

**GLOBAL WHOLESALE FINANCE:  
STRUCTURE, CONDUCT, PERFORMANCE**

**by**

**R. C. SMITH\***  
**and**  
**I. WALTER\*\***

**2000/72/EPS/FIN**

\* Professor of Finance, Stern School of Business, New York University, USA.

\*\* Professor of International Management at INSEAD, Boulevard de Constance, 77305 Fontainebleau Cedex, France.

A working paper in the INSEAD Working Paper Series is intended as a means whereby a faculty researcher's thoughts and findings may be communicated to interested readers. The paper should be considered preliminary in nature and may require revision.

Printed at INSEAD, Fontainebleau, France.

# Global Wholesale Finance: Structure, Conduct, Performance

Roy C. Smith and Ingo Walter  
Stern School of Business, New York University<sup>1</sup>

During the past decades many changes have affected the financial services industry, including the reconfiguration of the industry into two very broad sectors: wholesale finance, and retail and regional finance. The former is defined rather simply as financial services offered to clients which have direct access to capital markets, and the latter as services offered to those who do not have such access. Over the years, those with access to financial markets have been able to benefit from greatly increased competition, highly globalized financial markets and a variety of innovations designed to lower the cost of funds to user organizations. Those individuals or organizations (such as small and mid-sized corporations) lacking access to markets have also benefitted from greater competition and improved technology, but these customers tend to select their providers because of prior relationships or advertising that engenders confidence in them.

The wholesale sector (which provided about \$6.5 trillion of new financing for its clients in 1999) is now serviced by both commercial banks and investment banks, although both of these types of banks also provide a wide range of retail and mid-sized corporate services. Clients of wholesale finance providers are governments, corporations, banks and investment managers of many types. The

services offered by wholesale finance firms include bank lending, securities market transactions, mergers and corporate restructuring advisory services, and asset management. Securities market transactions have grown to dominate the services supplied to wholesale finance clients, and bank loans and related services have retreated in importance, representing in 1999 only about 25% of all wholesale market new issue activity for clients other than governments. The market capitalization of all the global securities outstanding in 1998 was nearly \$60 trillion, almost equally divided between debt and equity securities. See Exhibit 1. In this paper we refer to wholesale financial service providers as “investment banks,” although traditional investment banks now engage in many other services, and other types of financial service firms (such as traditional commercial banks and universal banks) also offer wholesale market services.

Investment banking is among those financial-sector activities that have had important catalytic effects on the global economy. Investment banks are key facilitators. They help reduce information and transaction costs, help raise capital, bring buyers and sellers together, improve liquidity, and generally make a major contribution to both the static (resource-allocation) and dynamic (growth-related) dimensions of economic efficiency. In terms of their impact on overall economic development and restructuring, in advanced and emerging-market economies alike, investment banks have an interesting and important role to play.

It is appropriate, therefore, to examine the competitive structure, conduct and performance of the investment banking industry, itself now a highly

globalized industry with leading players being active in all major markets around the world and in many emerging markets. We are interested to know what the industrial and competitive structures of the principal lines of business are, how individual firms perform, and what distinguishes the successful from the unsuccessful players.

### **The Investment Banking Arena**

The overall market for financial instruments within which wholesale financial services forms operate can be illustrated by the schematic appearing as Exhibit 2.

At the core of the market are foreign exchange and money market instruments. There is virtually complete transparency in these markets, high liquidity, large numbers of buyers and sellers – probably as close to the economists' definition of perfect competition that one gets in global financial markets.

Moving out from the center of the diagram, the next most perfect market comprises sovereign debt instruments in their respective national markets, which carry no credit risk (only market risk) and usually are broadly and continuously traded. Sovereign debt instruments purchased by foreign investors, of course, also carry foreign exchange risk and the (arguably minor) risk of repudiation of sovereign obligations to foreign investors. If these sovereign debt instruments are denominated in foreign currencies, they carry both currency risk and country risk (the risk of inability or unwillingness to service foreign-currency debt). Sovereign

debt instruments run the gamut from AAA-rated obligations that may be traded in broad and deep markets all the way to non-investment grade, highly speculative “country junk.”

Next come state, local and corporate bonds, which range across the quality spectrum from AAA-rated corporate and municipal securities that trade in liquid markets fractionally above sovereigns, all the way to high-yield non-investment grade and non-rated bonds. Also included in this category are asset-backed securities and syndicated bank loans, which may be repackaged and resold once issued.

Then there are common stocks of corporations that trade in secondary markets and constitute the brokerage business. Equity securities are also issued, underwritten and distributed by investment banks. Between corporate bonds and equities lie hybrid financial instruments such as convertible bonds and preferred stocks and warrants to buy securities at some time in the future, which in turn can sometimes be “stripped” and sold in the “covered warrant” market. Well out on the periphery of Exhibit 2 is venture capital and private equity, which tends to be speculative with little or no liquidity until an exit vehicle is found through sale to another company or an initial public offering.

As one moves from the center of Exhibit 2 to the periphery in any given financial market environment, information and transactions costs tend to rise, liquidity tends to fall, and risks (market risk, credit risk and/or performance risk) tend to rise. Along the way, there are a host of “structured” financial products and

derivatives that blend various characteristics of the underlying securities in order to better fit into investors' portfolio requirements and/or issuer/borrower objectives. There are also index-linked securities and derivatives, which provide opportunities to invest in various kinds of asset baskets.

Finally, each geographic context is different in terms of size, liquidity, infrastructure, market participants, and related factors. Some have larger and more liquid government bond markets than others. Some have traditions of bank financing of business and industry, while others rely more heavily on public and private debt markets. Some have broad and deep equity markets, while others rely on permanent institutional shareholdings. Some are far more innovative and performance-oriented than others. In addition to structural differences, some -- such as the euro-zone -- may be subject to substantial and rapid shift.<sup>2</sup> Such discontinuities can be highly favorable to the operations of wholesale and investment banking firms, and provide rich opportunities for arbitrage. But they can also involve high levels of risk.

Financial intermediaries that perform well tend to have strong comparative advantages in the *least perfect* corners of the global financial market. Banks with large market shares in traditional markets that are not easily accessed by others are examples of this. Sometimes, intermediaries specialize in particular sectors, types of clients, regions or products. Some have strong businesses in the major wholesale markets and as a result are able to selectively leverage their operating platforms to access markets that are less efficient. They may also be able to cross-link on a selective basis both the major and peripheral markets as interest

rates, exchange rates, market conditions and borrower or investor preferences change. As an example, by financing the floating-rate debt needs of a highly-rated American corporation by issuing fixed rate Australian dollar bonds at an especially good rate, and then swapping the proceeds into floating rate US dollars. These cross-links -- permitting the intermediary to creatively marry opportunistic users of finance to opportunistic investors under ever-changing market conditions -- is what in many cases separates the winners from the losers.

### **Wholesale Finance Market Segments**

Global wholesale banking involves a range of businesses that service the financial and strategic needs of corporate and institutional clients, trading counter-parties and institutional investors. In this section of the paper we characterize the key wholesale and investment banking product lines and in the Appendix indicate where data are available, which were the leading firms in 1999 in each segment. In subsequent sections of the paper we attempt to explain the underlying reasons for the wide differences that appear to prevail in competitive performance among firms in the industry.

### **Wholesale Lending**

Loan syndication comprises is an important wholesale finance activity. It involves the structuring of short-term loans and "bridge" financing, credit backstops and enhancements, longer-term project financing and standby

borrowing facilities for corporate, governmental and institutional clients. The loan syndicate manager often “sells-down” participations to other banks and institutional investors. The loans may also be repackaged through special-purpose vehicles into securities that are sold to capital market investors. Syndicated credit facilities are put together by lead-managers who earn origination fees, and jointly with other major syndicating banks earn underwriting fees for fully committed facilities. These fees usually differ according to the complexity of the transaction and the credit quality of the borrower, and there are additional commitment, legal and agency fees involved as well.

Global lending volume increased rapidly in the 1990s, from \$403 billion in 1992 to over \$1 trillion in 1995 and approximately \$1.6 trillion in 1999. The business is very competitive, with loan spreads often squeezed to little more than 10 to 20 basis points. Wholesale loans tend to be funded in the interbank market, usually in Eurocurrencies. In recent years investment banks such as Goldman Sachs & Co., Lehman Brothers and Merrill Lynch have moved into what was once almost exclusively the domain of commercial banks, and many commercial banks, such as Citibank, Crédit Suisse, NatWest and JP Morgan have backed away from lending in this sector.<sup>1</sup> The firms coming in find it important to be able to finance client requirements with senior bank loans (as least temporarily) as well as securities issues, especially in cases of mergers and acquisitions on

---

<sup>1</sup> One of the authors, Roy C. Smith, discloses that he was a partner of Goldman, Sachs & Co. from 1976-1999)

which they may be advising. Those departing the business are concerned about the high costs of doing business and the low returns. The relevant league tables for loan syndications for the 1997-99 period (awarding full credit to lead managers) is presented in Appendix Table 1.

### **Securities Underwriting**

The securities market new-issue activity usually involves an underwriting function that is performed by investment banks. Corporations or government agencies issue the securities. Sovereign governments tend to issue bonds to the markets directly, without underwriting. The United States securities market accommodates the greatest volume of new issues (in 1999 totaling \$2.7 trillion), and the international securities markets based in Europe comprise most of the rest. Domestic market issues of corporate stocks and bonds have historically been comparatively modest outside the United States. The international securities market, consisting of the euro-medium term note markets, euro and foreign fixed income bonds, and international equity new issues accounted for \$2.2 trillion in 1999. See Exhibit 3.

Underwriting of securities is usually carried out through domestic and international syndicates of securities firms with access to local investors, investors in various important foreign markets such as Japan and Switzerland, and investors in offshore markets (Eurobonds) using one of several distribution techniques. In some markets “private placements” occur in cases where securities are directed not at public investors but only at selected institutional

investors. Access to various foreign markets is facilitated by means of interest-rate and currency swaps (swap-driven issues). Some widely-distributed, multi-market issues have become known as "global issues." In some markets, intense competition and deregulation have narrowed spreads to the point that the number of firms in underwriting syndicates has declined over time, and in some cases a single participating firm handles an entire issue – in a so-called "bought deal."

Commercial paper and medium-term note (MTN) programs maintained by corporations, under which they can issue short-term and medium-term debt instruments on their own credit standing and more or less uniform legal documentation, have become good substitutes for bank credits. Financial institutions provide services in designing these programs, obtaining agency ratings, and dealing the securities into the market when issued. In recent years, MTN programs have become one of the most efficient ways for borrowers to tap the major capital markets. Appendix Tables 2 and 3 present recent rankings of underwriters of global bonds and medium-term notes.

Underwriting of equity securities is usually heavily concentrated in the home country of the issuing firm, which is normally where the investor-base and the secondary-market trading and liquidity is to be found. Corporations periodically issue new shares for business capital, but the principal source of new supplies of stocks to the market has come from government privatization programs. New issues of stocks may also involve companies issuing shares to the public for the first time (initial public offerings), existing shareholders of large

positions selling their holdings, and issues by companies of new shares to existing shareholders (rights issues). League table data for global equity underwriting are presented in Appendix Table 4.

### **Privatizations**

Sales of state-owned enterprises (SOEs) to the private sector became a major component of global wholesale financial services in the early 1980s. Privatizations generally involve the sale of the initial public offering of a large corporation, but they have also involved the sale of SOEs to corporate buyers, and substantial advise-giving on how the processes should work to satisfy the public interests. They have run the gamut from state-owned manufacturing and services enterprises to airlines, telecommunications, infrastructure providers, etc. using various approaches such as sales to domestic or foreign control groups, local market flotations, global equity distributions, sales to employees, etc. Privatization transactions are usually included in global equity new issue and M&A deal-flow data, although separate league table data are presented in Appendix Tables 5 and 6.

