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www.mercercapital.com
mcm@mercercapital.com

Interest Rate Swaps and Fair Value

Interest rate swaps are over-the-counter derivative contracts between two parties that agree to exchange periodic interest payments on referenced notional amounts. The swapped interest payments may be based on fixed or floating rates in one or more currencies. Interest rate swaps allow firms to manage their exposures to fixed and floating rate assets and liabilities. Speculators can also use interest rate swaps to create positions designed to profit from changes in interest rates. This article presents a brief discussion of interest rate swaps and related fair value considerations.

Background

Interest rate derivatives, including swaps, are used by a large number of firms based in the U.S. and around the world. According to the Securities Industry and Financial Markets Association, all 30 companies that comprised the Dow Jones Industrial Average used interest rate derivatives in 2007 and 2008.[1] Non-financial companies (the retail counterparties) typically enter into interest rate swap agreements with securities dealers, who are also active in the inter-dealer market. The overall market for interest rate swaps has grown substantially in recent years and is generally considered highly liquid. A survey of the derivatives markets in 11 industrialized countries conducted by the Bank for International Settlements indicated that the notional amount outstanding on interest rate swaps totaled $328 trillion at the end of 2008, up from $36 trillion at the end of 1998.[2]

The most common interest rate swap arrangement involves a party that agrees to pay interest based on a fixed rate, while the other agrees to pay interest based on a reference floating rate (typically three-month LIBOR) in the same currency. These contracts are commonly referred to as plain-vanilla interest rate swaps, which allow firms to hedge their exposures to fixed or floating interest rates according to their appetite for (interest rate) risk. For instance, a firm with a liability whose interest payments are based on a floating rate can enter into a fixed-for-floating plain-vanilla interest rate swap contract as a hedge against potential future increases in interest rates.

IN THIS ISSUE

Interest Rate Swaps and Fair Value	1
America's Bank Board Symposium	4
What's New On Mercer Capital's Web Site	5
Recent & Upcoming Speaking Engagements	5
The Mercer Capital Library	6
Obtain a Proposal	7

Fair Value Considerations

The accounting treatment of interest rate swaps is governed by SFAS 133, *Accounting for Derivative Instruments and Hedging Activities,* which establishes fair value as the only relevant measure for derivative instruments.[3] Under certain circumstances, some derivatives (including interest rate swaps) may be designated as hedges of the exposure to fair value of recognized assets or liabilities (fair value hedges) or hedges of the exposure to variable cash flows of a forecasted transaction (cash flow hedges). For instance, a floating-for-fixed interest rate swap could hedge the changes in value of a fixed rate liability (a fair value hedge), while a fixed-for-floating interest rate swap could be a hedge for the variable interest payments associated with a floating rate liability (a cash flow hedge).

Changes in the fair value (gains or losses) of interest rate swaps designated as cash flow hedges, along with the gains or losses in the underlying security, are recognized in earnings. Fair value gains or losses associated with cash flow hedges are generally recognized first in other comprehensive income, and subsequently in earnings as the underlying forecasted cash flows (e.g. interest payments) are resolved. Changes in the fair value of interest rate swaps that are not designated as hedges are recognized in earnings. Thus, for companies who have entered into interest rate swap contracts, compliance with SFAS 133 necessitates periodic fair value estimates of those contracts.

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SFAS 157, *Fair Value Measurements,* defines fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." Depending on the direction of the interest rate movement (see following section), a swap contract is likely to represent an asset for one of the counterparties and a liability to the other. Pursuant to SFAS 157:

» Fair value of a liability is based on the price paid to transfer the liability to a market participant. The underlying assumption is that the liability to the counterparty continues, i.e. the liability is not settled.

» Fair value of a liability should reflect nonperformance risk, including credit risk, associated with the liability. Nonperformance risk before and after transfer of the liability is assumed to be unchanged. Consequently, the reporting entity for which the interest rate swap represents a liability needs to consider its own credit risk in order to appropriately estimate fair value of the swap contract.

