, the taxpayer would simply petition for a redetermination and substantiate greater deductions. * * *

IV. Tax Accounting for Methods of Accounting

Section 446(a) contains the general rule for tax accounting. Section 446(a) generally requires that the accounting method used by a taxpayer to compute its taxable income be based on the method of accounting used by the taxpayer to compute its book income. The regulations interpreting section 446(a) restate this requirement and clarify that the requirement must be met unless the Internal Revenue Code provides a more specific accounting method for an item. Sec. 1.446-1(a), Income Tax Regs. The regulations list "research and experimental expenditures, soil

and water conservation expenditures, depreciation, [and] net operating losses" as examples of items which require a more specific accounting method. Id. The regulations do not indicate that the mark-to-market rules of section 475 involve an item that requires a specific method different than book method.

Even in cases where an item is not listed as requiring a specific method of tax accounting, section 446(b) gives the Commissioner broad authority to require a certain method of tax accounting as to that item when the taxpayer's method of tax accounting fails to reflect the taxpayer's income clearly. Thor Power Tool Co. v. Commissioner, 439 U.S. 522, 532 (1979); Commissioner v. Hansen, 360 U.S. 446, 467 (1959); see also sec. 1.446-1(a)(2), Income Tax Regs. The Commissioner's authority under section 446(b) encompasses overall methods of accounting, as well as specific methods used to report any item of income or expense. Thor Power Tool Co. v. Commissioner, supra at 531; Prabel v. Commissioner, 91 T.C. 1101, 1112-1113 (1988), affd. 882 F.2d 820 (3d Cir. 1989); Wal-Mart Stores Inc. v. Commissioner, T.C. Memo. 1997-1, affd. 153 F.3d 650 (8th Cir. 1998); see also sec. 1.446-1(a), Income Tax Regs. The Commissioner's authority under section 446(b) authorizes the Commissioner to change a method of accounting used by a taxpayer such as FNBC to report its swaps income under section 475 if that method does not clearly reflect that income.

Petitioner argues that its burden as to section 446(b) is to prove simply that FNBC's method of reporting its swaps income was reasonable. We disagree. We understand section 446(b) to require that a method of accounting clearly reflect income and not that it simply be reasonable. A taxpayer's method of accounting, although believed by the taxpayer to be reasonable, may not necessarily be a method which clearly reflects the taxpayer's income for purposes of Federal income taxes. Such is especially so considering that the Commissioner is given broad discretion under section 446(b) to determine whether an accounting method clearly reflects income, and that his exercise of authority under that section is given "much latitude" and cannot be disturbed unless "clearly unlawful" or "plainly arbitrary". Thor Power Tool Co. v. Commissioner, supra at 532-533; Lucas v. Am. Code Co., 280 U.S. 445, 449 (1930); Am. Fletcher Corp. v. United States, supra at 438. Moreover, it is well engrained in our tax jurisprudence that a taxpayer challenging the Commissioner's exercise of authority under section 446(b) bears a heavy burden of proving that the Commissioner's determination is "clearly unlawful" or "plainly arbitrary". Thor Power Tool Co. v. Commissioner, supra at 532-533; Lucas v. Structural Steel Co., 281 U.S. 264, 271 (1930); Lucas v. Am. Code Co., supra at 449. See also Am. Fletcher Corp.

v. United States, supra at 438, where the Court of Appeals for the Seventh Circuit stated:

> Our task [in reviewing the Commissioner's determination that a method of accounting does not clearly reflect income] is limited to determining whether the Commissioner abused his discretion in finding it necessary to change the taxpayer's method of accounting, recalling that a taxpayer has the heavy burden of proving that the Commissioner's determination is plainly arbitrary. [Citations and quotation marks omitted.]

Nor must the Commissioner establish any bad faith on the part of a taxpayer in using a particular method of accounting before requiring that the taxpayer change that method of accounting. Prabel v. Commissioner, supra at 1112.

The fact that the Commissioner possesses broad authority under section 446(b), however, does not mean that the Commissioner may change a taxpayer's method of accounting with impunity. For example, the Commissioner may not change a method of accounting which clearly reflects income to another method that the Commissioner believes reflects income more clearly. Osteopathic Med. Oncology & Hematology, P.C. v. Commissioner, 113 T.C. 376, 381 (1999); Ansley-Sheppard-Burgess Co. v. Commissioner, 104 T.C. 367 (1995); Bay State Gas Co. v. Commissioner, 75 T.C. 410, 417 (1980), affd. 689 F.2d 1 (1st Cir. 1982); see also Wal-Mart Stores, Inc. v. Commissioner, 153 F.3d at 657 (having ruled that inventory shrinkage estimates are not prohibited by the Internal Revenue Code or the regulations

thereunder, the court held that the Commissioner abused his discretion in changing the taxpayer's method of accounting because that method complied with GAAP, was applied consistently for both tax and financial accounting purposes, and produced accurate results). Nor may the Commissioner change an accounting method that clearly reflects income to a method that does not clearly reflect income. See Harden v. Commissioner, 223 F.2d 418 (10th Cir. 1955), revg. and remanding 21 T.C. 781 (1954); Rotolo v. Commissioner, 88 T.C. 1500, 1514 (1987); Brountas v. Commissioner, 74 T.C. 1062, 1069 (1980), supplementing 73 T.C. 491 (1979), vacated and remanded on other grounds 692 F.2d 152 (1st Cir. 1982), affd. in part and revd. in part on other grounds sub nom. CRC Corp. v. Commissioner, 693 F.2d 281 (3d Cir. 1982).

Respondent argues that the Court may find that the Commissioner has abused his discretion under section 446(b) only if the Court first finds that the taxpayer's method of accounting clearly reflects income. We disagree. We find nothing in either the statute or the caselaw that preconditions a finding of an abuse of discretion under section 446(b) on a finding that the taxpayer's method clearly reflects income.[58] In fact, the

[58] The caselaw does, however, establish the converse of respondent's proposition; i.e., the Commissioner lacks the discretion to change a taxpayer's method of accounting if the taxpayer establishes that the method clearly reflects its income. E.g., Peninsula Steel Prods. & Equip. Co. v. Commissioner, 78 T.C. 1029, 1044-1045 (1982); see also Capitol Fed. Sav. & Loan (continued...)

caselaw leads to the opposite conclusion. Ft. Pitt Brewing Co. v. Commissioner, 210 F.2d 6, 10-11 (3d Cir. 1954), affg. 20 T.C. 1 (1953); Russell v. Commissioner, 45 F. 2d 100, 101 (1st Cir. 1930) ("An arbitrary adoption of a substitute method of computing a tax, which does not in fact 'clearly reflect the income' of the taxpayers, cannot be sustained. The commissioner's discretion must be exercised reasonably, on sound grounds." (Citation omitted.)), revg. 12 B.T.A. 56 (1928); see also Harden v. Commissioner, supra at 421; Prabel v. Commissioner, 91 T.C. at 1112; Golden Gate Litho v. Commissioner, T.C. Memo. 1998-184. Compare Helvering v. Taylor, 293 U.S. 507, 514 (1935), where the Supreme Court stated:

> We find nothing in the statutes, the rules of the board or our decisions that gives any support to the idea that the commissioner's determination shown to be without rational foundation and excessive, will be enforced unless the taxpayer proves he owes nothing or, if liable at all, shows the correct amount. * * *

Contrary to respondent's belief, that line of cases firmly establishes that courts do not simply sustain the Commissioner's change of a taxpayer's accounting method merely because the taxpayer's method was found to be erroneous.

When a taxpayer challenges the Commissioner's authority under section 446(b), we inquire whether the accounting method in

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[58](...continued)
v. Commissioner, 96 T.C. 204, 210 (1991) (and cases cited thereat); Prabel v. Commissioner, 91 T.C. 1101, 1112 (1988) (and cases cited thereat), affd. 882 F.2d 820 (3d Cir. 1989)

question clearly reflects income. The answer to this question does not hinge on whether the taxpayer's method is superior to the Commissioner's method, or vice versa. RLC Indus. Co. & Subs. v. Commissioner, 98 T.C. 457, 492 (1992), affd. 58 F.3d 413 (9th Cir. 1995); Wal-Mart Stores, Inc. & Subs. v. Commissioner, T.C. Memo. 1997-1; see also Brown v. Helvering, 291 U.S. 193, 204-205 (1934). Rather, the answer is found by carefully analyzing the unique facts and circumstances of the case. Ansley-Sheppard-Burgess Co. v. Commissioner, supra; Peninsula Steel Prods. & Equip. Co. v. Commissioner, 78 T.C. 1029, 1045 (1982). Although it is not dispositive in our analysis, we believe that a critical fact is whether the taxpayer is consistently using a recognized method of accounting that comports with GAAP and that is prevalent in the industry. See Wilkinson-Beane, Inc. v. Commissioner, 420 F.2d 352, 354 (1st Cir. 1970), affg. T.C. Memo. 1969-79; RLC Indus. Co. & Subs. v. Commissioner, supra at 490; Wal-Mart Stores, Inc. & Subs. v. Commissioner, T.C. Memo. 1997-1.

We recognize that the treatments of an item for financial accounting and Federal income tax purposes do not always mesh, and that an accounting method that is acceptable under GAAP may be unacceptable for Federal income tax purposes because it does not clearly reflect income. Thor Power Tool Co. v. Commissioner, 439 U.S. at 538-544; Am. Auto. Association v. United States, 367 U.S. 687 (1961); see also Hamilton Indus., Inc. v.

Commissioner, 97 T.C. at 128; Sandor v. Commissioner, 62 T.C. 469, 477 (1974), affd. 536 F.2d 874 (9th Cir. 1976). Nevertheless, the regulations under section 446(b) contemplate that a method of accounting "ordinarily" will clearly reflect income when it "reflects the consistent application of generally accepted accounting principles in a particular trade or business in accordance with accepted conditions or practices in that trade or business". Sec. 1.446-1(a)(2), Income Tax Regs.; see also Am. Fletcher Corp. v. United States, 832 F.2d at 439-440. Moreover, as recognized by the Court of Appeals for the Seventh Circuit: "Not only does the applicable regulation make generally accepted accounting principles a pertinent criterion but the courts have also applied that criterion to establish what method clearly reflect[s] income under Section 446 of the Code." Am. Fletcher Corp. v. United States, supra at 439-440 (citations and quotation marks omitted).

V. FNBC's Mark-to-Market Book Method

A. Mark-to-Market Method Acceptable for Section 475

Consistent with the practice of the financial derivatives industry, FNBC used a mark-to-market method to compute its swaps income for financial accounting purposes.[59] We believe that it

[59] We refer to the specific mark-to-market method used by FNBC as "a" mark-to-market method instead of "the" mark-to-market method. As is true in the case of accrual accounting, for which there is more than one accrual method, see sec. 446(c)(2), we

(continued...)

was acceptable for FNBC also to have used its mark-to-market method for purposes of section 475 as long as the method actually arrived at the fair market value of FNBC's swaps. Stated differently, we believe that FNBC's mark-to-market method will clearly reflect its swaps income for Federal income tax purposes if the method was in fact a mark-to-market method.

1. Acceptable in Theory

Mark-to-market accounting has for decades been considered by academia and other commentators to be the most theoretically desirable of all the various systems of taxing income in that mark-to-market accounting consistently measures and levies tax on a taxpayer's economic (or Haig-Simons) income.[60] See Haig, The Concept of Income--Economic and Legal Aspects, The Federal Income Tax (1921), in Readings in the Economics of Taxation 68-69

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[59](...continued)
believe that there may be more than one specific method of accounting that may properly be considered a mark-to-market method under sec. 475(a)(2).

[60] As the Court noted in Collins v. Commissioner, T.C. Memo. 1992-478, affd. 3 F.3d 625 (2d Cir. 1993):

> The Haig-Simons definition of income states that income during a taxable period is properly defined as the sum of (1) the market value of rights exercised in consumption during the period, and (2) the increase in the value of the store of property rights, or wealth, between the beginning and the end of the period. Haig, The Concept of Income--Economic and Legal Aspects, in Readings in the Economics of Taxation 54 (Musgrave & Shoup eds. 1959); Simons, Personal Income Taxation 50 (1938). * * *

(Musgrave & Shoup eds. 1959); Simons, Personal Income Taxation 103 (1938); see also Brown & Bulow, The Definition of Taxable Business Income, in Comprehensive Income Taxation 241, 242-43 (J. Pechman ed. 1977); Shakow, "Taxation Without Realization: A Proposal For Accrual Taxation", 134 U. Pa. L. Rev. 1111 (1986). In the academic and policy literature dealing with the taxation of swaps and other financial products, commentators have regularly mentioned a superiority of mark-to-market accounting in measuring income and the significant defects of competing systems. E.g., Scarborough, "Different Rules for Different Players and Products: The Patchwork Taxation of Derivatives", 72 Taxes 1031, 1049 (1994); Shuldiner, "Consistency and the Taxation of Financial Products", 70 Taxes 781 (1992); Warren, "Financial Contract Innovation and Income Tax Policy", 107 Harv. L. Rev. 460 (1993). As used by tax policymakers, mark-to-market accounting is the paradigm of clear reflection of income to which traditional accrual methods aspire.

