ENVIRONMENTAL DRIVERS

Information Advantages
Interpretation Advantages
Transaction cost Advantages

Risk Transformation (Swaps, Forwards, Futures, Options)

INFORMATION INFRASTRUCTURE:
Market Data
Research
Ratings
Diagnostics
Compliance

TRANSACTIONS INFRASTRUCTURE:
Payments
Exchange
Clearance
Settlement
Custody

Information Advantages
Interpretation Advantages
Transaction cost Advantages

Origination

Securities
New Issues

Loans & Advances

USERS OF FUNDS
Households
Corporates
Governments

Brokerage & Trading
Proprietary / Client-Driven

Securities
Broker/Dealers (B)

Banks (A)

Direct-connect
Linkages (C)

Distribution

Securities
Investments

Deposits &
Certificates

SOURCES OF FUNDS
Households
Corporates
Governments

Collective Investment Vehicles


Source: Federal Reserve
Higher returns for investment banks

Average return on equity of selected commercial and investment banks, 1990–2000, percent

1Average of Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch, Morgan Stanley; average does not include Lehman Brothers 1990–93 and Goldman Sachs 1990–96.

2Average of Bank of America, Bank One, Wachovia, and Wells Fargo.

Source: Compustat
Private Asset Allocation in German Households

1990 (%)
- Stocks: 31.4%
- Investment funds: 27.4%
- Others*: 20.6%
- Insurance: 12.3%
- Short-term investments with banks: 5.2%

2000 (%)
- Stocks: 26.6%
- Investment funds: 23.3%
- Others*: 27.4%
- Insurance: 12.3%
- Short-term investments with banks: 10.4%

*includes fixed interest deposits, long-term investments with banks and building society deposits

Sources: Tecis; JP Morgan
Household Asset Allocation, Japan (2001)

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocks</td>
<td>5.5%</td>
</tr>
<tr>
<td>Bonds</td>
<td>6.1%</td>
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<tr>
<td>Savings Deposits</td>
<td>11.3%</td>
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<tr>
<td>Demand Deposits</td>
<td>11.3%</td>
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<tr>
<td>Insurance &amp; Pension funds</td>
<td>25.1%</td>
</tr>
<tr>
<td>Savings Deposits (52.0%)</td>
<td></td>
</tr>
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</table>

Source: Datastream
Banks’ Share in Financial Intermediation

- Austria: 82%
- Switzerland: 78%
- Italy: 75%
- Germany: 67%
- Spain: 71%
- France: 65%
- Netherlands: 59%
- United Kingdom: 58%
- United States: 27%
ENVIRONMENTAL DRIVERS

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Collective Investment Vehicles

USERS OF FUNDS
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- Corporates
- Governments

SOURCES OF FUNDS
- Households
- Corporates
- Governments

Debt Outstanding, 2000

Source: Organization for Economic Cooperation and Development
Total Securitization Market, 1985-2001
($bn outstanding)

Source: CS First Boston (1985-95 data); Moody’s, Schroder Salomon Smith Barney, Merrill Lynch (1996-1997 YTD data)
ENVIRONMENTAL DRIVERS

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- Loans & Advances

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- Deposits & Certificates

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- Households
- Corporates
- Governments

 SOURCES OF FUNDS
- Households
- Corporates
- Governments

The US Financial Services Sector, 1950

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Minor involvement
## The US Financial Services Sector, 2001

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<td>Specialist Firms</td>
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*Check* indicates involvement.

