FINANCIAL INNOVATION AND RISK MANAGEMENT: AN INTRODUCTION TO CREDIT DERIVATIVES

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INDIVIDUAL SOCIAL SECURITY ACCOUNTS: NO FREE LUNCH FOR WALL STREET

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FINANCIAL INNOVATION AND RISK MANAGEMENT:
AN INTRODUCTION TO CREDIT DERIVATIVES

In recent years, discussions of financial innovation and risk management have invariably turned to credit derivatives[1]. Although these instruments are drawing increasing attention[2] and growing in importance[3], credit derivatives remain an obscure subject for many participants in financial markets. To help remedy this situation, the following is an introduction to credit derivatives.

$ billions
(notional amounts)

Global Credit Derivatives Market
(excluding Asset Swaps)

Source: British Bankers' Association (BBA) 2001/2002 and 2003/2004 Credit Derivatives Reports

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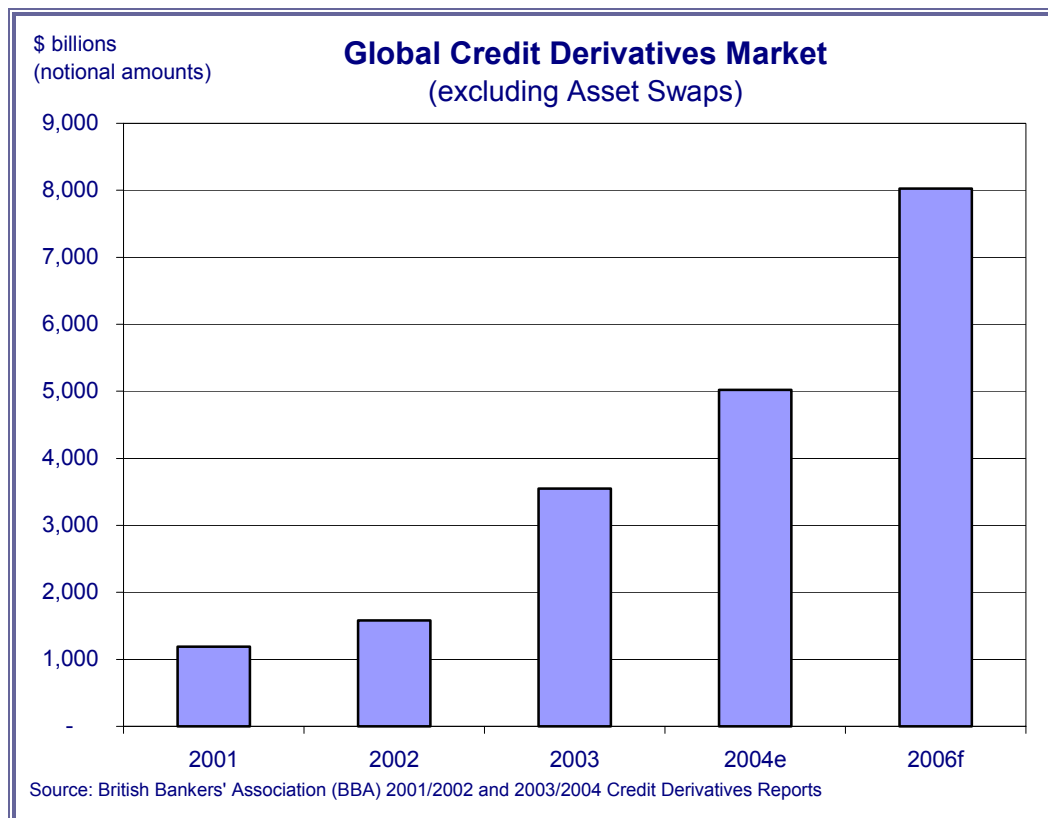
[1] The following is drawn from a presentation made by Frank Fernandez at the Rutgers Business School conference on Financial Innovation: Session IV: Financial Innovation and Risk Management – Credit Derivatives, New York, NY, November 12, 2004. The Rutgers presentation also included material on other risk transfer products (such as catastrophic (CAT) bonds, CAT risk financing and CAT risk swaps) not included here.

[2] The International Swaps and Derivatives Association (ISDA) reported that the notional value of outstanding credit derivatives grew 44% in the first half of 2004, compared to growth of 16% in the much larger interest rate derivatives market in the same period. Charles Batchelor, "Derivatives: Financial instruments with a bad press", *Financial Times*, December 2, 2004, p. 16.

[3] "Many bankers see the rapid growth of derivatives trading, in particular the growth of credit derivatives that allow the separate pricing of credit risk, as the reason why banks survived the 2001-2003 economic downturn without significant failures." Ibid.

Credit Derivatives

The most important characteristics of credit derivatives are that they are financial products which:

— Isolate *credit risk*[4] (from other forms of risk such as *market risk* or *operational risk*) of a particular asset or credit, the *reference credit* or *asset*, and transfers that risk from one party to another;

— Have payoffs that are contingent on the occurrence of a *credit event*, such as failure to pay, obligation acceleration, restructuring, moratorium and repudiation; and,

— Reflect the markets assessment of the likelihood of the reference asset experiencing a credit event within a certain time frame and the expected value of the reference asset after the event (*recovery value*).

The over-the-counter credit derivatives market described below dates to 1991[5], but traces its roots to *options*, in the form of bond insurance, that pay in the event of default of a particular credit, which have been around for more than three decades.[6] The outstanding *notional value* of the credit derivatives market grew from approximately $180 million in 1997 to more than $1 trillion in 2001, before reaching an estimated $5 trillion at end 2004.[7] Although banks seeking to hedge credit risk in their loan portfolios led growth, the size and liquidity of the credit derivatives market developed in response to a broad range of participants seeking to hedge and take credit risk. Current market players include banks, securities firms, non-financial corporations, insurance/reinsurance companies, and hedge funds. One of the most notable changes in the composition of credit derivatives market players is the increasing role of hedge funds and the decrease in securities firms as a share of total participation, as the charts on the following page demonstrate.[8]

The credit derivatives market is useful because it provides:

— Liquidity to the cash market in times of stress;
— Liquidity to individual credits under stress;
— A conduit for information across markets for distinct asset classes;
— A means to isolate credit risk from other risks inherent in ownership of credit instruments;
— A variety of off-balance sheet instruments (except when embedded in structured notes) which offers flexibility in terms of leverage; and,
— An efficient way to short a credit without incurring the risk of a "*short squeeze*".[9]

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[4] Terms in **bold blue italics** are defined in the glossary provided at the end of this piece.

[5] Charles Smithson and Hal Holappa, "Credit Derivatives: What are these youthful instruments and why are they used?" CIBC Wood Gundy School of Financial Products, 1996.

[6] AMBAC has been insuring municipal bonds since 1971 according to Das, S. R., "Credit risk derivatives", *The Journal of Derivatives*, Spring 1995.

[7] 2001/2002 Credit Derivatives Report and 2003/2004 Credit Derivatives Report, British Bankers' Association.

[8] Ibid.

[9] "Credit Derivatives: A Primer," Credit Derivatives Product Management, J.P. Morgan Securities Inc., 2Q 2003.

Credit Derivatives Market Participants (2001)

Buyers

Insurers/Reinsurers 6%
Mutual Funds 2%
Pension Funds 1%
Corporates 4%
Government 2%
Hedge Funds 12%
Banks 52%
Securities Firms 21%

Sellers

Mutual Funds 3%
Pension Funds 2%
Insurers/Reinsurers 6%
Banks 39%
Corporates 2%
Hedge Funds 5%
Securities Firms 21%
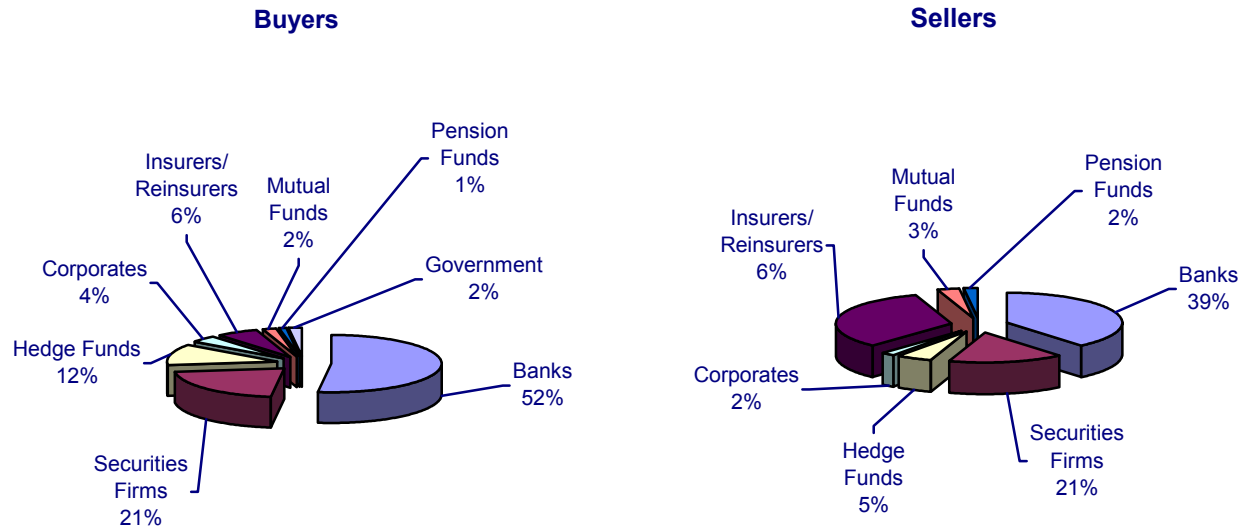
Source: BBA 2001/2002 Credit Derivatives Report

Credit Derivatives Market Participants (2003)

Buyers

Pension Funds 3%
Mutual Funds 3%
Insures/Reinsurers 7%
Government 1%
Corporates 3%
Banks 51%
Hedge Funds 16%
Securities Firms 16%

Sellers

Mutual Funds 3%
Insures/Reinsurers 7%
Pension Funds 3%
Corporates 3%
Government 1%
Hedge Funds 16%
Banks 51%
Securities Firms 16%
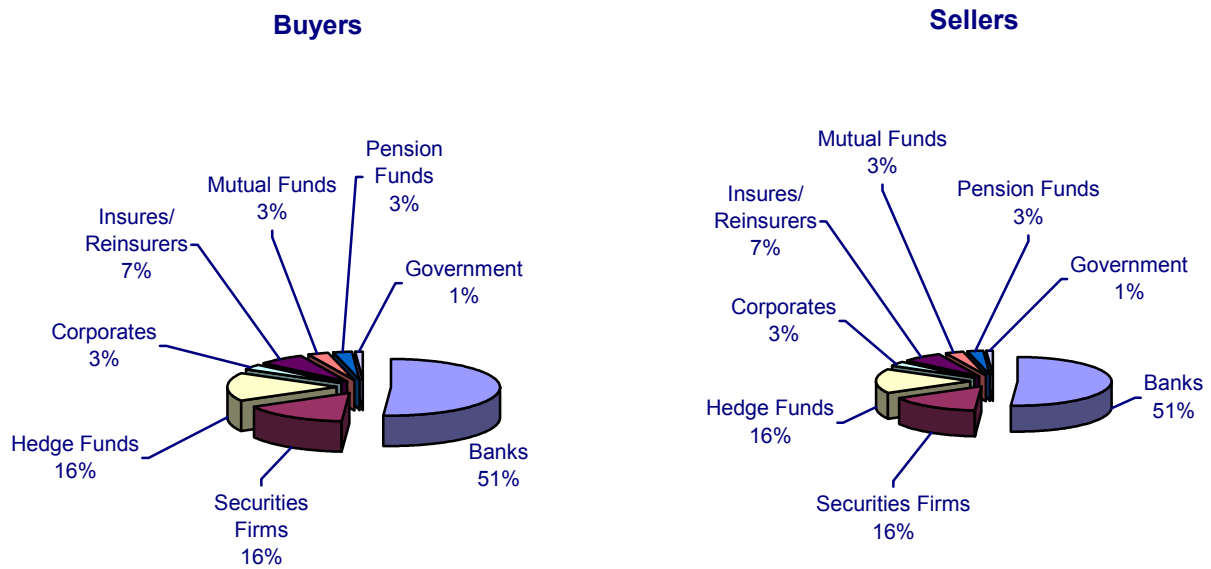
Source: BBA 2003/2004 Credit Derivatives Report

By rationalizing pricing of credit products, the development of the credit derivatives market has promoted efficiency. Financial institutions that have originated, serviced, and held credit risk of various types of financial assets such as bonds, syndicated loans and mortgages can now, with the development of credit derivatives, transfer the risks of these assets to the most efficient holders. Even traditional lending institutions have increasingly become originators and servicers of, rather than investors in credit products. Credit derivatives provide "market completion" by providing access to credit exposure from sources that would not be available otherwise. Credit derivatives have broken down the barriers in a variety of important ways: between product segments (such as, bonds and loans); between geographies (standard global documentation); and, between market participants (those active in securities, loan and derivatives markets).