Additionally, implementation guidance contained in SFAS 157 also suggests securities dealers are the relevant market participants from the perspective of the retail counterparty. In general, however, other dealers in the relevant markets would be considered market participants from the perspective of a securities dealer.

Estimation of Fair Value

At inception, the fixed rate on an interest rate swap is set such that the expected present values of the interest payments from the fixed and floating legs are equal. At each payment date, the payment obligations of the fixed and floating payers are typically netted, and only one party makes a payment to the other. Thus, fair value of interest rate swaps at contract initiation is typically zero

and subsequent movement in interest rates trigger changes in the fair value of the interest rate swap contracts. For example, if interest rates generally rise, the fixed leg payer realizes mark-to-market (fair value) gains, which correspond to the mark-to-market losses realized by the floating-rate payer. In this scenario, the interest rate swap represents an asset to the fixed payer and a liability to the floating payer.

Fair value estimates of interest rate swap contracts are commonly developed using the income approach since the private nature of swaps generally preclude the use of the market approach. Application of the income approach requires specification of payment dates, notional amounts, interest rate applicable to the fixed leg of the swap, expected forward interest rates and appropriate discount factors. The payment dates, corresponding notional amounts and fixed-leg interest rate are usually specified in the swap contract.

Estimation of the relevant forward rates and base discount factors require market participants to make assumptions regarding the term structure of interest rates for the remaining life of the swap. Term structure assumptions are based on observable interest rates as well as beliefs about the future movements of interest rates for various maturities. Typically, a term structure that mimics the assumptions of a market participant can be constructed using short-term spot rates, intermediate term interest rate futures and select long-term market swap rates. The base discount factors may require adjustments based on the credit quality of the counterparties to the interest rate swap contract.

Valuation of the asset or liability represented by an interest rate swap requires an examination of current and expected future levels of interest rates as well as careful scrutiny of the credit standing of a counterparty

Evaluation of Credit Risk

Credit risk of an interest rate swap agreement refers to the likelihood that a counterparty will not be able to make the payments specified by the contract. This includes both the risk associated with the short-term payment (current credit risk) and longer-term payments (potential credit risk). Since parties entering into an interest rate swap agreement are likely to scrutinize each other's credit quality at contract initiation, credit risk near the beginning of the contract term is generally low. Credit risk concerns tend to be most elevated in the middle of the contract term when credit quality of a counterparty could have worsened since swap initiation and significant payments on the swap remain. The dwindling amount of outstanding payments typically diminishes credit concerns towards the end of the swap contract.

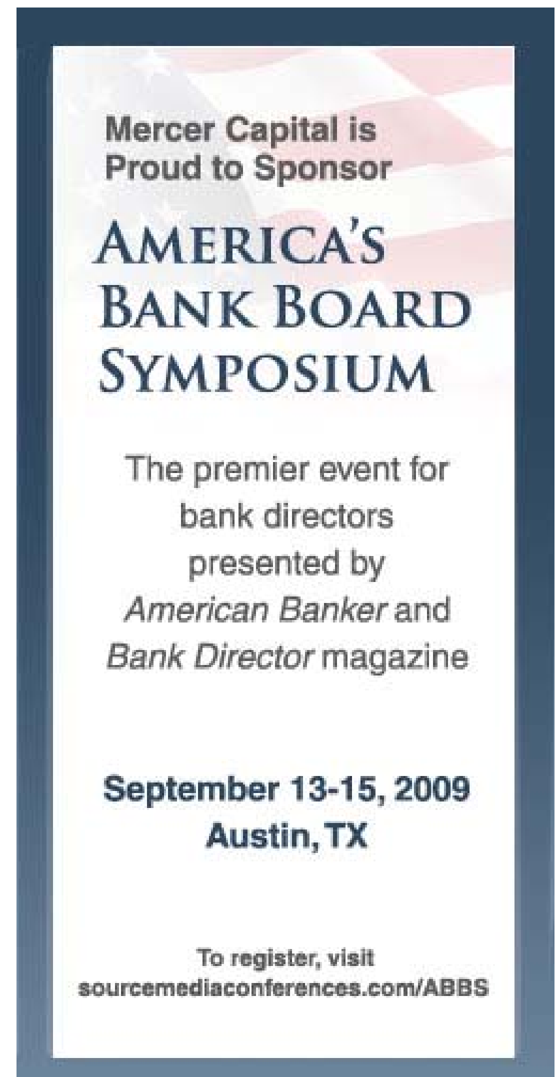
Credit risk is borne by the counterparty for which the interest rate swap represents an asset. Estimates of the fair value of the asset require careful examination of the credit standing of the payments-making counterparty. However, a market participant who acquires the swap liability is also likely to incorporate the probability of non-payment associated with the liability in determining its price. Thus, estimation of fair value of the interest rate swap from the perspective of the holder of the swap liability requires an evaluation of its own credit risk. Such an evaluation needs to consider the relative deterioration, if any, in the ability of the party to make expected payments since the initiation of the swap contract.