Mark-to-market accounting is particularly appropriate for OTC derivatives dealers. Swaps dealers employ mark-to-market accounting for commercial and financial purposes because, they believe, mark-to-market accounting is a superior method of clearly reflecting a swaps dealer's annual income. Swaps dealers rely extensively on hedging techniques to reduce or eliminate their exposure primarily to interest rate changes and other

first-order economic risks. Many of these hedging transactions, such as exchange-traded futures contracts, have maturities that are much shorter than the long-term swaps contracts on a swaps dealer's books, and other hedging transactions (e.g., a long position in physical securities) are regularly liquidated or unwound as new customer swaps change the risk profile of a swaps dealer's book.

Traditional accrual method accounting, which uses the realization principle as the bedrock of its income inclusion rules, can subject a swaps dealer to enormous and unpredictable distortions in the measurement of its income from its book of customer swaps and hedges. The dealer's recognized losses on short-dated hedges, for example, would offset its unrealized gains on its customer swaps as a commercial and economic matter. The unrealized gain, however, would be ignored for tax purposes.

The only practical way to eliminate these large and unpredictable timing distortions arising from a book of short-dated hedges and long-dated customer contracts is to adopt a mark-to-market method of tax accounting. Through the recognition of all economic fluctuations in value in the swaps dealer's book of customer positions and hedges, a mark-to-market method assures that a dealer is taxed each year on its true annual change in net worth arising from its dealer activities. In fact, many swaps dealers had been advocates of comprehensive

mark-to-market tax accounting long before the adoption of section 475, and securities and commodities dealers (and, since the birth of the industry, swaps dealers) have for decades maintained their books on a mark-to-market basis for commercial and financial purposes. See, e.g., A.R.M. 135, 5 C.B. 67 (1921), and A.R.M. 100, 3 C.B. 66 (1920), both of which permitted commodity dealers to adopt a comprehensive mark-to-market accounting system for their open hedge contracts. See also Rev. Rul. 74-223, 1974-1 C.B. 23 (updates and restates the conclusions of A.R.M. 135, supra).

2. Acceptable in Practice

The use of mark-to-market accounting for taxpayers in positions analogous to that of FNBC has been recognized for Federal tax purposes for many years.

a. Market Valuation of Inventories

Since at least 1919, taxpayers have been permitted to value their inventories at the lower of cost or market. T.B.R. 48, 1 C.B. 47; see also O.D. 8, 1 C.B. 56 (confirming that securities dealers, like other taxpayers, may value their inventories at lower of cost or market). A method of accounting is acceptable for inventory accounting if it: (1) Conforms as nearly as may be to the best accounting practice in the trade or business and (2) most clearly reflects income. Sec. 471(a); sec. 1.471-2(a)(1) and (2), Income Tax Regs.; see also Thor Power Tool Co.

v. Commissioner, 439 U.S. at 531-532; Hamilton Indus. Inc. v. Commissioner, 97 T.C. at 130.

From 1958 until the date that it was superseded by section 475, section 1.471-5, Income Tax Regs., specifically authorized dealers in securities to value securities inventories at (1) cost, (2) market, or (3) lower of cost or market, so long as the method employed by the dealer for tax purposes was also "the basis upon which his accounts are kept". The requirement that a dealer's tax accounting method for inventories conform to the method used to maintain the dealer's internal accounts and to the accounting principles of the industry meant, in practice, that the Commissioner and dealers alike expected that the same valuations would be employed consistently for tax and for nontax accounting purposes. In consequence, although many cases involve disputes over the relevant "market" for purposes of applying, for example, lower-of-cost-or-market accounting, e.g., Thor Power Tool Co. v. Commissioner, 439 U.S. 522 (1979), we are unaware of any decided case in which a taxpayer's good faith calculations of the actual fair market values of inventories, employed consistently for tax and nontax accounting purposes, have been challenged by the Commissioner.

b. Comprehensive Mark-to-Market Accounting

The same tradition of consistency holds true for comprehensive mark-to-market accounting outside the context of

inventory methods. For example, in Rev. Rul. 74-223, supra, the Commissioner addressed futures contracts that commodities dealers entered into as hedges. The Commissioner relied on the nontax purposes for which the taxpayers' mark-to-market method of accounting was employed and concluded that the method clearly reflected income.

Before the enactment of section 475, swaps dealers all confronted the short-dated-hedges/long-dated-swaps timing distortions discussed above. In response, many dealers voluntarily adopted comprehensive mark-to-market tax accounting, and swaps dealers in some cases lobbied Congress to adopt rules confirming mark-to-market as a valid tax accounting method for swaps dealers. E.g., Letter to Internal Revenue Service from Saul Rosen, Salomon Brothers Inc., dated December 6, 1991, in 91 Tax Notes Today 255-37 (Dec. 17, 1991); Letter to Internal Revenue Service from Cynthia Beerbower, on Behalf of Nine Interest Rate Cap Dealers, dated March 4, 1988, in 88 Tax Notes Today 69-29 (Mar. 28, 1988). See generally Kleinbard & Evans, "The Role of Mark-to-Market Accounting in a Realization-Based Tax System", 75 Taxes 788, 798-799 (1997). The technical reason for any concern was that, while swaps are directly analogous to traditional securities inventories, swaps arguably are not directly inventoriable, because once entered into, they are not literally held for resale to other customers.

In 1991, the Treasury Department responded to this dealer-driven request to clarify the scope of mark-to-market accounting by proposing section 1.446-4, Proposed Income Tax Regs., 56 Fed. Reg. 31361 (July 10, 1990). These proposed regulations would have allowed swaps dealers to place their OTC derivatives businesses onto mark-to-market systems. The proposed rules would have conditioned the availability of mark-to-market accounting for a swaps dealer on the dealer's employing the same valuations for tax purposes as it employed in its financial statements. The proposed regulations provided in relevant part:

> (a) Mark-to-market election. A dealer or trader in derivative financial instruments may elect to account for those instruments on its income tax return at market value. A dealer or trader in derivative financial instruments may elect to account for a derivative financial instrument at market value only if:
>
> (1) The dealer or trader purchased or entered into the derivative financial instrument either--
>
> (i) In its capacity as a dealer or trader; or
>
> (ii) As a hedge of another financial instrument that the dealer or trader holds or intends to hold in its capacity as a dealer or trader;
>
> (2) The dealer or trader values all of the derivative financial instruments that it holds in its capacity as a dealer or trader (or as hedges of such instruments) at market for purposes of computing net income or loss on its applicable financial statement (as defined in § 1.56-1(c)), and the dealer or

> trader uses the same method of valuing those instruments on its income tax return;
>
> (3) The dealer or trader and all persons related to the dealer or trader within the meaning of sections 267(b) and 707(b)(1) account for the securities and commodities that they hold in their capacity as dealers or traders (or as hedges or such securities or commodities) on their income tax returns either on the basis of cost or on the basis of market value, but not at the lower of cost or market value;
>
> (4) A description of the methods employed to value each class of derivative financial instruments is attached to the dealer's or trader's income tax return for each year; and
>
> (5) The method elected under this section is used consistently in subsequent years, unless another method is authorized by the Commissioner pursuant to a written request under § 1.446-1(e) of the regulations. [Id.]

Whereas the enactment of section 475 rendered moot any final action on the relevant part of these proposed regulations, the Treasury Department, in the end, never did finalize these rules.

The legislative history of section 475 itself indicates that Congress anticipated that a taxpayer could use mark-to-market accounting to comply with section 475. The history of section 475 establishes that Congress was well aware of how mark-to-market accounting operated in practice in the swaps industry and that Congress constructed section 475 in light of that current practice. In fact, the first legislative proposal for what became section 475, contained in the President's Budget Proposal,

see Department of the Treasury, General Explanation of the President's Budget Proposals Affecting Receipts 89-90 (Jan. 30, 1992), overlapped the G-30's preparation of the G-30 report and was released only a few months after the Treasury Department published section 1.446-4, Proposed Income Tax Regs., supra, and released its 1991 report, Modernizing the Financial System: Recommendations for Safer, More Competitive Banks (Feb. 1991).

In describing the reasons for section 475, both Congress and the President emphasized that the change in tax accounting rules would simply move tax accounting to the already accepted financial accounting treatment. H. Rept. 103-111, supra at 661, 1993-3 C.B. at 237 ("Inventories of securities generally are easily valued at year end, and, in fact, are currently valued at market by securities dealers in determining their income for financial statement purposes."); see also Department of the Treasury, General Explanation of the President's Budget Proposals Affecting Receipts 36 (Feb. 25, 1993); Department of the Treasury, General Explanation of the President's Budget Proposals Affecting Receipts 89-90 (Jan. 30, 1992). Congress also expressed its expectation "that the Treasury Department will authorize the use of valuation methods that will alleviate unnecessary compliance burdens for taxpayers and clearly reflect income for Federal income tax purposes", H. Conf. Rept. 103-213, supra at 616, 1993-3 C.B. at 494, thus implying that the

Commissioner should defer to the taxpayer's normal financial accounting valuation, which in the case of a swaps dealer was generally the method that was recommended by the G-30 report. This implication that using financial accounting methods would "alleviate unnecessary compliance burdens" is buttressed by another part of the legislative history of section 475. This other part, which relates to the identification of certain securities as hedges (and not the fair market valuation of securities), indicates that the use of financial accounting methods would be an adequate and efficient method for applying mark-to-market rules. The other part states:

> It is anticipated that the identification rules with respect to hedges will be applied in such a manner as to minimize the imposition of additional accounting burdens on dealers in securities. For example, it is understood that certain dealers in securities use accounting systems which treat certain transactions entered into between separate business units as if such transactions were entered into with unrelated third parties. It is anticipated that for the purposes of the mark-to-market rules, such an accounting system generally will provide an adequate identification of hedges with third parties. [H. Rept. 103-111, supra at 664, 1993-3 C.B. at 240.]

B. Standard of the Mark-to-Market Method Is Not Reasonableness

Petitioner argues that FNBC was allowed to use its specific mark-to-market method for purposes of section 475 because, petitioner asserts, FNBC's method was "reasonable". We disagree with petitioner that the reasonableness of a particular method of accounting is the linchpin of an acceptable method under section

475. Contrary to petitioner's assertion, the mere fact that FNBC's swap valuations were recurring and business in nature does not mean that FNBC was free to use for purposes of section 475 whatever "reasonable" method it decided was proper. We disagree with petitioner when it asserts that an established business judgment rule requires that this Court, for Federal income tax purposes, defer to FNBC's choice of either (or both) an accounting method or a valuation method for nontax purposes. The cases upon which petitioner relies, namely, as to a method of accounting, Photo-Sonics, Inc. v. Commissioner, 357 F.2d 656 (9th Cir. 1966), affg. 42 T.C. 926 (1964); Osteopathic Med. Oncology & Hematology, P.C. v. Commissioner, 113 T.C. 376 (1999); Auburn Packing Co. v. Commissioner, 60 T.C. 794 (1973); and Wal-Mart Stores Inc. v. Commissioner, 153 F.3d 650 (8th Cir. 1998), and, as to a valuation method, Vinson & Elkins v. Commissioner, 7 F.3d 1235 (5th Cir. 1993), affg. 99 T.C. 9 (1992); Portland Manufacturing Co. v. Commissioner, 56 T.C. 58 (1971); and Utah Med. Ins. Association v. Commissioner, T.C. Memo. 1998-458, do not adequately support that argument. In this regard, we do not question the reasonableness of FNBC's business judgment, nor do we substitute our business judgment for its. We simply analyze whether the method of accounting resulting from FNBC's exercise of business judgment clearly reflects FNBC's swaps income so as to be acceptable under sections 446(b) and 475.

Nor does the complexity of an issue, or the fact that an issue may be novel, play any part in our determination of the proper standard of review. Many determinations of fair market value involve novel and/or complex calculations. Moreover, as generally agreed upon by the experts, the valuation issue at hand as applied to plain vanilla swaps, the principal financial derivative in issue, is not that complex to a person familiar with the industry.

We also disagree with petitioner that the lack of regulations on the valuation of financial derivatives entitles it to prevail under a reasonableness standard. Petitioner notes correctly that Congress authorized the Treasury Department to prescribe regulations under which financial derivatives would be valued and that the Treasury Department has yet to do so. Petitioner also notes correctly that both this Court and the Court of Appeals for the Seventh Circuit have previously criticized the Treasury Department for failing to prescribe congressionally mandated regulations. E.g., Pittway Corp. v. United States, 102 F.3d 932, 935-36 (7th Cir. 1996); First Chicago Corp. v. Commissioner, 842 F.2d 180, 181-182 (7th Cir. 1988), affg. 88 T.C. 663 (1987); Estate of Maddox v. Commissioner, 93 T.C. 228, 233-234 (1989); First Chicago Corp. v. Commissioner, 88 T.C. at 676-677; Occidental Petroleum Corp. v. Commissioner, 82 T.C. 819, 829 (1984). In each of those cases,

however, the statute itself clearly directed the Treasury Department to prescribe specific regulations as to the matter in question in order to effect congressional intent. Here, by contrast, we find in the statute no clear direction from Congress to the Treasury Department to prescribe rules valuing financial derivatives, let alone a direction to prescribe those rules as a precondition to effecting congressional intent as to section 475. The fact that regulations have not been issued on the valuation matter at hand does not provide FNBC with a basis to thwart Congress's mandate to value swaps at fair market value. Intl. Multifoods Corp. v. Commissioner, 108 T.C. 579, 587 (1997) (and cases cited thereat).

