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## Corporate Finance

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### Salomon Brothers

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# The CFO Quarterly: Second Quarter 1994

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The authors wish to acknowledge Peter Conroy, Robert V. DiClemente, John Hom, and Bill Koch. We would also like to thank Mike DeMeo, Kimberly Grigas and Taryn Worrell for their assistance in the production of this report.

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## INTRODUCTION AND SUMMARY

### Economic, Policy and Market Trends

- On February 4, the Federal Reserve raised short-term rates for the first time in five years by one quarter of a point to 3<sup>1</sup>/<sub>4</sub>%. The Fed repeated this action on March 22 and April 18, pushing the Fed funds rate to 3<sup>3</sup>/<sub>4</sub>%. The fixed-income and equity markets — fearing that the Fed knew more about inflation risk than they did — reacted negatively to these three actions, as well as to reports of outsized income growth and successively stronger employment gains. On May 17, the Fed raised the Fed funds rate and the discount rate by 50 basis points each and stated that, "these actions . . . substantially remove the degree of monetary accommodation which prevailed throughout 1993." Unlike the previous three actions, the market responded favorably, hoping that the Fed might be finished for some time. Nonetheless, new indications that growth remains above trend in coming weeks will challenge renewed complacency in the capital markets.

### Fixed-Income Market Trends

- Debt financing activity slowed dramatically in the first four months of 1994 as all fixed-income asset classes — Treasury, corporate, mortgage-backed, high-yield, emerging market, and convertible — experienced sharp downturns and heightened volatility. With investors steering clear of fixed-rate investments, floating-rate structures have ascended to a pivotal role in the U.S. corporate bond, the Eurobond and preferred markets. We expect, though, that the recent improvement in the Treasury yield curve — resulting from the Fed's carefully worded explanation of its most recent policy action — may portend a more active financing calendar in the second quarter of 1994.

### Equity Market Trends

- As a result of the recent volatility in the equity and fixed-income markets, equity investors have grown increasingly cautious and selective in their approach to new investment opportunities. Offerings are still being completed at volume levels and at prices that are strong by historical standards, but they are below the record levels reached during late 1993 and early 1994. Investors are giving heightened scrutiny to new offering terms, and the majority of transactions completed during the past month has required longer, more intense marketing and road show efforts. As a result, a few recent issuers have been forced to make price or size concessions to have their transactions successfully completed.

### Fixed-Income Derivative Trends

- The steep yield curve and increased interest rate volatility were the primary factors driving fixed-income derivative activity. Essentially, corporations focused on two classes of strategies: corporations with risk appetites and bullish interest rate views sold explicit or implicit options to reduce their funding costs; and risk-averse corporations bought interest rate protection such as caps.

### Equity Derivative Trends

- The equity swap market was the fastest-growing derivative market, even as the equity market experienced a correction in the first quarter of 1994. Corporations used equity derivatives to implement strategies to enhance or complement stock buyback programs (for example, put warrants), to monetize or hedge cross holdings, to defer capital gains taxes, and to manage employee compensation to maximize performance.

**Mergers and  
Acquisitions Trends**

- The merger and acquisition (M&A) environment continued at its brisk pace in the first quarter of 1994 and experienced a significant increase in hostile activity. Large transactions in a few industries still dominated the market. Regulation, regulation and regulation were the primary factors behind the continued heightened activity, which we expect to continue. As strategic players still dominate the market, equity continues to be a favored acquisition currency.

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## ECONOMIC, POLICY AND MARKET TRENDS

### Question 1

*What is the economic growth outlook for major industrialized countries?*

### Answer 1

- **Economic growth remains robust in the United States, shrinking the cushion of excess capacity.** The U.S. economy should achieve a robust 4% annual growth pace during the second half of this year. Interest rate-sensitive sectors — housing, investment and consumer durables — are spurring U.S. growth, but some initial slowing in final demand growth is likely, reflecting the impact of higher interest rates.
- **The European growth outlook gradually should improve this year as exports gain and monetary policy is eased.** Nonetheless, the upturn will be modest and will not prevent a rise in European unemployment to record highs.
- **The Japanese economy is showing signs of recovery** in housing, consumption and public investment, but growth remains constrained by falling business investment and weak net exports.

### Question 2

*What are the economic policy prospects for major industrialized countries?*

### Answer 2

- **Economic policy prospects remain divergent: Additional U.S. Federal Reserve tightening** is likely this year, pushing the Fed funds rate to 5% by winter. The U.S. fiscal deficit is expected to decline modestly during the coming year. However, new spending incentives — such as health care reform — could rekindle concerns about the appropriateness of U.S. fiscal policy.
- **European monetary policy easing will extend through 1994**, while fiscal deficits remain high.
- **The Bank of Japan likely will keep short-term interest rates unchanged.** Moreover, recent additions to fiscal stimulus should help to produce a modest upturn late this year.

### Question 3

*What is the market outlook?*

### Answer 3

- Stronger-than-expected U.S. economic growth likely will push long-term Treasury bond yields higher in the next few months, until more aggressive Fed tightening begins to halt the market sell-off and flatten the yield curve. Eventually, expectations of decelerating growth should support new yield declines.
- **In Europe, bond yield trends should remain broadly decoupled from yields on U.S. Treasuries**, but rallies in European markets will be limited by rising U.S. yields. European yield curves, in general, will steepen or remain steep as monetary policies are eased in response to low or falling inflation.

- **Yields on ten-year Japanese Government bonds could retrace some of the latest backup, reflecting the stagnant economy.** Any subsequent rise would reflect the eventual resumption of economic growth, but it would be muted by low inflation.
- **The U.S. dollar will strengthen** modestly versus European currencies, while the yen faces near-term weakness versus the dollar, before stronger Japanese growth helps to underpin the Japanese currency.



**FIXED-INCOME MARKET TRENDS**

Issuers and investors endured a turbulent first quarter that reversed most of the gains of the 1993 interest rate rally.

- **Investors moved to the sidelines in the wake of battered asset values and heightened volatility.** Most fixed-income (and equity) sectors posted negative total returns in the first quarter of 1994 (see Figure 1).

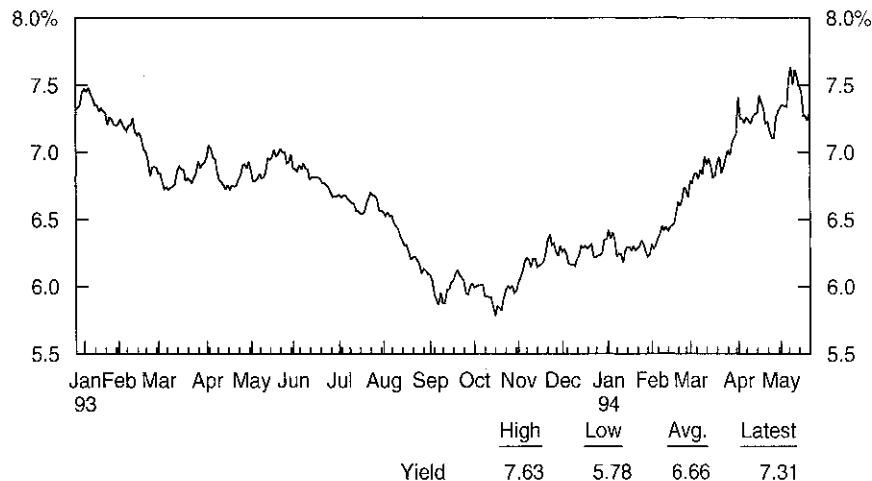
Markets also were buffeted by unsettling headlines describing leveraged hedge fund losses, mortgage fund collapses, corporate write-offs resulting from derivatives strategies, and international trade tensions and political uncertainty from Mexico City to Beijing.

