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MONTHLY STATISTICAL REVIEW

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Moderator:

—**Brandon Becker**, Partner,
Wilmer, Cutler & Pickering

Panelists:

—**Patrick Campbell**, President, Nasdaq

—**Robert Colby**, Deputy Director,
Division of Market Regulation, SEC

—**Edward Kwalwasser**,
Group Executive Vice President, NYSE

—**Anthony Leitner**,
General Counsel, Equities Division,
Goldman Sachs & Company

—**Bernard L. Madoff**, Chairman,
Bernard L. Madoff Investment Securities

—**Paul Wigdor**, General Counsel,
Pershing Trading Co.

Background

On November 17, 2000, the SEC adopted Rules 11Ac1-5 and 11Ac1-6, which require public disclosure of order execution information. Under Rule 11Ac1-5, every market center must make available for each calendar month a report on covered orders in national market securities that it received for execution from any person. The required data is comprised of 20 subcategories for each security, including type of order, size, average effective spread, and other information. Broker-dealers must also make available order routing information, under Rule 11Ac1-6. Broker-dealers are to publish reports and analysis of their order routing practices once per quarter, including disclosure of any profit sharing arrangements and payment for order flow relationships.

Issues Raised

The most contentious issues raised regarding the Rule refer to its emphasis on execution price and time as the primary measures of execution quality. Panelists pointed out that by minimizing the importance of other measures of execution quality - such as executed order size and market center liquidity - the Rule disadvantages some market centers. For example, the importance of average effective spread as a measure may be particularly objectionable for market centers treating large orders. Effective spread is a measure of the difference between execution price and the NBBO at the time of order receipt; large orders executed in a block away from the market will, by this measurement, appear to have received lower quality execution, despite the fact that this practice is what many block traders prefer. In sum, trade data will not reflect the customer's execution priorities or current market conditions, facts that many suggest will inaccurately reflect execution quality in an environment increasingly based on executions done to the specifications of unique customer interests.

Panelists also noted certain inconsistencies in the data that will be reported, which could result in inaccurate comparisons. For example, data on some Nasdaq trades are reported to the tape with market maker fees embedded in the trade price. This practice will skew comparisons of Nasdaq data unless it is addressed. Additionally, aggregating trades by size into only four categories could produce misleading comparisons. The largest size category is 5,000 shares plus, a bucket that will mix 100,000 share institutional trades in with 6,000 share trades. Evaluating these vastly different trades with respect to each other would not be a valid comparison.

The Rules were originally introduced in part to indirectly eliminate payment for order flow practices, as broker-dealers will be prompted to route order-by-order based on execution quality rather than in response to a particular relationship with an executing market center. Panelists debated whether the SEC will need to introduce more direct regulation to combat payment for order flow.

The debate on execution quality has prompted much discussion of optimal market center linkage structures in the listed arena. Some would argue that, with open access to every quote and full disclosure of execution quality, mandatory market linkage (ITS) is no longer necessary. The panelists debated this question, pointing to the Nasdaq and options markets as examples of structures that have evolved without mandatory linkage, with order routing based on market center competition as opposed to regulatory provisions like the trade-through rule.

II. Trading Automation and Regulation: Explaining Market Structure Differences Between the US and Europe

Presenter:

—Dr. Benn Steil,
Council on Foreign Relations

Dr. Steil began with a discussion of automation and trading costs, comparing costs on both the NYSE and the Nasdaq with nonintermediated systems, such as ECNs. Domowitz and Steil (2001) used data from a large U.S.- based mutual fund from the years 1992 – 1996, prior to the SEC Order Handling Rules, which significantly affected ECNs. They found that trading costs with traditional brokerage on the NYSE were 39 basis points, as opposed to 28 basis points using nonintermediated systems. Those systems represented a 28% savings. Trading costs on the Nasdaq with traditional brokerage were 80 basis points, as opposed to 54 basis points using automated systems. The systems represented a 33% savings. Dr. Steil reported that many ask if comparing trading costs from traditional brokerage with automated systems isn't trying to compare apples and oranges, because the automated systems do the easy trades. Domowitz and Steil accounted for the trade difficulty variable with a benchmark that they developed involving beta and volatility measures.

Then Dr. Steil began to discuss how trading costs affect the cost of capital in the United States and Europe respectively. In the United States, Domowitz and Steil estimate that between the years 1996 and 1998, trading costs declined by 56%. This led to a decline in the cost of capital of 8%. In Europe, trading costs declined only 17% between 1996 and 1998. This translated into a 2.6% savings in the cost of capital. In trying to project the effects that full automation would have on the costs of capital, Domowitz and Steil estimated that trading costs in the United States would drop by another 30%, leading to a savings on equity capital of 4%. The trading costs in Europe, if they were to fall by another 50%, would lead to a savings on the cost of capital of 8%. Domowitz, Glen, and Madhavan also found that trading costs are 37 basis points in the United States and 38 basis points in Europe. However, of those costs in the U.S., 7 of those basis points are explicit costs, and 30 represent implicit costs. It is the opposite in Europe: 31 basis points represent explicit costs, and 7 basis points represent implicit costs. Why the difference? In the United States, brokerages are more efficient getting orders to the exchange, there is more competition. In Europe, however, because of automation, matching is more efficient.

Next, Dr. Steil discussed the advantages of automation as it relates to exchanges. With regard to trading systems, they are now cheaper to implement and operate. They can be built for under $10 million.

Automation has also changed the economics of the business because of access. Traditional exchanges have a limited number of exchanges physically. With automation, access is all but unlimited and does not have to be rationed. In Europe, there are many remote members of exchanges.

With regard to the pricing of services, it is in the interest of exchanges to have a full limit order book with a lot of liquidity. Some exchanges will begin paying for limit orders.

With regard to revenues, membership and listing used to account for a huge portion of this. Listing was 36% of NYSE revenue. Quality control, however, can be outsourced, institutions can compete just in listing. There is no need for it to be done by the exchange. It used to make sense to charge a high entry fee. Now the case is the opposite, as the marginal cost of adding a new trader is zero. Membership and listing fees are under pressure; soon exchanges may only charge for transactions.

In terms of governance, Dr. Steil said that the purpose of demutualizing exchanges is not to raise cash, but to free themselves from the strategic control of intermediaries.

Consolidation is also an automation-driven phenomenon. There have been many types of alliances between exchanges, from strategic alliances, to common trading alliances, to common access, to full mergers. Common access alliances were the most popular type of alliance, but that has been abandoned in favor of the full merger.

In contrasting the U.S. and Europe, the U.S. has government-mandated market linkages, versus free competition in Europe. Because of this, there is no one in Europe to stop cross-border competition. Regulation in the U.S., in trying to eradicate fragmentation, had perversely created it. After the creation of ITS, the mergers stopped. With regard to ECNs, there aren't any in Europe because there is nothing there to disintermediate. Similarly, one doesn't see internalization and payment for order flow in Europe because one only can engage in those activities when the market is inefficient. If the market is running efficiently, the inside spread really reflects the most aggressive buying and selling interest.

III. Decimalization, Market Depth, Liquidity, and Transparency Issues

Moderator:

—**Lon Gorman**, Vice Chairman,
The Charles Schwab Corporation

Panelists:

—**Myles Gillespie**, President,
Fleet Meehan Specialists, Inc.

—**William Harts**, Managing Director,
Salomon Smith Barney

—**Robert McCooey**, President and CEO,
The Griswald Company

—**Mary McDermott-Holland**,
Senior Vice President,
Franklin Portfolio Associations, LLC

—**Holly Stark**, Director of Trading,
Kern Capital Management, LLC

The panelists agreed that Decimalization has increased volume and spread that volume over multiple price points, thus diminishing average trade size and creating tight, shallow markets. One of the NYSE specialists in the group reported that his firm is seeing 40% more trades, but that the average trade size is down 30%. For institutions, this means increased difficulty executing block orders. Panelists are also observing fewer limit orders, as market participants become more squeamish about exposing their interest to the market.

The issue of "pennying" was brought up repeatedly; pennying refers to the practice of stepping ahead of customer orders by an increment of one penny in order to execute proprietary trades. At issue are the practices of pennying customer limit orders – which then go unexecuted and remain on the book – and breaking up "clean crosses" to penny a side of the cross. "Clean crosses" are pairs of buy and sell limit orders submitted at the same price, which a broker has already matched and sent to the exchange floor for execution. Panelists indicated that they would penny for a customer account (e.g. send a customer market order out ahead of a limit order held on the book at a price bettered by one penny), but that they wouldn't penny for their own proprietary gain. Potential measures by the NYSE to address these issues were briefly discussed.

Panelists noted the Investment Company Institute (ICI)'s letter to the NYSE, which includes proposals for the protection of large orders in listed stocks in a decimal environment. Specifically, the letter calls for changes to the NYSE's Institutional X Press product for large executions. The ICI suggests that, by including its proposed changes, Institutional X Press would indeed provide institutions with a vehicle for protected execution, ensuring that all investors realize the benefits of decimalization. While panelists agreed with the ICI's proposals, they pointed out that a comprehensive solution to the problems associated with decimalization has yet to appear.

III. Panel Discussion I: ECNs

Moderator:

—**Donald Kittell**, Executive Vice President, SIA

Panelists:

—**Kevin Foley**, CEO, Bloomberg Tradebook LLC

—**Joseph Lombard**, Executive Vice President, Archipelago LLC

—**William O'Brien**, General Counsel, The BRUT ECN, LLC

—**John Schaible**, President, Nextrade, Inc.

—**Cameron Smith**, General Counsel, The Island ECN, Inc.

Each ECN gave a brief overview of current issues and initiatives. Island discussed its success in the QQQs (currently 10% of the market), emphasizing that this success has been realized outside of the NMS and translating this into a discussion of the need for changes to the linkage structure of the listed market. Nextrade is currently focusing on initiatives dealing with foreign currency transactions, single stock futures, and other timely issues. BRUT emphasized the value of its integration with BRASS, the broker-dealer order routing system. Archipelago, with its equities trading engine linked to PCX, is focused on continuing to develop its outbound connectivity to all liquidity pools and its smart order routing system. Bloomberg discussed its innovations in executions based on the parameters of the customer.

The majority of the debate following these introductions focused on issues of linkage and trade-through rules. Many of the ECNs agreed that it is unfair to hold ECNs, with their advantage of speedy execution, to the standards created by ITS, which is relatively slow. The ECNs suggest that they should be exempt from trade-through rules. Island posits (in its paper, *Strengthening the National Market System"; Unleashing Innovation and Competition*) that mandatory linkage with trade-through rules is unnecessary and that competitive forces and best-execution obligations are sufficient to monitor trade-through practices. He proposes that competitive forces – spurred by a trade through disclosure rule – would be sufficient impetuses for the creation of proprietary intermarket linkages.

