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Deutsch-Französisches Wirtschaftspoliti-
sches Forum/
Forum Economique Franco-Allemand

**Financial Supervision and
Policy Coordination in the
EMU**

Working Paper

**B99-11
1999**

Contents

1. Forum Economique Franco-Allemand / Deutsch-Französisches Wirtschaftspolitisches Forum	1
2. Financial Supervision in EMU	3
3. Economic Policy Coordination in EMU: Strategies and Institutions.....	36
4. Summary of the Proceedings of the Fourth Franco-German Forum	61

Forum Economique Franco-Allemand

Deutsch-Französisches Wirtschaftspolitisches Forum

Together with other members of the European Union, France and Germany are about to embark on an unprecedented cooperative venture. To be successful, Economic and Monetary Union will require a very high degree of mutual understanding among the policymakers of the participating countries. It will also require upgrading the dialogue between those who contribute to shaping the policy debates on both sides of the Rhine.

France and Germany have a long tradition of high-level dialogue and cooperation in the framework of bilateral and European institutions. But the dialogue between their civil societies does not match this spirit of cooperation. Economists and those involved in practical economic policy making from both countries in particular rarely talk to each other to find out why they may have differing visions of the functioning of Economic and Monetary Union and of the associated challenges, and even more rarely try to narrow the divergence of their views. This lack of dialogue contributes to keeping alive entrenched prejudices on the other country's supposedly hidden policy agenda.

Yet, an Economic and Monetary Union in which policy debates with a bearing on European policy choices remain confined within national boundaries would be prone to instability, because disagreements about policies would tend to end up in disputes between countries. It is, therefore, of utmost importance to foster the emergence of a genuine *European* professional discussion on major economic policy issues.

The purpose of the *Deutsch-Französisches Wirtschaftspolitisches Forum/ Forum économique franco-allemand* is to contribute to this discussion through the organisation of a series of informal meetings between French and German economists.

The Forum assembles professional economists from academia, business and the public sector. As a non-partisan institution, the Forum brings together participants from all strands of thinking about economic policy with the aim of stimulating fruitful debate. Each meeting is devoted to one or two major policy issues: employment, exchange rate policies, the organisation of economic policy in Economic and Monetary Union, its relations with non-participating countries, and the immediate policy challenges on the eve of monetary union, to name just a few. The Forum commissions papers to provide an informed basis for the discussion, but the focus will be on debate and the exchange of views, starting with reactions from discussants whose role will be to present alternative views and to frame the key issues for the debate.

The proceedings of each meeting are published in working paper format. With the present brochure, we present papers of the discussion from the Forum's fourth meeting on January 11-12, 1999. We hope that this will be a useful input into an emerging public debate on Europe's economic policies in our two countries and beyond.

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Financial Supervision in EMU

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Monetary union is triggering a broad debate on the adequacy of the supervisory framework for financial institutions. Three concerns inform this debate:

- First, strong interpenetration of financial markets as a result of EMU poses a challenge to the home country control rule in the supervision of financial institutions in the EU, and to the limited integration and cooperation in the supervision of markets.
- Second, the trend towards scale-enlarging and conglomeration in the financial sector, of which EMU itself is a partial cause, raise the question of whether the current institutional set-up for the supervision of financial institutions and markets is indeed adequate for the task.
- Third, the transfer of monetary policy making to the European Central Bank (ECB) raises the question of what role that institution will play in the area of prudential supervision and financial stability, which in large part remain member state responsibilities.

The European Central Bank has sometimes been characterised more as a monetary policy rule than as a full central bank. The ECB will have independent powers to maintain price stability, but financial stability and prudential control will remain in the hands of national authorities. It will have only an advisory and coordinating role in the prudential supervision of banks, and will promote the smooth operation of payment systems in EMU. By contrast, a full central bank performs all three functions with the aim of maintaining overall economic and financial stability.

Two sets of questions can thus be raised, related to the supervision of financial institutions on the one hand and markets on the other.

- Will EMU not require more centralised supervision, at least for banks? Will European banks and financial institutions continue to have a clearly discernible home market? Who will act as lender of last resort for truly European financial institutions?
- How will supervision of financial markets be coordinated in EMU? What degree of coordination has been achieved, and what remains to be done?

Before discussing the implications of EMU for financial supervision, we first analyse the rationale for financial supervision and examine the institutional set-up of control. We then see how this issue was approached in the EU context and what are the implications of EMU.

I. The Rationale for Financial Supervision

When discussing financial supervision, a distinction needs to be made between the supervision of financial institutions and markets. Institutions are supervised to protect consumers at the retail level and to prevent systemic risk at the wholesale level. Markets are supervised at the macro-level to examine market liquidity and exposures, at the micro-level to guarantee market integrity, by ensuring the equality of participants, transparency of operations and fairness of trades.

The functional division in the supervision of financial institutions has traditionally been based on the differences in risk factor for banks, investment firms and insurance companies. Regulation at the retail level is valid for all three sectors. Consumers are not in a position to judge the safety and soundness of the institutions with which they are dealing, because of imperfect information (agency problem), which raises a public policy issue. Systemic risk was seen as an issue for banks, to a lesser extent for investment firms, and, in principle, not for insurance companies and mortgage banks (which refinance on a long-term basis).

Banks transform liquid short-term liabilities (deposits) into illiquid long-term assets (commercial loans). The deposits can be easily withdrawn, whereas the loans are not readily marketable. A bank can afford this asymmetry as long as withdrawals by depositors take place randomly over time and assets are held to term. In case of a loss of confidence in the solvency of a bank, however, depositors are faced with a prisoner's dilemma (Goodhart et al., 1997). While they stand to gain more, collectively, by agreeing to refrain from withdrawals and allowing the bank to realise its assets, their individual interest lies in withdrawing their own deposit first, while the bank is still able to pay. Faced with this situation, a bank can only realise its assets by accepting a discount on the book value of its loans, or worse, can be confronted with a growing proportion of bad loans, which would trigger the insolvency of the bank.

The failure of one bank can have contagious effects on other banks. A run on one bank can lead to a run on all banks, or can have repercussions on the interbank market and the payment and settlement system, thereby endangering the stability of the financial system. The failure of one bank to respect its commitments will immediately affect its creditors. In such situations, central banks should stand by and be ready to inject extra liquidity into the financial system to alleviate temporary liquidity constraints on banks and prevent a crisis from becoming systemic. They should act in close cooperation with banking supervisors, to judge the credit-worthiness of a particular bank. In case the bank is judged illiquid but not insolvent, lender-of-last-resort support should be provided. Banks contribute to economic efficiency by allocating savings to productive investments, and confidence in this function should be maintained. However, excessively explicit support may produce a moral hazard, i.e. the impression that less care needs to be taken, thereby reducing the incentives for banks to manage their portfolios prudently. This was exemplified in the US with the savings and loan crisis at the end of the 1980s, when 1,142 savings and loan associations and 1,395 banks went bankrupt, mainly as a result of maturity mismatching and imprudent lending (9.1% of the total number of banks failed in the period 1980-1994, representing 9.0% of total bank assets). The Swedish financial crisis of the early 90s is a more recent example of this phenomenon.

The Basle Committee, the international organisation of banking supervisors, agreed in 1988 that a solvency ratio of 8% was the minimum required for a bank to be sound. A bank needs to have a minimum of 8% tier-one and tier-two capital of the total risk-weighted assets. At least half of the recognised capital must be in the form of core capital, i.e. common stock, non-cumulative preferred stock and disclosed reserves. The remainder, the supplementary or tier-two capital, includes items such as undisclosed reserves, general loan-loss provisions, asset-revaluation reserves, hybrid capital instruments and subordinate debt. The latter element is limited by the Basle Accord to 50% of tier-one capital. Credit exposures are assigned to five broad categories of risk, with weightings ranging from 0% to 100%. Loans to OECD countries carry a 0% weighting, claims on banks from OECD countries 20%, residential (and commercial) mortgages 50%, all other credits 100%, including claims on non-OECD countries and commercial loans. This rule was implemented, as far as the EU is concerned, in the 1989 solvency ratios directive.

A good solvency ratio, however, is a necessary but not sufficient condition to ensure a bank's soundness. The Banesto Bank in Spain went bust with a solvency ratio of 9%, but it did not make sufficient provisions for bad loans, and also fraud was involved. Much more thus comes into play: the management and structure of the bank, the internal control system, the lending procedures and loan portfolio, etc. A synthesis of such key issues for bank control was recently published by the Basle Committee, entitled *The Core Principles of Banking Supervision* (September 1997), in response to calls from the G-7 to strengthen financial control at global level. The definition of the solvency ratio itself also contains weaknesses, such as the weighting categories (a zero risk weighting for loans to *all* OECD countries, compared to 100% for all commercial loans), and the overall low level of tier one capital. It is therefore being revised by the G-10.

At the retail level, depositors of banks and investment firms are protected through deposit protection schemes. By protecting deposits, regulators reduce the likelihood of a bank run and increase the stability of the financial system. Depositor protection, however, is rather recent in Europe. It was instituted in most member states only in the 1970s, compared to 1933 in the US, and was still non-existent in Greece and Portugal when it became obligatory following the EU's 1992 deposit

guarantee schemes directive. This directive introduced a minimum level of protection on deposits of 20,000 ECU and brought it under the responsibility of the home country. In the EU, the home country, which is in charge of controlling the banks under its supervision, is also in charge of guaranteeing its depositors (albeit with a non-export provision and a top-up clause). The same principles and levels of consumer protection were recently introduced through the investor compensation schemes directive for retail clients of investment firms.

The nature of risk in the investment business is different from that in banking. The assets of investment firms (investment bankers, brokers, fund managers) mainly comprise marketable securities, which are quoted and transacted every day. The asymmetry of contracts that exists in the banking sector does not arise in the investment sector, and thus the susceptibility to a loss of confidence is less high in the latter sector. It is becoming increasingly difficult to use this argument, however. The risk profile of investment firms has changed with the practice of trading in derivative instruments, where the risk exposure can be much higher than in the primary business and can change rapidly. Investment banks are also big players in many large-value transactions in the financial system. The failure of one large investment bank or fund manager could thus impact on the whole financial system and have systemic effects, as could recently be noticed in south-east Asia, or as was argued in favour of the LTCM-rescue. Finally, investment banking has become increasingly fused with traditional banking business, certainly in Europe, where universal banking was taken as the model in the second banking directive.

In the insurance sector, the risk of systemic effects through the insolvency of one company does not occur, except for connected undertakings with large intra-group exposures. The failure of one insurance company should not lead to a run on insurance companies to withdraw policies. As compared to bank deposits, policies are illiquid claims that are transformed into liquid assets. On the life-side of the business, policies are held until a pre-defined date of maturity, and contributions are set on the basis of the mortality statistics. On the non-life side, contributions are defined on the basis of accident statistics, or other variables.

Prudential supervision in insurance is mainly a matter of controlling the asset-liability match. Liabilities of insurance companies are backed by technical reserves, mostly readily marketable assets, established to cover future claims from the policies underwritten. Rules on the prudential asset spread are defined in the EU's third insurance directives. In addition, insurance companies are required to hold a certain amount of additional resources for unexpected losses, the solvency margin, and to reinsure their claims with reinsurance companies. According to a recent Commission report, this system has worked well: over the last 20 years, only a few cases of deficiencies of insurance companies were observed in the European Economic Area (EEA). A significant proportion of these could be remedied through a capital increase or by a take-over by other insurance undertakings, thus avoiding final insolvency and winding-up.¹

Three factors could render insurance companies (and also mortgage banks) more prone to systemic risk: i) elements of consumer protection law which allow consumers to withdraw policies easily (and before maturity), or regulation which requires a guaranteed nominal rate of return on life insurance policies, as is set by legislation in most EU member states; ii) macro-economic instability, deflation and meltdown of assets, as is the case in Japan; iii) the emergence of *bancassurance* firms and integrated financial conglomerates. The two first factors, systemic risk would be provoked by bad government policies, the latter is, within a European perspective, the most critical for regulators at present. While both entities are separately authorised and controlled, supervisory authorities could be unaware of the overall risk profile of the group. The risks at group level do not necessarily equal the sum of the risks of the different entities of the group: the group might have large exposures that do not exist at the entity level. The danger of double gearing of capital or uncontrolled intra-group transactions to cover losses on the one side with gains from the other, also arises. International and European authorities are considering these problems, but no legislation exists at European level yet.²

¹ European Commission, Report to the Insurance Committee on the Need for Further Harmonisation of the Solvency Margin, COM(97)398, 24.07.97.

² The Tripartite Group, composed of banking, securities and insurance regulators, published a report on the subject in 1995; in February 1998, the Basle Committee published a report on "Supervision of Financial Conglomerates".

In banking, on the other hand, the evidence of and proneness to systemic risk is less clear-cut than before. On the basis of empirical research, Kaufman (1995, 1996) shows that there is little solid proof of systemic risk in US banking. Insolvencies at one bank have rarely caused insolvencies at others. Bank failures result from bad management and economic downturns, but banks do not fail in dominos. Shareholders as well as depositors have been able to differentiate successfully financially strong from financially weak banks. According to Kaufman, bank fragility was increased by government policies, not decreased, and has thus become an element of government failure, rather than market failures. Regulators should not concentrate on solving liquidity problems, which induce moral hazard behaviour, but focus on the risks to the macroeconomy.

