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EUROPEAN CAPITAL MARKETS AND THE EMU

ALEXANDROS BENOS*

Abstract

This paper starts with a short overview of the big structural changes that have affected the European securities markets for the last ten years. Then we briefly present the essential features of some European marketplaces and we focus on the future of capital markets in Europe after the EMU of 1999. It seems that the competition between organised exchanges will be tough although the actual technologies are converging faster than expected. We finally analyse the possible effects on the bond markets with the increasing importance played by credit quality.

Key Words: European Financial markets, microstructure, EMU, bond markets, credit quality

The 1980's have been characterized by radical changes in European capital markets. Traditional intermediaries such as France's "agents de change" and the banks in Germany have seen their roles significantly reduced by the introduction of automation on the floor of the exchanges. Competition between neighbouring equity markets like Paris, London and Frankfurt has led to an increase in transactions volume and a fall in commission fees. Cross listing of securities has become the rule for big conglomerates looking for new sources of financing. Trading of domestic stock in global markets, such as the SEAQ-I in London, was actively pursued by European portfolio managers who were eager to minimise their costs of portfolio rebalancing. The spectacular development of telecommunications and information networks increased borrowers' and investors' mobility and added to the dynamics of capital flows. New technologies have widened the space of financial operations and lengthened the operational transaction time of exchanges, creating an environment favourable to innovative financing and hedging instruments.

As we reach the end of the 90s, even before the ripples of these first shocks die out, European capital markets have to undergo a second, probably more painful, adjustment. The European Monetary Union of January 1999 will redistribute the hands, once more, in this tough game. The creation of a unique currency will make many actively traded instruments (mainly present on the floors of derivative markets) obsolete. Among them, currency options and futures on local bonds. The new instruments replacing them are not very clearly defined

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yet. Furthermore, the EMU will impose a heavy burden on the standardisation of accounting practices all over the continent. Local listing may be substituted by a European blue chip electronic market, where every European citizen might have access for submitting his personal orders. On the other hand, it may not. Local markets may probably continue to coexist, each serving a different clientele, all linked through an information highway. Throughout this adjustment, earnings of firms will rise, capital costs fall and more funds come into the Old Continent.

EMU will also revolutionize European bond markets with new sectors emerging, new criteria being used to choose bond portfolios and new hedging instruments focusing on credit risk. The bond market will definitely be the hardest affected but its unregulated nature makes predictions very difficult.

We will start with an overview of the structural changes that have affected European securities markets for the last ten years. We then outline some of the EMU possible effects on organised markets in Europe, first for equity markets and then for derivative ones. Finally, we dive into the depths of the European bond markets where flexibility, imagination and performance will play the essential roles.

A. Overview of the Changes in the Structure and Dynamics of European Securities Markets

The last 15 years have been characterised by radical structural changes in European capital markets that we can summarise by the five following closely interwoven phases.

First, the progressive liberalisation of European economies together with the fall of the communist systems in Europe, stimulated the revival of sleeping stock exchanges and the establishment of new ones. In all European emerging markets like Portugal, Slovenia, Poland, Hungary, the Czech Republic, Russia, and many others, there was an urgent need for well functioning, efficient capital markets to support privatisation programs. This led to the development of a highly fragmented situation with 35 stock exchanges and 23 futures and options exchanges all around Europe. The late development of stock markets in Europe with respect to the United States in the 70s and the beginning of the 80s is mainly due to the lack of securitization in Europe. It seems these markets are catching up rapidly as desintermediation of the banking system is in progress in many countries; each year many new IPOs and a number of privatisations of government owned companies take place.

Second, major developed economies like France increasingly rely on foreign capital to finance their large budget deficits. The modernisation of the French government bond market, the innovation of OATs in 1980 and the opening of the MATIF in 1986, were motivated by the need to attract foreign institutional investors and offer them suitable, highly liquid instruments or hedging vehicles against risk.

Third, the "Big Bang" in England happened in a context of accelerated internationalisation of capital markets, and a spectacular development of telecommunications and information networks which favoured the mobility of market participants and added volume to capital flows. Traditional old-fashioned stock exchanges like Frankfurt and Paris, however, lagged in their effort to modernise their operations and adapt their regulatory framework to the rising competition from London. Consequently, SEAQ International of London succeeded initially in taking away an astounding proportion of trade volume on domestic equity from their home

markets.[1] Though these numbers were often overrated by London officials, they remain a strong indication of the commitment to client service shown by the British financial sector.[2]

In addition, cross listing of securities has become the rule for big corporations seeking new sources of financing. These firms sought to expand their investor base to their export countries, not only to have a better access to new financial markets, but also to enhance their public image as part of their communication policy. In the mean time, foreign institutional investors started to diversify their portfolios and were eager to minimise the cost of portfolio rebalancing. Thirty-one French companies were recently listed on seventeen foreign stock exchanges, and forty-six French firms are regularly traded on SEAQ International of London. Many European companies have already issued Euro-shares and ADRs either on the NYSE or the NASDAQ (especially IPOs in new technologies, etc.).

Fourth, the main exchanges in Europe reacted dramatically to this new environment. They adopted new, fully computerised trading and execution systems like CAC in Paris and IBIS in Germany. At the same time, in France, new laws were passed to stimulate competition, and allow heavily capitalised domestic and foreign financial firms to trade both as agents (brokers) and as principals (for their own accounts). In some markets, like France, floor trading was totally abandoned, while in countries like Germany, the electronic system still works in parallel to floor operations, and offers the opportunity of a direct comparison between the two in terms of efficiency. In May 1996, however, the Deutsche Börse AG decided that all stocks belonging to the DAX benchmark would now be traded only on the electronic system. As for stocks, it seems today that only electronic trading systems will survive in the near future in the EU. Even the London Stock Exchange, a long time bastion of the quote-driven structure, has introduced in late 1997 an electronic order book for its FTSE100 shares.

Last, but not least, is the phase of integration stimulated by the European Directive on Investments, which came into force in 1996 and facilitated cross-border stockbroking. Any member firm of any stock exchange in Europe is now allowed to trade on any exchange — provided it becomes a member of that exchange as well — without the obligation to set-up a local subsidiary governed by local law. For example, a German broker is regulated by the usual German authorities; in France, he is only subject to the common rules that apply to any member of the Paris Bourse, in terms of capital ratios, minimum investment, etc. No discriminatory conditions, which could penalise a foreign institution, are permitted as long as it belongs to the EU. Will this process lead to a single European exchange? We don't think so, at least in the immediate future.[3] The strong conservative attachment of exchange members to their domestic products constitutes a major obstacle. The most likely scenario for the near

[1] See Pagano, M. and A. Roëll, "Dually-Traded Italian Equities: London vs. Milan", CEPR Discussion Paper no. 564 (1991) for Italian stocks; Pagano, M. and A. Roëll, "Shifting Gears: an economic evaluation of the reform of the Paris Bourse", in *Financial Markets Liberalization and the Role of Banks*, ed. by V. Conti and R. Hamaui, Cambridge University Press (1993b), pp. 152–177 for French ones; and Schmidt, H. and P. Iversen, "Automating German Equity Trading: Bid-Ask Spreads on Competing Systems", Journal of Financial Services Research, vol. 6, no. 4 (1993), pp. 373–397 for German ones. This is not supposed to be an exhaustive list but remains a good introduction to this thorny subject.

