

Heinsohn, Gunnar; Steiger, Otto

Working Paper

The European Central Bank and the eurosystem: An analysis of the missing central monetary institution in European Monetary Union

ZEI Working Paper, No. B 09-2003

Provided in Cooperation with:

ZEI - Center for European Integration Studies, University of Bonn

Suggested Citation: Heinsohn, Gunnar; Steiger, Otto (2003) : The European Central Bank and the eurosystem: An analysis of the missing central monetary institution in European Monetary Union, ZEI Working Paper, No. B 09-2003, Rheinische Friedrich-Wilhelms-Universität Bonn, Zentrum für Europäische Integrationsforschung (ZEI), Bonn

This Version is available at:

<https://hdl.handle.net/10419/39508>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Zentrum für Europäische Integrationsforschung
Center for European Integration Studies
Rheinische Friedrich-Wilhelms-Universität Bonn



Gunnar Heinsohn, Otto Steiger

**The European Central Bank
and the Eurosystem: An
Analysis of the Missing
Central Monetary Institution
in European Monetary Union**

Working Paper

**B 09
2003**

THE EUROPEAN CENTRAL BANK AND THE EUROSISTEM: An Analysis of the Missing Central Monetary Institution in European Monetary Union

by Gunnar Heinsohn*) and Otto Steiger**)
May 2003

*) Universität Bremen
Raphael-Lemkin-Institut
Bibliothekstr. 1
D-28359 Bremen, Germany
Tel.: +49(0)421/218-3154
Fax: +49(0)421/218-7069
E-mail: gheins@uni-bremen.de

**) Universität Bremen
Institut für Konjunktur- und Strukturforchung
Wilhelm-Herbst-Str. 5
D-28359 Bremen, Germany
Tel.: +49(0)421/218-3071
Fax: +49(0)421/218-4336
E-mail: osteiger@uni-bremen.de

Abstract

The European Central Bank and the Eurosystem:

An Analysis of the Missing Central Monetary Institution in European Monetary Union

The Eurosystem is the fifth decentralized system in the history of central banks. It consists of the European Central Bank (ECB) and twelve National Central Banks (NCBs) forming the European Monetary Union (EMU). The stark decentrality of this System is so little known that ubiquitous statements by high level Euro experts on its supposed similarity with other decentralized systems, like the former Bundesbank System and the existing Federal Reserve System, are met with no protest. A closer look on European documents and the balance sheet of the ECB reveals, however, that the ECB – far from being the monopoly supplier of central bank money – cannot set the refinancing conditions to credit institutions in EMU. The latter are determined by the Council of Governors of the Eurosystem, while the main refinancing operations are executed by the NCBs leaving to the ECB the role of vicarious agent. The ECB can neither control all types of securities accepted for the NCBs' credit operations nor is it able to act as lender of last resort. Yet, every possible manoeuvre to make the ECB look like a central bank of the NCBs is relentlessly employed, most obviously in the design of the Euro banknotes which are issued by the NCBs but carry only the imprint of the ECB, as well as by the ECB's balance sheet as at 31 December 2002. The latter contains for the first time the item "banknotes in circulation" that are, however, issued by the NCBs and only allocated to the ECB.

JEL Classification: E 58

The European Central Bank and the Eurosystem: An Analysis of the Missing Central Monetary Institution in European Monetary Union*

1. The Principles of Central Banking

A two-tiered banking system consists of a central bank with the monopoly of issuing *banknotes* in credit contracts with commercial banks, which can only obtain these notes by pledging *good securities* and promising *interest*. Since it is *property* that is at the core of any good security such a banking system can only function in property based societies (Heinsohn and Steiger, 2000a).

The central bank must not accept as underlying assets in such a contract debt instruments issued or guaranteed by its counterparty commercial bank, or by any other entity with which the counterparty has close links. *Dresdner Bank*, e.g. will be accepted at the discount window with securities bought from its competitor *Deutsche Bank*, or another entity like the German Government, but not with its own paper, or that of its owner *Allianz Insurances*, even if these titles should prove to be highly marketable. Yet, it is with its own assets, its property, that the counterparty is held liable by the central bank for the debt instruments issued by other entities. Thus, genuine central bank money always has to be a *creditor's* and not a *debtor's money*.