Nor do we agree with petitioner that the legislative history of section 475 indicates that taxpayers are allowed to implement under section 475 any "reasonable" method until the Treasury Department exercises its regulatory authority.[61] We trace the history of section 475 to the Treasury Department's concern that certain existing tax rules applicable to securities dealers appeared overly favorable when compared with GAAP. The specific concern, as stated in the President's Budget Proposal, see Department of the Treasury, General Explanation of the President's Budget Proposals Affecting Receipts 89-90 (Jan. 30,

[61] Petitioner relies erroneously on First Chicago Corp. v. Commissioner, 88 T.C. 663 (1987), affd. 842 F.2d 180 (7th Cir. 1988), for a contrary proposition.

1992), was that, for GAAP purposes, dealers had to mark to market their inventories of marketable securities, while for tax purposes they could (and did) use lower of cost or market or other rules that were considerably more favorable in that they tended to reduce taxable income. Under the caption "Conform Book and Tax Accounting for Securities Inventories/Reasons for Change," that explanation noted, at 89:

> Inventories of marketable securities are easily valued at year end, and in fact are currently valued by securities dealers in computing their income for financial statement purposes and in adjusting their inventory to an LCM [lower of cost or market] basis for Federal income tax purposes. The cost method and the LCM method tend to understate taxable income compared to the market method that securities dealers use to report their income to shareholders and creditors. The market method represents the best accounting practice in the trade or business of dealing in securities and is the method that most clearly reflects the income of a securities dealer.

Later, as the proposal that became section 475 wound its way through the legislative process,[62] its scope was expanded to include not only marketable securities but also instruments such as swaps and other financial derivatives for which no active secondary market existed. During this process, Congress knew that GAAP did not explicitly require mark-to-market accounting

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[62] The first legislative precursor of sec. 475 was sec. 372 of the Economic Growth Act of 1992 (H.R. 4150). H. Rept. 102-4150 (1991). H.R. 4150 was not enacted. However, sec. 3001 of the Revenue Bill of 1992, H.R. 11, 102d Cong. (1992), contained similar language. H.R. 11 passed both houses of Congress but was vetoed by the President.

for nonmarketable securities. Congress also was told that, in the case of instruments which did not have an active secondary market, the implementation of a mark-to-market approach would be a complex process. E.g., ABA Members Comment on Mark-to-Market Accounting for Securities Dealer, dated September 10, 1992, in 92 Tax Notes Today 209-28 (Oct. 16, 1992). The compromise Congress struck in enacting section 475 was (1) to require mark-to-market accounting for dealer "securities," regardless of their marketability, and (2) to ask the Treasury Department to prescribe regulations which would authorize valuation methods which were more taxpayer favorable from a compliance point of view. See H. Conf. Rept. 103-213, supra at 616, 1993-3 C.B. at 494. Given that the Treasury Department has yet to prescribe these regulations, we believe it only natural to conclude that a taxpayer such as FNBC must use under section 475 a method of accounting that accurately marks its financial derivatives to their market price as of the requisite valuation date.

Petitioner also argues that FNBC's methodology in valuing its swaps has been recognized by nearly everyone as the best approach for valuing financial derivatives. Petitioner contends that FNBC's methodology was longstanding and systematic and that each element was developed for important commercial and nontax financial reasons. Petitioner contends that FNBC's swaps were valued at the same amounts in its general ledger, its financial

statements, its tax returns, and its internal monthly management reports. Petitioner contends that each element of the methodology was consistent with GAAP and the recommendations of the leading authorities, and that FNBC's approach was in the mainstream of industry practice for large dealers during the relevant years. Petitioner observes that: (1) The G-30 report recommends that midmarket values should be adjusted for credit risk, administrative cost, and other items and (2) the OCC (through BC-277) required that all national banks adjust their values for credit, administrative costs, and other items.

We disagree with petitioner that FNBC's methodology in valuing its swaps has been recognized by nearly everyone as the best approach for valuing financial derivatives. In support of this argument, petitioner relies mainly (if not solely) on its experts' opinions that FNBC computed its adjustments in the same manner as did the rest of the industry. We are unpersuaded by these opinions. In the main, they conflict with the credible evidence in the record including, for example, the testimony of Duffie to the effect that (1) the industry did not compute its adjustments in any one manner and (2) FNBC's use of an 80-percent confidence level as one data point was the only time that he had heard of such an approach. Duffie also testified that FNBC's practices either were inconsistent with industry practice or were

unknown to him to be the industry practice.[63] Duffie's inability to state unequivocally that FNBC's practices were consistent with industry practice is particularly telling in view of his position and status in the very field at issue in this case.

As to the G-30 report, it did not show any general consensus on an industry standard. In fact, the G-30 report leads to a contrary conclusion that there was very little in the way of specific industry practice. See also BC-277, supra:

> The best approach is to value derivatives portfolios based on mid-market levels less adjustments. Adjustments should reflect expected future costs such as unearned credit spreads, close-out costs, investing and funding costs, and administrative costs. Most limited end-users (and some traders) may find it too costly to establish systems that accurately measure the necessary adjustments for mid-market pricing. In such cases, banks may price derivatives based on bid and offer levels, provided they use the bid side for long positions and the offer side for short positions. This procedure will ensure that financial derivatives positions are not overvalued.

In this regard, the G-30 survey indicates that, during the relevant years, there was no consistency among dealers on the use

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[63] For example, with respect to expected exposure, Duffie was unable to state that FNBC's use of a maximum exposure methodology was consistent with industry practice. In fact, he pointed to FNBC as the "one data point" for use of an 80-percent confidence level. With respect to the question of whether FNBC used a "system" that was consistent with industry practice, Duffie stated that there was no consistent industry practice. Duffie also opined that there was little standardization in the techniques used by banks to value financial derivatives and little consistency among bank financial derivatives dealers in determining the amount of adjustments to be made to midmarket values of financial derivatives during the early 1990s.

of midmarket values with or without adjustment. The July 30, 1993, survey reveals that (1) 49 percent of the respondents thereto used midmarket values for valuation and (2) of the respondents thereto that used midmarket values with adjustments, 44 percent of them adjusted for credit and 54 percent adjusted for administrative costs. The March 1994 survey reveals that (1) 31 percent of the respondents thereto still used midmarket values without adjustments a year after the publication of the G-30 report and (2) of the respondents thereto using midmarket values with adjustment, 32 percent adjusted for credit and 24 percent adjusted for administrative costs.

Nor does the G-30 report contain a specific standard as to the precise manner in which credit adjustments to midmarket values must be computed. To the extent that the G-30 report sets out general guidelines (e.g., recommendations as to netting, dynamic computation of credit risk, expected versus maximum exposure), FNBC's methodology conflicts with each of these guidelines. In fact, FNBC's failure to take netting into account deviated in significant respects from the industry's consensus on that subject. The CFTC viewed rationing via procedures such as netting as widespread throughout the industry, and Duffie noted that market participants placed significant emphasis on the use of netting agreements. Duffie also concluded that the distorting

effect of FNBC's failure to take netting into account was large and systematic.

VI. Application of Fair Market Value

A. Overview

As just discussed, we will respect FNBC's mark-to-market method for Federal income tax purposes if it meets the fair market value requirements of section 475. FNBC's application of its mark-to-market method will meet those requirements only if the method arrives at the fair market value of FNBC's swaps and does so as of the applicable valuation dates.

The term "fair market value" is used throughout the Internal Revenue Code, but has never been defined by Congress.[64] The

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[64] As the Court noted in Estate of Auker v. Commissioner, T.C. Memo. 1998-185:

> Disputes over valuation fill our dockets, and for good reason. We approximate that 243 sections of the Code require fair market value estimates in order to assess tax liability, and that 15 million tax returns are filed each year on which taxpayers report an event involving a valuation-related issue. It is no mystery, therefore, why valuation cases are ubiquitous. Today, valuation is a highly sophisticated process. We cannot realistically expect that litigants will, will be able to, or will want to, settle, rather than litigate, their valuation controversies if the law relating to valuation is vague or unclear. We must provide guidance on the manner in which we resolve valuation issues so as to provide a roadmap by which the Commissioner, taxpayers, and valuation practitioners can comprehend the rules applicable thereto and use these rules to resolve their differences. Clearly articulated rules will also assist appellate courts in their review of our decisions in the event of an

(continued...)

Treasury Department has defined the term for Federal income tax purposes as "the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell and both having reasonable knowledge of relevant facts." Sec. 1.170A-1(c)(2), Income Tax Regs.; see also sec. 1.704-4(a)(3), Income Tax Regs. (similar definition). See generally Rev. Rul. 59-60, sec. 2.02, 1959-1 C.B. 237. The Treasury Department has prescribed a similar definition for Federal estate tax and gift tax purposes. See sec. 20.2031-1(b), Estate Tax Regs.; sec. 25.2512-1, Gift Tax Regs.

Petitioner argues that FNBC's valuations of its swaps met the fair market value requirement of section 475 in that they were the fair value of the swaps for purposes of financial accounting. According to petitioner, FNBC's application to its swaps of the standards governing fair value produced the same values which would have resulted by applying to those swaps the rules for determining fair market value. In other words, petitioner argues, under the facts and circumstances of this case, the concept of fair market value is the same as the concept of fair value. We disagree. We conclude that the fair value of FNBC's swaps as reported for financial accounting purposes is not

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[64](...continued)
appeal.

the same as the swaps' fair market value for purposes of section 475. Cf. Knight v. Commissioner, 115 T.C. 506, 516 n.6 (2000) (in passing on the fair market value of certain property, the Court declined to consider testimony of an expert who opined solely as to the "fair value" of that property).

B. History of the Term "Fair Market Value"

We begin our analysis of the term "fair market value" by looking at its history. We trace the first use of that term to the case of United States v. Fourteen Packages of Pins, 25 F. Cas. 1182 (E.D. Pa. 1832). There, the issue was whether fourteen packages of pins were shipped from England to the United States with a "false valuation" on the invoice which, if they were, was illegal under the Congressional Act of May 28, 1830, ch. 147, sec. 4, 4 Stat. 410. The court ruled that fair market value, market value, current value, true value, and actual value all require the same inquiry; i.e., what is the true value of the item in question? United States v. Fourteen Packages of Pins, supra at 1190.

The term "fair market value" appears to have first been used for Federal income tax purposes as part of the Revenue Act of 1918, ch. 18, 40 Stat. 1057. Section 202(b), 40 Stat. 1060, of that act provides that for purposes of determining gain or loss on the exchange of property, the value of any property received equals the cash value of its fair market value. The act offered

no further explanation of the meaning of the term "fair market value", and the committee reports underlying the act were equally silent, using the term without explaining it. H. Rept. 767, 65th Cong., 2d Sess. (1918), 1939-1 C.B. (Part 2) 86, 88.

Over the years, judicial tribunals have defined the term by enunciating certain standards which must be considered in passing on a determination of fair market value. First, in 1919, the Advisory Tax Board (ATB) recommended an interpretation of the term "fair market value". T.B.R. 57, 1 C.B. 40 (1919). There, the ATB stated that the term refers to a fair value that both a buyer and a seller, who are acting freely and not under compulsion and who are reasonably knowledgeable about all material facts, would agree to in a market of potential buyers at a fair and reasonable price. Id. Six years later, in 1925, the Board of Tax Appeals (Board) stated that the buyer is considered to be a willing buyer and that the seller is considered to be a willing seller. Hewes v. Commissioner, 2 B.T.A. 1279, 1282 (1925); accord United States v. Cartwright, 411 U.S. 546, 550-551 (1973) ("The willing buyer-willing seller test of fair market value is nearly as old as the federal income, estate, and gifts taxes themselves"). The Board also stated in that case that fair market value must be determined without regard to any event that occurs after the date of valuation. Hewes v. Commissioner, supra at 1282; accord First Natl. Bank v. United States, 763 F.2d 891,

894 (7th Cir. 1985) ("a rule has developed that subsequent events are not considered in fixing fair market value, except to the extent that they were reasonably foreseeable at the date of valuation").

Two years after Hewes, the Board adopted the ATB's recommendation that fair market value be determined by viewing neither the willing buyer nor the willing seller as being under a compulsion to buy or to sell the item subject to valuation. Hudson River Woolen Mills v. Commissioner, 9 B.T.A. 862, 868 (1927). After that case, the Board observed that neither the willing buyer nor the willing seller was an actual person but was viewed as a hypothetical person mindful of all relevant facts. Natl. Water Main Cleaning Co. v. Commissioner, 16 B.T.A. 223 (1929); accord Estate of Bright v. United States, 658 F.2d 999, 1005-1006 (5th Cir. 1981) (clarifies that the views of both a hypothetical buyer and a hypothetical seller must be taken into account, and that the characteristics of each hypothetical person may differ from the personal characteristics of the actual seller or a particular buyer); Kolom v. Commissioner, 644 F.2d 1282, 1288 (9th Cir. 1981) (same), affg. 71 T.C. 235 (1978); Pabst Brewing Co. v. Commissioner, T.C. Memo. 1996-506 (focusing too much on the view of one hypothetical person, to the neglect of the view of the other, is contrary to a determination of fair market value); cf. Estate of Andrews v. Commissioner, 79 T.C.