[2] A recent study by Jacquillat and Gresse ("The divergence of order flow from the CAC market to London: Myth or Reality", unpublished manuscript, April 1995) shows that the average volume of transactions on French stocks traded on SEAQ International in 1993 was near 53%. Because of double counting due to different reporting systems in France and the UK, this number should be adjusted downward to 50%. Half of this volume, however, requires execution by London market makers in Paris to satisfy necessary inventory adjustments.

[3] So far, all pan-European co-operative ventures have failed. Pipe and Euroquote, two projects to pool market information, were abandoned thanks to the hostility of Frankfurt and London. Only Eurolist, under which a

future starts with the interconnection of various trading and information networks in Europe. Each exchange will keep its niche for local stocks and continue to play a local role, providing access to the domestic financial market for small and medium size firms. It is probable that the trading volume for blue chips will build up on the exchange(s) which will offer the best cost-effective services, quality of execution, research, etc. It might also be the case that supranational private markets like Instinet of Reuters, Trade of BZW, and more recently, TradePoint Investment Exchange in London, will gain a dominant position among big investors.[4]

The second step of the scenario will involve the linkage of the clearinghouses of various exchanges in order to improve safety, speed and quality of settlement and delivery. At some point, it is reasonable to imagine a merger of all clearinghouses in Europe. The establishment of a unique market seems a remote possibility, though regional stock markets might soon merge into a unique national stock market as has happened in Switzerland (7 regional exchanges) and Germany (8 regional exchanges).

For derivative markets, co-operation and competition are closely linked. There are many co-operative agreements in the making, mostly with non-European markets. Most of the inter-European possible mergers, widely discussed in 1995–6, were abandoned, the MATIF-DTB alliance being the best known. Exchanges have turned towards their US and Asian colleagues for talks and negotiation.[5] Given the possibility of an increasing interest from American investors for Euro-denominated products, it is hardly remarkable that US exchanges have been the recipients of so many approaches for links.

As is well known, co-operation is fruitful when the common enemy, is both "*ante portas*" (in front of the door) and clearly defined. It is not a question of being locally concentrated, since physical location is of no interest whatsoever for exchanges. With electronic trading, only the interface platform is important. This is why the current move is towards a cost-effective procedure of consolidation and a standard interface. The proposal of some derivative market officials is to create and jointly own a Central European Clearing Exchange (CECE) which will provide the technical network and allow more financial products and commodities from different Eastern European countries to be listed.

B. The present trading mechanisms of organised exchanges

The 15 member countries of the European community (EC) boast 35 stock exchanges and 23 futures and options exchanges. Of these, the markets in London, Frankfurt, Paris, Amsterdam, Milan, Madrid and more recently Vienna — contemplating its strategic location

company meeting the listing requirements for one exchange is entitled to a listing on all, is going forward. But this is hardly a single market!

[4] The latter created much stirring in the City, as the LSE had to alter its controversial 4.18 rule to enable its own members to deal on the new platform.

[5] The ties between the London International Financial Futures Exchange (LIFFE), the Chicago Board of Trade (CBOT) and the Chicago Mercantile Exchange (CME) have the highest profile, but other European exchanges have also been active in forging links. The Deutsche Terminborse (DTB) has signed an agreement with the CME for its DAX stock index futures and agreed a letter of intent with SOFFEX in Zurich. This adds the DTB to an existing alliance the Swiss have with the Chicago Board Options Exchange (CBOE). Market makers in Amsterdam would like to work with BELFOX, and install four screens in their offices encompassing the German, French, Belgian and Dutch markets.

with respect to Eastern European countries — aspire to significant roles on the European and world stages. Recent arrivals include futures and options exchanges in Italy, Spain, Austria and Portugal.

Since the nature of instruments traded on securities and derivatives exchanges is quite different, it is essential to present independently their trading systems. We first discuss the trading systems adopted for securities markets, and then turn to the organisation of the derivatives markets.

1. Stock Exchanges

Securities markets, and more specifically equity markets, have been traditionally organised either as continuous dealer markets, like the NASDAQ in the United States or SEAQ in London, or as call or continuous auction markets. France and Germany, once organised primarily as periodic call markets, have become continuous electronic auction markets. Call auctions may be used to open markets, but thereafter trading is continuous. Call markets are also used for thinly traded issues (e.g. on the Paris Bourse) or by proprietary trading systems like *Instinet* of Reuters, *Posit* of Jeffries, or the after-hours "*Crossing Network*" system of the New York Stock Exchange.

An obvious change in European equity markets is the increased computerisation of trading. Auction markets are centralised systems, and as such are more suitable to automation of trading, than dealer markets, which are set up as fragmented networks. The Paris Bourse and the German IBIS systems are fully computerised in the sense that the information systems, the routing of orders, the queuing and execution system are all automated. It is quite likely that

TABLE 1. TRADING MECHANISMS OF SOME EUROPEAN ORGANISED EXCHANGES

		Open Outcry	*Electronic Order Book*	*Auction system?*	*Dealers?*
Stock Exchanges	Paris Bourse	No	Yes (CAC)	Yes	For Blocks
	London	No	Partially (SETS)	For small trades	Yes
	Frankfurt	Yes	IBIS (for DAX stocks)	Yes	Yes
	Zürich	No	Yes (EBS)	Yes	No
	Brussels	Yes	Yes	Yes	No
	Athens	No	Yes	Yes	No
Derivative Exchanges	MATIF	Yes (Eurofloor)	Yes (NSC-VF since 1998)	Yes	No
	MONEP	Yes (on CAC 40 index)	Yes (for individual options)	Yes	Yes (stock options)
	LIFFE	Yes	Yes (APT)	Yes	No
	DTB	No	Yes	Yes	Yes (options)
	MEFF (Spain)	No	Yes	Yes	No
	SOFFEX	No	Yes	Yes	No

floor auction trading will soon disappear in Europe, and be replaced by electronic continuous markets. The London market was, until lately, the only dealer market for equity[6]. The dissemination of dealer quotes was automated, but execution of trades required direct bargaining on the telephone with the dealers. This has changed in November 1997 with the introduction of the Stock Exchange Electronic Trading Service (SETS), an electronic order book trading system, just like those on continental exchanges.

One major subject of debate today in Europe is whether a continuous dealer market works better than a continuous auction market. In a continuous dealer market like SEAQ in London, dealers continuously quote prices at which they are ready to buy or sell a limited quantity of shares. Such "quote-driven" systems are well suited to the negotiation of large trades, but lack a limit order book, and therefore fail to expose public orders to incoming market orders. On the contrary, continuous auction systems like Paris are cost effective at processing the small investors' order flow, but used to run into great difficulties in handling large blocks. Presently, both systems are trying hard to cope with their limits. London, as well as the NASDAQ with its forthcoming "*Aqcess Order System*", has made provisions for a limit order book. Auction markets are making provisions to accommodate block trading. Still, direct negotiation is impossible in an automated market. It is appropriate for processing informationless trades, but not for executing large trades which convey information. Electronic systems have still to resolve the problem of the right balance of power between professional traders and the public, and between informed and non-informed traders.

a) *Order driven systems*

Most systems in Europe are now computerised. Toronto was the first exchange in 1977 to computerise its trading system. Since then, its CATS (Computer Assisted Trading System) system has been exported to many markets like Tokyo (CORES: 1982), Paris (CAC: 1986), Madrid (1989), Brussels (1989), Sao Paulo (1990), Milan (1991), Athens (1992), as well as Hong Kong, Shanghai and Australia. The German IBIS system was independently developed and launched in 1989.