Principal types of credit derivatives include, but are not limited to: **credit default swaps** (CDS); **synthetic collateralized debt obligations**; **index trades**; **credit-linked notes**; **total return swaps**; **asset swaps**; **basket products**; **credit spread options**; and, **swaptions**. The relative importance of each at end-2003 is shown below.[10]

Breakdown of Credit Derivative Products by Outstanding Notional Amount (End-2003)

Total Return Swaps 4%
Basket Products 4%
Asset Swaps 4%
Credit Spread Options 2%
Swaptions 1%
Equity-linked Credit Products 1%
Credit-linked Notes 6%
Single-Name CDS 51%
Index Trades 11%
Synthetic CDOs 16%

Source: BBA 2003/2004 Credit Derivatives Report

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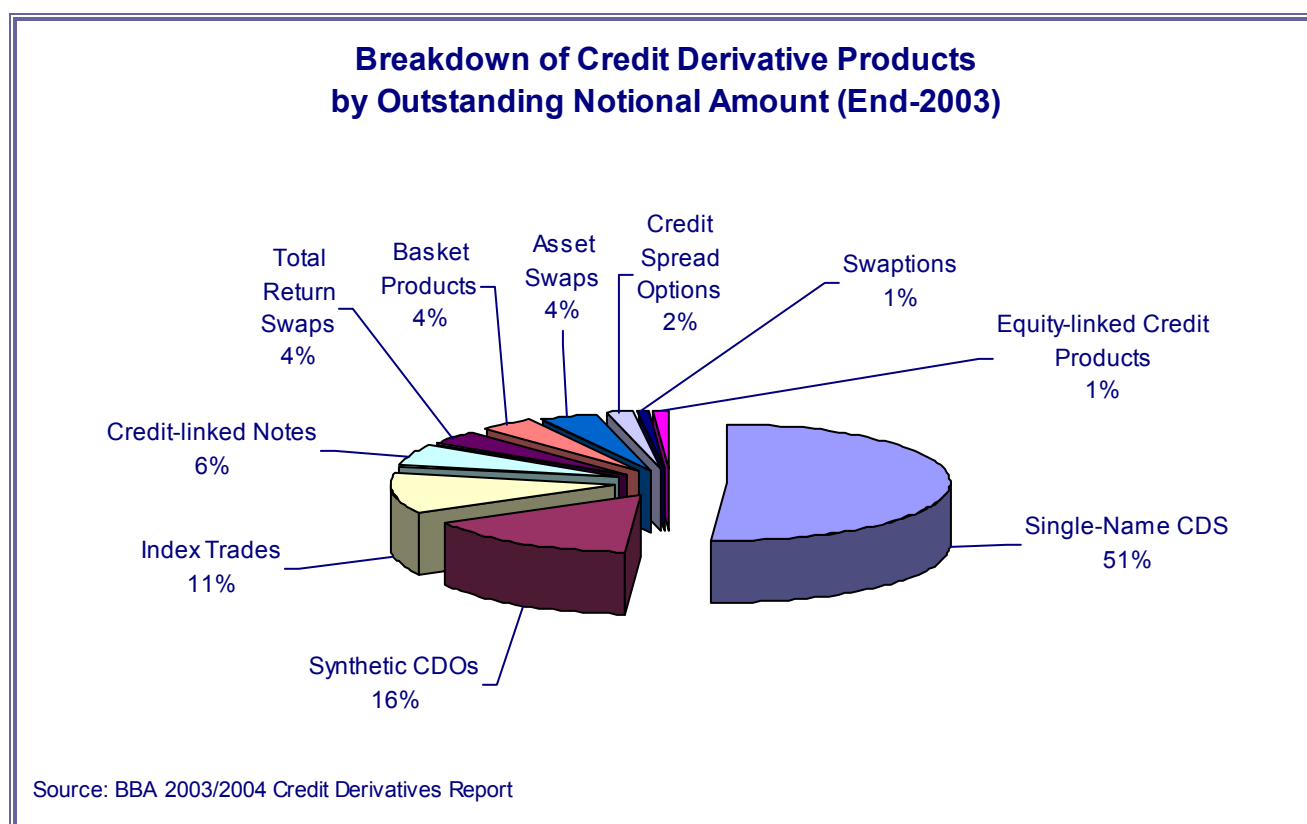
[10] Descriptions of these products are provided in the text that follows.

Credit Default Swaps

Credit default swaps (CDS) are the most common and most liquid type of credit derivatives, accounting for slightly more than half of the outstanding notional value of all credit derivatives. A CDS is a bilateral financial contract by which the *protection buyer* pays a periodic fee/premium to the *protection seller* in exchange for a contingent payment in case a credit event involving the reference asset occurs during the contract period. A CDS carries a fee or premium that reflects the credit risk of the reference asset issuer, and is usually quoted as a spread over a reference rate such as *Libor*, to be paid either upfront, quarterly or semiannually.

CDS contracts are terminated if no credit event occurs before the end of the contract period, with the protection seller having received the fee/premium payments. In the case of the occurrence of a credit event, the contract provides for a contingent payment to be made by the protection seller to the protection buyer. This payment may take one or the other of two forms – physical or cash – which is specified in advance in the contract.

$billions
(notional amounts)

Credit Default Swaps Importance in the Credit Derivatives Market

Other
Credit-linked Notes
Credit Default Swaps

1999   2001   2003

Source: BBA 1999/2000, 2001/2002, and 2003/2004 Credit Derivatives Reports
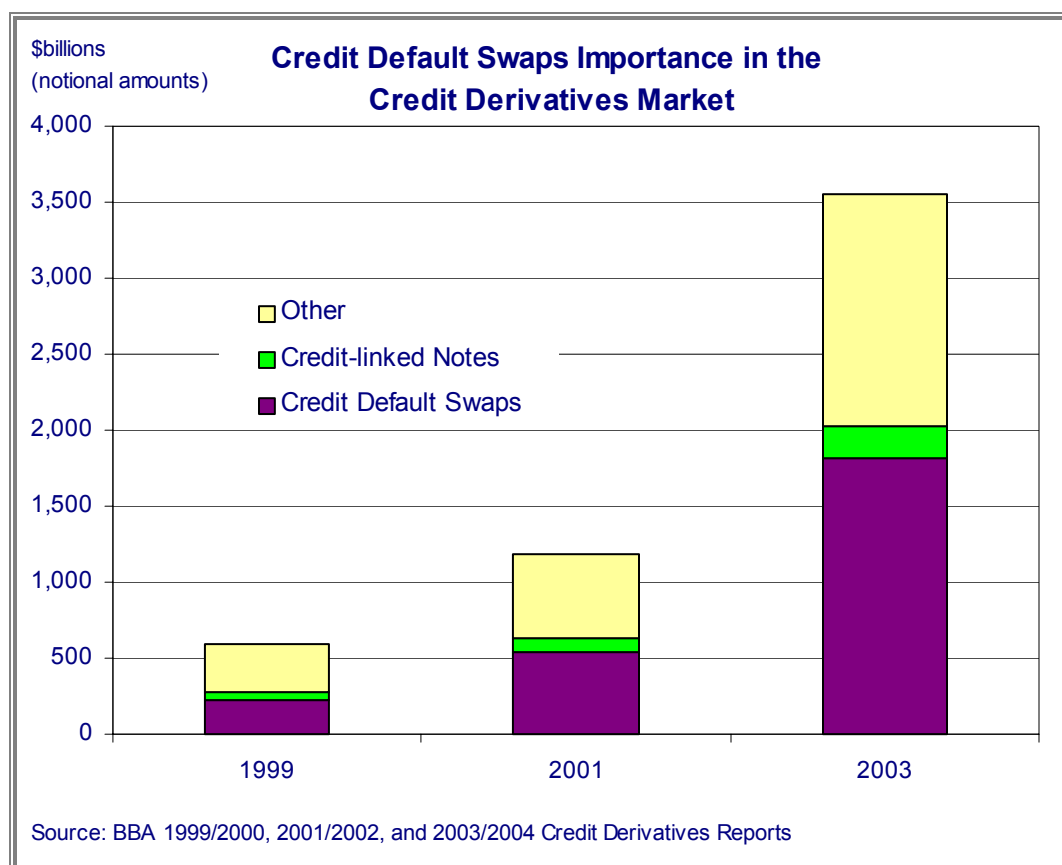
Key Terms

Any CDS contract will include several key terms that determine the characteristics of the risk being traded. Such terms will include at least the following:

— The reference asset, which is usually an actively traded corporate or sovereign bond or a portfolio of such bonds, or is a widely syndicated loan or portfolio of such loans;

— Credit events, which usually are defined by standard market convention as (1) bankruptcy, insolvency or payment default, (2) a stipulated price decline for the reference asset or (3) a ratings downgrade of the reference asset;

— Settlement method, which is either (1) a cash payment of a fixed percentage of the notional amount by the protection seller to the protection buyer or (2) physical delivery which is accomplished by the payment of the par amount by the protection seller in exchange for physical delivery of the reference asset by the protection buyer;

— Scheduled termination date, which is the date on which the protection ends;

— Notional amount, which is the amount used to calculate the premium/fee;

— Premium/fee, which is expressed in basis points per annum, usually paid up front, quarterly or semiannually.

The International Swap and Derivatives Association (ISDA) set and defined standard credit events (such as bankruptcy, failure to pay and restructuring) and standardized terms of CDS contracts in 1999, substantially aiding development of this market. The flow chart below diagrams the basic terms of a CDS.
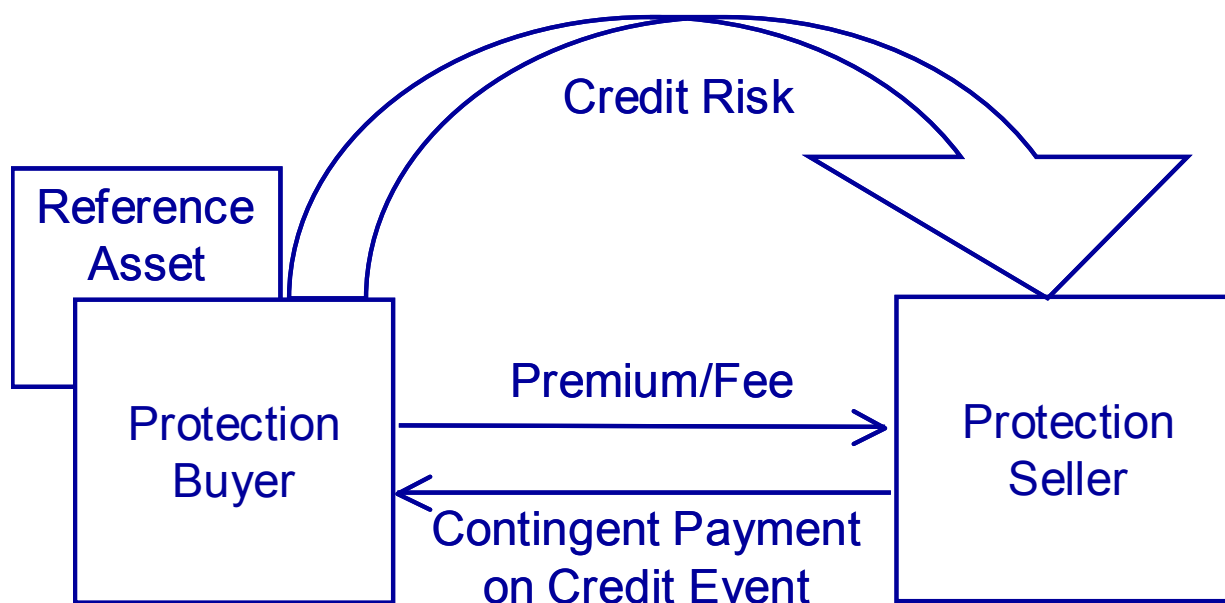
Valuing a CDS

Determining the relative value of a CDS should, in theory, be relatively straightforward. Since a CDS isolates credit risk, its price should be equal to the price of the reference asset (such as a bond or loan) stripped of its funding cost (since, in a CDS transaction the underlying notional amount is not purchased, and hence no funding is required), interest rate risk, and other risks. These reference assets can be swapped into a floating rate investment with a return expressed as a spread over Libor. When purchasing the reference asset, an investor is assumed to borrow to fund the asset, therefore the cost of funds must be subtracted from the return on the asset to find the net return. Since a CDS is an unfunded investment (as explained above), the Libor portion of this equation can be removed leaving the theoretical price of credit risk.

Therefore, the CDS spread and the stripped bond spread should be approximately the same, with a theoretical portfolio of a CDS contract and its reference asset being essentially risk free. In actuality, however, this is not the case, as CDS spreads are generally larger than stripped bond spreads. The difference between these two spreads is called the "basis" and the risk that the basis widens or narrows over time is referred to as basis risk. The causes of the basis are many, beginning with causes such as market friction (the two instruments trade in different markets with different liquidity and trading costs) and differences in the timing of interest payments and maturities. Other factors that may cause a divergence in spread are options that may be embedded in some CDS contracts, such as a cheapest-to-deliver option clause. These pricing issues, however, go beyond the scope of this introductory piece.

In addition, credit risk is not the only factor affecting the value of a CDS, which is impacted by a number of things, including:

— The market perception of the credit quality of the reference asset;

— Interest rates;

— The credit quality of the counterparty;

— The liquidity of the reference asset;

— New issuances by the reference entity; and,

— General market liquidity.

Other Credit Derivatives

There are a great variety of instruments that allow market participants to buy and sell specific slices of credit exposure. Below are examples of several of the larger categories of credit derivative products. The list is not exhaustive and variations and new products are continuously emerging, as market participants identify new niches of risk that can be isolated and transferred via credit derivatives.