938, 956 (1982) (hypothetical sale should not be constructed in a vacuum isolated from the actual facts that affect value). The Board stated that the fair market value of an item is determined from a hypothetical transaction between a "hypothetical willing seller and buyer, who are by judicial decree always dickering for price in the light of all the facts, [and] can not be credited with knowing what the future will yield." Natl. Water Main Cleaning Co. v. Commissioner, supra at 239; accord Estate of Watts v. Commissioner, 823 F.2d 483, 486 (11th Cir. 1987) (the hypothetical buyer and the hypothetical seller each seek to maximize his or her profit from any transaction involving the property), affg. T.C. Memo. 1985-595; Estate of Curry v. United States, 706 F.2d 1424, 1428 (7th Cir. 1983) (hypothetical willing buyer and the hypothetical willing seller are presumed to be dedicated to achieving the maximum economic advantage).

In 1936, the U.S. Supreme Court clarified as to the definition of fair market value that fair market value is determined by viewing the item under consideration on the basis of its best use.[65] St. Joseph Stock Yards Co. v. United States, 298 U.S. 38, 60 (1936). There, the Court held that two adjacent pieces of land should be valued the same per square foot

[65] The notion of "highest and best use" was later recognized by Congress as a requirement of fair market value. H. Conf. Rept. 94-1380, at 5 (1976), 1976-3 C.B. (Vol. 3) 735, 741.

regardless of the fact that one was being used in its highest and best use while the other was not being used at all.

In summary, the primarily judicially developed standards as to fair market value are: (1) The buyer and the seller are a willing buyer and a willing seller; (2) neither the willing buyer nor the willing seller is under a compulsion to buy or to sell the item in question; (3) the willing buyer and the willing seller are both hypothetical persons; (4) the hypothetical willing buyer and the hypothetical willing seller are both reasonably aware of all relevant facts involving the item in question; (5) the item in question is valued at its highest and best use; and (6) the item in question is valued without regard to events occurring after the valuation date to the extent that those subsequent events were not reasonably foreseeable on the date of valuation.

C. Determination of Fair Market Value

A determination of fair market value is a factual inquiry in which the trier of fact must weigh all relevant evidence of value and draw appropriate inferences. Commissioner v. Scottish Am. Inv. Co., 323 U.S. 119, 123-125 (1944); Helvering v. Natl. Grocery Co., 304 U.S. 282, 294 (1938); Symington v. Commissioner, 87 T.C. 892, 896 (1986). Generally, three approaches are used to determine the fair market value of property consistent with the judicially espoused standards. These approaches are: (1) The

market approach, (2) income approach, and (3) the asset-based approach. The question of which of these approaches to apply in a given case is a question of law. Powers v. Commissioner, 312 U.S. 259, 260 (1941).

1. Market Approach

The market approach requires a comparison of the subject property with similar property sold in an arm's-length transaction in the same timeframe. The market approach values the subject property by taking into account the sale prices of the comparable property and the differences between the comparable property and the subject property. Estate of Spruill v. Commissioner, 88 T.C. 1197, 1229 n.24 (1987); Wolfsen Land & Cattle Co. v. Commissioner, 72 T.C. 1, 19-20 (1979). The market approach measures value properly only when the comparable property has qualities substantially similar to those of the subject property. Wolfsen Land & Cattle Co. v. Commissioner, supra at 19-20.

2. Income Approach

The income approach relates to capitalization of income and discounted cashflow. This approach values property by computing the present value of the estimated future cashflow as to that property. The estimated cashflow is ascertained by taking the sum of the present value of the available cashflow and the present value of the residual value.

3. Asset-Based Approach

The asset-based approach generally values property by determining the cost to reproduce it.

D. Fair Market Value Compared With Fair Value

1. Meaning of the Term "Fair Value"

We understand the term "fair value" to have two separate and distinct meanings, the first under GAAP and the second under State law.

a. GAAP Purposes

As to the first meaning, the term "fair value" is often the standard followed by accountants in their preparation of financial statements. Financial statements are used not only by the clients for whom they are prepared but also by lending banks, buyers of businesses, the SEC, and countless others. For purposes of financial accounting, SFAS No. 107 defined the fair value of a financial instrument as:

> the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale. If a quoted market price is available for an instrument, the fair value to be disclosed for that instrument is the product of the number of trading units of the instrument times that market price.

b. State Law Purposes

As to its second meaning, most State statutes usually define the term for purposes of valuing dissenting stockholders' appraisal rights and, sometimes, for purposes of valuing property

in cases of marital dissolution. In Illinois, for example, the Illinois legislature has defined the fair value of a noncash asset as:

> (A) the amount at which that asset could be bought or sold in a current transaction between arms-length, willing parties;
>
> (B) quoted market price for the asset in active markets should be used if available; and
>
> (C) if quoted markets prices are not available, a value determined using the best information available considering values of like assets and other valuation methods * * *. [215 Ill. Comp. Stat. Ann. 5/179E-15 (West Supp. 2002).]

In passing on the definition of fair value, the Illinois courts have held that the fair value of an item may be the same as its fair market value, but that the fair value of an item is not always its fair market value. Institutional Equip. & Interiors, Inc. v. Hughes, 562 N.E.2d 662, 667-668 (Ill. App. Ct. 1990); see also Laserage Tech. Corp. v. Laserage Labs., Inc., 972 F.2d 799, 805 (7th Cir. 1992).

2. Difference Between Fair Market Value and Fair Value

Given the applicability to these cases of SFAS No. 107, we believe that the accountant's definition of "fair value" is more pertinent to these cases than the State law definition. Accordingly, we apply that definition to our analysis. The concepts of "fair market value" and "fair value" are different primarily in three regards. First, whereas fair market value requires that the willing buyer and willing seller be reasonably

aware of all facts relevant to the property to be valued, fair value requires no such knowledge. Fair value simply anticipates that the "willing parties" be "willing".

Second, whereas fair market value requires that neither the willing buyer nor the willing seller be under a compulsion to buy or to sell the property in question, fair value merely requires that the property not be the subject of a forced sale or liquidation. At first blush, these requirements appear to be the same. As noted correctly by Sziklay, however, as to the phrase "forced or liquidation sale", "it simply is not clear if that condition attaches to both the buyer and the seller in this definition. Fair market value for tax purposes must give equal consideration to the hypothetical buyer and seller--neither can be under compulsion." In addition, a liquidation is not the same thing as being under a compulsion to buy or to sell. One can liquidate voluntarily.

Third, the words contained in the Treasury Department's definition of the term "fair market value" have been glossed judicially to impute certain attributes into the valuation test. For example, as discussed above, the willing buyer and willing seller are both considered to be hypothetical rather than actual persons. In addition, we learn from the jurisprudence underlying the term "fair market value" that the property to be valued must be valued by viewing the property in its highest and best use.

We find neither of these requirements in the definition of "fair value" as set forth in SFAS No. 107. Nor are we able to conclude on the basis of the record that either of these requirements has been imputed into that definition under SFAS No. 107, or, in fact, into the accountant's definition of that term in general.[66]

Our understanding of the difference between these two terms is further reinforced by additional testimony from Sziklay. He concluded that

> Fair market value for income tax reporting purposes is related to, but not the same as, fair value for financial reporting purposes which is directed to the needs of financial statement users. The former is encompassed in the latter. I have not read anything in the trial record, expert reports, the Internal Revenue Code, Treasury regulations, Revenue Rulings, Revenue Procedures, federal tax cases, etc. to suggest that fair market value for income tax purposes must conform to fair value for financial reporting purposes for the purpose of marking-to-market * * * [FNBC's] portfolios of derivative securities.

He testified further that "the term, fair value, for accounting purposes is a broader term than fair market value for tax

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[66] For purposes of financial accounting, the term "fair value" denotes primarily:

> 1. Value determined by bona fide bargain between well-informed buyers and sellers; the price for which an asset could be bought or sold in an arm's-length transaction between unrelated parties; value in a sale between a willing buyer and a willing seller, other than in a forced or liquidation sale.
> 2. An estimate of such value, in the absence of sales or quotations (e.g., the approximation of exchange price in nonmonetary transactions). [Kohler's Dictionary for Accountants 211 (6th ed. 1983).]

purposes. It could include a value which does not necessarily meet the strict requirements of the Internal Revenue Code, U.S. Treasury regulations, etc."

Upon the cross-examination of petitioner's counsel, Sziklay did testify that the elements of "fair market value" and "fair value", when the definitions of the terms are construed literally, were inconsequential when applied to FNBC's swaps. Sziklay testified initially, however, that the elements of those two terms were different as applied to those swaps. We agree with Sziklay's initial testimony. We apply the term "fair market value" as interpreted by the judiciary to include requirements which are found outside of that term's literal definition (e.g., requirements of hypothetical parties and highest and best use). We also note that Sziklay's later testimony was tangential to his testimony concerning the valuation of FNBC's swaps as if they were hypothetical swaps each of which was between the actual counterparty and (instead of FNBC) a hypothetical person. As discussed infra p. 211, we value the swaps held by FNBC on the basis of their actual attributes rather than viewing each of the swaps as a hypothetical swap entered into between the actual counterparty and (instead of FNBC) a hypothetical person.

3. Conclusion

For the foregoing reasons, we conclude that the fair value of FNBC's swaps does not equal their fair market value.[67]

VII. Property To Be Valued

We consider next the specific property that must be valued. Each piece of property is an interest rate swap to which FNBC is a party.[68] Each swap's benefit is realized by the party thereto that is entitled to receive the higher interest rate on the valuation date. Each swap's detriment is suffered by the party thereto that is required to pay that higher rate.

Given the bilateral nature of a swap, we believe that the fair market value of an interest rate swap is best ascertained by

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[67] As to the specifics of FNBC's swaps income methodology, and the question of whether that method arrived at the fair market value of FNBC's swaps for Federal income tax purposes, Sziklay testified credibly that he was unable to answer that question. He opined that the adjusted midmarket method is a customized version of the discounted cashflow method, and that a proper implementation of the adjusted midmarket method may result in a fair market value consistent with the meaning of that term for Federal income tax purposes. He testified, however, that FNBC's sole use of its adjusted midmarket method to value its swaps was inconsistent with the general practice of the business appraisal profession to use more than one approach to value an asset. He specifically took exception to the fact that petitioner produced no evidence of ever using the market comparables approach to valuation, even as to a sample of its financial derivative transactions.

[68] We hereinafter limit our analysis to the treatment of interest rate swaps. We believe on the basis of our understanding of the other financial derivatives at issue that the tax treatment of those derivatives follows naturally from our decision as to FNBC's interest rate swaps. If we are mistaken on that point, then either party may bring this to our attention.

determining the difference in the value of each of the swap's legs viewing the legs as if each of them was a bond bearing the same attributes (e.g., identification of issuer, maturity, interest rate) as the corresponding leg. In short, we view the fixed leg as a bond the issuer of which is the fixed-rate payor and the interest rate of which equals the fixed rate payable on the swap. We view the floating leg as a bond the issuer of which is the floating-rate payor and the interest rate of which is the floating rate of interest. We consider the fair market value of each swap to equal the difference between: (1) The price at which a hypothetical willing buyer and a hypothetical willing seller would agree to buy/sell the fixed leg and (2) the price at which a hypothetical willing buyer and a hypothetical willing seller would agree to buy/sell the floating leg.

We learn from Sziklay, generally speaking, that an interest rate swap is analogous to two bonds.[69] We learn from Duffie, speaking more specifically, that a swap is simply an exchange of a fixed-rate bond for a floating-rate bond of the same maturity, both bonds bearing a face value equal to the notional principal amount of the swap. We further learn from Duffie that a swap's

[69] Sziklay testified that the credit ratings of the issuers must be taken into account when valuing the bonds. We agree. As to each leg, its value to the payee equals the present value of the payments due thereunder. Obviously, in determining this value, one must take into account the creditworthiness of the payor/issuer.

value may be derived by comparing the difference in the values of the fixed-rate and floating-rate bonds. Whereas Duffie qualifies his position as to value by stating that adjustments may have to be made to the difference in the values of the two bonds, e.g., to reflect credit risk, we reflect his qualifications by viewing the two bonds as described above.

