

Speeches

Financial Innovation and Market Innovation: What is Next? EURONEXT?

Remarks by

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Let me add my voice to the others in welcoming you to Atlanta and note with pride that we were chosen as a venue for the first U.S. symposium to discuss the upcoming consolidation and formation of the new European Stock Exchange, EURONEXT, through the combination of the Bourse de Paris, BXS-Brussels, and AEX-Amsterdam. That Atlanta was chosen is emblematic of the city's new role as a technological center where new ways of conducting commerce—and especially e-commerce and e-finance—are emerging.

The name EURONEXT also captures the extraordinary revolution and rapid pace of change taking place in commerce. Decomposing the name EURONEXT a bit further—the first syllable, *EURO*, suggests that we are looking at the beginning of a truly pan-European concept of an integrated equity and financial market place. The second syllable, *NEXT*, suggests—at least to me—that it is the next logical, but by no means the last, step in the evolution of European equity markets.

This change includes not only financial services but also brings together the Internet, technology companies, communications companies, and financial services companies to provide technologically based services, promising to change totally the way we conduct transactions and think about financial markets. Moreover, this change is coming at an accelerating pace. While some may find the pace bewildering, I must confess I envy those people who have their full careers ahead of them to help change the world's economic and financial markets.

And change they will. As the U.S. courts decide the fate of giant Microsoft, I marvel at the fact that the company at the root of the Microsoft suit, Netscape, has now twice morphed into part of the company that owns the Atlanta Braves. Moreover, the computer program Mosaic (Netscape's precursor, after which the company was named), which truly gave the average citizen with a personal computer and a modern easy access to the Internet for the first time, came out only seven years ago in 1993. Looking back, it seems much longer ago than that.

In thinking about the contribution I might make to the program, I decided to try to put today's discussion in the context of the broader process of financial and technological innovation that has been shaping the U.S. and world equity markets. I want to highlight what I think will be some of the key issues that will have to be addressed by the markets themselves, by market participants, by market regulators, and by governments in the future as they relate to the structure of the new equity markets and traditional functions equity markets have performed.

Briefly, these issues involve four key areas. First are the implications for information flows and price discovery. Second are the implications for the provision of liquidity—not only for individual issues of securities but also for market-makers and for the markets themselves—particularly in times of stress. Third are the implications for the structure of markets and the firms that operate in them. And fourth are the implications for central banks as transactions must be cleared and funds transferred for settlement in ways that ensure that these new markets are not subject to systemic risk or other shocks that might cause them to break down and disrupt the real economy. I might add that these so-called e-finance issues will be the subject of a very high-level policy/research conference on financial markets that the Federal Reserve Bank of Atlanta is sponsoring later this year.

Background—Globalization, Innovation, Change

I want to preface my remarks with a few simple but important observations. First, EURONEXT and the changes that it represents are not primarily European phenomena. Open-outcry markets are being replaced by electronic markets in the United States and elsewhere. Nasdaq merged with the American Stock Exchange, and the value of a seat on the New York Stock Exchange (NYSE) has continued to decline as institutional investors and individuals move on-line. Hence, the issues I raise are not unique to Europe or to EURONEXT.

Second, the creation of EURONEXT is not being driven by the political changes taking place within Europe itself as the European Union evolves and financial integration proceeds. This is not to say that the politics are unimportant. However, I would argue that even if there were no Maastricht treaty, we would be as likely to be here today as we are with the treaty in place. The process of financial innovation does not respect political boundaries. Companies always find ways to circumvent political and legal constraints imposed by politicians to insulate markets and to protect suppliers from outside competition if it is in their economic self interest to do so. As we have discovered here in the United States in attempting to deal with new financial innovations, politicians typically respond by ratifying developments taking place in financial markets rather than by anticipating and acting proactively. This is true with respect to most innovation, and it is especially true in financial markets because funds are so fungible.

Third, we are looking at a dynamically evolving process in which new technologies make possible reductions in costs, increased consumer convenience, and new ways of performing the informational, distribution, and transactions functions that equity markets perform. In this context, nothing is really new in terms of substance—only the form has changed. Moreover, market change is not primarily a consequence of technology. Financial markets evolved, adapted to, and circumvented regulatory constraints long before computers and related technology became widely available. Only the speed of change, and not the process itself, has accelerated.

With these brief preliminaries completed, I would like to turn to the four basic issues raised by recent developments in equity markets. Again, these are (1) the nature and structure of asset price discovery, (2) liquidity provision, (3) market and firm structure, and (4) clearing and settlement. I will illustrate these issues with examples

taken primarily from the U.S. experience, but I have no reason to believe they are any less relevant to other markets. In the course of the discussion, I will simply raise what I think are the interesting and unresolved questions and, with your indulgence, leave the answers to another time.

Price Discovery

First, with respect to price discovery, recent years have seen a proliferation of trading venues in both NYSE and other stocks. In addition to the rise of the third- and fourth-level markets in NYSE stocks, internalization of order flow is now common and Electronic Communication Networks (ECNs) are used to execute trades. As a consequence, many transactions never reach the trading floor. Trading in Nasdaq stocks also occurs on different venues without all traders having the ability to interact with the order flow or even participate. The extreme case may be the differences in the markets available to institutional investors as distinct from those available to so-called day traders. Some traders trade on and off exchanges, with or without payments for order flow, and with different access to information. Such trading is sometimes conducted according to formulae based on volatility and other criteria and is executed automatically via program trading algorithms, which might cause huge swings in volume for reasons other than changes in the fundamentals associated with the underlying stock or asset. As a result, some have concluded that markets for stock in the United States have become fragmented because of trading on isolated venues, potentially more volatile on an intraday basis, less competitive at certain times, and possibly less efficient.