Credit linked notes (CLN) are securities with principal and/or interest payments linked to the occurrence of a credit event with respect to a specific reference entity. In effect, a CLN embeds a CDS into a funded asset to create a synthetic investment that replicates the credit risk associated with the reference asset. CLNs are issued either on an unsecured basis directly by a financial institution or issued from a collateralized special purpose entity (SPE), typically a trust. Often CLNs provide access to the credit derivative market for investors who cannot trade derivatives.

Collateralized debt obligations (CDO) are structured fixed income securities (notes) with cash flows linked to the performance of a reference debt instrument. CDOs are issued by an SPE and are collateralized by a portfolio of debt instruments held by the SPE that is purchased with the proceeds from the sale of the CDO. The debt instruments held in the CDO may be bonds, loans, revolving credit facilities, mortgage-backed securities, other asset-backed securities, or other types of debt instruments. CDOs are generally issued in tranches of different seniority and equity and the tranches are generally rated on the basis of portfolio quality, diversification and structural subordination. The tranches are ordered so that in the event of a credit event, the loss of principal and/or interest incurred on the collateral are absorbed first by the lower level tranche, before affecting higher tranches.

Index trades are designed to provide investors with the ability to trade on the movements of a highly diversified index of credits. The index trade contract is drawn up based on a basket of credit default swaps referencing a static, but diversified pool of credits that closely tracks the chosen index at the time of the trade.

Basket products are credit derivatives that transfer credit risk with respect to multiple reference entities.

Total return swaps allow the swap buyer to receive the cash flow generated by the reference asset and pay an amount determined by an agreed upon reference rate. At maturity of the swap, the reference asset is revalued and payment is made, with the buyer bearing the risk of default.

Asset swaps restructure a security's cash flow. Typically, restructuring may include repackaging an issue paying fixed rates into floating rates or vice versa or converting cash flows stated in one currency to another. Asset swaps are often aligned with credit derivatives. In a credit swap, the party who is long the credit risk (buyer) pays a premium/fee in the form of a continuous stream of payments to the counterparty (seller). The seller agrees to make a payment to the buyer should a credit event occur.

Credit spread options are used to hedge against or take on the risk of changes in credit spreads. A reference asset is selected and a strike spread and maturity are set. The contingent payment depends on whether the actual spot credit spread at the exercise date of the option is over or under the strike spread of the reference asset.

Swaptions, or options on swaps, allow the holder the option to enter into a swap with a pre-specified fixed payment stream over a specified period of time. In the case of a credit swaption, these payment streams are contingent on the occurrence of a credit event.

It is clear that credit derivatives have a variety of forms and uses, allowing the transfer of credit risk in ways that were not previously possible. Such products help make credit markets more efficient and liquid, and allow for greater diversification of credit risk.

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GLOSSARY

Credit events are defined by standard market convention as (1) bankruptcy, insolvency or payment default, (2) a stipulated price decline for the reference asset, or (3) a ratings downgrade of the reference asset.

Credit risk is the possibility of a loss occurring due to the financial failure to meet contractual debt obligations.

Libor, which stands for the London Interbank Offered Rate, is the most widely used benchmark or reference rate for short-term interest rates and is the rate that credit-worthy international banks generally charge each other for large loans. It is compiled by the British Bankers Association and released to the market at about 11:00 AM London time each business day.

Market risk is the risk associated with fluctuations in market prices.

Notional value or *notional amount* is the predetermined dollar amount on which the exchanged payments in a derivative instrument are calculated.

Operational risk covers risks other than market or credit risk, most importantly those involving breakdowns in internal controls and corporate governance. Other aspects of operational risk include major failure of information technology systems or events such as major fires or other disasters.

Options are the contractual right, but not the obligation, to buy or sell a specific amount of a given financial instrument at a fixed price before or at a designated future date.

Protection buyer and *protection seller* are terms used in the context of credit derivatives where the buyer of a credit derivative is buying protection against the occurrence of a credit event, and the seller is selling that protection.

Recovery value is the expected value of the reference asset after a credit event.

Reference asset or *credit*, in the context of credit derivatives, is the instrument(s) from which the value of the credit derivative is derived. It is usually an actively traded corporate or sovereign bond, or a portfolio of such bonds, or is a widely syndicated loan or portfolio of such loans.

Short squeeze is the situation in which the price of an instrument stock rises and investors who sold short rush to buy it to cover their short position and cut their losses. As the price of the stock increases, more short sellers feel or are compelled to cover their positions, thereby accelerating the price rise.

INDIVIDUAL SOCIAL SECURITY ACCOUNTS:
NO FREE LUNCH FOR WALL STREET

Introduction

There is widespread expectation that Social Security will be significantly reformed over the course of the current Administration. In particular, there has been much speculation that a system of individual Social Security accounts will be introduced, whereby workers will be allowed to divert some portion of their Social Security payroll tax into personal accounts invested in bond and equity funds.

Any proposal for a system of individual Social Security accounts will need to deal with a range of complex issues, not least how the transition between the current pay-as-you-go system and a new partially-funded system will work. In weighing any profound reform, it is important to think through how the costs stack up against the benefits. In particular, some analysts worry that the costs of a system of individual accounts will be excessive and end up reducing the real value of savings, generating a free lunch for Wall Street rather than a retirement nest-egg for the average worker.[1]

In SIA's view, a well-configured system of individual Social Security accounts would help ensure that individuals get a market return on their savings at minimal cost and with minimum complexity. Such a system would, in its basic form, provide workers access to a limited set of index-linked savings products, administered in a centralized fashion. It would be simple for workers to understand, and would generate the economies of scale that would keep administrative expenses and investment-management fees to a minimum.

The aim of this piece is to develop a picture of what a system of individual Social Security accounts might look like, and then analyze the likely costs involved, the potential participation rates, and the likely impact on Wall Street. A simple model of individual Social Security accounts, where workers can choose to invest in a limited number of index funds, would generate $39.0 billion of fees (in present value terms) over a 75-year window. This represents just 1.2% of the estimated revenue of the entire financial sector over the next 75 years. A more sophisticated model, where workers can choose to invest in a wider range of actively managed funds, would generate at most $279 billion in fees (in present value terms) over the same 75-year window.

What Might The System Look Like?

A system of individual Social Security accounts is unlikely to look much like the current world of mutual fund investment. The mutual fund universe is highly diverse, with a very large number of funds offering a wide range of investments and a wide variety of service options. Moreover, the fees that mutual funds charge (12b-1 fees and upfront 'load' charges) cover both the administrative expenses incurred in administering a worker's account as well as investment-management fees.

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[1] In particular, Austan Goolsbee of the University of Chicago's Graduate School of Business has made the striking claim that individual accounts will generate $940 billion in fees for private investment-management firms (in present value terms), representing one quarter of the revenue of the entire financial sector over the next 75 years. www.usnewswire.com/attach/Goolsbee.pdf

By contrast, investing in individual Social Security accounts will, from the worker's perspective, have distinctive institutional features. As President George Bush's 2001 Commission to Strengthen Social Security (CSSS) set out[2], any model for individual Social Security accounts would be likely based on a system of centrally administered contributions, using the existing payroll tax system and run by a federal agency. This would keep administrative costs down, as there would be huge economies of scale. It is also likely that, in its basic form, investment choices would be limited to a few, no-load index funds, as opposed to regular 'load', or actively-managed, mutual funds.

In effect, any new system would resemble the Thrift Savings Plan (TSP). The TSP is a retirement plan for federal workers and military personnel, who can choose to invest a percentage of their basic pay into five low-cost index, or passively-managed, funds (three equity index funds, one mixed bond fund and a U.S. Treasury bond fund).[3] A central administrator keeps all the records and invests worker contributions according to their preferences. This TSP-like model might be described as 'Limited Choice'. By comparison to mutual funds, individual Social Security accounts will have a distinctly institutional feel, with fewer choices being balanced out by lower fees.

In its 2001 report, the CSSS also set out the possibility of a two-tiered structure for individual Social Security accounts. As before, there would be a centralized approach to collecting and administering contributions. Contributions would initially be invested in 'Tier I', which would offer a limited set of index funds, along the lines of the TSP as outlined above. When workers' contributions exceed a certain threshold – $5,000 was suggested by CSSS – they would then be allowed, but not compelled, to invest that balance and additional contributions into a wider range of 'Tier II' funds. It is likely that these Tier II funds would include actively managed funds with higher total fees. This model might be described as 'Extended Choice'.

Likely Costs

The likely total costs of a system of individual Social Security accounts will depend on two main variables:

— The fees charged, both to cover the centralized administrative expenses and by private investment firms that manage the funds

— Expected participation rates

This section provides estimates for these fees, for both the 'Limited Choice' and 'Extended Choice' models outlined above.

'Limited-Choice' Model Fees

The administrative expense ratios of the TSP are very low. Annual fees for the government bond and mixed U.S. bond funds are 0.06% of assets under management, while fees for the eq-

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[2] http://www.csss.gov/reports/Final_report.pdf

[3] For more information on TSP, visit www.tsp.gov. Other than for government bonds, the TSP currently invests in Barclays Global Investors index funds. The funds are the 'I' fund (international equity index), the 'S' fund (small-cap stock index), the 'C' fund (S&P 500 index) and the 'F' fund (commingled U.S. debt). The 'S' and 'I' funds have only been available since 2001.

uity fund are 0.07% of assets under management. They have also declined as the TSP funds have increased in size, as shown below.

TSP Administrative Expense Ratios
1993-2002

Source: Thrift Savings Plan
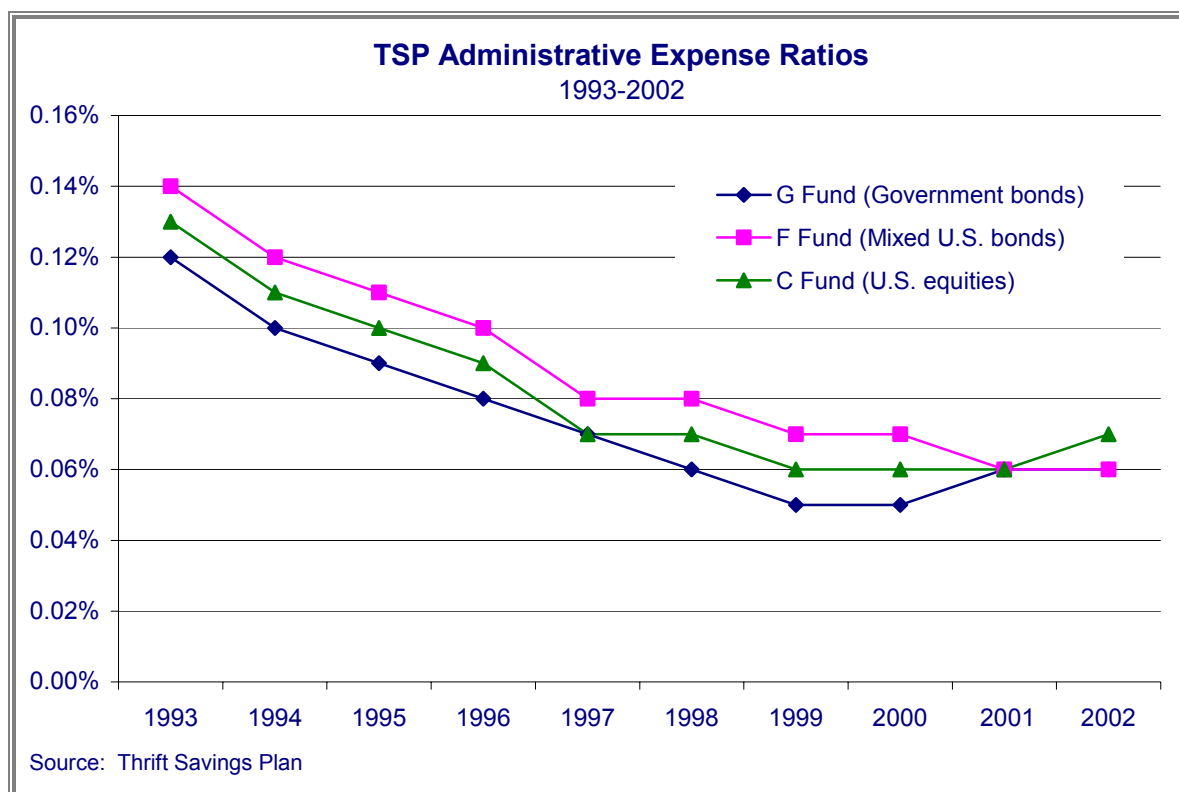
In addition, TSP clients invested in the equity and mixed-bond funds pay an investment-management fee to the fund manager in the form of deductions from the fund's earnings. In order to estimate what these investment-management fees might be, we can look at the 'institutional' fees currently charged in the market to large-scale investors. As a general rule, big pension schemes that pool together employees' contributions can benefit from lower institutional investment-management fees, because the investment-management firm does not have to undertake individual account administration.

Current market prices for these types of institutional index fund products are very low:

— Institutional S&P 500 index fund (analogous to TSP 'C' fund): 0.025%[4]

— Small-cap 1750 index fund (analogous to TSP 'S' fund): 0.1%[5]

— Institutional developed markets index fund (analogous to TSP 'I' fund): 0.19%[6]

— Bond market index fund (analogous to TSP 'F' fund): 0.1%[7]

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[4] Vanguard Institutional Index Fund Plus. The minimum investment to access these low fees is $200 million – a system of individual Social Security accounts would rapidly reach this level.