**Figure 1. Total Rates of Return of Selected Asset Classes, First Quarter 1994**

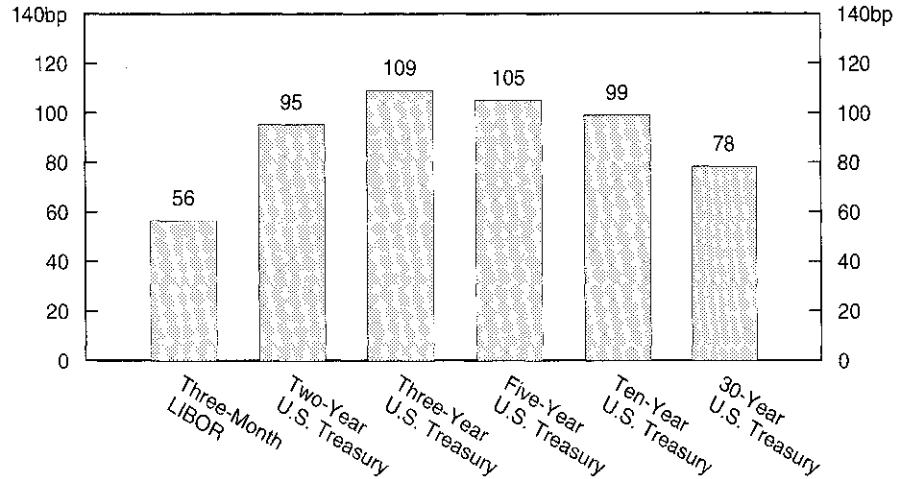
Asset Class	1Q Total Return
Treasury	-3.03%
Corporate	-3.24
Mortgage	-2.10
High-Yield	-2.09
Emerging Markets	-19.09
S&P 500	-4.43

- **Technical factors also conspired to exaggerate the recent rise in yields.** Portfolio and fund managers, seeking to reduce their exposure to cratering markets, sold their most liquid securities first — namely, U.S. Treasuries. Other asset managers — particularly, dealers — sold Treasuries as a hedge for interest rate-sensitive assets held in inventory. In fact, long-term Treasury yields moved significantly higher than the Fed had ever expected (see Figure 2) and more than the rise in short-term rates that it engineered (see Figure 3).

**Figure 2. 30-Year U.S. Treasury Yields, Jan 93-May 94**

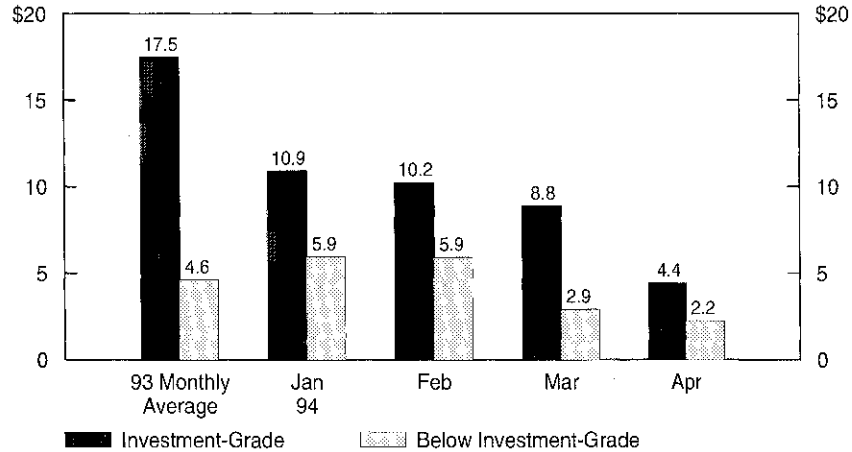


**Figure 3. Changes in Interest Rates, First Quarter 1994**



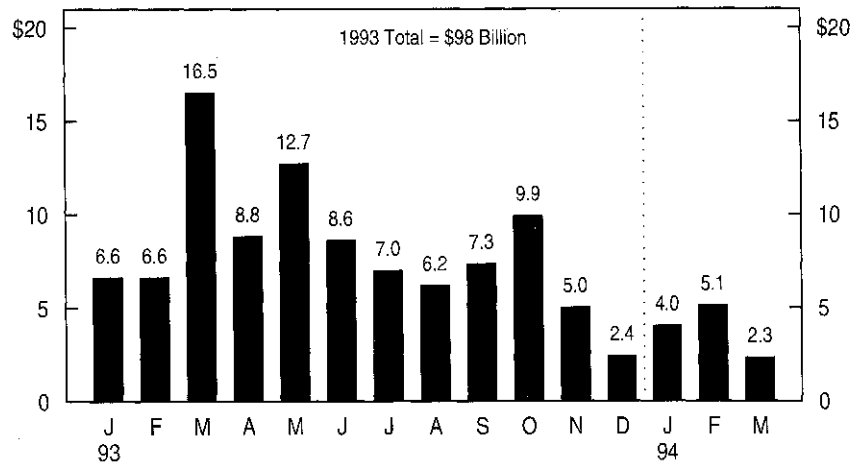
- **The pace of debt financing — in both the investment-grade and high-yield markets — slowed in the first four months of 1994** (see Figure 4). In general, issuers have shifted their funding strategy "down the yield curve" in order to control financing cost. At the extreme, floating-rate structures have enjoyed a renewed popularity.

**Figure 4. Monthly Corporate Debt Issuance, Jan 94-Apr 94 versus 1993 Monthly Average (Dollars in Billions)**



With interest rates significantly higher and more than \$150 billion of high-coupon investment-grade corporate debt refinanced in the past two years, the frequency of call announcements has declined and should moderate debt volume in 1994 (see Figure 5).

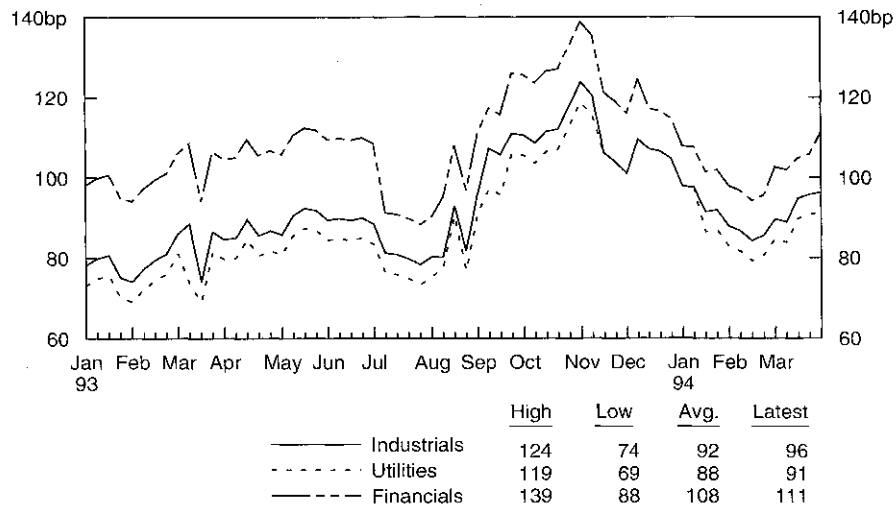
**Figure 5. Principal Amount of Corporate Securities Called in the Salomon Brothers Broad Investment-Grade (BIG) Bond Index, Jan 93-Mar 94 (Dollars in Billions)**



The exceptions to this reduced pace of debt issuance are the **Yankee and Eurobond sectors**, which exploded in January and have maintained volume levels close to the frenetic 1993 pace.

- **Debt financing spreads have edged up, but they remain benign.** With fixed-income investors boycotting the markets for much of the first quarter, spreads widened in the face of evaporating demand (see Figure 6). Sustained high levels of Treasury market volatility and concerns about "event risk" may widen spreads further from today's levels.<sup>1</sup>

**Figure 6. Long-Term A-Rated Corporate New Issue Spreads, Jan 93-Apr 94**



<sup>1</sup> See *Corporate Strategy and Model Portfolio*, Joseph Bencivenga et al., Salomon Brothers Inc, May 1994.

Floating-rate structures moved to center stage as bearish sentiment dominated the global credit markets.

- **Floating-rate term debt has experienced a resurgence in the corporate, Eurobond and preferred markets.** With most market observers eulogizing the recent demise of the bull market in bonds, institutional investors have begun to assume a more defensive posture, shifting their focus from maximizing yield to preserving capital. Floating-rate assets provide an appropriately defensive vehicle in a bearish environment.

- **The economics of, for example, a five-year London Interbank Offered Rate (LIBOR) floater can be quite compelling.** Under current conditions, LIBOR would have to increase by more than 600 basis points over the five-year term in order for the LIBOR floater to be *less* cost-effective than a comparable fixed-rate financing. Consequently, a term floater may be an attractive financing vehicle that diversifies funding sources, avoids depleting bank lines of credit and reduces annual interest expense. Nonfinancial companies as diverse as Texas Utilities Electric, MCI Communications and Ford Motor Credit recently have issued LIBOR floaters with maturities of three to five years in the U.S. corporate bond market.