An examination of the status of loan covenants and financial performance can provide the basis for an evaluation of credit risk associated with an interest rate swap contract. The inability of a firm to comply with its loan covenants is an indication of credit quality deterioration. Preliminary assessments of a company's financial performance to determine its credit quality may be performed by examining the current levels of liquidity, coverage and leverage ratios relative to past performance. Liquidity ratios provide an indication of the ability of a firm to meet its short-term liabilities, while coverage ratios reflect the ability to repay its debt obligations from operating cash flows. Leverage ratios facilitate analysis of the overall level of financial risk associated with a company. Comparison of the financial ratios of a company with those of similar companies can also be useful in examining the credit standing of the company.

Conclusion

Valuation of the asset or liability represented by an interest rate swap requires an examination of current and expected future levels of interest rates as well as careful scrutiny of the credit standing of a counterparty. Independent estimates of fair value for interest rate swaps can assuage the conflicts of interest that may be inherent in examining own credit risk. Mercer assists its clients in producing robust fair value estimates of assets and liabilities associated with interest rate swaps. Our opinions are consistently accepted by the largest audit firms in the country and other reviewing entities. Contact us to discuss how we can help you.

Sujan Rajbhandary
sujanr@mercercapital.com



[1] "Use of OTC Derivatives by American Companies." Available online at http://www.sifma.org/uploadedFiles/Government_Affairs/OTC/Use%20of%20OTC%20Derivatives%20by%20American%20Companies%20June%202009(1).pdf

[2] For perspective, U.S. and global gross domestic products for 2008 were estimated at $14.3 trillion and $60.7 trillion, respectively. Bank for International Settlements data is available online at http://www.bis.org/statistics/derstats.htm. U.S. GDP estimate from the Bureau of Economic Analysis can be accessed online at http://www.bea.gov/national/index.htm#gdp. The estimate of world GDP was obtained from the World Economic Outlook database, which is prepared by the International Monetary Fund and available online at http://www.imf.org/external/pubs/ft/weo/2009/01/weodata/index.aspx

[3] SFAS 149, Amendments of Statement 133 on Derivative Instruments and Hedging Activities, amended and clarified certain sections of SFAS 133.

What's New on Mercer Capital's Web Site

Mercer Capital's website is updated frequently and contains information of interest to attorneys, business owners, bankers, and other professional advisors to business. Please visit often at www.mercercapital.com.

FINANCIAL INSTITUTIONS

Mercer Capital Offers Assistance to Banks Involved in Loss-Share Transactions

Banks that enter into a loss-share transaction with the FDIC are undoubtedly aware of the issues involved in accounting for the transaction. While relatively few of these loss-share transactions have occurred since SFAS 141R became effective, we are one of the only firms who have provided valuation services to assist with financial reporting requirements in such a transaction.