We view each of FNBC's swaps as a swap between the two actual counterparties, one of which is FNBC, and we determine the fair market value of each swap as if its legs were bonds which were bought and sold by hypothetical persons. We believe that this manner of valuation is most consistent with the requirement of section 475(a) and (c)(2)(D) that the property considered sold as of the last business day is the "contract" rather than the rights or liabilities of only one of the parties to that contract. We also believe that this manner of valuation is most consistent with the well-established willing buyer/willing seller test, which considers the "willing seller" of FNBC's swaps to be a hypothetical seller rather than FNBC itself. See Estate of Curry v. United States, 706 F.2d at 1428; Estate of Bright v. United States, 658 F.2d at 1005. This manner of valuation also equates the valuation of swaps with the valuation of stocks and bonds, the more common types of financial instruments which come before this Court for valuation, in that we value the actual

(rather than a hypothetical) financial instrument.[70] In determining our manner of valuation, we consider it important that we are unable to find (nor does either party or the amici suggest) that, except in rare cases, a party to a swap actually sells its place in the swap to a third party. The record indicates, and we find as a fact, that, except in those rare cases, one party to a swap never sells only its position in the swap but, instead, if it wants to get out of the swap, terminates the swap in full primarily through a buyout.

VIII. Applicable Valuation Date

FNBC did not determine the value of its swaps as of the last business day of its taxable years. Petitioner argues that the early closing dates were reasonable and did not result in any undervaluation of its swaps. Petitioner asserts that early closing dates were common among banks and resulted, at most, in a timing difference of 1 year. Petitioner relies upon Wal-Mart Stores Inc. v. Commissioner, T.C. Memo. 1997-1, as support for the early valuation dates used by FNBC.

We are unpersuaded by petitioner's argument. Section 475 required that FNBC value its swaps as of the last business day of its 1993 taxable year. Although section 475 by its terms also

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[70] In other words, were we to value FNBC's swaps by assuming that a hypothetical buyer replaces FNBC in the swap, we are no longer valuing the actual swap but are now valuing a hypothetical swap between the hypothetical buyer and the actual counterparty.

did not apply to FNBC's earlier years, we believe that FNBC was bound by a similar rule for those earlier years. As we see it, the rule in the earlier years was that a proper application of a mark-to-market method required that FNBC value its swaps as of the end of its taxable year.[71]

FNBC failed to meet this yearend valuation requirement in that it did not value all of its swaps as of the last business day before its yearend. Petitioner relies erroneously upon Wal-Mart for a contrary conclusion. Whereas the taxpayer in Wal-Mart estimated inventory shrinkage as of its yearend (the applicable valuation date there), FNBC is not estimating the value of its swaps as of its applicable valuation date (i.e., the last business day before yearend) but is using an early valuation date.

IX. Proper Hypothetical Market

We consider next the proper hypothetical market in which to value FNBC's swaps. The Code provides no specific rule as to the proper market in which to determine fair market value. The regulations do, at least in the case of valuations which are required for Federal estate and gift tax purposes. For Federal estate tax purposes, the regulations provide:

> The fair market value of a particular item of property includible in the decedent's gross estate is not to be

[71] As we observed supra, FNBC's last business day of each subject year was the same as its last day of the year.

> determined by a forced sale price. Nor is the fair market value of an item of property to be determined by the sale price of the item in a market other than that in which such item is most commonly sold to the public, taking into account the location of the item wherever appropriate. Thus, in the case of an item of property includible in the decedent's gross estate, which is generally obtained by the public in the retail market, the fair market value of such an item of property is the price at which the item or a comparable item would be sold at retail. For example, the fair market value of an automobile (an article generally obtained by the public in the retail market) includible in the decedent's gross estate is the price for which an automobile of the same or approximately the same description, make, model, age, condition, etc., could be purchased by a member of the general public and not the price for which the particular automobile of the decedent would be purchased by a dealer in used automobiles. * * * The value is generally to be determined by ascertaining as a basis the fair market value as of the applicable valuation date of each unit of property. For example, in the case of shares of stock or bonds, such unit of property is generally a share of stock or a bond. * * * [Sec. 20.2031-1(b), Estate Tax Regs.]

For Federal gift tax purposes, the relevant regulations contain virtually identical language. See sec. 25.2512-1, Gift Tax Regs.

Thus, in the case of Federal estate and gift taxes, the regulations provide that the relevant market for the hypothetical sale is the "public" market or, in other words, the retail market in which the item is sold to the ultimate consumer; i.e., the customer who does not hold the item for subsequent resale.[72]

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[72] In the case of the Federal income tax, more specifically, charitable contributions, the regulations set forth rules for determining the value of items which a taxpayer sells in the course of its business. The regulations provide:

(continued...)

Goldman v. Commissioner, 388 F.2d 476, 478 (6th Cir. 1967), affg. 46 T.C. 136 (1966); Lio v. Commissioner, 85 T.C. 56, 70 (1985), affd. sub nom. Orth v. Commissioner, 813 F.2d 837 (7th Cir. 1987); see also Leibowitz v. Commissioner, T.C. Memo. 1997-243. In fact, the regulations, by way of the used car example, specifically adopt the price that a retail purchaser would pay for an item in lieu of the price that a dealer would pay for it. See Estate of Lemann v. United States, 73 AFTR 2d 2345, 2349, 94-1 USTC par. 60159, at 84,195 (E.D. La. 1994) (rejecting prices that a dealer would pay for estate jewelry in favor of the prices which the customers would pay at auction). For this purpose, the term "retail" does not denote that the most expensive source is the only source for determining fair market value. Lio v.

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[72](...continued)

> If the contribution is made in property of a type which the taxpayer sells in the course of his business, the fair market value is the price which the taxpayer would have received if he had sold the contributed property in the usual market in which he customarily sells, at the time and place of the contribution and, in the case of a contribution of goods in quantity, in the quantity contributed. The usual market of a manufacturer or other producer consists of the wholesalers or other distributors to or through whom he customarily sells, but if he sells only at retail the usual market consists of his retail customers. [Sec. 1.170A-1(c)(2), Income Tax Regs.]

These regulations are not pertinent to our inquiry. FNBC did not "sell" swaps in the course of its business. Swaps were seldom sold in a secondary market, and no entity similar to FNBC actually purchased a swap during the relevant years with the intent to resell it.

Commissioner, supra at 70. Fair market value is determined in the market most commonly used by the ultimate consumer, and the value in that market may or may not represent the highest value for the product that is the subject of the valuation. Here, with respect to the interest rate swaps in issue, we believe that the applicable market is a market comprising largely end users (including dealers acting as end users).

Having identified the appropriate market for valuation purposes, we determine the fair market value of FNBC's swaps at the amount that an ultimate consumer/hypothetical buyer would in that market pay for the swaps on the dates of valuation, bearing in mind that the swaps are considered sold by a hypothetical seller. Petitioner asks the Court to view the hypothetical buyer as a dealer entering into swaps intending to earn a profit. We decline to do so. We believe it inappropriate to limit the hypothetical willing buyer to the requested subset of buyers rather than viewing the hypothetical buyer as a member of the broad group of potential buyers referred to in the accepted definition of willing buyer. In addition to the fact that even petitioner acknowledges that dealers enter into swaps without expecting to earn a profit, e.g., to hedge risks in its portfolio or to generate business, valuation at the equivalent of the dealer's own bid or ask price improperly limits consideration to buyers who believe they are paying less than fair market value.

The case of Dellinger v. Commissioner, 32 T.C. 1178, 1185 (1959), is instructive to our conclusion. There, a corporation sold vacant lots to its shareholders at a bargain price. The taxpayer argued that the fair market value of the lots was the price that would be paid by an "investor", and that an investor would not have paid more than one-half of the price at which the lots were expected to eventually sell. The Court rejected these arguments. The Court stated:

> Petitioner has not directed our attention to any case where fair market value was predicated on or limited to the amount that a hypothetical investor would pay for the property, rather than the broader group referred to in the accepted definition as a "willing buyer." Fair market value does not mean, of course, that the whole world must be a potential buyer of the property offered, but only that there are sufficient available persons able to buy to assure a fair and reasonable price in the light of the circumstances affecting value. In considering the term "fair market value" as used in section 301, supra, we cannot restrict the market to dealers, investors, or any other limited groups. * * * [Id.]

X. FNBC Implemented Its Mark-to-Market Method Inconsistently With Section 475

A. Overview

FNBC primarily used its mark-to-market method to compute the amounts that it reported as the fair market value of its swaps for purposes of section 475. O'Brien testified that a valuation method is not actually a mark-to-market method if the valuation method does not arrive at fair market value. She concluded that FNBC's mark-to-market method did not arrive at fair market value.

She concluded that FNBC's mark-to-market method was not actually a mark-to-market method.

We agree with O'Brien's conclusion that FNBC's mark-to-market method was not in fact a mark-to-market method. We conclude that FNBC's mark-to-market method was inconsistent with the fair market value requirement of section 475.

B. Midmarket Values

Section 475(a)(2) generally mandates that FNBC value each swap that it "held at the close of any taxable year * * * as if such security [swap] were sold for its fair market value on the last business day of such taxable year". FNBC's midmarket method failed this requirement. FNBC's midmarket method did not ascertain midmarket values for all of the swaps which FNBC held at the end of each of its taxable years, as if those swaps had been sold at their fair market value as of the last business day of the appropriate years. The midmarket values which FNBC computed as of its early closing dates were not last business day values. Such an early valuation date is inconsistent with section 475, especially when one considers that the values of at least some of FNBC's swaps changed significantly from the early closing date to the date of the last business day. As Sziklay noted, and we agree, the valuation date required by section 475 is December 31 for calendar year taxpayers such as FNBC, and an

earlier valuation date simply does not meet that legislative requirement.[73]

Nor was FNBC's practice of valuing nonperforming swaps at modified lower of cost or market consistent with the last business day mark-to-market requirement of section 475. A policy of valuing nonperforming swaps at lower of cost or market is not mark-to-market accounting. A lower of cost or market method recognizes losses in market value below the amortized cost value, but it does not recognize gains in market value above the amortized cost value. Gains in market value are recognized under a lower of cost or market method only to the extent that they recoup previously recognized losses. The legislative history of section 475 also states specifically that a lower of cost or market method is not acceptable for purposes of section 475. That history notes that such a method generally understates the income of securities dealers.

C. Adjustments in General

Petitioner argues that FNBC's adjustments are allowed under section 475 because, petitioner asserts, FNBC used and relied upon its adjusted swap values for various nontax purposes; e.g., pricing swaps, risk managing swaps, reporting to regulatory agencies and shareholders, and ascertaining employee bonuses.

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[73] We note that Dec. 31 was on a weekday during each of the years 1990 through 1992.

Petitioner has failed to establish that FNBC relied on its adjustments or adjusted midmarket values for any of these purposes.[74] In fact, the evidence establishes to the contrary that FNBC used midmarket to price and risk-manage its swaps, to ascertain employee bonuses, and to report to management. The evidence also establishes that the adjustments at issue were lower than the materiality standard for audited financial statement purposes, so as not to draw any criticism from FNBC's auditors, and that where a fair value standard did apply to FNBC's financial reporting in the form of the footnote disclosures under SFAS No. 107, FNBC used midmarket values.

The fact that FNBC risk-managed its swaps by using midmarket values is supported by Parsons's observation that FNBC's risk management personnel did not rely upon information on either of the carve-outs. In terms of managing credit risk, as opposed to market risk, FNBC used updated calculations of exposure in the form of updated CEM figures for risk management purposes and did not rely on the valuations made using the "stale" CEM figures incorporated into the credit adjustment. Parsons also testified credibly that the swap industry used midmarket value for doing actual business, for pricing swaps, for trading swaps, and for risk-managing swaps.

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[74] Even if it did, we agree with Sziklay that FNBC's use of its adjusted midmarket method for any or all these purposes is not dispositive for Federal income tax purposes.

Petitioner also contended that the carve-outs were used for pricing. The facts, however, show that pricing of swaps was market-driven; i.e., FNBC's traders quoted swap spreads based on where the market was at the time, and where they thought it would go. Nor were the bonuses for swap personnel ascertained strictly on profitability. The size of the bonus pool for swap personnel depended on many factors, including how the bank performed as a whole, and did not depend on any adjustment taken by FNBC. To the extent that swap profitability was a consideration in determining the bonuses, compensation for traders and marketers was based upon unadjusted mark-to-market revenues raised by each trader or marketer, as well as certain other subjective factors. Nor did FNBC rely upon adjusted midmarket values for buyout purposes; it required that the buyout prices be (and effected its buyouts) at the midmarket value.

D. Credit Adjustment

1. Need for a Credit Adjustment

Petitioner argues that FNBC's calculation of credit adjustments was necessary to reflect the fair market values of its swaps.[75] Respondent acknowledges that the midmarket value of an interest rate swap may have to be adjusted for credit risk in order to arrive at its fair market value when: (1) The

[75] Petitioner concedes that FNBC could determine its current exposure at any point.

counterparty has the lower credit rating and (2) the parties to the swap have not agreed to any credit enhancement that would negate that lower rating. Respondent asserts that any credit adjustment that is reported under section 475 must be ascertained on the basis of a market benchmark, which is not present here.

We hold that a credit adjustment to the midmarket value of an interest rate swap is necessary in certain cases to determine the swap's fair market value. Specifically, we hold that such an adjustment is required to the extent that the adjustment properly reflects the change to the swap's midmarket value on account of the actual parties' respective creditworthiness, taking into account all the facts and circumstances that would enhance or diminish each party's creditworthiness.[76] We consider the presence or absence of credit enhancements such as collateral or netting provisions to be an important factor to take into account as to the enhancement or diminution of a counterparty's creditworthiness.