Secondly, the asymmetry in the asset-liability structure is slowly diminishing, with the proportion of commercial loans to non-banks in total bank assets declining, while marketable securities are increasing. In France, Germany and the UK, the share of securities on the balance sheet doubled over the last ten years to about 20% in 1996 (OECD, 1998). The process of asset securitisation is widely expected to be further stimulated in EMU. Moreover, the ECB has also included illiquid loans in its list of eligible assets for monetary policy operations. The blurring of boundaries in the financial services sector is thus not only applicable on the product side, but also on the risk side, which has important implications for the institutional set-up of supervision.

II. The Institutional Set-Up

In several countries, the institutional structure of prudential control has become a policy issue. Increasing emphasis is being given to the general question of whether the efficiency of regulation and supervision might be influenced by a particular institutional structure. A particular structure might cause an unnecessary duplication of regulatory activity and hence impose a cost on firms and society, or it might miss some aspects of supervision altogether.

As regards banking, the discussion centres on whether banking supervision needs to be under the same roof as the central bank. The increasing tendency towards conglomeration in the financial services industry is an argument in favour of a single supervisory authority, but the differences in risk profile of the various types of business plead for the opposite. Conglomeration might also strengthen the arguments for more supervision by the objectives of regulation.

A. Central Bank or Separate Banking Supervisor

Monetary policy and banking supervisory functions are separated in one-half of the Community countries and combined in the other half. Generally speaking, the arguments in favour of combining both functions revolve around the fact that it is the central bank's role to ensure the stability of the financial system and prevent contagious systemic crises. The performance of bank supervisory and regulatory functions by the central bank should contribute to better control of overall financial stability. Through its role as lender-of-last-resort (LOLR), the central bank should, it is argued, be involved in supervision as well. At the same time, however, this raises an argument against combining both functions. For a conflict of interest might arise. The central bank's participation in bank rescues might endanger price stability and increase moral hazard. It might create competitive distortions if central bank money is allocated at preferential rates to a bank in trouble as compared to other banks. Finally, it might raise the expectation in the private sector that the central bank would be influenced by considerations of financial system stability when determining monetary policy. The central bank's reputation might then be at stake.

The fact that both regimes are equally represented in the EU shows that there are no definitive arguments for either model (see Table 3). According to Goodhart and Schoenmaker (1995), the question of the appropriate design has to be approached in the context of the particular financial or banking structure of each country rather than as an abstract problem to be solved. An analysis of bank failures over the last two decades showed there to be a much higher frequency of failures in countries with a separated regime than in those with a combined one. This should not, however, lead immediately to the conclusion that the latter regime is better.

Many other factors come into play, such as the quality of supervision, the willingness of governments to let a bank fail or the existence of oligopolies in banking. Goodhart and Schoenmaker also found a stronger likelihood of commercial banks being involved in bank rescues in a combined regime, but they see this as a receding possibility.

There is, however, a general trend among central banks to retreat from supervisory functions. This was exemplified recently in the UK by the breakaway of the supervisory functions from the Bank of England in May 1997 and the establishment of the Financial Services Authority (FSA), a mega financial supervisory authority. Several reasons can be advanced for this trend. First banking is becoming an increasingly complex business and less clearly defined. Leading banks are active in several jurisdictions as providers of a whole series of financial services. Linked to this are new developments in financial supervision, which increasingly emphasise the role of self-regulation and internal risk management in financial institutions. Finally, there is increasing acceptance that the government, not the central bank, should take responsibility for ultimate financial support. The ability of central banks to organise and co-ordinate bank rescues has been slipping, and bank rescues have become more expensive, going beyond the sums which the central bank can provide from its own resources. This was demonstrated earlier this decade in Norway and Sweden, but also more recently in France. There has consequently been no alternative but to rely on taxpayer funding, leading to more demand for political control of supervisory functions. Close co-operation between the supervisors and the central bank is required, however, since only the central bank can provide immediate liquidity to the market in case of trouble, and price stability cannot be achieved without financial stability.

The UK Financial Services Authority

After only a few weeks in office, the new Labour government announced far-reaching changes to the financial regulatory system in the UK. Several bank failures (BCCI, Barings) and fraud affairs (personal pensions) had brought increased public criticism of the UK's financial regulatory system, which was based on a mixture of statutory legislation and a quasi-private system of self-regulatory organisations. All financial supervisory tasks are now concentrated in the Financial Services Authority (FSA), a fully statutory system of regulation. According to its initiators, the reform will bring about greater coordination and consistency across different areas of regulation, simplified access to the regulator for consumers, clearer lines of accountability and greater efficiency achieved through economies of scale.

The FSA combines banking supervision (formerly belonging to the Bank of England), securities (formerly the Securities and Investment Board, SIB) and insurance regulation (formerly the Department of Trade and Industry, DTI). The reform abolished three self-regulatory organisations: the Securities and Futures Authority (SFA), the Investment Management Regulatory Organisation (IMRO) and the Personal Investment Authority (PIA). The FSA will also absorb the powers of the Building Societies Commission and the Friendly Societies Commission. The FSA has rule-making powers and cooperates with exchanges and clearing houses. It is accountable to the government and Parliament.

The Bank of England remains responsible for ensuring the overall stability of the financial system, which involves monitoring and, when necessary, intervening in the market. A Memorandum of Understanding between the Treasury, the Bank of England and the FSA divides the responsibilities of the different bodies. It establishes a standing committee between these three groups to discuss financial stability and an information sharing agreement between the Bank and the FSA.

B. Mega-financial Supervisor or Specialist Supervisors

Once the question of central bank versus separate banking supervisor is settled, a second question to be addressed is whether financial supervision should be assigned to one entity or should be determined by the type of business of the institutions under supervision. The case for the former seems obvious, and was illustrated above in the case of the UK's FSA. It presupposes that there are economies of scale (and probably economies of scope) in supervision, as well as some practical and political advantages. There is a one stop shopping for authorisations for conglomerate financial groups. Expertise is pooled and cooperation between the different functional supervisors is guaranteed. A single authority could also lead to lower supervisory fees, at least in these countries where the financial sector contributes directly to the cost of supervision.

The differences in risk profiles and in the nature of the businesses remain an important argument against a mega-supervisor, most importantly for banking as compared to the insurance business. In fact, it is doubtful that a mega-authority would be more efficient (see Goodhart et al., 1997). A mega-authority could quickly become a collection of separate divisions. Moreover, it would be a very powerful entity and could increase moral hazard, i.e. it could reduce the incentive for financial institutions to prudently manage their business. The public perception could emerge that the whole financial sector is under control, and the loss of confidence as a result of the failure of one institution would be even larger.

A specialist supervisor could be closer to the business, more specialised and better aware of the problems of the sector. It could also be more effective and easier to manage. Two other arguments stand out: increasing specialisation in supervision and interagency competition. As a result of new developments in financial supervision, increasing emphasis is being given to market discipline in risk control. This move originates from the realisation that formal rules are increasingly cumbersome tools to capture market risk, since a bank's risk exposure can change very quickly with its investments. Under models, the task of the supervisory authorities is to set the risk parameters and validate the statistical models. Secondly, a single

authority suppresses competition among regulatory agencies. Where several agencies work side by side, institutional competition can work and create incentives for each agency to work efficiently (von Hagen, 1998).

The Case for	
A Mega-financial Supervisor	Specialist Supervisors
<ul style="list-style-type: none"> • one-stop shopping for authorisations • pooling of expertise and economies of scale (certain units could be merged, e.g., authorisations) • lower supervisory fees (?) • adapted to evolution in financial sector towards financial conglomerates • cooperation between type of financial business guaranteed; one lead supervisor for conglomerates • no regulatory arbitrage, regulatory neutrality • more transparent to consumers 	<ul style="list-style-type: none"> • more effective and easier to manage • clearly defined mandates • more adapted to the differences in risk profiles and nature of the respective financial business, clear focus on objectives and rationale of regulation • closer to the business • better knowledge of the business • lower profile • stimulates interagency competition

An overview of financial sector supervision in the EU and the rest of Europe shows that three EU countries (Denmark, Sweden and the UK) as well as Norway have a mega-financial services authority. In some of these countries (as also recently in Japan and South-Korea), integration of supervision resulted from important financial sector bankruptcies or bail-outs. In Belgium, the Netherlands and Ireland, the creation a mega-authority is on the political agenda or close to be completed. In the other countries, a broad mixture of systems exists, ranging from separate supervisors to combined banking-and-securities or combined securities-and-insurance supervisors (see Table 4).

To complete the overview, it should be noted that a varying degree of institutionalised self-regulation exists in the financial sector in the EU. It was clear in the former supervisory regime in the UK, with the Self-Regulatory Organisations (SRO's) SIB, IMRO and SFA (see Box 1). Self-regulation in the financial sector is most widespread in the area of securities supervision, where the powers exercised by the stock exchange as compared to the statutory supervision by the securities commission differs importantly across EU countries, and distorts rapid comparisons.

The discussion of mega versus specialist regulator often bypasses the key issue, namely, the exchange of information between the different supervisors and the appointment of a lead supervisor. As the problem also rises at the international level, the emergence of financial conglomerates calls for a good exchange of information between the specialist supervisors concerning the risk exposure in the different parts of the group and agreement on a "lead supervisor", i.e., an authority that will take final responsibility for supervising the group. There is no guarantee that a mega-authority will ease this process. To quote a Bank of England official: "It is tempting to think that all regulatory questions can be resolved by the creation of a single regulator. Even with everything under one roof, regulatory problems can be resolved efficiently only by close cooperation between regulators, whether they wear different institutional labels or simply different divisional labels within the same regulatory institution".³ Different entities with clearly defined responsibilities might be as effective.

C. Supervision by Objective

A possible outcome of the conglomeration trend is that supervision will become more objective-driven, since the functional divisions of the business will be increasingly difficult to make. As the differences in risk profiles in the financial sector become less clear to distinguish, and also risk management within large groups has converged across the bank and non-bank activities, supervision should adjust accordingly, and tilt towards a horizontal model, driven by objectives of regulation.

³ J. Footman, official of the Bank of England, quoted in Goodhart et al., 1997.

Financial supervision could be carried out separately by one agency for systemic stability, a second for prudential supervision, and a third for consumer protection and conduct-of-business considerations. Conduct-of-business supervision looks after transparency, disclosure, fair and honest practices, and equality of market participants. The “stability” agency should concentrate on systemic problems, the prudential agency controls the solvency and soundness of financial institutions and enforces depositor protection. Such structure was instituted in Australia, further to the Wallis Committee of Inquiry (1997). The Australian Prudential Regulatory Authority (APRA) supervises financial institutions on prudential grounds, the Reserve Bank of Australia looks after systemic stability and provides liquidity assistance, and the Australian Securities and Investment Commission (ASIC) controls market integrity and conduct-of-business rules. APRA and ASIC report to the Treasury. Some EU countries have elements of an objective-driven system of supervision. In Italy, for example, the Banca d’Italia is in charge of controlling financial institutions on financial stability and prudential grounds, the CONSOB enforces conduct of business rules for the banking and securities industry.

A schematic overview of the objectives of supervision and their importance per type of financial business is given below. Banking and securities are given as one, in view of the universal banking model in Europe. Systemic risk is considered to be of a lesser problem in insurance than in banking and securities business. Control of solvency is equally unimportant for both sectors. An advantage of supervision by objective is that a distinction can be made between retail and wholesale business in the banking and securities sector, but probably as well in insurance. The asymmetry of information and the implications of market failures are much greater in the retail sector, as will be the demand for consumer protection.

From this point of view, it could be argued that the wholesale business would certainly not be better off under a single authority, contrary to what is often asserted. The result of a single supervisory authority would be that the different objectives of supervision are merged and later disappear which could ultimately lead to more regulation, including for the wholesale business. This fear was already raised in

recent reports on the UK's FSA, since the distinction retail/wholesale had disappeared in the draft financial services and markets bill (July 1998).⁴

Table 1. An Institutional Framework for Financial Market Control

<i>Type of Business/ Objective of Supervision</i>	Banking – Securities		Insurance
Systemic Risk	Xx		x
Prudential (solvency control)	Xx		xx
Consumer Protection/ Conduct of Business	retail xx	Wholesale x	xx

Note: xx = very important; x = of lesser importance.

III. The Implications of EMU and the role of the ECB

EMU should lead to a further quantum step in the integration of European financial markets. Notwithstanding 5 years of single market, financial markets have remained fairly isolated. Thus far, the single-market programme in financial services has not led to more convergence in the pricing of financial services in EU member states, as cross-border surveys for banking and insurance services prove.⁵ Different currencies have kept the local markets protected from foreign competition. Furthermore, a strong home bias can be noticed. Public debt is largely issued on the local market and is domestically held. Institutional investors are strongly biased towards the local market and are not internationally diversified. Cross-border banking penetration is still very limited. According to recent data, only 4.25% of the loans and 6.2% of the liabilities of financial institutions to non-banks were cross-border in 1996 in the five largest EU countries (White, 1998). This home bias is confirmed in an analysis of balance sheets (1997) of European banks with global ambitions, such as

⁴ See Clifford Chance, 1998.

⁵ See for example: European Commission (1997), *The Single Market Review: Credit Institutions and Banking*, Subseries II, Volume 3, Kogan Page: London.

ING, ABN-AMRO or Deutsche Bank. In each case, 50% or more of the income and profits are generated in the local market, while the European share is still limited.