**Selective involvement of large firms via affiliates**
## Financial Services Concentration Ratios

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<tbody>
<tr>
<td>Retail Banking</td>
<td>Percentage of total deposits held by top 30 bank holding companies</td>
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<tr>
<td>Mortgage Origination</td>
<td>Percentage of origination by top 10; ranked by value of loans outstanding</td>
<td></td>
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<tr>
<td>Total originations</td>
<td>$1.073 trillion</td>
<td>55%</td>
<td>61%</td>
<td></td>
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<tr>
<td>Credit Cards</td>
<td>Percentage of total credit issued by top five; ranked by value of outstandings</td>
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<tr>
<td>Total industry Outstanding</td>
<td>$478.7 billion</td>
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<tr>
<td>Corporate Lending</td>
<td>Percentage of syndicated loans to large corporation in which the top five players served as the agent bank*</td>
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<tr>
<td>Total syndicated loans outstanding</td>
<td>$1.9 trillion</td>
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<tr>
<td>Custody Banks</td>
<td>Percentage of total Held by top 10; ranked by global assets under management</td>
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<tr>
<td>Total world-wide Assets under Management</td>
<td>$37.24 trillion</td>
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<tr>
<td>Investment Banking</td>
<td>Percentage of wholesale origination held by top-ten firms (global)</td>
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<tr>
<td>Volume</td>
<td>$11.5 trillion</td>
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</tbody>
</table>

*The agent bank arranges a financing pool in which other banks participate.

**Sources:** First Manhattan Consulting Group; Inside Mortgage Finance; the Nilson Report; Loan Pricing Corp.; Federal Reserve; Institutional Investor
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Sources of Funds
Households
Corporates
Governments

Direct-connect
Linkages (C)

Users of Funds
Households
Corporates
Governments

Collective Investment Vehicles

The US Financial System in Global Perspective, 2000

**US Share of global:**

Population

4.5%

GDP

28.9%

**Loans:**

Banking assets

10.6%

Syndicated lending

13.5%

**Securities:**

Bond market capitalization

44.9%

Stock market capitalization

50.0%

Non-government debt issues

53.2%

Stock new issues

57.0%

Completed M&A

52.8%

**Managed assets:**

Funded pension assets

59.4%

Mutual fund assets (non-pension)

53.0%

**Intermediation:**

Loan lead-managers

77.2%

Debt & equity bookrunners

66.3%

M&A advisory

78.6%
<table>
<thead>
<tr>
<th>United States</th>
<th>Europe*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial banks</td>
<td>Banks</td>
</tr>
<tr>
<td>Savings institutions</td>
<td>Banks</td>
</tr>
<tr>
<td>Credit Unions</td>
<td>Banks</td>
</tr>
<tr>
<td>Finance companies</td>
<td>Banks</td>
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<tr>
<td>Securities brokerage</td>
<td>Banks</td>
</tr>
<tr>
<td>On-line brokerage</td>
<td>Banks</td>
</tr>
<tr>
<td>Investment banks</td>
<td>Banks</td>
</tr>
<tr>
<td>Mutual fund companies</td>
<td>Mainly affiliates of banks</td>
</tr>
<tr>
<td>Mortgage companies</td>
<td>Affiliates of banks and mortgage banks</td>
</tr>
<tr>
<td>Insurance companies</td>
<td>Insurance companies &amp; bancassurance affiliates of banks</td>
</tr>
</tbody>
</table>

* Significant inter-country differences exist among European markets.

1 Adapted from Gunter Dufey “The Blurring Borders of Banking”. 
### The European Financial Services Sector, 2001

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<td>Specialist Firms</td>
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Banks (A)

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Collective Investment Vehicles

Retail banking:
On-line banking (CS Group, Bank-24, E*loan, Amex Membership B@nking, ING Direct, Egg)

Insurance:
ECoverage (P&C) [defunct 2002]
EPrudential term and variable life

Retail brokerage:
E-brokerage (Merrill Lynch, MSDW, Fidelity, Schwab, E*trade, DJL Direct, Consors)
Alternative Services and Delivery Channels

Electronic enablers
- S1, Checkfree, Sanchez, System Access, Back-office

Financial products
- Home banking, Mortgages, brokerage, Insurance, e-Wallets, Electronic bill presentation and payment services, Checking, Business services, Credit cards

Financial institutions
- Specialized financial service providers
- Financial conglomerates
- Telecom/utility companies