- **Floating-rate notes (FRNs) also have proliferated in the Eurobond market.** The proportion of Euro-FRNs as a percentage of total Eurobond issuance has more than doubled from the year-ago level. In the Eurodollar market, a deluge of FRNs, which constituted more than one half of Eurodollar issuance, underpinned this sector of the market. With U.S. dollar swap spread levels at historical lows, borrowers are able to achieve better funding levels through direct FRN issuance than swapping fixed-rate notes to floating.

Adjustable-rate preferred stock came out of a multiyear hibernation as traditional fixed-rate preferred buyers seek to hedge their interest rate risk exposure.

- **Adjustable-rate preferred stock (ARPS) has enjoyed reinvigorated demand as institutional and retail appetite for fixed-rate perpetual preferred stock has dissipated.** The dividend rate on an ARPS is set quarterly as a fixed percentage of an index, typically equal to the maximum of the Treasury yields corresponding to constant maturities of three months, ten years and 30 years. This dividend rate is subject to a collar, which recently has been set at  $4\frac{1}{2}\%$ - $10\frac{1}{2}\%$ .

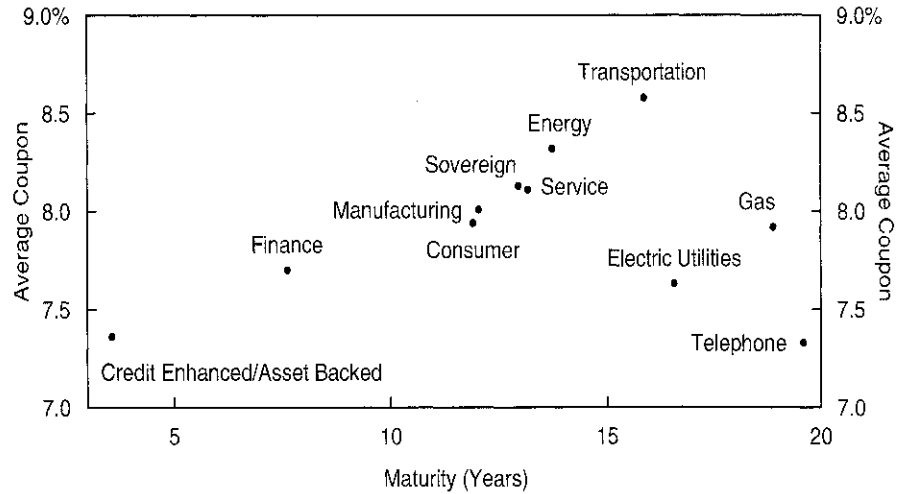
- **The break-even Treasury yield for ARPS relative to a fixed-rate alternative provides an attractive risk-return trade-off.** For example, as of March 31, 1994, the initial dividend rate on an ARPS priced at 85% of the index would be 6.06%. Hence, the initial dividend savings for the ARPS issuer over a comparable fixed-rate issue is 200-250 basis points. In fact, Treasury yields would have to exceed 10% for the cost of the ARPS to exceed an  $8\frac{1}{2}\%$  fixed-rate alternative.

- **Over a longer-term horizon, our Monte Carlo simulation analysis shows that ARPS issuers can expect to save 50-70 basis points over a fixed-rate offering.** Assuming that both structures are callable at par after five years, we have compared the internal rate of return, or effective cost, of both structures, and ARPS seems to be the winner.

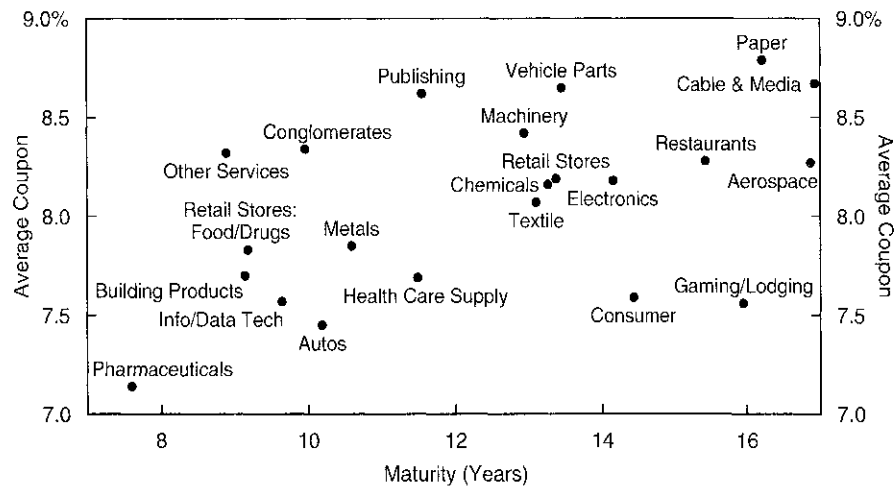
- **Commercial banks and electric and gas utilities remain the dominant issuers.** Banks and utilities share common regulatory motivations: The banks require Tier 1 regulatory capital, and the utilities use preferred (rather than common) to support regulatory balance sheets. Recent issuers have included Citicorp, Chase and ENSERCH.

- **Finally, in the last *CFO Quarterly*, we showed the average life and cost of the taxable debt portfolios of various broad corporate classes.** We repeat this chart in this issue of the *Quarterly* (see Figure 7), and we include a new chart that shows these statistics for a number of individual corporate sectors (see Figure 8).<sup>2</sup>

**Figure 7. Fixed-Rate Taxable Debt Portfolio Statistics by Corporate Sector, 31 Mar 94**



**Figure 8. Fixed-Rate Taxable Debt Portfolio Statistics by Industry Sector, 31 Mar 94**



<sup>2</sup> *The CFO Quarterly: First Quarter 1994*, Niso Abuaf et al., Salomon Brothers Inc, February 1994.

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## FIXED-INCOME LIABILITY MANAGEMENT TRENDS

In the first quarter of 1994, liability managers focused on the following developments:

- A painful realization that they may have missed the interest rate troughs to maximize the benefits of a refinancing;
- Fears of future rate increases;
- A flattening of the yield curve, especially between two-year and 30-year maturities, which made tenders or open market repurchases cheap relative to refundings (tenders are priced on a yield to call);
- Positive cash balances caused by asset sales or an improving economy; and
- Expectations of improving credit spreads caused by an improving economy.

As a result of these developments, many companies have used their cash balances to tender for existing high-coupon debt. In particular, investment-grade debt tender offers have totaled almost \$490 million since January 1994. Companies using them include Puget Sound Power & Light, Scott Paper, Columbia/HCA, and The Williams Companies.

The motivation of some debt tender offers was somewhat different from the traditional tender offer objective of refinancing high-cost debt. Some companies wanted to use their cash balances to retire rather than refund debt. In some cases, the tax benefits of the tender premium were used to shield other capital gains.

With few exceptions, the participation rates of the tenders exceeded 70%. The principal reasons why the remaining 30% did not participate were FAS 115 (the issue had been placed in the held-to-maturity account) and some investors' inability to take a taxable gain.<sup>3</sup> In such cases, a company can choose to retire the remaining bonds through an in-substance defeasance, hence retiring the entire issue.

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<sup>3</sup> For more information on FAS 115, see *The CFO Quarterly: First Quarter 1994*, Niso Abuaf et al., Salomon Brothers Inc, February 1994.

Fixed-income derivative activity slowed down in the first quarter of 1994 as concerns surfaced about the risks that various market participants may be taking.

**Question 4**

*In light of the recently publicized problems that certain derivatives users have experienced, how should corporate boards and product managers manage the risks and rewards of using derivative instruments?*

**Answer 4**

According to a survey of industry practice of close to 200 dealers and end-users worldwide, and a Group of Thirty Study,<sup>4</sup> corporations should consider the following recommendations as a benchmark in managing the risks and rewards inherent in derivatives transactions.

- **Derivatives Usage Policy.** Derivatives usage policy should be set at the highest levels of the corporation — preferably at the board level. Derivatives usage policy should have at least as much importance as other instruments of corporate financial policy like dividend policy, capital structure policy and liability-management policy. Derivatives usage policy should clearly set forth the purposes for which derivatives can or should be used. Senior management should monitor and implement these policies, and delegate authority to treasury officials for execution.

