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The structure of financial systems and macroeconomic instability



Daniel Gros



Karel Lannoo

1. Introduction

With the successful launch of the euro, the previously national interbank bank markets have been integrated at once in a unified euro interbank market, outstanding public debt has been redenominated in euro, trading conventions harmonised, and all EMU stock markets have started quoting in euro. This does not, however, bring Euroland at once to a US-style capital market, since it remains profoundly different from the US in at least two aspects:

- Regional differences: The terms and conditions under which enterprises finance investment and the role of intermediaries still vary considerably from country to country in the EU. This is due to deeply-rooted structural differences in legal systems, development of markets and institutions, and the role of the state.
- The importance of banks: Bank credit plays a much more important role than market-based forms of financing of investments by enterprises in the EU. Disintermediation, and institutionalisation of savings in pension and investment funds is much less developed than in the US.

These differences have acquired a special importance because financial markets are subject to important shocks at present. In this paper we focus on how the structure of the financial system influences the way in which financial market volatility impinges on the real economy. In a nutshell, a bank-based system usually absorbs high frequency shocks better than a market-based system; however, a bank-based system has other problems, especially in the area of supervision, where the framework for EMU has not yet been well defined. These two points are vividly reflected in the different responses of the US and European monetary authorities to the market developments induced by the Russian debt moratorium of August 1998. Just trying to imagine how the European supervisory and monetary authorities would have reacted to something like the LTCM collapse in the EU is a good way to see the importance of these two points.

2. US versus European systems

Monetary union creates deep, liquid and uniform money and bond markets, and increases competition between market operators. It has been widely assumed that this would contribute to securitisation and disintermediation, which has, so far, been little developed in Europe. But it is not this one-off change which will bring us at once to a US-style capital market.

The difference between the US and the continental European system is deeply rooted, and cannot only be explained solely by the lack of liquidity in the European market. Comparing the size of bank, bond and equity markets in the US and the EU, it is striking to note that to a very developed banking market in the EU stands a bond and equity market which is much less developed. The

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opposite is the case in the US (see Table 1). This asymmetry between both markets results largely from regulatory differences, the universal banking system in Europe and the segmentation of the US financial system in the 1933 Glass-Steagall Act, which separated commercial from investment banking. Although the US regime is still considered as a handicap, preventing US banks from exploiting economies of scale and scope available to foreign banks not subject to the separation, the segmentation of the US financial industry stimulated tough competition between intermediaries. It provided the environment in which capital market financing, specialisation and innovation emerged, creating the most competitive industry worldwide. According to Steinherr (1998, pp. 29 and 39-42), "in no other industry has the United States been as resolutely superior as in the financial industry. ...All significant innovations have come out of the US financial system".

Table 1. Bonds outstanding, total stock market capitalisation and bank assets

	Bond markets, ECU billion, 1997	% GDP	Equity markets, ECU billion, 1997	%GDP	Commercial bank assets, ECU billion, 1996	% GDP
EU 11	6174	109.3	2707	47.9	11583	212.3
EU 15	7903	111.6	4946	69.9	13265	195.6
US	12430	206.4	9619	159.7	3585	62.5