The EU regulatory framework, which is based on the system of home country control, is adapted to this situation of limited cross-border activity. The home country supervisors are in charge of controlling the operations of the financial institution throughout the Community. The home country would also be in charge of organising rescue operations for its domestic banks, be it via liquidity support by the central bank, with assistance of other commercial banks, or, if necessary, with government funds. In case the latter route is followed, it will need to comply with the EU's state aid rules.

The limited ECB mandate is in line with the single market framework, and coincides with the trend of retreat of supervisory functions in central banking. Involvement of the ECB in bank supervision could force it to assist banks in trouble, which both could be difficult to reconcile with the task of maintaining price stability and could compromise its independence. More centralisation of functions than those essentially required for the execution of joint monetary policy would also have been difficult to realise, as it went against the subsidiarity principle. Bank supervision can be better executed at the local level, because of the availability of specific expertise of the local market and the limited integration of European financial markets.

But will this framework face EMU? Monetary union will bring great change in the structure of European financial markets. The euro is the domestic currency in 11 member states. Competition will increase, margins will go down, and scale increases will be required by banks and financial institutions to remain competitive. This is anticipated by the financial sector in the current restructuring and rationalisation process, which often crosses national and sectoral boundaries. Assets will be held more cross-border in EMU. Since all public debt is denominated in euro, and currency matching rules in insurance regulation become meaningless, fixed income investments will be spread over debt of different countries, which would also be prudentially sound, and yields will be measured as compared to a euro bond index. Returns on equity investments will be measured against euro equity indexes. Financial market integration can thus be expected to make a quantum step.

Stronger competition in EMU could intensify bank fragility, but the cushions which European banks have are limited. Average profitability of European banks is low, as compared to US commercial banks. Return on assets of all European banks, measured as profit before tax as percentage of total assets, stands at about 0.50%, as compared to 1.75% for the US commercial banks (OECD, 1998). Some countries are doing much better than the EU average, such as the UK and Dutch banks, but this is rather exceptional. Big mergers and acquisitions could aggravate the “too big to fail” problem. Also supervision will thus need to make a huge step forward.

A first reaction to this situation is to step-up cooperation between supervisors and central banks at the European level. Strong communication lines should be established between supervisory authorities at national and international level to aggregate exposures of financial groups and exercise consolidated supervision. The present system of supervisory coordination, based on bilateral memoranda of understanding, risks to miss certain elements in the picture of European-wide operating groups, and should be supplemented with a more intensified form of cooperation. In a recent statement, the European Shadow Financial Regulatory Committee (ESFRC, 1998) proposed that cooperation between supervisors be underpinned by a clear EU-wide agreement on a code of conduct covering supervisory responsibilities and standards in order to avoid misunderstandings, institutional rivalry, and excessive forbearance by national supervisors. Some institution should thereby be in charge of overseeing the web of bilateral memoranda of understanding.

In the recent Framework for Action paper, the European Commission (October 1998) endorsed the need for greater cooperation between supervisory authorities and proposed to contribute to the elaboration of a “supervisors charter”, setting down relative responsibilities and mechanisms for coordination between supervisors. The Commission also committed to cooperate in the review of the Basle capital rules and to examine prudential issues raised by conglomerates. This paper was endorsed by the Vienna European Council (11-12 December 1998), which asked a policy group of special representatives of the Ministers of Finance to report on concrete measures for the Cologne European Council (June 1999).

Something more might however be needed within EMU, as was revealed as a result of the recent financial market crisis. It emerged that the exposure 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 about 400 bn ECU at the end of 1997, compared about 125 bn ECU for the 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 (BIS, 1998). European banks have thus actively contributed to the asset bubble in emerging markets. This raises questions about internal risk management within European banks, and external control on lending policies. No European body was (and still is) apparently aware of the aggregate exposure of European banks to these regions.

This situation should be seen in the perspective of EMU and the role of the ECB. As indicated before, the ECB will be in charge of monetary stability, but not of financial stability, which remains a member state responsibility, together with prudential supervision.⁶ This set-up could be characterised as part of the “constructive ambiguity” (Schinasi, 1998) which is used in the design of safety nets in the banking sector. In order to reduce moral hazard, LOLR procedures in banking were deliberately kept ambiguous. However, this argument is no longer valid. Maintaining a high degree of ambiguity has led to excessive risk taking by financial institutions and too much forbearance by authorities in the face of banking problems. Such policy can only be modified in a climate of greater transparency on the support which will be offered to banks in trouble, and under what circumstances (Enoch, e.a., 1997).

Within the EMU context, the ambiguity of LOLR procedures could, however, rapidly become “destructive”, if member states continue to provide liquidity assistance to local problem banks at their own discretion. In EMU, the capacity of national central banks to provide liquidity to local institutions is potentially in conflict

⁶ Art 105.5 of the Treaty and Art. 25.1 of the ESCB Statute. Note that the ECB’s role in prudential supervision is more limited than that of its precursor, the EMI; see box below.

with the ECB's responsibility for determining liquidity at EMU level. Any operation that is undertaken on the national level has EMU-wide monetary repercussions. For example, an interest rate subsidy to a local problem bank may in the end be paid for by other banks in the EMU and their customers. It could also, if happening systematically, undermine the capital base of the NCB in question. For these reasons, and on the grounds of competitive equality, procedures for LOLR operations should be harmonised and responsibility for emergency liquidity provision should be clearly allocated between the ECB and national central banks. The procedures should require adequate collateral (following the ESCB Statute), penal interest rates and, above all, prior authorisation from the ECB for the injection of liquidity at local level. This should contribute to reducing moral hazard.

Applied to markets in general, it means that, within EMU, nobody is in charge of aggregating and examining exposures in the European banking system to detect signs of potential financial trouble. According to Bini-Smaghi (1998), this information is not available at ECB level and will seriously impede its capacity to judge about the extent of liquidity crisis in European markets. The ESFRC (1998) therefore recommended that, within EMU, the current cooperative mechanisms for supervision of institutions will have to be supplemented by a European-wide structure to monitor markets. This reflects the fact that any supervisory shortcomings in a particular jurisdiction would be quickly felt in other member states. The new structure could take the form of a European Observatory of Systemic Risk (Aglietta and de Boissieu, 1998). The aim would be to ensure common supervisory and transparency standards, to monitor market developments across Europe and alert national and European authorities to exposures with a potentially systemic impact. This body might or might not be a part of the ECB. In the former case, the legal mechanism exists already, since Art 105.6 of the Treaty provides for an expansion of the role of the ECB in this domain. An overview of the required changes to the current set-up of supervision in the perspective of EMU is given in Table 2.

Table 2. Objectives of supervision and deficiencies in the perspective of EMU

<i>Objective of Supervision</i>	Current Set-Up	Required changes for EMU
Systemic Risk	National supervisory authorities and/or NCB's	Clear role for ESCB/ECB Create European Observatory of Systemic Risk
Prudential (solvency control)	National supervisory authorities (home country) Bilateral Memoranda of Understanding Different attitudes to banks in trouble Excessive forbearance	Strengthen exchange of information: need for Multilateral Memoranda of Understanding; intensified cooperation Draft code of conduct between supervisors Align lender of last resort procedures, prior authorisation of ECB
Consumer Protection/ Conduct of Business	Host country (country where service is provided) for retail and wholesale business	Home country for wholesale business

For the time being, the ECB will need to have sufficient resources to make a quick assessment of the situation in the different financial markets. National supervisory authorities will need to transmit information on the exposure of the banking system on a regular basis to the ECB. Opposition of national authorities in sharing information with the ECB will only strengthen and accelerate the emergence of a more centralised supervisory authority in this domain. At ECB level, the establishment of the European Banking Supervisory Committee (EBSC) within the ECB is a useful step towards information sharing. In contrast to the Commission's Banking Advisory Committee (BAC) which has mainly a legislative role, the EBSC's tasks fall on the macro-prudential side: to monitor the overall stability of the financial system, to promote the exchange of information between supervisors and give ample warning of new developments.

In the area of insurance, a parallel of the BAC, the Insurance Committee, was established in 1991, as part of the opening-up of insurance markets in the EU. Proposals for an EU securities markets committee were recently abandoned, after it had been deadlocked for the last five years between the European Parliament and

the Council on a matter of principle, i.e. the degree of implementing powers it would be granted (“comitology”). In the Framework for Action paper, the European Commission (1998) signalled this change and granted support to FESCO, the Forum of European Securities Commissions. Launched in December 1997, FESCO is an informal and intergovernmental network between securities supervisors, with a permanent secretariat at the COB (Commission des Opérations en Bourse) in Paris. Above all in the latter domain, rapid progress will need to be made in supervisory practices, in view of the acceleration in the cooperation between stock exchanges in the EU, compared to the big differences in regulatory standards, investor protection and market disclosure (See Lannoo and Gros, 1998).

IV. Conclusions

It might be as tempting to believe that EMU would call for a single supervisory authority at EU level, just as the conglomeration trend in the financial sector would call for single financial services’ supervisors. Many elements must be taken into account in the design of an optimal structure for financial supervision: moral hazard, the objectives of supervision, interagency competition, market discipline, efficiency and accountability.

Limiting the ECB functions to monetary policy is part of a general trend of withdrawal from supervisory functions in central banking and fits with the home country control principles of the single market. Specific expertise in and knowledge of prudential control is situated at the local level, where the bulk of the operations of financial institutions are still located, and where lender-of-last-resort will be provided. Greater centralisation of functions than what is essentially required for the execution of joint monetary policy would have been difficult to achieve, as that would violate the principle of subsidiarity. Giving the ECB an explicit LOLR role, as argued by Schinasi (1998), would also not be desired, because of the link with fiscal powers (for eventual bank rescues) and the related accountability, which reside on the state level.

However, EMU adds an additional layer to the already complicated structure of financial supervision in the EU, which might reduce consistency and operability,

mainly on the systemic side. What needs to be done primarily is to step up cooperation between supervisors at national and European level, and institute a hierarchy when it comes to emergency lending and responses to financial stability problems. Although the latter tasks remain at the local level, it is clearly related with monetary policy. Unlimited lender-of-last-resort support at the local level will spill over in the whole euro area. Price stability cannot be achieved if financial stability is not in place.

It is therefore of utmost importance to develop firm procedures between national central banks, local supervisors and the ECB to monitor the stability of financial institutions and markets. The ECB will need to be fully informed about developments in local financial markets, to judge whether they might become systemic at the European level. It will at the same time have to make sure that the playing field is levelled for financial institutions in the EU. To avoid misunderstandings and institutional rivalries, the ECB should exploit its position as “primus inter pares” and set common rules in cooperation with the NCB’s on the scope of the safety net for financial institutions. These arrangements should, to the extent possible, be made public.

As far as the stability of financial markets is concerned, procedures should be agreed to be followed in times of crises. It is however clear that, should a generalised liquidity problem emerge at European level, the ECB will be the institution to intervene and to coordinate the response. The creation of a European observatory for systemic risk, close to the ECB, would most useful to scrutinise developments in European financial markets and to aggregate exposures in the European banking system.

To respond to the supervisory problems posed by conglomerates, the EU should consider to create a Joint Forum, the cooperative framework of functional supervisors at international level, at European level. This forum could assess which regulatory changes are needed at European level to face the development of bankinsurance companies.

In the area of securities markets, big efforts will need to be made by supervisors to match market developments. Although FESCO is now in place, cooperation and coordination is clearly in its infancy. Supervisors will need to make sure that confidence in Europe's capital markets can be maintained, and that the same standards apply across markets.

Supervisors and policy makers will need to closely watch the effects of financial market integration as a result of EMU, and be prepared to adapt the institutional structure of financial control to market developments. In the longer run, more far-reaching institutional adaptations will be required. Consideration should thereby be given to a more holistic approach to financial supervision, in line with the conglomeration trend in the financial sector. Regulatory objectives will increasingly be difficult to be applied on a functional or vertical basis, but need to be assessed across the board. This will also allow to see where the biggest gaps in efficient supervision exist at European level.

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Annexes

EU Treaty Provisions on the ECB and Prudential Supervision

The relevant provisions for the ECB's involvement in prudential control are Articles 105.5-6 of the Maastricht Treaty and the ECB Statute Article 25. Article 105.5 gives some co-ordinating role to the ECB in prudential supervision, but these duties may be extended by a Council decision.

Art. 105.5 and 6 of the EU Treaty state:

- 105.5 The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system.
- 105.6 The Council may, acting unanimously on a proposal from the Commission and after consulting the ECB and after receiving the assent of the European Parliament, confer upon the ECB specific tasks concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings.

Art. 25 of the statute of the ECB states:

- 25.1 The ECB may offer advice and be consulted by the Council, the Commission and the competent authorities of the member states on the scope and implementation of Community legislation relating to the prudential supervision of credit institutions and to the stability of the financial system.
- 25.2. In accordance with any decision of the Council under Article 105(6) of this Treaty, the ECB may perform specific tasks concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings.

EU Treaty Provisions on the EMI and Prudential Supervision

It is noteworthy that the Treaty provisions on the ECB's role in prudential supervision go less far than the role of its precursor, the European Monetary Institute (EMI), which had a broader mandate. Art. 109f.2 of the Treaty states:

- The EMI shall (...) hold consultations concerning issues falling within the competence of the national central banks and affecting the stability of the financial institutions and markets.