In this paper, we limit ourselves to the presentation of five markets: Frankfurt and Paris are included for obvious reasons. Brussels and Athens provide a look into the financial market of smaller countries, one of them in the developed North, the other in the developing South. Finally, the example of Zurich is studied mainly for its role in a confederated, ethnically diverse country like Switzerland. Zurich can serve as a good example of a possible future structure in unified Europe.

Paris, Brussels and **Athens** are three financial markets covering quite a large and diverse geographic and economic space, while being organised around a common structure. They all come from the Napoleonic "*bourse publique*", the public exchange operated by brokers named by the State. They still remain under the direct or indirect control of public (government — controlled) institutions. Investors can submit limit orders via intermediaries (the brokers) on an automated system. In Paris and Brussels, terminals are completely delocalised in the offices of the different brokerage houses. In Athens, the old building of the stock exchange is still full of life, as brokers must be physically present there to use their terminals.[7]

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[6] The German Interbank and large customer markets (the predecessor of IBIS II) are two smaller examples.

[7] Complete delocalisation was expected by the end of 1996 but it is not yet operational.

Frankfurt and **Zurich** present a mix of open-outcry on the floor and an automated execution system. The centre of the Frankfort WertpapierBörse is still a series of periodic auctions on the floor, but its heart lies in the automated IBIS system used by banks for their proprietary and institutional client transactions. IBIS has a strong market-making activity flavour. The Zurich Stock Exchange has been converted to a modern project of automating and linking all exchanges in Switzerland, thus creating the Swiss Exchange (ESB). We should not forget that the very successful Swiss derivatives market, the SOFFEX, was a pioneer in electronic order matching in 1988.

In an order-driven system, limit orders are automatically matched among them when a transaction opportunity appears. The trade execution program follows a price and time priority rule: an order that has a better price (lower if it is a sell order, higher if it is a buy one) enjoys a priority. If two orders offer the same price, the one who arrived first on the system is executed first. In principle, there is neither human intervention nor bilateral negotiation once orders have been submitted to the system.

The Paris New Super-CAC system is a centralised order-driven system, completely automated in all four of the usual transaction steps: the routing of the orders (RONA and COCA systems), the execution of the order (CAC system), the payment and delivery (RELIT) and the information diffusion (Chronoval, Topval, Minitel). It offers viability and execution speed against a higher execution risk. It also offers free liquidity through limit orders. For a long period, the Paris Bourse has obviously been in direct competition with SEAQ of London since approximately 25% of Paris volume for cross-listed stocks was traded in London despite liquidity being in the Bourse's favour. Given these figures, it was difficult to explain the preference for London in terms of a cost advantage, especially since the transaction tax was abandoned, the Super-CAC system was made less transparent and adjustments were implemented to facilitate block trading.[8] This outflow of orders has decreased lately: a probable explanation is partly the overestimation of volume figures by London officials, the weakening of the first-mover advantage of London and the important adjustments in Paris, especially concerning block trading.

The Brussels stock exchange is much smaller than the Paris Bourse, but their trading systems are the same. The liberalisation of the markets has increased competition and forced transaction fees to fall. Competition from London worsened the situation for many brokerage houses that decided to leave the market. From the original 300 brokers in 1990, only 10 are active in the market today. Some brokers still think this number is huge relative to the profit opportunities present in Brussels. The market is much thinner than Paris and a dozen of blue chips make most of the volume. In such circumstances, it does not come as a surprise that most dealers in Brussels are for a Single Financial Market in Europe.

The Athens Stock Exchange (ASE) turned electronic on August 17, 1992 by adapting the Toronto CATS system to the needs and wishes of the Greek capital markets. The usual telephone routing mode is used here, with an execution algorithm following price and time priorities. There are, nevertheless, two special features. First, terminals exist only on the floor. Hence, brokers must all be present on the floor to submit their orders. This makes the market livelier, more liquid and much more prone to manipulations. As a private broker on the ASE

[8] The *ex post* transparency of Paris can be avoided by trading in London.

noted, "the exchange lives out of insiders' trades and personal contacts are extremely important". In effect, low transparency of the system is counterbalanced by the exchange of information among brokers. The second feature is the complete lack of market makers. This gives a large role to block traders, since they are the only ones fuelling liquidity. They can cross their orders at a price outside the current spread.

The ASE, though thin and small, is an interesting market to study as it offers an alternative to the excess transparency of an auction market like Paris, without introducing dealers directly. Its heavy dependence on block trades and insider information for liquidity are weak points which can be remedied with a stricter legislation on insider trading, the introduction of market-making and the retraction of cash settlement. This will enhance the possibilities of trading for smaller investors, adding a healthier note to the primary capital market of a developing country.

Germany still presents a mix of open-outcry on the floor of 8 regional exchanges (the 3 main exchanges of Frankfurt, Düsseldorf and Munich, and the 5 other bourses in Hamburg, Stuttgart, Berlin, Hanover and Bremen) and an automated execution system, IBIS. The German equity market has been the last to undertake any significant institutional changes in the wave of innovations that swept European financial markets in the late 80s. Banks' domination of German capital markets is considered the main brake to the innovation of their structure. Since banks are effectively the managers of the stock exchanges, the reforms could not really take off like in other markets i.e., based on a pre-existing group of brokers/dealers. It was in 1987 when banks themselves decided to replace the middlemen by an automated system in order to cut down on costs. The creation of an electronic derivatives market, the DTB, pushed forward the need of a more flexible arrangement for trading underlying assets. The IBIS was born. But the viability of floor trading is now questioned as the three largest bourses are planning to link their trading systems in a bid to lift market liquidity and eliminate price differences in the country's best known stocks. Since May 1997 all trading in the 30 DAX blue chips stocks takes place on IBIS, which in turn makes up for 85% of all German share trading.

The IBIS (initially, Inter-Banken-Informations-System, and with its second generation renamed to Integriertes Börsenhandels- und Informations-System) started as a quotation system to support a new Interbank spot market. It served to inform participating banks of quotes on stocks used as underlying assets, stocks included in the DAX index and a number of government bonds. The actual trading was done over the telephone. Since 1991, IBIS II, its successor, is a fully automated trade execution system.

Nevertheless, IBIS II operates in tandem with the floors of the eight German exchanges. It would best be described as the European counterpart of the U.S. regional exchanges plus the NYSE. With the perspective of a full automation of German share trading, the Deutsche Börse AG considers IBIS II has reached its operational limit; it is now high time it was replaced by a new system. Discussions are in progress between DBAG and the Paris Bourse for a possible adoption of the Super-CAC by the DBAG.

b) *Quote-driven systems: SEAQ in London*

The reforms in Europe, which swept financial centres in the last decade, started with London's "Big Bang" in 1986. This reform helped London strengthen its leading position among European exchanges by a substantial gain in its cost efficiency and volume (20% up in

the first two months after the Big Bang).[9]

The LSE remained a pure dealership market using an automated quotation system, (SEAQ for domestic stocks and SEAQ International for international securities) until late 1997. Standard procedures of dealing through the telephone were in place and transparency of deals was far from perfect. It suited, however, very well institutional traders with large blocks of shares who demand immediacy and anonymity. The IDB system helped market makers "work on" large trades and achieve good execution conditions for their clients.