Source: BIS, FESE, OECD; US stock market data refer to NYSE and NASDAQ

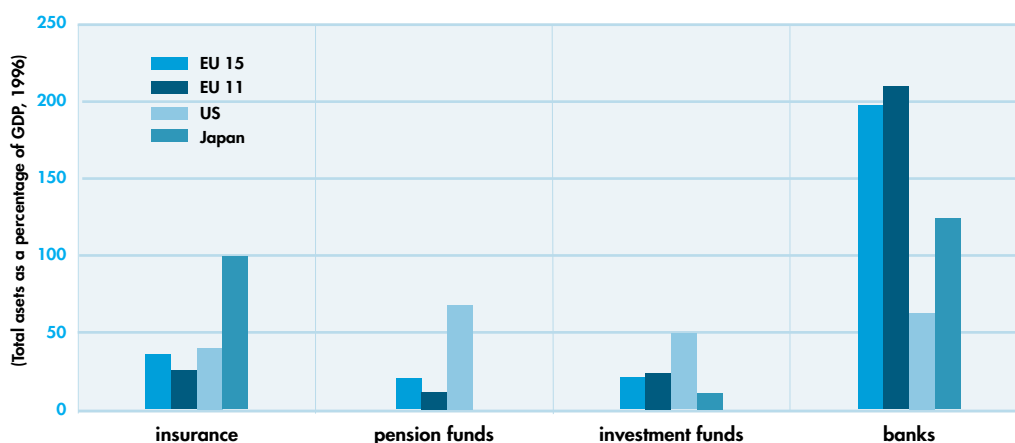
The competitive process between commercial banks, investment banks and brokers in the US stimulated a process of disintermediation and securitisation. Caps on short-term bank deposits led to the emergence of higher yielding money market mutual funds. Banks responded by transforming liabilities in negotiable certificates of deposits, on which interest could be paid without restriction. In order to get a share of the profitable loan market, investment banks stimulated corporations in securitising their loans. As a result, balance sheets of banks became disintermediated and securitised, and with this disappeared relationship banking. The growth of a deep and liquid money and capital market had deprived relationship of its implicit insurance value, and made valuations more important. The key principle of transparency, that underlies US financial, securities and accounting law, emerged.

In continental Europe, the universal banking system has remained dominant, and was taken as the model in the EU's financial market liberalisation under the Single Market programme. There was no incentive for banks to securitise debt, and capital markets remained underdeveloped. Furthermore, the regulatory framework for direct issues on capital markets left much to be desired, and differs from one country to another. For example, corporate bonds were until recently discouraged in Germany through very strict emission criteria, with, for example, the obligation to issue only in domestic currency on the local market, and unfavourable tax treatment. Governments wished to keep close control of the local debt securities market to ease public finance.

These differences in the role of financial intermediaries are reflected in the financing structure of the economy. The share of liabilities of non-financial companies owed to banks differ widely, going from 33% in the US, 50% in the UK, to about 80% in most continental European countries.

Another outcome of the segmentation of the US financial system is the strength of institutional investors. Pension and investment funds are much more important players in the US than in the EU (see Figure 1). This is, however, not only related to the regulatory framework for financial markets, but even more to the reach of the welfare state and the design of social security systems. Although "institutionalised" saving in investment funds has also started to grow rapidly in Europe, it is, unlike the US, largely intermediated by banks (1).

Figure 1. Importance of financial intermediaries in the EU, US and Japan



Source: CEA, EFRP, FEFSI and OECD.

Taken together, the elements of a more market-based system exist in the EU, though they are spread over different countries, and on an aggregate basis they are still small compared to the US market segment. For example, the following markets are well developed:

- pension funds in the UK, Netherlands and Ireland;
- investment funds in France, Spain and Luxembourg;
- mortgage bonds in Germany, Denmark and Sweden;
- corporate bonds in France and the UK.

The strength of the bank system will have a dampening effect on the development of a more market-based system.

It is, therefore, difficult to say how the manner in which a more market-based system will emerge in Europe. The strength of the bank system will have a dampening effect on the development of a more market-based system. Also many elements in the regulatory framework will need to be adapted. Issuing bonds directly on the market requires a different attitude than getting a loan from the bank. It requires more transparency, market-based accounting standards, rating services, elements that will not emerge overnight. This means a rapid converge to a US system is unlikely.

3. Bank-based, market-based financial systems, and their macroeconomic implications

As mentioned, differences in the structure of financial markets are not only important for the allocation of savings, but can also have macroeconomic implications if financial shocks are important. The

1) In continental Europe, banks have a share of between 50% and 80% of the mutual fund market, whereas in the US, this is only 8%, see ECB (1999, p. 17) and Walter (1998, pp. 17-18).

unexpected Russian debt moratorium of 1998 is a good example. It triggered large movements in asset prices and has widely been interpreted as a reminder to investors that risk might be more important than assumed beforehand. This event, which can be viewed as a generalised increase in the perception of risk by savers, has quite different consequences in the two different financial systems.