Aggregators
- LendingTree.com, DollarDEX.com, AdvanceMortgage.com, Insweb.com

Source: Claessens, Glaessner, Klingebiel, World Bank, 2000
# E-Finance Penetration in Industrial Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Online banking (customers as % of bank customers)</th>
<th>Online brokerage (transactions as % of brokerage transactions)</th>
<th>E-money (number of merchant terminals per 100,000 people)</th>
<th>Business Environment Ranking, 2000-04</th>
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<tr>
<td>Industrial country average</td>
<td>8</td>
<td>27</td>
<td>427</td>
<td>8.2</td>
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<tr>
<td>Australia</td>
<td>4</td>
<td>22</td>
<td>10</td>
<td>8.1</td>
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<tr>
<td>Belgium</td>
<td>4</td>
<td>20</td>
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<td>Denmark</td>
<td>6</td>
<td>38</td>
<td>1,192</td>
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<td>Finland</td>
<td>20</td>
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<td>110</td>
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<td>France</td>
<td>2</td>
<td>18</td>
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<td>8.2</td>
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<td>Germany</td>
<td>12</td>
<td>32</td>
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## E-Finance Penetration in Industrial Countries (Cont’d)

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<th>E-money</th>
<th>Environment</th>
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<td>Japan</td>
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<td>32</td>
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<tr>
<td>Netherlands</td>
<td>15</td>
<td>40</td>
<td>1,898</td>
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<td>Norway</td>
<td>8</td>
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<td>Singapore</td>
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<td>Spain</td>
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<td>Sweden</td>
<td>31</td>
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<td>United Kingdom</td>
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<td>26</td>
<td>3</td>
<td>8.8</td>
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<tr>
<td>United States</td>
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<td>56</td>
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## Estimated Impact of E-Finance on Bank Net Interest Margins, 2005 and 2010

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<th></th>
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<td>1.66</td>
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Estimated Impact of E-Finance on Bank Net Interest Margins, 2005 and 2010 (Cont’d)

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<th>NIM 2010</th>
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<td>Spain</td>
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<td>2.62</td>
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<td>Switzerland</td>
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<td>2001</td>
<td>2.09</td>
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<td>United States</td>
<td>4.06</td>
<td>2001</td>
<td>2.91</td>
<td>1.87</td>
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</table>
Merrill Lynch 2000 Net Revenues
($26.8 billion)

Merrill Lynch Investment Management (MLIM) 9%

Private Client Group (PCG) 45%

Corporate & Institutional Client Group (CICG) 46%

Data: Merrill Lynch
U.S. Securities Firms Ranked By Number of Brokers World-Wide, as of Jan 1, 2000

Source: Securities Industry Association
Merrill and Schwab Market Capitalization, $bn

Source: Thomson Financial Datastream
Merrill Says Online Trading Is Bad for Investors

By Rebecca Buckman
Staff Reporter of The Wall Street Journal
A top executive at the nation's largest brokerage firm, Merrill Lynch & Co., wants to slap a warning label on Internet stock trading.

Merrill Vice Chairman John "Launny" Steffens, who oversees the firm's army of 14,800 stockbrokers, has waged an unusually public campaign over the last few months to dramatize what he calls the dangers of buying and selling stocks unassisted over the Internet. Such trading has exploded over the last two years, but not at Merrill. In interviews, speeches and even a trade-magazine opinion piece, Mr. Steffens has badmouthed low-priced cyber-trading, saying it encourages people to trade too much at the expense of long-term returns.

The always-blunt Mr. Steffens first made a public splash with the issue in June, when he told an audience at the PC Expo conference in New York: "The do-it-yourself model of investing, centered on Internet trading should be regarded as a serious threat to Americans' financial lives. This approach to financial decision-making doesn't serve clients well and it's a business model that won't deliver lasting value."

He has even compared discount online trading with gambling, saying that making 20 transactions a year in a small portfolio - the norm at some Internet houses - "is like going to Las Vegas and betting on black or red."

Some Industry experts contend Merrill is attacking Internet trading simply because it fears the lower-cost trading mechanism could threaten its "full-service," higher-commission business. "They've got to come up with some response, because right now the Internet is cheaper, faster and easier to use," said Bill Burnham, an online-brokerage analyst at Credit Suisse First Boston Corp. Full-service brokerage firms generally offer more planning, advice and personal attention than discount firms.