The existence of market makers versus a continuous call auction has widely been studied.[10] It is true that market makers in London benefited for the service of supplying liquidity through privileges like stock borrowing and the exemption of the stamp duty. The SEAQ system was close to the Anglo-Saxon mentality where trade comes from an innate willingness to take risks and invest in capital. This cultural difference, backed by the natural liquidity offered by big UK pension funds[11] but also by foreign institutional investors, boosted London for almost 10 years. Half of the turnover on the LSE is done with foreign stocks. As documented earlier, SEAQ International is still growing strong with the help of four factors: stamp duties on share deals in home markets, which institutional investors can avoid on SEAQ-I;[12] shortness of trading hours on continental bourses; the ability of market-makers on SEAQ-I to quote two-way prices for large trades and their willingness to trade big blocks; and the lack of transparency, allowing large trades to be reported later on. However, London still lags in terms of settlement costs. Some claim that its superiority among European exchanges is not due to transaction cost advantages or better liquidity but to a more efficient handling of paperwork. After the failure of the TAURUS project, however, an automated settlement system is put on the shelf. Firms are reluctant to move up and lose their competitive advantage in bureaucracy. As a Stock Exchange official put it, "custodians like the messy systems!»

It is interesting, nevertheless, to point out that despite this seemingly superior position, the LSE authorities have decided to add an electronic order book to their market and converge towards the other order-driven market in Europe. SETS delivers several benefits to its users: a wider choice of how, when and at what price to trade; a greater transparency (immediate publication, irrespective of size); lower costs by automation and less "implicit collusion" opportunities; and increased volumes (attracting smaller private investors, afraid of big jobbing costs).

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[9] Tonks, I. and D. Webb, "The Reorganization of the London Stock Market: The causes and consequences of 'Big-Bang'", LSE Financial Markets Group Special Paper no. 20 (1989).

[10] Theoretical papers include Madhavan, A., "Trading Mechanisms in Securities Markets", *Journal of Finance*, Vol. 47, no. 2, June 1992, pp. 607–641; and Pagano, M. and A. Roëll, "Auction markets, dealership markets and execution risk", in *Financial Markets Liberalization and the Role of Banks*, ed. by V. Conti and R. Hamaui, Cambridge University Press (1993), pp. 201–212. Empirical papers include Pagano, M. and A. Roell, "Trading systems in European stock exchanges: current performance and policy options", *Economic Policy*, vol. 10, April 1990, pp. 65–113; Pagano, M. and A. Roëll, "Auction Markets and Dealership Markets: What is the Difference?", *European Economic Review*, vol. 36 (1992a), pp. 613–623; and Pagano, M. and A. Roëll, "Transparency and Liquidity: A Comparison of Auction and Dealer Markets with Informed Trading", LSE Financial Markets Group Discussion Paper no. 150 (1992b) and all the references therein.

[11] Compared to France, where institutional investors hold less than 20% of the market capitalization, investing institutions in the UK hold 50% of company shares and 68% of government securities by market value. Apart from percentages, the size difference is also enormous. A single building society in the UK manages 5 trillion FRF, two and a half times the French market capitalization!

[12] To stop the migration of the order flow to London, market authorities in Europe, like in France, have already suppressed most of the stamp duties associated with large trades.

2. Futures and options markets

Competition among exchanges is even more acute for derivatives business. Here the market which first trades a given product tends to corner the business in it. The European Options Exchange (EOE) in Amsterdam was the first derivatives exchange in Europe; today it is the only one to trade a European equity-index option. London's LIFFE (London International Financial Futures Exchange) which opened in 1982 is now Europe's biggest derivatives exchange. The competition with Frankfurt's DTB (Deutsche TerminBorse) and Paris' MATIF is fierce.[13]

Altogether, there are 23 futures and options exchanges in Europe. LIFFE operates as an open-outcry system with no market makers. Crossing of trades is done in the pit while trade registration, information diffusion and clearing are electronic.[14] As part of the automation process, LIFFE studied the possibility of supplementing or replacing pit trading by a computerised execution system. Its Automatic Pit Trading system (APT) is an after hours system which simulates the outcry procedure on the floor without the physical presence of the trader.[15]

The Swiss Options and Financial Futures EXchange (SOFFEX) was founded in 1988 and its electronic framework proved very successful, as it was soon sold to other exchanges (DTB). Its development was, however, due more to a political problem than a technical or an efficiency decision. Given the federalist structure of Switzerland, the choice of a unique physical place to serve as the new derivatives market was close to impossible. An automated system delocalised trading completely and allowed participants to access the markets without leaving their office. Fragmentation of exchanges is finally at the expense of the customer and the creation of a new system is much simpler than substitution of an existing one. The EBS system in Switzerland is the correct pathway to a single order book, higher liquidity, and a "global" bourse! In a sense, the finance officials of the European Union may learn a lot from the non-members Swiss...

The DTB, the German derivatives market, was created on a blank sheet of paper since Germany had no clearly defined financial centre at the time. With no prior experience in automated trading, they opted for the purchase of an existing system from another exchange. (SOFFEX) and a platform for futures trading added, together with a "pre-opening phase" for stock options. DTB now offers a mixed system: automatic matching of orders (open book continuous double auction) supplemented with the possibility of explicitly entering, modifying or cancelling a counterpart order. In futures, there are designated market makers, which must quote prices 40% of the trading time against a partial reimbursement of their transaction, trading and settlement fees. In options, market makers must answer at least 50% of quote requests by other participants and cannot make such requests themselves.

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[13] LIFFE was able to keep a two-to-one lead in German government-bond futures contract, the BUND, over Frankfurt's DTB which started to trade this contract later in 1990. However, LIFFE lost the market for the ECU-bond futures contract to Paris' MATIF.

[14] A new options exchange was expected to exist by the end of 94 using the automatic trading integrated system and following the information of the floor.

[15] The Japanese Government Bond futures (JGB) is traded intraday (07:00 to 16:00 hours) on the APT.

C. *Effects of the EMU*

1. Competition in equity

As we have seen above (Section 1), the playing field becomes now more and more homogeneous with a tendency of exchange authorities to adapt their original systems and to abandon the fight over the supremacy of order-driven versus quote-driven algorithms. The London Stock Exchange has lost its first-mover advantage and has changed due course towards a mixed system. Continental exchanges have added flexibility in block trades to attract big pension funds from across the Atlantic. Despite such convergence, however, I think that competition between exchanges should persist. The near future is set for fierce competition *not around the trading platform itself* but around cost efficiency and service to clients. This competition will be beneficial to final customers as each market will play the cards of its comparative advantage and finally cater to different clienteles. The results of such a process are clearly seen in the fall of the spreads quoted around Europe. Exchanges, even small ones like the ASE, are now much more interested in institutionals and modernize their settlement and delivery mechanisms. New discount brokers are likely to emerge to offer the benefits of direct investment in stocks to individuals who are presently highly penalized by too high fixed entry costs and a heavy fiscal treatment of capital gains. Such developments are, still, very dependent on the continuing financial desintermedation in the Euro zone.