In a market-based system an increase in the perception of the riskiness of corporate debt leads to an immediate increase in credit spreads. In a bank-based system, there should not be such an immediate impact.

In a market-based system, an increase in the perception of the riskiness of corporate debt leads to an immediate increase in credit spreads, i.e., the difference in the rates paid by more risky borrowers. At an unchanged rate for riskless debt this would amount to an immediate increase in the level of interest rate faced by most corporate borrowers.

If the increase in risk aversion is very strong, corporations that formerly used this market might refuse to issue new debt because the projects they have do not yield a high enough return. To the extent that investors also perceive that they are less able to discriminate between good and bad quality borrowers than before, the usual adverse selection (or 'lemons') problem would also worsen, risk premia would increase, and, in the extreme, as shown by Stiglitz and Weiss (1981), new issues would stop. This seems to have happened briefly in the US during the autumn of 1998.

If these problems can be overcome issuance activity should continue, but at a lower volume and yields would remain higher. This is again what has happened in the US. Credit spreads settled down at a much higher level than before the Russian crisis broke out, but not unprecedented by historical standards. The long upswing in the US economy has covered the fact that 'credit crunches' have been a regular feature, and have in many cases preceded recessions. Concerns about a credit crunch are thus not new to the US (see for example OECD, 1990).

In a bank-based system, by contrast, the same exogenous increase in the perception of risk should not have such an immediate impact. Loans are on the books of banks, and not marked to market on a daily basis. Retail depositors will not withdraw their deposits, since they are hardly aware of the situation, and protected by deposit insurance. The situation is thus different for both savers and the intermediaries.

If the financial shock is large enough that the general economic outlook worsens, banks should also become more prudent in their lending. But here again there is a difference to a market-based system since banks have more information about their corporate customers and will thus be better placed to solve the 'lemons problem' mentioned above. Moreover, in relationship banking the implicit contract that binds firms into long-run partnerships implies that banks should not react immediately to temporary shocks. For all these reasons a sudden financial shock should have much less of an immediate effect in a bank-based financial system.

Nonetheless, a bank-based system could be seriously affected by a financial shock if it substantially impairs the capital of banks. Minimum ratios of total capital to risk-weighted assets were harmonised in the Basle 1988 Capital Accord so as to allow banks to ride out temporary shocks. However, if a bank lost so much that it no longer satisfies the rules on minimum capital ratios, it would be forced to cut back lending or raise new capital. As the latter is typically impossible during financial turmoil, cutting back on credit could become unavoidable in the face of serious losses.

In an even more extreme scenario, a bank whose capital falls too far could have an incentive to gamble for resurrection by taking on very risky loans, with obvious dangers of insolvency if the gamble does not pay off. Such problems should not be left to accumulate until they become unmanageable - as seems to have been the case in Japan - and it remains critical that a reliable bank supervisory system is in place.

4. The supervisory framework under EMU

The current supervisory framework in Europe has serious weaknesses.

In this context, the current supervisory framework in Europe has serious weaknesses. For example, consider the approach to crisis management. Under the present framework both the European Central Bank (ECB) and the relevant National Central Bank (NCB) can act as lenders of last resort, by lending at the overnight lending window against eligible assets. But during a financial crisis a situation may arise which requires more than just mechanically discounting eligible assets. What can be done in such a situation?

In theory, the ECB is free to do what it wants, as long as it respects the no bail-out principle: Insolvent banking institutions cannot be rescued. Several alternatives are available to the ECB's Governing Council to cope with a banking crisis: It can instruct national central banks to engage in bilateral operations with specific counterparts; it can extend the list of eligible assets; it can engage in open market operations to inject liquidity in the system, etc. In practice, however, each of these interventions is governed by a complex decision-making process. Two issues can be distinguished.