Mr. Steffens's message may also indicate that Merrill is taking a strong stance, at least for now, against low-priced Internet trading. That is in contrast to another full-service firm, Morgan Stanley Dean Witter & Co., which operates Internet unit Discover Brokerage Direct alongside its insider Dean Witter operation.

Despite some internal dissent, industry insiders say, Merrill likely won't build or buy such a venture. Merrill, like other firms, envisions something intermediate - offering more limited full-priced online trading to existing customers. "There are clear differences of opinion" inside the company, Mr. Steffens acknowledged. But "I've taken lots of tough positions in my life, and most of them have proven to be correct."

No one believes that online trading will put Merrill, a diversified, global firm, out of business. But Mr. Steffens's campaign against online trading shows that "maybe here is some fear there," says Lehman Brothers Inc. analyst Michael Sears. For full-service firms, "the conflict is obvious," notes Steven Eisman, who follows the securities business at CIBC Oppenheimer & Co. "You've got to protect your high fee broker."

The fees at Merrill, at least for customers who pay by the trade, certainly can be high. An online purchase of 100 or even 1,000 shares of International Business Machines Corp. would cost just $3.95 at Suretrade Inc., a unit of Fleet Financial Group Inc., and $2.95 at online leader Charles Schwab Corp., a discount brokerage firm. At Merrill, picking up 100 shares would cost about $100; 1,000 shares would run just over $1,000.

Merrill points out, however, that frequent traders and customers with big accounts frequently get discounts. Others eschew commissions altogether and opt for accounts that charge a percentage of assets as a yearly fee - something more and more brokers are pushing as stock trades rapidly become commodities.

Fundamentally, Mr. Steffens insists; his firm isn't threatened by bargain-basement Internet commissions. Merrill customers want investment advice, not a cheap trade, he maintains. The firm's mushrooming client base is proof of that; he adds; just as online firms are growing. Merrill will open a million new brokerage accounts this year and bring in $100 billion in new assets. The firm has about nine million accounts.
Merrill propels Wall St into internet age

John Labate and Daniel Bögl on how the way shares are traded is set to change

Wall Street goes online today. Merrill Lynch, America's pre-eminent stockbroker, is launching its long-awaited internet strategy to challenge not only rivals but the profitability of its own traditional business. And as the "Thundering Herd" — so-called because of its nationwide army of old-style brokers — stampedes on to the net, it will change the way millions of Americans trade shares.

In a few short years, online trading has come from nowhere to account for about 15 per cent of all US stock market volumes today. While mid-day day traders have captured the public's attention, in fact they represent a slim portion of the online market.

The real battle for Merrill Lynch, Morgan Stanley Dean Witter and leading online broker Charles Schwab, will be for the assets of the mainstream market.

The broad potential market for these firms is the 80m stock- and mutual-fund-owning individuals in the US, the vast majority of whom do not currently trade online.

Although there are some 12m US online retail accounts, the figure is distorted since it includes many individuals who hold multiple accounts. Clearly though, Schwab, E*Trade and a handful of other top online brokers have won the first round of the trading wars, luring eager investors to a low-cost alternative to full-service broking.

Merrill Lynch's goal now is to stem that drifting tide and to stake its claim in the broader market that is yet to log on.

Six months have gone by since Merrill first announced its online strategy, giving competitors a chance to adjust their own strategies. Morgan Stanley re-launched its own online business, integrating it into the firm's core research and advisory operations. Schwab recently said it was building an online investment bank to expand its business in initial public offering shares.

Now Merrill is making up for its tardiness with some aggression. The central plank of its new offering is self-directed trading via the internet at $29.95, in line with the fee charged by Schwab.

In addition, Merrill, under John Steffens, head of its US brokerage operations, is moving its one-stop-shop approach to financial services online, via its financial portal that will offer a range of choices for customers based on the level of service desired.