[5] Vanguard Index Fund Institutional fund

[6] Vanguard Institutional Developed Markets Index fund

[7] Vanguard Institutional Total Bond Market Index fund

If we assume that contributions were invested 60% in the S&P 500 index fund, 20% in the composite U.S. bond index fund, and 20% in Treasury bonds,[8] then total expenses would be as follows:

Estimated Fees for 'TSP-Style' Individual Social Security Accounts

	Portfolio %	Administrative Expense	Investment Management Fee	Total Expense Ratio
Equity index	60%	0.070%	0.025%	0.095%
Mixed bond index	20%	0.060%	0.100%	0.160%
Treasury bonds	20%	0.060%	0%	0.060%
Weighted average		0.066%	0.035%	**0.101%**

The total expense ratio (factoring in both likely federal administrative expenses and investment-management fees) would amount to just over 10 basis points, or 0.101%. This is significantly less than the costs of the average retail mutual fund. Investment Company Institute data shows that the weighted average cost for all equity and bond mutual funds, including the expense ratio (12b-1 fees) and annuitized loads, is 1.1%, or more than ten times higher.[9] Note also that of the 0.101%, private investment-management firms would only take approximately one-third of this amount, as two-thirds would go to cover centralized administrative expenses.

Yet even at this low total expense ratio, TSP clients still receive a good standard of service. In addition to having five funds to choose from, clients can access daily valuations online, and make contributions or inter-fund transfers on a daily basis.[10] In other words, a realistic assessment of individual Social Security accounts, which takes account of both existing federal schemes and current market prices, could deliver a system of individual Social Security accounts that might offer customer service and investment choices limited by comparison to regular mutual funds, but which would be delivered at a fraction of the cost.

A historical perspective on market data suggests that these expense ratios could well drop even further over time. For one thing, mutual fund expense ratios tend to decline as the amount of fund assets increase.[11] This is because investment-management firms pass along the cost savings achieved from economies of scale. Individual accounts within Social Security would generate large amounts of fund assets, suggesting that expense ratios would lie below even the existing benchmarks for institutional funds. Another factor is the revolution in communications and information technology, which has yielded substantial improvements in operational systems, driving costs down. As a result, average mutual fund costs have been diminishing over time, as the figure below shows.

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[8] This is the investment mix assumed in the Goolsbee paper, op.cit.

[9] http://www.ici.org/pdf/fm-v13n1.pdf

[10] See http://www.tsp.gov/features/chapter01.html#sub6

[11] See, for example, an SEC study on this issue: http://www.sec.gov/news/studies/feestudy.htm#item3

Average Cost of Equity Fund Sales Loads and Expense Ratios

percent

Source: Investment Company Institute.
Average cost is a sales-weighted average of the expense ratio (12b-1 fees) and annuitized loads.
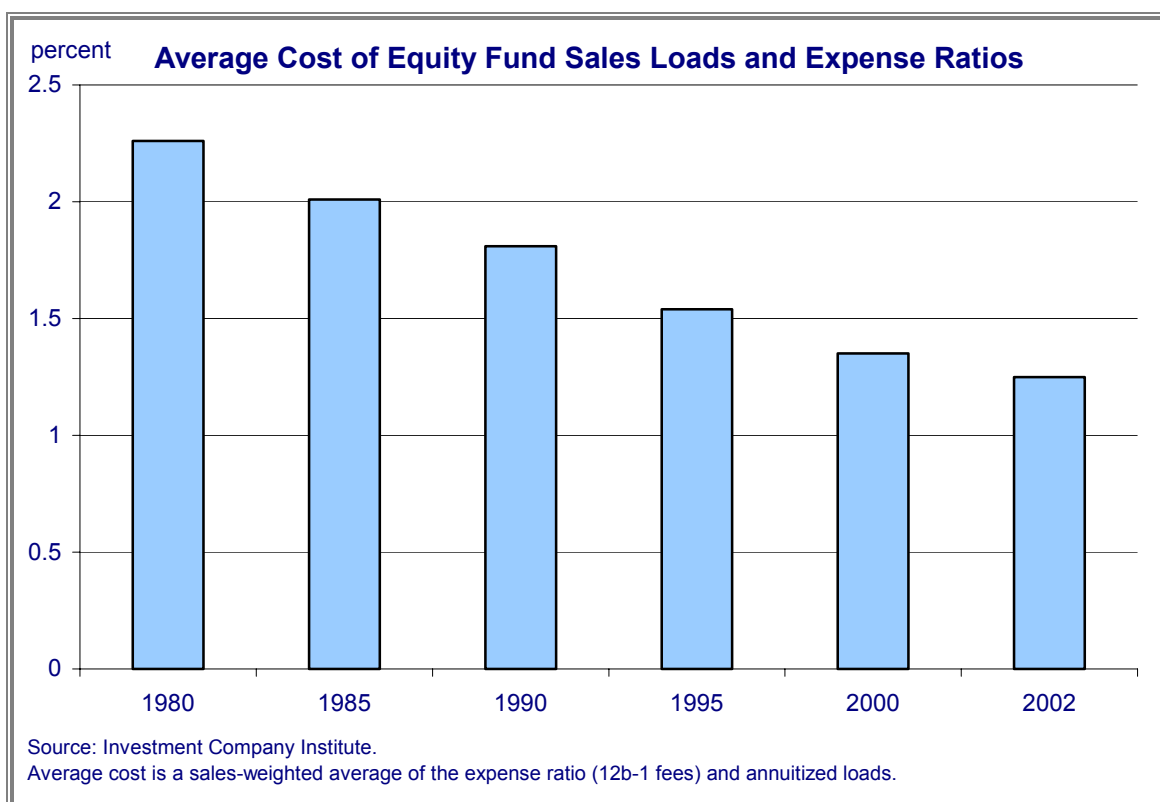
In other words, our estimates are likely to be conservative. Over time, as productivity continues to grow and fund sizes increase, total fees paid by workers could reduce further.

'Extended-Choice' Model Fees

In the 'Extended Choice' model, as described above, workers would initially put their contributions into a limited set of index funds in 'Tier I', with the option to then move into Tier II once their contributions reach a pre-set level. Workers who choose to make this move will be able to invest in a wider range of funds than the limited set of index funds likely to be available in Tier I. In this respect, Tier II will more closely resemble regular mutual fund investment. Hence, one way to calculate average fees in Tier II would be to use average fees for equity and bond mutual funds.[12] However, this would draw upon average fees for the whole universe of mutual funds out there: large and small, plain vanilla and exotic. But as the CSSS report is careful to point out, only mutual funds that satisfy "*stringent rules*" will be eligible.[13] In particular, Tier II funds will not be allowed to charge sales loads or other marketing fees on entry or exit. Inevitably, this will limit the number of funds offered. This, in turn, will mean that eligible funds will be significantly larger on average than the current average mutual fund. Industry data shows that the average operating expense ratio for funds that hold assets of more than $1 billion is 0.84% for equities (0.79% for large-cap domestic funds), and 0.57% for bonds.[14] If we

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[12] This is the approach used in the Goolsbee paper to calculate the likely fees from an 'extended choice' model.

[13] CSSS report, op. cit., p.46

[14] Investment Company Institute (www.ici.org/pdf/fm-v13n1.pdf). These fees include both administrative expenses and investment-management fees. Note that these numbers include both load and no-load funds; given that the CSSS model calls for no-load funds only in Tier II, these figures are again likely to overestimate actual fee levels.

use the same investment mix as before (60% equity, 40% fixed income), then this gives us an estimated total expense ratio for the full-service Tier II of 0.73%.[15]

To recap, we have estimated likely fees for two different Social Security models. In the 'Limited Choice' model, workers will be restricted to making contributions only to a few low-cost index funds, and there will be limited customer service. Total fees for a typical investment mix will average just over 0.1%, and will in all likelihood drop further still, due to large fund sizes and increased productivity. In the 'Extended Choice' model, customers will have the option of moving from the basic Tier I to Tier II once their assets exceed a given threshold, where a larger (but screened) set of actively managed funds will be available. Average total fees in Tier II are likely to be 0.73%. Again, with large fund sizes and technological progress, Tier II fees are also likely to decline over time.

Likely Participation Rates

Given that one of the President's principles for individual Social Security accounts is that they are voluntary, we cannot assume a 100% participation rate.[16] A better starting point for estimating participation rates comes from the CSSS report. It envisages that for those contributing to individual accounts, traditional Social Security benefits would be 'offset', or reduced, by the amount of the contributions to the individual account, compounded at "a real interest rate of 2%".[17] A real interest rate of 2% means in practice a nominal rate of 2% plus inflation.[18]

In his set of solvency calculations, the Chief Actuary for Social Security interprets a real interest rate of 2% in two ways: either an offset yield rate as 2% above inflation, or as an offset yield rate of 1% below the market yield on long-term Treasury bonds.[19] In the first of these two scenarios, which approximates more closely the model put forward by the CSSS[20], actual net yields on individual accounts *"would generally, but not always, exceed the benefit offset yield rate."* In other words, this scenario would be attractive, but not necessarily a sure thing. The Chief Actuary assumes a 67% participation rate for this scenario. He assumes a 100% participation rate only for the second scenario, which in our analysis less closely approximates the CSSS model.

Empirical data also suggest that participation in individual accounts would be significantly less than 100%. The TSP, which is the blueprint for much of the CSSS's analysis, had a participation rate in 2001 of 86.6%. However, unlike the proposed individual Social Security accounts, the TSP also offers many participants attractive incentives in the form of matching contributions.[21] In practice, then, we estimate that participation in individual Social Security accounts would only reach 70-75%.

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[15] Once centralized administrative expenses are stripped out, private investment management fees will amount to approximately 0.66%.

[16] This assumption is made in the Goolsbee paper.

[17] CSSS report, op. cit., p.119. Note that we are analyzing here CSSS 'Model II', which has been viewed by many as the most likely reform package. This is also the model used as the basis for calculations in the Goolsbee paper.

[18] Real interest rate = nominal interest rate – inflation.

[19] Social Security memorandum from the Chief Actuary, available at http://www.ssa.gov/oact/solvency/PRESComm_20020131.pdf.com.

[20] CSSS 'Model II', the most likely reform option.

[21] Employees in the Federal Employees' Retirement System (FERS) receive matching contributions from their agency, at a dollar-for-dollar rate on the first 3% of pay contributed and 50 cents on the dollar for the next 2% of pay.

This 70-75% estimate covers all who opt for individual Social Security accounts. In the 'Extended Choice' model, participants in 'Tier 2' would be a smaller subset of this group. A reasonable benchmark to use when estimating the size of this subset would be the percentage of the U.S. population that currently chooses to invest in actively managed mutual funds. We estimate this to be approximately 44%.[22] We therefore assume that 44% of individuals who opt for individual Social Security accounts will participate in Tier II.

In summary, rather than assuming across-the-board participation in individual Social Security accounts, it is more realistic to assume a 70-75% participation rate in the 'Limited Choice' model, and that 44% of these workers will then participate in Tier II in the 'Extended Choice' model.

Impact On Wall Street

Calculating the likely impact of individual Social Security accounts on Wall Street first requires an estimate of the total size of investments in the accounts. To do this, we need to make projections of the likely flow of contributions into the accounts from workers, and the likely flow of disbursements out of accounts to pensioners, as well as estimate the likely aggregate growth rate of the investments. Then, using the likely fee levels estimated above, we can calculate the fees that are likely to be generated in any given year.

Fortunately, the Chief Actuary of Social Security has helped us out. In his assessment of the CSSS proposals, he provides projections for accumulated assets in individual accounts over a 75-year actuarial window. We have adjusted the projection to take account of two factors: first, the estimated participation rates in the different tiers, and second, the fact that different fee levels will of themselves affect the rate of accumulation of assets in the account (because, for example, lower fees mean that the net contribution to an account will be higher).[23] In order to give us a snapshot of the likely impact of individual Social Security accounts on Wall Street, we then discount the revenue streams over 75 years back to a single present value figure.

Running these calculations gives us an estimate for the total expenses incurred by workers over the 75-year actuarial window of $112 billion (in present value terms). Remember, though, that two-thirds of this amount is due to public-sector administrative expenses – that is, the cost of administering the centralized system. Thus, the total revenue for Wall Street would amount to a modest $39.0 billion over 75 years (present value terms).[24]

It is useful to put this number in context. The present value of revenues of the entire financial sector over the next 75 years has been estimated at around $3.3 trillion.[25] Using the 'Limited Choice' model described here, the total fees generated from individual Social Security accounts would amount to something like 1.2% of that total. In other words, it is hardly likely to be a bonanza for Wall Street.

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[22] Investment Company Institute data (http://www.ici.org/shareholders/us/fm-v13n3.pdf) shows that 48% of the U.S. population invests in mutual funds. ICI also estimates that 91% of assets are in actively managed funds.

[23] We follow the methodology in the Goolsbee paper here.

[24] By way of comparison, the Goolsbee paper estimates $940 billion in fees, or more than 20 times the amount, for the same model.

[25] Goolsbee, op. cit., p.5.