In the classical texts on central banking these prerequisites of genuine money were not fully understood. However, the founding fathers of the theory of central banking, Henry Thornton in his *Paper Credit of Great Britain* (1802)

* This paper is a revised and extended version of Heinsohn and Steiger (2002). It will be published in D. Ehrig and O. Steiger (eds.), *The Euro, the Eurosystem and European Monetary Union*, Hamburg: LIT-Verlag, 2003.

and Walter Bagehot in his famous *Lombard Street* (1873), always tied the creation of money to good securities, even in the case of a liquidity crisis. The former was the first to conceive of a lender of last resort. In his discussion of the financial crisis of 1793 in England Thornton observed that the country banks ceased to give out their notes because the public refused to accept them demanding instead Bank of England notes. Therefore he proposed two rules for “future seasons of alarm”. “First, [...] the Bank of England [...] should be disposed to extend its discounts in a greater degree than heretofore [...]. Secondly, the country bankers should be taught [...] to provide themselves with a larger quantity of that *property* which is quickly convertible in Bank of England notes“ (Thornton 1802, 188, our emphasis).

To merely focus on interest, as is common practice in modern literature, would never have entered the minds of Thornton and Bagehot. The latter’s rationale for the central bank as the lender of last resort, “the last lending house” as he has termed it (Bagehot, 1873, 53), is far from merely providing liquidity by whatever means. Unwaveringly he stated: “There are two rules. First. That these loans should only be made at a very high rate of interest. [...] Secondly. That at this rate these advances should be made at all *good* banking securities and as largely as the public ask for them” (Bagehot, 1873, 197; our emphasis).

Ralph Hawtrey, no less than Bagehot, in his classic *The Art of Central Banking* (1932) was well aware that the lender-of-last-resort responsibility must never be mistaken in a way that, because of the devastating consequences of a panic, commercial banks may, by way of exception, be allowed to obtain cash without pledging prime property titles: “The essential duty of the central bank as the lender of last resort [...] cannot mean that it should lend to *any* bank that needs cash, regardless of the borrowing bank’s behavior or circumstances. Neither a commercial concern nor a public institution could undertake to supply

cash to insolvent borrowers” (Hawtrey, 1932, 126).

All three authors emphasized the necessity of good securities because they understood that the principles of banking apply to a central bank no less than to any bank of issue. They were beautifully lined out already in 1767 by James Steuart in what can be regarded as mercantilism’s most important treatise (Stadermann and Steiger, 2001, 21-86): “Many, who are unacquainted with the nature of banks, have a difficulty to comprehend how they should ever be at a *loss* for money, as they have a mint of their own, which requires nothing but paper and ink to create millions. But if they consider the principles of banking, they will find that every note issued for value consumed in place of value received and preserved, is neither more or less, than a partial spending either of their *capital*, or profits on the bank”. Therefore, he emphasized “that banks give credit upon nothing but the *best* securities” (Steuart, 1767, II, 151 f. and 603, our emphases).

Thornton and Bagehot were no less concerned than Steuart about the dangers in the business of issuing money: “Banknotes emitted without obtaining value in return [...] are [a] great source both of *loss and danger* to a banking company” (Thornton 1802, 244, our emphasis). By accepting “*bad* bills or *bad* securities [...] the Bank [of issue] will ultimately *lose*” (Bagehot 1873, 198, our emphases).¹ Hawtrey, too, had no difficulty to see the central bank’s common

¹ However, Bagehot, other than Steuart, Thornton and Hawtrey, did not comprehend the full meaning of such a loss. While the latter two unequivocally saw the loss of the bank’s own *capital*, the former stressed the loss of the bank’s *reserve* in the form of its own notes. The holding of such a reserve by the Bank of England was due to its particular division into an Issue and a Banking Department. Without this particularity, a central bank never holds its notes as a reserve because for a bank of issue they are not an asset but a liability. Therefore, it deletes them from its books the very moment they flow back against the return of the debt instruments which were conditional for their creation. At the Bank of England this demonetization of the notes occurred at the Issue Department when it handed out gold against its notes. Therefore, the Banking Department, which could not create the notes, had to hold a reserve of banknotes equal to the amount deposited with it by the commercial banks which themselves did not hold such a reserve. Bagehot did not recognize that the reserve of

commercial woes: “A commercial concern in particular cannot afford to take *risks* out of proportion to its *own capital*” (1932, 126, our emphases).

The balance sheet of a central bank, like that of any other business in the monetary economy, has to consist not only of assets and liabilities but also of a surplus of the former over the latter. With this own capital or equity it safeguards itself against the threat of bankruptcy: “While a central bank can extend emergency loans for unlimited amounts, *its capacity to absorb losses is limited* (up to the size of its capital)” (Schoenmaker 2000, 222, our emphasis).