Moreover, these trends raise equity and related issues concerning who has access to the information and who has the right to trade on this information for profit. As a result, some have concluded that prices have become more volatile. If volatility has increased, then what are the implications for the structure and degree of informativeness contained in price movements over the day? Does this mean that markets may have become more efficient? And how should we define efficiency—in continuous time or discrete time? If these developments do not promote efficiency, then is this a temporary issue, or does it possibly indicate that further changes in trading, other rules, or institutional arrangements may be appropriate?

Liquidity

Closely related to the issue of information and price discovery is the role that traditional exchange arrangements play in providing liquidity for individual securities and for the markets as a whole. On traditional open-outcry equity exchanges, specialists make markets and are expected to provide liquidity for the issues in which they trade. In return they receive a spread. Except during times of financial stress such as the 1987 U.S. market dip, this has worked quite well, at least for the specialists. During the 1987 episode many specialists simply walked away rather than incur capital losses. The Federal Reserve in its role of protecting financial markets against systemic risk stepped forward to provide assurances to market participants that it stood ready to provide liquidity should it be needed. By inference, this would have required commercial banks to tap the discount window if necessary to honor backup lines of credit extended to broker-dealers.

Market-makers still exist in the electronic world of today's evolving securities markets, but the question remains whether e-finance and the widespread use of Web-based transactions for financial services and other commodities change the fundamental nature of how liquidity is provided. This question has several dimensions. For example, low-cost cross-border transactions could lead to de facto dollarization (or Euroization) of many markets. Should the potential this poses for systemic risk be of concern to central bankers in their pursuit of domestic monetary policy, and/or might this require central bank coordination across "strong" currency countries?

Moreover, whether e-trading in securities markets causes more or less fragmented markets is potentially an important issue in the structure of liquidity provision in private markets and may therefore also have a significant influence on the relationship between central banks and the settlement system. More generally, e-finance may change the way individuals, armed with almost unlimited access to information, choose to manage their liquidity positions as a part of their overall portfolio of assets and liabilities. Will private providers of liquidity be able to earn a profit during normal periods in such a competitive market? Will the safety net inevitably increase should such providers become widely used by the public, and should central banks care?

Firms and Markets Structure

The discussion so far has suggested that e-finance may have important structural implications for markets, but there may be equally important implications for financial institution structure as well. A variety of regulatory changes throughout the developed economies have been made in response to market developments. One such recent change in the United States is the opening of new opportunities for financial firms to expand their geographic reach and product mix. Europe has responded more quickly than the U.S. Congress in this regard, and under the first and second banking directives provided for unrestricted cross-border activities by financial institutions. Many analysts would expect financial firms to exploit these opportunities by combining with firms in different geographic areas or subsectors of the financial system or both, and they have done just that.

The development of e-finance could also facilitate the growth of larger intermediaries. For example, many U.S. banks have argued that they needed to become larger to increase the size of their customer base in order to spread the fixed costs of developing new software across more customers. However, the development of e-finance may also undercut the development of large firms by allowing customers to assemble their own packages of financial services from the best available providers or may even eliminate the need to use traditional financial firms in some markets.

If e-finance supports the growth of larger and more complex financial firms, how should these firms be supervised, and how should supervisors handle the financial collapse of a very large, very complex financial firm? Conversely, what should be the role of central banks and prudential supervisors if e-finance promotes the development of firms focused on specific niches in finance? These firms may not define their niche in a way that fits within the current distinctions drawn between financial firms (which are typically subject to prudential supervision) and nonfinancial firms (which are typically not subject to prudential supervision). Nor may these niches match up well with the new so-called functional regulation regime that is getting so much attention today as the result of passage of the Gramm-Leach-Bliley Act.

Clearing and Settlement

Some have argued that the evolution of e-finance has the potential to increase the probability of breakdowns in payments and settlement. For example, e-finance creates the potential for investors to trade directly with other traders and bypass traditional financial intermediaries in areas such as corporate bonds and even equities. Successful debt issues have now been floated on-line, and it is becoming increasingly possible to buy equities by going to the company Web site and making an on-line purchase.

In the extreme, it is possible to conceive of the development of what I might term Napster financial markets, where Napster-type technology is used to bring buyers and sellers together on-line. For those of you who may not be totally familiar with Napster, this small computer program was developed by a nineteen-year-old student (who, by the way, is currently being sued by a number of rock bands and music distributors). Napster enables people to link up with other Napster users and freely exchange music bilaterally and in "real time." The user is able to download a song from anyone who is using Napster without going through any middleman or even

through a centralized server. This program creates a virtual market for music with no centralized exchange. Other Napster-like programs also permit the downloading of software and other data in a similar fashion—again with no centralized server.

It is not inconceivable that investors might use a similar type of program to identify the potential sellers of financial assets and to complete the transaction bilaterally without ever going through an organized exchange. Under these circumstances, the central bank might not even know when, if, where, or what markets were experiencing financial distress until somewhere down the chain an electronic transaction failed to settle, potentially setting off a chain reaction.

E-finance may also raise the costs of a breakdown by, for example, lowering the costs of trading, which may lead to new markets in traded instruments and increased trading in existing instruments. If investors become dependent upon their ability to trade through these markets, then breakdowns could become more costly. What should central banks and financial supervisors do to reduce the risk and cost of a breakdown in payments and settlement? If a breakdown does occur, what should be the role of central banks and supervisors in resolving problems in cyberspace?

These are but a few of the challenges that market makers and regulators face as traditional securities markets continue to evolve. It should be clear that many of the problems and speculations I have made are just that—speculations. The pace of change is such that we may be dealing with them sooner than we might expect. In the meanwhile, we will all be following EURONEXT developments and how market participants respond to the mechanisms being put in place.

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