Challenges to this perspective included questions of whether and how trade-through exemption and disclosure rules would be extended across market centers other than ECNs and issues of investor confidence in a marketplace without mandatory linkage and trade-through rules.

Judith L. Chase
Vice President and Director, Securities Research

Mariya Rosberg
Consultant

UPDATE ON REGULATORY INITIATIVES IN RISK MANAGEMENT

Introduction

The financial services industry, collectively and as individual firms, is continually working to improve risk management. In our July and August 2000 ***Research Reports*** we commented on the ongoing reassessment of and significant changes in risk management practices, which in turn generate additional changes in the operations of firms and the market. At that time we highlighted a number of both industry initiatives and regulatory initiatives that were underway. Recently, initiatives in the regulatory sphere have shown significant progress, resulting in a number of releases by those agencies. The following is a summary of those efforts and, in some cases, the industry's response to them.

I. THE NEW BASEL CAPITAL ACCORD

The Basel Committee on Banking Supervision, of the Bank for International Settlements (BIS), is comprised of banking supervisory authorities of the G-10 countries. In 1996, the Committee adopted a new set of capital requirements to cover market risk exposure from financial institutions' trading activities, amending the existing capital adequacy framework, which was issued in 1988. With this amendment, for the first time, the requirements were based on financial institutions' internal risk measurement models. In the years that followed, significant progress was made to develop statistical models to measure other types of risk, most notably credit risk.[1] In January of this year, the Committee released a proposal for a new capital adequacy framework to replace the prior Accord. The comment period on this proposal ended today. When finalized and adopted by national supervisors, the new Accord will govern all the business undertaken by financial holding companies, including that of their broker/dealer affiliates.

The new Accord (Basel II) and accompanying documents is quite complex in that it proposes a global regulatory capital standard that encourages market discipline and appropriate capital allocation for both banks and non-banks operating in distinctly different national environments. Basel II is a response to both the increasing sophistication of risk measurement and management and to the erosion of the Basel I rules through "capital arbitrage" (strategies that reduce a bank's regulatory capital requirements without a commensurate reduction in the bank's risk exposure).[2] The new Accord responds to this by requiring that the parameters used to determine regulatory capital be the same as those that management uses to run financial institutions.

Very generally, **the Accord consists of three "pillars",** which are designed to mutually reinforce one another. The **first pillar deals with formal capital regulation** in the form of minimum capital requirements and is the most familiar and rule based of the three pillars. Capital ratios will serve as triggers for corrective actions. The biggest change in this area from Basel I has to do with the approach to credit risk[3]. For setting capital requirements for credit risk, the proposal gives financial firms a choice be-

[1] Hirtle, B., Levonian, M., Saidenberg, M., Walter, S. and Wright, D., "***Using Credit Risk Models for Regulatory Capital: Issues and Options***", Economic Policy Review, Vol. 7, No. 1, Federal Reserve Bank of New York, 2001.

[2] Meyer, Laurence H., Governor, Federal Reserve Board, "The New Basel Accord: Challenges for Banks and Their Supervisors", Remarks at the Risk Management Association's Conference on Capital Management, Washington, D.C., May 17, 2001.

[3] Credit risk represents the risk that a firm would incur if a counterparty or issuer of securities or other instruments held by a firm fails to perform its contractual obligations.

tween a standard approach, using risk weights set by supervisory bodies, and an internal ratings-based (IRB) approach. In the IRB approach, firms would be allowed to use their own models and estimates with regard to the probability of default associated with a given counterparty. Firms choosing the IRB approach will have a higher qualification standard than under the standard approach and will likely be subject to increased disclosure requirements under the third pillar. This IRB framework will likely have three main components: a set of prudential standards defining the risk estimate to be used in the capital charge; a set of model standards describing the elements that a comprehensive credit risk model would incorporate, and validation techniques that could be used by supervisors to financial firms to ensure that model estimates are reasonably accurate and comparable across institutions.[4] A similar "menu' structure is envisioned for operational risk measurement, but it is a less advance proposal than that for credit risk, and further clarification and changes are expected from the Committee.

Pillar 2 is concerned with supervisory review. Supervisors will need to ensure that each financial firm has internal processes that effectively assess capital adequacy, given the firm's unique risk environment. This will require supervisors to be even more risk-focused and increasingly concerned with validating the systems, the ratings and the probabilities of default employed by the firms under their review. For this pillar to "stand", increasing responsibility will devolve to line supervisory personnel to evaluate the quality of risk management and examine the adequacy of risk measures. This in turn will require increased resources and expanded effort in recruiting, training and retaining staff by supervisory and regulatory agencies.

Pillar 3 deals with "market discipline". Market discipline will be enlisted through the disclosure, to other market participants, of a financial firm's capital, risk exposures, assessment processes, management processes and capital adequacy measures. It is though that through these disclosures of internal risk measures, the market will react to variations in risk postures, and that this reaction will "discipline" the firms to strike the right balance between risk and reward.

The Securities Industry Response to Basel II

In a comment letter filed today, the Securities Industry Association's Risk Management Committee urged financial regulators, in finalizing the new Accord, to grant greater recognition to the benefits of marking-to-market by clarifying that the capital rules under the Accord's "market risk amendment"[5] apply to all products subject to mark-to-market (or fair value) accounting[6], where the mark-to-market incorporates the pricing of the credit risk inherent in the position. The SIA's Risk Management Committee noted that mark-to-market valuation of credit sensitive contracts and securities effectively integrates market and credit risk. In this way, all positions subject to mark-to-market accounting would have capital requirements calculated on a consistent basis.

[4] Op.cit. 1.

[5] Market risk here refers to the potential for changes in the market value of a firm's trading positions. More broadly it defined by the SEC as the risk of loss arising from adverse changes in market rates and prices, such as interest rates, foreign currency rates, commodity prices, and other relevant market rate or price changes (e.g. equity prices).

[6] Mark-to-Market accounting or fair value accounting records securities and financial instruments based on listed market prices or broker or dealer price quotations with unrealized gains and losses recognized in earnings. To the extent that prices are not readily available, fair value is based on either a firm's internal valuation models or a firm's estimate of amounts that could be realized under current market conditions.

The comment letter also urged that the new Accord's recommended disclosure requirements apply only to the assets not included in its trading book[7], and that the Accord require a firm adhering to mark-to-market accounting to make risk disclosures broadly in line with those outlined in the Fisher Report and the Shipley Report (see below). In its analysis of the new Accord, the SIA's Risk Management Committee viewed mark-to-market accounting as a key tool that strengthens market discipline, supports appropriate capital allocation, and facilitates the integration of market and credit risk. A timely and reliable system of disclosing mark-to-market financial data is an effective means of providing risk information and is the natural culmination of the innovations incorporated in the proposed Accord.

The comment letter also recognized that for some financial institutions the adoption of mark-to-market accounting for all assets might be impractical. However, as markets evolve, price transparency should continue to improve, making mark-to-market accounting more practical for a broader range of financial instruments. The Risk Management Committee, while not commenting at this time on other issues in the Accord, specifically the proposed treatment of operational risk, has not acquiesced on those issues.

[7] Under the proposed new Accord, financial firms have two primary categories for their assets, the "banking book" and the "trading book". As the names would indicate, the banking book is the repository for most conventional banking transactions, such as loans, while the trading book is a proprietary portfolio for financial instruments held by an institution in its capacity as a dealer.

II. THE FISHER REPORT AND THE SHIPLEY REPORT

The Fisher Report refers to the recommendations put forward by the Multidisciplinary Working Committee on Enhanced Disclosure headed by Peter Fisher, which is a government-sponsored entity.[8] It explored the use of public disclosure as a tool to discipline market participants. Its report provided a template for firms, creating a "level playing field" in disclosure, which would facilitate more efficient capital allocation and reduce the risk of systemic shock. The Shipley Report is a product of The Working Group on Public Disclosure, a private sector group headed by former Chase Manhattan Bank Chairman Walter Shipley, which was established to articulate principles for improving the public disclosure of financial information by financial organizations.[9] The Shipley Report developed options for improved disclosure, aimed at improving transparency and the markets ability to evaluate risk exposure and risk management. The reports of both groups were supportive of the Basel Committee's purposes and reached similar conclusions, with the Fisher group supplying significantly greater detail.

Both groups recognized that firms approach risk management differently and so meaningful comparisons across firms (as well as across national borders with different accounting standards, corporate governance structures, etc.) will be difficult to achieve. As such regulatory

[8] This Committee is jointly sponsored by the Basel Committee on Banking Supervision, the Committee on Global Financial System of the G-10 central banks (CGFS), the International Association of Insurance Supervisors (IAIS), and the International Organization of Securities Commissions (IOSCO). For full details of the report see The BIS public website at http:/www.bis.org/publ/joint01.htm.

[9] The group reported their findings to Federal Reserve Governor Meyer on January 11, 2001. The document is available at http://www.federalreserve.gov/boarddocs.press/general/2001/20010111/DisclosureGroup Letter.pdf.

"overlap" is likely to occur and it is important to recognize the need for flexibility, consensus and that the process of enhanced disclosure is evolutionary. The Shipley Group summarized some principles that are key to the effort towards enhanced disclosure, specifically that required disclosures: should be the same information used by management of the firms under review, and change as internal practices change; should focus on how risk changes over time, and; should provide a balance between quantitative and qualitative information. Both reports then go on to provide a detailed description of recommended disclosures, with the Fisher Group separating the recommendations into types of disclosures: those that can be made immediately; those that should be made in the near term, but that require further investigation as to how they should be made, and; those for which further development of risk assessment concepts and methods is needed before practical disclosures could be considered.

III. THE BIS CENSUS ON STRESS TESTING

The final regulatory initiative to emerge recently is the report released by the BIS entitled "A Survey of Stress Tests and Current Practices at Major Financial Institutions".[10] Stress tests[11] are tools used to gauge potential vulnerability to exceptional but plausible evens and have grown in importance in recent years alongside value-at-risk (VaR)[12] and other risk measurement tools. The recently completed CGFS survey covered stress test scenarios in use at 43 major financial institutions (commercial and investment banks) from 10 countries, and made the following summary observations:

- There is a perceived asymmetry in risks, with negative events more likely to be stress tested than positive events;
- The most common areas stress tested were equity prices, interest rates and emerging markets;
- Stress tests were relied on most heavily for markets or products whose risks may be inadequately captured by statistical risk measures such as VaR, and;
- Similarly titled stress tests, varied across firms, both on the size of the shocks and on cross-market effects, even when based on historical, as opposed to simulated, episodes.