This article is repeated in Article 4 of the EMI Protocol.

European Shadow Financial Regulatory Committee

Statement No. 2

19 October 1998

EMU, the ECB and Financial Supervision

In this statement, we recommend that:

1. The twin principles of home country supervision and mutual recognition should be supplemented in the short run by a clear allocation of responsibilities in times of crisis, and a mechanism to ensure that all financial institutions operating in Europe have an effective lead supervisory authority;
2. Looking ahead, we foresee the need for a European-wide structure for monitoring systemic risk;
3. Finally, while the lender-of-last-resort function should be used with restraint, the present ambiguity regarding the allocation of lender-of-last-resort responsibilities as between the ECB and national central banks needs to be resolved.

The recent market turmoil has brought the discussion of financial supervision to the forefront. Within a European context, monetary union is prompting a quantum leap in interpenetration of financial institutions and markets. These developments generate a new potential for European-wide instability while also reducing the capacity of individual member states to handle crises. Against this background, it is necessary to reassess the adequacy of home country control and existing provisions for the lender-of-last-resort.

The ECB will have independent powers to maintain price stability, but financial stability and prudential control will remain in the hands of national authorities. The European Shadow Financial Regulatory Committee (ESFRC) believes that this framework contains potential risks that would be alleviated by the above recommendations.

1. Supervision and crisis management

At present supervisory coordination is based on bilateral memoranda of understanding. However, closer market integration under EMU demands intensified cooperation between supervisors and central banks both at national and European levels. It is important that such cooperation be underpinned by a clear EU-wide agreement on a code of conduct covering supervisory responsibilities and standards in order to avoid misunderstandings, institutional rivalry, and excessive forbearance by national supervisors. The overriding objective would be to ensure that all banks, financial conglomerates and other financial institutions are adequately supervised by a lead regulator. The ECB could in this context act as a clearing house for cooperation agreements between national supervisors at EU and international levels. The coordinating mechanism should in particular make provision for the allocation of responsibilities in times of crisis. Such coordination at the European level would represent a contribution to global financial stability.

2. Towards a European-wide structure

As the euro-capital market deepens and pan-European financial groups become dominant, the cooperative mechanisms will have to be supplemented by a European-wide structure. This reflects the fact that any supervisory shortcomings in a particular jurisdiction would be quickly felt in other member states. The new structure could take the form of a European Observatory of Systemic Risk which might or might not be a part of the ECB. The aim would be to ensure common supervisory and transparency standards, to monitor market developments across Europe and alert national and European authorities to exposures with a potentially systemic impact. This does not imply that the new entity is given decision-making power, but it must be in position to obtain information from national authorities.

3. Align lender-of-last-resort operations in EMU

It is remarkable that in a complex new financial structure embracing the ECB and eleven national central banks, nothing has been publicly stated to reduce the ambiguity contained in the EU Treaty about lender-of-last-resort (LOLR) operations. This ambiguity should be eliminated. In our previous statement (22 June 1998), we outlined procedures for early intervention that would minimise the need for a LOLR assistance to problem banks. Nevertheless, financial stability may at times require the existence of a smoothly functioning LOLR.

The capacity of national central banks to provide liquidity to local institutions is potentially in conflict with the ECB's responsibility for determining liquidity at EMU level. Any operation that is undertaken on the national level has EMU-wide monetary repercussions. For example, an interest rate subsidy to a local problem bank may in the end be paid for by other banks in the EMU and their customers. For these reasons, and on the grounds of competitive equality, procedures for LOLR operations should be harmonised and responsibility for emergency liquidity provision should be clearly allocated between the ECB and national central banks. The procedures should require adequate collateral, penal interest rates and, above all, prior authorisation from the ECB for the injection of liquidity at local level.

**Table 3. Monetary and Bank Supervisory Functions
in EU Countries, Switzerland and the US**

	Regime	Monetary Agency	Supervisory agency
AU	S	National Bank of Austria (CB)	(Federal) Ministry of Finance (MF)
B	S	National Bank of Belgium (CB)	Banking and Finance Commission
DK	S	Danmarks Nationalbank (CB)	Finance Inspectorate (MI) ¹
FIN	S	Bank of Finland (CB)	Bank Inspectorate (MF)/ Bank of Finland (CB)
F	C	Banque de France (CB)	Banque de France (CB)/ Commission Bancaire ²
D	S	Deutsche Bundesbank (CB)	Federal Banking Supervisory Office/ Deutsche Bundesbank ³
GR	C	Bank of Greece (CB)	Bank of Greece (CB)
IRL	C	Central Bank of Ireland (CB)	Central Bank of Ireland (CB)
I	C	Banca d'Italia (CB)	Banca d'Italia (CB)
L	C	Bank of Luxembourg (CB)	Bank of Luxembourg (CB)
NL	C	De Nederlandsche Bank (CB)	De Nederlandsche Bank (CB)
P	C	Banco de Portugal (CB)	Banco de Portugal (CB)
S	C	Banco de Espana (CB)	Banco de Espana (CB)
SW	S	Sveriges Riksbank (CB)	Swedish Financial Supervisory Authority
UK	S	Bank of England (CB)	Financial Services Authority ⁴
CH	S	Swiss National Bank (CB)	Federal Banking Commission
US	S/C	Federal Reserve Board (CB)	Office of the Comptroller of the Currency (CB)/ Federal Reserve board (CB)/ State Governments/ Federal Deposit Insurance Corp ⁵

Legend: C = Combined, S = Separated, CB = Central Bank, MF = Ministry of Finance, MI = Ministry of Industry

Notes:

1. The Danish National bank is the granter of liquidity support, while the Inspectorate is responsible for the supervision of banks. The inspectorate has no formal link with the Nationalbank, although there is in practice co-operation between the two on many issues.
2. The Banking Commission (Commission Bancaire) is a composite body chaired by the governor of the Banque de France, with representatives from the Ministry of Finance. The Banking Commission supervises compliance with the prudential regulations. The inspections and on-site examinations are carried out by the Banque de France on behalf of the Banking Commission.
3. The Federal Banking Supervisory Office (Bundesaufsichtsamt für das Kreditwesen) is entrusted with the supervision of banks. It is responsible for sovereign acts, such as licensing and issuing regulations, whereas the Bundesbank is involved in current supervision by collecting and processing bank prudential returns. The Banking Act provides for co-operation between the Supervisory Office and the Bundesbank (i.e. the two bodies communicate information to each other, and the Supervisory Office has to

consult the Bundesbank on new regulations).

4. The Bank of England Bill (October 1997) transferred the banking supervisory responsibilities from the Bank of England to the Financial Services Authority, a mega-financial supervisor. The Financial Services and Markets Bill (July 1998) integrated all supervisory bodies in one authority.
5. The Office of the Comptroller of the Currency, an agency within the US Treasury Department supervises national banks and federally licensed branches of foreign banks. The Federal Reserve Board and the State Governments supervise state chartered banks which are members of the Federal Reserve System. State chartered non-member banks are supervised by the State Governments. The Federal Reserve Board has the authority to supervise all bank holding companies and their subsidiaries. In addition, the autonomous Federal Deposit Insurance Corporation has some supervisory responsibilities.

Source: Adapted from Goodhart and Schoenmaker (1995), p. 558.

**Table 4. Regulators of Banking, Securities and Insurance
in Europe, Japan and the US**

	Banking	Securities	Insurance
B	BS	BS	I
DK	M	M	M
DE	B	S	I
EL	CB	S	I
E	CB	S	I
F	B/CB	S	I
I	CB	S	I
IRL	CB	CB	G
L	CB	CB	I
NL	CB	S	I
AU	G	G	G
P	CB	S	I
SF	BS	BS	G
SW	M	M	M
UK	M	M	M
CH	BS	BS	I
CZ	CB	SI	SI
H	B	S	I
N	M	M	M
PL	CB	S	I
SLOE	CB	S	G
USA	CB	S	I
J	M	M	M

Note: CB = Central Bank, BS = banking and securities supervisor, M = overall financial supervisory authority, B= specialised banking supervisor, S = specialised securities supervisor, I = specialised insurance supervisor, SI = specialised securities and insurance supervisor, G= government department.

Source: updated and adapted from Goodhart et al. (1997)

Economic Policy Coordination in EMU: Strategies and Institutions

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1 Introduction

EMU was never a perfect solution to Europe's many predicaments. It has always been the least bad of available options given the need for stable relative prices among members of a single market, and given the wish to fully integrate capital markets.⁷ Those who doubted that EMU could and would happen were wrong in misunderstanding the economic and political need for a stable monetary mechanism, but they were right in pointing out the difficulties of operating a single currency owned by several independent countries without any substantial federal arrangement. Similarly, those who now predict dire times, possibly even a collapse, are wrong for the same reasons, but they are right that much more is needed to achieve a satisfactory output than current arrangements.

The architecture of EMU is clearly dated: it is late 1980s' conventional wisdom. The Maastricht Treaty was crafted at a time when the implications of the rational expectations revolution were being digested at the policy-making level. The need to have an independent central bank explicitly focused on price stability is rooted in such fundamental principles as the neutrality of expected money (Lucas, Sargent and Wallace), intertemporal inconsistency (Barro and Gordon, 1984; Rogoff, 1985) and early political economy results that showed the superior performance of countries which had independent central banks (Alesina and Summers, 19xx; Grilli, Masciandaro and Tabellini; 19xx). Much has been learned, since, both about theory and the empirical relevance of these principles.

⁷ For a summary of my own views, see Wyplosz (1997). These views have been long-standing, see Wyplosz (1989, 1990) and Cohen and Wyplosz (1988).

The Maastricht Treaty is also politically dated. Political conditions have changed considerably since the late 1980s. The public opinion takes low inflation for granted, it even worries about deflation. Unemployment has proven to be a particularly stubborn issue, one that requires both demand and supply-side policies. The domination of Germany as the ultimate referee that conditions for EMU are acceptable has evaporated with the birth of the euro. Today's conditions require a complex organization between governments and the European System of Central Banks (ESCB) and a no less complex organization between the European Central Bank (ECB) and the national central banks (NCBs), at a time when there is an unequivocal need to deal with the unemployment problem.

The paradox is that the ten-year long transition to EMU decided in Maastricht has been devoted to achieve convergence towards a 1980s-style culture of monetary stability, not to prepare the operation of a monetary union. Preparations have been extremely detailed but highly focused on monetary convergence, often seen as a necessary and sufficient condition for a successful EMU. It was probably not necessary as the old debate between „economists“ and „monetarists“ suggested all along. It is now becoming more clearly obvious that it is not a sufficient condition in a world of unexpected shocks and high unemployment.

Academic research on these issues is barely starting and yet solutions are urgently needed. Chances are that solutions will be found and implemented before they have been fully studied. The best that we can do at this stage, therefore, is to pinpoint the difficult analytical questions and suggest a few principles on how to approach them. This is what the paper attempts to do in a very preliminary way.

The next section provides some empirical background on the practices of central banks and national authorities. Section 3 presents briefly some of the early analytical results emerging from recent works. Section 4 then ventures a number of potential solutions; it is much less an advocacy than a call for discussion and clarification. The last section briefly concludes.

2 What do authorities really do?

The conventional wisdom of the 1980s was that central banks look after inflation, and that governments look after cyclical conditions while being sensitive to their indebtedness. This separation of responsibilities lies behind the Maastricht Treaty and is customarily emphasized by central bankers as an implication of independence. Yet, it begs the question of coordination between monetary and fiscal policies.

Because both inflation and cyclical conditions depend on the policy mix, monetary and fiscal policies are *de facto* interdependent. Central bank independence does not imply that there can be no coordination, not even that there can be no explicit or implicit negotiations between the central bank and the governments of Europe. Don't both authorities routinely take into account the other's moves?

A way to look into this question is to ask whether there is a statistical link between policy instruments. The estimation of policy reaction function has made a come back since Taylor (1993) proposed a monetary rule involving both inflation and the output gap. In this section, I estimate „Taylor rules“ for both central banks and governments, adding each other's instruments. The precise formulation adopted here follows closely the work of Clarida et al. (1998) with a few differences. The instrument of monetary policy is, as in Clarida et al. (1998) the short term interest rate. The fiscal policy instrument is the primary budget surplus because the other candidate, the overall budget surplus, is sensitive to interest rates and could therefore spuriously appear to be related to monetary policy.

The need to deal with fiscal policy implies that we can only work with annual data. Given the small number of relevant annual information, I adopt a panel approach looking simultaneously at all the EMU member countries.⁸ This is desirable anyway as a way of looking at „average“ EMU membership, although I will test for common behavior. The period under study is 1980-1997, which includes the disinflation period of the 1980s and the convergence process of the 1990s.

⁸ For lack of data Luxembourg is excluded from the sample.

Table 1 presents the central banks' reaction function. Some of the variables found to by Clarida et al. (1998) to influence the short-term interest rate do not appear as significant here: lagged money growth and the real exchange rate. One possible explanation is that Clarida et al. use monthly observations. For the present purposes, this is relatively unimportant. The important results that deserve emphasis here appear in all specifications. The following comments are based on the more compact results presented in the first column, with some discussion of the other specifications.