### **Trading**

Once issued, bonds, notes and shares become trading instruments in the financial markets, and the underwriters remain active as market-makers and as proprietary investors for their own accounts. Secondary-market trading is also conducted by investment bankers in other instruments including foreign

exchange, derivative securities of various types and commodities and precious metals. Trading activities include market-making (executing client orders, including block trades), proprietary trading (speculation for the firm's own account), "program trading" (computer-driven arbitrage between different markets), and "risk arbitrage," usually involving speculative purchases of stock on the basis of public information relating to pending mergers and acquisitions. By far the largest trading market involves foreign exchange, and Appendix Table 7 shows league table data for the major players in that market – one traditionally dominated by commercial banks but increasingly penetrated by insurance companies and investment banking firms as well.

### **Brokerage**

Agency business is an important and traditional part of the securities and investment banking industry. Its key area is brokerage, involving executing buy or sell orders for customers without actually taking possession of the security or derivative contract, sometimes including complex instructions based on various contingencies in the market. Brokerage tends to be highly oriented to retail as opposed to wholesale business, although many of the financial market utilities discussed below are aimed at providing more efficient vehicles for classic brokerage functions as they affect institutional investors.

### **Investment Research**

Research into factors affecting the various financial markets as well as individual securities and derivatives, specific industries as well as

macroeconomic conditions has become an important requirement for competitive performance in investment banking. Research is made available to clients by more or less independent analysts within the firm. Research analysts' reputation and compensation depend on the quality of their insights, usually focused on specific industries or sectors in the case of equity research. The value of research provided to clients depends critically on its quality and timeliness, and is often compensated by business channeled through the firm, such as brokerage commissions and underwriting or advisory mandates. Closely allied are other research activities – often highly technical modeling exercises – involving innovative financial instruments which link market developments to value-added products for issuer-clients and/or investor-clients. Over the years research carried out by investment banks (called “sell-side” research) has become increasingly important in soliciting and retaining investment banking clients, a condition which increasingly places their objectivity in question. Appendix Table 8 presents client survey data on the research capability of major securities firms.

### **Hedging and Risk Management**

Hedging and risk management mainly involves the use of derivative instruments to reduce exposure to risk associated with individual securities transactions or markets affecting corporate, institutional or individual clients. These include interest-rate caps, floors and collars, various kinds of contingent contracts, as well as futures and options on various types of instruments. It may

be quicker, easier and cheaper, for example, for an investor to alter the risk profile of a portfolio using derivatives than by buying and selling the underlying instruments. In modern wholesale financial markets, the ability to provide risk management services to clients depends heavily on a firm's role in the derivatives market, particularly over-the-counter (OTC) derivatives that allow structuring of what are frequently highly complex risk management products. Appendix Table 9 presents league table data for the principal OTC dealers in financial futures, options and other derivatives.

### **Advisory Services**

Corporate finance activities of investment banks predominantly relate to advisory work on mergers, acquisitions, divestitures, recapitalizations, leveraged buyouts and a variety of other generic and specialized corporate transactions. They generally involve fee-based assignments for firms wishing to acquire others or firms wishing to be sold (or to sell certain business units) to prospective acquirers. Exhibit 4 provides a picture of the global deal-flow of mergers and acquisitions according to geographic region.

This business sector (called usually "M&A business") is closely associated with the market for corporate control, and may involve assistance to and fund-raising efforts for hostile acquirers, or plotting defensive strategies for firms subjected to unwanted takeover bids. It may also involve providing independent valuations and "fairness opinions" for buyers or sellers of companies to protect against lawsuits from disgruntled investors alleging that the price paid for a

company was either too high or too low. Such activities may be domestic, within a single national economy, or cross-border, involving parties from two different countries. The global M&A marketplace has been extraordinarily active in recent years, with a majority of the transactions in it being outside the United States.

Appendix Table 10 provides data on global M&A advisories.

### **Principal Investing**

So-called “merchant banking” (a term used by American investment banks, not by British merchant banks) involves financial institutions’ placing their clients’ and their own capital on the line in private placement investments of (usually) non-public equity securities (venture capital, real estate, and leveraged buy outs) and certain other equity participations. It may sometimes involve large, essentially permanent stakeholdings in business enterprises, including board-level representation and supervision of management. Or it may involve short-term subordinated lending (bridge loans or mezzanine financing) to assure the success of an M&A transaction. Firms began to participate in these investment in the late 1980s, to take advantage of the opportunity to participate in the high expected returns that were a natural part of their natural “deal flow.”

An important dimension of merchant banking today involves greater emphasis on venture capital with the idea that the firms would not only benefit from the success of the investment per se, they would also arrange the initial public offering and any other financial services needed afterwards. Virtually all of the global investment banks have now established private equity or venture

capital units.

### **Investment Management and Investor Services**

In mid-1999 there were approximately \$50 trillion in assets under management worldwide, comprising some \$11 trillion in mutual funds, \$9.5 trillion in pension funds, \$7.6 trillion managed by insurance companies, and \$14.4 trillion in onshore and \$7.2 trillion in offshore private assets (managed outside the country of residence of the client). This compared with roughly \$ 42 trillion in global banking assets and \$ 55 trillion in total capitalization of global stock and bond markets at that time.

There are a variety of asset-allocation services provided to institutional and individual investors, as well as technology-intensive investor services that reduce transactions costs, improve market information and transparency, and facilitate price discovery and trading. Key activities are institutional asset management and private banking. With respect to institutions, major investors such as pension funds and insurance companies may allocate blocks of assets to be managed against specific performance targets or "bogeys" (usually stock or bond indexes). Closed-end or open-end mutual funds or unit trusts may also be operated by broker-dealers, banks, or fund management firms and either marketed to selected institutions or mass-marketed to the general investor community either as tax-advantaged pension holdings or to capture general household savings. Private banking for high net worth individuals usually involves assigning discretionary or active asset management to financial institutions within

carefully structured parameters. These may link asset management to tax planning, estates and trusts, and similar services in a close personal relationship with an individual private banking officer that involves a high level of discretion. Many (notably offshore) private clients are confidentiality-driven, which makes them comparatively less sensitive to normal risk-return considerations and more sensitive to trust vested in the bank and the banker.

Appendix Table 11 is a league-table of the major asset managers, using funds under management as a yardstick. The firms are quite dispersed, based in part on the location of the major savings pools and insurance markets. The US is heavily represented based on firms managing the assets of classic defined-benefit pension funds as well as mutual fund companies and large life insurers. Europe's presence is mainly represented by the insurance sector and the major universal banks – which dominate mutual fund distribution in most countries – plus the private banking assets of the Swiss banks. The fact that much of the reconfiguration with respect to global pension programs will be centered in Europe points to significant future developments in this industry, including strong penetration of the European environment by US asset managers.

### **Infrastructure Services**

There are an array of services that lies between buyers and sellers of securities, domestically as well as internationally, which are critical for the effective operation of securities markets. These center on domestic and international systems for trading (notably electronic communication networks –

ECNs) and for clearing and settling securities transactions via efficient central securities depositories (CSDs). These are prerequisites for a range of services, often supplied on the basis of quality and price by competing private-sector vendors of information services, analytical services, trading services and information processing, credit services, securities clearance and settlement, custody and safekeeping, and portfolio diagnostics.

Investor services represent financial market utilities that tend to be highly scale- and technology-intensive. Classic examples include Euroclear, a Belgian cooperative that was pioneered by-and had a long-standing operating agreement with J.P. Morgan, and Cedel, a Luxembourg-based consortium of major financial services firms. Many banks and securities firms have stakes in investor services utilities, as shown in Appendix Table 12. Appendix Table 13 presents a league table of the world's largest custodians. Investor services utilities can generate attractive risk-adjusted returns for financial services firms if all-important costs and technologies are well managed.

All of these activities have to be organized in an effective structure that in most cases has come to form a so-called "full-service" investment banking capability which comprises market-assess services (debt and equity originations), trading and brokerage, corporate advisory services including M&A activities, principal investing, asset management and (sometimes) investor services. Such a structure is depicted in Exhibit 5, and may represent an independent investment bank or (at least in part) the investment banking division of a universal bank or financial conglomerate. From the schematic alone it is

evident that the complexities present important managerial challenges.

### **The Competitive Structure of Wholesale Finance**

What about market structure, which tends in many cases to be reflected in profit margins? Information on overall competitive performance can be obtained either by means of client survey data, or by deal-flow market-share analysis.

Exhibit 6 is an example of the former, which assesses only the market perception in a polling survey of the capital-raising ability of the leading firms. A perhaps better approach is depicted in Exhibit 7, which shows the top-25 firms in terms of measurable global deal-flow in 1999, and indicates a highly uneven distribution of transaction volumes. This table ranks firms by the total of the volume of transactions originated in four categories of wholesale financial services in which full credit to the lead managers can be determined. The four are management of (1) syndicated bank loans, (2) securities underwriting and private placements, (3) M&A transactions and (4) medium term notes (not included in securities underwriting). The sum of these four services are thought to represent a convincing proxy for the firms market "presence," or share of market. On this basis, the wholesale banking market is more concentrated than it would otherwise appear. The top-10 firms handled 79% of the combined transaction volume in 1999, and the top-25 firms had a combined market share of over 93%.

A good way to measure market structure in any industry is the so-called Herfindahl-Hirshman index – the sum of the squares of market shares ( $H = \sum s^2$ ), which lies somewhere between 0 (perfect competition) and 10,000 (monopoly).

The value of H rises as the number of competitors declines and as market-share concentration increases among a given number of competitors. In wholesale financial markets, too, spreads and fees tend to be positively associated with higher concentration levels, as in the traditional US “bulge bracket” of securities underwriters. But as market-definition broadens from domestic to global, the H value invariably drops and market structure becomes increasingly competitive – that is, more of the gains from wholesale financial services go to the clients and less go to the intermediaries.

Despite increasing concentration, global wholesale banking shows very little evidence so far of systematically increasing market concentration. The Herfindahl-Hirshman index for the top 10 firms has risen gradually since 1990, as indicated in Exhibit 8, but was still only 664 in 1999. For the top 20 firms, the index rose from 373 in 1992 to 709 in 1999. But the Herfindahl-Hirshman index is still very low compared with many other industries, indicating a high level of intensity in market competition despite evidence of an upward trend in concentration, especially among the top 10 players. This indicates a very competitive global wholesale market that is likely to prevail well into the future, one that is far tougher than the term “global bulge bracket” suggests.

The dominance of the US firms is evident in Exhibit 8 as well. Of the top-10 firms, nine were American in 1999, one (Crédit Suisse First Boston, a firm with strong American roots) was European-owned, and none was Japanese. Of the top-20 firms, 13 were American, seven were European and none was Japanese.

This picture may shift in the years ahead, if the major European universal banks acquire or build significant market-shares against their American rivals. This may be more likely than it would otherwise appear if introduction of the euro and higher levels of capital-market integration creates disproportionate growth in Europe's share of global transaction-flow. The global share of the major Japanese firms remains minimal for the time being, although successful cleanup of past problems and serious domestic deregulation could lead to a resurgence at some point in the future.

### **Comparative Success and Market Valuations**

Wholesale financial institutions essentially carry out more or less comparable portfolios of the aforementioned businesses, although each has its unique strengths and weaknesses. Firms like Goldman Sachs have had a competitive bias toward corporate finance, Chase Manhattan toward syndicated lending, Citigroup toward trading, Deutsche Bank toward bond underwriting and distribution, and UBS toward private banking and asset management. However, each has found it necessary to develop "full service" and "global" capabilities in most of the critical areas of wholesale banking in order to serve major corporate, government and institutional investor clients. This does not preclude the existence of sometimes highly successful specialist firms that target individual activities or are particularly strong in particular geographic areas or industrial sectors. Examples include Lazard Frères (mergers and acquisitions), Kohlberg, Kravis and Roberts (leveraged buy-outs), Mediobanca (Italian corporate finance)

or BNP-Paribas (France corporate finance).

Exhibit 9 presents what we would argue were the top firms in the global wholesale banking and securities industry at the beginning of 2000. The top firms form a relatively stable group over time, although there is some degree of mobility in the second and third tiers as mergers and acquisitions in the industry occur, and as smaller firms are acquired by larger ones seeking to fill-in particular areas of wholesale banking activity.

In addition to targeting the right markets around the world at the right time with the right level of skill and execution capability, their success from an investor's shareholder perspective requires strong performance in profitability, return on investment and shareholder value. This requires cost containment, risk control, and maximizing available economies of scale and economies of scope.<sup>3</sup> It also requires mastery of the "organizational software" of American-style investment banking, in which, on a continuous basis, top quality employees can be recruited, trained, evaluated, compensated and retained.