The implications of the census, according to the authors, are that despite stress testing becoming integral to risk management, interpretation of the results is subjective and that there is no unique response by firms to the information gain in stress testing. This subjectivity reflects the firms' position in the market, their approach to stress test implementation and the strategic aspects of risk management. Unlike VaR, stress-testing practices are very heterogeneous and hence create no evident link between market shocks and firms' responses.

[10] Prepared by the Task Force established by the Committee on the Global Financial System (CGFS) of the central banks of the Group of Ten countries, released April 25, 2001. It follows up on earlier work carried out by the CGFS ("Stress Testing by Large Financial Institutions: Current Practice and Aggregation Issues", March 2000. Both reports can be found at www.bis.org.

[11] Stress tests can be either stress test scenarios or sensitivity stress tests. A stress test scenario contains simultaneous moves in a number of risk factors (for example, equity prices, interest rates, exchange rates, etc,.) reflecting an event that the firms's risk managers believe may occur in the foreseeable future. A sensitivity stress test isolates the impact on a portfolio's value of one or more predefined moves in a particular market risk factor or a small number of closely linked market risk factors. Usually includes symmetric shocks (up and down) unlike a stress test scenario which typically shocks a given market factor in only one direction (either up or down).

[12] VaR is the largest loss a company purportedly could experience from its market-risk sensitive instruments in a given holding period with a given probability. The probability of VaR loss is based on past market rate changes or on simulated rate changes and is assumed to be no greater in most cases than 5%.

IV. THE DISCLOSURE OF CREDIT, LIQUIDITY, AND MARKET RISK IN 2000 ANNUAL REPORTS

With the recent regulatory focus on disclosure, it is useful to remember that companies already disclose to their shareholders a wide range of detailed information relating to their risk management practices. This information is frequently broken down into credit, liquidity, market, and even operational risk sections. In 1999, we compared the disclosures of ten companies in three categories. The tables that follow are updated comparisons from the 2000 annual reports. We found that these companies are disclosing more than ever, with a trend toward discussing their methods used in stress tests.

2000 Annual Reports		Credit Risk Data Reported
Company 1		Credit – Related Portfolio between Commercial Loans, Derivative and FX Contracts, Consumer Loans, year end 99, 00 Managed credit-related assets graph between Commercial and Consumer credit-related assets for yr 99,00. Commercial and consumer Portfolios by type of loan (past due, etc.) for 99, 00. Commercial Credit-Related Assets – Risk Profile, 99, 00 (graph - the % of investment). Diversification of Industry profile – 10 Largest Industries. Maturity Profile, 99, 00. Selected Country Exposure, 00, 99. Consumer Managed Loan Portfolio (Total by category) Consumer Loans by Geographic Region, broken between Mortgage Loans, Credit Card Loans, Auto Financing yr. 00, 99. Allowance Components (for Credit Losses), yr. 00, 99. Loans by type 00, 99. Impaired loans, Loan securitizations– cash flow received from securitization trust for sales 2000 – consumer and commercial. Sensitivity of the current fair value of retained interests. Actual and projected credit losses 00, Net credit losses by type of loan and components of reported and securitized financial assets for 2000 Mortgage servicing Rights98-00 – sensitivity analysis, changes in fair values. Long term debt by maturity 99, 00. Weighted-Average Grant-Date fair value 00-98. Off-balance sheet lending-related financial instruments 00, 99, Credit risk concentrations, Major products and industry segments. Distributions 00, 99,
Company 2		Loans and advances to banks 98-00 by world area, maturity analysis of loans and advances to banks and customers at yr end 99 and 00. Fixed and Variable interest rate sensitivity of loans and advances to banks and customers yr end 00. Loans and advances to banking customers 95-99 by world area. Exposure to countries subject to International Monetary Fund liquidity support programs 97-99 by type of borrower. Analysis of provisions for bad and doubtful debts yr end 96-00 by world area and general provisions of credit risk vs. country risk. Ratios of provisions specific and general for country and credit risk and amount written off at end of year as percentage of loans and advances including and excluding trading business 96-00. Movement in provisions for bad and doubtful debts 96-00 for credit risk, country risk, and provisions charged against profit by world area. Credit risk provisions by UK industry with one foreign category by net specific provision and specific provisions for credit risk at yr end 96-00. Analysis of amounts written off and recovered – credit risk by UK industry with one foreign category 96-00 and recoveries of amounts previously written off 98-00. Non-performing lendings UK and foreign by different types of lending 96-00. Potential problem UK and foreign lendings 96-00. Interest forgone on non-performing lendings 98-00. Cross-border outstandings exceeding 1% of assets by country and by type of borrower.
Company 3		Net replacement costs of derivative contracts in a gain position at Nov, 2000 and 1999. Fair Value of Financial Instruments owned and sold, 00, 99 Financial instruments with off-balance sheet risk – revenues by reporting categories including derivatives 00, 99. Notional/contract amounts of outstanding derivative financial instruments at Nov 30, 00,99. Fair value of derivative financial instruments held or issued for trading and hedging purposes as of Nov 30, 00,99. Monthly average fair values of the derivative financial instruments, Nov 30, 00,99. Maturities for notional/contract amounts outstanding for derivative financial instruments at Nov 30, 00,99. Distribution of derivatives exposure (net replacement cost) by rating for Nov 00, 99, Non-Trading Derivative activity, 00, 99
Company 4		Cross-border outstandings and commitments by country and by type of claims yr end 00, 99.Consumer and Commercial Loans in US and outside of US 00, 99.Impaired loans, 00, 99, Total 2000 loan portfolio managed and credit losses, net of recoveries. Allowance for credit losses 98-99 by consumer and commercial provisions. Investment banking, and brokerage borrowings yr end 00, 99 and short-term borrowings yr end 00, 99. Long-term debt maturities/ weighted average coupon at yr end 00,99 by section of Citigroup, aggregate annual maturities on long-term debt 2000 and on. Insurance policy and claims reserves by type of claim yr end 00, 99. Beginning/ ending property-casualty reserve balances for claim/ claim adjustment expenses for yr end 98-00, Reinsurance premia by type of claim yr end 98-00. Foregone interest revenue on loans for 2000 in US and non US offices. Loan maturities and sensitivity to changes in interest rates. Loans outstanding 00-96 consumer and commercial. Cash-basis, renegotiated, and past due loans, 96-00. Details of credit loss experience, 96-00. Short-term and other borrowings 98-00 by type , including weighted-average interest rate.

2000 Annual Reports		Credit Risk Data Reported
Company 5		Total credit extended by industry (in %). Credit risk profile by division 00, 99, by industry. Credit risk profile by credit rating category, 00, 99. Credit risk profile by region, 00, 99. Allowance for credit losses by group division. Country risk by region (in %), Emerging markets country risk 00, 99 Placements with, and loans and loans and advances to other banks. Loans and advances to customers, to related companies and companies with which a participation relationship exists. Total credit extended.. Total provisions for and analysis of losses on loans and advances 00,99 Key ratios of total provisions on loans and advances Subordinated Assets 00, 99, Deposits from other banks, Amounts owed to other depositors, Other deposits, 00, 99, Liabilities to related companies Liabilities , provisions. Segment info by group divisions, by geographical regions. Relevant maturity groupings based on the remaining peiod 00, 99, for Loans and advances and Liabilities. Contingent liabilities and other obligations. Assets Pledged as securities 00, 99 for liabilities/contingent liabilities, other debts and loans. Trust activities, trust liabilities..
Company 6		OTC derivative exposures by credit rating equivalent and by exposure, collateral held, exposure net of collateral, % of exposure net of collateral. Net of collateral by maturity. Leverage ratio and adjusted leverage ratio 00, 99. Gross notional amounts of derivative financial instruments for trading with off-balance-sheet market risk, yr end 00,99 by type of contract. Gross notional amounts of purchased option contracts yr end 00, 99. Fair value of derivative financial instruments for trading, yr end 00, 99
Company 7		Notional amounts of interest rate, currency and equity swaps by maturity and $/nonUS$, yr end 00,99. Changes to mix of fixed and floating rate debt and weighted-average interest rates because of end user derivative activity yr end 00, 99. Net credit exposure at yr end 00 for OTC contracts based upon ratings. Capital requirements. Notional/contract amounts of trading-related derivatives yr end 00, 99 and weighted-average maturity. Fair value of trading-related derivatives yr end 00,99 Unrecognized net gain (loss) related to the company's end-user derivatives.
Company 8		Fair value of trading derivatives yr end 00,99, average fair values. Notional amounts of derivatives used for trading purposes by type of risk yr end 00,99. Notional amount of derivatives based on contractual expiration. Financial instruments with carrying values that differ from their fair values yr end 00,99.Notional amounts of non-trading derivatives yr end 00,99. Summary of counterparty credit ratings for replacement cost of trading derivatives in a gain position by maturity yr end 99
Company 9		Consumer loans year end 00, 99. Activity in allowance for consumer loan losses 98-00. Total commitment to extend credit. Notional amounts of swaps US$/nonUS$ by maturity and weighted average interest rates yr end 00,99. Activity during the periods in the notional value of the swap contracts 00,99. Gross notional amounts of derivatives and fair value (carrying amount) of the related assets and liabilities by type at yr end 00,99 and average fair values. Remaining maturities of the swaps and other products at yr end 00 ,99, showing notional values by year of expected maturity. Credit quality of trading derivatives by fair value and counterparty credit rating yr end 00 ,99
Company 10		Status of total credit risk exposure 00, 99 by claim. Banking product exposure by industries. Banking product exposure by counterparty rating 00, 99. Traded products exposure by counterparty rating 00, 99 Mortgage exposure by type of property. Private and corporate clients credit risk exposure by industries, excluding mortgages 00, 99. Banking products exposure by counterparty rating excluding Mortgages 00, 99 Group OTC Derivative Exposure by Product Type and Maturity. Corporate and industrial institutional clients banking products 98-00. Total loan portfolio exposure by business group 98, 99. Emerging Markets Exposures by Major Geographical Areas 00-98. Summary of banking products exposure and credit risk results 00, 99 Swiss Bankruptcy rates 95-00. Allowances and provisions for credit risk 00, 99. Credit Loss by UBS Group yr 98-00 , expected credit losses and IAS actual credit expense. Derivative related credit risk broken betw countries. Allowance and Provision for Credit Losses 00, 99. Non-Performing loans00, 99.