Among its online services, Merrill has included access to research, cash management services, a credit card rewards programme, e-commerce linkages and related services for insurance, trusts and savings, and home financing services.

Although Merrill had little choice but to offer an online strategy, there are clear risks ahead.

Perhaps the most obvious is the impact on earnings. Merrill's new discount trading price is a big drop from its full-price commission of $300 and even 85 per cent below the $310 estimated average commission (after discount) that the broker used to net. However, the firm has moved away from an overdependence on trading services in recent years, so that now an estimated 30 per cent of its 1999 earnings are expected to come from retail brokers, compared with 40 per cent for Paine Webber. If Merrill and the others do not make up in volume what they will no doubt lose in commissions, they will suffer.

Another risk is that Merrill is a newcomer to large-scale internet transactions.

"It is known for taking the lead in the retail space, but the online strategy isn't battle-tested," said Dan Burke, online analyst at Gomez Advisors.

At some point its online technology will be put to the test, and how it handles its first outages — systemwide breakdowns that all leading brokers have faced — will be a public relations challenge unlike any other it has encountered.

The firm also faces a challenge at the human level. The shift to the internet will change the life of Merrill's 15,600-strong army of traditional US stockbrokers, particularly those who do little more than handle trades. Large institutions still want a certain amount of human intervention for large trading blocks, but eventually much of that business will also be automated.

However, the future of the largest number of brokers, those who advise clients and recommend trading strategies, may in fact be brighter, not dimmer, as a result of the internet.

"There's always going to be a big market for financial advisers and I think that's going to be a growing market," says James Angel, finance professor at Georgetown University.

The next wave of online investors is expected to want more services, not fewer, from these companies. For many brokers, the transition to financial adviser will require a new skill set, and Merrill and other traditional firms may find it difficult to maintain their position in the Internet age.
MSDW Client Options

1. Traditional brokerage relationship at traditional price points.
2. MSDW Online account: Discounted trades at $29.95-$39.95.
3. MSDW Choice wrap account: Access to a broker + unlimited on-line ($29.95) and off-line (39.95) trading – additional fees for orders exceeding 1,000 shares. Brokers can negotiate individual charges.

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<th>Asset Level</th>
<th>Account</th>
<th>Mutual Fund/Fixed Income</th>
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<tr>
<td>$10,000,000+</td>
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Source: Morgan Stanley Dean Witter
Top E-brokerage Players, 2001

- Merrill Lynch
- Prudential Financial
- Citigroup
- PaineWebber
- CSFB Direct
- Discover Brokerage Direct
- Schwab
- E*Trade
- Fidelity Investments
“Kindly explain the asset allocation approach just once more…”
Primary capital markets:
E-based CP & bond distribution (UBS Warburg, Goldman Sachs)

E-based direct issuance:
Governments (TreasuryDirect, World Bank)
Municipals (Bloomberg Municipal, MuniAuction, Parity)
Corporates (CapitaLink, Intervest)
IPOs (W.R. Hambrecht, Wit Soundview, Schwab, E*Trade)
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<th>Spread</th>
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<td>Yes</td>
<td>VI</td>
<td>15.5</td>
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Merrill Lynch Comments on CapitaLink

- No prior history of automated Dutch auction distribution
- Lack of liquidity – Unlike underwritten issues) and Merrill will not handle any CapitaLink issues
- JP Morgan will have to provide backstop bids (denied by Morgan)
- Merrill refuses to provide any pricing service on CapitaLink issues.
- Unsuit for “Reverse Inquiry” trade as with MTN programs where
- Funding could be driven by investor interest, hence sacrifices flexibility
- Issuer gives up control of pricing
- Irrevocability of bids during auction increases investor exposure to market risk
- Narrower investor base will increase funding costs
- Undisciplined dealer participation may lead to violation of securities laws
- Not suited to swap-driven deals
- John Deere out on a limb as first company to include CapitaLink in its program, and may attract adverse publicity, especially due to boycott by bulge bracket firms.
“Most investment bankers lead a very hard life. After they take care of each other they have to take care of their friends. After that, they have to take care of people they’d like to have as friends. You can imagine that after all of this hard work there aren’t many IPO shares to go around.”