The share price of a wholesale banking firm should reflect these efforts, but most of the leading firms are today multi-functional corporations in which the wholesale part may be a relatively modest component, and therefore its efficiency may not be a principal driver of shareholder value. Citigroup's (market capitalization of \$162 billion at February 28, 2000) wholesale banking activity comprises only about 15% of the firm's core profits. Morgan Stanley Dean Witter (market cap of \$80 billion), Chase Manhattan (\$63 billion), Credit Suisse Group (\$43 billion) and Merrill Lynch (\$36 billion), also all have very substantial retail

finance activities that account for a large part of their market capitalization. UBS's (\$87 billion) profits are mainly from private banking and asset management, Deutsche Bank's market capitalization (\$54 billion) reflects substantial industrial stock ownership and German domestic banking. On the other hand, wholesale market share leader Goldman Sachs (market capitalization \$40 billion) derives almost all of its profits from wholesale finance activities, as does J.P. Morgan (\$19 billion), Lehman Brothers (\$10 billion), and Donaldson, Lufkin & Jenrette (\$6 billion). Overall, size does not appear to be an advantage in gaining leading market share positions, and indeed may be a hindrance if organizational issues impede the firm's ability to compete effectively.

Ratios such as price/earnings and market/book value, which are computed after payouts for management and staff compensation, have tended to vary greatly over the past decade. In general, however, the wholesale banking industry has had to contend with valuations that are relatively low in comparison to other parts of the financial services industry. For example, Goldman Sachs's price-earnings ratio, when its stock was at an all time high in March 2000 was 13.6, or 47% of the S&P 500 average ratio. Earnings from investment banking may not be capitalized at a high market value because investors substantially discount future cash flows for "risk factors," mainly attributable to aggressive trading positions and regulatory and legal hazards. This is despite the fact that the underlying business streams in securities new issues, trading, corporate finance, risk management, and investment advisory have grown very rapidly

indeed and the return on investment that of Goldman Sachs was 27% in 1999) is relatively high.

A second concern adversely affecting the price of investment banking share valuations has to do with the gradual erosion of margins from investment banking activities (trading spreads, advisory fees, commissions) due to the competitive structure of the industry. In virtually every area of global wholesale banking, margin erosion has taken place. There's been some reversal from time to time, as a result of innovations or changed market conditions, but the continuing impact of stiffer competition is having the effect that economists would predict.

A third factor influencing industry valuations has to do with technology, which tends to have a catalytic impact on market structure and competition. There are three principal sources of competitive advantage in investment banking. One is an *information* advantage over clients or trading counterparties. A second involves an *interpretation* advantage, and the third, *transaction cost* advantages. Over time, information advantages have gradually been eroded as technology developments have progressed, and transaction cost advantages have also declined in terms of differential cost structures among competing firms. But there remain very large differences across firms in terms of interpretation advantages, particularly as they relate to financial innovations, arbitrage and value-added in corporate finance. Interpretation advantages are imbedded in people, which may be why the industries payout to employees (returns on labor) have outpaced returns to shareholders. And this may only be the beginning,

should Internet-based brokerage and IPOs, PC-based commercial paper distribution and automated Dutch auction distribution of corporate debt directly to institutional investors become more widely used by the industry's customers.

A final point that may contribute to low equity valuations in the industry has to do with what some people call the BOB problem -- "bolts out of the blue." Investment banking is perhaps an "accident-prone" industry, one that is sometimes capable of massively destroying shareholder value.<sup>4</sup> It may be that public perceptions of the professional standards in the industry have eroded considerably in recent years. These standards, which incorporate the industry's reputation for integrity, service quality and expertise may have been seriously tarnished by rogue behaviour and lapses in supervision, criminal indictments, regulatory complaints, customer litigation and all the publicity that attends them. Top management tolerance (however distantly or implicitly) of low standards of conduct will almost certainly cause them to come to pass, sometimes at great cost to firms and their shareholders. If, indeed, as current share prices represent the least biased assessment of the long-term, risk-adjusted present-value of earnings, then these kinds of issues must be reflected in the valuation of the industry.

### **The Next Stage of Development and Competition**

In America, competition in the investment banking industry has been intense for at least forty years. During this time, market leaders such as Merrill Lynch, Salomon Brothers and Goldman Sachs emerged from the middle of the

pack, and many at the front of the league tables (Kuhn Loeb, First Boston, Dillon Read in the Us and virtually al of the UK and continental European merchant banks) disappeared or faded away into mergers. First Boston was absorbed into the Crédit Suisse Group. The long-time industry standard bearer, Morgan Stanley (inheritor of the clients and relationships of the old Morgan Bank in 1933) was compelled by pressures of competition and profitability to merger with a credit card and retail stockbroker, Dean Witter. Salomon Brothers was acquired by Travelers Group, which controlled another large brokerage, Smith Barney, and then merged with Citicorp to form Citigroup in 1998. J.P. Morgan, the commercial banking arm of the old Morgan Bank, essentially converted into an investment bank because of competitive pressure. Bankers Trust did the same, and became a specialist trading firm before being acquired by Deutsche Bank, which had failed to make headway into the investment banking business on its own. Whatever the American investment banking industry has been, it has not been stagnant – it has been fiercely competitive for generations, and as a result it has developed skills and capabilities unknown in other parts of the world until fairly recently.

Europe, now undergoing extraordinary changes in finance, corporate governance and market liberalization, has emerged as the next great theatre of competition for investment banking. American-style firms have the lead in market share in many of the segments of the business in Europe, and their skills and global reach are much appreciated by many leading European clients. But Europe is still in early stages of its own economic renewal, a process that will

involve extensive use of investment banking services in years to come. Competition for this business will be stiff, not only among the usual American houses, but increasingly from European sources as well. In the past, the battleground being in the American market, European firms could be disinterested – it did not concern their primary markets and customer bases. Now it does. Several players are attempting (at almost any cost) to secure investment banking parity (if not control) of the European market, and surely several will make important breakthroughs in the future. The mobility of top people in investment banking has never been greater, and many American-trained European nationals may be available to lead European firms in the future. And after this competition in Europe subsides, the battleground will most likely move to Asia in time to assist Japan in its overdue economic restructuring. The industry will busy for a long time.

The outlook is for intense competition for a long time to come, among powerful contestants. So the overriding question becomes what the industry's ultimate competitive structure will look like. Will there really emerge an enduring global "bulge bracket" capable of superior and sustained risk-adjusted returns on shareholder capital? Or will the industry's competitive structure going forward prove to reward smaller, more specialized firms, and therefore fragment the field. Will the risk-takers be the ones rewarded, and if so does that mean the expected life-cycles of firms will shorten. Nobody knows. But what does seem clear is that the competitive structure of global wholesale banking is fluid, adaptive, and

extremely responsive to changing market demands. As long as the market demands remain high for investment banking services (the continuing economic and financial restructuring in Europe, Japan and emerging markets suggest they will) the ongoing struggle for market leadership will continue, and with it continuing benefits for the users of financial services.

---

### Endnotes

998-0707. E-mails: [rsmith@stern.nyu.edu](mailto:rsmith@stern.nyu.edu), [iwalter@stern.nyu.edu](mailto:iwalter@stern.nyu.edu). Paper presented at the 22<sup>nd</sup> annual Colloquium of the Société Universitaire Européenne de Recherches Financières (SUERF) in Vienna, Austria on 27-19 April 2000. Draft of 6 February 2000.

1. Roy C. Smith and Ingo Walter, *High Finance in the Euro-zone* (London: Financial Times - Prentice-Hall, 2000).

1. See Ingo Walter, "Universal Banking: A shareholder Value Perspective," *European Management Journal*, August 1997. Reprinted in *Finanzmarkt und Portfolio Management* (Switzerland), No.1, 1997; and in *Financial Markets, Institutions and Instruments*, Volume 7, No. 5, 1997.

1. Roy C. Smith and Ingo Walter, *Street Smarts: Linking Professional Conduct and Shareholder Value in the Securities Industry* (Boston: Harvard Business School Press, 1997).

**Table 1**  
**Top 20 Arrangers of Syndicated Loans<sup>1</sup>**  
**(1997-1999)**

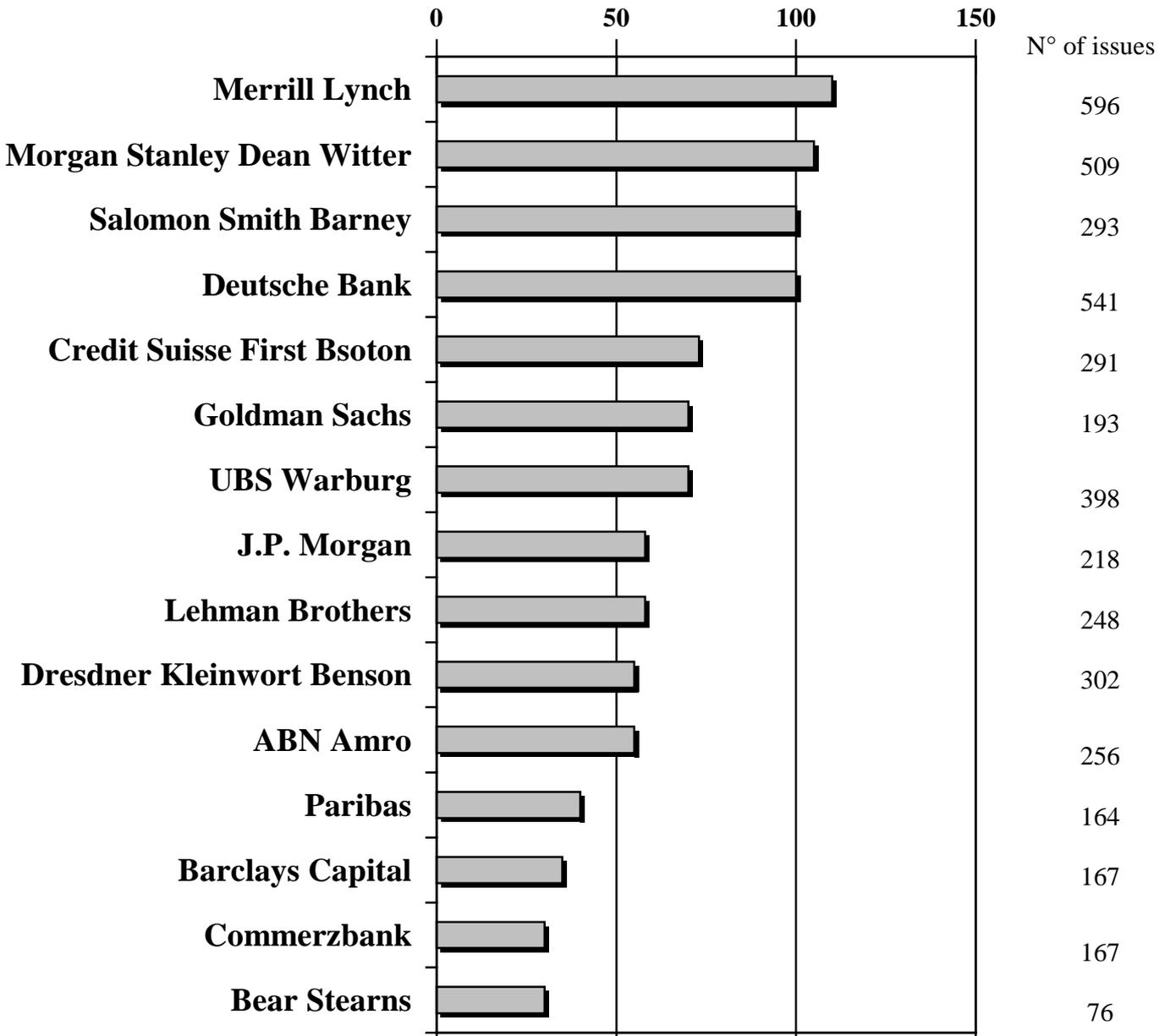
| <b>Pos.</b>  | <b>Bank Name</b>           | <b>Amt. US\$ m</b>  | <b>No.</b>    | <b>% Share</b> |
|--------------|----------------------------|---------------------|---------------|----------------|
| 1            | Chase Manhattan Corp.      | 755,416.37          | 2,535         | 21             |
| 2            | BankAmerica Corp.          | 683,733.43          | 3,462         | 19             |
| 3            | Citigroup Inc.             | 447,172.38          | 1,567         | 13             |
| 4            | JP Morgan & Co.            | 312,773.25          | 708           | 10             |
| 5            | Deutsche Bank AG           | 229,355.52          | 1,128         | 6              |
| 6            | Barclays                   | 127,105.58          | 559           | 4              |
| 7            | ABN-AMRO Bank NV           | 115,780.67          | 846           | 3              |
| 8            | Fleet Boston Financial     | 114,127.67          | 1,173         | 3              |
| 9            | Credit Suisse First Boston | 99,843.62           | 373           | 3              |
| 10           | UBS Warburg                | 90,089.31           | 297           | 3              |
| 11           | Bank of New York           | 88,362.91           | 399           | 2              |
| 12           | First Union Corp.          | 85,520.19           | 800           | 2              |
| 13           | Scotia Capital             | 61,343.09           | 360           | 2              |
| 14           | HSBC                       | 60,598.31           | 341           | 2              |
| 15           | Goldman Sachs & Co.        | 53,883.25           | 165           | 2              |
| 16           | Greenwich Natwest          | 47,712.84           | 196           | 1              |
| 17           | Banque National de Paris   | 47,465.39           | 283           | 1              |
| 18           | Société Générale           | 47,384.40           | 443           | 1              |
| 19           | Toronto-Dominion Bank      | 47,063.13           | 213           | 1              |
| 20           | Dresdner Bank AG           | 41,722.28           | 216           | 1              |
| <b>Total</b> |                            | <b>3,556,453.59</b> | <b>16,064</b> | <b>100</b>     |