2000 Annual Reports		Liquidity Risk Data Reported
Company 1		Sources of free cash flow, Uses of free cash flow, Yr. End 98-00. Risk-based capital ratios at yr end 96-00 by total capital, tier 1 capital, and tier 1 leverage. Breakdown of tier 1 and tier 2 capital yr end 99,00. Risk Based Capital-Ratios by banking subsidiaries. Derivative and foreign exchange used for Asset/Liability activities 00, 99. Aggregate notional amounts of derivatives and foreign exchange contracts/credit exposure 00, 99. Lending related commitments00, 99-carrying value, estimated fair value
Company 2		Interest rate sensitivity gap analysis, summarizing repricing profiles on the Group's non-trading book at yr end 00,99, allocated to time bands by reference to the earlier of the next contractual interest rate repricing date and the maturity date. Structural currency exposures as at yr end 00,99 by net investments in overseas operations, by borrowings taken out to hedge the net investments, and by remaining structural currency exposures. Unrecognized gains and losses on hedges at yr end 00, 99, deferred gains and losses on hedges at yr end 00, 99. Derivatives held or issued for trading and non-trading purposes: notional principal amounts and fair values of instruments entered into with third parties 00, 99. Nominal amounts of OTC foreign exchange derivatives held to manage the non-trading exposure of the Group analyzed by currency and final maturity, 00, 99. Maturity of notional principal amounts by residual maturity, of Group trading and non-trading derivatives for 00, 99. Residual maturity and counter party analyses of the net replacement cost of OTC and non-margined exchange traded derivatives held for trading and non-trading purposes at yr end 00, 99. Carrying amount and the fair value of the Group's financial instruments analyzed between trading and non-trading assets and liabilities. Reconciliation of operating profit to net cash flow from operating activities. Changes in financing during the year. Analysis of cash balances and the Net Outflow/Inflow of cash in respect of the acquisition of subsidiary undertakings. Short-term borrowings, changes in Net Interest Income (volume and rate analysis) change from '00/'99 and '99/'98 broken down for interest receivable, interest payable, movement in net interest income, Capital Resources '98,'99,'00, Capital adequacy data '00,'99, Capital ratios. '00,'99, Weighted risk assets, '00,'99
Company 3		Financial leverage/Leverage ratios. Long term, short term debt rating, Cash flows – cash and cash equivalent increase, 00, 99. Short-term financing trough commercial paper , MTNs, repurchase agreements, loans for year end-00, 99, 98 interest rates and weighted average Long-term borrowings by type of note 00, 99, with weighted average effective interest rates. Maturity of long-term borrowings at Nov 2000,
Company 4		Ratios yr end 00,99, by tier 1, total capital, leverage, and common stockholders' equity, for Citicorp and Citigroup separately. Components of capital under regulatory guidelines, yr end 00,99 (for Citigroup only). Extent to which Citigroup, Citicorp and Citibank meet regulatory capital requirements. Derivative and foreign exchange contracts, notional principal amounts and balance sheet credit exposure yr end 00,99. End-user interest rate, foreign exchange and derivative contracts by notional amounts yr end 00,99 and maturities. End-user interest rate swaps and net purchased options as of yr end 00 by notional amounts and maturities. Fair and carrying value of financial instruments 00, 99 and the differences.
Company 5		Diversification of unsecured funding in %. Economic Capital – Overall risk position, Capital and risk position according to BIS (Risk-weighted assets and market risk equivalent) by qtr. Capital and reserves according to BIS by qtr, . Trading activities in OTC derivatives by counterparty groups, yr end 00, 99. Trading activities in OTC derivatives by product and by maturity-nominal amount and negative, positive, net market values, including average values for 2000 notional volume, positive, negative market value. Cash reserve yr end 00,99. Capital and reserves by type of capital yr end 00,99. s Core and supplementary capital yr end 00.Fair value of financial instruments book value, yr end 98,99.Foreign currency, yr end 00,99. Exchange rate changes that affect income st.
Company 6		Short-term borrowings by type yr 00,99. Long-term borrowings by type yr end 00,99. Long-term borrowings by maturity 00 and on by $/nonUS$. Effective weighted average interest rates for long-term borrowings after hedging activities by type of obligation yr end 00, 99 Earnings per share**..**

2000 Annual Reports		Liquidity Risk Data Reported
Company 7		Short-term Debt to Adjusted Total assets by % by year 97-00. Short-Term Debt to total debt by % by yr 97-00. Company's Total capital (Long term debt, Preferred Securities, Stockholders' Equity) 98-00, Long term debt by year 98-00 -graph Short-term financing by type of debt, yr end 00,99. Weighted-average interest rates by type of debt, yr end 00,99. Long-term debt by maturity and by US dollar/non-U.S. dollar and by fixed and floating rate, yr end 00, 99.
Company 8		Short-term borrowings by type 00, 99. Long-term borrowings by type 00, 99. Maturity of long-term borrowings 00. Effective weighted-a average interest rates for borrowings at yr end 00, 99. Major components of the change in long-term borrowings for 2000 and 99. Capital leverage ratios for 00, 99 year end and Average
Company 9		Maturities of certificate accounts. Long- and medium-term borrowing maturities and terms for $ /non US$ fixed and floating rates for 00, 99. Other borrowings (subordinated notes, etc.).
Company 10		OTC derivative exposure by product type and maturity. Interest rate sensitivity of the Bank Book. Change in risk between methodologies "net income at risk" and "economic value sensitivity" yr end 98-00. BIS risk-weighted assets, yr end 98-00. Share Buy-back Tier1 Ratios – by qr yr.00/01. Proposed Changes to par value**.** Financial instruments currency risk yr end 00,99, liquidity risk – maturity analysis of assets and liabilities 00,99, Capital Adequacy yrend00, 99, BIS capital ratios**.** Fair value of financial instruments 00, 99 UBS Group statement of cash flows. Due to banks and customers, 00, 99, long term debt 00, 99Derivative Instruments 00, 99,

2000 Annual Reports Market Risk Data Reported		Value-at-risk (VaR)method	VaR Data Reported	Other Risk Measures (stress tests numbers only where given. Otherwise, just a description.)
Company 1		Chase - 99% confidence level JPMorgan - 95% confidence level Historical simulation	Chase – Market-to-Market Trading Portfolio - '00, 99 Avg, Min, Max, YrEnd for int.rate, FX, equities,commod. and hedge fund inv. risk, minus portf.diversif Chase Aggregate VAR (Avg, Min, Max , Yr end 00, 99) J.P. Morgan Aggregate DeaR for all Portfolios (Avr, min, max, yr. End-oo, 99) for Trading , Investment , Aggregate DeaR. JP Morgan DEaR for Market-to-Market Trading Portfolios for int. rate, FX, equities, commodities minus portfolio divers (Avg, Yr, end – 00, 99)	00, 99 Avr, Min, Max Yr . end for Directional Risk and Basis Risk, SVA performance measurement t that allocates risk-adjusted capital to business units, Basis point value (BPV), Vulnerability Identification (VID), firm-wide monthly stress tests, moving to weekly: combined marked-to-market trading activities stress test as of January 4, 2001: pre-tax stress test loss of $447 million
Company 2		98% confidence level, back-testing assesses effectiveness; historical simulation method	'99Avg, Low,High, for int. rate, FX, Equities & Commod. Risk, minus diversification effect; Total DVaR exposures in 00, 99	Weekly firm-wide stress tests based on historical and hypothetical extreme movements
Company 3		95% confidence level; for interest rate and FX risk use "Monte Carlo" approach, for equity risk use combination of historical and Monte Carlo approach	00, 99 Year end VaR for Interest Rate, Currency Equity, minus Diver. benefit 2000, High, Low, Avr, for Interest rate, Currency, Equity, Aggregate Value-at-risk, Daily Trading Profit Frequency Distribution for yr end 00, 99	Stress Tests at firm-wide level and below
Company 4		99% confidence level, earnings at risk = pretax earnings impact of a specified upward and downward shift in the yield curve for the appropriate currency	00. 99, Avg,Yr end, Low, High, for Citicorp and Solomon Smith Barney separately in int.rate, FX, equity, all other (primarily commod.) for trading portfolios. Citigroup Earnings-at-Risk 00, 99 (Increase, Decrease of US and non US Dollar) for non-trading portfolios	Stress testing on aggregations of portfolios and businesses where appropriate, Factor sensitivities – the change in the value of a position for a desired change in a market risk factor
Company 5		99% confidence level, one day holding period,Monte Carlo simulation process, historical, Group value-at-Risk	'00 Avg, Min, Max, Yr.End for total VaR risk, int.rate, equity price, commod., FX risk, Graph of Trading income and VaR of trading units Graph of daily VaR trend in '00. VaR of trading units by risk category '99,'00, Graph of Income of trading units and Var risk 00. Average Var for Global Corporates and Institutions	Back-testing, weekly stress tests on trading portfolios, country-specific events

2000 Annual Reports Market Risk Data Reported		Value-at-risk (VaR)method	VaR Data Reported	Other Risk Measures (stress tests numbers only where given. Otherwise, just a description.)
Company 6		95% confidence level, estimated with historical data, informs of assumption that asset returns are normally distributed, firmwide and daily VaR	'99, '00 Avg, Min, Max, YrEnd for int.rates, currency, equity, commodity, minus diversification effect. Graph of firmwide VaR trend in '00. Chart of frequency distribution of '00 daily trading net revenues	Scenario analyses based on abnormal or catastrophic market movements
Company 7		95% confidence level, incorporates actual trading revenues over a standardized 250-day historical period	'99, '00 Avg, Min, Max, YrEnd firmwide, Avg for int.rate, equity, FX, minus diversification benefit.	
Company 8		99% confidence level, historical simulation, 2-week holding period, database of historical biweekly changes in market factors	'99,'00 YrEnd and '00 Avg., High, Low for int.rate and credit spread, equity, commod, curren, volatil, minus divers; '99,'00 Yr.End #s in same categories for non-trading instru; 2000 histogram-weekly trading-related revenues	
Company 9		99% confidence level, historical simulation (4 years of data) for major market risk factors and Monte Carlo simulation for name-specific risk for 10,000 equity names and 100 classes of corp. and high-yield bonds.l	'99,'98 Avg, Low, High, YrEnd for int.rate, equity, FX, commod., less div. benefit; Aggreg VaR for other confidence levels and time horizons (95% 1-day VaR, 99% 2-week VaR), 1 histogram of 99% 1-day VaR in '99 institu. Trading, 1 for distr. of daily Net. revenues	Firmwide stress and event analyses
Company 10		'99 confidence level, both 1-day and 10-day, daily back-testing, historical simulation	'00, 99 Avg, Min, Max, YrEnd, for equities, int.rates, FX, precious metals, less divers effect; YrEnd'00, '99 UBS Group Var.,'00 Back-testing result graph for 10 day,1day, rev; Non-trading currency risk Var – 00, 99, Min, max, aver, yr end.	Stress loss measures for tail risk

SELIGMAN ADVISORY COMMITTEE ON MARKET INFORMATION: MEETING FIVE

Note: This meeting overview is not meant to be an actual transcript of the meeting, and therefore does not reflect direct quotes from participants. For background on the formation of this Committee, as well as a short summary from the first, second, third, and fourth meetings, please see the Appendix following this article.