Only because economists have forgotten this old wisdom, dubious recommendations, most prominently by Paul Krugman, were made in recent years to the Bank of Japan to salvage the deflation-ridden Japanese economy by

banknotes could be expanded by taking in more good securities. On the contrary, he regarded the reserves as a fixed stock that had to be safeguarded. It is this perception which explains his demand for “a very high rate of interest” in case of a panic (Bagehot 1873, 197). Without this high rate he feared the Banking Department would go bankrupt: “**I t m a y b e s a i d t h a t t h e r e s e r v e i n t h e B a n k i n g D e p a r t m e n t w i l l n o t b e e n o u g h f o r a l l s u c h l o a n s . I f t h a t b e s o , t h e B a n k i n g D e p a r t m e n t m u s t f a i l**” (1 8 7 1 , 1 9 8 , o u r e m p h a s e s ; s e e a l s o S t e i g e r 2 0 0 2 , 5 8 f.) .

The danger for a central bank engaging in lender-of-last-resort operations is correctly described. However, Bagehot’s focus on the reserve of banknotes in the Banking Department, and not on its own capital, does not lead to a correct explanation of the danger of bankruptcy. A central bank will only fail if it loses its capital due to the securities of its debtors turning bad but not because its reserve of banknotes is not enough for its loans.

For a consolidation of the balance sheets of both departments of the Bank of England into a unified balance sheet in which a reserve of banknotes no longer exists cf. Andréadès 1904, 296. See also Stadermann and Steiger, 2001, 85.

engaging in large scale purchase of long-term government debt. The idea that such a policy will lift bond prices and lower short-term interest rates and, thereby, trigger an upswing, does not take into account that this could bankrupt the Bank. The more this policy succeeds in dispelling deflation and the more the economy prospers, the higher long-term interest rates will be. This increase in yield will decrease the value of the bonds held by the Bank of Japan: “If the Bank held only 10 percent of the long-term government bonds outstanding and interest rates rose by two percentage points, the resulting losses would wipe out the institution’s entire capital and reserves” (Lerrick, 2001, 13).

It is true that in a liquidity crisis of a counterparty of the central bank the latter usually does not have the time to check whether the former is solvent or insolvent. Moreover, a commercial bank which is merely illiquid but not insolvent will usually be able to refinance on the money market without recourse to the central bank. Thus, anybody turning to the central bank is under highest suspicion of insolvency. Therefore, modern central banks are well advised to protect their own capital by sharing the risk of bad loans with their counterparties and other commercial banks. When, in September 1998, Long Term Capital Management (LTCM) applied for funds from the Federal Reserve Bank of New York the latter, fearing a financial meltdown by contagion with this insolvent hedge fund, did not help LTCM with fresh money. Instead it swiftly called fifteen domestic and foreign banks to put up 3.5 billion dollar as credit to LTCM.

When, on 25 February 1995, the prestigious British merchant bank Barings had, in its Singapore division, accumulated a loss of £ 625 million it turned to the Bank of England for help. The latter immediately tried to line up forty British and international banks willing to put up the equivalent of Barings’ loss. The richest man in the world and a longtime client of Barings, the Sultan of

Brunei, did volunteer to put in £ 300 million but later withdrew because his generous offer was the only one to come forward. Then, the Bank of England decided to let Barings fall because it “was unable to put its own money into a bailout [...] to help cap the risk” (Zhang 1995, 5 and 8). Therefore, on 26 February 1995, Barings had to declare bankruptcy.

After the terror attacks of 11 September 2001, to give a final example for a central bank’s risk, the Federal Reserve Bank of New York did not even have time to round up a defensive line of commercial banks. Instead it swung its discount window wide open because Wall Street was closed and the money markets barely functioned. The Bank had no chance whatsoever to scrutinize the eligible assets of applicants. In normal times its discount window is hardly used because banks showing up there fear a loss of reputation, *i.e.* are afraid of being suspected of having financial problems. The System does not see this differently. Therefore, “Federal Reserve Banks ensure that the value of collateral pledged to secure a discount window loan exceeds the amount of the loan. The extra cushion of collateral helps protect the Reserve Banks against loss in the event that a borrower defaults” (Federal Reserve System, 1994, 46).

In regular times the weekly total lent through the discount window is a mere \$ 200 million. Yet, within a day of the New York Bank’s announcement that the window is open to provide liquidity, it received demands for \$ 46.25 billion in one-day funds. It effectively lent \$ 38.25 billion (Ip *et al.* 2001, 6).