<sup>1</sup>Euromarket, Asiamarket and U.S. Market combined.

Data: Euromoney Publications PLC.

**Table 2**

**International bond issues**  
Top bookrunners, 1999, \$bn



Source : Capital Data

**Table 3****Medium-Term Note Programs, 1999\*****A. Arrangers**

| <b>Rank</b> | <b>Firm</b>          | <b>No. of pgms</b> | <b>Share</b> |
|-------------|----------------------|--------------------|--------------|
| 1 (1)       | Merrill Lynch        | 27                 | 18.49        |
| 2 (2)       | Deutsche bank        | 25                 | 17.12        |
| 3 (4)       | Morgan Stanley DW    | 13                 | 8.9          |
| 4 (6)       | ABN Amro Bank        | 11                 | 7.53         |
| =5 (12)     | Paribas              | 9                  | 6.16         |
| =5 (3)      | Warburg Dillon Read  | 9                  | 6.16         |
| =7 (7)      | Lehman Brothers      | 8                  | 5.48         |
| =7 (8)      | Salomon Smith Barney | 8                  | 5.48         |
| 9 (5)       | JP Morgan            | 5                  | 3.42         |
| 10 (9)      | Goldman Sachs        | 4                  | 2.74         |

**A. Dealers**

| <b>Rank</b> | <b>Firm</b>          | <b>No. of pgms</b> | <b>Share</b> |
|-------------|----------------------|--------------------|--------------|
| 1 (1)       | Merrill Lynch        | 87                 | 58.39        |
| 2 (4)       | Deutsche Bank        | 83                 | 55.7         |
| 3 (5)       | Morgan Stanley DW    | 73                 | 48.99        |
| 4 (2)       | Warburg Dillon Read  | 71                 | 47.65        |
| 5 (7)       | Salomon Smith Barney | 64                 | 42.95        |
| 6 (6)       | ABN Amro             | 61                 | 40.94        |
| 7 (3)       | JP Morgan            | 51                 | 34.23        |
| 8 (10)      | Paribas              | 45                 | 30.2         |
| 9 (9)       | Goldman Sachs        | 42                 | 28.19        |
| 10 (8)      | Lehman Brothers      | 38                 | 25.5         |

\*Figures in parentheses denote 1998 ranking.

Data: Euromoney.

**Table 4****International Equity Top 10 Bookrunners 1999**

| <b>Rank</b> | <b>Managing Bank</b>       | <b>Proceeds<br/>(\$million)</b> | <b>%</b> | <b># of Deals</b> | <b>Fees<br/>(\$million)</b> |
|-------------|----------------------------|---------------------------------|----------|-------------------|-----------------------------|
| 1           | Morgan Stanley Dean Witter | 24,923.5                        | 18.0     | 89                | 701.7                       |
| 2           | Goldman sachs              | 17,695.7                        | 12.8     | 89                | 624.0                       |
| 3           | Merrill Lynch              | 17,089.1                        | 12.3     | 121               | 725.4                       |
| 4           | Crédit Suisse First Boston | 8,110.6                         | 5.9      | 75                | 228.5                       |
| 5           | Warburg Dillon Read        | 7,318.8                         | 5.3      | 49                | 154.8                       |
| 6           | JP Morgan                  | 6,615.0                         | 4.8      | 17                | 188.5                       |
| 7           | Deutsche Bank Alex Brown   | 6,573.2                         | 4.7      | 58                | 105.4                       |
| 8           | Lehman Brothers            | 5,479.1                         | 4.0      | 51                | 144.3                       |
| 9           | Salomon Smith Barney       | 5,132.0                         | 3.7      | 40                | 194.5                       |
| 10          | ABN Amro                   | 4,496.5                         | 3.3      | 37                | 55.8                        |

**Table 5**

**Privatization IPOs, 1985-1999**  
(full credit to book runner, equal credit if joint)

|                                    | Proceeds<br>(\$ million) | Rank | Market<br>Share | Number<br>of Issues |
|------------------------------------|--------------------------|------|-----------------|---------------------|
| Goldman, Sachs & Co.               | 16949.5                  | 1    | 10.1            | 45                  |
| IMI Capital Markets                | 12358.1                  | 2    | 7.4             | 15                  |
| UBS Warburg                        | 10901.4                  | 3    | 6.5             | 43                  |
| Dresdner Kleinwort Benson          | 9797.5                   | 4    | 5.9             | 12                  |
| Paribas                            | 9466.0                   | 5    | 5.7             | 18                  |
| Mediobanca                         | 8594.2                   | 6    | 5.1             | 5                   |
| Merrill Lynch & Co.                | 8351.4                   | 7    | 5               | 46                  |
| Crédit Suisse First Boston         | 7279.2                   | 8    | 4.4             | 32                  |
| Morgan Stanley Dean Witter         | 5012.9                   | 9    | 3               | 20                  |
| Société Generale                   | 4358.6                   | 10   | 2.6             | 3                   |
| Banque Nationale de Paris          | 4054.1                   | 11   | 2.4             | 8                   |
| Banco Português<br>Investmimento   | 4026.1                   | 12   | 2.4             | 6                   |
| Argentaria Bolsa                   | 3539.8                   | 13   | 2.1             | 10                  |
| ABN AMRO                           | 3270.5                   | 14   | 2               | 9                   |
| Banco Central<br>Hispanoamericano  | 3211.8                   | 15   | 1.9             | 10                  |
| J.B. Were & Son                    | 3127.3                   | 16   | 1.9             | 2                   |
| JP Morgan & Co. Inc.               | 2582.2                   | 17   | 1.5             | 6                   |
| Daiwa Securities                   | 2498.4                   | 18   | 1.5             | 7                   |
| Santander Investment               | 1985.4                   | 20   | 1.2             | 7                   |
| China International Capital<br>Co. | 1982.5                   | 21   | 1.2             | 4                   |
| Banco Bilbao Vizcaya               | 1942.0                   | 22   | 1.2             | 10                  |
| Lazard Houses                      | 1931.8                   | 23   | 1.2             | 3                   |
| Lehman Brothers                    | 1708.2                   | 24   | 1               | 10                  |
| Underwriter(s) Unspecified         | 1548.8                   | 25   | 0.9             | 6                   |
| Not Available                      | 2478.8                   | 19   | 1.5             | 2                   |
| <b>Industry Totals</b>             | <b>167217.8</b>          |      | <b>100.0</b>    | <b>488</b>          |