Summary of Fifth Meeting

The last meeting on market data as it relates to equities was held at the SEC on May 14, 2001. The next meeting will focus on options. This meeting focused on the idea of an alternative market data model with competing consolidators that had been addressed in a subcommittee meeting. The four relevant issues for the subcommittee, as well as the committee as a whole, were: 1) technology issues of the alternative model, 2) policy/economic issues of the alternative model, 3) whether or not the Display Rule should be retained, and 4) how information not subject to the Display Rule should be treated.

Technological Issues of Competing Consolidators

According to the summary of the two subcommittee discussions, each market center would provide "best bid, best offer and last sale price, time and volume information through a direct data feed to any number of securities information processors or vendors." Standards would be developed to accommodate the consolidation of the multiple feeds. Nasdaq proposed a procedure to mitigate potential risks that may arise from differences in hardware or software, validation tolerances, sequencing rules and capacity variations. They proposed that market centers would each file a plan with the SEC to establish performance standards and protocols. Some thought that the proposed procedure was too formal and that specifications would become outdated too quickly.

Most on the subcommittee thought that the SEC would not have to step up its marketplace intervention if there were competing consolidators, because the market clearly demands consolidation and reliability. Trade associations could help provide necessary coordination. It was mentioned that systemic risk would be mitigated in the case of competing consolidators because there would no longer be a single point of failure.

Michael Atkin of the Software and Information Industry Association was charged with surveying the vendor community in order to find out what its reaction would be to proposed competing consolidators. The survey consisted of discussions with nine market data vendors. Atkin reported that if the Display Rule were retained, then in general the vendors did not believe that there was too little to be gained to too much potential risk for a move to competing consolidators to be warranted. However, the vendors believed that if the current NBBO model were to be scrapped, then "data quality considerations [would] be mitigated, [and] the entire industry could gain from the benefits of information competition."

Specifically, with regard to competing consolidators within the NBBO model, the vendors had concerns with the costs of conversion, with maintaining a level playing field for data access, and with data quality. The vendors reported that the costs of conversion, including programming and infrastructure changes and quality assurance parameters, would be significant. The vendors also noted that any delay in the provision of data by one consolidator could result in only a portion of market participants be-

ing disadvantaged. With regard to data quality, the vendors highlighted several technological issues associated with competing consolidators, including maintaining proper sequencing of messages, a complete data stream, and a more complicated process for data quality problem resolution.

Policy/Economic Issues of Competing Consolidators

According to the subcommittee summary, two scenarios were considered, retaining the Display Rule with multiple consolidators, and abandoning the Display Rule with multiple consolidators. There was no overall consensus within the subcommittee on the policy issues, but benefits and costs of both approaches was discussed.

If the Display Rule were retained, participants claimed that there would still be a greater ability to innovate in the form of quick modifications to the system and new technology than exists currently. Also, the costs associated with administration and joint supervision of plans would be removed, "along with potential antitrust exposure."

The costs of this approach, however, according to subcommittee members, include the multiple duplication of the technology needed to consolidate, which could potentially be spread out across the system, and the transaction costs incurred through separate contract negotiations. The largest concern related to the fact that retaining the Display Rule compels consolidators to buy data from market centers, so the potential for pricing abuses still exists. Others, however, noted that alternative data sources, such as broker/dealers, would act as a mitigating factor for such abuses.

If the Display Rule were abandoned, participants identified two benefits. First, innovative data products would be created to service the demands of different types of investors would determine what information should be provided to whom. Second, consolidators would not be required to purchase data from secondary market centers if their data is not of value to investors. Thus prices for that data would drop unless the value of the data to investors was somehow increased.

With regard to the costs of abandoning the Display Rule, it is not clear that the market power of the primary market centers would be mitigated. The second potential cost pertains to the duty of best execution. Will the pertinent data be available in order for broker/dealers to get the best execution for their customers?

Should the Display Rule be retained?

Part of the discussion in the full committee about whether the Display Rule should be retained related to what would happen to the regional exchanges if the Display Rule were abandoned – would they be left off of the display? One vendor representative said that it needs to be made explicit why the regional exchanges should be protected. One representative of a large broker/dealer said that brokers would only ignore non-primary markets at their own risk because of their duty of best execution. An SEC representative worried that there was a problem for new market centers entering the business. When someone claimed that Instinet did so successfully, the SEC representative pointed out that it would still be difficult for the second and third in line to enter and compete in the market, businesses without huge innovations. A market maker representative said that it

seemed like a fantasy to eliminate the NBBO, that it could never happen. There was a vote, and a majority of the committee participants voted to recommend multiple consolidators while retaining the Display Rule.

If the Display Rule is retained, how should information not subject to the Display Rule (i.e. deeper data) be treated?

Dean Seligman identified two concepts with regard to the issue of fee filings made with the SEC. He said that either all fees could be filed and some would be effective immediately, or some fees would need to be filed, and some not. It was proposed that any data with a fee would have a filing, and any data not charged for would not have a filing. Most committee members did not have much objection to market makers selling their data directly to vendors as long as the data goes to the consolidator no later than to anyone else. At the end of the meeting, it appeared that there was little or no support for the Display Rule to be broadened in any way.

Appendix

Background of the Formation of the Committee

On July 25, 2000, the SEC announced the establishment a federal advisory committee to assist it in evaluating issues relating to the public availability of market information in the equities and options markets. The Advisory Committee on Market Information has a broad mandate to explore both fundamental matters, such as the benefits of price transparency and consolidated market information, and practical issues such as the most effective methods of consolidating market data. Joel Seligman, Dean of the Washington University School of Law in St. Louis, chairs the Committee.

Summary of First Meeting

The agenda for the first meeting on October 10, 2000 at the SEC was first to have an overview of the three current market data plans, and then discuss 1) the value of transparency to the markets, and 2) the merits of providing consolidated information. Everyone agreed on the theoretical value of transparency to the markets, but many complained that transparency is poorly defined and means different things to different kinds of market participants. As for consolidation, there was disagreement about whether any information consolidation should be mandated, whether participants should instead compete on that basis, or some combination of the two. There was also disagreement about whether the position of consolidator should be a for-profit or non-profit utility. Many agreed about the necessity of at least displaying last sale information and NBBO.

Summary of Second Meeting

The central question posed for the second meeting on December 14, 2000 at the SEC was, "Should the Committee proceed to attempt to develop an alternative model for disseminating market information, in addition to exploring ways to improve the existing model? Or should we focus solely on improving the existing model?" The plan was to review five alternative models that had been sent to Dean Seligman, have the SEC staff make some general comments about what they are looking for in an ideal model, and then to discuss whether or not to consider alternative models at all. It was decided that alternative models would be considered after ways to fix the current system were considered.

Summary of Third Meeting

There were several questions on the agenda for the March 1, 2001 meeting at the SEC. The first question was, "What market information should vendors and broker/dealers be required to provide to customers?" The second question was, "How should market information be consolidated?" The third question was, "How should the consolidators be governed?" The fourth question was, "How should user fees be determined and revenues allocated among plan participants?" There was not enough time left to address the last question fully.

Summary of Fourth Meeting

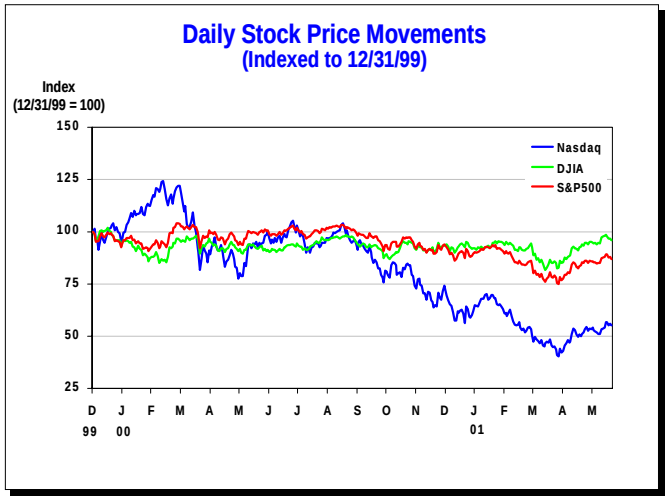
There main question on the agenda for the April 12, 2001 meeting at the SEC was, "How should user fees be determined and revenues allocated among plan participants?" This question was to be addressed in the context of reforming the current market data system. The discussion began with deciding whether transparency in the fee-setting process, by making data contracts available, would act as a check on pricing power. Comments seemed to indicate that what is already provided and out there is adequate. The next discussion revolved around SROs offering their data on a strictly non-discriminatory basis – in effect, "most favored nation" pricing – as a way to mitigate perceived pricing abuses. One participant said that this may lead to unintended consequences, such as the exchanges refusing to lower fees for one party on the basis of the fact that the fees would have to be lowered for all parties. There did not appear to be a consensus on this issue.