First, central banks care for both inflation and output. A one percent increase in the previous year's rate of inflation (measured with the GDP deflator) leads the central banks to raise the interest rate by 0.2% in the short-run, and by 0.7% in the long run. A one percentage point decrease in the output gap (actual GDP falls relative to potential GDP) leads them to lower the interest rate by 0.2% in the short-run, and by 0.8% in the long run. This confirms previous results which unanimously show that, no matter what they say, central banks do care about cyclical conditions.⁹

Second, central banks do not seem to react to fiscal policy. Neither the lagged primary budget deficit nor the change in the deficit from the previous year enter significantly in most specifications. In the two cases whether they do, the signs differ. *A priori*, one could expect both signs. A positive sign would suggest that both authorities move in the same cyclical direction, e.g. increasing the interest rate and reducing the budget deficit. This is what is called complementarity between policy instruments. The negative sign, instead, shows that the instruments are used as cyclical substitutes. This may reflect e.g. the tendency of the central bank to react to higher deficits by tightening monetary policy.¹⁰

As indicated in the table, the two assumptions of country-specific fixed effects and slope coefficients for the fiscal policy instrument are rejected at the 1%

⁹ Note that Svensson (1997) argues that the output gap may be used by the central bank as a predictor of future inflation, and hence does not correspond to a concern for cyclical conditions.

¹⁰ Preliminary testing indicates the possibility that the sign has changed over time, in line with the institutional interpretation proposed by von Hagen and Harden (1994).

confidence level. The table's footnote shows that, when it is significant, the change in the surplus enters with a negative sign, suggesting strategic substitutability: the central bank raises the interest rate when the deficit increases. For the surplus level, on the other side, the sign is positive, suggesting complementarity perhaps but, maybe, a willingness to finance the deficit when it is not worsening. Columns (5) and (6) deal with two natural objections, heteroskedasticity and simultaneity. Most of the previous conclusions survive.¹¹

Table 1. Reaction Function of the Central Banks

Panel data estimation: EMU members, 1982 – 1997
Dependent variable: call-money interest rate

	No fixed effects (1)	Fixed effects (2)	Random Effects (3)	Variable slope (4)	GLS. No fixed effects (5)	3SLS (6)
Interest rate lagged	0.66** (12.00)	0.57** (9.24)	0.86** (26.25)	0.61** (9.79)	0.66** (13.70)	0.53** (11.97)
Inflation lagged	0.20** (3.13)	0.24** (3.14)	0.05 (1.59)	0.23** (3.558)	0.17** (2.76)	0.24** (8.32)
Output gap lagged	0.23** (4.00)	0.34** (4.97)	0.15** (3.49)	0.29** (4.56)	0.25** (4.89)	0.24** (7.29)
Money growth lagged	0.00 (0.21)	-0.01 (-0.57)	0.02 (1.58)	-0.01 (-1.31)	0.01 (1.19)	-0.01** (-2.92)
Relative unit labor costs	0.00 (0.43)	-0.02 (-1.84)	0.01** (3.49)	0.01 (0.82)	0.01 (0.33)	-0.02** (-4.65)
US interest rate	0.21** (2.70)	0.26** (3.42)	0.21** (3.38)	0.26** (3.33)	0.20* (3.11)	0.21** (2.97)
Primary surplus lagged (% of GDP)	0.05 (0.85)	0.00 (0.07)	0.08** (2.67)	See notes	0.06 (1.27)	-0.14** (-5.47)
Change in primary surplus lagged (% of GDP)	-0.09 (-1.18)	-0.10 (-1.27)	-0.07 (-1.12)	See notes	-0.10 (-1.49)	-0.03 (-1.20)
Current account (% of GDP)	-0.08 (-1.77)	-0.07 (-1.91)	-0.08** (-3.29)	-0.17** (-2.97)	-0.09* (-2.17)	-0.08** (-2.81)
Adj. R2	0.87	0.88	0.85	0.88	0.87	
S.E.R.	1.57	1.53	1.68	1.50	1.58	
F-test for fixed effects	1.93			1.63	1.44	
N. observations	187	187	187	187	187	176

Source: OECD *Economic Outlook*, various issues.

¹¹ SUR estimates, designed to allow for intertemporal correlations, were unsatisfactory and are not reported.

Notes: t-statistics in brackets. ** (*) significant at the 1% (5%) confidence level. White heteroskedasticity-consistent standard errors.

Variable slopes: Primary budget surplus lagged: Austria: 0.52 (0.42), Belgium 0.22** (2.64), Denmark: 0.05 (0.14), Finland: -0.23 (-1.69), France: 0.37 (1.15), Germany: 1.07** (4.35), Ireland: 0.34* (2.40), Italy: 0.04 (0.41), Netherlands: 0.20 (0.75), Portugal: -0.17 (-0.87), Spain: -0.28 (-0.90).

Change in primary budget surplus lagged: Austria: 0.15 (0.43), Belgium -0.42** (-3.02), Denmark: -0.38* (-2.34), Finland: -0.09 (-0.48), France: 0.02 (0.05), Germany: -0.53* (-2.04), Ireland: 0.04 (0.16), Italy: -0.07 (-0.34), Netherlands: 0.32 (1.15), Portugal: 0.17 (1.86), Spain: -0.15 (-0.28).

Test for same effect of budget figures: $F(20, 157) = 1.88$.

Not reported: constant.

Column 6: all variables are contemporaneous except: inflation, money growth and the dependent variable. Instruments: unemployment rate, 1991 GDP evaluated at PPP, and lags of all explanatory variables except the budgetary figures and the output gap.

The estimated behavior of governments is reported in Table 2.¹² Neither the unemployment rate nor the current account enter significantly. Both are dropped. Interestingly, like central banks governments are found to be sensitive to both inflation and the cyclical conditions, even though but the inflation effect is not always significant. A one percentage point increase in inflation leads to a short run reduction of the deficit by 0.1% of GDP, a small effect. A deterioration of the output gap by 1 percentage point leads in the short-run to a larger deficit of about 0.2% of GDP, also a small effect. Thus governments are far from being keynesian activists: while they display little concern for inflation, they react to cyclical fluctuations but little. If in EMU fiscal policy is the only output stabilization tool, based on past behavior (in the absence of the Stability Pact but in a period that includes disinflation and Maastricht-mandated convergence) macroeconomic stabilization will be muted.

In relation to monetary policy, we find again evidence of strategic substitutability. Increases in interest rates are followed by fiscal relaxation. Again the effect is small, but significant. There is no statistical evidence that the effect varies across countries.

Importantly, the debt level exerts a clear moderating influence. There is no evidence that the debt buildup process has been explosive, even though average

¹² Here again various country-specific effects have been tested and rejected.

debt among the eleven EMU member countries has increased from 42% of GDP in 1980 to 79% by 1995. On the other side, the effect is very small, suggesting a very small reversion process.

Table 2. Reaction Function of National Budgets

Panel data estimation: EMU members, 1982 – 1997
Dependent variable: primary budget surplus (% of GDP)

	No fixed effects (1)	Fixed effects (2)	Random Effects (3)	Variable slope (4)	GLS. No fixed effects (5)	3SLS (6)
Primary budget rate lagged	0.72** (15.89)	0.68** (14.66)	0.82** (23.16)	0.66** (13.75)	0.71** (18.60)	0.73** (28.95)
Interest rate lagged	-0.10* (-2.29)	-0.14** (-2.84)	-0.04 (-0.96)	See notes	-0.14** (-4.01)	-0.09* (-2.68)
Inflation lagged	0.08 (1.58)	0.11 (2.13)	0.05 (1.17)	0.09 (1.57)	0.10* (2.49)	0.06* (1.98)
Output gap	0.18** (3.04)	0.25** (4.14)	0.08* (1.90)	0.27** (4.17)	0.11** (2.64)	0.18** (4.54)
Relative unit labor costs	-0.02* (-2.39)	-0.03** (-3.24)	-0.01** (-2.65)	-0.03** (-2.99)	-0.01** (-2.65)	-0.02** (-4.45)
Debt (% of GDP)	0.02** (3.65)	0.03** (2.69)	0.01** (6.78)	0.02** (2.77)	0.02** (6.60)	0.02** (7.61)
Adj. R2	0.77	0.78	0.84	0.78	0.76	
S.E.R.	1.35	1.31	1.75	1.32	1.37	
F-test for fixed effects	1.86			1.79	1.79	
N. observations	176	176	176	176	176	176

Source: OECD *Economic Outlook*, various issues.

Notes: t-statistics in brackets. ** (*) significant at the 1% (5%) confidence level. White heteroskedasticity-consistent standard errors.

Variable slopes: lagged interest rate coefficients: Austria: -0.16* (-2.49), Belgium: -0.22** (-2.90), Denmark: -0.11 (-1.78), Ireland: -0.02 (-0.80), Finland: -0.02 (0.24),

France: -0.13* (2.30), Germany: -0.21* (-2.58), Italy: -0.14* (-2.48), Netherlands: -0.18** (-2.94), Portugal: -0.13* (-2.02), Spain: -0.16** (3.31).

Test for variable slopes: $F(10, 159) = 1.79$.

Column 6: all variables are contemporaneous except inflation and the dependent variable. Instruments: unemployment rate, the current account lagged, 1991 GDP evaluated at PPP, and lags of all explanatory variables except the lagged budget surplus and the output gap.

Not reported: constant.

Summarizing, the reaction functions reveal strategic substitutability among the monetary and fiscal authorities. Both attempt to keep inflation in check and to conduct counter-cyclical policies, but each does less when the other moves in the same direction. Economic outcomes can be seen as an externality imperfectly internalized by the authorities. These results are very similar to those recently obtained by Melitz (1997).

3 Principles

3.1 EMU-specific difficulties: a framework

Every country faces the familiar problem of coordinating its monetary and fiscal policy. Examples of lack of coordination abound. It includes the early Reagan years when the combination of lax fiscal policy and tight monetary policy resulted in a massively overvalued exchange rate and the twin budget and current account deficits that did not disappear for another decade, leaving the US in a net negative asset position vis a vis the rest of the world. More recently, Britain has seen a similar combination policy which also produced an exchange rate that is generally seen as overvalued.

Another celebrated example concerns France and Germany. Following reunification, Germany faced large fiscal expenditures, hence a lax fiscal policy. Alarmed by overheating and high wages in Eastern Germany, the Bundesbank tightened up monetary policy. The resulting mix pushed the DM sharply up. Having refused to let the DM rise vis a vis the franc, France had to also adopt a tight monetary policy. Without the benefit of a demand boom, the French economy slumped and fiscal policy turned lax, a good example of strategic substitutability.

These cases illustrate the difficulty of achieving complementarity between monetary and fiscal policies. The costs can be significant. A lax fiscal-tight money mix delivers an overvalued exchange rate and a fast debt buildup as the overall

budget deficit is fueled by high interest rates. An easy money-tight fiscal mix results in an undervalued exchange rate and rising inflation.

Why is coordination occasionally difficult to achieve? There is a vast literature which relies on the lack of internationalization of the output, price and exchange rate externalities. This phenomenon is compounded by the presence of Barro-Gordon incentives to attempt to expand the economy through expansionary surprises, especially if the monetary and fiscal authorities have different views (or preferences). Political economy arguments may also interfere with coordination as elected governments are often unwilling to take responsibility for slowing down demand while central banks are sometimes inclined to display firmness for the sake of building up their reputations.

The already difficult exercise of policy coordination is compounded in EMU. First, the number of partners is higher, which makes informal repeated contacts unlikely. Second, diversity of opinion is likely to be wider, not only because of different „cultures“ but also because of different economic conditions. Third, the set of incentives is different among countries both because of possible externalities and because the effects of macroeconomic policies differ in a monetary union. The exploration of these issues has recently started. This section reports on the early lessons that can be drawn from research under way. It draws on Debrun (1998), with insights gained from Beetsma and Uhlig (1997), Beetsma and Jensen (1998) Agell et al.(1996), Ghironi and Giavazzi (1997), and von Hagen and Harden (1994).

The 11 governments and one central bank that make up the EMU can be described as interacting at three levels represented on Figure 1. To start with, there is the classic fiscal-monetary mix. However, before this stage, each government appoints a member of the Governing Council of the ESCB and, collectively, all member governments appoint the Executive Council of the ECB. Thus the partners engaged in working out the policy mix are governments and central bankers initially chosen by governments. In addition, earlier governments have agreed to set up the Stability and Growth Pact. The Pact constrains the range of possibilities that can be reached as part of the policy mix, and possibly affects the incentives of governments in their conduct of fiscal policy.

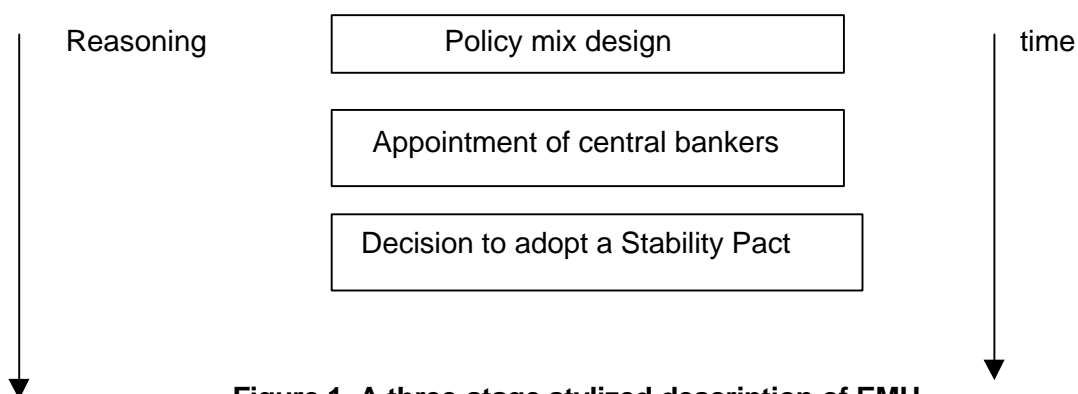


Figure 1. A three-stage stylized description of EMU

The Maastricht Treaty spells out in some detail the framework of the policy mix. It has been agreed upon long ago, well before the adoption of the Stability Pact and the appointment of the central bankers who are in charge today. It stands to reason that at each step each decision is based on expectations regarding the next ones. The purpose of this section is to think through this process. The usual analytical approach consists in working backward in time, studying first the last decision level (establishing the policy mix) and then the second level (the appointment of central bankers) in view of what governments want to achieve with the policy mix. Finally we look at the Stability Pact as guided by what is expected to be decided later on.