**Source:** Thomson Financial Securities Data Company (as of April 1999).

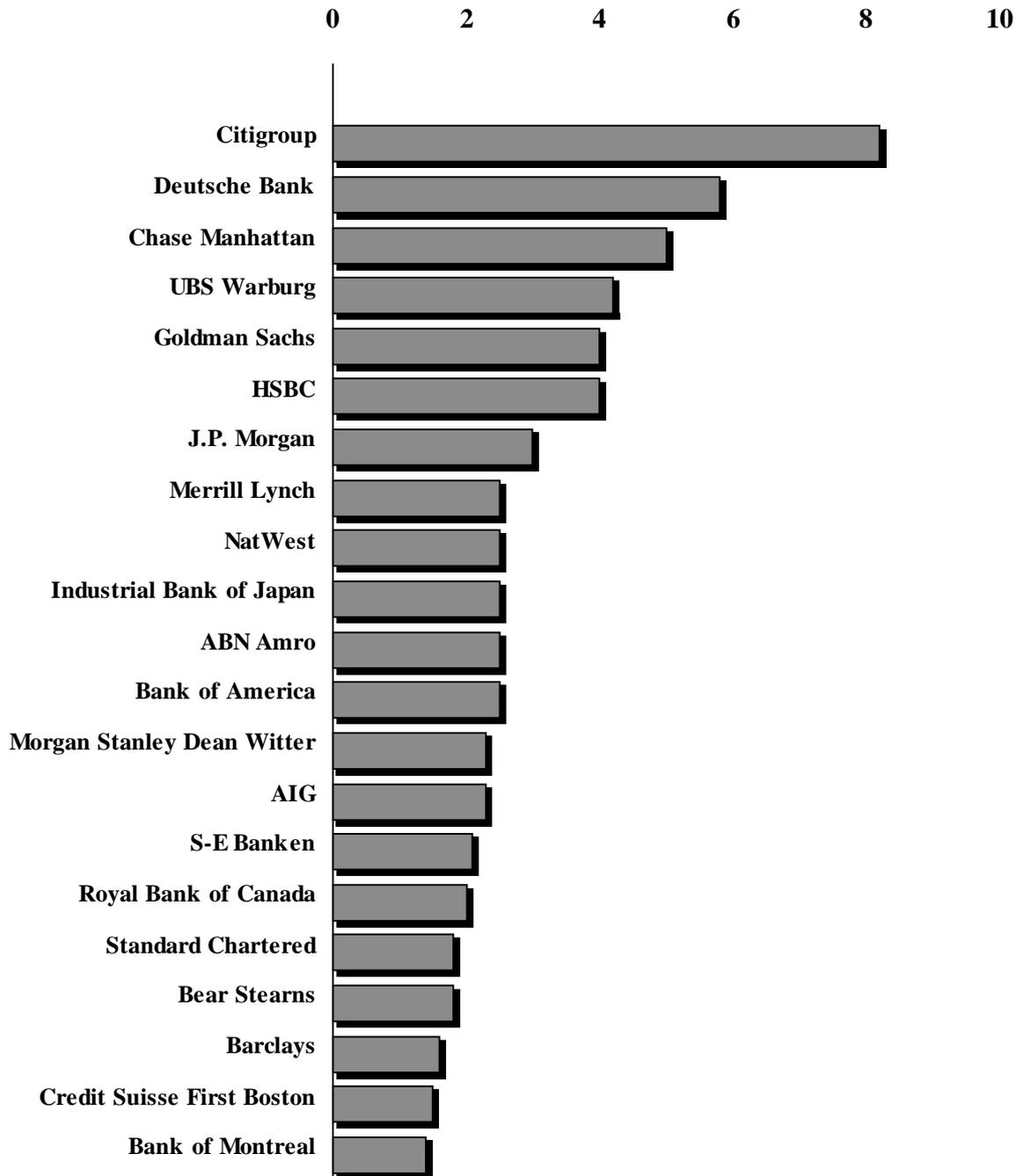
Table 6

**Privatization SEOs, 1985-1999**  
(full credit to bookrunner, equal credit if joint)

|                             | Proceeds<br>(\$ million) | Rank | Market<br>Share | Number<br>of Issues |
|-----------------------------|--------------------------|------|-----------------|---------------------|
| Crédit Suisse First Boston  | 79,798.3                 | 1    | 17.3            | 183                 |
| UBS Warburg                 | 65,286.2                 | 2    | 14.1            | 122                 |
| Salomon Smith Barney        | 60,425.3                 | 3    | 13.1            | 101                 |
| Morgan Stanley Dean Witter  | 59,671.7                 | 4    | 12.9            | 76                  |
| JP Morgan & Co. Inc.        | 51,484.0                 | 5    | 11.1            | 95                  |
| Deutsche Bank               | 48,125.4                 | 6    | 10.4            | 108                 |
| Goldman, Sachs & Co.        | 47,489.3                 | 7    | 10.3            | 68                  |
| Rothschild Group            | 38,464.9                 | 8    | 8.3             | 91                  |
| Lehman Brothers             | 37,217.0                 | 9    | 8.1             | 47                  |
| Merrill Lynch & Co.         | 32,569.5                 | 10   | 7.0             | 64                  |
| Dresdner Kleinwort Benson   | 28,819.9                 | 11   | 6.2             | 54                  |
| KPMG                        | 21,522.5                 | 12   | 4.7             | 73                  |
| Schroders                   | 19,141.9                 | 13   | 4.1             | 46                  |
| PriceWaterhouseCoopers      | 17,584.1                 | 14   | 3.8             | 109                 |
| Barclays Capital            | 17,410.8                 | 15   | 3.8             | 44                  |
| Lazard Houses               | 15,322.9                 | 16   | 3.3             | 37                  |
| ING Barings                 | 13,029.8                 | 17   | 2.8             | 29                  |
| Maxima consultoria          | 12,172.2                 | 18   | 2.6             | 9                   |
| Banco Brascan               | 11,732.9                 | 19   | 2.5             | 11                  |
| Paribas                     | 10,947.3                 | 20   | 2.4             | 36                  |
| Chase Manhattan Corporation | 10,352.9                 | 21   | 2.2             | 30                  |
| HSBC                        | 9,162.8                  | 22   | 2.0             | 52                  |
| BES Investimentos           | 9,081.5                  | 23   | 2.0             | 3                   |
| Flemings                    | 8,202.1                  | 24   | 1.8             | 25                  |
| Banque Nationale de Paris   | 8,122.0                  | 25   | 1.8             | 15                  |
| Deals with Advisor          | 360,208.0                |      | 77.9            | 1362                |
| Deals w/o Advisor           | 102,191.0                |      | 22.1            | 3574                |
| <b>Industry Totals</b>      | <b>462,399.0</b>         |      | <b>100.0</b>    | <b>4935</b>         |

**Source:** Thomson Financial Securities Data Company.

**Table 7**  
**Foreign-exchange Dealing**  
**Market share (percent)**  
**May 1999**



Source: Euromoney

**Table 8****Research**

| <b>1999</b> | <b>1998</b> | <b>Firm</b>                   | <b>Total<br/>1999</b> | <b>Positions<br/>1998</b> |
|-------------|-------------|-------------------------------|-----------------------|---------------------------|
| 1           | 1           | Merrill Lynch                 | 56                    | 57                        |
| 2           | 4           | Salomon Smith Barney          | 55                    | 46                        |
| 3           | 2           | Morgan Stanley Dean Witter    | 53                    | 50                        |
| 4           | 2           | Goldman, Sachs & Co.          | 43                    | 50                        |
| 5           | 6           | Crédit Suisse First Boston    | 40                    | 27                        |
| 6           | 5           | Donaldson, Lufkin & Jenrette  | 36                    | 38                        |
| 7           | 9           | Bear, Stearns & Co.           | 31                    | 19                        |
| 8           | 8           | Lehman Brothers               | 19                    | 21                        |
| 9           | 7           | PaineWebber                   | 19                    | 25                        |
| 10          | 10          | J.P. Morgan Securities        | 17                    | 16                        |
| 11          | 12          | Sanford C. Bernstein & Co.    | 12                    | 12                        |
| 12          | 13          | Prudential Securities         | 12                    | 11                        |
| 13          | 14*         | Deutsche Banc Alex. Brown     | 7                     | 7                         |
| 14          | 19**        | Banc of Americas Securities   | 6                     | 4                         |
| 15          | 11          | Schroder & Co                 | 5                     | 13                        |
| 16          | 16          | CIBC World Markets            | 4                     | 5                         |
| 17          | 14          | SG Cowen                      | 4                     | 7                         |
| 18          | 16          | BancBoston Robertson Stephens | 3                     | 5                         |
| 19          | 20          | UBS Warburg                   | 3                     | 3                         |
| 20          | 23          | Int'l Strategy & Investment   | 2                     | 1                         |
| 21          | --          | Thomas Weisel Partners        | 0                     | 0                         |

---

\*Ranking of BT Alex Brown

\*\*Ranking of NatinsBanc Montgomery Securities

\*\*\*Number of Ranked Analysts

**SOURCE:** Institutional Investor, October 1999

## Research: Europe

| <b>Rank</b> |             | <b>Firm</b>                 | <b>Total team positions</b> |             |
|-------------|-------------|-----------------------------|-----------------------------|-------------|
| <b>1999</b> | <b>2000</b> |                             | <b>2000</b>                 | <b>1999</b> |
| 1           | 1           | Merrill Lynch               | 47                          | 52          |
| 3           | 2           | Morgan Stanley Dean Witter  | 41                          | 37          |
| 2           | 3           | Warburg Dillon Read         | 36                          | 45          |
| 6           | 4           | Credit Suisse First Boston  | 26                          | 16          |
| 8           | 5           | Deutsche Bank               | 23                          | 9           |
| 4           | 6           | Goldman Sachs International | 22                          | 25          |
| 12          | 7           | Salomon Smith Barney        | 12                          | 6           |
| 13          | 8           | J.P. Morgan                 | 9                           | 5           |
| 10          | 9           | Dresdner Kleinwort Benson   | 6                           | 7           |
| 10          | 10          | ABN Amro                    | 5                           | 7           |
| 8           |             | HSBC Securities             | 5                           | 9           |
| 14          |             | Lehman Brothers             | 5                           | 4           |
|             | 14          | CAI Cheuvreux               | 2                           | 0           |
| 16          |             | CA IB Securities            | 2                           | 2           |
| 16          |             | ING Barings                 | 2                           | 2           |

**Source:** Institutional Investor

## Table 9

### The Top Derivatives Dealers

| 1998            | 1999 | Firm                           |
|-----------------|------|--------------------------------|
| 1               | 1    | Citigroup <sup>1</sup>         |
| 2               | 2    | Goldman, Sachs & Co.           |
| 3               | 3    | J.P. Morgan                    |
| 6               | 4    | Morgan Stanley Dean Witter     |
| 9               | 5    | Merrill Lynch & Co.            |
| 5               | 6    | Deutsche Bank                  |
| 7 <sup>2</sup>  | 7    | UBS Warburg <sup>1</sup>       |
| 4               | 8    | Chase Securities               |
| 12              | 9    | Crédit Suisse First Boston     |
| 10              | 10   | BT Alex. Brown <sup>4</sup>    |
| 13              | 11   | BankAmerica Corp. <sup>1</sup> |
| 20              | 12   | Lehman Brothers                |
| 14              | 13   | Société Générale               |
| 15 <sup>3</sup> | 14   | Barclays Capital               |
| ---             | 15   | Bear, Stearns & Co.            |
| 11              | 16   | HSBC Securities                |
| ---             | 17   | ABN Amro                       |
| 18              | 18   | Banque Paribas                 |
| ---             | 19   | AIG Financial Products         |
| ---             | 20   | ING Baring Furman Selz         |

---

<sup>1</sup> Merged company

<sup>2</sup> Ranking of SBC Warburg Dillon Read

<sup>3</sup> Ranking of BZW

<sup>4</sup> Merged in 1999 into Deutsche Bank

**SOURCE:** International Financing Review, 2000

**Table 10**

**Worldwide Announced M&A 1999**  
Credit to target and acquiring advisors

| <b>Rank</b> | <b>Advisor</b>                 | <b>Rank value (\$m)</b> | <b>Market Share (%)</b> | <b>Number of deals</b> |
|-------------|--------------------------------|-------------------------|-------------------------|------------------------|
| 1           | Goldman Sachs & Co.            | 1348788.0               | 39.5                    | 417                    |
| 2           | Morgan Stanley Dean Witter     | 1131331.5               | 33.1                    | 447                    |
| 3           | Merrill Lynch                  | 1097129.2               | 32.1                    | 377                    |
| 4           | Crédit Suisse First Boston     | 528360.1                | 15.5                    | 329                    |
| 5           | JP Morgan                      | 514685.5                | 15.1                    | 241                    |
| 6           | UBS Warburg                    | 489189.0                | 14.3                    | 279                    |
| 7           | Citigroup/Salomon Smith Barney | 456058.6                | 13.3                    | 276                    |
| 8           | Lazard Houses                  | 376086.2                | 11.0                    | 165                    |
| 9           | Lehman Brothers                | 310876.6                | 9.1                     | 194                    |
| 10          | Deutsche Bank                  | 292862.6                | 8.6                     | 226                    |
| 11          | Chase Manhattan                | 290425.6                | 8.5                     | 184                    |
| 12          | Donaldson, Lufkin & Jenrette   | 272126.7                | 8.0                     | 315                    |
| 13          | Bear Stearns                   | 169339.6                | 5.0                     | 84                     |
| 14          | Rothschild                     | 160928.8                | 4.7                     | 204                    |
| 15          | Dresdner Kleinwort Benson      | 144790.2                | 4.2                     | 97                     |
| 16          | Gleacher                       | 125930.7                | 3.7                     | 10                     |
| 17          | Banque Nationale de Paris      | 112568.9                | 3.3                     | 101                    |
| 18          | Wasserstein Perella            | 95536.9                 | 2.8                     | 66                     |
| 19          | Arthur Andersen                | 76774.9                 | 2.3                     | 106                    |
| 20          | Greenhill                      | 73487.7                 | 2.2                     | 26                     |
| 21          | Allen & Co.                    | 71243.4                 | 2.1                     | 7                      |
| 22          | CreditAgricole Indosuez        | 62330.6                 | 1.8                     | 11                     |
| 23          | Société Générale               | 61735.9                 | 1.8                     | 101                    |
| 24          | Schroders                      | 55501.5                 | 1.6                     | 129                    |
| 25          | ABN AMRO                       | 52437.4                 | 1.5                     | 136                    |
| --          | Deals with advisor             | 3045096.3               | 89.1                    | 5983                   |
| --          | Deals w/o advisor              | 373095.0                | 10.9                    | 25082                  |
| --          | <b>Industry totals</b>         | <b>3418191.3</b>        | <b>100</b>              | <b>31065</b>           |