Judith L. Chase
Vice President and Director, Securities Research

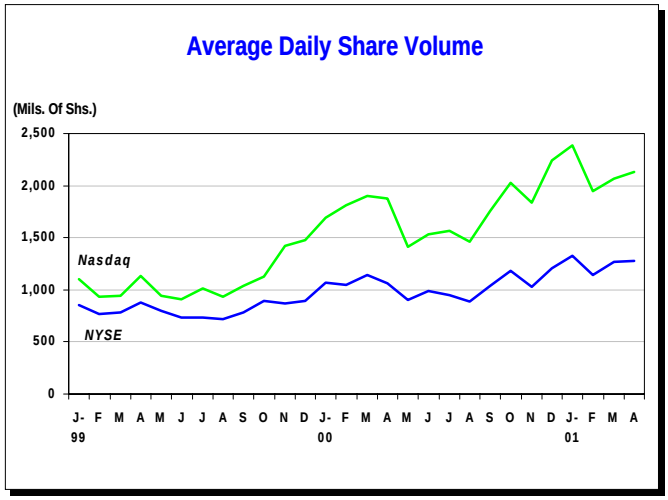
MONTHLY STATISTICAL REVIEW

U.S. Equity Market Activity

Stock Prices – U. S. stocks posted impressive gains during the last three weeks of April, as investors grew increasingly confident that the sharp sell-off in stocks late last year and earlier this year was finally over. The stock market rally was triggered by yet another between FOMC meeting surprise half-point interest rate cut by the Fed, as well as positive earnings reports from a few bellwether tech companies. For the month of April overall, the Nasdaq Composite soared 15.0%, while the Dow advanced 8.7% and the S&P 500 rose 7.7%.

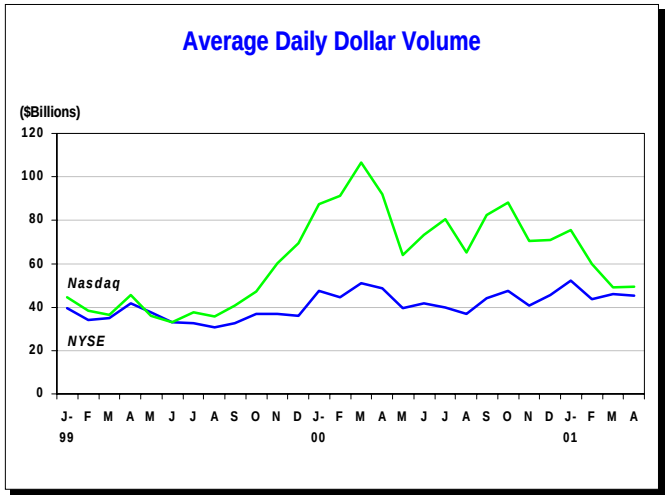


In May, stocks added to their gains as the Fed's fifth 50 basis point interest rate cut in as many months spurred hopes that corporate profits and the economy will rebound later this year. On May 25, the Nasdaq Composite closed at 2251.03, up 37% since April 4, when it set a 2-1/2-year low of 1638.8. Nevertheless, the Nasdaq index is still down 9% from the start of the year. The S&P 500 gained 16% through May 25 from its own 2 ½ year low also set on April 4, but remains down 3% since the year's start. The Dow, after hitting a two-year low of 9389.48 on March 22, gained 17% through May 25, and is now up 2% for the year.



Whether or not the recent market recovery can be sustained remains to be seen. The economy remains sluggish, and of the 600 companies that have already made second-quarter earnings pre-announcements, 64% do not expect to meet consensus Q2 analyst earnings predictions. This already exceeds first quarter's record negative warnings by 15%.

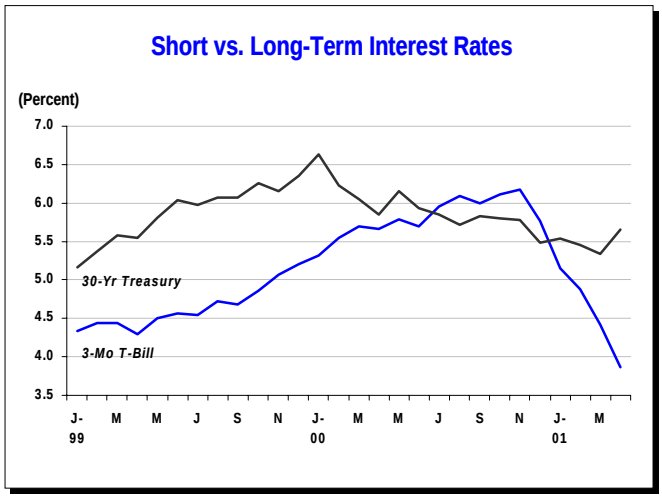
Share Volume – Trading activity remained strong in April on both the NYSE and the Nasdaq. NYSE volume increased slightly from March's level to 1.28 billion shares daily in April, second only to January's monthly record volume of 1.33 million shares daily. Year-to-date, NYSE average daily volume of 1.26 billion shares is 21% above last year's annual record of 1.04 billion shares per day.

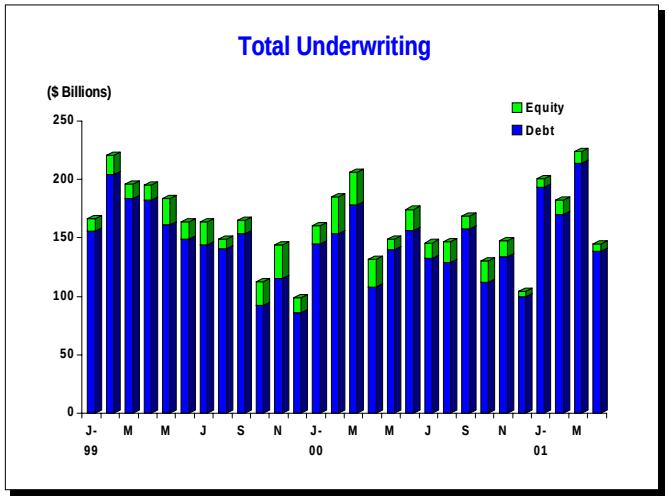


On Nasdaq, daily volume increased 3% from March to 2.13 billion daily in April, also the second highest monthly average behind January 2001. That brought year-to-date Nasdaq volume to 2.14 billion shares daily, 22% higher than 2000's annual record 1.78 billion daily average.

Dollar Volume – Nasdaq's average daily dollar volume increased slightly to $49.6 billion in April from $49.2 billion daily in March. Nevertheless, the year-to-date value of trading on Nasdaq, at $58.5 billion daily, is nearly 28% below 2000's $80.9 billion daily average. Conversely, daily dollar volume on the NYSE slipped to $45.1 billion in April from March's $45.9 billion daily average, while the value of trading in NYSE stocks year-to-date, at $46.8 billion daily, remains roughly 7% ahead of last year's pace.

Interest Rates – Short-term interest rates continued their downward trajectory this year through April. Further Fed easing of monetary policy helped push the yield on 3-month T-bills to 3.87% in April, down 55 basis points from March and 190 basis points since December 2000. Yields on 30-year Treasuries were up 30 basis points from March and averaged 5.64% in April, as bond traders anticipate a reversal in Fed policy down the road. The spread between short- and long-term interest rates, which had been inverted throughout the second half of last year, has now widened to 177 basis points.

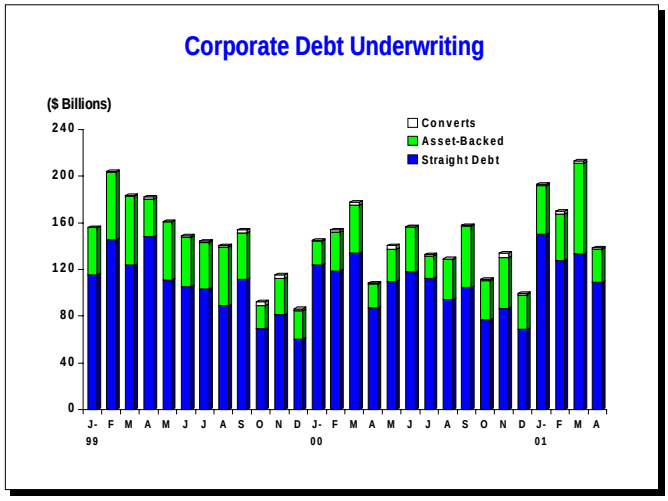




U.S. Underwriting Activity

Debt Offerings – Underwritten corporate debt, always the driver of total underwriting volume, sank to its lowest level of the year. At $138.7 billion in April, dollar volume was down 35% from March's $213.3 billion. Deal volume also set a 2001 monthly low as only 965 deals were completed in April, marking the first time this year that fewer than 1,000 debt deals were done in a month. The declines were across-the-board on all three fixed income product lines.

Proceeds from asset-backed securities offerings plunged by nearly two-thirds from March's elevated level of $78.1 billion to $27.8 billion in April, the slowest pace since last July. Of course,

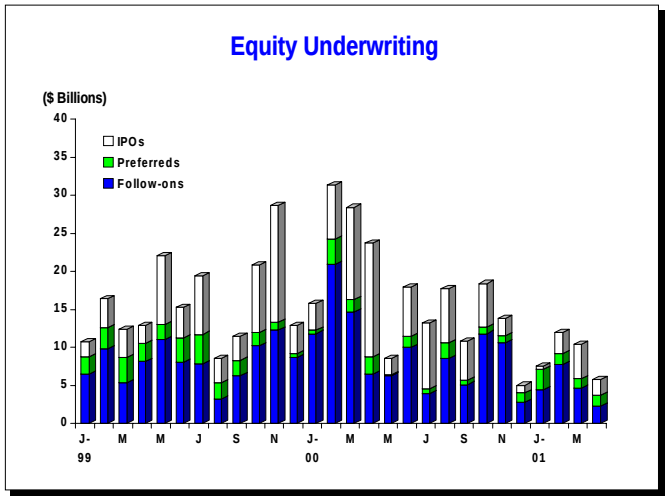


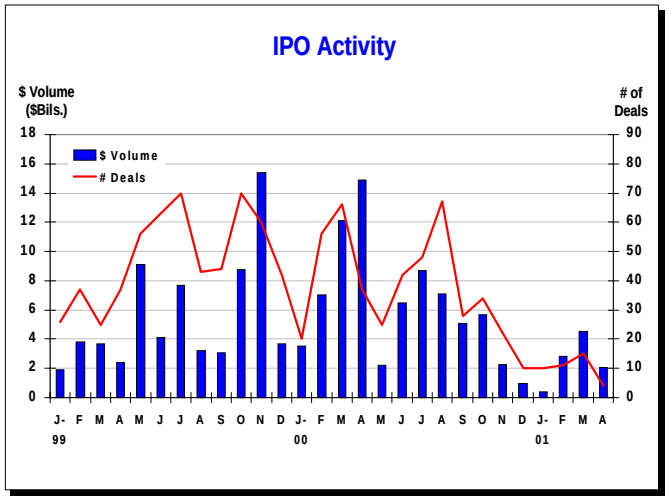
this was prior to Senator Jefford's reshuffling of the Senate leadership, which most likely precludes the new Administration's push to downsize Fannie Mae, Ginnie Mae, and other agencies' financing roles in the marketplace.