Firstly, the ECB is unlikely to command adequate information to be able to discriminate between solvent and illiquid institutions. This information is possessed by national supervisors - often the NCB. Unfortunately, national supervisors do not have the right incentives to communicate this information truthfully. When a problem arises, any regulator has a natural incentive to hide it because a problem bank is partially also a reflection of failure on the part of the regulator. The insolvent bank and the regulator thus have a joint incentive to hide the insolvency, in the hope that it will go away if external circumstances improve. In the case of EMU, these incentives are strengthened by an additional redistributive motive: To the extent that an insolvent bank is treated like an illiquid one, the cost of the insolvency is partly shifted onto the rest of the union. Thus, for both reasons, NCBs have a systematic incentive to overestimate the soundness of illiquid institutions under their jurisdiction. Since everyone is aware of these incentives, the relevant bodies of the ECB will not believe the assessments by NCBs, even when they are truthful, or at least they will discount them by some extent. Thus, although the relevant information is available inside the central banking system, it is quite possible that this information will not be fully brought to bear on the decisions concerning lender of last resort activities.

This incentive problem may be aggravated by a second issue. Even with full information, the timing of ECB decisions could be lengthy and the procedure complex. A liquidity crisis requires timely and swift reactions by the authorities, but this may be impossible under current procedures. For instance, to extend the list of eligible assets, a national central bank must request permission from writing to the ECB; to authorise bilateral operations, the Governing Council of the ECB must approve them by a qualified majority.

Increased competition in the euro-zone could highlight bank fragility.

In sum, the European System of Central Banks may be severely constrained in acting as a lender of last resort, once the function requires going beyond the routine procedure of discounting eligible assets. Admittedly, such extreme circumstances happen very rarely, but institutional design must carefully take into account even extreme and rare events. The incentive problems preventing a truthful and trustworthy exchange of information may be very acute at a time of crisis. These problems should be removed, most likely through greater centralised bank supervision at the European level (See Wihlborg, this volume, for a more detailed discussion of this issue).

5. An example of the risks facing European banking

Could European banks face a shock large enough to affect lending behaviour? On the surface, problems in the banking sector in Europe have been limited. However, increased banking competition in the euro-zone could highlight bank fragility. The profitability of EU banks, measured as profit before tax as a percentage of total assets, stands at about 0.50% for the period from 1994 to 1996, as compared to 1.75% for the US commercial banks (OECD, 1998). Some countries are doing much better than the EU average, such as British and Dutch banks, but in others, such as France, the situation is problematic, with a return on assets of only 0.2% in 1996. A concentration wave in the financial sector will not immediately change this situation: It is not by merging two weak institutions that a strong one will emerge, rather, on the contrary, it could exacerbate the "too-big-to-fail" problem.

On top of this general weakness, the exposure of European banks to emerging markets could provide a potential example of an extreme financial shock. By the end of 1997, total lending of European banks to emerging markets was more than three times higher than that of North American banks. The aggregate exposure of European banks to Asia, Latin America and Eastern Europe stood at over EUR 400 billion at the end of 1997, compared to about EUR 125 billion for North American banks (US and Canada). Moreover, lending of European banks to these regions increased strongly over the last 3 years, and also after the first signs of the emerging market crisis became apparent in July 1997.

Table 2 shows that exposure was mainly concentrated with German and French banks. German bank lending in these regions stood at EUR 240 billion, which is large, even in relation to German GDP (over 12%). However, the more appropriate scale variable is capital (here defined as own funds) because this is the base to absorb losses. On this account German banks are in a delicate position because their total exposure to emerging markets amounts to over 160% of their own funds. The next in line would be the French banks, which have also an exposure of over 100% of their own funds. The Spanish and Italian banks, by contrast, seem to have been more conservative in that their exposure is much smaller. The exposure of the Italian banks is the lowest, close to only 30% of own funds. That of the Spanish banks is somewhat higher, close to 50% of own funds, but this exposure is concentrated in Latin America.

It is clear that the total at risk for European banks is huge compared to their capital base (2). A generalised emerging market collapse could thus have wiped out the European banking system. But even the actual loss which European banks have incurred raises important questions about risk

2) For comparison, European banks have own funds of about EUR 600 billion, US (commercial) banks have about EUR 295 billion and Japanese banks only EUR 170 billion.