**Source:** Thomson Financial Securities Data

**Table 11**  
**Global League Table of Leading Asset Managers**  
 (assets under management exceeding \$100 billion)<sup>1</sup>

| <b>Rank 1/1/99</b> | <b>Firm</b>                            | <b>Country</b> | <b>AUM(\$bil.)</b> |
|--------------------|----------------------------------------|----------------|--------------------|
| 1                  | Kampo                                  | Japan          | 1,685              |
| 2                  | UBS AG <sup>1</sup>                    | Switzerland    | 1,167              |
| 3                  | Fidelity Investments                   | USA            | 773                |
| 4                  | Deutsche Bank Group <sup>2</sup>       | Germany        | 698                |
| 5                  | Groupe AXA <sup>3</sup>                | France         | 672                |
| 6                  | Barclays Global Investors              | UK             | 616                |
| 7                  | Allianz (including PIMCO)              | Germany        | 607                |
| 8                  | Merrill Lynch                          | USA            | 501                |
| 9                  | State Street Global Advisors           | USA            | 493                |
| 10                 | Capital Group Companies                | USA            | 424                |
| 11                 | Zurich Group <sup>4</sup>              | Switzerland    | 407                |
| 12                 | Mellon Financial Services              | USA            | 401                |
| 13                 | Nippon Life                            | Japan          | 383                |
| 14                 | Equitable Cos.                         | USA            | 359                |
| 15                 | Morgan Stanley Dean Witter             | USA            | 346                |
| 16                 | Citigroup                              | USA            | 327                |
| 17                 | JP Morgan                              | USA            | 316                |
| 18                 | Putnam Investments                     | USA            | 294                |
| 19                 | Zenkyoren                              | Japan          | 279                |
| 20                 | Vanguard Group                         | USA            | 276                |
| 21                 | Dai-Ichi Mutual Life                   | Japan          | 267                |
| 22                 | TIAA-CREF                              | USA            | 244                |
| 23                 | Pimco Advisors                         | USA            | 244                |
| 24                 | Prudential Insurance Co.               | USA            | 242                |
| 25                 | Bank of America Corp.                  | USA            | 234                |
| 26                 | Crédit Suisse Group                    | Switzerland    | 231                |
| 27                 | Northern Trust Company                 | USA            | 226                |
| 28                 | Mitsui Trust and Banking               | Japan          | 225                |
| 29                 | Franklin Group of Funds                | USA            | 220                |
| 30                 | Sumitomo Mutual Life                   | Japan          | 220                |
| 31                 | Fortis Group                           | Belgium        | 219                |
| 32                 | Amvescap                               | USA            | 217                |
| 33                 | National Westminster Bank <sup>5</sup> | UK             | 212                |
| 34                 | Wellington Mgmt Co.                    | USA            | 211                |
| 35                 | Generali Group <sup>6</sup>            | Italy          | 198                |
| 36                 | Schroder Investment Man.               | UK             | 197                |
| 37                 | American Express                       | USA            | 196                |
| 38                 | Chase Manhattan Corp.                  | USA            | 190                |
| 39                 | United Asset Mgmt Corp.                | USA            | 188                |
| 40                 | BNP Paribas <sup>7</sup>               | France         | 184                |
| 41                 | Goldman Sachs Asset Mgmt               | USA            | 181                |

|    |                               |             |     |
|----|-------------------------------|-------------|-----|
| 42 | Commercial Union              | UK          | 175 |
| 43 | Société Generale              | France      | 175 |
| 44 | First Union Corp.             | USA         | 169 |
| 45 | ING Groep                     | Netherlands | 169 |
| 46 | Groupe Caisse des Dépôts      | France      | 168 |
| 47 | MassMutual                    | USA         | 157 |
| 48 | AegonNV                       | Netherlands | 156 |
| 49 | Metropolitan Life             | USA         | 154 |
| 50 | Dresdner Bank Group           | Germany     | 152 |
| 51 | Lloyds TSB <sup>8</sup>       | UK          | 151 |
| 52 | Indocar (Crédit Agricole)     | France      | 151 |
| 53 | Meiji Mutual Life             | Japan       | 150 |
| 54 | T. Rowe Price Assoc.          | USA         | 148 |
| 55 | Mitsubishi Trust & Bank       | Japan       | 145 |
| 56 | Hypo Vereinsbank              | Germany     | 140 |
| 57 | Prudential Corp. <sup>9</sup> | UK          | 141 |
| 58 | Sumitomo Trust & Bank         | Japan       | 137 |
| 59 | Nvest Cos.                    | USA         | 135 |
| 60 | Blackrock                     | USA         | 132 |
| 61 | Münchener Rückversich         | Germany     | 130 |
| 62 | Asahi Mutual Life             | Japan       | 129 |
| 63 | Comerzbank Group              | Germany     | 124 |
| 64 | BancOne Inv. Advisors         | USA         | 122 |
| 65 | Standard Life                 | UK          | 122 |
| 66 | Daiwa Trust & Banking         | Japan       | 115 |
| 67 | Yasuda Mutual Life            | Japan       | 114 |
| 68 | Desjardin-Laurentian          | Canada      | 114 |
| 69 | Toyo Trust & Banking          | Japan       | 111 |
| 70 | Janus Capital Corp.           | USA         | 108 |
| 71 | Fleming Investment Mgt.       | UK          | 108 |
| 72 | Federated Investors           | USA         | 107 |
| 73 | Grupo Intesa                  | Italy       | 107 |
| 74 | John Hancock                  | USA         | 105 |
| 75 | Deka Bank                     | Germany     | 105 |
| 76 | Sun Life of Canada            | USA         | 105 |
| 77 | Daiwa Group                   | Japan       | 103 |
| 78 | Sun Life of Canada            | Canada      | 102 |

<sup>1</sup>Includes Global Asset Management, <sup>2</sup>Including Bankers Trust Co., <sup>3</sup>Includes Guardian Royal Exchange, <sup>4</sup>Including Scudder Kemper Investments, <sup>5</sup>Includes Legal & General and Gartmore, <sup>6</sup>Includes Achener & Münchener, <sup>7</sup>Includes Paribas, <sup>8</sup>Includes Scottish Widows, <sup>9</sup>Includes Mutual & General.

<sup>1</sup>**Sources:** *Euromoney*, August 1999 (non-US asset managers) based on InterSec Research Corp. Data: *Institutional Investor*, July 1999 (US asset Managers).

## Table 12

### Financial Institutions Stakes in Financial Market Utilities

|                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Crédit Suisse First Boston</b><br/>Tradeweb<br/>Brokertec<br/>EuroMTS</p> <p><b>DLJ/DLJ direct</b><br/>Strike<br/>Reditrade</p> <p><b>Goldman, Sachs &amp; Co.</b><br/>Hull Group<br/>Wit Capital<br/>Archipelago<br/>Optimark<br/>Brut<br/>Primex Trading<br/>Strike<br/>Brokertec</p> <p>EuroMTS<br/>Tradeweb</p> <p>Easdaq</p> | <p>Dealer-investor on-line bond trading system, instigated by CSFB<br/>Inter-dealer broker system<br/>European government bond trading system</p> <p>ECN, minority interest<br/>ECN, DLJdirect joint venture with Schwab, Fidelity and Spear Leeds &amp; Kellogg</p> <p>Options trading, full stock acquisition, \$531 million<br/>Retail on-line investment bank, 20% stake<br/>ECN, 25% ownership<br/>ATS, minority stake (undisclosed)<br/>ECN, 10% stake<br/>Joint venture with Merrill Lynch and Madoff Securities<br/>ECN, 5% stake through Hull Group<br/>Global inter-dealer broking system for bonds and futures;<br/>Goldman is the force behind it but holds an equal stake with six other<br/>Investment banks<br/>One of 24 banks in the inter-dealer bond broker for the European Market<br/>Dealer-investor on-line bond trading system. Goldman one of four banks in<br/>initial consortium<br/>European stock exchange, minority interest</p> |
| <p><b>JP Morgan &amp; Co.</b><br/>Archipelago<br/>Tradepoint</p> <p><b>Lehman Brothers</b><br/>Strike<br/>Brokertec</p> <p>EuroMTS</p>                                                                                                                                                                                                  | <p>ECN, minority stake<br/>Electronic stock exchange, based in London, 8.5% stake</p> <p>ECN, minority stake<br/>Inter-dealer bond and futures broking system; one of seven founder members</p> <p>One of 24 banks in the inter-dealer bond broker for the European market.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                                                                                   |                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Merrill Lynch &amp; Co.</b><br/>Direct Markets</p> <p>Brokertec<br/>Primex</p>              | <p>Merrill's e-commerce division; Merrill is the only investment bank to have created such a division.</p> <p>Inter-dealer bond and futures broking system; one of seven founder members.</p> <p>Alternative trading system, joint venture with Goldman Sachs and Madoff Securities.</p> |
| <p><b>Morgan Stanley Dean Witter</b></p> <p>Tradepoint<br/>Easdaq<br/>Brut<br/>Eclipse</p>        | <p>Electronic stock exchange, based in London, 15.95% stake.</p> <p>European stock exchange, 2.5% interest.</p> <p>ECN, minority interest.</p> <p>ECN pushing after-hours trading, minority interest.</p>                                                                                |
| <p><b>Citigroup/Salomon Smith Barney</b></p> <p>Strike<br/>Brokertec<br/>Tradeweb<br/>EuroMTS</p> | <p>ECN, Minority Stake</p> <p>Inter-dealer bond and futures broking system; one of seven founder members.</p> <p>Dealer-investor on-line bond trading system.</p> <p>European government bond trading system.</p>                                                                        |

**Table 13****Top 12 Custody Banks, 1999<sup>1</sup>**

|                                     | \$bn  |
|-------------------------------------|-------|
| <b>Bank of New York<sup>2</sup></b> | 5,610 |
| <b>Chase Manhattan</b>              | 5,584 |
| <b>State Street</b>                 | 4,812 |
| <b>Deutsche Bank<sup>3</sup></b>    | 3,732 |
| <b>Citigroup</b>                    | 3,022 |
| <b>Mellon Trust<sup>4</sup></b>     | 2,187 |
| <b>Northern Trust</b>               | 1,251 |
| <b>Royal Trust</b>                  | 893   |
| <b>Dresdner Bank</b>                | 877   |
| <b>Brown Brothers Harriman</b>      | 630   |
| <b>Banque Paribas</b>               | 620   |
| <b>HSBC<sup>5</sup></b>             | 577   |

<sup>1</sup>These figures include all assets under administration including cross border assets, fixed income, equities and eurobonds. The large Swiss banks (Crédit Suisse and UBS) had over SFr 1,000 billion (approx. \$650bn) in assets but are not willing to be more specific.

<sup>2</sup>Includes RBS Trust Bank assets

<sup>3</sup>Includes Bankers Trust assets

<sup>4</sup>Includes ABN-AMRO Mellon joint venture assets

<sup>5</sup>Previously Midland Bank's UK custody operations

**Source:** Global Securities Consulting Services, 1999.

## Exhibit 1

### Capitalization of Major Securities Markets Nominal Value Outstanding, 1999

(\$ billions)

| Country of Issuance  | Bond Market |              |                      |             | Equity Market | Total Market Capitalization |
|----------------------|-------------|--------------|----------------------|-------------|---------------|-----------------------------|
|                      | Government  | Corporations | Euro & Foreign Bonds | Total Bonds |               |                             |
| <b>USA</b>           | \$ 7,550    | \$ 5,795     | \$ 738               | \$ 14,083   | \$ 13,451     | \$ 27,534                   |
| <b>EU11</b>          | 4,812       | 2,319        | 1,320                | 8,451       | 4,160         | 12,611                      |
| <b>EU4</b>           | 809         | 692          | 512                  | 2,013       | 2,751         | 4,764                       |
| <b>Total EU</b>      | 5,621       | 3,011        | 1,832                | 10,464      | 6,911         | 17,375                      |
| Japan                | 3,118       | 1,212        | 293                  | 4,623       | 2,496         | 7,119                       |
| <b>Rest of World</b> | 190         | 764          | 1,224                | 2,178       | 4,604         | 6,782                       |
| <b>World Total</b>   | \$ 16,479   | \$ 10,782    | \$ 4,087             | \$ 31,348   | \$ 27,462     | \$ 58,810                   |