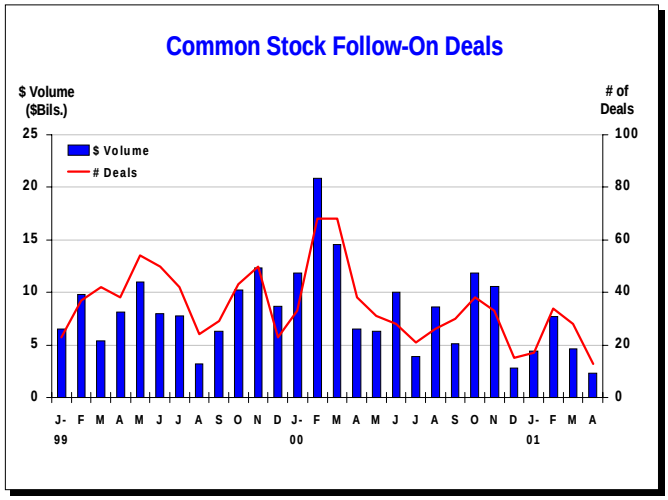
Straight corporate bonds plummeted 18% from $133.2 billion in March to $108.8 billion in April, again the lowest monthly total amount raised in 2001. Meanwhile, convertible bond offerings were slashed nearly in half to $1.1 billon from March's $2.0 billion and was 35% below February's $3.1 billion of placements.

Equity Underwriting – On the equity front, April's $5.8 billion tally was 44% below March's $10.4 billion showing, and was the second lowest total (behind December 2000's $4.9 billion) since the $5.1 billion recorded in September 1998 in the midst of the LTCM scare. Further, only 20 equity deals were brought to market – three preferreds and 17 common stock deals (of which only four were IPOs) – the lowest monthly total in many years. The four IPO deals in April also represented the lowest monthly total in many years and raised a mere $2.1 billion, less than half of March's $4.5 billion on 15 deals. Furthermore, April's IPO dollar volume would have been halved again if not for the Houston electric utility Reliant Resources' $1.4 billion offering (U.S. portion only). However, equity underwriting activity surged in May to its highest monthly level this year as both issuers and investors re-entered the market amid the impressive stock market rally.

Year-to-Date Underwriting – April's anemic equity underwriting activity, which reflected the stock market bottom at the month's onset, dragged the year-to-date (through April) total to $35.6 billion, down 64% from $99.2 billion in last year's comparable period. Year-to-date IPO volume, at $9.8 billion, was down a whopping 74% compared with $37.6 billion in the same period last year. On the other hand, corporate debt issuance, despite April's woes, reached $715.4 billion year-to-date and was up 22% from $584.9 billion a year ago.







Grace Toto
Assistant Vice President and Director, Statistics

U.S. CORPORATE UNDERWRITING ACTIVITY

(In $ Billions)

	Straight Corporate Debt	Con-vertible Debt	Asset-Backed Debt	**TOTAL DEBT**	High-Yield Bonds	Common Stock	Preferred Stock	**TOTAL EQUITY**	All IPOs	Follow-Ons	**TOTAL UNDER-WRITINGS**
1985	76.4	7.5	20.8	104.7	14.2	24.7	8.6	33.3	8.5	16.2	138.0
1986	149.8	10.1	67.8	227.7	31.9	43.2	13.9	57.1	22.3	20.9	284.8
1987	117.8	9.9	91.7	219.4	28.1	41.5	11.4	52.9	24.0	17.5	272.3
1988	120.3	3.1	113.8	237.2	27.7	29.7	7.6	37.3	23.6	6.1	274.5
1989	134.1	5.5	135.3	274.9	25.3	22.9	7.7	30.6	13.7	9.2	305.5
1990	107.7	4.7	176.1	288.4	1.4	19.2	4.7	23.9	10.1	9.0	312.3
1991	203.6	7.8	300.0	511.5	10.0	56.0	19.9	75.9	25.1	30.9	587.4
1992	319.8	7.1	427.0	753.8	37.8	72.5	29.3	101.8	39.6	32.9	855.7
1993	448.4	9.3	474.8	932.5	55.2	102.4	28.4	130.8	57.4	45.0	1,063.4
1994	381.2	4.8	253.5	639.5	33.3	61.4	15.5	76.9	33.7	27.7	716.4
1995	466.0	6.9	152.4	625.3	28.9	82.0	15.1	97.1	30.2	51.8	722.4
1996	564.8	9.3	252.9	827.0	37.2	115.5	36.5	151.9	50.0	65.5	979.0
1997	769.8	8.5	385.6	1,163.9	31.4	120.2	33.3	153.4	44.2	75.9	1,317.3
1998	1,142.5	6.3	566.8	1,715.6	42.9	115.0	37.8	152.7	43.7	71.2	1,868.3
1999	1,264.8	16.1	487.1	1,768.0	36.6	164.3	27.5	191.7	66.8	97.5	1,959.8
2000	1,236.2	17.0	393.4	1,646.6	25.2	189.1	15.4	204.5	76.1	112.9	1,851.0
2000											
Jan	123.9	0.5	20.5	144.9	4.1	15.3	0.5	15.8	3.5	11.8	160.7
Feb	118.8	1.8	33.4	153.9	3.1	27.9	3.3	31.2	7.1	20.9	185.1
Mar	134.0	2.7	41.2	177.9	3.3	26.7	1.7	28.3	12.1	14.6	206.3
Apr	87.2	0.7	20.4	108.3	0.4	21.4	2.3	23.8	14.9	6.5	132.0
May	109.8	3.2	27.3	140.3	0.8	8.5	0.1	8.6	2.2	6.3	148.9
June	118.0	0.3	38.3	156.5	1.9	16.5	1.4	17.9	6.5	10.0	174.4
July	112.5	1.1	19.0	132.6	4.5	12.6	0.6	13.2	8.7	3.9	145.8
Aug	94.6	0.4	34.3	129.3	1.9	15.7	2.0	17.6	7.1	8.6	146.9
Sept	104.5	0.3	52.9	157.7	3.8	10.2	0.6	10.9	5.1	5.1	168.6
Oct	77.3	1.6	33.0	111.9	0.7	17.5	0.9	18.4	5.7	11.8	130.3
Nov	86.9	3.6	43.5	134.0	0.0	12.9	0.9	13.8	2.3	10.6	147.8
Dec	68.8	1.0	29.7	99.5	0.6	3.8	1.2	4.9	1.0	2.8	104.4
2001											
Jan	150.1	1.5	41.6	193.2	5.9	4.8	2.7	7.4	0.4	4.4	200.6
Feb	127.7	3.1	39.5	170.2	4.1	10.5	1.5	11.9	2.8	7.7	182.2
Mar	133.2	2.0	78.1	213.3	1.3	9.1	1.3	10.4	4.5	4.6	223.7
Apr	108.8	1.1	28.7	138.7	3.3	4.4	1.4	5.8	2.1	2.3	144.5
May											
June											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
YTD '00	463.8	5.6	115.4	584.9	11.0	91.4	7.8	99.2	37.6	53.8	684.1
YTD '01	519.8	7.7	187.9	715.4	14.5	28.8	6.8	35.6	9.8	19.0	751.0
% Change	12.1%	36.8%	62.8%	22.3%	32.3%	-68.5%	-12.5%	-64.1%	-73.9%	-64.7%	9.8%

Note: High-yield bonds is a subset of straight corporate debt. IPOs and follow-ons are subsets of common stock.
Source: Thomson Financial Securities Data

MUNICIPAL BOND UNDERWRITINGS
(In $ Billions)

INTEREST RATES
(Averages)

	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	30-Year Treasuries	SPREAD
1985	10.2	150.8	161.0	17.6	22.8	40.4	201.4	7.47	10.79	3.32
1986	10.0	92.6	102.6	23.1	22.6	45.7	148.3	5.97	7.80	1.83
1987	7.1	64.4	71.5	16.3	14.2	30.5	102.0	5.78	8.58	2.80
1988	7.6	78.1	85.7	19.2	12.7	31.9	117.6	6.67	8.96	2.29
1989	9.2	75.8	85.0	20.7	17.2	37.9	122.9	8.11	8.45	0.34
1990	7.6	78.4	86.0	22.7	17.5	40.2	126.2	7.50	8.61	1.11
1991	11.0	102.1	113.1	29.8	28.1	57.9	171.0	5.38	8.14	2.76
1992	12.5	139.0	151.6	32.5	49.0	81.5	233.1	3.43	7.67	4.24
1993	20.0	175.6	195.6	35.6	56.7	92.4	287.9	3.00	6.59	3.59
1994	15.0	89.2	104.2	34.5	23.2	57.7	161.9	4.25	7.37	3.12
1995	13.5	81.7	95.2	27.6	32.2	59.8	155.0	5.49	6.88	1.39
1996	15.6	100.1	115.7	31.3	33.2	64.5	180.2	5.01	6.70	1.69
1997	12.3	130.2	142.6	35.5	36.5	72.0	214.6	5.06	6.61	1.55
1998	21.4	165.6	187.0	43.7	49.0	92.8	279.8	4.78	5.58	0.80
1999	14.3	134.9	149.2	38.5	31.3	69.8	219.0	4.64	5.87	1.23
2000	13.6	116.2	129.7	35.0	29.3	64.3	194.0	5.82	5.94	0.13
2000										
Jan	1.0	5.2	6.2	2.0	1.3	3.4	9.5	5.32	6.63	1.31
Feb	0.8	7.0	7.8	3.3	1.2	4.5	12.3	5.55	6.23	0.68
Mar	1.3	11.1	12.4	2.4	2.3	4.7	17.1	5.69	6.05	0.36
Apr	0.6	9.9	10.5	3.1	1.8	4.9	15.5	5.66	5.85	0.19
May	0.8	8.8	9.7	2.6	3.0	5.6	15.3	5.79	6.15	0.36
June	1.4	12.7	14.0	4.5	4.1	8.6	22.6	5.69	5.93	0.24
July	1.2	9.5	10.7	2.4	1.6	4.0	14.7	5.96	5.85	(0.10)
Aug	0.8	10.3	11.2	2.8	2.8	5.5	16.7	6.09	5.72	(0.37)
Sept	1.4	7.8	9.2	3.0	3.8	6.8	16.0	6.00	5.83	(0.17)
Oct	1.8	11.8	13.6	3.6	2.2	5.8	19.4	6.11	5.80	(0.31)
Nov	1.5	12.6	14.0	3.7	2.2	5.8	19.9	6.17	5.78	(0.39)
Dec	1.0	9.4	10.4	1.6	3.1	4.6	15.1	5.77	5.49	(0.28)
2001										
Jan	1.2	4.7	5.9	4.4	1.8	6.1	12.1	5.15	5.54	0.39
Feb	0.8	10.3	11.1	4.7	5.1	9.8	20.9	4.88	5.45	0.57
Mar	1.2	15.8	17.0	2.7	5.1	7.7	24.7	4.42	5.34	0.92
Apr	0.9	9.0	9.9	3.6	3.0	6.6	16.5	3.87	5.64	1.77
May										
June										
July										
Aug										
Sept										
Oct										
Nov										
Dec										
YTD '00	3.7	33.2	36.9	10.9	6.6	17.5	54.4	5.55	6.19	0.64
YTD '01	4.2	39.8	43.9	15.3	14.9	30.2	74.2	4.58	5.49	0.91
% Change	14.5%	19.7%	19.1%	40.4%	125.3%	72.5%	36.3%	-17.5%	-11.3%	43.5%