If a more sophisticated two-tier version of individual Social Security accounts were offered, where workers could choose a higher level of service with many individual investment choices after accumulating a minimum balance, we estimate that total private investment-management fees, on a present value basis, would at most amount to $279 billion.[26]

Whether Social Security reform ends up opting for simple individual Social Security accounts with limited options, or a full-service version, the outcome for Wall Street will not be the feast of fees some have been keen to predict. Investment managers hungry for fees will need to look elsewhere for their free lunch.

Rob Mills
Vice President and Director, Industry Research

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[26] By way of comparison, the Goolsbee paper estimates that the present value of investment-management fees could approach $1,160 billion, for the same model and based on the assumption that all workers would opt for the higher 'Tier II' service.

MONTHLY STATISTICAL REVIEW

U.S. Equity Market Activity

*S**tock Prices* – The three major market indices posted their best monthly gains so far this year in November. Some of the main reasons cited for the climb in stock prices were the end of election-related uncertainties, President Bush's investor-friendly legislative agenda, a drop in oil prices from record highs set in late October, better-than-expected third quarter corporate earnings growth of around 17%, and an upward revision in third-quarter economic growth to 3.9% from the initial estimate of 3.7%.

The S&P 500 hit a three-year high in mid-November and gained 3.9% for the month, its best monthly gain of the year and fourth straight monthly increase. The Dow Jones Industrial Average rose 4.0% in November, also its best showing this year, after posting slim losses in September and October. Meanwhile, the Nasdaq Composite Index hit a nine-month high and rose 6.2% in November, its third consecutive monthly gain and best monthly performance since October 2003.

Since the start of the year, the Nasdaq Composite has risen 4.7%, the S&P 500 has gained 5.6% and the DJIA has remained virtually unchanged (down 0.2% through November).

Monthly Closing Stock Prices
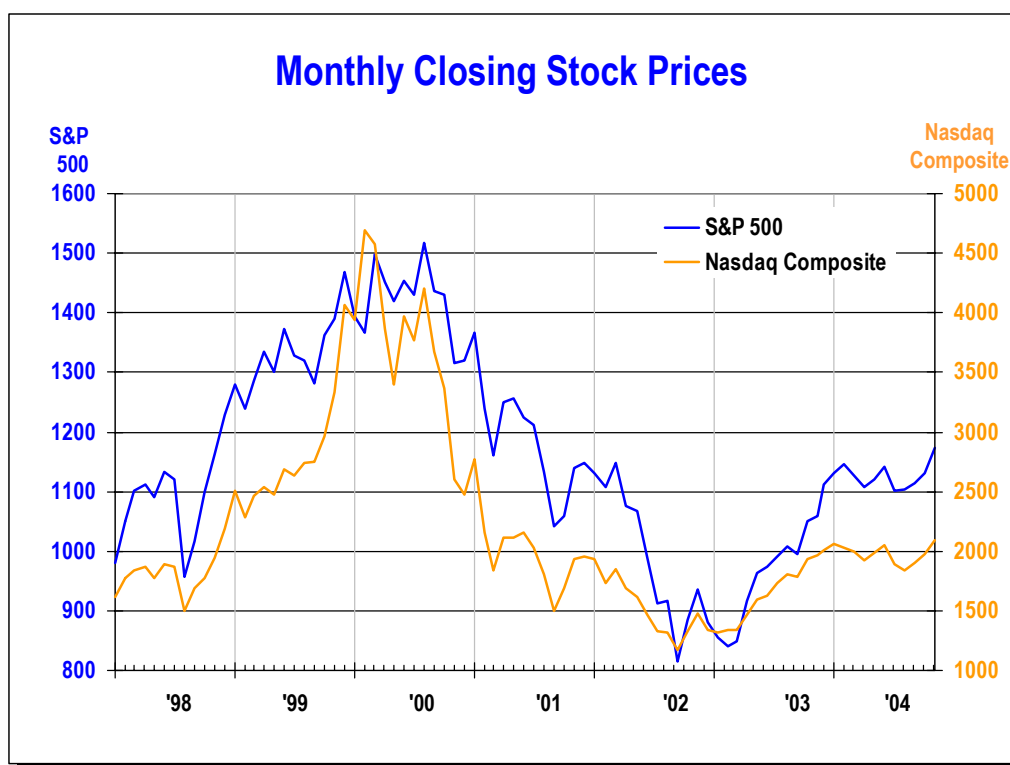
Share Volume – Nasdaq average daily volume rose 5.6% from October's level to 1.83 billion in November. That marked its third consecutive monthly increase and its highest level in seven months. Through the first 11 months of 2004, Nasdaq volume averaged 1.78 billion shares daily, 5.5% above 2003's 1.69 billion average and second only to 2001's record daily average of 1.90 billion.

New York Stock Exchange average daily volume slipped 3.2% in November to 1.49 billion, after climbing for two straight months to a nine-month high of 1.54 billion shares in October. Despite that decline, NYSE volume year-to-date, at an average of 1.46 billion shares daily, is up 4.1% from 2003 levels and is on track to top the record 1.44 billion daily average volume set in 2002.

Average Daily Share Volume
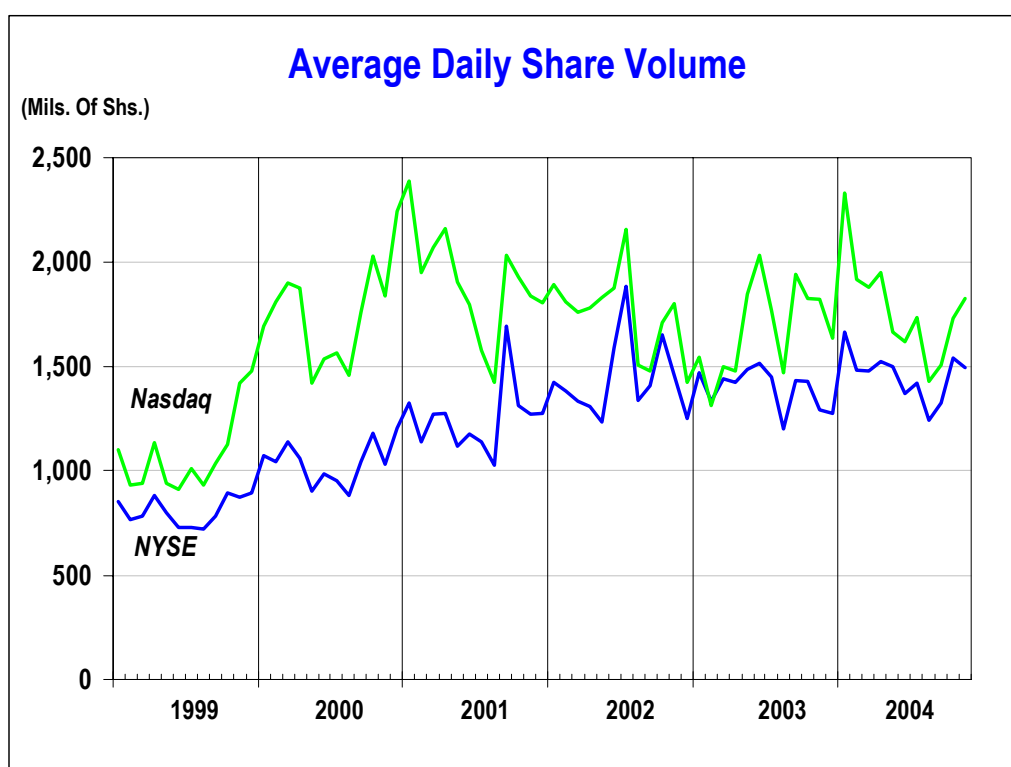
Dollar Volume – Increased trading activity and higher share prices lifted the value of trading in Nasdaq stocks to $38.0 billion in November, a 10.1% increase over October levels and its best monthly reading since January. That brought the year-to-date daily average to $34.1 billion daily, up 21.9% from 2003's $28.0 billion, yet still a hefty 57.8% below the phenomenal record of $80.9 billion set in 2000.

Average daily dollar volume on the NYSE edged down 1.0% in November to $49.0 billion after spurting 18% in October to $49.5 billion (its highest level since January). Year-to-date, NYSE average daily dollar volume of $45.9 billion daily stands 19.3% above last year's $38.5 billion, and is running 4.6% ahead of 2000's record level of $43.9 billion.

Average Daily Dollar Volume

($ Billions)
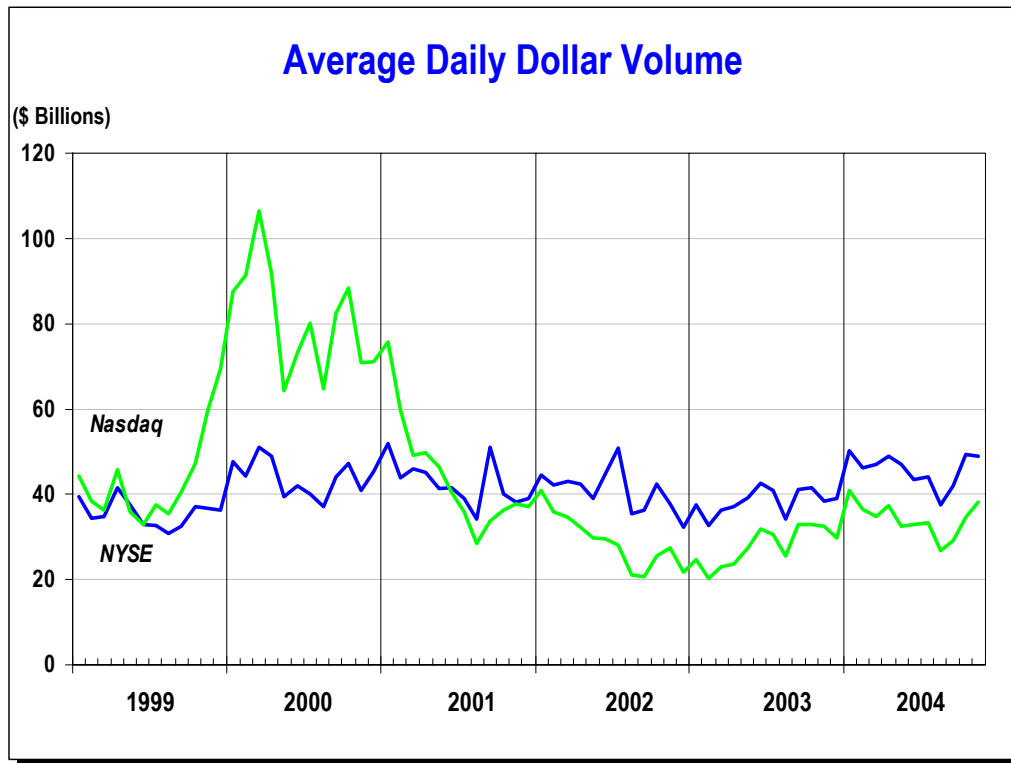
Interest Rates – Long-term Treasury bond yields rose sharply in November, reversing a four-month downward trend. The rise was triggered by growing fears that the recent slump of the U.S. dollar to multi-year lows against several major currencies will lead to a slowdown in foreign purchases of U.S. government securities. Concerns over the growing U.S. trade deficit and a strong employment report that showed 337,000 jobs were created in October, also contributed to the bond market's woes. By November's end, the yield on the benchmark 10-year Treasury note climbed to a near four-month high of 4.36%, up 33 basis points from October and 9 basis points above year-end 2003 levels.

On the short end of the spectrum, Federal Reserve policymakers raised the federal funds rate by one-quarter point to 2.0% at the November 10th Federal Open Market Committee meeting, and left the door open for further increases in the future. The Fed has doubled its key short-term interest rate to 2% with four increases since June, when the rate stood at a 46-year low of 1%. The latest move helped push the yield on three-month T-bills up 33 basis points for the month to 2.20% by November's close, marking the first time in over three years (since October 2001) that the yield has exceeded 2%. At the start of the year, three-month T-bills were yielding 0.93%. As a result, the spread between three-month and 10-year Treasuries has now narrowed to 2.16%, compared with 3.34% at year-end 2003.