A unique currency means that corporate profits will be determined by productivity rather than currency. Up to now, many countries have used an offensive devaluation policy to boost companies with uncompetitive costs of production. With Maastricht's criteria, this can no longer be the case and the labour market adjustment in the EU risks being quite rude. With cut-off levels of 3% in budget deficit and 60% in public sector debt, GDP growth is endangered. This can, however, be consistent with higher real corporate profits if substitution of labour with capital continues. It is equally obvious that corporate profit rates will diverge among countries and the Euro will push prices towards those of low-cost producers.

In such an environment, the decrease in interest rates due to the end of currency risk, becomes a supporting factor for equity markets. Higher domestic investment flows and wider valuation ranges because of varying credit risk premia among countries will help European equity markets mature.[16] Continuing privatisations will serve as a political catalyst to lower labour costs and, eventually, higher growth. In this arena, the battle for these new flows will be fierce among exchanges. The apparent risk behind such competition is definitely the extreme facilitation of trades to the extent of undesirable side effects. Regulation at the local level will be both undesirable and difficult to enforce. It turns away customers and, if imposed, is ineffective in an environment without a minimum of co-operation by authorities. The financial institution will simply change its address to another country where regulatory costs are lower.

[16] Market capitalization in France, Italy or Germany is less than half GDP, compared with more than 100% in the UK and the US. The coming revolution in the pension fund industry in the EU may create a rise of fund assets by USD4 trillion (Euromoney estimate, August 1997), doubling the EU market capitalization.

In this sense, optimal regulation has to be undertaken at the EU level, where some minimum standards have to be set and followed by all participants. This is much easier in a completely automated exchange as the marketplace has then no physical meaning. The defining criteria of a modern securities market are information dissemination, settlement, clearing, the set of instruments traded, the execution algorithm and the regulation structure. Of these, information diffusion is definitely global by now. The set of instruments is very similar in the case of derivative markets. The only ones that still are strongly national are clearing, settlement and regulation. In an electronic platform, all three can be easily consolidated.

Normalisation of instruments in equity markets remains an economic and accounting objective, outside the reach of exchanges. The vast majority of equity assets negotiated today on any one of the European exchanges have a strong local colour. This is why public consensus today is towards a dual structure of execution and an improvement of local services. Smaller local structures will continue to exist for long, listing small and medium companies, and guaranteeing the role of a primary market. With no currency risk after the EMU, both portfolio diversification for institutional investors and inter-European capital raising will be easier. These effects will be reinforced by the likely convergence throughout the EU, of the accounting standards, as it will lower natural difficulties of foreign fund managers to reading annual corporate accounts. Blue chips may eventually be listed on a central electronic exchange with a common basis, like ADRs in the USA. A single satellite will then be the NASDAQ market of the EU! Finally, round the clock trading will only be necessary for very few products like interest rates, commodities and the ECU. Nothing justifies, in principle, the trading of BMW in New York or of Nestle in Tokyo, since the news affecting particular equity prices are mostly local.[17] Instead, for commodities, currencies and interest rates, the global political and economic environment plays a much more essential role. Where the trade takes place remains unanswered: where it is reported or where the trader really is?

2. Death and survival in derivatives

a) *Organized exchanges*

EMU will cause a large number of the best products of such exchanges to disappear. First, foreign exchange contracts, based on European currencies, will cease to exist with the arrival of the Euro.[18] Secondly, short-term interest rate contracts will lose most of their appeal given the unique interbank Euro rate (EURIBOR). Volume in the long-term bond contracts will also weaken. They are currently the highest volume contracts in the EU (MATIF's «notionnel», the Bund at the DTB and LIFFE and the 3 month LIBOR at the LIFFE). Most probably, all three of them will disappear together with their youngest brothers in Milan, Brussels and Madrid and a single long-term and short-term contract will replace them. The possible development of a contract on the medium term part of the yield curve may eventually

[17] This does not mean that corporations will not try to enlarge their shareholder base and promote their image abroad by listing in the NASDAQ, for example. But if the European Stock markets break away from their old fashioned practices, they may keep local firms at home. *See the Wall Street Journal Europe* article "German high-tech Firms Look to NASDAQ" on September 18, 1995.

[18] The recent introduction by the MATIF of currency options (DEM/FRF, DEM/ITL, GBP/DEM) seems somehow misplaced.

add a third one.

Short-term LIBOR and PIBOR contracts will be perfect substitutes, their only difference being the place they are quoted. With the creation of the EURIBOR index and the development of a "European funds market" similar to the American "Fed funds market", this difference will not exist any more. Liquidity will concentrate on a single contract, capable of quoting up to 10 years like the Eurodollar one in the CME. This yield curve may then serve for valuing floating legs of swaps and long term bonds.

Long-term bond contracts are more difficult to tackle. First, with the Euro, actual contracts can only serve as potential instruments of credit risk hedging and not of interest rate risk. The demand for them will certainly flounder. In the US, although the corporate bond market is extremely developed and credit risk is correctly valued, there is no futures contract on an index of yields on corporate bonds. On the other hand, no bond is expected to be issued by a central authority in the EU that could eventually serve as the underlying asset for a long-term contract. The obvious solution is, once more, a "fictitious bond", with a basket of underlying European sovereign issues. Consequently, big derivative exchanges (MATIF, LIFFE, and DTB) compete for its listing.[19] Typically, only one contract will survive, so all three exchanges are fighting to make sure they are the winners. Liquidity will go to the exchange that offers a critical mass of bonds to deliver and an underlying flexible market.[20] This last point helps MATIF to keep a relative advantage in the run. LIFFE is playing its London card and its alliances to foreign exchanges (SIMEX, CBOT, and CME). The DTB is betting on the Deutschemark's supremacy and the Central European Bank in Frankfurt.

The view that total volume will expand after EMU on the back of increased activity by participants from outside Europe, particularly the US, is gaining in popularity. The attraction for such investors will be the opportunity of trading a single liquid block of European debt and the associated hedging tools, rather than disparate sovereign issues and derivatives, as at present. Part of the fighting process is the need to have optimum global distribution, which has led to an interest in seeing their products traded in other exchanges.

It is interesting to note that the exact trading mechanism (auction vs. dealer market) is less important in derivative exchanges. Most of these exchanges have moved slowly towards an electronic platform, the MATIF being the last to suppress its floor. The effects of such a change do not, however, seem to be as clear here as they seem to be in stock markets.[21] Some recent studies show that spreads are wider in the automatic system that in floor trading, though this empirical research is only at its beginning.[22] Though the trading mechanism will play a role in this battle, the precise definitin of the product and its liquidity will be the essential criterion for concentration of volume.

No single European exchange can yet claim outright supremacy but the contenders are

[19] MATIF has today a fictitious ECU bond contract with a 6 to 10 years maturity and a 5.5% coupon rate. Its underlying is a basket of ECU denominated bonds, issued by sovereign states of supranational organisms. In the same way, we could define a basket of Euro-denominated bonds serving as the underlying of the new contract.