Sources: Thomson Financial Securities Data; 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	121.58	324.93	109.2	8.3	82.1	3.9	0.9
1986	1,895.95	242.17	138.58	348.83	141.0	11.8	113.6	5.4	1.5
1987	1,938.83	247.08	138.23	330.47	188.9	13.9	149.8	7.4	2.0
1988	2,168.57	277.72	156.26	381.38	161.5	9.9	122.8	5.4	1.4
1989	2,753.20	353.40	195.04	454.82	165.5	12.4	133.1	6.1	1.7
1990	2,633.66	330.22	180.49	373.84	156.8	13.2	131.9	5.2	1.8
1991	3,168.83	417.09	229.44	586.34	178.9	13.3	163.3	6.0	2.7
1992	3,301.11	435.71	240.21	676.95	202.3	14.2	190.8	6.9	3.5
1993	3,754.09	466.45	259.08	776.80	264.5	18.1	263.0	9.0	5.3
1994	3,834.44	459.27	250.94	751.96	291.4	17.9	295.1	9.7	5.8
1995	5,117.12	615.93	329.51	1,052.13	346.1	20.1	401.4	12.2	9.5
1996	6,448.27	740.74	392.30	1,291.03	412.0	22.1	543.7	16.0	13.0
1997	7,908.25	970.43	511.19	1,570.35	526.9	24.4	647.8	22.8	17.7
1998	9,181.43	1,229.23	595.81	2,192.69	673.6	28.9	801.7	29.0	22.9
1999	11,497.12	1,469.25	650.30	4,069.31	808.9	32.7	1,081.8	35.5	43.7
2000	10,786.85	1,320.28	656.87	2,470.52	1,041.6	52.9	1,757.0	43.9	80.9
2000									
Jan	10,940.53	1,394.46	621.73	3,940.35	1,074.2	49.5	1,693.0	47.6	87.5
Feb	10,128.31	1,366.42	592.64	4,696.69	1,045.9	52.9	1,812.0	44.3	91.4
Mar	10,921.92	1,498.58	647.70	4,572.83	1,138.4	61.4	1,902.8	51.0	106.4
Apr	10,733.91	1,452.43	644.16	3,860.66	1,060.0	65.5	1,876.2	48.8	92.0
May	10,522.33	1,420.60	643.60	3,400.91	905.4	46.2	1,417.5	39.4	64.2
June	10,447.89	1,454.60	642.93	3,966.11	986.5	44.3	1,537.5	41.8	73.3
July	10,521.98	1,430.83	640.63	3,766.99	953.8	38.5	1,567.9	40.0	80.4
Aug	11,215.10	1,517.68	674.53	4,206.35	886.1	37.5	1,458.7	36.9	65.0
Sept	10,650.92	1,436.51	663.04	3,672.82	1,041.3	48.9	1,756.7	44.0	82.4
Oct	10,971.14	1,429.40	666.02	3,369.63	1,180.6	59.7	2,026.9	47.4	88.3
Nov	10,414.49	1,314.95	629.78	2,597.93	1,033.4	58.1	1,840.4	40.8	70.7
Dec	10,786.85	1,320.28	656.87	2,470.52	1,208.8	73.9	2,247.4	45.5	71.1
2001									
Jan	10,887.36	1,366.01	663.64	2,772.73	1,325.9	72.5	2,387.3	52.0	75.6
Feb	10,495.28	1,239.94	626.94	2,151.83	1,138.5	70.9	1,947.6	43.8	59.7
Mar	9,878.78	1,160.33	595.66	1,840.26	1,271.4	82.5	2,071.4	45.9	49.2
Apr	10,734.97	1,249.46	634.83	2,116.24	1,276.5	77.6	2,131.9	45.1	49.6
May									
June									
July									
Aug									
Sept									
Oct									
Nov									
Dec									
YTD '00	10,733.91	1,452.43	644.16	3,860.66	1,082.0	57.4	1,823.3	48.0	94.8
YTD '01	10,734.97	1,249.46	634.83	2,116.24	1,255.8	76.1	2,138.4	46.8	58.5
% Change	0.0%	-14.0%	-1.4%	-45.2%	16.1%	32.5%	17.3%	-2.5%	-38.3%

MUTUAL FUND ASSETS
($ Billions)

	Equity	Hybrid	Bond	Money Market	**TOTAL ASSETS**
1985	116.9	12.0	122.6	243.8	495.4
1986	161.4	18.8	243.3	292.2	715.7
1987	180.5	24.2	248.4	316.1	769.2
1988	194.7	21.1	255.7	338.0	809.4
1989	248.8	31.8	271.9	428.1	980.7
1990	239.5	36.1	291.3	498.3	1,065.2
1991	404.7	52.2	393.8	542.5	1,393.2
1992	514.1	78.0	504.2	546.2	1,642.5
1993	740.7	144.5	619.5	565.3	2,070.0
1994	852.8	164.5	527.1	611.0	2,155.4
1995	1,249.1	210.5	598.9	753.0	2,811.5
1996	1,726.1	252.9	645.4	901.8	3,526.3
1997	2,368.0	317.1	724.2	1,058.9	4,468.2
1998	2,978.2	364.7	830.6	1,351.7	5,525.2
1999	4,041.9	383.2	808.1	1,613.1	6,846.3
2000R	3,962.3	349.7	808.0	1,845.3	6,965.2
2000					
Jan	3,951.6	368.8	793.9	1,657.3	6,771.6
Feb	4,218.5	360.7	796.7	1,680.5	7,056.4
Mar	4,441.6	371.6	793.1	1,697.0	7,303.3
Apr	4,250.3	359.8	781.0	1,649.4	7,040.5
May	4,106.7	349.3	776.3	1,676.6	6,908.9
June	4,316.6	350.8	791.5	1,658.6	7,117.5
July	4,244.1	352.1	796.2	1,697.3	7,089.7
Aug	4,579.8	363.0	802.5	1,729.8	7,475.1
Sept	4,397.5	354.9	797.8	1,728.0	7,278.2
Oct	4,293.4	354.2	795.4	1,760.0	7,203.0
Nov	3,854.9	342.9	795.3	1,821.3	6,814.3
Dec	3,963.1	349.7	810.9	1,845.3	6,969.0
2001					
Jan	4,093.3	356.9	830.0	1,955.5	7,235.7
Feb	3,689.7	344.4	845.2	2,019.3	6,898.6
Mar	3,408.0	333.4	852.8	2,035.5	6,629.7
Apr	3,718.6	348.0	847.0	2,031.6	6,945.2
May					
June					
July					
Aug					
Sept					
Oct					
Nov					
Dec					
YTD '00	4,250.3	359.8	781.0	1,649.4	7,040.5
YTD '01	3,718.6	348.0	847.0	2,031.6	6,945.2
% Change	-12.5%	-3.3%	8.5%	23.2%	-1.4%

MUTUAL FUND NET NEW CASH FLOW*
($ Billions)

	Equity	Hybrid	Bond	Money Market	**TOTAL**	Total Long-Term Funds
1985	8.5	1.9	63.2	-5.4	68.2	73.6
1986	21.7	5.6	102.6	33.9	163.8	129.9
1987	19.0	4.0	6.8	10.2	40.0	29.8
1988	-16.1	-2.5	-4.5	0.1	-23.0	-23.1
1989	5.8	4.2	-1.2	64.1	72.8	8.8
1990	12.8	2.2	6.2	23.2	44.4	21.2
1991	39.4	8.0	58.9	5.5	111.8	106.3
1992	78.9	21.8	71.0	-16.3	155.4	171.7
1993	129.4	39.4	73.3	-14.1	228.0	242.1
1994	118.9	20.9	-64.6	8.8	84.1	75.2
1995	127.6	5.3	-10.5	89.4	211.8	122.4
1996	216.9	12.3	2.8	89.4	321.3	232.0
1997	227.1	16.5	28.4	102.1	374.1	272.0
1998	157.0	10.2	74.6	235.3	477.1	241.8
1999	187.7	-12.4	-5.5	193.6	363.4	169.8
2000R	309.6	-31.8	-48.6	159.6	388.8	229.2
2000						
Jan	44.5	-6.3	-12.7	41.8	67.3	25.6
Feb	55.6	-5.1	-8.2	14.8	57.2	42.3
Mar	40.2	-5.7	-7.7	12.7	39.5	26.8
Apr	35.5	-1.9	-6.7	-52.2	-25.4	26.9
May	17.0	-2.1	-5.2	18.2	27.9	9.7
June	22.1	-2.2	0.5	-23.0	-2.6	20.4
July	17.3	-1.5	-0.7	33.3	48.4	15.1
Aug	24.0	-1.3	-1.8	22.5	43.3	20.9
Sept	17.3	-2.1	-3.0	-8.6	3.5	12.2
Oct	19.2	-1.2	-2.0	26.0	42.0	16.0
Nov	5.5	-0.3	-0.6	56.1	60.7	4.6
Dec	11.6	-1.6	-0.7	16.4	25.8	9.3
2001						
Jan	25.1	1.1	8.8	103.0	138.0	34.9
Feb	-3.3	1.2	8.8	58.0	64.7	6.7
Mar	-20.6	-0.4	7.9	13.6	0.6	-13.1
Apr	19.3	1.4	1.3	-10.4	11.5	21.9
May						
June						
July						
Aug						
Sept						
Oct						
Nov						
Dec						
YTD '00	175.8	-19.0	-35.2	17.0	138.6	121.6
YTD '01	20.4	3.2	26.8	164.2	214.7	50.5
% Change	-88.4%	NM	NM	865.7%	54.9%	-58.5%

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

Securities Industry Association

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