10-Year Treasury Yields
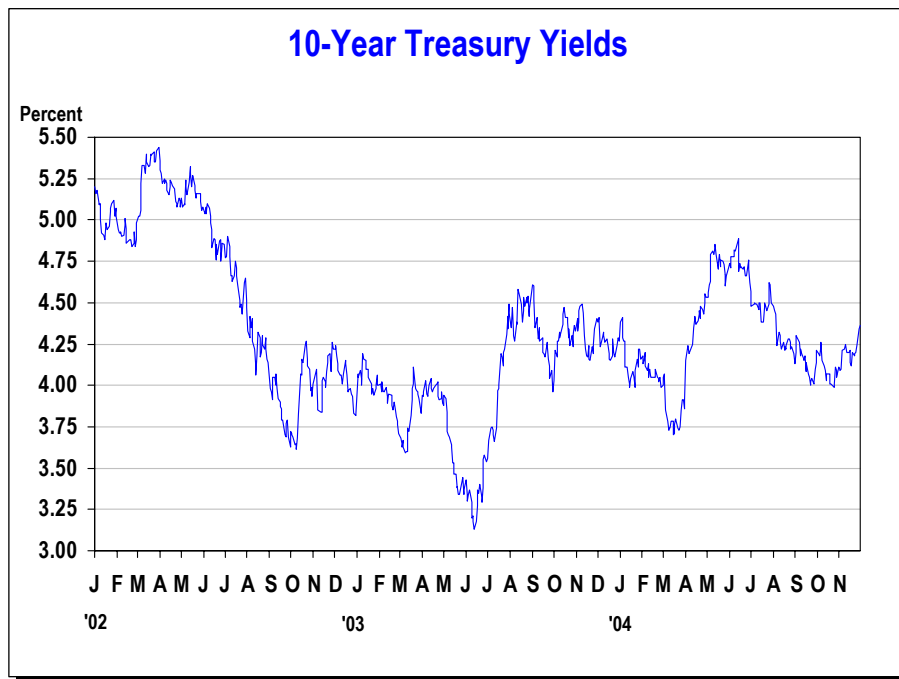
U.S. Underwriting Activity

Domestic underwriting activity slumped in November to its lowest level in nearly two years (since December 2002), primarily due to a dramatic slowdown in asset-backed issuance. New issuance of stocks and bonds sank 20.6% to $169.1 billion in November from $213.1 billion in October. Through the first 11 months of 2004, underwriting activity is running 3.1% below year-ago levels, and at the current pace will come in at $2.86 trillion for the year, or just behind 2003's $2.89 trillion record level. Although the primary equity market is enjoying its best year since 2000, a slight cutback in activity in the much larger corporate debt market has driven down the totals.

Monthly Total Underwriting

Source: Thomson Financial
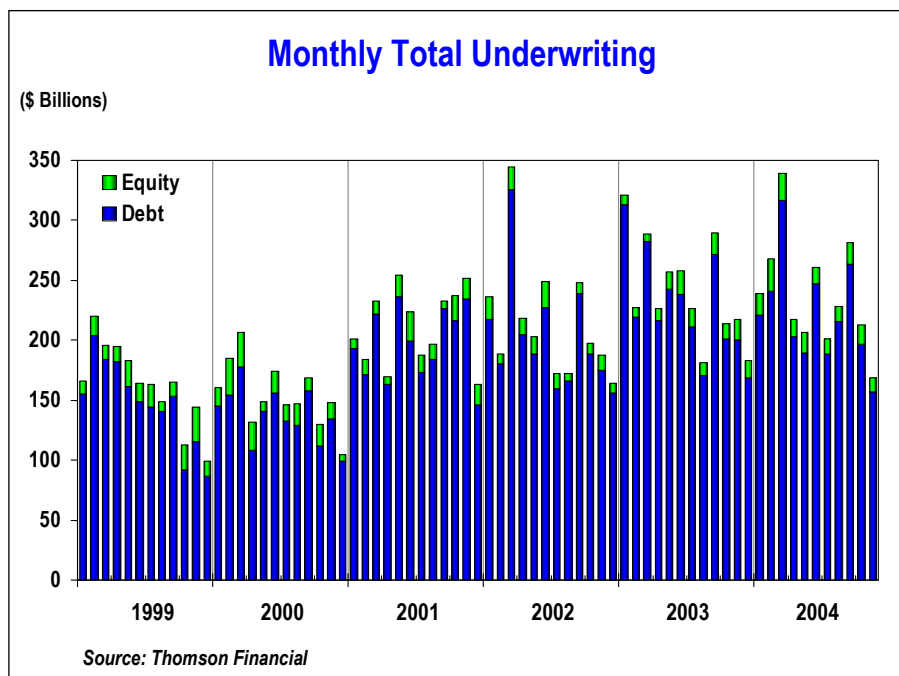
Corporate Bond Underwriting – In November, total debt underwriting fell to its lowest level since December 2002, tumbling 20.4% from October's level to $156.6 billion as interest rates rose once again. Year-to-date, new issuance of corporate bonds totaled $2.44 trillion, 4.9% below results achieved in the same period last year and is on track to reach $2.66 trillion for full-year 2004, or 2.7% below 2003's annual record of $2.73 trillion.

New asset-backed securities offerings plunged 48.3% from October levels to a new 2004 monthly low of $57.8 billion in November. That brought the year-to-date total to $1.23 trillion, down 4.9% from $1.29 trillion in last year's comparable period. On an annualized basis, new asset-backed issuance would total $1.34 trillion this year, just short of 2003's record $1.35 trillion.

So far this year, straight corporate debt offerings so far this year are also running slightly below 2003's levels. Despite a 17.3% increase in November to $98.3 billion, year-to-date issuance of $1.20 trillion is 4.6% below the $1.26 trillion issued in the same period a year ago. On an 11-month annualized basis, straight corporate debt underwriting would reach $1.31 trillion this year, or off 4.2% from 2003's record $1.37 trillion.

Monthly Corporate Bond Underwriting

($ Billions)

Source: Thomson Financial
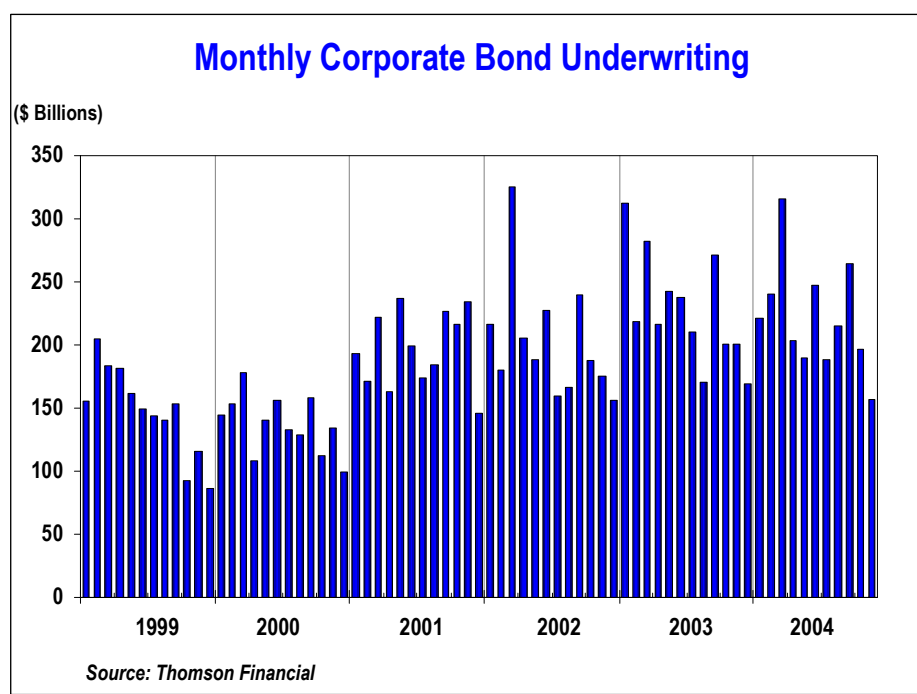
Equity Underwriting – Total equity underwriting activity in the U.S. market (combining common and preferred offerings) declined 22.8% in November to a four-month low of $12.5 billion. Despite that monthly decrease, year-to-date total equity issuance of $184.4 billion represents a 30.1% increase over year-ago levels and already exceeds the annual totals of the past three years. On an annualized basis, new equity issuance would total $201.2 billion this year, up 28.7% from $156.3 billion in 2003 and just 1.6% shy of the record $204.5 billion set in 2000.

Monthly Equity Underwriting

($ Billions)

Source: Thomson Financial
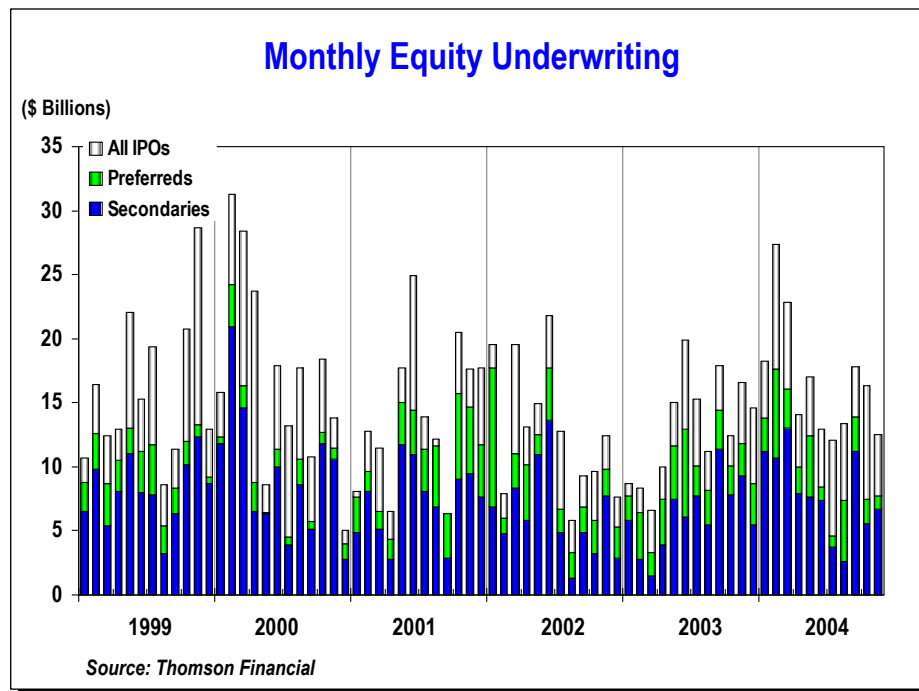
Initial Public Offerings (IPOs) – Activity in the IPO market slowed in November, as it typically does, with 17 deals raising $3.8 billion compared with 33 deals worth $6.2 billion in October. Even so, IPO dollar volume year-to-date, at $41.9 billion, is nearly quadruple the $10.9 billion raised in last year's comparable period, and already exceeds the amount raised during the entire 2002-2003 period. At an annualized rate, IPO volume would hit $45.7 billion for all of 2004, nearly triple the $15.9 billion tally for 2003, but still roughly 40% below the record $75.8 billion set in 2000.

Monthly IPO Activity
(excluding closed-end funds)

Source: Thomson Financial
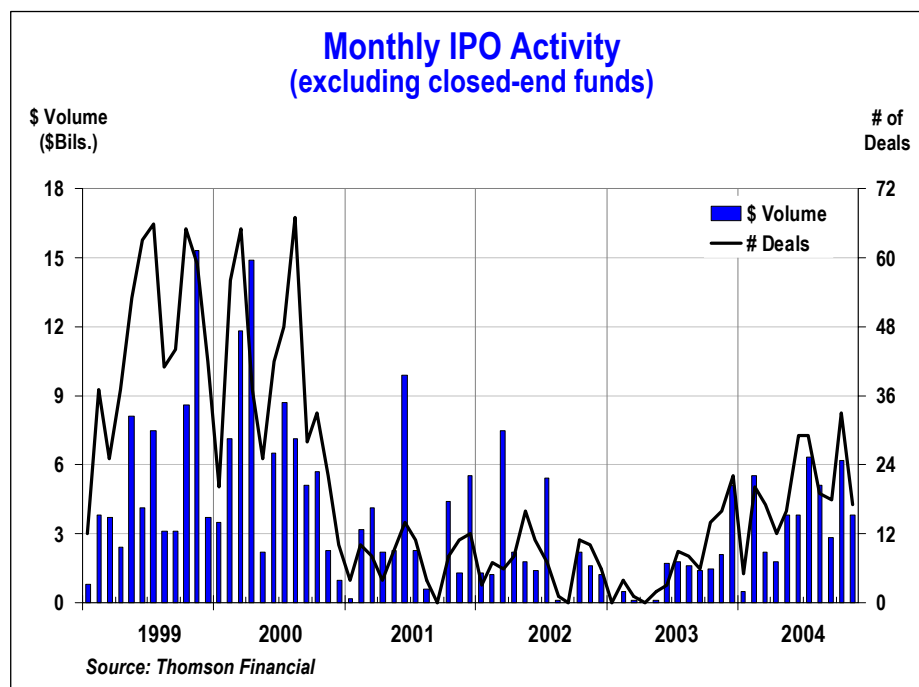
The backlog of filed U.S. IPOs declined to $21.6 billion in November from $33.4 billion in October, as completed deals have yet to be replenished. Still, December is expected to be a busy month, given the rebound in the stock market and the strong aftermarket performance of recent IPOs.