Source: BIS, IFC



**Exhibit 3**  
**Non-Government Capital Market Activity -- 1992 ~ 1999**  
(\$ billions)

|                                | <b>1999</b>    | <b>1998</b>    | <b>1997</b>    | <b>1996</b>    | <b>1995</b>    | <b>1994</b>    | <b>1993</b>    | <b>1992</b>    |
|--------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>US Domestic New Issues</b>  |                |                |                |                |                |                |                |                |
| US MTNs                        | 397.9          | 308.6          | 284.7          | 255.3          | 404.9          | 282.8          | 260.3          | 169.4          |
| Investment Grade Debt          | 1,195.8        | 504.2          | 726.1          | 518.9          | 417.3          | 342.5          | 389.2          | 281.1          |
| Collateralized Securities      | 559.0          | 560.9          | 378.0          | 252.3          | 154.1          | 252.5          | 478.9          | 428.2          |
| High Yield Debt                | 108.7          | 149.9          | 125.3          | 121.4          | 30.2           | 36.4           | 69.5           | 53.7           |
| Municipal Debt                 | <u>219.3</u>   | <u>279.7</u>   | <u>214.8</u>   | <u>181.7</u>   | <u>154.9</u>   | <u>161.3</u>   | <u>287.8</u>   | <u>231.7</u>   |
| <b>Total Debt</b>              | <b>2,480.7</b> | <b>1,803.3</b> | <b>1,728.9</b> | <b>1,329.6</b> | <b>1,161.4</b> | <b>1,075.5</b> | <b>1,485.7</b> | <b>1,164.1</b> |
| Preferred Stock & Convertibles | 68.3           | 74.5           | 91.3           | 45.6           | 16.3           | 15.5           | 22.4           | 20.9           |
| Common Stock                   | <u>171.9</u>   | <u>114.8</u>   | <u>120.1</u>   | <u>115.4</u>   | <u>81.7</u>    | <u>61.6</u>    | <u>101.7</u>   | <u>72.4</u>    |
| <b>Total Equity</b>            | <b>240.2</b>   | <b>189.3</b>   | <b>211.4</b>   | <b>161.0</b>   | <b>98.0</b>    | <b>77.1</b>    | <b>124.1</b>   | <b>93.3</b>    |
| <b>Total U.S. Domestic</b>     | <b>2,720.9</b> | <b>1,992.6</b> | <b>1,940.3</b> | <b>1,490.6</b> | <b>1,259.4</b> | <b>1,152.5</b> | <b>1,609.8</b> | <b>1,257.4</b> |
| <b>International Issues</b>    |                |                |                |                |                |                |                |                |
| Euro MTNs                      | 607.8          | 598.0          | 420.0          | 392.6          | 251.6          | 257.2          | 149.8          | 96.9           |
| Euro and Foreign Bonds         | 1,393.8        | 846.9          | 635.2          | 537.4          | 385.1          | 485.2          | 482.7          | 335.9          |
| International Equity           | <u>159.2</u>   | <u>100.9</u>   | <u>90.8</u>    | <u>69.7</u>    | <u>36.7</u>    | <u>48.6</u>    | <u>35.8</u>    | <u>17.8</u>    |
| <b>Total International</b>     | <b>2,160.8</b> | <b>1,545.8</b> | <b>1,146.0</b> | <b>989.7</b>   | <b>748.2</b>   | <b>791.0</b>   | <b>668.4</b>   | <b>450.6</b>   |
| <b>“World-Wide” Total</b>      | <b>4,881.7</b> | <b>3,538.4</b> | <b>3,086.3</b> | <b>2,480.3</b> | <b>2,007.6</b> | <b>1,943.5</b> | <b>2,278.2</b> | <b>1,708.0</b> |
| Global Syndicated Bank         |                |                |                |                |                |                |                |                |
| Loans & NIFs                   | 1,658.9        | 1,223.0        | 1,265.8        | 1,400.0        | 1,098.0        | 785.6          | 555.4          | 403.0          |

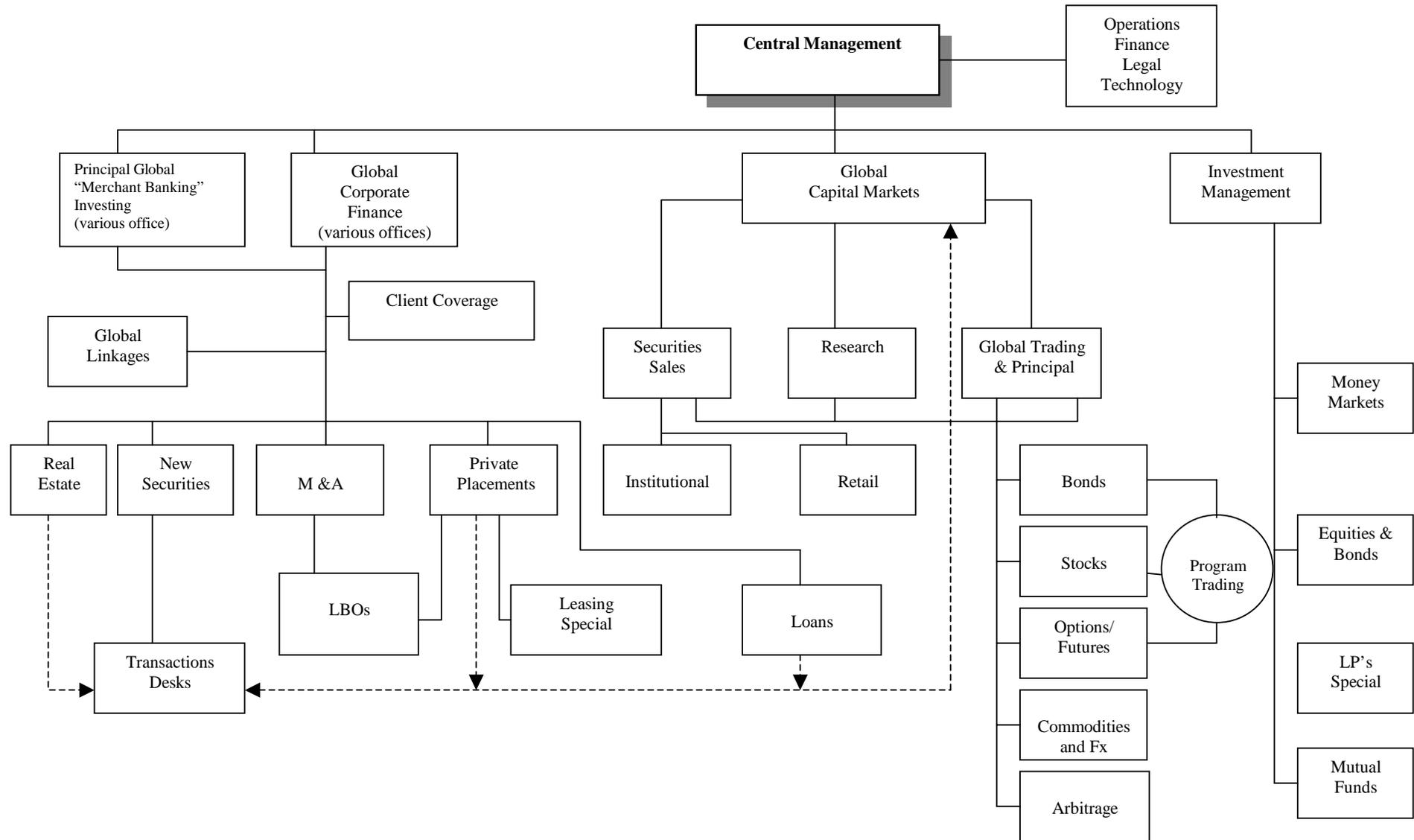
Source: Thomson Financial Securities Data Corporation, Investment Dealers' Digest.

**Exhibit 4**  
**Global M & A Developments**  
(Volume of Transactions in US\$ Billions and Percentages)

|                          | 1999    | 1998    | 1997   | 1996   | 1995   | 1994   | 1993   | 1992   | 1991   | 1990   | 1989   | 1988   | 1987   | 1986   |
|--------------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Transactions:            |         |         |        |        |        |        |        |        |        |        |        |        |        |        |
| US Domestic              | 588.7   | 801.8   | 488.3  | 330.7  | 218.5  | 199.8  | 101.1  | 119.3  | 108.5  | 124.9  | 250.1  | 293.2  | 203.9  | 200.9  |
| US Cross-Border          | 303.4   | 292.2   | 101.9  | 84.5   | 106.5  | 58.4   | 34.9   | 33.5   | 40.5   | 73.0   | 85.6   | 77.9   | 50.2   | 39.3   |
| Intra-European           | 575.5   | 305.9   | 242.4  | 193.3  | 151.8  | 85.6   | 59.9   | 91.0   | 117.2  | 127.2  | 130.1  | 86.4   | 54.9   | 20.7   |
| European Cross-Border    | 292.0   | 291.4   | 78.5   | 73.2   | 72.4   | 57.1   | 33.0   | 43.0   | 53.8   | 97.7   | 74.3   | 54.6   | 41.4   | 35.4   |
| US-European Cross Border | (219.1) | (210.3) | (49.2) | (52.9) | (43.5) | (39.0) | (27.4) | (13.3) | (22.8) | (36.6) | (46.3) | (38.2) | (28.3) | (17.4) |
| All Other                | 149.1   | 118.6   | 116.6  | 84.9   | 47.1   | 34.3   | 60.2   | 43.0   | 54.2   | 47.8   | 69.7   | 37.5   | 28.2   | 15.9   |
| Global Total             | 1689.6  | 1599.6  | 978.5  | 713.7  | 552.8  | 406.9  | 261.7  | 316.5  | 351.4  | 434.0  | 563.5  | 511.4  | 350.3  | 294.8  |
| US/Total                 | 52.8%   | 68.4%   | 60.3%  | 58.2%  | 58.8%  | 63.5%  | 52.0%  | 48.3%  | 42.4%  | 45.6%  | 59.6%  | 72.6%  | 72.5%  | 81.5%  |
| Europe/Total             | 51.3%   | 37.3%   | 32.8%  | 37.3%  | 40.6%  | 35.1%  | 35.5%  | 42.3%  | 48.7%  | 51.8%  | 36.3%  | 27.6%  | 27.5%  | 19.0%  |
| US Domestic/Total        | 34.8%   | 50.1%   | 50.0%  | 46.3%  | 39.5%  | 49.1%  | 38.6%  | 37.7%  | 30.9%  | 28.8%  | 44.4%  | 57.3%  | 58.2%  | 68.1%  |

Source: Thomson Financial Securities Data Company

## Exhibit 5 Schematic of a Full-Service Securities Firm



## Exhibit 6

### Poll of Polls: Overall Results

| Jan  |      |                                |             | Grand Total    | Underwriting | Trading      | Advising     |
|------|------|--------------------------------|-------------|----------------|--------------|--------------|--------------|
| 2000 | 1999 |                                |             | (out of 1,000) | (out of 350) | (out of 350) | (out of 300) |
| 1    | 3    | Deutsche Bank                  | Germany     | 637.31         | 237.36       | 240.47       | 159.47       |
| 2    | 2    | Merrill Lynch                  | USA         | 587.08         | 234.73       | 179.99       | 172.37       |
| 3    | 7    | Morgan Stanley Dean Witter     | USA         | 490.11         | 240.09       | 116.17       | 133.85       |
| 4    | 1    | UBS Warburg                    | Switzerland | 472.32         | 146.81       | 195.31       | 130.20       |
| 5    | 5    | Citigroup                      | USA         | 453.86         | 154.16       | 161.49       | 138.21       |
| 6    | 6    | Goldman Sachs                  | USA         | 440.11         | 203.71       | 125.20       | 111.20       |
| 7    | 4    | JP Morgan                      | USA         | 409.98         | 154.25       | 137.63       | 118.10       |
| 8    | 8    | ABN Amro                       | Netherlands | 285.86         | 94.36        | 116.13       | 75.37        |
| 9    | 9    | Chase Manhattan                | USA         | 260.33         | 64.60        | 121.80       | 73.93        |
| 10   | 10   | Crédit Suisse First Boston     | Switzerland | 220.43         | 101.49       | 60.11        | 58.83        |
| 11   | 12   | Lehman Brothers                | USA         | 162.88         | 70.78        | 57.97        | 34.12        |
| 12   | 11   | HSBC Group                     | UK          | 160.47         | 51.09        | 69.17        | 40.20        |
| 13   | 15   | Dresdner Kleinwort Benson      | Germany     | 157.29         | 75.17        | 47.22        | 34.90        |
| 14   | *    | BNP Paribas                    | France      | 147.28         | 57.78        | 61.38        | 28.12        |
| 15   | 13   | Barclays Capital               | UK          | 123.91         | 40.32        | 53.93        | 29.67        |
| 16   | 17   | Société Générale               | France      | 117.42         | 35.08        | 56.34        | 26.00        |
| 17   | 20   | Bank of America                | USA         | 107.33         | 21.24        | 52.36        | 33.73        |
| 18   | 19   | Crédit Lyonnais                | France      | 86.27          | 16.91        | 39.47        | 29.90        |
| 19   | 16   | NatWest Group**                | UK          | 86.02          | 6.16         | 60.82        | 19.04        |
| 20   | 18   | ING Barings                    | Netherlands | 84.17          | 28.75        | 33.12        | 22.31        |
| 21   | 21   | Nomura Securities              | Japan       | 61.68          | 28.02        | 32.50        | 1.15         |
| 22   | 28   | S-E-Banken                     | Sweden      | 59.98          | 8.16         | 49.93        | 1.89         |
| 23   | 24   | Royal Bank of Canada           | Canada      | 57.28          | 9.27         | 38.18        | 9.82         |
| 24   | 29   | Bear Stearns                   | USA         | 56.44          | 16.14        | 21.22        | 19.08        |
| 25   | 25   | Robert Fleming/Jardine Fleming | UK/HK       | 46.51          | 7.02         | 23.62        | 15.87        |