**Managing Market Risk**

- **Marking-to-Market.** Derivatives positions should be marked-to-market for risk management purposes. Corporations also should mark-to-market the underlying positions being hedged to determine if the hedge continues to be effective. Most dealers mark-to-market their positions daily, indicating that this is an important risk management activity. Corporations, conversely, should mark-to-market their positions at least monthly. Other accounting techniques do not provide as much information to risk managers.

- **Market Valuation Methods.** Positions can be marked-to-market based on theoretical valuation methods or dealer quotes. The risk manager should pay special attention to the limitations of these methods, especially when market conditions are adverse or volatile, or when the size of a given position is large relative to the overall size of a given market. For example, certain positions may be easily put on but not easily liquidated. If so, the risk manager should value positions with the appropriate discounts.

- **Cash Flow Management.** Corporations should estimate statistical confidence intervals about the cash flow requirements of their derivatives positions in order to better understand the range of periodic exposures that they may face.

- **Independent Market Risk Management.** An independent and authoritative group reporting directly to top management should monitor a corporation's market risk positions. The size and complexity of the portfolio should determine the extent of monitoring needed.

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<sup>4</sup> *Derivatives: Practices and Principles*. Global Derivatives Study Group. The Group of Thirty, Washington, D.C., July 1993.

### **Managing Credit Risk**

Corporations can measure their credit exposure to derivatives in two ways:

- **Current Exposure.** That is the replacement cost of a derivatives transaction in case a counterparty defaults immediately; and
- **Potential Exposure.** This is more difficult to measure than current exposure, and it usually is measured by using statistical analyses using methods like 95% confidence bands or the present expected value of potential default. Moreover, corporations should consider the following factors when managing their credit risk exposures:

(1) **Aggregating Credit Exposures.** Credit exposures should be aggregated by counterparty, industry and country. Such aggregated exposures should not exceed potential worst-case scenario limits or similar measures. If exceeded, measures should be taken to reduce exposures to acceptable levels.

(2) **Independent Credit Risk Management.** Companies should monitor and report credit risks just as they monitor and report market risk. This activity should be managed by an independent and authoritative group reporting directly to top management. A corporation's credit risk positions should be monitored individually and by concentration category.

(3) **Executing One Master Agreement.** Corporations should execute one master agreement, with each counterparty encompassing all derivative instruments. These agreements should facilitate the netting of all transactions, thereby mitigating credit exposure.

(4) **Credit Enhancement.** Corporations should weigh the risks and rewards of techniques such as bilateral mark-to-market agreements and transacting with **AAA derivatives subsidiaries.**

### **Managing Legal, Regulatory and Tax Risk**

Before executing derivatives transactions, a corporation should master the associated legal, supervisory, tax, and accounting implications, obtaining the advice of counsel.

### **Managing Systems and Operations Risks**

Corporations should ensure the quality of their personnel and computer systems, in addition to matching responsibility with authority. Appropriate systems should be in place for monitoring exposures. Portfolio valuation, especially of large portfolios, and trade confirmation should be required on a same-day basis. These should be immediately verified for accuracy. Moreover, corporations should have master swap agreements in place prior to execution.

### **Managing Accounting Exposure**

Ideally, accountants should recognize the gain or loss on a hedged item at the same time that they recognize the gain or loss on the hedging transaction. Such coincident recognition allows the company's balance sheet and income statement to accurately reflect the true economics of the hedge.<sup>5</sup> Conversely, derivatives not qualifying for risk management are required to be marked-to-market and highlighted accordingly. Gains or losses on termination of derivatives considered a hedge are recognized over the remaining life of the original transaction.

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<sup>5</sup> See *The Executive's Guide to Foreign Exchange Exposure Management*, Niso Abuaf et al., Salomon Brothers Inc., September 1993.



**Question 5**

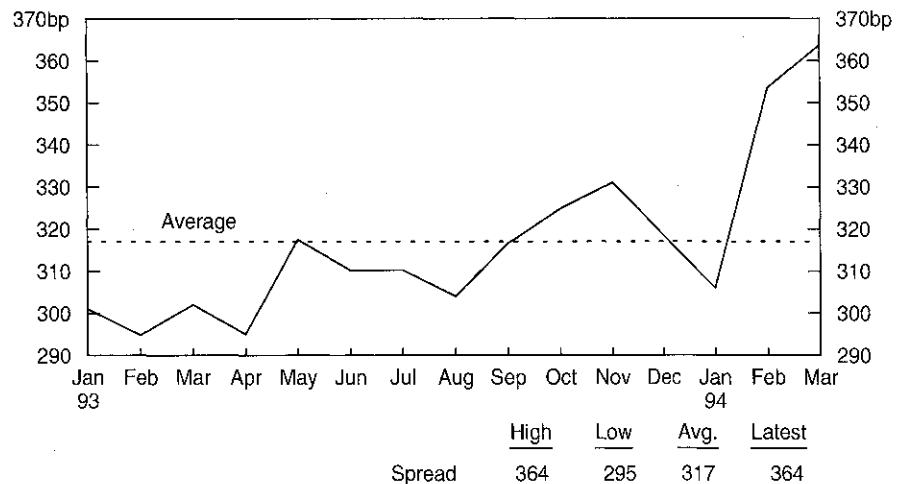
*How should issuers who want to exploit the short end of the historically steep yield curve (see Figure 9) and are fearful of rising interest rates protect themselves?*

**Answer 5**

Issuers can protect the interest rate exposure of floating-rate debt by purchasing interest rate caps. However, expected widening of swap spreads, a steep yield curve and high interest rate volatility (see Figure 10) result in relatively high cap premiums. Consequently, issuers may want to consider a number of cap strategies, including the following:

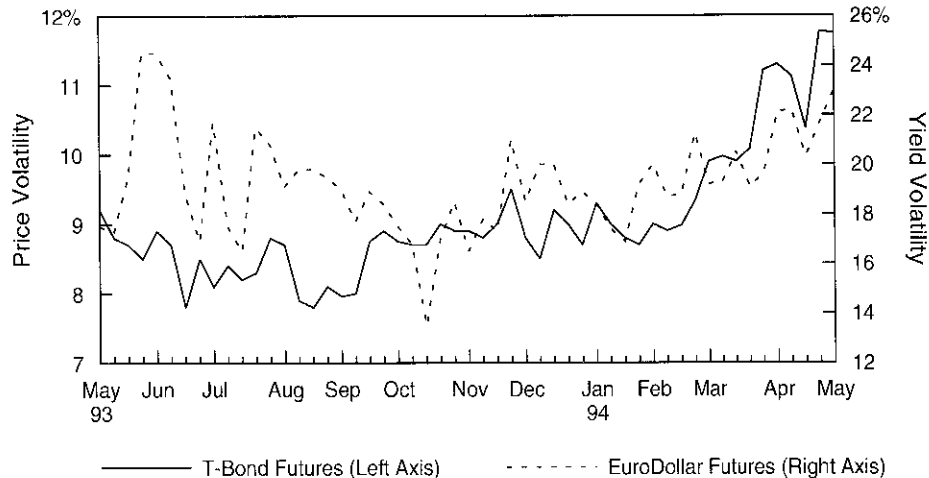
- **Conventional Caps.** These provide interest rate protection while allowing the company to benefit from lower short-term rates.
- **Average Cost Caps and Horizon Caps.** Typically, average and horizon caps cost a company less than a conventional cap by providing protection only against interest rate increases. Depending on the shape of the yield curve, however, average cost caps might be more expensive than regular caps. In the current environment, for example, average cost caps cost 3%-8% more than conventional caps.
- **Collars.** These guarantee that the interest cost of a company will be within a specified range. These are not as costly as conventional caps because a company gives up the benefits of interest rate declines below a floor in exchange for protection against interest rate rises above a ceiling.
- **Contingent Premium Caps.** These allow a company to pay the cap premium only in interest rate scenarios in which the cap is in-the-money, allowing the company to avoid an up-front premium.

**Figure 9. Five-Year Fixed Swap Rates Minus Three-Month LIBOR, Jan 93-Mar 94**



LIBOR London Interbank Offered Rate.