Monthly IPO Backlog
(as of first of the month)

Source: Dealogic
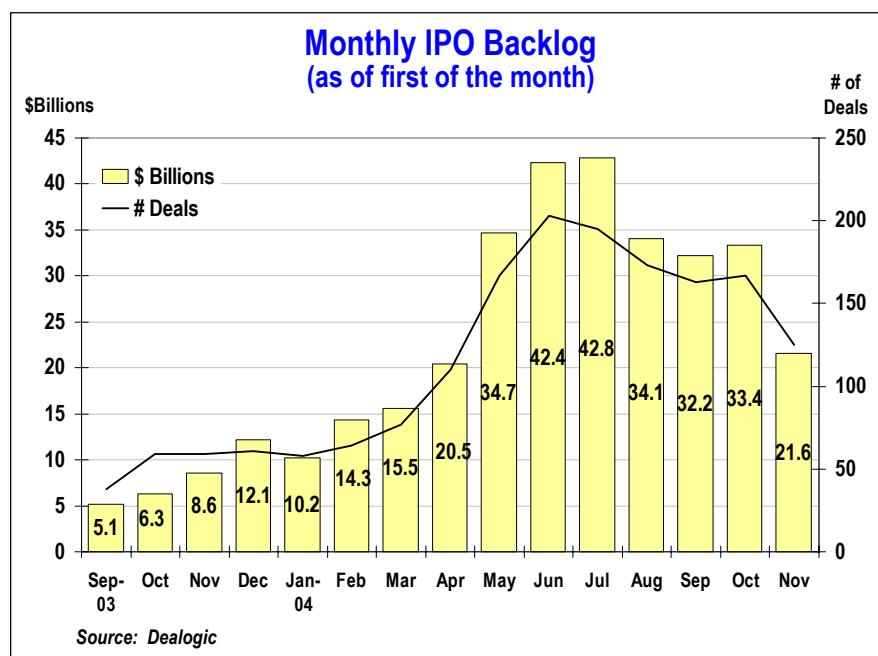
Secondary offerings of common stock increased 19.6% to $6.7 billion in November from $5.6 billion in October. Through the first 11 months of 2004, secondary common stock offerings have raised $87.5 billion, a 26.2% increase on a year-over-year basis. Total activity for full-year 2004 is expected to reach $95.5 billion, topping last year's $74.8 billion by 27.7%, but still 15.4% below 2000's record $112.9 billion.

Common Stock Secondary Offerings

Source: Thomson Financial
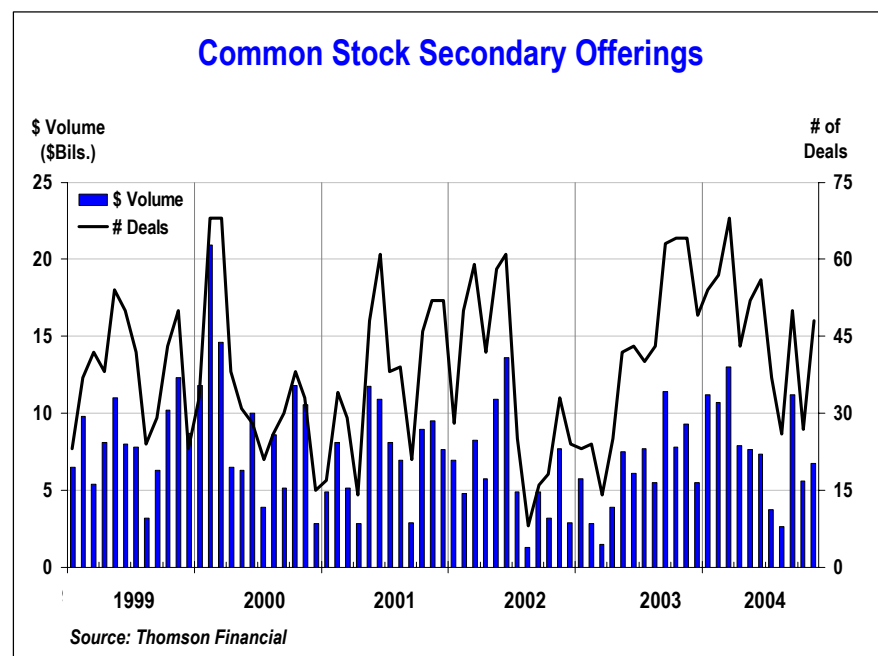
Grace Toto
Vice President and Director, Statistics

U.S. CORPORATE UNDERWRITING ACTIVITY

(In $ Billions)

	Straight Corporate Debt	Con- vertible Debt	Asset- Backed Debt	TOTAL DEBT	Common Stock	Preferred Stock	TOTAL EQUITY	All IPOs	"True" IPOs	Secondaries	TOTAL UNDER- WRITINGS
1985	76.4	7.5	20.8	104.7	24.7	8.6	33.3	8.5	8.4	16.2	138.0
1986	149.8	10.1	67.8	227.7	43.2	13.9	57.1	22.3	18.1	20.9	284.8
1987	117.8	9.9	91.7	219.4	41.5	11.4	52.9	24.0	14.3	17.5	272.3
1988	120.3	3.1	113.8	237.2	29.7	7.6	37.3	23.6	5.7	6.1	274.5
1989	134.1	5.5	135.3	274.9	22.9	7.7	30.6	13.7	6.1	9.2	305.5
1990	107.7	4.7	176.1	288.4	19.2	4.7	23.9	10.1	4.5	9.0	312.3
1991	203.6	7.8	300.0	511.5	56.0	19.9	75.9	25.1	16.4	30.9	587.4
1992	319.8	7.1	427.0	753.8	72.5	29.3	101.8	39.6	24.1	32.9	855.7
1993	448.4	9.3	474.8	932.5	102.4	28.4	130.8	57.4	41.3	45.0	1,063.4
1994	381.2	4.8	253.5	639.5	61.4	15.5	76.9	33.7	28.3	27.7	716.4
1995	466.0	6.9	152.4	625.3	82.0	15.1	97.1	30.2	30.0	51.8	722.4
1996	564.8	9.3	252.9	827.0	115.5	36.5	151.9	50.0	49.9	65.5	979.0
1997	769.8	8.5	385.6	1,163.9	120.2	33.3	153.4	44.2	43.2	75.9	1,317.3
1998	1,142.5	6.3	566.8	1,715.6	115.0	37.8	152.7	43.7	36.6	71.2	1,868.3
1999	1,264.8	16.1	487.1	1,768.0	164.3	27.5	191.7	66.8	64.3	97.5	1,959.8
2000	1,236.2	17.0	393.4	1,646.6	189.1	15.4	204.5	76.1	75.8	112.9	1,851.0
2001	1,511.2	21.6	832.5	2,365.4	128.4	41.3	169.7	40.8	36.0	87.6	2,535.1
2002	1,303.2	8.6	1,115.4	2,427.2	116.4	37.6	154.0	41.2	25.8	75.2	2,581.1
2003	1,370.7	10.6	1,352.3	2,733.6	118.5	37.8	156.3	43.7	15.9	74.8	2,889.9
2003											
Jan	150.3	0.0	162.5	312.7	6.8	1.9	8.8	1.0	0.0	5.8	321.5
Feb	114.7	0.0	104.1	218.8	4.7	3.6	8.3	1.9	0.5	2.8	227.1
Mar	141.9	0.1	140.2	282.3	4.8	1.8	6.5	3.3	0.1	1.5	288.8
Apr	101.5	1.3	113.6	216.5	6.4	3.6	10.0	2.5	0.0	3.9	226.5
May	120.7	3.0	118.7	242.4	10.9	4.1	15.0	3.4	0.1	7.5	257.4
June	118.0	5.1	114.7	237.9	13.1	6.8	19.9	7.0	1.7	6.1	257.8
July	96.4	0.4	114.0	210.8	12.9	2.4	15.3	5.2	1.8	7.7	226.1
Aug	72.7	0.0	97.5	170.3	8.4	2.7	11.1	3.0	1.6	5.5	181.4
Sept	137.4	0.0	133.9	271.3	14.9	3.0	17.9	3.5	1.4	11.4	289.2
Oct	110.5	0.1	90.6	201.2	10.2	2.3	12.4	2.3	1.5	7.8	213.6
Nov	97.4	0.0	103.1	200.6	14.0	2.5	16.6	4.8	2.1	9.3	217.1
Dec	109.1	0.6	59.3	169.0	11.3	3.2	14.5	5.9	5.1	5.5	183.5
2004											
Jan	139.4	1.4	80.3	221.1	15.6	2.6	18.2	4.4	0.5	11.2	239.2
Feb	131.9	0.7	108.1	240.6	20.5	6.9	27.4	9.8	5.5	10.7	268.0
Mar	170.5	0.6	145.1	316.2	19.8	3.1	22.8	6.7	2.2	13.0	339.0
Apr	101.5	0.3	101.3	203.2	12.0	2.1	14.1	4.1	1.8	7.9	217.3
May	81.4	0.1	108.1	189.6	12.2	4.8	17.0	4.6	3.8	7.6	206.6
June	107.0	0.0	140.4	247.4	11.8	1.0	12.9	4.5	3.8	7.4	260.3
July	78.4	0.0	110.4	188.9	11.2	0.9	12.1	7.5	6.3	3.7	200.9
Aug	81.0	0.0	134.1	215.2	8.6	4.8	13.4	6.0	5.1	2.6	228.6
Sept	130.5	0.6	132.7	263.8	15.1	2.7	17.9	3.9	2.8	11.2	281.7
Oct	83.8	1.1	111.9	196.8	14.4	1.9	16.2	8.8	6.2	5.6	213.1
Nov	98.3	0.4	57.8	156.6	11.5	1.0	12.5	4.8	3.8	6.7	169.1
Dec											
YTD '03	1,261.6	10.0	1,293.1	2,564.7	107.1	34.6	141.8	37.8	10.9	69.3	2,706.4
YTD '04	1,203.8	5.2	1,230.2	2,439.3	152.7	31.7	184.4	65.2	41.9	87.5	2,623.7
% Change	-4.6%	-48.1%	-4.9%	-4.9%	42.5%	-8.4%	30.1%	72.3%	285.7%	26.2%	-3.1%

Note: IPOs and secondaries are subsets of common stock. "True" IPOs exclude closed-end funds.
Source: Thomson Financial

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MUNICIPAL BOND UNDERWRITINGS

(In $ Billions)

INTEREST RATES

(Averages)

</div>

	Compet. Rev. Bonds	Nego. Rev. Bonds	**TOTAL REVENUE BONDS**	Compet. G.O.s	Nego. G.O.s	**TOTAL G.O.s**	**TOTAL MUNICIPAL BONDS**	3-Mo. T Bills	10-Year Treasuries	SPREAD
1985	10.2	150.8	161.0	17.6	22.8	40.4	201.4	7.47	10.62	3.15
1986	10.0	92.6	102.6	23.1	22.6	45.7	148.3	5.97	7.68	1.71
1987	7.1	64.4	71.5	16.3	14.2	30.5	102.0	5.78	8.39	2.61
1988	7.6	78.1	85.7	19.2	12.7	31.9	117.6	6.67	8.85	2.18
1989	9.2	75.8	85.0	20.7	17.2	37.9	122.9	8.11	8.49	0.38
1990	7.6	78.4	86.0	22.7	17.5	40.2	126.2	7.50	8.55	1.05
1991	11.0	102.1	113.1	29.8	28.1	57.9	171.0	5.38	7.86	2.48
1992	12.5	139.0	151.6	32.5	49.0	81.5	233.1	3.43	7.01	3.58
1993	20.0	175.6	195.6	35.6	56.7	92.4	287.9	3.00	5.87	2.87
1994	15.0	89.2	104.2	34.5	23.2	57.7	161.9	4.25	7.09	2.84
1995	13.5	81.7	95.2	27.6	32.2	59.8	155.0	5.49	6.57	1.08
1996	15.6	100.1	115.7	31.3	33.2	64.5	180.2	5.01	6.44	1.43
1997	12.3	130.2	142.6	35.5	36.5	72.0	214.6	5.06	6.35	1.29
1998	21.4	165.6	187.0	43.7	49.0	92.8	279.8	4.78	5.26	0.48
1999	14.3	134.9	149.2	38.5	31.3	69.8	219.0	4.64	5.65	1.01
2000	13.6	116.2	129.7	35.0	29.3	64.3	194.0	5.82	6.03	0.21
2001	17.6	164.2	181.8	45.5	56.3	101.8	283.5	3.39	5.02	1.63
2002	19.5	210.5	230.0	52.3	73.1	125.4	355.4	1.60	4.61	3.01
2003	21.1	215.8	236.9	54.7	87.7	142.4	379.3	1.01	4.02	3.00
2003										
Jan	1.4	16.8	18.2	4.4	4.3	8.8	27.0	1.17	4.05	2.88
Feb	1.8	15.6	17.4	5.1	7.6	12.8	30.2	1.17	3.90	2.73
Mar	2.0	16.4	18.4	4.2	5.5	9.7	28.1	1.13	3.81	2.68
Apr	1.6	18.4	20.1	4.6	10.2	14.8	34.9	1.13	3.96	2.83
May	3.0	20.3	23.3	5.5	7.1	12.6	35.8	1.07	3.57	2.50
June	2.1	22.6	24.7	6.6	17.1	23.7	48.4	0.92	3.33	2.41
July	2.2	18.5	20.6	6.5	6.1	12.6	33.3	0.90	3.98	3.08
Aug	1.1	17.6	18.7	3.9	3.4	7.2	25.9	0.95	4.45	3.50
Sept	1.4	17.6	18.9	3.6	3.2	6.8	25.7	0.94	4.27	3.33
Oct	1.6	16.7	18.4	3.8	12.2	16.0	34.3	0.92	4.29	3.37
Nov	1.3	16.2	17.5	4.1	4.2	8.3	25.8	0.93	4.30	3.37
Dec	1.7	19.1	20.7	2.3	6.8	9.1	29.8	0.90	4.27	3.37
2004										
Jan	0.7	10.4	11.1	3.6	5.6	9.2	20.3	0.88	4.15	3.27
Feb	1.0	13.0	14.1	4.8	7.7	12.5	26.5	0.93	4.08	3.15
Mar	2.7	19.6	22.3	5.6	10.5	16.1	38.4	0.94	3.83	2.89
Apr	1.0	18.0	19.0	3.5	8.2	11.8	30.8	0.94	4.35	3.41
May	1.4	28.1	29.5	3.1	4.7	7.8	37.3	1.02	4.72	3.70
June	1.3	24.0	25.3	4.5	5.4	9.8	35.1	1.27	4.73	3.46
July	1.8	14.6	16.4	5.1	3.7	8.9	25.3	1.33	4.50	3.17
Aug	0.6	15.5	16.1	4.0	7.6	11.6	27.6	1.48	4.28	2.80
Sept	1.7	13.1	14.8	5.3	4.8	10.1	24.9	1.65	4.13	2.48
Oct	2.4	17.5	19.8	5.5	6.3	11.8	31.7	1.76	4.10	2.34
Nov	1.1	16.7	17.8	2.3	4.7	6.9	24.8	2.07	4.19	2.12
Dec										
YTD '03	19.5	196.7	216.2	52.4	80.9	133.3	349.5	1.02	3.99	2.97
YTD '04	15.7	190.5	206.2	47.2	69.2	116.5	322.7	1.30	4.28	2.98
% Change	-19.3%	-3.1%	-4.6%	-9.9%	-14.4%	-12.6%	-7.7%	27.1%	7.2%	0.3%