TRANSACTION ADVISORY SERVICES

Mercer Capital's M&A Market Overview

The investment banking group of Mercer Capital prepares an overview of the M&A market quarterly. The 2nd quarter 2009 overview is published at www.mercercapital.com. For more information about the overview, contact Nicholas J. Heinz. ASA.

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MERCER CAPITAL IN THE MEDIA

Gibbs Quoted in ComplianceWeek.com re Loan-Loss Provisions

Andrew K. Gibbs, CFA, CPA/ABV, a senior vice president at Mercer Capital, was recently quoted in an article published on *ComplianceWeek.com*, titled "Accounting Pressure in Obama Regulatory Reform?," by Tammy Whitehouse. Gibbs comments are part of a larger article addressing recent changes in accounting rules as part of the Obama Administration's plan to reform financial regulation.

SELECTED LIST OF RECENT & UPCOMING SPEAKING ENGAGEMENTS

September 3, 2009
"Buy-Sell Agreements"
Birmingham Estate Planning Council
Birmingham, Alabama
Timothy R. Lee, ASA

September 15, 2009
"Understanding, Measuring, and Managing Value"
America's Bank Board Symposium
presented by American Banker and Bank Director Magazine
Austin, Texas
Andrew K. Gibbs, CPA/ABV, CFA

September 16, 2009
"Valuation Issues Important to Your Clients"
Memphis Bar Association
Memphis, Tennessee
Timothy R. Lee, ASA & Nicholas J. Heinz, ASA

September 24, 2009
"An Alternative Approach to Determining Active/Passive Appreciation in Divorce"
Business Valuation Resources Divorce Summit
Chicago, Illinois
Z. Christopher Mercer, ASA, CFA

September 24, 2009
"Building and Marketing a Valuation Practice"
Virginia Society of CPAs 10th Annual Business Valuation Conference
Glen Allen, Virginia
Barbara Walters Price

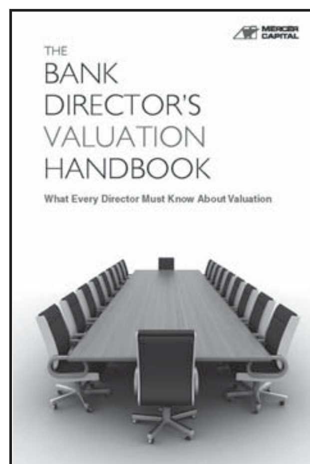
October 19, 2009
"So You Want to Be An Expert?"
Southern Federal Tax Institute
Atlanta, Georgia
Z. Christopher Mercer, ASA, CFA

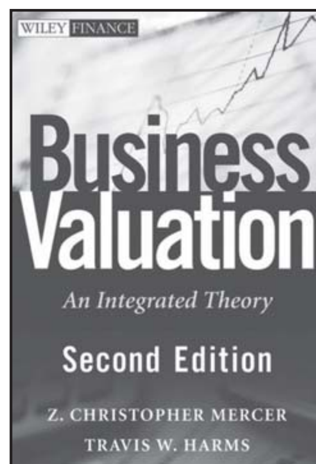
November 10, 2009
"Fair Value in Today's World"
Birmingham FEI Chapter
Birmingham, Alabama
Travis W. Harms, CFA, CPA/ABV

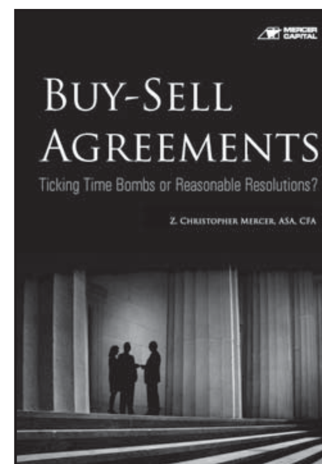
November 16, 3009
"Buy-Sell Agreements"
AICPA's Annual Business Valuation Conference
San Francisco, California
Z. Christopher Mercer, ASA, CFA

To see a complete list, visit the Speaker's Bureau section of our website at www.mercercapital.com. To inquire about engaging a professional from Mercer Capital to speak to your group, contact Barbara Walters Price at priceb@mercercapital.com, or by calling 901.322.9724.