3.2 The policy mix

The last decision is the policy mix, the joint conduct of fiscal and monetary policies. Section 2 indicates that governments and central banks are concerned with both inflation and the output gap. This can be interpreted in two mutually non-excludable ways. First is the Keynesian concern with countercyclical policies and the perception of a short-run Phillips trade-off between inflation and the output gap. The second interpretation is neo-classical and rests on the presence of distortions *à la* Barro-Ricardo. In that case there is a temptation to engineer expansionary surprises to improve on the distortion-induced output level. These surprises work by reducing temporarily real wages and are followed by an inflationary adjustment. The

reasoning that follows starts from the inflation-output trade-off, while remaining agnostic to its cause.

The outcome is the existence of two biases: an inflation bias and budget deficit bias. The central bank is ultimately deciding on the inflation rate and is responsible for the inflation bias. Given the legislative nature of the budgetary process, governments act less frequently than central banks do. They must anticipate the central bank's ultimate choice of inflation, possibly influencing its choice by affecting output. Thus governments set their budget with several motivations in mind: the output-inflation trade-off and the central bank's own perception of, and reaction to, this trade-off. The result is the perception by governments of a trade-off between inflation and the budget deficit.

Having broadly characterized the incentives of both authorities, we now look at their strategic interactions. To start with, we ignore the multiplicity of governments in EMU. Table 1 and 2 suggests that the two authorities are strategic substitutes. This is indeed an implication of the underlying logic adopted here: the more inflation is tolerated by the central bank, the less incentive for the government to attempt to expand through a deficit. Conversely, the more expansionary is the deficit the lower is the central bank's incentive to inflate.

In the case of EMU, we look at eleven governments operating in open economies which are part of a monetary union. How are the previous conclusions affected? The open economy aspects sharpen the conclusions previously reached.¹³ Not only is fiscal policy the only national-level macroeconomic instrument left, it is also more efficient in EMU. Indeed, there is no crowding out since, to a first approximation, neither the interest rate nor the exchange rate, both set as the union-wide level, respond. In addition, as pointed out by Ghironi and Giavazzi (1997), there exists a negative externality: to a second order of approximation, a country's policies will affect the union's exchange and interest rates, possibly disturbing national-level

¹³ I do not consider supply-side policies because they have long-term effects, inappropriate for the current analysis which concerns itself with a horizon corresponded to cyclical fluctuations. Also note that most of the arguments do not rely on Keynesian effects (Barro-Gordon inefficiencies). The current paragraph, though, is rooted in the Mundell-Fleming tradition.

equilibria. As this externality is not taken into account, nor is it sanctioned by the markets through country-level exchange and interest rate changes, each country will tend to be too activist as it ignores the impact of its action on other EMU members. Thus the inflation-deficit trade-off is displaced towards more of each evil.

3.3 Appointing the central bankers

As governments appoint central bankers, presumably they anticipate that they will soon face their appointees at the stage of setting the policy mix. In the end, it is the central bank that decides on the rate of inflation. Therefore, a convenient simplification is that the government's choice of a central banker amounts to choosing the inflation rate that will ultimately be traded off against the budget deficit. Given the trade-off, this choice reflects each government's inflation and deficit biases, as described above.

In the end, the ESCB votes on inflation so that it is the median central banker that carries the day. This leads to either of two strategies. Strategy one is to appoint someone who is likely to be the median voter. Strategy two is to appoint someone who will tilt the median towards the government's preferred level. The choice of which strategy to adopt depends on the government's position on the scale of inflation preferences relative to the other governments. Outliers will adopt strategy two, middle of the road governments will adopt strategy one.¹⁴

Another aspect of the decision is related to the degree of coordination among governments. Alone, each country weights little on the union-wide inflation rate and the trade-off that it faces is limited. If governments coordinate in their dealing with the ESCB, the trade-off is more significant and the choice of an appropriate median central banker becomes even more important. Fiscal policy coordination (some would say collusion) sharpens the trade-off.

¹⁴ Things might be more complicated if the government may soon lose the next elections so that it may want to appoint a central banker which will be away from the rival party's own preferences.

3.4 The Stability Pact

The Stability and Growth Pact (SP thereafter), decided upon long before the appointment of central bankers, affects the deficit-inflation trade-off. Indeed, beyond some level, it sharply raises the cost of the deficit. By constraining the room for maneuver of one partner (the governments) the SP reduces the inefficiency of the policy bargaining process if it is non-cooperative. This is presumably one reason for adopting a SP.¹⁵

Another effect of the SP is to improve the strategic position of the ESCB. The outcome is more likely to be close to the central bank's own preference. This has the effect of increasing the importance of who are those appointed as central bankers. Given the fact that the SP limits the choices of governments and that the central bank ultimately chooses the rate of inflation, governments end up with limited influence on the policy mix. That the SP increases the influence of the central bank on the policy mix is bound to affect the next step, the appointment of the central bankers. The governments' best strategy is to delegate their own preferences to the central bank through the appointment of its top staff.

One way of looking at the SP is that it alleviates the need to adopt a Rogoff-type conservative central banker. Rogoff's proposal is based on a second best argument: the outcome of the game between the central bank and price setters being inefficient, it may improve things to falsify the central bank's preferences. The same logic applied to the inefficient design of a policy mix is now applied to justify the SP. Tilting the central bank's position vis a vis price setters still calls for a conservative central banker. On the other side, tilting the balance away from weakened fiscal authorities displaces the policy mix away from democratically set preferences. Less of a tilt is therefore called for.

The reasoning so far concerns how a government delegates monetary policy power to the central bank through appointments. In EMU, the international make-up

¹⁵ There are other reasons, analyzed in Eichengreen and Wyplosz (1998). These includes the risk of eventual monetization of debts and the desire to avoid public defaults that would spill into contagious bank crises.

changes matters at several levels. First, there may be heterogeneity of preferences. This may not be „in the genes“ but the result of elections. The recent two years provide a ready example. Second, asymmetric shocks and contingencies are likely to further contribute to the heterogeneity of national preferences. Finally, the sensitivity of an international central bank to national public opinion sentiments is likely to differ from purely national setups.

The broad implication is that the appointment of central bankers will be a different exercise: less conservative, more in tune with public opinion and more attuned to forging majorities in decision making bodies. The need for an ear to national public opinions calls for a role of the Governing Council of the ESCB while effectiveness calls for centralization and delegation of powers to the narrower Executive Board of the ECB.

4 A search for European institutions

It should be clear by now that much remains to be done in EMU. The pending issues are mostly institutional, an area where economists have to acknowledge comparative disadvantage. In this section, therefore, I attempt to draw the key implications of the previous analysis and empirical evidence, and to venture a number of ideas, without paying much attention to acceptability.

Taking the SP as given, it seems safe to consider that the risk of monetization of uncontrolled public debts is not a live concern. As Table 2 shows, the debt process was stable before the adoption of the SP, a feature now reinforced. Rather the concern now is that national budgets may not be used as much as otherwise desirable. The main question is what will be the SP's effect on the deficit-inflation trade-off: is there a tilt towards accepting more inflation or is the trade-off alleviated, with less inefficiency in deciding both deficits and inflation? We do not know the answer to this question. On the other side, the evidence from Table 2 is that European governments have refrained from fiscal policy activism, so that there is little need for using the SP to further reduce counter-cyclical policies.

This is especially so as asymmetric shocks can only be dealt with at the national level with fiscal policies. Even if the SP can be justified as a tool to reduce inefficiencies in setting the policy mix, it suffers from two key weaknesses: it is not tailored to particular country situations, and it is not contingent on particular events. The exceptional events envisaged in the Pact can be seen as dealing with both objections but they are unlikely to be of much use. For example Eichengreen and Wyplosz (1998) show that, over the period 1955-96, the clause would have worked only once in three times when the deficit exceeded the 3% limit.

Thus there is a clear need to introduce some ability to react flexibly during moderate downturns. Either fiscal policies need to be able to continue the moderate counter-cyclical influence that they had, or the central bank has to take over some of this task, or both. In any case, this issue must be dealt with as part of an effort to avoid a too inefficient coordination mechanism.

4.1 A centralized coordinating mechanism

The natural difficulty of coordinating fiscal and monetary policies typically leads to various institutional arrangements. One case is the subordination of the central bank to the Treasury, a feature of France until 1993.¹⁶ A less direct procedure is to have representatives of each institution automatically involved in the formulation of policy in the other institution. This is the case in EMU where representatives of the Commission and Euro-11 seat at Council meetings of the ECB while the President of the ECB is invited to Euro-11 meetings. Other procedures are informal and involve frequent personal contacts which tend to replace one-shot Nash games with repeated contacts conducive to agreements.

The existence of strategic substitutability implies the need for bargaining. Collectively the governments must be in a position to negotiate with the ESCB a

¹⁶ Why was the policy mix wrong in 1991-95, then? One possibility was a misunderstanding of the implications of the German unification shock. Another was conflict within the Treasury, which would show that differing views of the respective roles of fiscal and monetary policies is not necessarily predicated upon institutional logic.

policy mix that is acceptable to all parties concerned. The Euro-11 committee is the natural venue for such negotiations, but efficient bargaining cannot be conducted in such a large forum. Going further, bargaining is easier when conducted informally by very few negotiators. This indicates that both governments and the ESCB ought to be able to delegate negotiating powers to just one or two persons each who would maintain regular and informal contacts.

On the central bank's side, this is would not be difficult to appoint representatives since there exists a President and a Vice-President. On the governments' side, the delegation of negotiating powers is more complex. First, asymmetric shocks imply that national views about the policy mix will rarely be homogeneous. Second, even the perception that sovereignty over fiscal policies is reduced could provoke a serious backlash. Third enforcement is likely to be tricky, if not just outright impossible. Fourth, the natural procedure would be to appoint the Minister of the country that holds the EU presidency. This could create difficulties between larger and smaller countries. A possible resolution would be to have a team of two, representing a large and a small country.

4.2 Decentralized coordination

Another possibility is to conduct discussions at the national level. The Minister of Finance and the central bank Governor could be in regular, informal contact. The Treaty of Maastricht forbids that instructions be given by governments to ESCB officials but it does not rule out the exchange of views among equal partners and the search for mutually acceptable policy outcomes.

The difficult step would be the aggregation of national preferences by the ESCB. Such a procedure would reinforce centrifugal forces that are sometimes seen as dangerous for effective decision making by the central bank.¹⁷ It would weaken the central bank by making the locus of national disagreements. In addition, the one

¹⁷ See, e.g. Begg et al. (1998).

man-one vote procedure of decision-making could make it unappealing, possibly illegitimate, in the eyes of the larger countries.

A related issue is the organization of the ESCB. National central banks formally hold the power of decision within the Governing Council. Their legitimacy is national, whereas the ECB Board members have a European outlook and legitimacy. Eventually, one currency is better served by a centralized central bank, as shown by von Hagen and Süppel (1994). The tasks to be centralized, in addition to setting monetary policy proper, include the analysis of EMU-wide conditions and of the banking system. The current situation is one of transition with powerful personalities at the helm of national central banks. It seems logical that, eventually, national central banks will be seen as subsidiaries run by people of lower administrative status, whose next carrier step could be to join the ECB Board. When this is achieved, it will be easier to use national central banks as a conduit for information on local conditions and preliminary negotiations, much as ambassadors prepare higher level decisions.

4.3 Wisepersons as facilitators

When negotiations prove to be difficult, a common practice is for all parties to defer to a facilitator who may either propose *bona fide* solutions or act as a referee with binding decision power. In the present context, economic wisepersons could be asked to issue recommendations regarding the policy mix. They should be independent persons drawn from all over Europe on the basis of expertise. They could meet on a regular basis and issue reports. Alternatively, they could be asked to convene whenever disagreements emerge, either between governments and the ESCB, or among governments. To be effective such a group should be small, hence not designed to have at least one representative from each EMU country. Indeed, there should be no presumption that they represent their country of origin.

Presumably, the wisepersons would be (academic) economists. Unfortunately economists are known for their uncanny ability to disagree on any topic, so it would be difficult for such a group to adopt a common position. A solution would be that

they are asked yes/no answers as, for example, judges who sit on a panel. This could include the presentation of minority views.

Economic wisepersons exist in a number of countries, e.g. Germany and the US. Typically they have little or no decision power and their influence is limited. Sometimes they are implicitly used to mute criticism, e.g. in the UK. The main reason for limited power is that, in the end, the decisions that they confront are deeply political and cannot be entirely delegated to „technocrats“ whose legitimacy is rooted in dubious economic knowledge.