Sources: Thomson Financial; Federal Reserve

	STOCK MARKET PERFORMANCE INDICES (End of Period)				STOCK MARKET VOLUME (Daily Avg., Mils. of Shs.)			VALUE TRADED (Daily Avg., $ Bils.)	
	Dow Jones Industrial Average	S&P 500	NYSE Composite	Nasdaq Composite	NYSE	AMEX	Nasdaq	NYSE	Nasdaq
1985	1,546.67	211.28	1,285.66	324.93	109.2	8.3	82.1	3.9	0.9
1986	1,895.95	242.17	1,465.31	348.83	141.0	11.8	113.6	5.4	1.5
1987	1,938.83	247.08	1,461.61	330.47	188.9	13.9	149.8	7.4	2.0
1988	2,168.57	277.72	1,652.25	381.38	161.5	9.9	122.8	5.4	1.4
1989	2,753.20	353.40	2,062.30	454.82	165.5	12.4	133.1	6.1	1.7
1990	2,633.66	330.22	1,908.45	373.84	156.8	13.2	131.9	5.2	1.8
1991	3,168.83	417.09	2,426.04	586.34	178.9	13.3	163.3	6.0	2.7
1992	3,301.11	435.71	2,539.92	676.95	202.3	14.2	190.8	6.9	3.5
1993	3,754.09	466.45	2,739.44	776.80	264.5	18.1	263.0	9.0	5.3
1994	3,834.44	459.27	2,653.37	751.96	291.4	17.9	295.1	9.7	5.8
1995	5,117.12	615.93	3,484.15	1,052.13	346.1	20.1	401.4	12.2	9.5
1996	6,448.27	740.74	4,148.07	1,291.03	412.0	22.1	543.7	16.0	13.0
1997	7,908.25	970.43	5,405.19	1,570.35	526.9	24.4	647.8	22.8	17.7
1998	9,181.43	1,229.23	6,299.93	2,192.69	673.6	28.9	801.7	29.0	22.9
1999	11,497.12	1,469.25	6,876.10	4,069.31	808.9	32.7	1,081.8	35.5	43.7
2000	10,786.85	1,320.28	6,945.57	2,470.52	1,041.6	52.9	1,757.0	43.9	80.9
2001	10,021.50	1,148.08	6,236.39	1,950.40	1,240.0	65.8	1,900.1	42.3	44.1
2002	8,341.63	879.82	5,000.00	1,335.51	1,441.0	63.7	1,752.8	40.9	28.8
2003	10,453.92	1,111.92	6,440.30	2,003.37	1,398.4	67.1	1,685.5	38.5	28.0
2003									
Jan	8,053.81	855.70	4,868.68	1,320.91	1,474.7	62.9	1,547.6	37.5	24.7
Feb	7,891.08	841.15	4,716.07	1,337.52	1,336.4	53.6	1,311.4	32.8	20.4
Mar	7,992.13	848.18	4,730.21	1,341.17	1,439.3	64.7	1,499.9	36.3	23.0
Apr	8,480.09	916.92	5,131.56	1,464.31	1,422.7	54.7	1,478.2	37.1	23.5
May	8,850.26	963.59	5,435.37	1,595.91	1,488.6	69.6	1,847.9	39.2	27.4
June	8,985.44	974.50	5505.17	1,622.80	1,516.3	79.5	2,032.2	42.7	32.0
July	9,233.80	990.31	5,558.99	1,735.02	1,451.1	67.4	1,771.7	40.7	30.5
Aug	9,415.82	1,008.01	5,660.16	1,810.45	1,200.3	57.7	1,470.8	34.1	25.3
Sept	9,275.06	995.97	5,644.03	1,786.94	1,436.7	83.9	1,943.2	41.1	33.0
Oct	9,801.12	1,050.71	5,959.01	1,932.21	1,430.0	68.6	1,827.1	41.7	33.1
Nov	9,782.46	1,058.20	6,073.02	1,960.26	1,293.3	71.7	1,821.0	38.5	32.4
Dec	10,453.92	1,111.92	6,440.30	2,003.37	1,275.7	70.4	1,637.0	38.9	29.7
2004									
Jan	10,488.07	1,131.13	6,551.63	2,066.15	1,663.1	79.8	2,331.7	50.3	40.9
Feb	10,583.92	1,144.94	6,692.37	2,029.82	1,481.2	75.5	1,917.2	46.3	36.5
Mar	10,357.70	1,126.21	6,599.06	1,994.22	1,477.5	76.7	1,880.6	47.1	34.9
Apr	10,225.57	1,107.30	6,439.42	1,920.15	1,524.7	78.3	1,950.8	49.0	37.3
May	10,188.45	1,120.68	6,484.72	1,986.74	1,500.0	72.1	1,663.6	46.9	32.3
June	10,435.48	1,140.84	6,602.99	2,047.79	1,371.4	57.4	1,623.3	43.5	32.9
July	10,139.71	1,101.72	6,403.15	1,887.36	1,418.1	54.1	1,734.8	44.1	33.2
Aug	10,173.92	1,104.24	6,454.22	1,838.10	1,243.5	49.5	1,431.0	37.7	26.7
Sept	10,080.27	1,114.58	6,570.25	1,896.84	1,322.2	50.5	1,510.7	41.8	29.1
Oct	10,027.47	1,130.20	6,692.71	1,974.99	1,543.5	61.3	1,730.7	49.5	34.5
Nov	10,428.02	1,173.82	7,005.72	2,096.81	1,494.4	65.3	1,827.6	49.0	38.0
Dec									
YTD '03	9,782.46	1,058.20	6,073.02	1,960.26	1,410.1	66.8	1,690.1	38.4	27.8
YTD '04	10,428.02	1,173.82	7,005.72	2,096.81	1,456.1	65.4	1,778.3	45.9	34.1
% Change	6.6%	10.9%	15.4%	7.0%	3.3%	-2.2%	5.2%	19.4%	22.6%

MUTUAL FUND ASSETS
($ Billions)

MUTUAL FUND NET NEW CASH FLOW*
($ Billions)

	Equity	Hybrid	Bond	Money Market	TOTAL ASSETS	Equity	Hybrid	Bond	Money Market	TOTAL	Total Long-Term Funds
1985	116.9	12.0	122.6	243.8	495.4	8.5	1.9	63.2	-5.4	68.2	73.6
1986	161.4	18.8	243.3	292.2	715.7	21.7	5.6	102.6	33.9	163.8	129.9
1987	180.5	24.2	248.4	316.1	769.2	19.0	4.0	6.8	10.2	40.0	29.8
1988	194.7	21.1	255.7	338.0	809.4	-16.1	-2.5	-4.5	0.1	-23.0	-23.1
1989	248.8	31.8	271.9	428.1	980.7	5.8	4.2	-1.2	64.1	72.8	8.8
1990	239.5	36.1	291.3	498.3	1,065.2	12.8	2.2	6.2	23.2	44.4	21.2
1991	404.7	52.2	393.8	542.5	1,393.2	39.4	8.0	58.9	5.5	111.8	106.3
1992	514.1	78.0	504.2	546.2	1,642.5	78.9	21.8	71.0	-16.3	155.4	171.7
1993	740.7	144.5	619.5	565.3	2,070.0	129.4	39.4	73.3	-14.1	228.0	242.1
1994	852.8	164.5	527.1	611.0	2,155.4	118.9	20.9	-64.6	8.8	84.1	75.2
1995	1,249.1	210.5	598.9	753.0	2,811.5	127.6	5.3	-10.5	89.4	211.8	122.4
1996	1,726.1	252.9	645.4	901.8	3,526.3	216.9	12.3	2.8	89.4	321.3	232.0
1997	2,368.0	317.1	724.2	1,058.9	4,468.2	227.1	16.5	28.4	102.1	374.1	272.0
1998	2,978.2	364.7	830.6	1,351.7	5,525.2	157.0	10.2	74.6	235.3	477.1	241.8
1999	4,041.9	383.2	808.1	1,613.1	6,846.3	187.7	-12.4	-5.5	193.6	363.4	169.8
2000	3,962.0	346.3	811.1	1,845.2	6,964.7	309.4	-30.7	-49.8	159.6	388.6	228.9
2001	3,418.2	346.3	925.1	2,285.3	6,975.0	31.9	9.5	87.7	375.6	504.8	129.2
2002	2,667.0	327.4	1,124.9	2,272.0	6,391.3	-27.7	8.6	140.3	-46.7	74.5	121.2
2003	3,684.8	436.7	1,240.9	2,051.7	7,414.1	151.4	33.3	31.3	-258.5	-42.5	216.1
2003											
Jan	2,597.7	324.7	1,138.2	2,273.6	6,334.2	-0.3	1.1	12.9	-1.1	12.6	13.7
Feb	2,537.8	322.9	1,171.1	2,236.2	6,268.0	-10.9	0.1	19.6	-39.5	-30.7	8.8
Mar	2,551.3	325.3	1,183.3	2,204.7	6,264.6	0.0	0.9	10.5	-32.3	-20.9	11.4
Apr	2,770.3	346.8	1,210.5	2,157.7	6,485.3	16.1	2.7	10.5	-53.8	-24.5	29.3
May	2,958.5	365.8	1,238.7	2,140.6	6,703.6	11.9	3.0	8.9	-18.3	5.6	23.8
June	3,031.1	373.6	1,248.4	2,164.4	6,817.5	18.6	3.9	5.1	22.3	49.9	27.7
July	3,126.0	376.4	1,212.1	2,152.5	6,867.0	21.5	3.4	-10.9	-12.9	1.1	14.0
Aug	3,238.5	382.3	1,209.4	2,141.0	6,971.2	23.6	3.3	-12.6	-20.2	-5.9	14.3
Sept	3,228.5	388.2	1,231.3	2,100.0	6,948.0	17.5	3.8	-5.9	-50.5	-35.1	15.4
Oct	3,440.4	405.9	1,226.6	2,080.1	7,153.0	25.0	4.0	-1.3	-22.2	5.4	27.7
Nov	3,513.3	416.4	1,232.7	2,071.7	7,234.1	14.9	3.0	-2.6	-7.6	7.8	15.3
Dec	3,684.8	436.7	1,240.9	2,051.7	7,414.1	14.2	3.6	-3.3	-22.6	-8.1	14.6
2004											
Jan	3,805.1	447.8	1,249.9	2,034.3	7,537.1	43.0	5.5	-0.3	-19.8	28.4	48.2
Feb	3,896.3	458.6	1,262.4	2,016.6	7,633.9	26.2	5.0	1.5	-21.0	11.8	32.8
Mar	3,887.5	456.3	1,278.9	2,006.6	7,629.3	16.0	4.8	7.8	-10.3	18.3	28.6
Apr	3,811.4	452.3	1,246.8	1,961.9	7,472.4	23.0	4.6	-7.8	-46.3	-26.6	19.8
May	3,855.1	456.9	1,224.4	1,969.7	7,506.1	0.4	2.3	-16.2	6.6	-7.0	-13.5
June	3,948.9	466.9	1,221.0	1,948.8	7,585.6	10.4	2.4	-7.6	-21.9	-16.6	5.2
July	3,797.3	462.3	1,230.0	1,947.1	7,436.7	9.4	3.0	-1.2	-3.2	8.0	11.2
Aug	3,803.6	469.9	1,252.8	1,934.7	7,461.0	1.2	2.6	4.2	-13.5	-5.6	8.0
Sept	3,916.5	479	1,263.9	1,903.7	7,563.1	10.2	3.0	2.8	-42.4	-26.4	16.0
Oct	3,994.4	487.1	1,277.7	1,891.4	7,650.6	7.2	3.5	3.5	-14.1	0.0	14.1
Nov											
Dec											
YTD '03	3,440.4	405.9	1,226.6	2,080.1	7,153.0	123.2	26.0	36.9	-228.5	-42.4	186.1
YTD '04	3,994.4	487.1	1,277.7	1,891.4	7,650.6	146.9	36.6	-13.2	-185.9	-15.6	170.3
% Change	16.1%	20.0%	4.2%	-9.1%	7.0%	19.2%	40.7%	-135.9%	NM	NM	-8.5%

* New sales (excluding reinvested dividends) minus redemptions, combined with net exchanges
Source: Investment Company Institute