[20] More on this in the section below on EMU effects on bond markets.

[21] Fisher Black, in his pioneering articles on Automated Exchanges (*Financial Analysts Journal*, 1971), was the first to point out that automation would lower the costs of trading and increase the efficiency of a stocl exchange. Biais et al. (*Journal of Finance*, 1995) examine the liquidity of the French Bourse after the passage to electronic trading.

[22] Gwilym and Thomas (*Journal of Fixed Income*, June 1998) show that spreads in each contract of the LIFFE are significantly wider during the APT sessions that in floor trading hours, while Fremault Vila and Sandmann (LES/FMG Discussion Paper 218) find the same evidence for the Nikkei stock index future.

now down to three. LIFFE is strongly positioned with its existing suite of Eurocurrency interest rate products. By contrast, a worrying development for MATIF has been the gradual emigration of members to remote locations, particularly London. The comparatively high cost of maintaining such operational support in Paris means that the larger players are tending to leave only staff who needs to be in day to day contact with clients. Any competition between LIFFE and DTB will also involve the battle between open outcry and electronic trading. LIFFE and its pits have the scalpers' business. Investors go where there is enough liquidity. Professional traders prefer electronic platforms for their adaptability, for example, in hedging a swaps deal on the exchange as they negotiate the swap on the telephone with their counterparty. They are, hence, supporters of the DTB system but it will take them several years to create an impact on liquidity so large as to make end users shift between exchanges.

In this arena, smaller derivative exchanges are far from having a rosy future. Small local markets, with a strong dependence on equity contracts, will probably perish. The first victim was the Irish Futures and Options Exchange in Dublin, which closed down in August 1997. Amalgamation is the other solution among these smaller exchanges. The cost base of exchanges such as MONEP, SOFFEX and MEFF will not allow them to continue in glorious independence.

Finally, we should not oversee some primary though necessary steps. One is the globalization of clearing systems. At present, investment houses need to maintain multiple interfaces to multiple clearing systems and multiple costs. Direct feeds to the traders' own computers will bring possible savings. Other irregularities still persist behind a supposedly "global" marketplace: the need to post margin denominated in local currency, for example. Such anomalies drive users towards the OTC market with greater flexibility and lower costs.[23] Electronic trading then represents the easiest route for these smaller exchanges into creating linkages with other exchanges and launching new contracts with uncertain potential.

Competition or cooperation does not stop systems from being continuously redesigned, trying to gain the edge of a standard in a highly volatile industry. It is though much more important for such exchanges to speak with each other since they are not just software companies! They are an infrastructure of services and, as such, their competition must not stop at the competition between their members.

b) *The over-the-counter market*

In the previous section, we only looked at the centralized derivative exchanges whose volume is clearly lower than the OTC market where all sorts of tailor-made derivatives are quoted, together with the instrument of the 90s, the *swaps*. This market is based on a pre- or post-determined benchmark rate (LIBOR for the former, T4M, TAM for the latter) which represents a generic AA credit risk. The EMU will bring a harmonization of benchmark interbank Euro rates. Without credit differences, swaps markets will become perfectly fungible. Consequently, transaction volumes and liquidity will go through a period of high growth in contrast to the public debt market, which will have to wait long in order to achieve the homogeneity of swaps. Thus, it is highly probable that the private non-banking sector (insurance companies, fund managers) will prefer the swaps market that will offer them

[23] It also offers possibilities for exchanges with OTC aspirations like the Stockholm OM where a large part of the clearing is from OTC trading.

"mark-to-market" position evaluation, easy collateral and liquidity. At the same time, we will also witness an important growth of swap derivatives like swaptions, caps and floors.

On the other hand, the Euro will bring ample diversity in credit quality among issuers, even in the public debt sector (sovereign or semi-public issuers) with two major effects. Firstly, since the vast majority of domestic bonds will not be graded "riskless" anymore, pricing them will become harder. One will not be able to use the government debt yield curve to price domestic debt and the Euro swaps curve may easily fill this void, growing to be the benchmark for Euro yields. Public domestic bonds and private corporate issues will be priced relatively to the swap curve. We can very well get some negative risk premia in some cases but these do not pose any serious theoretical problem on fixed income pricing. Furthermore, a majority of issuers would like to exploit swap-arbitrage, thus reinforcing the swaps market supremacy.

Credit diversity and the considerable involvement of banks in this market guarantee a rapid evolution towards derivative instruments to hedge credit risk. Whence market risk management searches continuously for more sophisticated hedging tools, credit risk management has stayed too traditional and very heavy. The main problem is that this risk is almost exclusively a function of the issuer's intrinsic characteristics and offers low correlation with usual indices. Credit derivatives evoke a growing interest in an intensely innovative market. Their development will be constant due to the size of the bond market and the need for participants (banks, traders and corporates) to master their credit exposure.

3. Implications for bond markets

The pre-EMU bond markets in Europe are small, fragmented and heavily dependent on govenment issues. They have not left alone to develop like their Anglo-Saxon counterparts given the traditional bank intermediation in Continental Europe, the harsh fiscal environment and the significant demand for funds by central governments. The EMU is their big chance to grow and start playing an equal role in the financial needs of both the public and the private sector of their economies.

The changeover to a single currency will have an enormous effect on European bond markets by creating new liability structures, new performance benchmarks and new asset allocation models. The impact should be very positive. The macroeconomic characteristics of EMU (fiscal discipline, low interest rates, reduced currency risk) and the microeconomic effect on bond markets (low operational costs, enhanced efficiency, better liquidity) should provide a major help for suppliers and users of private debt markets. One major effect will be a larger market after EMU, with at least three new market sectors likely to emerge.

a) *New markets will emerge*

First, a new and integrated **Euro-denominated domestic market** will develop containing the existing local-currency debt of private issuers. A deeper local high-yield market should result as investors assume more credit risk to replace lost opportunities for maximizing return from interest and currency rate differentials.

Second, a wider **Eurobond market** will develop with the creation of a new Euro-denominated Eurobond sector. With the Euro as the new local currency, international and European issuers will want to tap this new market.

Third, a **Euro equivalent of the Yankee market** should come forth, consisting of

Euro-denominated debt sold by non-European issuers to European institutional investors. This should also help build a foreign high yield market since domestic markets tend to accept lower-rated foreign borrowers than do Euromarkets.

b) *ECBS, the maker of monetary policy*

Selection of participating states will not occur until May 1998, dealings in the single Euro currency not until January 1999, and full integration of the Euro not until January 2002. Sovereign governments within EMU will cede monetary policy and responsibility to the new European Central Bank (ECB) which in 2002 plans to replace local-currency member sovereign and private-sector debt with new Euro debt.