Figure 10. Interest Rate-Implied Volatility, May 93-May 94



**Question 6**

*How can issuers reduce their borrowing costs in the current environment?*

**Answer 6**

The current market environment can be characterized by a steep yield curve, particularly up to five years, and high volatility — compared with historical standards. As such, view-driven issuers who have an appetite and board approval for taking risk can swap their fixed-rate debt into floating or can sell interest rate options to lower their funding costs — provided that their views materialize.

Issuers who swap their fixed-rate debt into floating, would achieve cost savings if future LIBOR rates stay below current implied forward LIBOR rates. Conversely, such issuers would bear higher costs if future LIBOR rates move higher than the implied forwards.

When selling options, the higher the volatility and the more in-the-money the options are, the more valuable they would be, allowing issuers to significantly lower their funding costs. For example, an issuer can lower its costs of funds by explicitly selling options-like caps, floors or swaptions, or by entering into structured swaps having option-like features. These options can be tailored to meet a corporation's risk-reward tolerance. The accounting implications of such strategies should be considered before implementation. In addition, issuers can sell options implicitly by issuing put bonds. Selected strategies include the following.

• **Issuing Put Bonds**

By issuing a put bond, a borrower can reduce its interest expense below that of a bond without any embedded options. In a put bond, the investor has the option to put the bond back to the issuer, typically at par, after the put protection period.

During the put protection period, the issuer enjoys a lower interest expense. After the protection period, however, if interest rates rise and the bond is put back, the issuer must refinance the bond with higher interest rates.

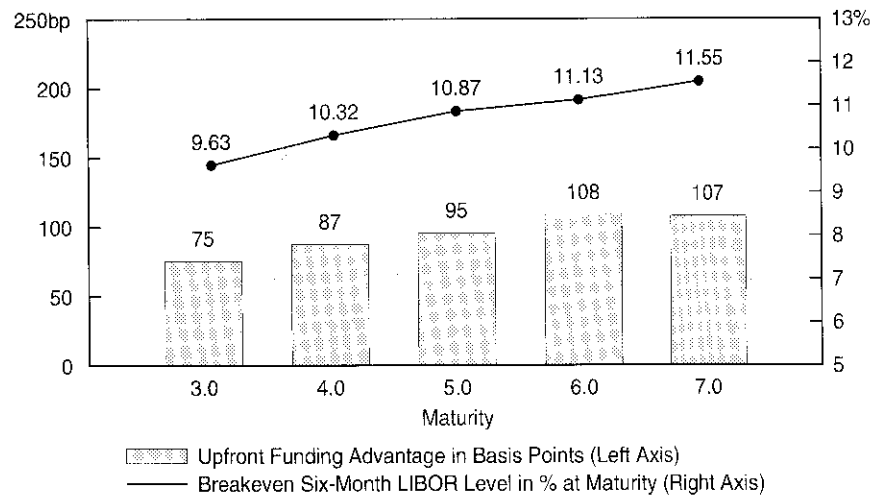
Issuers who expect that interest rates will not move up significantly or who think that they can neutralize the optionality of their put bonds by buying relatively cheaper put options in other markets — for example, by buying swaptions to pay fixed — likely will issue put bonds.

• **Selling Caps to Create Synthetic Multi-Put Bonds**

A borrower planning to issue a fixed-rate bond may be able to lower its cost of funds by selling a simple cap on six-month LIBOR struck at the coupon level of the note. By following such a strategy, an issuer effectively pays a floating rate if the reference interest rate is higher than the fixed-bond coupon. Conversely, if the reference interest rate is lower than the fixed bond coupon, the issuer pays the fixed coupon. **The economics of this strategy are identical to issuing a multi-puttable note puttable at every reset date and refunded by a floating issue.** Because the current yield curve is steep, implying high forward rates, this strategy may result in substantial savings. Figure 11 shows the amortized savings per year for various maturities, assuming a funding level of Treasury *plus* 30 basis points. The break-even terminal LIBOR rate at maturity that makes the issuer indifferent between the multi-puttable note and a straight fixed-rate issue also is shown. The analysis assumes that LIBOR rises linearly from its initial value to its terminal value.

Currently, the volatility levels in the derivatives market — for maturities up to ten years — are one to two percentage points higher than what investors would pay in the bond market. Therefore, it may be more cost-effective to create synthetic put bonds by issuing fixed-rate bonds and selling caps than to issue straight puttable bonds.

Figure 11. The Economics of Selling Caps to Create Multi-Put Notes: Break-Even Points and Savings



Bp Basis points.

• **Selling Swaptions**

An issuer may reduce its cost of funds by selling swaptions, which give a holder the right to pay (payor option) or to receive (receiver option) a fixed rate in a predetermined swap.

Figure 12. Term Sheet of a Generic Swaption

Swaption Type	Payor or Receiver
Maturity of Swap	10 Years
Fixed-Rate Strike	7.61%
Floating Rate	6-Month LIBOR
Swaption Maturity	12 Months
Exercise Style	American or European

LIBOR London Interbank Offered Rate.  
Source: Salomon Brothers Inc.

Typically, an issuer can sell the following:

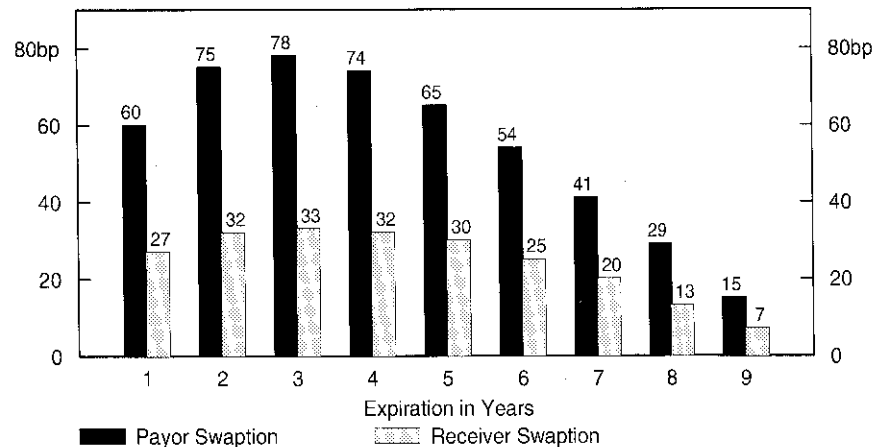
- A payor swaption struck at the coupon level of an existing fixed-rate issue; or
- A receiver swaption on a floating-rate issue.

If the holder exercises the swaption, the issuer's interest rate exposure switches as follows:

- From floating to fixed (receiver swaption); or
- From fixed to floating (payor swaption).

For example, an issuer can attempt to reduce the cost of a fixed-rate ten-year issue by selling a European payor swaption with an option maturity varying from one to nine years. Specifically, selling a three-year payor swaption may give an issuer a funding advantage of 78 basis points. If the swaption is exercised, the issuer pays the floating-rate leg for years three to ten. Figure 13 illustrates the yearly funding advantage of this strategy as a function of the maturity of the option. Selling a payor swaption results in greater savings than selling a receiver swaption. This primarily is caused by the steep yield curve, which implies that forward rates exceed spot rates. That is, having the right to pay the current ten-year rate is more valuable than receiving it. The difference between the payor and receiver swaption savings peaks at an expiration date around three years from settlement date. This peak is caused by the interplay of two offsetting factors. On the one hand, the longer the maturity of the swaption, the higher the value of the option because option values increase with time to expiration. On the other hand, the longer the maturity of the swaption, the shorter the maturity of the swap, into which the option can be exercised. This second factor decreases the value of the option.

Figure 13. The Yearly Funding Advantage of Selling Swaptions, If Swaptions Unexercised



• **Entering into Index-Amortizing Swaps**

An index-amortizing swap is a swap whose principal amortizes as a function of an interest rate index such as a Constant Maturity Treasury (CMT) or LIBOR. In a typical index-amortizing swap, principal paydown accelerates when interest rates decline — mimicking the prepayment of a mortgage. The fixed receiver in such a swap would receive a higher

coupon than an interest rate swap with a similarly weighted average life. Consequently, a fixed-rate bond issuer that receives fixed in an index-amortizing swap can significantly reduce its effective floating cost of funds if its views materialize. The cash flows and interest rate sensitivity of an index-amortizing swap are similar to those of a mortgage-backed security. As such, issuers should fully understand the complex risk implications of executing such a swap.