We hear from all of the experts on financial derivatives that credit risk may cause a swap's fair market value to deviate from its midmarket value and, therefore, that the fair market value of a swap should reflect credit risk. We agree. A swap is

[76] Given our conclusion that we must value each swap on the basis of the traits of the actual parties thereto, we disagree with respondent that a market benchmark as to credit adjustments is indispensable to the determination of any such adjustment.

a series of promised cashflows, the payment of which depends upon the probability that they will be paid. Other things being equal, the probability that a payment will be made is greater in the case of a counterparty with a high credit rating than in the case of a counterparty with a low credit rating. Thus, all other things being equal, the fair market value of the promise of the higher rated counterparty is usually greater than the fair market value of the lower rated counterparty. The midmarket value fails to reflect this basic principle in that the value is calculated without regard to a counterparty's actual credit rating and without regard to the presence or absence of credit enhancements or netting.

Petitioner and its experts argue that the midmarket value of an interest rate swap will always overestimate its fair market value because, they assert, credit risk can only lower the swap's fair market value. We disagree. Credit risk in swaps is bilateral and may increase or decrease midmarket value. For example, all other things being equal, a swap's midmarket value is less than the actual value of FNBC's position in the swap if the counterparty has a better credit rating than FNBC. An upward adjustment, therefore, is appropriate in such a case. A downward adjustment, however, is appropriate in the converse situation. The downward adjustment is necessary to reflect the fact that a swap's midmarket value is greater than the actual value of FNBC's

position in the swap given that the counterparty has a worse credit rating than FNBC. Whereas petitioner is correct that credit risk is normally negligible at the inception of a swap, and that interest rate movements after inception may produce an incremental credit risk warranting a downward adjustment at a revaluation date, petitioner ignores the reality of the converse of this principle; i.e., that an upward credit adjustment might be justified when changes in interest rates have caused the market value of the swap to become negative.

2. One-Month Lag in Recording Swaps

Whereas FNBC calculated its credit adjustments quarterly, those quarterly periods did not coincide with the calendar quarters in which its swaps actually arose. FNBC treated each of its swaps as arising 1 month after the date that the swap actually arose. FNBC's 1-month lag for determining the swaps which it included in its credit adjustment for a quarter was inconsistent with the section 475 mark-to-market requirement that value be determined as of the last business day in the taxable year. FNBC's 1-month lag resulted inappropriately in FNBC's postponing the recognition of some of its credit adjustments for 1 whole year; e.g., the credit adjustments for 32 swaps which FNBC initiated in December 1993 were actually claimed in 1994.

3. Credit Ratings of Both Counterparties

Petitioner argues that the fair market value of FNBC's interest rate swaps does not take into account FNBC's own credit rating. Respondent argues that the fair market value of interest rate swaps takes into account both parties' creditworthiness. We agree with respondent. We believe that a determination of the fair market value of interest rate swaps, in that they are bilateral contracts which by definition require the performance of both parties thereto, must take into account the creditworthiness of both of those parties. FNBC's credit risk methodology ignores the bilateral nature of swaps and the impact that FNBC's own credit risk has on a swap's fair market value flowing from the danger that FNBC may not fulfill its obligations under the swap.

We agree with Duffie and Parsons that the credit rating of a dealer such as FNBC affects the value of a swap. We also agree with Duffie and Parsons that the credit adjustment may be either positive or negative when a counterparty has a better credit rating than the dealer, regardless of that higher rating. As Parsons stated, a dealer such as FNBC may have to make an upward adjustment if a swap becomes significantly off-market to the dealer's disadvantage, regardless of who has the higher credit rating. In that case, the counterparty is exposed to credit risk from the dealer, and the dealer is generally not exposed to any

credit risk from the counterparty. On the other hand, Parsons stated, the dealer may have to make a downward credit adjustment if the swap becomes significantly off-market to the dealer's advantage, regardless of the relative credit ratings of the dealer and its counterparty.

Duffie disagreed with the related analysis of petitioner's experts that rested on the premise that only the credit quality of the dealer's counterparty should be considered when making a credit-risk adjustment, and that the relative quality of the dealer itself is irrelevant. Duffie stated:

> consider the case of interest-rate swaps, with two possible dealers, Gilt and Silver, and an outside counterparty, Z, that wishes to pay the floating rate. We will ignore all adjustments except for credit. Suppose the outside counterparty X is rated AA, that Gilt is rated AA, and that Silver is rated BBB. Suppose Z calls Gilt and asks for the fixed rate R to be paid by Gilt that would be set so that there is no initial exchange of cash, meaning that the fair market value of this swap between Z and Gilt is zero.
>
> Now, suppose Z calls the lower-quality dealer Silver in order to obtain an interest rate swap under which Z pays floating and Silver pays the same fixed rate R. They negotiate a price P for this swap (under the same standard of willing buyer and seller used in the definition of "fair market value") to be paid by Silver to Z. The price is greater than zero because Z was willing to receive a price of zero under the same contractual terms when trading with the higher-quality dealer Gilt. He would be unwilling to trade at a price of zero with Silver, but rather would demand some higher price as compensation for bearing the comparably higher credit risk of Silver. This means an upward adjustment in the market value of the swap to Silver, relative to the price of zero obtained by Gilt. This refutes the claim that Silver's own credit quality

should play no role in the fair market values at which it trades.

The petitioner's expert analysis suggests that Silver should make a downward credit adjustment in market value (from zero) associated with the potential default of counterparty Z, disregarding its own lower credit quality. Again, this is incorrect. The petitioner's experts rely on the argument that if the low-quality dealer Silver were to attempt to "sell" (that is, assign its position in) its swap with Z to the higher-quality dealer Gilt, then Gilt "would not be influenced to pay more or less" because of Silver's credit rating, because, if it purchased this swap from Silver, it would not be extending credit to Silver. * * * There is a logical fallacy here. Silver had already been receiving, in terms of expected credit exposure, an effective extension of credit from Z, which was worth P to Silver, net of the value of the effective credit it had offered Z. If Silver were to ask Gilt to assume its position in the swap, it would demand P in return for the net loss in market value on the extension of credit by Z. Then, before completing the deal with Silver, Gilt would turn to counterparty Z and ask for an up front payment of P in return for relieving Z of its net exposure to Silver, in the event that the re-assignment of the swap from Silver to Gilt were to occur. Since Z would indeed benefit from this net reduction in credit risk that is worth P, Z would agree to pay P to Gilt, contingent on the re-assignment. All three parties would then consummate the trade. Gilt would now be paying a fixed rate R to Z on a fixed-for-floating swap, and have gotten into this contract for a net price of 0. This is of course the same price (zero) at which Gilt and Z would have signed the swap contract in the first place. Of course, there is some doubt in practice whether all three counterparties would take the trouble to make such contingent assignment arrangements, and indeed it is unusual to see swap assignments, where there is a material difference in the credit qualities of the assignor and assignee. This does not lessen the "moral of the story," which is that Silver's own credit quality does indeed play a role in determining the market value of its swap with Z.

Now, going back to the swap between Z and the low-quality dealer Silver, suppose that interest rates fall

> dramatically, and the swap has moved so far into the money (of positive value) to Silver, that Silver now has an expected exposure to Z that is so large as to cause an expected loss from default by Z that is much larger than the expected loss to Z from default by Silver, resulting in a new credit adjustment in Silver's market value that is downward.
>
> That is, the same swap between the same two counterparties can have an upward adjustment for credit risk in some cases, and a downward credit adjustment in other cases, regardless of the relative quality of the counterparties. At the inception of a swap with no initial exchange of cash flow, however, a dealer of lower credit quality than its counterparty should not apply a downward credit adjustment relative to a mid-market valuation. If anything, the adjustment from mid-market should be upward.
>
> I have not learned of cases in which major dealers have actually made upward credit adjustments from the mid-market valuation of interest-rate swaps associated with the fact that their own credit quality is lower than that of their counterparty. Dealers are normally of high quality in any case. When dealers (and other firms) issue bonds, however, they sell them to investors at a price that reflects their own credit quality. The lower their quality, the lower the price at which they are willing to issue their bonds, relative to those issued by higher-quality firms. The same principle applies to derivatives.

4. Midmarket Values Reflected AA Counterparties

Parsons stated that for a counterparty rated AA, the credit risk is already reflected in the discount rate used to calculate midmarket value. Parsons also stated that applying a credit adjustment on a swap negotiated with an AA counterparty is double counting absent the presence of an incremental credit risk above and beyond that already reflected in the quoted AA swap rates. Such an incremental credit risk could occur if the swap becomes

significantly off-market to the advantage of the dealer. Duffie stated similarly to Parsons that there should be no credit adjustment at the inception of a swap with a counterparty rated AA, but that a downward credit adjustment would subsequently be warranted if changes in interest rates caused the value of the swap to become positive.

We agree with the testimony of Duffie and Parsons. Given that FNBC discounted at an AA rate, the midmarket values being reduced by credit adjustments already were discounted by a factor reflecting the risk of nonpayment by an AA-rated counterparty. The impact of the AA discount rate coupled with the claimed credit adjustments is that FNBC is taking two adjustments for the risk of default by AA-rated counterparties. FNBC did not increase the value of swaps with A and above A-rated counterparties to take into account the impact of FNBC's credit rating of A-.[77]

5. Credit Enhancements

Whereas many of FNBC's swaps were supported by credit enhancements such as credit triggers, guarantees, collateral, and credit agreements, FNBC did not take those enhancements into account in computing its credit adjustments. We believe that collateral and other types of credit enhancements must be

[77] Duffie testified that it would be unusual to see a difference in prices between counterparties rated AAA and AA.

considered in determining credit risk. By ignoring these enhancements, a taxpayer such as FNBC fails to consider that a counterparty's credit rating may actually be equivalent to an AA rating.

6. Netting

The parties dispute whether netting applies in determining the fair market value of a swap. Respondent argues that it does. Petitioner argues that it does not. We agree with respondent. Market participants during the relevant years placed significant stress on the use of netting agreements, and most of FNBC's swaps during those years were covered by ISDA agreements with netting provisions. Netting lowered FNBC's credit risk in that FNBC, were it to be a nondefaulting party, could take advantage of offsetting transactions in the event of counterparty default.

As a consequence of single- and multiple-transaction netting, when one swap is above market to the dealer and another swap between the same parties is below market to the dealer, credit exposure is reduced given that the corresponding obligations will be netted against one another. As a consequence of closeout netting, if one swap is above market to the dealer and another swap between the same parties is below market to the dealer, then in the event of default, the dealer's potential loss will be limited because these obligations also will be netted against one another. Moreover, even when one of the parties to a

payment and closeout netting contract becomes bankrupt or insolvent, payment and closeout netting reduces credit exposure of the nondefaulting party to the bankrupt counterparty.

FNBC had a program that took netting into account but apparently chose not to use it. FNBC's failure to take netting into account in determining its credit adjustments overestimated the credit adjustments and did not reflect the true value of its swaps. In fact, FNBC acknowledged as much in its annual statements when it reported that the credit exposure amount was overstated because FNBC ignored the effects of netting and other credit enhancements.

7. Static or Dynamic Procedure

FNBC ascertained its credit adjustments using a static procedure. Petitioner argues that FNBC's static procedure was reasonable and consistent with industry practices and did not overstate the credit adjustments compared to a dynamic model. Petitioner asserts that the G-30 report endorsed the use of straight-line amortization of a credit adjustment over the life of the related transaction as the most common approach in the industry.

We believe that a static procedure such as that used by FNBC is contrary to the requirement of section 475 that a swap be marked to market at each yearend. FNBC's static procedure failed to reflect (1) the changing market value of credit risk,

(2) movements in interest rates, (3) changes in its and its counterparties' credit ratings, and (4) the early terminations of some swaps or their subsequent chargeoffs. In fact, as to the last point, FNBC in some cases even claimed adjustments to reduce yearend swaps income when the swap that gave rise to the alleged credit risk was paid in full before yearend. Not only was there no value included on the return in that case, but there was no longer a risk of nonpayment. Under mark-to-market accounting, FNBC must reestimate the value associated with credit risk for its outstanding swaps at yearend, in light of the then-current conditions affecting the value of credit risk. FNBC also must record any decreases (increases) in this value as income (loss).

Parsons testified that only a dynamic procedure captures the actual value of credit risk at a date later than the inception of the swap. We agree. Whereas FNBC calculated the credit adjustment only at inception, when the midmarket value was probably very close to fair market value, the credit risk of a party is most often affected after inception.[78] As stated by Duffie, what may amount to small numbers at the inception of a swap turns into the real "meat and potatoes" of the credit adjustments, which will manifest itself after inception. FNBC's

[78] The credit risk inherent in a swap may peak not at inception or termination, but during the life of the swap, and the credit risk inherent in a swap may be lower at inception and termination than at any other point in the life of the swap.

method of calculating the credit adjustment inappropriately accelerates to inception the maximum amount of credit risk presented during the life of the swap. As for the recommendation of the G-30 report, which of course was not made for purposes of valuing swaps for Federal income tax purposes, but for risk management purposes, the G-30 report specifically endorsed a dynamic procedure. Not only was a static procedure not recommended by the G-30 report, but such a procedure was not followed as a matter of industry practice.