The **European Central Bank System** (ECBS) will be the maker of the European monetary policy after the EMU's Phase II. Its instruments will stay the traditional ones i.e., open-market operations to determine the floor rate at the very short end (O/N to S/1 week) and discounting / lending on asset collateral, to fix the ceiling rate. The success of such a centralized model of monetary policy needs three conditions: (a) a single interbank market for short term funds, (b) an efficient market for medium and long term Euro-denominated bonds and (c) sufficient asset inventory in the banking institutions to disseminate liquidity offered by the ESCB. The first condition is easy to satisfy given the success of the Eurocurrency market. The second one is tightly linked to the new, enormous bond market created by the EMU: its value is estimated at USD 2.6 trillion according to a J.P. Morgan study in 1996[24]. The product range will be similar to that in the US as European governments cut deficits and a wide range of corporations issue in the public bond markets for the first time. The efficiency benefits of a single currency may even lift European debt markets to a size dose to that of the US. Further down the road, pension reform in Europe could well create an investor base for debt similar to the expansion of pension and mutual funds that are the top buyers of bonds in the US. This new market will, nevertheless, not be as homogeneous as that of the US, since many issuers with different procedures, liquidities and credit standings will coexist for a while.

To be clearly independent, the ESCB will not be able to finance government institutions.[25] Furthermore, the Article 104 of the Maastricht Treaty precludes the European Central Bank (ECB) from buying sovereign bonds in the primary market. Consequently, national governments will have to go directly to the investors, like any corporate issuer up the line. The government bonds of EU states will be differentiated by pricing spreads. Member countries with bad debt ratios that are near their maximum tax-raising potential will not be considered investments of the same grade as, say, Germany. Instead, they may be treated much like low-grade corporates. Ratings assigned to (all) issuers under EMU will fully reflect their stand-alone credit characteristics. Differences in size, per capita income and public finances are paramount among economies in the EU. Consequently we expect fiscal analysis debt levels, contingent liabilities, pension obligations, etc. of a member's general government to take on greater importance in the post-EMU ratings of member sovereigns. This would include, for example, assessing regional and local governments and social security systems, unlike the current practice of focusing on the central government and its monetary and foreign exchange

[24] J.P. Morgan, European Fixed Income Research note, "*EMU: Impact on Financial Markets*", August 1996.

[25] This could eventually pose a problem once a "hard kernel" country runs an important fiscal deficit. The Fed had already to face this situation in the 80s.

rate flexibility. Tax-raising flexibility within EMU and pension spending should also take on greater relative importance. Since members will no longer have more privileged access to their own local debt markets than they will have to foreign currency debt markets, their local Euro and foreign currency obligations will probably be rated the same regardless of currency. Some countries risk therefore to be downgraded in early 1998. This would imply wider spreads, which some estimate could go out as far as 100 basis points. A counter to this possibility is the mutual guarantee of debt for EMU members, which would reduce risk and substantially narrow spreads. Politics may here prove more crucial than finance. Countries that cooperate politically with their single-currency partners may well be in a relatively strong position to seek financial assistance should the need arise. Nevertheless, if a member country, perhaps one of the smaller ones, were to take a politically divergent view, the spreads on its debt would probably widen.

c) *Governments will need to attract investors...*

In the time perspective of the bond markets, the European single currency is tomorrow. In the market of Euro-denominated sovereign bonds, the competition between national governments to attract investors has already started. One approach is complex instruments that can eventually take on a Euro denomination; another takes the plunge into a currency that doesn't yet exist. Some governments have issued parallel bonds (e.g. Austria with its 7-year Eurobond issue in FRF, convertible into a domestic ATS Bund).[26] Smaller borrowers are competing in structured deals like MTN programs. The EIB has opted for tributary bonds: four 10-year bonds with the same coupon but four different currencies (NLG, FRF, PTE and DEM), redenominated in Euro once the corresponding countries participate in the EMU. The name comes from the hope that soon these bonds will merge to flow into "one large Euro river".

So investors who have been buying European government debt will have a new decision to make: whose Euro government bonds do they buy? Among the criteria will be spread margin, liquidity, flexibility and user-friendliness. Sometimes a feeling can outweigh that last factor in a particular market like the German one, which has a particularly cumbersome issuance procedure. But it will definitely play a role in the smaller EMU members. One way for smaller countries to distinguish their debt from others is by having the most flexible debt structure. We should not, however, forget that too much flexibility kills liquidity. Liquidity may be improved by the introduction of stripping, but this may take a while to develop. Not all countries have the right investor base to provide sufficient demand. The UK strips market is widely expected to be a success because large insurance and pension firms are strong in the UK and find the zero-coupon structure useful for their payment patterns. The German strip market, by contrast, has started badly. Moreover, strips may be attractive to domestic investors, but international investors are likely to have little incentive to buy them. They will help to flatten the yield curve, reducing the borrowing costs for governments, and may help to increase domestic bond market participation, but there the benefits may end.

Finally, we get back to the user-friendliness of the paper. This encompasses both tax-exemption clauses for international investors (but most countries already offer these) and

[26] Old national currency Eurobonds with a long life to go will be left "orphans", with a dramatic loss in liquidity since they cannot be redenominated without the prior agreement of all investors.

the design of issuing systems. At present, the main European government bond markets have different issuing systems at different levels of development. The French system is the most advanced among the European states. Modernized in 1985, it is partly an electronic market and uses 20 primary market makers — the *Spécialistes en Valeurs du Trésor*. There are three types of repurchase agreement available and a strips market was introduced in 1991. Borrowing requirements are announced at the start of the year and there are specified issuance dates for each type of security. Auctions are made by sealed bid, with the SVTs permitted to bid at the average price accepted for a limited amount. By contrast, the German issuance procedure is particularly old-fashioned. Bids for German government bonds must go through several stages, all via telephone or fax, and this is a long process. A gradual upgrading process is under way, but the system is still too intricate and time consuming. Even the issuance of the Bund is clumsy.[27] The more investor friendly the procedure, the more likely it is that the debt will be bought. Putting international banks among the primary dealers will naturally increase the participation of international investors. There are still views that doubt the issuance procedure will be of importance for investors at all. An extreme view would say that what investors do not know, they do not like. Domestic demand in smaller countries within the single currency should remain, even if it is slightly diminished, despite the development of more exciting instruments than government bonds.

d) *...pushing investment banks to fight back...*

Given the above discussion, it is clear there is going to be rough competition among US and domestic investment banks, leaving only a handful of big players standing up in the break of the 21st century. The effect of EMU on the banking sector will be negative. Capital markets after EMU will be larger and more developed, with a greater range of securities and derivatives. Competition in the syndicated loan business will increase, as a broader range of borrowers go directly to the capital and money markets for funding. Banks will fight for deposits as cross-border expansion gains ground. The single currency will expand cross border competition by giving all banks immediate access to local market funds. Banks will incur serious costs in gearing their internal business systems to deal with the Euro, and they will lose the foreign exchange revenues they used to derive from cross-border trade in Europe.[28] Those expected to lose a minimum are large institutions with diversified loan portfolios, strong capital markets franchises, solid deposit bases and low dependence on cross border trade (Swiss and German banks, Societe Generale, Credit Agricole, ING Barings). Well-established small and medium-sized banks with good local underwriting skills should also do well against new entrants in maintaining their commercial lending businesses. Smaller players will become niche distributors of securities to retail customers.

Concerning the Euro yield curve, with so many sovereign borrowers it is not at all clear that one issuer's securities will provide the benchmark for all issues. Some predict segmenta-

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[27] The Bund is issued in three tranches. The 110-member Federal Bond Consortium receives 40%, another 40% are sold via auction, and the remaining 20% are kept by the Bundesbank for market support operations. The consortium receives its quota regardless of bids and its members are given a placement commission of 0.875%. The German borrowing announcements are made quarterly.