W.R. Hambrecht + Co. (2000)
Hambrecht sets an expected price range to provide a sense of potential value.

Investors bid price and number of shares.

Offering price is set a lowest at which all shares will be sold.

Those bidding above offering price get all bid-for shares at the offering price.

Those bidding at offering price will get some (pro-rata).

Those bidding below offering price get none.

Hambrecht underwrites the shares at clearing price and sells them to investors.

Hambrecht reserves the right to limit shares to anyone bidding for over 1% of the IPO.

No more than 10% of shares can go to a single bidder.

No research – only quantitative analysis of comparables.

Fees: 3-6% (vs. 6-7%).

Reduced underpricing

First deal: 1 million shares Ravenswood Winery February 1999.

Expected dealflow: 6-12 annually.

Key issue: Quality of the deals with no inv. Banker reputation on the line.
<table>
<thead>
<tr>
<th>Issue</th>
<th>Salon.com</th>
<th>Theglobe.com</th>
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<tbody>
<tr>
<td>Underwriters</td>
<td>Hambrecht &amp; Daiwa</td>
<td>Bear Stearns &amp; Volpe Brown</td>
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<tr>
<td>Amount raised</td>
<td>$26 million</td>
<td>$28 million</td>
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<td>Fee</td>
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<td>Price at u/w</td>
<td>$10.50/sh</td>
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<tr>
<td>First-day close</td>
<td>$10.07/sh</td>
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<td>T+90 day close</td>
<td>$9.56/sh</td>
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<td>Left on table</td>
<td>$0</td>
<td>$169 million</td>
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<tr>
<td>Total cost</td>
<td>$1.3 million</td>
<td>$171 million</td>
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Source: Business Week, Jan. 2000
## W.R. Hambrecht + Co.
### IPO’s 1999-2001

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<th>Year</th>
<th>Amount</th>
<th>Role</th>
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<td>Ravenswood Winery</td>
<td>1999</td>
<td>$ 11.55</td>
<td>LM</td>
</tr>
<tr>
<td>Salon.com</td>
<td>1999</td>
<td>$ 27.3</td>
<td>LM</td>
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<tr>
<td>Andover.net</td>
<td>1999</td>
<td>$ 82.8</td>
<td>LM</td>
</tr>
<tr>
<td>Nogatech</td>
<td>2000</td>
<td>$ 42.0</td>
<td>LM</td>
</tr>
<tr>
<td>Peet’s Coffee &amp; Tea</td>
<td>2001</td>
<td>$ 26.4</td>
<td>LM</td>
</tr>
<tr>
<td>Briazz</td>
<td>2001</td>
<td>$ 16.0</td>
<td>LM</td>
</tr>
<tr>
<td>Instinet</td>
<td>2001</td>
<td>$464.0</td>
<td>17% (CSFB LM)</td>
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<td>Smith &amp; Wolensky</td>
<td>2001</td>
<td>$ 45.0</td>
<td>LM</td>
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<tr>
<td>Plato Learning</td>
<td>2001</td>
<td>$ 50.0</td>
<td>Follow-on</td>
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<tr>
<td>InterCept Group</td>
<td>2001</td>
<td>$124.0</td>
<td>Follow-on</td>
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</table>

IPO Underwriting 2000 (percent)

Online 9.9
Broker-Dealers 90.1

Source: Thomson Financial Securities Data
**W.R. Hambrecht + Co.**

### OpenBook Debt Issues

<table>
<thead>
<tr>
<th>Issuer</th>
<th>Year</th>
<th>Amount</th>
<th>Role</th>
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<tbody>
<tr>
<td>Dow Chemical</td>
<td>2000</td>
<td>$300.0</td>
<td>Platform*</td>
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* First on-line auction of corporate debt.