8. Confidence Levels

Petitioner argues that FNBC's use of an 80-percent confidence interval was reasonable and consistent with industry practice. Respondent argues that FNBC's use of the 80-percent confidence level was improper. We agree with respondent.

When credit exposure is overstated, the credit adjustment does not reflect the market value of credit risk and cannot accurately reduce midmarket values and arrive at fair market value. FNBC was the only known entity in the industry that used an 80-percent confidence level when computing credit exposure, and its use of a maximum 80-percent measure of exposure overstated credit exposure. In fact, all of the experts on financial derivatives opined that the CEM amount should use a

mean exposure rather than the 80-percent level.[79] Duffie and Parsons, in particular, stated that FNBC should have used for valuation purposes the mean exposure level generated by its Monte Carlo simulation model, rather than the maximum exposure at an 80-percent confidence interval. Whereas the G-30 report endorsed a higher confidence level for risk management purposes, the G-30 report endorsed a mean exposure measure for valuing credit risk.

9. Mirror and Partially Offsetting Swaps

FNBC claimed credit adjustments on mirror swaps. This overstated the credit adjustment and understated fair market value.

FNBC claimed credit adjustments on partially offsetting swaps. This overstated the credit adjustment and understated fair market value.

10. Per-Swap Adjustments

FNBC computed its credit (and administrative) adjustments for groups of swaps. O'Brien opined that "Under FNBC's procedure, swaps having shorter-than-average lives, relative to others originated in the same quarter, will have credit deferral income amortized over a longer term than the life of the swap, and conversely for swaps having longer-than-average lives."

[79] FNBC's 80-percent confidence level for a swap's exposure at some future time is much larger than the mean exposure for that same time.

Sziklay took exception to the opinions of Sullivan and Smithson that both theory and practice demonstrate that administrative costs should be calculated on a portfolio basis. We agree with O'Brien and Sziklay that the adjustments must be computed on a swap-by-swap basis. See H. Rept. 103-111, supra at 665, 1993-3 C.B. at 241 (fair market value determined by valuing each security separately); see also sec. 20.2031-1(b), Estate Tax Regs. ("The value is generally to be determined by ascertaining as a basis the fair market value as of the applicable valuation date of each unit of property. For example, in the case of shares of stock or bonds, such unit of property is generally a share of stock or a bond.").

E. Administrative Costs

1. Overview

Petitioner argues that the fair market value of FNBC's swaps included an administrative costs adjustment. Respondent concedes that administrative costs may affect value and that market values may need to be adjusted for future administrative costs to arrive at fair market value. Respondent asserts that administrative costs adjustments are allowed only to the extent that they are derived from market data.

We agree with petitioner that the fair market values of FNBC's swaps include an administrative costs adjustment. We agree with O'Brien that a procedure in which an entity such as

FNBC adjusts midmarket value by the presumed market value of future administrative costs, reestimates the value each period, and reduces or increases income by the change in value is consistent with mark-to-market accounting. We do not believe that the procedures used by FNBC reflected fair market value.

2. Incremental Costs

FNBC calculated its administrative costs adjustments by using fully allocated costs. The Court-appointed experts testified that the administrative costs' impact on the value of a swap is no more than the marginal (incremental) costs to administer the swap. We agree. FNBC's method is incorrect in that only incremental costs affect fair market value.

In contrast to fixed costs such as general overhead costs, the incremental costs of a swap are the additional costs associated with acquiring the swap. FNBC's approach, which used general overhead from its other departments as part of its administrative costs adjustment, is wrong. For a dealer of swaps, general overhead is not an incremental cost. General overhead generally consists of the costs that would occur whether or not additional swaps would be acquired. When a dealer is considering whether to acquire a swap, only incremental costs would affect the prices at which the dealers would be willing to trade by reducing the present value of the cashflows associated with acquiring the swap.

3. Use of Own Costs

FNBC's adjustments for administrative costs are based on FNBC's own costs and cost allocation rules rather than on market data. We believe that such an approach was correct for purposes of section 475. As mentioned above, we value FNBC's swaps as the difference in value between the legs. We believe that the administrative costs must be taken into account in determining the value of FNBC's leg in that the inherent value of that leg includes FNBC's forecast of its administrative costs related thereto. In this regard, we agree with the experts that the best approach to valuation in these cases is the income approach.[80]

F. Other

Petitioner argues that FNBC did not include all of the adjustments to midmarket value that may have been appropriate. According to petitioner, the industry allows many adjustments, and FNBC took adjustments only for administrative costs and credit risks. Petitioner observes that the G-30 report and OCC also recommended adjustments for (1) investing and funding costs, (2) greater credit adjustments (e.g., FNBC did not take an adjustment for compensation for credit exposure), and (3) anticipated profit.

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[80] The record does not indicate that property similar to any of FNBC's swaps was sold near the valuation dates so as to use the market approach. Nor does the record support applying the asset-based approach to those swaps.

We disagree with petitioner's assertion that FNBC took only two of the available adjustments. Although FNBC labeled its adjustments solely as credit adjustments and administrative costs adjustments, Duffie noted that FNBC took three, and maybe four, of the adjustments listed in the G-30 report. FNBC included an adjustment for hedging within its administrative costs adjustment and may have included an adjustment for funding and cost of capital within the administrative cost adjustment.

XI. Respondent's Method of Accounting

Respondent determined that FNBC was required to report its swaps income by valuing its swaps at their midmarket value and not reporting any adjustments thereto; e.g., for credit risk or administrative costs. Petitioner argues that respondent's method is erroneous in that it fails to reflect FNBC's swaps income clearly. Petitioner notes that virtually everyone who has considered the valuation of swaps has rejected respondent's position that the fair market value of a swap is its midmarket value.

We agree with petitioner that the midmarket method, standing alone, fails to reflect FNBC's swaps income clearly. Midmarket is the value of the payments but not the value of the swap contract in that FNBC must incur administrative costs and bear the risk that a payment might never be received.

Respondent invites the Court to adopt his proffered mid-market valuation by analogy to the valuation of stocks and bonds. In this regard, respondent notes, section 20.2031-2(f), Estate Tax Regs., and section 25.2512-2(f), Gift Tax Regs., provide two rules for valuing stocks and bonds traded on exchanges. The first rule, the mean transaction method, refers to mean selling prices. That rule provides:

> In general, if there is a market for stocks or bonds, on a stock exchange, in an over-the-counter market, or otherwise, the mean between the highest and lowest quoted selling prices on the valuation date is the fair market value per share or bond. * * * [Sec. 20.2031-2(b)(1), Gift Tax Regs.]

See also sec. 25.2512-2(b)(1), Estate Tax Regs. The second rule, the mean quotation method, refers to the mean of the bid and asked prices. This rule provides:

> If the provisions of paragraph (b) of this section are inapplicable because actual sales are not available during a reasonable period beginning before and ending after the valuation date, the fair market value may be determined by taking the mean between the bona fide bid and asked prices on the valuation date. [Sec. 20.2031-2(c), Gift Tax Regs.]

See also sec. 25.2512-2(b)(2), Estate Tax Regs. Respondent asserts that the values ascertained by the mean-transaction or mean-quotation method are never adjusted for credit risk or administrative costs.

Respondent asserts that for plain vanilla swaps with AA dealers for counterparties, midmarket value is precisely equal to fair market value. Respondent asserts that for plain vanilla swaps between counterparties with different credit ratings, some may have a fair market value less than midmarket whereas others will have a fair market value greater than midmarket values. Respondent contends that dealers that value their swaps on a portfolio basis therefore have an accurate valuation by using midmarket values without adjustment.

We decline respondent's invitation to value FNBC's swaps by reference to the quoted regulations. As petitioner correctly notes, all of the experts agree that the fair market value of a swap must take into account credit risk and administrative costs adjustments. Nor do we agree with respondent that it is appropriate to value FNBC's swaps collectively rather than individually. As noted explicitly by the members of the House Committee on Ways and Means: "For purposes of the provision, fair market value generally is determined by valuing each security on an individual security basis." H. Rept. 103-111, supra at 665, 1993-3 C.B. at 241; see also sec. 20.2031-1(b), Estate Tax Regs.

XII. Conclusion

We conclude that FNBC's mark-to-market method of tax accounting for its swaps income failed for nine reasons to

reflect its swaps income clearly. First, the method did not value FNBC's swaps as of yearend. Second, the method was not applied to FNBC's nonperforming swaps. Third, the method did not reflect the creditworthiness of both parties. Fourth, the method did not reflect the applicability of netting and other credit enhancements. Fifth, the method used a 1-month lag in ascertaining the applicable credit adjustments. Sixth, the method used a static rather than dynamic procedure to ascertain the applicable credit adjustments. Seventh, the method inappropriately ascertained credit adjustments as to swaps which were no longer in existence. Eighth, the method did not ascertain administrative costs adjustments by using incremental costs. Ninth, the method did not ascertain credit and administrative costs adjustments as to each swap.[81]

We also conclude that respondent's method of accounting for FNBC's swaps income did not clearly reflect that income. Respondent's method failed to reflect the need to adjust each swap's midmarket value by credit and administrative costs adjustments in order to arrive at fair market value.

[81] Of course, in lieu of the adjusted midmarket method, FNBC could have valued its swaps using bid or ask rate, as applicable. Bid prices would be used to value a long position (swaps where the dealer received the fixed rate), and ask prices would be used to value a short position (swaps where the dealer paid the fixed rate).

We return this case to the parties to prepare a computation or computations under Rule 155. In that financial products are an integral part of our Nation's major institutions, far better it is to have an acceptable valuation method as to these products, even though checkered by occasional variance, than to remain in the gray twilight of uncertainty. The parties should determine the fair market value of each of FNBC's swaps and other like derivative products by valuing the derivative at its midmarket value as properly adjusted on a dynamic basis for credit risk and administrative costs. A proper credit risk adjustment must reflect the creditworthiness of both parties, with due respect to netting and other credit enhancements. A proper administrative costs adjustment must be limited to incremental costs.

XIII. Postscript--Weight Given to Expert Testimony

A. Role of the Experts

We set forth herein our opinions as to the various experts and the weight that we have given to their respective testimony. The Court has broad discretion to evaluate the cogency of an expert's analysis (including that of a Court-appointed expert). Neonatology Associates, P.A. v. Commissioner, 115 T.C. 43, 85 (2000), affd. 299 F.3d 221 (3d Cir. 2002); see also Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 943 (Fed. Cir. 1987) (Bennett, J., dissenting in part) (majority "certainly should not

have taken the additional step of recasting the court-appointed expert's testimony to support its position since the job of evaluating the testimony of expert witnesses and witnesses in general is peculiarly that of the trier of fact"). Sometimes, an expert will help us decide a case. E.g., Booth v. Commissioner, 108 T.C. at 573; Trans City Life Ins. Co. v. Commissioner, 106 T.C. 274, 302 (1996). Other times, he or she will not. E.g., Estate of Scanlan v. Commissioner, T.C. Memo. 1996-331, affd. without published opinion 116 F.3d 1476 (5th Cir. 1997); Mandelbaum v. Commissioner, T.C. Memo. 1995-255, affd. without published opinion 91 F.3d 124 (3d Cir. 1996). Aided by our common sense, we weigh the helpfulness and persuasiveness of an expert's testimony in light of his or her qualifications and with due regard to all other credible evidence in the record. Neonatology Associates, P.A. v. Commissioner, supra at 85. We may embrace or reject an expert's opinion in toto, or we may pick and choose the portions of the opinion to adopt. Helvering v. Natl. Grocery Co., 304 U.S. at 294-295; IT&S of Iowa, Inc. v. Commissioner, 97 T.C. 496, 508 (1991). We are not bound by an expert's opinion and will reject an expert's opinion to the extent that it is contrary to the judgment we form on the basis of our understanding of the record as a whole. IT&S of Iowa, Inc. v. Commissioner, supra at 508; see also Orth v. Commissioner, 813 F.2d at 842.

B. Court's Impression of the Experts

We find Duffie, Parsons, and Smithson to be helpful to our general understanding of the financial products at hand and the workings of the related financial market. We find the first two men to be more credible than the third as to their respective analyses and conclusions. First, we view Smithson as biased in that he is affiliated with and has served on the board of the ISDA. The ISDA joined in filing with the Court a brief of amici curiae in support of petitioner. Second, this Court's determination of fair market value requires that we apply the firmly established standard of willing buyer/willing seller. Smithson's analysis as to fair market value was inconsistent with that standard in that it was skewed improperly towards the price that a willing buyer would want to pay for a swap as opposed to the balanced price that a willing buyer would have to pay for the swap in order for a willing seller to sell the swap to the willing buyer. E.g., Pabst v. Commissioner, T.C. Memo. 1996-506 (the Court found that an expert did not properly analyze fair market value when the expert stressed that the subject asset "is only worth what a buyer will pay for it."); accord Estate of Cloutier v. Commissioner, T.C. Memo. 1996-49; Mandelbaum v. Commissioner, supra. Smithson's testimony as to a hypothetical buyer also focused inappropriately on the amount that a "dealer" would be willing to pay for the swap and further inappropriately

limited the hypothetical buyer to a dealer seeking to earn a spread. See e.g., Dellinger v. Commissioner, 32 T.C. at 1185. Third, Smithson's testimony was sometimes evasive or nonresponsive when it came to responding to questions that were damaging to petitioner's case. For example, whereas Smithson continued to endorse FNBC's methodology as to its credit adjustment, he knew quite well that FNBC's use of an 80-percent confidence level was wrong. Smithson even acknowledged on cross-examination that he had written a book that advised using the mean confidence level and that, in 1993, he would have advised FNBC to use a confidence level other than the 80-percent confidence level. Fourth, Smithson's testimony indicates his belief the a single bid/ask spread applies to a given swap. Such a belief contrasts sharply with our finding that the bid/ask spread usually differed depending on whether a dealer entered into a swap with another dealer, on the one hand, or with an end user, on the other hand. Such a belief also ignores the fact that a dealer sometimes intended to lose money on a specific swap so as to risk-manage its books (and thus maximize its overall profit) or to develop its clientele.