The amortization rate, typically applied to the original principal amount, is given by the amortization schedule (Figure 14). When the change in the interest rate index falls between the values given, linear interpolation is used to determine the amortization rate. Typically, a lock-out period of two to five years is specified, where no amortization takes place. The interest rate index, the lock-out period and the maturity can be selected depending upon the corporation's interest rate views.

Factors including the shape of the yield curve and the volatility of interest rates affect the pricing of an index-amortizing swap. Because the fixed-rate receiver in an index-amortizing swap effectively has sold bond put options, he receives a higher coupon when volatility is high and when the yield curve is steep. The steep yield curve, as well as increased volatility, has prompted many treasurers to take advantage of index-amortizing swaps. For example, a 10-year fixed rate issuer can enter into an index amortizing swap, as shown in Figure 14, and receive 7.62% thereby outperforming either a 5-year conventional (6.98%), or a 10-year conventional (7.48%) swap strategy at the expense of the possibility of reduced coverage after four and a half years.

When choosing the interest rate index driving the amortization, a manager should clarify his expectations about the future shape of the yield curve. For example, a manager who expects that the yield curve will flatten at the short end may use a longer-term rate as the index, such as a five-year CMT.

**Figure 14. Index-Amortizing Swap, Generic Term Sheet**

Structure			
Fixed-Rate Payor			Salomon Brothers
Floating-Rate Payor			XYZ Corporation
Start Date			Spot
Lock-Out Period			4.5 Years
Final Maturity			10 Years
Amortization Index		5-Year Constant Maturity Treasury	
Floating Coupon		6-Month LIBOR	
Fixed Coupon		5-Year Treasury + 90 bp (7.62%)	
Conventional 5-Year Swap		5-Year Treasury + 26 bp (6.98%)	
Conventional 10-Year Swap		10-Year Treasury + 34 bp (7.48%)	
Amortization Schedule Starting After Lock-Out Period			
Rate Move	5-Year CMT	Semiannual Principal Amortization	Weighted Average Life (Years)
-400bp		100.000%	5
-300		100.000	5
-200		100.000	5
-100		100.000	5
0		100.000	5
100		11.110	7
200		3.636	9
300		0	10

bp Basis points. LIBOR London Interbank Offered Rate.  
Source: Salomon Brothers Inc.

• **Equity market issuance in the United States slows down.**

The slowdown of the new issuance market (see Figure 15) largely reflected the price correction caused by rising interest rates. Interestingly, Real Estate Investment Trusts (REITs) accounted for nearly one quarter of the initial public offering (IPO) volume in the first quarter of this year — a significant increase from previous years. Surprisingly, equity mutual funds experienced an outflow of funds only during the first week of April. This show of retail confidence was one of the factors keeping the equity market from further declines.

**Figure 15. Total Equity Issuance, 1Q 93-1Q 94 (Dollars in Billions<sup>a</sup>)**

	1Q 94	4Q 93	1Q 93
Common Stock and Convertibles	\$14.9	\$23.4	\$13.5
IPOs, Excluding REITs	6.1	7.0	7.8
Initial Public Offerings of REITs	2.0	0.5	0.0
Total	\$23.0	\$30.9	\$21.3

<sup>a</sup> Equity issuance excludes Rule 144A transactions and closed-end investment funds. IPO Initial public offering. REIT Real estate investment trust.

Sources: Securities Data Corp. and Salomon Brothers Inc.

**International equity issuance and privatizations continued at near-record levels** as well-known names such as Daimler-Benz, Dresdner Bank, Elf Aquitaine, Instituto Mobiliare Italiano, KLM Royal Dutch Airlines, and Tele Danmark tapped the U.S. market.

**Question 7**

*What equity market trends are likely to continue in 1994?*

**Answer 7**

• **Many corporations have been changing — and are likely to change — their dividend policies.** In the first quarter of 1994, corporations announced 551 dividend increases, the highest number since the first quarter of 1981, when 701 companies hiked their dividends. Furthermore, only 20 companies reduced dividends, and 23 omitted payments in the first quarter of 1994. These 43 unfavorable actions compared with 63 in the first quarter of 1993, and totaled the lowest amount since 40 negative actions in the first quarter of 1984.

Conversely, we recently witnessed a watershed event in that FPL Group — the parent of Florida Power & Light, a healthy electric utility — cut its dividend and initiated a significant share repurchase program. FPL Group's dividend action reflects, in part, the growing competitive pressures and potential regulatory changes that the electric utility industry may face. This may be the first in a series of future dividend cuts in which healthy electric utilities, telephone companies and other companies in industries with significant dividend payouts reduce their dividends to enhance financial flexibility.

Interestingly, within two weeks of the dividend cut, seven "Buy" recommendations were put on FPL's stock. The stock has recovered much of the initial drop after the dividend cut announcement. Standard and Poor's comments to this dividend cut also were favorable: "Although FPL's actions were a surprise and will be painful for shareholders in the short term, we think the move was a good one since it will strengthen the balance sheet and strengthen the company's ability to compete."

In addition, The Coca-Cola Company has announced a new dividend policy, which states that dividends will increase at roughly 75% of the earnings growth rate. It is very likely that The Coca-Cola Company will use this freed-up capital toward international business investment and share repurchases.

Dividend policy is a complex matter with no clear-cut answers.<sup>6</sup> Typically, however, the following guidelines may help corporations in setting their dividend policies:

- (1) Set dividends to reflect management's estimate of the lower boundary of future intermediate-term earnings;
- (2) Do not increase dividends unless confident that the higher level can be maintained in the future; and
- (3) Under normal circumstances, reduce dividends only if absolutely necessary. However, in some cases, maintain flexibility to reduce dividends if opportunities to divert cash flow to high-return investments are found.

A dividend policy that consistently reflects forecasts of intermediate-term, sustainable earnings should produce signals that are simple, credible and valuable.<sup>7</sup>

- **Universal shelf filings have become commonplace.** A universal shelf filing allows a corporation to speedily and opportunistically issue a variety of securities. Especially in choppy markets, a universal shelf allows companies to opportunistically execute financing strategies as various market windows open and shut. Currently, more than \$75 billion of securities is registered under the universal shelf format, and almost 120 companies have filed a universal shelf since October 1992.<sup>8</sup> In addition, the Securities and Exchange Commission (SEC) recently has adopted certain amendments that allow foreign issuers who have executed a registered equity offering more than a year ago to be eligible to file a universal shelf.

- **Many equity offerings will be in the form of equity carve-outs or spin-offs.** Equity carve-outs made up nearly one third of equity issue volume in 1993. In an equity carve-out, a parent company sells a portion of a wholly owned subsidiary's common shares through an IPO (see Figure 16). Investors like equity carve-outs because it gives them a clean exposure to a particular industry, in addition to allowing them to better monitor corporate management. In addition, carve-outs can enhance investors' perceptions of the parent company's stock by uncovering the subsidiary's favorable prospects, which previously may have been overlooked. Consequently, by carving out its subsidiary, the parent company can lower its cost of capital and boost its stock price. Carve-outs also can improve employee productivity, facilitate the use of stock incentive plans for subsidiary management and augment the firm's overall borrowing capacity.

<sup>6</sup> For more information, see the *Dividend Policy Decision*, Financial Strategy Group, Salomon Brothers Inc., May 1994.

<sup>7</sup> See "Signaling with Dividends, Stock Repurchase and Equity Issues," Paul Asquith and David Mullins, Jr., *Financial Management*, Autumn 1986.

<sup>8</sup> For further information regarding the universal shelf, see *The Universal Shelf — The CFO's Toolbox*, Niso Abuaf, Quyen Chu and Peter Blanton, Salomon Brothers Inc., April 1994.

Recent announcements to spin-off subsidiaries include the following:

- Tenneco's intention to carve out of its J.I. Case farm and construction equipment division;
- The distribution of AirTouch Communications (formerly PacTel Corporation) to the shareholders of Pacific Telesis; and
- The mailing of proxy statements to Kmart shareholders regarding the formation of targeted stock of four specialty retailing subsidiaries.