[28] During Phase II and until 2002, banks must offer accounts denominated in both their national currencies and the Euro. The British Bankers Association has estimated this cost at over USD 2 billion. Banks in EU countries whose adherence to the single currency is unsure must nevertheless start preparations, even though they are not likely to see any return on their investments in the near term.

tion by maturity with the French taking the front end due to their active BTF and BTAN markets and the Germans becoming the benchmark at the 10-year slot. For longer maturities, the French seem to take back the advantage. Others claim that the swap curve could become the trading instrument for duration purposes. There may be a sudden jump of risk premia embedded in coupon rates once exchange parities are irrevocably fixed. Issuers may try to adjust coupon rates to smooth out price fluctuations — the question of the correct rate remains nevertheless open — but in any case, derivative exchanges heavily dependent on bond trading will face some harsh consequences. It seems that this problem is similar to the one faced by banks and their assets and liabilities, so solutions must be coherent.

e) *...by attracting the private sector in the game.*

Private issuers face the same problem as public ones but their market risks to undergo a real explosion in the years to come. The present capitalization of the possible EMU-participating countries' corporate market is around USD 600 billions, much lower than the American one (USD 1,9 trillion) and without significant credit diversity (over 50% of issuers are graded AAA). This should change radically with disintermediation and the coming into force of high-yield (junk) bond issuers. In 1997, we saw the first issues of callable bonds previously disliked by most Europeans, as well as a large number of issues with embedded interest rate options. The first junk bonds denominated in a European currency have appeared too.

The market for **private high-yield European corporate bonds** promises to be one of the fastest-growing sectors of the European capital markets. Today, the exchange rate is the essential determinant of performance for most European fixed-income fund managers. In the Euro-denominated market of tomorrow, it will be credit. European fund managers are already seeking higher returns from weaker emerging market names. Strictly speaking, this evolution would have come into being even without the single currency; the Single Market Act was the generating force behind it. EMU just accelerated the process. It will give fund managers a powerful reason to devote more resources to credit.

In addition, the creation of a true single-currency bloc will enable investors to enjoy the benefits of portfolio diversification. Instead of taking exposure to a single speculative grade French software company, for example, a bond buyer might hold bonds of 10 different software companies across Europe. Then investors would be able to develop default-rate analysis for broad sector portfolios, as in the US. In this quest for the "undervalued gems", credit-research teams guiding investors through the new credit market are indispensable to big investment houses.

The merging fever in the banking sector in Europe and privatization increase the pressure by shareholders onto banks for decent returns. This will push banks to deny loans on favourable terms to "friends" and push them out into the high-yield bond market. The greater market discipline on banks will be transmitted to their clients as well. On the supply side, demographic changes will ensure the availability of funds since today's working population will invest more and save more for their retirement, expected to be a long period given the increase in the average life expectancy. The single currency will also stimulate intra-EU trade and investment since exchange risk premia included in real interest rates will disappear. Direct investment will grow and new poles of financial development (Eastern Europe) will emerge.

All this should lead to a larger corporate bond market in Europe, of which high-yield

bonds will be a significant subset. In the US, high-yield new issues comprise roughly a quarter of all new corporate bonds and accounted for around USD70 billion last year. Of that, 75% was raised by companies that were unrated, single-B, or B/BB: in other words, companies far below investment grade. "American investors look very intensively at relative credit value and they are happy to move down the credit spectrum," says a fixed income syndicate director in London. "Once we have a similar change in Europe, this market will take off very quickly." European investors are likely to start buying BBB and BB rated debt, before plunging into the truly junky end of the credit pool. Meanwhile, the US market provides more than just a theoretical model for what a European junk market might eventually look like since European investors and borrowers are already increasingly active in it.[29]

D. Prospects for European capital markets

It is unequivocal the EMU will profoundly upset current structures in the Capital Markets of Europe. The future of equity exchanges is quite clear, at elast for the short term. They will keep their local clientele for as long as private investors and pension funds remain prisoners of protectionist regulation, divergent accounting rules and a byzantine fiscal system in most countries. The long term is foggy. Will economic unification lead to a single European Bourse? Is this the best solution? What about informationally linking regional markets so that the investor could choose on his own screen the market at which to place his order? Competition will then be left to decide for the eventual winner. If there is to be a single market, the obvious candidate today is London, based on its long tradition, its head start in the process of innovation and its adaptability to investors' demands. Its latest move is the strategic alliance with the Deutsche Börse, signed in July, which will, at first, facilitate SEAQ access to German members. Then, the two exchanges will standardize rules and conventions, offer a common platform for liquid stocks and, eventually, merge around the year 2000. This is not definite, however, since cost economies and long-time tradition are not the only factors determining the geographic distribution of asset trading. The example of the US market shows that after the creation of ITS (the Intermarket Trading System), little relocation of trade among exchanges has been observed.

Derivative markets have a gloomy future in front of them. Most smaller exchanges will close down or merge with larger ones, in Europe or abroad. The three larger ones fight for the juicy interest rate contracts in Euros and, though some signs of a potential winner are now visible, the outcome is too important not to be influenced by the corridors of political power.

The bond markets will completely change with the arrival of the single currency which will expedite structural developments in the making. Credit risk will become the predominant factor of analysis for fixed income fund managers. Sectoral diversification will replace currency diversification in bond portfolios. A domestic corporate market will be born with more and more issues on the high-yield front. Three new market sectors will very probably

[29] From 1995 to 1996, European corporates launched 23 high-yield bond deals in the US, raising, USD 6.06 billion. European investors have bought a modest proportion of some of these deals and others by American high-yield issuers. Foreign buyers now hold roughly 0.5% of the USD 350 billion outstanding US high-yield market. As much as 15% of certain American high-yield deals has reached European hands according to a survey in *Euromoney*, August 1997.

come forth: (1) a huge, integrated Euro-denominated domestic market; (2) a broader Eurobond market; (3) the equivalent of the Yankee market in the EU.

It seems there is a convergence today towards a continuous, flexible, user-friendly market structure for organised markets, a quest for liquidity and an attack of administrative strongholds. Competition between all members of the financial sector will go on for some time since the EMU will be a monumental change for a set of 15 countries, each with its own language, business culture, tradition, etc. Perhaps it will increase in force for a while since another "barrier to entry" — different currencies — will cease to exist. Exchanges will have to search for other segments of the financial market to service (like individual investors) and use their technology as a marketing and strategic tool in this quest. Nevertheless, strong objections to such a liberalisation always remain and their arguments may hold water. Proponents of regulation are once more using major instabilities created by automated trading in the 80s to call for supplementary control measures. Finance, in a sense, looks like the airlines business ten years ago. There is some co-operation and a lot of competition. Once the competition becomes fierce, the safety of passengers is at stake. For financial markets, there is currently both a consensus and a political debate. The exact conclusion is still unknown. One point is certain, however. Before getting onto a paneuropean capital market, we have to leave behind old ideas and prejudice and look at things form a radical point of view.

HEC SCHOOL OF MANAGEMENT, FRANCE