4.4 Permits

One of the key difficulties in any effort to work out a policy mix in EMU is the likely divergence of economic conditions from one country to another. On the other side, what matters ultimately is a global fiscal stance associated to the common monetary policy. Even if an agreement could be reached on an EMU-wide policy mix, breaking it down country by country would be a formidable task. It is pretty hopeless to expect all member countries to surrender enough of fiscal policy sovereignty to achieve the desired global stance.

What is needed is an intermediate solution, between complete independence and uncoordinated fiscal policies and a centrally mandated assignment. A possible avenue is to provide countries with permits to deviate from assigned stances.¹⁸ Each country would be asked to contribute to the fiscal stance in a symmetric way (e.g. it would be asked to deliver the deficit/GDP ratio agreed upon at the EMU level) but it could use „points“ to deviate from the assigned target. The points could be spent if the deficit is in excess of the target and earned in the opposite case. This formula builds in a surplus bias which can be offset by the allocation of an initial endowment of points that would also allow for some flexibility.

¹⁸ This idea is being explored by Alessandra Casella in an as yet unwritten paper to be presented to the *Economic Policy Panel*.

Once again, sovereignty and enforceability represent serious hurdles. If the arrangement replaces the current version of the SP, the loss of sovereignty would not necessarily increase and enforcement could take the form of fines as envisaged in the SP. In addition, governments might welcome this change as it would rebalance their relationship with the ESCB.

4.5 Transfers

Permits represent an original attempt to deal with the need to recognize asymmetric economic conditions. A more traditional approach is fiscal federalism, a question which has been extensively studied since the beginning of debates on EMU, see Sachs and Sala-i-Martin (1992), Italianer and Pisani-Ferry (1994).

In principle, the policy mix would be easier to negotiate and organize if a global fiscal stance were first agreed upon. The problem, of course, is that the overall budgetary stance of the monetary union can accommodate widely different national positions. The current situation is that each country is free to set its policy, subject to the SP and to peer review. In the present case, the global outcome is not decided *ex ante*, it is just the result of decentralized decisions. This makes it difficult to conduct explicit or implicit negotiations with the central bank, for example those explored in Section 4.1.

Any effort to start policy design from a global objective, requires both a very large degree of coordination and a mechanism for agreeing to country-level targets. What makes the global stance approach difficult to implement is that it implies either a loss of sovereignty, or a severe enforceability hurdle, or both. In order to circumvent these two problems, one needs to offer incentives. This is how federal states operate. In exchange for a federal budget and limits on lower-level budgets that fit into a coherent whole, a redistribution system is set up to offer an insurance mechanism, offering some cushioning against cyclical shocks.

An insurance mechanism of this sort implies redistributing transfers very different from anything that currently exists at the EU level. That makes the idea

politically difficult. It is also true that building up a strong EU-wide fiscal power could possibly make negotiations with the central bank more inefficient, as noted in Section 3 above.

One way out is to set up a two part unemployment compensation system. In each country, unemployed workers would receive a EU allocation financed by each country in proportion to its size. Each country could then top up the EU benefits with its own locally-financed payments so as to achieve desired levels. The system would be strongly redistributive over the cycles but not in the long run. It would act as an insurance mechanism, not as structural transfers. It would not require any additional funding, simply a transfer of a part of existing national-level spending. Nor would it involve any loss of sovereignty.

4.6 Monetary Federalism

The need to diversify fiscal policies to take into account domestic conditions reminds us that the one-size-fits-all nature of monetary policy is unavoidable but problematic. A key question is how will the ESCB recognize special country-level needs. In principle, it should concern itself only with EMU-wide aggregates, actively overlooking national data. As a general statement of independence from local interests, this is perfectly fine. Real life is more complicated, however.

It is probably unavoidable that national central bank governors will be sensitive to economic and political conditions at home. Divergence of opinions will reflect differing national interests. This will be particularly so in the wider ESCB arena than within the tighter-knit ECB Board. As noted above, in the long run, the ECB will probably take over. In the mean time, there is a risk of less than fully efficient management of monetary affairs. This may offer member governments opportunities to attempt to divide and conquer. Unstable decision making will make it harder to achieve „deals“ on the policy mix.

It is quite likely, therefore, that the ESCB will not be able to detach itself from dealing with particular national events. Rather than attempting to ignore this difficulty,

a better approach could be to invent some form of "monetary federalism". It could proceed as follows. At times when national economies are reasonably well synchronized, dealing with the average situation is uncontroversial. Indeed, Table 1 has shown that national central banks have tended to behave in a very similar way. However, when some countries are badly asynchronized, the overall monetary policy stance may be a serious problem. A possible approach is for the ESCB to adapt its policy to the needs of a country which is undergoing an exceptional deviation from the EMU average.

This requires defining special circumstances and specifying how the central bank alters its approach. Wyplosz (1998) offers the following illustrative example. A special national circumstance is said to occur when a particular country's output gap is more than one or two standard deviations away from the Euro-11 average. Over the period 1980-98, the one standard deviation definition would have signaled a special case in 27.9% of the annual observations, nearly every year (18 years out of 19). With the two standard definition, it would have occurred 4.7% of the time --9 years out of 19.

How could the ESCB bend its stance when such circumstances occur? Consider the case of Finland which underwent an exceptional recession in 1991-95: during these five years its output gap was more than two standard deviations away from the European average. Taking an estimated Taylor rule similar to what is reported in Table 1, Figure 2 shows the interest that would result from the application of this rule to an index giving 50% of the weight to the average of EMU countries and 50% to Finland, a very generous view of special attention to Finland's needs. The difference is small even though the Finnish recession has been spectacular and the weight put on Finland over the period 1991:01-1994:03 is unrealistic high. Part of the reason is that the central bank smoothes out the interest rate, part of the reason is that the interest rate response to the output gap is not very large. Both factors justify monetary federalism: the ESCB can afford to take into account depression condition in one of its member countries as if the whole of the union were in depression. This is readily confirmed in Figure 2 by allowing the weight on Finland to be set at 100% during the period 1991:01-1994:03.

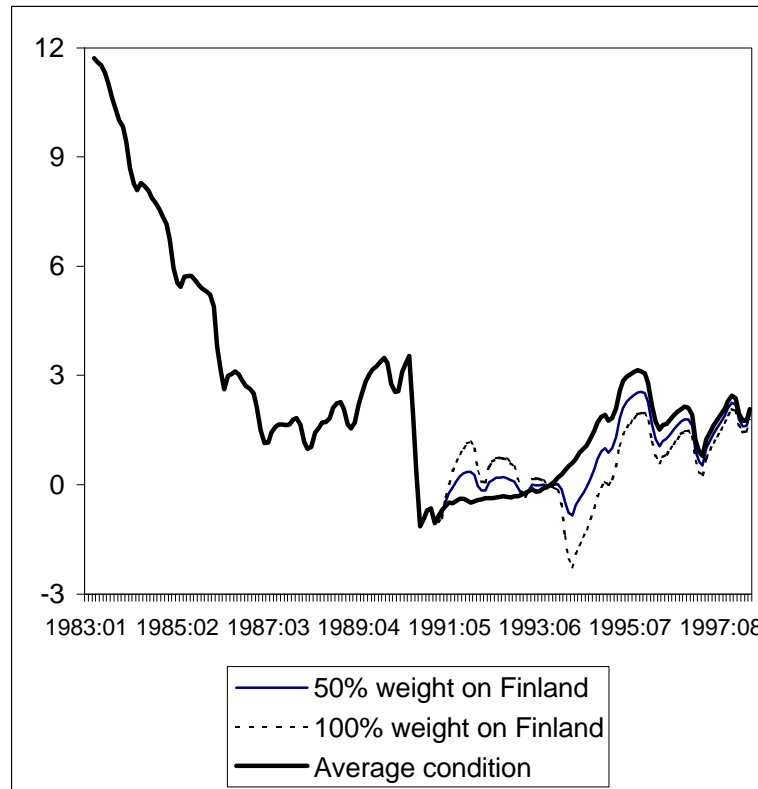


Figure 2. An example of monetary federalism

5 Conclusions

The creation of EMU is the end of a long process of macroeconomic convergence. Yet, as often noted, Europe is not an optimum currency area and its institutions are far from fully adapted to the challenges of a single currency. These shortcomings will become increasingly evident as time passes by.

This paper has reviewed the experience with the policy mix and looked at some analytical aspects specific to Europe's new situation. In addition to the traditional inefficiencies from a lack of coordination between the monetary and fiscal authorities, Europe will face further inefficiencies from imperfect coordination among national governments as well as strategic behavior in the appointment of central bankers. The constraints imposed by the Stability Pact further affect incentives and weaken the governments' hand in their dealing with the ESCB.

A consequence of this analysis is that first best principles are not likely to always be the proper response. Institution building is necessary. The paper puts forward a few ideas. Some may be far-fetched, others more directly applicable.

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Summary of the Proceedings of the Fourth Franco-German Forum

Bonn, 11-12 January 1999

The Fourth Franco-German Forum, which is jointly organised by the ZEI and the CEPPII, was held in Bonn, on the 11 and 12 January 1999. At the opening dinner, Heiner Flassbeck, Germany's Secretary of Finance, put forward his views on Europe's policy mix, and especially Germany's. The discussion the following day was based on two presentations:

- **Economic Policy Coordination in EMU: Strategies and Institutions**
By Charles Wyplosz (Graduate Institute of International Studies, Geneva, and CEPR)
Chair: Jürgen von Hagen (ZEI, University of Bonn)
Discussants: Manfred J.M. Neumann (University of Bonn)
Pierre-Alain Muet (Conseil d'Analyse Économique, Paris)

- **Financial Supervision in EMU**
By Karel Lanoo (CEPS, Brussels)
Chair: Patrick Artus (Caisse des Dépôts et Consignations, Paris)
Discussants: Olivier Davanne (Conseil d'Analyse Économique, Paris)
Heinz Hermann (Deutsche Bundesbank)

1. Economic Policy Coordination in EMU

Presentation by Charles Wyplosz

Charles Wyplosz recalled that the context of economic policy has changed since the 1980s: it is now admitted that Europe is not an optimal currency area, and the unemployment has become the prime preoccupation.

He next presented two reaction functions each estimated on a panel of future members of the EMU, for the period 1980-1997. These estimates are aimed at analysing the interaction between monetary policy and fiscal policy. The reaction function of the central banks indicates that the interest rate reacts to inflation and to the output gap, but only very little to primary budget balances. The reaction function of the fiscal authorities indicates that primary budget balances are slightly procyclical, and that the authorities seek to stabilise public debt. Lastly, primary budget balances fall when interest rates rise. As a result, the fiscal authorities seek to compensate the impact of monetary policy on demand, while the central banks react somewhat to fiscal policy.

Mr Wyplosz went on to explain that the adoption of the Stability Pact and the appointment of European Central Bankers were made in view of the predictable changes in the policy mix, fiscal policy becoming more effective and externalities across countries stronger.

According to Mr Wyplosz, the interaction of fiscal and monetary policies will be stronger if Member States coordinate their fiscal policies. For its part, the Stability Pact will limit ineffectiveness if there is no coordination of fiscal policies, but will strengthen the power of the ECB with respect to the fiscal authorities. Lastly, the ESCB will also have to tackle the issue of the balance of power between the Board of Governors (who are sensitive to national opinions) and the Executive Board (which will be more effective). Each national government has the possibility of nominating an "extreme" national governor in order to move the balance of voting within the Board of Governors, or alternatively to nominate a "median" governor likely to determine the balance of voting. This possibility will allow national government's weight to be felt indirectly in the conduct of monetary policy.

Mr Wyplosz then outlined six propositions for organising the coordination of economic policies:

- 1) *Centralised coordination*: he did not believe this to be feasible due to the larger number of participants in the Euro11 (or due to problems of delegation if an effort

is made to reduce this number), and because of the need for convincing national parliaments to accept decisions taken centrally.

- 2) *Decentralised coordination*: (each government negotiates directly with the ECB). According to Mr Wyplosz, this raises the problem of aggregation of the negotiations, and hence provides the ECB with extensive power *de facto*.
- 3) *Arbitrage by "wise persons" in the event of a conflict*: this solution is also rejected because such a group would be made up of economists, who are known to differ and who have no political legitimacy.
- 4) *Rights to deviate* from positions decided by the Euro11. This proposition was put forward by Alessandra Cassella, on the model of polluting rights, which would allow a country to use up points/rights to increase its deficit. Points/rights could also be won in the case of deficit reduction. Mr Wyplosz would favour such a system replacing the Stability Pact.
- 5) *Transfers between Member States*, for example via sharing unemployment benefits between national and European levels. According to Mr Wyplosz, such a system would imply transfers between countries over the cycle, but not over the long term. This would favour the coordination of economic policies, without requiring an additional budget (this is just a matter of a budgetary transfer from the national to the federal level), nor any loss of sovereignty.
- 6) *Monetary federalism*: it was suggested that when a country deviates strongly from the average of the Euro11 (for example, Finland in 1991-95), the ECB should be authorised to alter its policy to take such a country into particular account.