**Figure 16. Major Equity Carve-Outs Completed in the United States, 1992-Present (Dollars in Millions)**

Offer Date	Subsidiary	Main Line of Business	Issue Proceeds	Parent	Business Description	Pct. of Subowner	
						Pre-Carve-Out	Post-Carve-Out
<b>1992</b>							
Jan	Target Therapeutics	Medical Devices	\$46.6	Collagen	Biotechnology	86.1%	55.0%
Jan	Margaretten Financial	Mortgage Bank	300.0	Primerica	Financial Services	99.0	0.0
Feb	TNT Freightways	Trucking	273.0	TNT	Transportation Services	100.0	25.3
Feb	SPS Transaction Services	Computer Services	55.2	Sears	Retail, Diversified	100.0	76.9
Mar	Vitalink Pharmacy Services	Pharmacy	42.1	Manor Care	Health Care	100.0	81.0
Mar	El Paso Natural Gas	Oil/Gas Pipeline	109.3	Burlington Resources	Natural Resources	100.0	86.0 <sup>a</sup>
Mar	Eskimo Pie	Food Wholesale	54.7	Reynolds Metals	Metals	84.0	0.0
Apr	First Data	Computer Services	1,113.2	American Express	Financial Services	100.0	60.0 <sup>a</sup>
May	John Nuveen	Investment Bank	144.0	The St. Paul Cos	Insurance	100.0	74.0
Jun	Riverwood International	Forest Products	169.3	Manville	Building Materials	100.0	82.0
Jul	CCP Insurance	Insurance	120.2	Conseco	Financial Services	51.1	36.8
Jul	Enron Liquids Pipeline	Gas Distribution	130.0	Enron	Natural Resources	100.0	14.9
Oct	Minerals Technologies	Mining	239.2	Pfizer	Pharmaceuticals	100.0	48.0
Oct	CMAC Investment	Mortgage Insurance	176.0	Reliance Group Holdings	Insurance	100.0	61.9
Nov	USA Classic, Inc.	Textiles	40.4	Orbit International	Textiles	100.0	49.1
Dec	First Colony Corporation	Insurance	271.6	Ethyl	Chemicals	100.0	82.6
Dec	Purolator Products	Auto Parts	166.5	Pennzoil	Energy	100.0	0.0
Dec	Hayes Wheels International	Auto Parts	179.2	Variety	Diversified	100.0	49.8
<b>1993</b>							
Jan	Wm. Coal Seam Gas Royal	Mining	\$119.6	Williams Companies	Oil & Gas	100.0%	46.4%
Jan	Paragon Trade Brands	Disposable Diapers	218.5	Weyerhaeuser	Forest & Paper Products	100.0	0.0
Feb	Dean Witter Discover	Investment Bank	913.3	Sears Roebuck	Retail, Diversified	100.0	82.2 <sup>a</sup>
Mar	Castle & Cooke Homes	Real Estate	81.0	Dole Food	Foods & Paper Products	100.0	82.0 <sup>a</sup>
Mar	St. John Knits	Textiles	116.3	Escada	Textiles, Fashion Access.	83.5	0.0
Mar	Specialty Paperboard	Forest Products	42.2	Boise Cascade	Forest Products	56.2	13.1
Mar	National Steel	Steel	152.0	NKK	Steel	100.0	72.5
Mar	Bankers Life Holding	Insurance	430.1	Conseco	Financial Services	79.6	47.0
Apr	TIG Holdings, Inc.	Reinsurance	1,000.6	Transamerica	Insurance	100.0	28.0
Apr	Geon Company	Chemicals	252.0	BF Goodrich	Tires/Rubber	100.0	50.0
May	Reinsurance Group of Amer.	Reinsurance	172.7	General Amer. Life Insurance	Insurance	100.0	65.0
May	Zurich Reinsurance Centre	Insurance	299.3	Centre Reinsurance Holdings	Insurance	88.0	57.0
May	Stolt Comex Seaway	Offshore Services	46.5	Stolt Tankers and Terminals	Shipping	100.0	70.0
May	Sonat Offshore Drilling	Drilling Services	372.8	Sonat	Diversified Energy	100.0	45.0
Jun	Allstate	Insurance	2,376.0	Sears Roebuck	Retail, Diversified	100.0	82.1
Jun	Libbey	Glass Manufacturing	195.0	Owens-Illinois Group	Packaging	100.0	0.0
Jun	Electrogas	Manufacturing	99.2	General Signal	Diversified	100.0	8.8
Jul	AT&T Capital	Credit Institution	123.6	Amer. Telephone & Telegraph	Telecommunications	100.0	87.0
Aug	Dual Drilling	Natural Resource	87.5	Mosvold Shipping	Shipping Service	100.0	60.3
Aug	Motor Coach Industries Intl	Bus. Manufacturing	260.0	Dial	Consumer Products	100.0	0.0
Sep	Antec	Cable Wholesale	146.7	Itel	Diversified	100.0	59.0
Sep	Belden	Electronic Equipment	327.8	Cooper Industries	Diversified	100.0	19.2
Sep	Kentucky Electric Steel	Steel Mini-Mill	54.0	NS Group	Steel	100.0	8.2
Oct	Gartner Group	Publishing	67.4	Dun & Bradstreet	Business Services	78.0	57.0
Oct	Paul Revere	Insurance	187.5	Textron	Diversified	100.0	83.0
Nov	Transnational Re	Reinsurance	100.0	Phoenix Reinsurance	Insurance	100.0	23.5
Nov	Vesta Insurance Group	Reinsurance	225.0	Torchmark	Insurance	99.0	27.0
Nov	The Talbots, Inc.	Retail	243.4	Jusco	Retail (Japanese)	100.0	66.5
Dec	PacTel (AirTouch Comm.)	Cellular and Paging	1,575.5	Pacific Telesis	Telecommunications	100.0	85.8 <sup>a</sup>
<b>1994</b>							
Jan	Interim Services	Temp Services	\$230.0	H&R Block	Income Tax Preparation	100.0%	0.0%
Feb	Western National	Annuities	388.2	Conseco	Insurance	100.0	48.0
Feb	American Paging	Messaging Service	49.0	Telephone and Data Systems	Telecommunications	100.0	82.5
Feb	AES China Generating	Electric Utility	160.0	AES	Electric Power Plants	100.0	42.9
Mar	Infosoft International	Software Developing	51.8	Houghton Mifflin	Book/Software Publishing	97.8	43.3
Apr	Centex Construction	Construction Products	164.2	Centex	Home Building	100.0	49.0
Apr	MK Rail	Railroad Car Mfg.	96.0	Morrison Knudsen	Construction Services	100.0	65.0
May	American Publishing	Newspaper Publishing	94.9	Hollinger	Newspapers/Magazines	100.0	67.0
May	Investment Tech. Group	Computer Services	42.3	Jefferies Group	Investment Banking	100.0	0.0
May	Financial Security Assurance	Bond Insurer	150.0	U S WEST	Telecommunications	92.5	62.7
May	Bush Boake Allen	Flavors & Fragrances	89.6	Union Camp	Paper & Forest Products	100.0	70.0

<sup>a</sup> Parent company eventually sold, distributed or monetized its remaining interests in the subsidiary company.

Source: Securities Data Corp.

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## EQUITY DERIVATIVE TRENDS

- Equity derivative activity continued on its innovative path even as the equity market experienced a correction in the first quarter of 1994. The equity swap market was the fastest-growing derivative market. This growth was primarily driven by investors seeking exposures across varying markets or trying to avoid anomalous tax regulations and extra costs associated with investing in equities.
- Conversely, corporations focused on strategies to enhance or complement stock buyback programs (for example, put warrants) to monetize or hedge cross holdings, to defer capital gains taxes and to manage employee compensation to maximize performance. According to the International Swap and Derivatives Association, the national principal value of equity derivatives activity totaled \$66 billion in 1992, including \$10 billion in equity swaps.

### Question 8

*What is the impact of equity derivatives and hedging on the issuer's stock?*

### Answer 8

There is growing evidence that derivatives and related hedging tend to improve the trading liquidity and reduce the price volatility of the underlying stock. In particular, several empirical studies of exchange-listed options document a reduction of the price volatility of the underlying stock of about 7%-20% for companies with options listed on an option exchange.<sup>9</sup> The measured rise in volatility, when a company's stock is delisted from an options exchange, is equally significant because the price volatility increases by 9% on average.