The losses that European banks have made on emerging markets raise important questions about risk management.

management. The best way to gauge the losses that European banks might incur in emerging-market lending, is to use the value of bonds for which market prices exist. The available indices of emerging market debt have fallen by about 30% during the summer of 1998 and then recovered strongly to about 10-15% below par. This implies that if one were to mark the loan portfolio of European banks to market, the total expected loss would have at one point been as high as EUR 140 billion and should now be around EUR 45-70 billion (3).

Table 2. European bank lending to emerging markets, EUR billion at end-1997

	FRANCE	GERMANY	ITALY	SPAIN
Offshore Banking Centres	56	119	14	10
Asia	39	44	4	2
Eastern Europe	10	45	5	1
Latin America	23	33	11	17
Total	127	241	34	30
Bank Own Funds	119	150	125	67
Total/Own Funds	107%	161%	27%	44%
Total/GDP	10%	13%	3%	6%

Source: BIS.

Thus, the expected losses on a mark-to-market basis could still amount to a considerable fraction of the capital base of European banks. While this might not make them insolvent, losses of this magnitude are certainly large enough to lead banks to restrict the availability of credit at home. Any such reaction would, of course, depend on their overall capital strength and the health of the remaining 90% of their lending operations.

6. Conclusions

Euroland differs importantly from the US financial market in two respects: it remains largely regional and banks are much more important for the financing of investment than in the US. In previous research, we noted that the forces that keep capital markets separated along national lines in Europe are rather strong, and are unlikely to be affected directly by the introduction of the euro (Lannoo and Gros, 1998). In the long run, however, it is likely that Euroland will move towards the US model as the greater integration of financial markets inter-acts with the demand for securitisation. This process would accelerate if the ECB gradually takes on a more important role in affecting the shape of financial markets.

3) This is obviously only a rough estimate. Most bonds are sovereign issues, whereas in some countries banks have lent to the private sector. Lending to banks has generally been guaranteed (ex post) by local governments, but lending to local enterprises (e.g. massively in Indonesia) has in general not been covered. The reference to the emerging market bonds can thus generate only a lower limit of the expected losses. Moreover, the available emerging market bond indices are heavily skewed towards Latin American issues and might thus not reflect adequately the losses in Asia. Additional losses could arise from proprietary trading and off balance-sheet exposure, but it is widely believed that the exposure in Europe from these two sources is limited, and any losses would have to appear quickly - perhaps immediately on quarterly accounts. This is different for the US where it is estimated that off balance sheet is as important as on balance-sheet exposure.

Bank-based systems require a strong supervisory system. A shock might not have any impact in the short run, but systemic problems might accumulate as the experience of Japan demonstrates.

Whatever the outcome, it is not appropriate to ask whether a bank-based or a market-based financial system is better. The fact that a bank-based system can cushion the economy against the fallout from financial shocks does not imply that it is superior. If the central bank is alert to this problem and reacts quickly, as the Federal Reserve did in late 1998, the short term excess reaction of a market-based system can be corrected at a minimal cost. Bank-based systems do this automatically, but they have other problems in that they require a strong supervisory system. A financial shock might not have any impact in the short run, but systemic problems might accumulate within the system as the experience of Japan demonstrates. This underscores the importance for Euroland to have a system of supervision that is adequate to contain this danger.

Thus, the system which is more conducive to macroeconomic stability depends on the quality of its institutions. In 1998, Europe was in the final transitory phase just before EMU when the responsibility for monetary policy was not well defined. Formally national central banks were still responsible and economic conditions differed importantly between the core and the periphery of the euro-11. However, fixing of the conversion rates in advance meant that *de facto* EMU had already started. Under these circumstances it would have been more difficult for monetary policy in Europe to react as quickly as in the US. Moreover, Alan Greenspan had accumulated such a prestige that he could cut interest rates without creating expectations of inflation.

Thus, both Europe and the US might have been lucky in 1998. Europe was in the transition to EMU and would have found it difficult to react quickly, but it had a financial system that did not require quick action. The US had a system that required immediate action, but it also had a central bank that was well poised to do so.

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