Commentary by Manfred Neumann

Manfred Neumann recalled that unions also participate in the definition of the policy mix. He stressed the fact that monetary and fiscal policy may sometimes be destabilising. He questioned the interpretation of the estimates put forward by Charles Wyplosz. According to Mr Neumann, the estimates do not provide evidence concerning the interaction between the monetary and fiscal authorities, due perhaps to the dependence of the central bank *vis-à-vis* political power, in most countries in the past.

For Mr Neumann, recourse to "wise persons" only makes sense when it comes to taking a single decision in economic policy, and not for arbitration. Rights to deviate mean that there would have to be a market for such rights. Transfers raise the problem of moral hazard, especially if most unemployment is not cyclical. Lastly, monetary federalism raises the question of those countries which are (temporarily) ignored by the ECB.

Commentary by Pierre-Alain Muet

For Pierre-Alain Muet, the Maastricht Treaty was clearly influenced by the economic and intellectual context of the 1980s (the fight against inflation and the literature on credibility). Today, the matter of coordinating economic policies is the major issue, especially for implementing the policy mix in the Monetary Union. Commenting on the estimates of Mr Wyplosz, he noted that the Central Banks effectively arbitrate between inflation and growth. As for the low degree of fiscal policy activism, this is probably due to the goal of fiscal consolidation, which has dominated the 1980s and 1990s, and has often led to pro-cyclical fiscal policies.

According to Mr Muet, the text by Mr Wyplosz raises two questions:

- How should the global policy mix be defined?
- How should this policy mix be decentralised?

He remarked that decentralisation is easier with an expansionary monetary policy, as it leaves more margin for manoeuvre for adapting national fiscal policies to the situation of each country. According to him, we are not ready for a system of cyclical transfers, which is why it is important to let national automatic stabilisers work. "Wise persons" could be useful for diagnosis, but arbitration among policies must remain political. He also remarked that in terms of business cycles, forecasting institutes often reach a consensus more easily than academics.

Mr Muet suggested two principles:

- Automatic stabilisers should be allowed to work, for example by defining a target for spending and not for the deficit (this is the logic behind France's multi-year programming for public financing).
- Monetary policy should be used to react to symmetric demand shocks, when such a reaction is compatible with the inflation target.

General Discussion

Jürgen von Hagen proposed organising the discussion around two questions:
Is coordination necessary? How can it be organised?

Is coordination necessary?

Many participants commented on the econometric estimates presented by Charles Wyplosz. They underlined the weakness of the interactions between monetary and fiscal policy, as well as the prominent role played by fiscal consolidation and the fact that few central banks were independent during the estimation period. In particular, it was stressed that estimates should take into account institutional variables like the independence of the central bank or membership of the ERM. Some of the participants underlined the endogenous nature of some of the explanatory variables (Mr Wyplosz explained that they were lagged by one year). Another participant stressed that other estimates, carried out on a European average (instead of for a panel), did not show up any arbitrage between the rate of inflation and the output gap.

A consensus emerged on the need to separate the discussion on coordination between cases of symmetric or asymmetric shocks.

Lastly, some participants insisted on the need to coordinate structural policies (for example, those relating to education or social standards), and incomes policies (stable unit labour costs would create an environment conducive to an accommodating monetary policy). This last suggestion nevertheless generated a

certain amount of scepticism: how were German unions to be convinced? France does not want to return to the income policies of the 1960s and 1970s.

Implementing coordination

One participant stressed that a framework for coordination already exists in the Economic and Financial Committee, but also because the President of the ECB can take part in Euro11 meetings, while the Stability Pact is a means for exchanging information. However, several participants deemed this framework to be insufficient. On the one hand, the exchange of information does not signify cooperation. On the other hand, national budgets are still voted by national parliaments, which may go back on the commitments made to the Euro11. From this point of view, one of the participants called for member countries to be sanctioned in case they contravene coordinated decisions. Finally, voluntary coordination is not reliable. In a situation as in Japan, for example, the monetary instrument is ineffective as soon as the authorities consider that there is no room for manoeuvre in fiscal policy. Under these circumstances, no-one volunteers to coordinate policy.

Rights to deviate were viewed favourably by the participants, at least as a matter of principle. According to one of them, such rights provide a framework for short-term coordination (the long term falling under the stability programme). Such rights already exist to a certain extent, but in the political arena. It could be useful to organise them in a more formal manner. But the functioning of such a market would have to be examined: What would be the price? Would small countries not tend to sell their rights to larger countries? The initial allocation of rights would clearly be of major importance.

Monetary federalism split the participants. The sceptics wondered what the Central Bank should do if two countries suffer significant, but opposing shocks at the same time, and if it were not precisely the role of fiscal policy to react to asymmetric shocks. Others admitted that the ECB should focus not just on the European average, but also on distribution. This would be justified if the ECB were to minimise a sum of national loss functions (and not a European loss function which depends on European aggregates).

As for fiscal federalism, one participant noted that this would imply redefining the Stability Pact in terms of structural deficits.

Lastly, certain differences emerged concerning the time-scale of coordination. For some, coordination must cover the differentials between economies, in the short term. For others, it should concentrate on long term trajectories. In either case, the time-scale of coordination is of crucial importance to the organisation to be adopted.

2. Financial Supervision in EMU

Presentation by Karel Lanoo

Karel Lanoo explained that monetary unification automatically raises the question of prudential supervision: though financial markets are highly interdependent, supervision remains national, but monetary powers have been transferred to the federal level.

A trend in Europe towards the separation of supervision and lender-of-last-resort responsibilities is to be observed. Furthermore, supervision is centralised at the level of a "mega-authority" in four European countries. A mega-authority is coherent with the trend to financial conglomerates. It allows for economies of scale and limits the number of interlocutors for financial institutions. However, Mr Lanoo did not think that recourse to such an authority should be systematic, because separate bodies are more effective, being closer to financial institutions, and possibly subject to competition. In addition, insurance activities are fundamentally different from banking activities.

According to Mr Lanoo, it is necessary to set up a European code of conduct relating to supervision responsibilities, to encourage the circulation of information between the various supervision agencies, and to ensure transparency *vis-à-vis* markets. Excessive ambiguity concerning the distribution of responsibilities could

lead to an excessive tolerance on behalf of different actors. More transparency is therefore needed. Transparency with respect to markets could be ensured by a monitoring body of systemic risk, which would aggregate and control risk exposure in European financial markets (in collaboration with the ECB, which cannot be kept aside). Institutional transparency would consist of a harmonisation of the lender-of-last-resort function at the national level, the application of Treaty rules, and the establishment of a certain hierarchy.

In his conclusion, Mr Lanoo was unfavourable towards the centralisation of supervision, but in favour of coordination across the various supervisory agencies as well as with the ECB and the national central banks, at the national and European levels.

Commentary by Olivier Davanne

Mr Davanne said that he was 90% in agreement with Karel Lanoo. He stressed the importance of separating supervision from crisis management.

Supervision: Mr Davanne suggested that the principle of subsidiarity should be applied, given that banks carry out half of their activity in home markets. He noted that there is already much cooperation between supervisory bodies, even if more could be done. He supported the idea of setting up a monitor of systemic risk, which had indeed been proposed to the French Conseil d'Analyse Économique by Michel Aglietta and Christian de Boissieu. Such a monitoring body would also be useful to the ECB in preventing credit rationing. He concluded that supervision should remain at the national level, while cooperation should be developed thanks to a monitoring body.

Crisis management: Mr Davanne doubted whether a lender-of-last-resort was necessary, as banks do not take liquidity risks by nature. They are covered by deposit insurance, in their relations with their clients. For inter-bank relations, banks should not borrow short to lend long. The existence of a lender-of-last-resort would encourage them to borrow short. He thought that the manner in which banks manage their liquidity should be modified with the use of heavy penalties.

To conclude, Mr Davanne set out his differences with Mr Lanoo concerning insurance. He felt that systemic risks also exist in this sector, at least for France, where resources are not really long term: were there to be a strong rise in long term rates, then insurance policy-holders would arbitrate in favour of bonds.

Commentary by Heinz Hermann

Mr Hermann said that he agreed with Mr Lanoo about the need for developing cooperation between supervisory bodies, but he thought that it was too early to talk about a federal supervisory body. He underlined the conflicts of interest between monetary policy and banking supervision. The ECB should therefore not be left aside, even if a separation of responsibilities has to be maintained.

Mr Hermann was also worried about the problems of supervision at the beginning of Stage 3, given especially the strengthening of competition and mergers which are sweeping the banking sector. He felt that supra-national supervision would be impossible as long as national budgets foot the bill were crises to occur. It is also necessary to have a quick institution. According to Mr Hermann, the problem with national supervision lies in the possibilities of covering up problems of solvency.

General Discussion

Patrick Artus, chair for the session, suggested organising the discussion around two subjects: supervision and the lender-of-last-resort.

Supervision

A certain consensus emerged that responsibility for supervision should remain at the national level. A number of participants stressed the fact that existing institutions already communicate a lot. Others judged such institutions in the light of their previous effectiveness...

One participant stressed the difference between supervision and regulation: work could start on harmonising prudential rules. Several participants feared

excessive regulation, which would limit competition among banks (regulation should be just enough to prevent bankruptcies, but not to prevent banks from making losses) and also limit liquidity. A discussion on capitalisation ratios then followed, ratios that are accused of tackling each risk separately, of encouraging certain risk-taking, and of accentuating the business cycle. In relation to non-bank institutions (such as hedging funds), one participant wanted to know whether they should be regulated directly or indirectly (by regulating their lending to banks).

Another participant suggested that regulation should evolve over the course of the cycle, as banks take excessive risks during phases of expansion, whereas they reduce their credit too strongly in times of recession. This proposition was met with some sceptical reactions. Lastly, a participant proposed associating depositors in the supervision of the banks holding their deposits.

The lender-of-last-resort

The discussion focused on the distribution of roles between the ECB and the national central banks.

It was suggested that banks be encouraged to develop their activities throughout the euro-zone, in order to limit the risks of a national banking crisis, to which the ECB could not respond by lower interest rates.

Another participant pointed out that the management responsibilities in a crisis are already well-defined: where a single bank is suffering from a problem of liquidity, the national central bank is responsible for and must inform the ECB; if there is a problem with the TARGET system, then the ECB must intervene. The only difficulty concerns a general crisis of liquidity, for which the role of lender-of-last-resort cannot be separated from monetary policy. A technical discussion followed on the possibility of national central banks playing a role of lender-of-last-resort (banks that would benefit from this would have to put up collateral), and on the risks of a solvency crisis being disguised into a liquidity crisis.

Agnès Bénassy-Quéré

2008		
B01-08	Euro-Diplomatie durch gemeinsame „Wirtschaftsregierung“	<i>Martin Seidel</i>
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2006		
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B02-06	Financial Openness and Macroeconomic Volatility	<i>Jürgen von Hagen, Haiping Zhang</i>
B01-06	A Welfare Analysis of Capital Account Liberalization	<i>Jürgen von Hagen, Haiping Zhang</i>
2005		
B11-05	Das Kompetenz- und Entscheidungssystem des Vertrages von Rom im Wandel seiner Funktion und Verfassung	<i>Martin Seidel</i>
B10-05	Die Schutzklauseln der Beitrittsverträge	<i>Martin Seidel</i>
B09-05	Measuring Tax Burdens in Europe	<i>Guntram B. Wolff</i>
B08-05	Remittances as Investment in the Absence of Altruism	<i>Gabriel González-König</i>
B07-05	Economic Integration in a Multicore World?	<i>Christian Volpe Martinicus, Jennifer Pédussel Wu</i>
B06-05	Banking Sector (Under?)Development in Central and Eastern Europe	<i>Jürgen von Hagen, Valeriya Dinger</i>
B05-05	Regulatory Standards Can Lead to Predation	<i>Stefan Lutz</i>
B04-05	Währungspolitik als Sozialpolitik	<i>Martin Seidel</i>
B03-05	Public Education in an Integrated Europe: Studying to Migrate and Teaching to Stay?	<i>Panu Poutvaara</i>
B02-05	Voice of the Diaspora: An Analysis of Migrant Voting Behavior	<i>Jan Fidrmuc, Orla Doyle</i>
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2004		
B33-04	The Effects of Transition and Political Instability On Foreign Direct Investment Inflows: Central Europe and the Balkans	<i>Josef C. Brada, Ali M. Kutan, Tanner M. Yigit</i>
B32-04	The Choice of Exchange Rate Regimes in Developing Countries: A Multinomial Panel Analysis	<i>Jürgen von Hagen, Jizhong Zhou</i>
B31-04	Fear of Floating and Fear of Pegging: An Empirical Analysis of De Facto Exchange Rate Regimes in Developing Countries	<i>Jürgen von Hagen, Jizhong Zhou</i>
B30-04	Der Vollzug von Gemeinschaftsrecht über die Mitgliedstaaten und seine Rolle für die EU und den Beitrittsprozess	<i>Martin Seidel</i>
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B26-04	Analyzing Trade Opening in Ukraine: Effects of a Customs Union with the EU	<i>Oksana Harbuzyuk, Stefan Lutz</i>
B25-04	Exchange Rate Risk and Convergence to the Euro	<i>Lucjan T. Orlowski</i>
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B18-04	Transmission Channels of Business Cycles Synchronization in an Enlarged EMU	<i>Iulia Traistaru</i>
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B02-04	Total Factor Productivity and Economic Freedom Implications for EU Enlargement	<i>Ronald L. Moomaw, Euy Seok Yang</i>
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2003		
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ISSN 1436 - 6053

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