Many market practitioners believe that the availability of hedging vehicles (such as convertible bonds or options) moderates the volatility in the underlying security because traders can use derivatives to offset market exposure and facilitate a customer's trade.<sup>10</sup> For example, if an investor sells a stock to a dealer, the dealer can hedge this position using the option or convertible market, as well as the stock market. To the extent that an investor's desire to trade can be accommodated in several markets, price movement in the stock market usually is reduced. When stock price movement is reduced, the stock is perceived as less risky.<sup>11</sup> Because investors typically require lower returns on less risky stocks, the company's cost of equity actually may be reduced.

In addition, the presence of equity derivatives can increase market liquidity. The additional hedging opportunities provided by convertibles and options generally increase trading activity in the underlying stock. One study found that the writing of a 100-share option contract was accompanied by a 22-share increase in trading volume on the underlying stock.<sup>12</sup>

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<sup>9</sup> Volatility reductions of 10%-20% are reported in "Options Markets and Stock Returns Volatility," Douglas Skinner, *Journal of Financial Economics*, No. 23, 1989. A 7% reduction in the volatility of the optioned stock after exchange listing is found in "Option Listing and Stock Returns: An Empirical Analysis," Jerome Detemple and Philippe Jorion, *Journal of Banking and Finance*, No. 14, 1990.

<sup>10</sup> In fact, derivative trading volume in some issues exceeds the trading volume of the underlying securities.

<sup>11</sup> There is evidence that stock betas (measures of the systematic or market-related risks) are lower for companies that have exchange-traded options. See "The Impact of Options on the Underlying Securities," Robert Klemkosky and Terry Maness, *Journal of Portfolio Management*, Winter 1980.

<sup>12</sup> See "The Impact of Listed Options on the Underlying Stock," Samuel Hayes III and Michael Tannenbaum, *Financial Management*, Winter 1979.

Increased liquidity and a more stable stock price may have a material, favorable effect on the cost of capital. For example, stock prices usually appreciate modestly after an announcement that the stock will have options listed on an exchange. Academic studies document a 3% average increase in the price of a stock when options are listed on an exchange.<sup>13</sup> There also is a positive relationship between the price increase and level of activity on the related option market. Moreover, the shares do not appear to lose that relative gain as long as option trading continues. If a company's stock is delisted from an option exchange, however, the stock price tends to fall.

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<sup>13</sup> See "Option Listing and Stock Returns: An Empirical Analysis," Jerome Detemple and Philippe Jorion, *Journal of Banking and Finance*, No. 14, 1990. Similar results are indicated in "The Price of Option Introduction," Jennifer Conrad, *The Journal of Finance*, June 1989.

- **The M&A environment continued at its brisk pace in the first quarter of 1994:** More than 1,400 transactions totaling \$48 billion were announced, almost double the first-quarter 1993 volume. While this level is down from the \$74-billion and \$52-billion figures in the second and third quarters of 1993, it reflects a continued high level of activity. Announced transactions over the 12-month period ended March 31, 1994, totaled \$217 billion, 9% ahead of the prior-12-month level.
- **Large transactions in a few industries continued to dominate the M&A market.** Of the 1,400 transactions announced, \$10-billion deals accounted for almost one half of the total dollar volume. The industries with the highest volume continued to be **financial services** (particularly, banks and investment management), **media and health care** — unchanged from 1993. The largest transactions announced in the quarter are presented in Figure 17.
- **The primary factors behind the continued heightened activity are regulation, regulation and regulation.** Secondary contributors include changing technologies, competition, corporate restructurings, and a healthy economic environment. Regulation in all its forms is the principal driver behind activity in the most active sectors. Pending deregulation of interstate banking is causing bank holding companies to consolidate in their region, pending health care regulation is fueling a series of HMO and hospital consolidations and drug company combinations, and reregulation of the cable television industry is affecting the strategic activity in that sector. In addition, corporate managers continue to use M&A as a tool to accomplish restructurings, as well as offensive or defensive market strategies.
- **The most notable transactions in the first quarter were the ones that failed.** The unraveling of the \$31-billion Bell Atlantic/Tele-Communications, Inc. and \$4.9-billion Southwestern Bell/Cox Cable transactions marked a slowdown in the frenzied rush for telephone and cable companies to combine. Much of this activity is being driven by rapidly advancing technology, which is expected to dramatically increase the flow of information and entertainment to the home, thereby converging the telephone and cable television businesses. This overhyped *information superhighway*, combined with an easing of telephone company ownership restrictions, fueled five telco/cable deals in 1993. In February 1994, regulatory changes had the opposite effect as the Federal Communications Commission's (FCC) second pass at the Cable Act of 1992 called for further cable rate reductions, which caused a widening of the bid/ask spread on the price of the pending deals. Despite these withdrawals, activity in this sector continues, reflecting the inevitable convergence of the industries caused by the technological advances.
- **Equity continues to be a favored acquisition currency** as 41% of the announced transactions utilized stock consideration, double that used in the first quarter of 1993. This is attributable to the buoyant equity markets in the first half of the quarter. Based on the recent volatility in the equity markets, target shareholders will view stock transactions with greater scrutiny and possibly require the use of value guarantees such as collars. The Viacom/Paramount transaction was a potent example of the volatility

**Figure 17. Ten Largest Merger and Acquisition Deals Announced in the First Quarter of 1994 (Dollars in Millions)**

Date Announced	Acquisitor/Target	Industry	Value	Type
01 Jan 94	Viacom Inc./Blockbuster Entertainment Corp.	Media	\$7,972	Stock Merger
14 Mar 94	General Electric Capital Corp./Kemper Corp.	Finance	2,103	Tender/Merger
10 Mar 94	Northrop Corp./Grumman Corp.	Defense	2,036	Tender/Merger
28 Jan 94	BankAmerica Corp./Continental Bank Corp. NA	Finance	1,911	Stock Merger
04 Mar 94	GFC Financial Corp./TriCon Capital (Bell Atlantic)	Finance	1,798	Divestiture
21 Mar 94	Novell Inc./WordPerfect Corp.	Technology	1,416	Stock Merger
18 Mar 94	First Madison Bank/First Nationwide Bank (Ford Motor Co.)	Finance	1,100	Divestiture
10 Jan 94	FHP International Corp./TakeCare Inc.	Health Care	1,070	Stock Merger
17 Jan 94	HealthTrust Inc./EPIC Healthcare Group Inc.	Health Care	1,004	Tender/Merger
22 Mar 94	Thompson Advisory Group LP/Cadence Capital Management	Finance	858	Stock Merger

Source: Investment Dealers Digest. Includes stake of purchases of \$100 million and greater.

of stock consideration in the context of an acquisition. Viacom's Class B common stock fell by 50% between the announcement of the merger in September 1993 and the end of the competitive tender offer with QVC in February 1994. In order to win the tender, Viacom was forced to increase the cash portion of consideration and guarantee the equity trading value of the acquisition currency.

- **Hostile activity increased significantly in the first quarter of 1994.**

Seven hostile transactions totaling more than \$2.5 billion (5% of total activity) were initiated in the first quarter. This activity was seen across several industries and reflects an increased emphasis on maximizing shareholder value in strategic transactions whether or not solicited. Grumman is a prime example of this: The board chose Northrop's \$62 unsolicited bid over a friendly \$55 offer negotiated with Martin Marietta.

- **Strategic players still dominate the M&A market.** Less than 1% of deals announced involved financial buyers. The significant pickup in M&A activity is being driven by strategic positioning by corporate managers as opposed to financially driven deals. There is, however, ample opportunity for financial buyers to participate in the restructuring of large companies as buyers of healthy but nonstrategic assets.

- **Looking forward, we expect the heightened level of M&A activity to continue.** Despite a rise in interest rates and increased equity market volatility, the fundamental drivers of M&A activity persist. The economy continues to show strong signs of growth without inflation, and Congress has plenty of regulatory bills on its agenda to keep the winds of change blowing. What industries should one look for in terms of future activity? Check the regulatory agenda — the telecommunications industry will continue to adapt to the expected changes in ownership restrictions, utility companies are just starting to feel the impacts of the Federal Energy Act of 1992, and health care companies will continue to proactively reposition themselves to adapt to whatever form that the eventual health care reform bill takes.

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- *Efficiency and Optimal Bond Refunding*, Salomon Brothers Inc, March 1987.

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1994-R1680



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