### OpenFollow-on Secondary Equity Issues

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<thead>
<tr>
<th>Issuer</th>
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<th>Amount</th>
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* First on-line auction of corporate debt.
Goldman buys 22% stake in Wit Capital

By William Lewis in New York

Goldman Sachs, the US-based investment bank that is about to become a public company, yesterday announced the acquisition of a 22 per cent stake in Wit Capital, an investment bank specialising in initial public offerings over the internet. The acquisition comes as Goldman, along with other leading investment banks, reconsiders its own long-term internet strategy following the surge in online trading in the US.

The stake in Wit, which itself is set to become a public company later this year, is one of several Goldman has taken in internet-focused financial companies. In January, the firm announced it was co-investing with E*Trade, the online broker, and Archipelago, an off-exchange electronic stock trading network.

Wit, formed in September 1997, specialises in selling securities to individual investors. Like other internet investment banks, in recent months it has won IPO business by undercutting the fees traditional investment banks charge.

Goldman said the two companies planned to co-operate in a number of areas, including IPOs, but both Goldman and Wit will be free to work with other investment banks.

"We believe that Wit Capital is both an attractive investment for Goldman Sachs and an important part of our ongoing commitment to supporting the internet and other new technologies in our business, both through internal development and external investment," said Henry Paulson, Goldman co-chairman and chief executive.

People close to the transaction said that Goldman was paying more than $20m in cash to Wit.

Goldman will acquire stock and warrants representing about 22 per cent of Wit's common stock, not including the shares that will be issued in Wit's planned IPO.
E – Applications in Financial Services (January 2001)

Secondary Financial Markets
Forex *(Atriax [defunct 2002], Currenex, Fxall (34 Banks), FX Connect)*
Governments *(Bloomberg Bond Trader, QV Trading Systems, TradeWeb EuroMTS)*
Municipals *(QV Trading Systems, Variable Rate Trading System)*
Corporates *(QV Trading Systems)*
Government debt cross-matching *(Automated Bond System, Bond Connect, Bondnet)*
Municipal debt cross-matching *(Automated Bond System)*
Corporate debt cross-matching *(Automated Bond System, Bond Connect, Bondlink, Bondnet Limitrader, BondBook [defunct 2001])*
Debt interdealer brokerage *(Brokertec – 13 firms, Primex)*
Equities – ECNs *(Instinet, Island, Redi-Book, B-Trade, Brut, Archipelago, Strike, Eclipse)*
Equities-cross-matching *(Barclays Global Investors, Optimark)*
Research *(Themarkets.com)*
End-user Platforms:

Corporate finance end-user platforms
(CFOWeb.com – now defunct)

Institutional investor utilities

Household finance utilities (Quicken 2001, Yodlee.com)
PC-Based Personal Finance Platform

Employee Credit Union

Fidelity 401(k) Account

Citbank Mastercard Account

Chase Checking Account

Schwab Brokerage Account

Washington Mutual Home Equity Loan

American Express Account

Home PC

Quicken 2002 Platform
Prototype On-Line Personal Finance Platform

- American Express Account
- Schwab Brokerage Account
- Chase Checking Account
- Citbank Mastercard Account
- Washington Mut. Home Equity Loan
- Fidelity 401(k) Account
- Employee Credit Union
- Webservice Server
- Home PC or Other Device
ENVIRONMENTAL DRIVERS

INFORMATION INFRASTRUCTURE:
- Market Data
- Research
- Ratings
- Diagnostics
- Compliance

Transactions Infrastructure:
- Payments
- Exchange
- Clearance
- Settlement
- Custody

Information Advantages
- Interpretation Advantages
- Transaction cost Advantages

Risk Transformation (Swaps, Forwards, Futures, Options)

Origination
- Securities
  - New Issues
- Loans & Advances

Brokage & Trading
- Proprietary / Client-Driven
- Securities
  - Broker/Dealers (B)

Banks (A)

Distribution
- Securities
  - Investments
- Deposits & Certificates

Collective Investment Vehicles

Direct-connect Linkages (C)

Users of Funds
- Households
- Corporates
- Governments

Sources of Funds
- Households
- Corporates
- Governments

It is not the strongest of the species that survive, but rather the most adaptable to change.

- Charles Darwin