The Mercer Capital Library







Revenue Ruling 59-60 at 50

Rediscover Fair Market Value

January 2009

Sale Price: $45 (plus s/h)

Revenue Ruling 59-60 is a compact storehouse of enduring practical wisdom for business appraisers and the users of appraisal reports. To celebrate the 50th anniversary of its publication, we summarize the Ruling and provide a non-technical view of how appraisers attempt to translate its guidance into actual valuation engagements. This 120+ page book is written for attorneys and other users of business appraisal reports.

The Bank Director's Valuation Handbook

What Every Director Must Know About Valuation

January 2009

Sale Price: $45 (plus s/h)

Mercer Capital has been working with financial institutions for over 25 years and has provided valuation and other financial consulting services to thousands of clients. We find that most of our clients have the same basic questions about important valuation issues. This handbook addresses many of these questions and provides useful information for bank directors and managers when valuation needs emerge.

Business Valuation, An Integrated Theory

Second Edition

January 2008

Reg. Price: $95 (plus s/h)

Whether you are a business appraiser, auditor, financial planner, or attorney, *Business Valuation: An Integrated Theory, Second Edition* enables you to understand and correctly apply fundamental valuation concepts. Thoroughly revised and expanded, the Second Edition demystifies modern valuation theory, bringing together various valuation concepts to reveal a comprehensive picture of business valuation.

Buy-Sell Agreements

Ticking Time Bombs or Reasonable Resolutions?

January 2007

Reg. Price: $79 (plus s/h)

Does your or your clients' buy-sell agreement say what you think it says? You might be surprised. Written for business owners, attorneys, CPAs, business appraisers, and other professional advisors to business, this book provides a road map for you (or your clients) to develop or improve your buy-sell agreement.

Coming in Fall 2009 - Valuation for Impairment Testing, Second Edition

A GENTLE PLUG FOR OUR FIRM

MERCER CAPITAL is a business valuation and investment banking firm serving a national and international clientele. Our reputation for excellence is based on an ability to solve complex financial problems expeditiously. We convert over 25 years of experience, including thousands of assignments, into solutions for the issues of today.

Mercer Capital provides a broad range of independent valuation and financial advisory services, including:

- Dispute Analysis Services and Expert Testimony
- Valuation for Corporate Tax Matters
- Valuation for Corporate Income Tax Issues
- Valuation for ESOPs
- Purchase Price Allocations
- Goodwill Impairment Testing
- Valuation of Employee Options
- Portfolio Valuation Services
- Valuation of Intangible Assets
- Fairness Opinions

Mercer Capital's investment banking professionals specialize in providing merger and acquisition services to sellers or buyers of private businesses or public companies divesting divisions and subsidiaries. In addition, we assist clients in industry consolidations, roll ups, and refinancings.

INTERNET COMMERCE: OBTAIN PROPOSALS TO VALUE YOUR COMPANY, BANK, FLP OR LLC VIA OUR WEBSITE

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Many of your colleagues have already used our PROPOSAL REQUEST FORMS and are impressed by the decrease in transactional overhead and the increased ease in obtaining actionable proposals for their clients. We are pleased to be doing business with them. Try it yourself! Visit our website and provide us with the pertinent information via this form, and we'll prepare a proposal and deliver it to you via e-mail, fax or USPS. Complete confidentiality is assured.

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HEADQUARTERS
5860 Ridgeway Center Parkway, Suite 400
Memphis, Tennessee 38120
901.685.2120 » Fax 901.685.2199

LOUISVILLE OFFICE
455 South 4th Street, Suite 690
Louisville, Kentucky 40202
502.585.6340 » Fax 502.585.6345

www.mercercapital.com

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