As to respondent's two remaining experts, O'Brien and Carney, we found each of these individuals to be helpful as to her or his area of expertise. We found likewise as to Sziklay, the other Court-appointed expert. We did not find the testimony

of petitioner's other expert, Sullivan, to be credible. Sullivan was qualified as an expert in various areas, but his single opinion was that FNBC's adjustments to its midmarket values were consistent with the industry practices for taking adjustments. Sullivan is an accountant who has been advising his clients worldwide on that issue for some time. Sullivan's knowledge of industry practice also was gleaned primarily from his few clients in the financial derivative area whom he has been advising as to that issue. Sullivan also endorsed petitioner's administrative expenses adjustment as consistent with industry practice but then acknowledged that he actually was unaware of how other dealers computed that adjustment.

We have considered at length each argument of the parties. All arguments not discussed herein are without merit or irrelevant. To reflect the foregoing,

Decisions will be entered under Rule 155.

APPENDIX A

STIPULATION WITH RESPECT TO COURT APPOINTED EXPERTS

WHEREAS, the parties are engaged in complex civil tax litigation involving novel issues of first impression and significant importance; and

WHEREAS, the parties each have their own experts to opine on certain issues; and

WHEREAS, the Honorable David Laro, the Judge in this matter, has indicated that he believes it would be helpful to have two experts appointed by the Court pursuant to Federal Rule of Evidence 706 to opine on certain issues which permeate these cases, and

WHEREAS, Judge Laro has asked that the parties jointly consider and stipulate as to the duties and procedures involved in the appointment of the Court's experts,

NOW THEREFORE, the parties do hereby stipulate to the following:

1.0 That the Court may appoint Dr. J. Darrell Duffie and Mr. Barry S. Sziklay as the Court's experts to assist the trier of fact in the above-entitled matter.

1.1 That Dr. J. Darrell Duffie may be appointed as an expert in the field of financial economics and financial derivatives and will be asked to opine on the following questions in the context of these cases, and, specifically, with regard to this petitioner:

a. The relative merits and deficiencies in the various expert reports and opinions of petitioner's and respondent's experts.

b. The generally accepted method or methodologies of valuing the derivatives at issue in this case.

c. With respect to the midmarket method of valuation, what adjustments, if any, should be made in order to arrive at the "fair market value" of the derivative?

1.2 That Mr. Barry S. Sziklay may be appointed as an expert in the field of fair market valuation and generally accepted accounting principles and will be asked to opine upon the following questions in the context of these cases and, specifically, with regard to this petitioner:

a. Whether mid market valuation arrives at "fair market value" (as that term is defined for federal tax purposes)?

b. What adjustments, if any, should be made to mid market values in order to arrive at the "fair market value" of the derivatives being valued?

c. With respect to the financial instruments in these cases whether the accounting concept of "fair value" is synonymous with the tax concept of "fair market value"?

1.3 That for both of the Court's experts, opinions generally should be restricted to information, techniques, and knowledge available or reasonably foreseeable during the years in issue.

1.4 That after consultation with the parties, the Court may propound other specific questions to be addressed by the Court's experts.

2.0 That each of the Court's experts shall prepare and sign a written report in accordance with Rule 143(f) of the Court's Rules of Practice and Procedure. Each report shall contain a complete statement of all opinions and the basis and reasons therefor, as well as the data or other information considered by the witness in forming the opinions, subject to the following further limitations:

(a) Except by order of the Court, in the preparation of their reports, the Court's experts shall be limited to considering the trial record as of the date when both parties have completed the presentations of their respective cases, in this matter, as well as materials of a type reasonably relied upon by experts in the particular field.

(b) Dr. Duffie and Mr. Sziklay may communicate freely with each other. Additionally, they may communicate ex parte with the Court about administrative, procedural or scheduling matters. Each expert may identify an assistant with whom the parties may communicate about administrative matters, such as contracting and payment for expert services. The Court's experts may not engage directly or indirectly in any ex parte communications with any other persons, including, but not limited to, the parties to this matter, their counsel, the parties' experts, or any association (or members thereof) who joined in filing the amici brief in this matter with respect to the issues in this case.

3.0 That the Court's experts shall provide the Court and shall serve upon counsel for each party their expert reports in accordance with a schedule established by the Court.

4.0 That upon request by the Court or any party, within 15 days after service of the expert reports, the Court's experts shall make available for inspection and copying, to the extent necessary, any materials relied upon in preparing the reports that are not part of the record or readily available.

5.0 That except by leave of Court, the Court's experts shall not be subject to discovery. However, consistent with the Court's Rules of Practice and Procedure, either party is at liberty to utilize limited discovery by way of written interrogatories to be served on the expert for the sole purpose of ascertaining any possible bias of the appointed experts.

6.0 That each party may submit rebuttal expert reports, which shall be filed with the Court, served on opposing counsel and provided to the Court's experts.

7.0 That the reports of the Court's experts will serve as their direct testimony at trial. In the order of Petitioner and then Respondent, the parties will have the opportunity to cross-examine the Court's experts. The parties, in the same order of proceeding, will thereafter have the opportunity to present any

additional expert evidence in rebuttal to the testimony of the Court's experts. However, all expert testimony will be limited to experts who have already testified in this trial and there will be no additional fact evidence adduced. The experts shall be limited to the record and materials of a type reasonably relied upon by experts in the particular field.

8.0 That further proceedings in this case shall not resume any earlier than 15 days after service of the last rebuttal reports.

9.0 That any report or other document required to be served pursuant to this stipulation shall be served by a next-day delivery service.

10.0 That the Court shall provide the schedule for the reports to be filed and unless otherwise ordered, the following schedule shall apply:

Court Appointed Expert's reports	February 15, 2001
Rebuttal expert reports submitted by the parties	15 days after the Court's expert's reports
Rebuttal expert reports submitted by the Court's experts	15 days after the Rebuttal expert's reports

10.1 The Court may permit the Court's experts or the parties' experts to offer expert rebuttal testimony without a written report.

11.0 That the Court's experts shall make themselves available at a session of the Court at a place and at a time designated by the Court for cross examination by the parties on their report.

12.0 That after consultation with the parties, the terms and conditions of the expert's employment will be directed by the Court, and executed by the parties. The fees and expenses of the experts will be paid equally by the parties hereto and the parties shall timely pay the experts in accordance with the terms and conditions of the expert's agreement.

13.0 Nothing in this stipulation should be construed as respondent's acquiesce to this procedure as a matter of tax litigation policy or that respondent would agree to a similar procedure in any other case. Respondent will state his concerns with this procedure on the record at the time this stipulation is presented to the Court, and these concerns will be incorporated by reference.

The foregoing are the stipulations of the parties.

APPENDIX B

SEC. 475. MARK TO MARKET ACCOUNTING METHOD FOR DEALERS IN SECURITIES.

(a) General Rule.--Notwithstanding any other provision of this subpart, the following rules shall apply to securities held by a dealer in securities:

(1) Any security which is inventory in the hands of the dealer shall be included in inventory at its fair market value.

(2) In the case of any security which is not inventory in the hands of the dealer and which is held at the close of any taxable year--

(A) the dealer shall recognize gain or loss as if such security were sold for its fair market value on the last business day of such taxable year, and

(B) any gain or loss shall be taken into account for such taxable year.

Proper adjustment shall be made in the amount of any gain or loss subsequently realized for gain or loss taken into account under the preceding sentence. The Secretary may provide by regulations for the application of this paragraph at times other than the times provided in this paragraph.

(b) Exceptions.--

(1) In general.--Subsection (a) shall not apply to--

(A) any security held for investment,

(B)(i) any security described in subsection (c)(2)(C) which is acquired (including originated) by the taxpayer in the ordinary course of a trade or business of the

taxpayer and which is not held for sale, and (ii) any obligation to acquire a security described in clause (i) if such obligation is entered into in the ordinary course of such trade or business and is not held for sale, and

(C) any security which is a hedge with respect to--

(i) a security to which subsection (a) does not apply, or

(ii) a position, right to income, or a liability which is not a security in the hands of the taxpayer.

To the extent provided in regulations, subparagraph (C) shall not apply to any security held by a person in its capacity as a dealer in securities.

(2) Identification required.--A security shall not be treated as described in subparagraph (A), (B), or (C) of paragraph (1), as the case may be, unless such security is clearly identified in the dealer's records as being described in such subparagraph before the close of the day on which it was acquired, originated, or entered into (or such other time as the Secretary may by regulations prescribe).

(3) Securities subsequently not exempt.--If a security ceases to be described in paragraph (1) at any time after it was identified as such under paragraph (2), subsection (a) shall apply to any changes in value of the security occurring after the cessation.

(4) Special rule for property held for investment.--To the extent provided in regulations, subparagraph (A) of paragraph

(1) shall not apply to any security described in subparagraph (D) or (E) of subsection (c)(2) which is held by a dealer in such securities.

(c) Definitions.--For purposes of this section--

(1) Dealer in securities defined.--The term "dealer in securities" means a taxpayer who--

(A) regularly purchases securities from or sells securities to customers in the ordinary course of a trade or business; or

(B) regularly offers to enter into, assume, offset, assign or otherwise terminate positions in securities with customers in the ordinary course of a trade or business.

(2) Security defined.--The term "security" means any--

(A) share of stock in a corporation;

(B) partnership or beneficial ownership interest in a widely held or publicly traded partnership or trust;

(C) note, bond, debenture, or other evidence of indebtedness;

(D) interest rate, currency, or equity notional principal contract;

(E) evidence of an interest in, or a derivative financial instrument in, any security described in subparagraph (A), (B), (C), or (D), or any currency, including any option, forward contract, short position, and any

similar financial instrument in such a security or currency; and

(F) position which--

(i) is not a security described in subparagraph (A), (B), (C), (D), or (E),

(ii) is a hedge with respect to such a security, and

(iii) is clearly identified in the dealer's records as being described in this subparagraph before the close of the day on which it was acquired or entered into (or such other time as the Secretary may by regulations prescribe).

Subparagraph (E) shall not include any contract to which section 1256(a) applies.

(3) Hedge.--The term "hedge" means any position which reduces the dealer's risk of interest rate or price changes or currency fluctuations, including any position which is reasonably expected to become a hedge within 60 days after the acquisition of the position.

(d) Special Rules.--For purposes of this section--

(1) Coordination with certain rules.--The rules of sections 263(g), 263A, and 1256(a) shall not apply to securities to which subsection (a) applies, and section 1091 shall not apply (and section 1092 shall apply) to any loss recognized under subsection (a).

(2) Improper identification.--If a taxpayer--

(A) identifies any security under subsection (b)(2) as being described in subsection (b)(1) and such security is not so described, or

(B) fails under subsection (c)(2)(F)(iii) to identify any position which is described in subsection (c)(2)(F) (without regard to clause (iii) thereof) at the time such identification is required,

the provisions of subsection (a) shall apply to such security or position, except that any loss under this section prior to the disposition of the security or position shall be recognized only to the extent of gain previously recognized under this section (and not previously taken into account under this paragraph) with respect to such security or position.

(3) Character of gain or loss.--

(A) In general.--Except as provided in subparagraph (B) or section 1236(b)--

(i) In general.--Any gain or loss with respect to a security under subsection (a)(2) shall be treated as ordinary income or loss.

(ii) Special rule for dispositions.--If--

(I) gain or loss is recognized with respect to a security before the close of the taxable year, and

(II) subsection (a)(2) would have applied if the security were held as of the close of the taxable year,

such gain or loss shall be treated as ordinary income or loss.

(B) Exception.--Subparagraph (A) shall not apply to any gain or loss which is allocable to a period during which--

(i) the security is described in subsection (b)(1)(C) (without regard to subsection (b)(2)),

(ii) the security is held by a person other than in connection with its activities as a dealer in securities, or

(iii) the security is improperly identified (within the meaning of subparagraph (A) or (B) of paragraph (2)).

(e) Regulatory Authority.--The Secretary shall prescribe such regulations as may be necessary or appropriate to carry out the purposes of this section, including rules--

(1) to prevent the use of year-end transfers, related parties, or other arrangements to avoid the provisions of this section, and

(2) to provide for the application of this section to any security which is a hedge which cannot be identified with a specific security, position, right to income, or liability.