|    |    |                                 |             |       |       |       |       |
|----|----|---------------------------------|-------------|-------|-------|-------|-------|
| 26 | 22 | Commerzbank                     | Germany     | 37.26 | 9.99  | 20.41 | 6.86  |
| 27 | 42 | Rabobank                        | Netherlands | 32.98 | 14.82 | 5.85  | 12.31 |
| 28 | 30 | Crédit Agricole Indosuez        | France      | 32.48 | 7.48  | 24.11 | 0.90  |
| 29 | 76 | Bank of New York                | USA         | 29.19 | 13.06 | 13.35 | 2.78  |
| 30 | 47 | Donaldson Lufkin & Jenrette     | USA         | 27.92 | 6.11  | 15.67 | 6.15  |
| 31 | 73 | MeritaNordbanken                | Finland     | 25.57 | 4.78  | 14.38 | 6.41  |
| 32 | 31 | Standard Chartered Bank         | UK          | 25.28 | 1.72  | 18.04 | 5.53  |
| 33 | 32 | CIBC – Wood Gundy/World Markets | Canada      | 24.88 | 6.22  | 18.09 | 0.57  |
| 34 | 51 | Svenska Handelsbanken           | Sweden      | 24.12 | 5.25  | 2.40  | 16.47 |
| 35 | -- | Westdeutsche Landesbank         | Germany     | 23.11 | 1.21  | 21.34 | 0.57  |
| 36 | 33 | Bank of Tokyo-Mitsubishi        | Japan       | 20.40 | 6.38  | 14.02 | 0.00  |
| 37 | 57 | DG Bank                         | Germany     | 19.82 | 2.47  | 13.99 | 3.37  |
| 38 | 39 | HypoVereinsbank                 | Germany     | 18.54 | 6.02  | 8.32  | 4.20  |
| 39 | -- | Exane                           | France      | 18.20 | 0.09  | 15.80 | 2.31  |
| 40 | 44 | Schroders                       | UK          | 16.57 | 3.03  | 10.81 | 2.73  |
| 41 | 34 | TD Securities                   | Canada      | 16.42 | 4.70  | 7.30  | 4.41  |
| 42 | 43 | Daiwa Securities                | Japan       | 16.22 | 1.43  | 13.91 | 0.89  |
| 43 | 36 | AIG International               | USA         | 15.93 | 0.74  | 0.00  | 15.19 |
| 44 | 55 | Royal Bank of Scotland          | UK          | 15.93 | 1.18  | 13.96 | 0.79  |
| 45 | 84 | Mediobanca                      | Italy       | 15.13 | 7.38  | 6.05  | 1.71  |
| 46 | 56 | Lazard Brothers                 | France      | 13.12 | 4.27  | 5.76  | 3.09  |
| 47 | 48 | San Paolo IMI Bank              | Italy       | 12.93 | 1.53  | 11.21 | 0.19  |
| 48 | -- | Bank One                        | USA         | 12.87 | 5.40  | 7.46  | 0.00  |
| 49 | 54 | General Re                      | USA         | 12.74 | 1.63  | 6.94  | 4.17  |
| 50 | 52 | KBC                             | Belgium     | 12.64 | 1.68  | 6.35  | 4.61  |

Source: Euromoney, January 2000.

## Exhibit 7

### Global Wholesale Banking Rankings 1999

Full Credit to Book Running Manager Only (\$ million)

| Firm Rank 1999 (1998 in paren) | Syndicated<br>Bank Loans | Securities U/W<br>& Private Placements | M&A Advisory | MTNs Arranged | Total     | Percent of Top 25 |
|--------------------------------|--------------------------|----------------------------------------|--------------|---------------|-----------|-------------------|
| Goldman Sachs (1)              | 17,164                   | 256,245                                | 912,949      | 83,840        | 1,279,198 | 13.55%            |
| Merrill Lynch (2)              | 5,266                    | 412,150                                | 518,674      | 143,345       | 1,079,435 | 11.43%            |
| Morgan Stanley (3)             |                          | 293,253                                | 608,930      | 80,966        | 983,149   | 10.41%            |
| Citigroup/SSSB (4)             | 94,964                   | 323,206                                | 291,841      | 117,550       | 827,561   | 8.77%             |
| Crédit Suisse Gp (5)           | 18,966                   | 239,346                                | 382,447      | 109,164       | 749,923   | 7.94%             |
| Chase Manhattan (7)            | 363,932                  | 132,290                                | 131,049      | 38,390        | 664,661   | 7.04%             |
| JP Morgan (6)                  | 57,351                   | 131,058                                | 361,899      | 35,996        | 586,304   | 6.21%             |
| Lehman Bros (8)                | 10,378                   | 202,679                                | 182,056      | 106,869       | 501,982   | 5.32%             |
| DLJ (13)                       | 9,830                    | 72,739                                 | 326,061      | 27,330        | 435,960   | 4.62%             |
| Banc of America (11)           | 220,632                  | 81,425                                 | 16,555       | 29,083        | 347,695   | 3.68%             |
| Deutsche Bank (9)              | 35,895                   | 139,425                                | 130,764      | 35,065        | 341,149   | 3.61%             |
| UBS/Warburg (10)               |                          | 80,604                                 | 155,616      | 26,455        | 262,675   | 2.78%             |
| Bear Stearns (12)              |                          | 94,867                                 | 41,129       | 50,608        | 186,604   | 1.98%             |
| ABN Amro (14)                  | 9,666                    | 103,884                                | 32,029       | 24,382        | 168,961   | 1.79%             |
| Lazards (16)                   |                          |                                        | 163,926      |               | 163,926   | 1.74%             |
| Dresdner KB (18)               |                          | 51,005                                 | 99,529       | 13,225        | 163,759   | 1.73%             |
| Rothschild (19)                |                          |                                        | 126,093      |               | 126,093   | 1.34%             |
| BNP Paribas (15)               |                          | 53,073                                 | 31,609       | 13,961        | 98,643    | 1.04%             |
| Wasserstein Perella (-)        |                          |                                        | 78,821       |               | 78,821    | 0.83%             |
| Paine Webber (24)              |                          | 42,529                                 |              | 35,348        | 77,877    | 0.82%             |
| NatWest (-)                    | 11,710                   | 34,952                                 |              | 26,846        | 73,508    | 0.78%             |
| HSBC (25)                      |                          | 25,172                                 | 39,239       | 8,259         | 72,670    | 0.77%             |
| Fleet Boston Corp (22)         | 31,340                   | 4,474                                  | 27,271       |               | 63,085    | 0.67%             |
| Barclays (17)                  |                          | 47,232                                 |              | 11,723        | 58,955    | 0.62%             |
| CIBC (-)                       | 12,404                   | 2,534                                  | 34,047       |               | 48,985    | 0.52%             |
| Top 10 Firms                   | 798,483                  | 2,152,391                              | 3,732,461    | 772,533       | 7,455,868 | 78.97%            |
| Top 25 Firms                   | 899,498                  | 2,831,142                              | 4,692,534    | 1,018,405     | 9,441,579 | 100.00%           |
| Industry Total                 | 1,089,931                | 3,278,721                              | 2,311,834    | 1,141,059     | 7,830,545 |                   |
| Top 10 as % of Top 25          | 91.67%                   | 78.26%                                 | 71.58%       | 76.62%        | 76.96%    |                   |

a. Full credit to bookrunner only, and to named advisors to merging companies

b. Completed deals only

c. Citigroup includes Schroders

## Exhibit 8

### Global Wholesale Banking and Investment Banking Market Concentration

|                              | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Top Ten Firms</b>         |       |       |       |       |       |       |       |       |       |       |
| % of Market Share            | 40.6  | 46.1  | 56.0  | 64.2  | 62.1  | 59.5  | 55.9  | 72.0  | 77.9  | 77.9  |
| Herfindahl Index             | 171.6 | 230.6 | 327.8 | 459.4 | 434.1 | 403.0 | 464.6 | 572.1 | 715.9 | 664.0 |
| <b>Number of Firms from:</b> |       |       |       |       |       |       |       |       |       |       |
| USA                          | 5     | 7     | 5     | 9     | 9     | 9     | 8     | 8     | 7     | 9     |
| Europe                       | 5     | 3     | 5     | 1     | 1     | 1     | 2     | 2     | 3     | 1     |
| Japan                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| <b>Top Twenty Firms</b>      |       |       |       |       |       |       |       |       |       |       |
| % of Market Share            |       |       | 80.5  | 75.6  | 78.1  | 76.0  | 81.2  | 93.3  | 97.1  | 96.3  |
| Herfindahl Index             |       |       | 392.7 | 478.4 | 481.4 | 439.5 | 517.6 | 620.9 | 764.0 | 709.0 |
| <b>Number of Firms from:</b> |       |       |       |       |       |       |       |       |       |       |
| USA                          |       |       | 8     | 15    | 15    | 14    | 14    | 13    | 11    | 11    |
| Europe                       |       |       | 11    | 4     | 5     | 5     | 6     | 7     | 8     | 8     |
| Japan                        |       |       | 1     | 1     | 0     | 1     | 0     | 0     | 1     | 0     |

## Exhibit 9

### Global Wholesale Financing Leaders – January 2000

|                                    | <b>U.S.</b>                                                                                                                                                                                       | <b>European</b>                                                                                                                                                                    | <b>Asian</b>                                                                                                                                                           |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Global Wholesale Leaders</b>    | <ul style="list-style-type: none"> <li>•Citigroup</li> <li>•Chase Manhattan</li> <li>•Goldman Sachs</li> <li>•Merrill Lynch</li> <li>•JP Morgan</li> <li>•Morgan Stanley Dean Witter</li> </ul>   | <ul style="list-style-type: none"> <li>•Credit Suisse Group</li> </ul>                                                                                                             | -----                                                                                                                                                                  |
| <b>Global Wholesale Contenders</b> | <ul style="list-style-type: none"> <li>•AXA-DLJ</li> <li>•Bank of America</li> <li>•Lehman Brothers</li> </ul>                                                                                    | <ul style="list-style-type: none"> <li>•ABN AMRO – Rothschilds</li> <li>•Deutsche Bank</li> <li>•UBS Warburg</li> </ul>                                                            | <ul style="list-style-type: none"> <li>•HSBC</li> </ul>                                                                                                                |
| <b>Regional or Special Focus</b>   | <ul style="list-style-type: none"> <li>•Blackstone</li> <li>•Bear Stearns</li> <li>•Lazard Frères</li> <li>•Paine Webber</li> <li>•Prudential Securities</li> <li>•Wasserstein Perella</li> </ul> | <ul style="list-style-type: none"> <li>•Barclays Capital</li> <li>•BNP - Paribas</li> <li>•Dresdner-Kleinwort Benson</li> <li>•ING Barings/BBL</li> <li>•Robert Fleming</li> </ul> | <ul style="list-style-type: none"> <li>•Daiwa – Sumitomo Bk.</li> <li>•IBJ – Fuji – DKB</li> <li>•Jardine – Fleming</li> <li>•Nikko - SSSB</li> <li>•Nomura</li> </ul> |
| <b>Withdrawals</b>                 | <ul style="list-style-type: none"> <li>•Drexel Burnham Lambert (bankrupt)</li> <li>•Kidder Peabody (closed)</li> </ul>                                                                            | <ul style="list-style-type: none"> <li>•Lloyds</li> <li>•NatWest</li> </ul>                                                                                                        | <ul style="list-style-type: none"> <li>•Peregrine (bankrupt)</li> <li>•Yamaichi (bankrupt)</li> <li>•LTCB (failed)</li> <li>•Nippon Credit (failed)</li> </ul>         |

---