In this case, all the risk of loosing its equity was with the Federal Bank of New York. Yet, it was clear that in the worst case the Treasury would refund the Bank with tax-payers’ money to keep it operating because a central bank cannot create money out of nothing, as many an economist believes, but risks its own capital when it creates money. Thus, the ministry of finance forms the final

defensive line for a central bank's function as lender of last resort (cf. Goodhart, 2000b, 11 f.; Schoenmaker, 2000, 220-222).

During the same crisis, the eleven national central banks (NCBs) of the European Monetary Union (EMU), which together with the European Central Bank (ECB) form the Eurosystem, also provided liquidity. Not rejecting a single demand they lent € 109.8 billion in one-day funds. However, the vital question who would bail out a failing NCB – the ECB, one of the big NCBs, the European Commission in Brussels, a national ministry of finance or some of them together – was neither raised nor answered. Everything was left to sheer luck.

Before analyzing the Eurosystem as a system consisting of a multitude of central banks, three principles of the art of central banking have to be kept in mind: (i) a central bank has to safeguard its own capital like any company and, therefore, like any other bank – especially when it acts as lender of last resort; (ii) the lender-of-last-resort responsibility has to be assigned to the central monetary institution; (iii) a monetary union of independent nations does not only require a central monetary but also a swift and big central fiscal authority to safeguard the lender-of-last-resort responsibility of the former under all circumstances.

2. The Art of Central Banking in a System with a Multitude of Central Banks

The Eurosystem is the fifth decentralized system in the history of central banks². It consists today of the ECB and twelve NCBs. It started on 1 January

² The emphasis is on *decentralised* central banking, *i.e.* the existence of a monetary union with a *single* central banking system. Therefore, we do not compare the Eurosystem with

1999. The stark decentralization of the Eurosystem is so little known that ubiquitous statements on its supposed similarity with other decentralized systems are met with no protest.

The mine-infested learning field for properly running a decentralized central banking system was provided by mankind's first such institution, the Federal Reserve System in action between the Federal Reserve Act of 1913 to the Banking Act of 1935. It was definitely a system without a central monetary authority. The seven members of the Board of Governors in Washington were restricted to tasks of coordination of the System's twelve regional Reserve Banks with no influence whatsoever on monetary policy. In the early years discount lending was the primary tool of monetary policy, with individual Banks having considerable discretion to set discount rates. It was not until the early 1920s that the potential of open market operations was discovered. Therefore, in the spring of 1922 the Committee of Governors on Centralized Execution of Purchases and Sales by Federal Reserve Banks was established to coordinate – without interference by the Board – the actions of the System. This Committee was reconstituted as the Open Market Investment Committee (OMIC) in 1923. It consisted of representatives of the Boston, New York, Philadelphia, Cleveland and Chicago Reserve Banks, under the chairmanship of the New York Bank. The OMIC was dissolved in 1930 and reconstituted as the Open Market Policy Conference composed of the Presidents of only the twelve Reserve Banks. As a reaction to the severe banking crisis in the wake of the Great Depression, the Banking Act of 1933 established the Federal Open Market Committee (FOMC) consisting of representatives of the twelve Reserve Banks and the Board of Governors. Even then, however, the Governors did not get a vote in open market policy.

decentralized monetary unions with different central banking systems, *e.g.* the Latin, Scandinavian and Austro-German monetary unions before World War I. They are discussed by Michael Bordo and Lars Jonung (2000) as well as Jonung (2003).

Only with the Banking Act of 1935, the lessons of all that went wrong with the first Federal Reserve System in the Great Contraction were finally drawn. The quagmire preceding this profound reform was admirably described by Milton Friedman and Anna Jacobson Schwartz in their famous study of 1963 (391): “There was nothing that could be called a System policy. The System was demoralized. Each Bank was operating on its own. All participated in the general atmosphere of panic that was spreading in the financial community and the community at large. The leadership which an independent central banking system was supposed to give the market and the ability to withstand the pressures of politics and of profit alike and act counter to the market as a whole, these – the justification for establishing a quasi-governmental institution with broad powers – were conspicuous by their absence”.

The Banking Act of 1935 brought a powerful centralization characterizing the second Federal Reserve System: “Only after authority was definitely centralized in the hands of the Board of Governors and the Federal Open Market Committee did the new institution finally come to operate smoothly” (Eichengreen 1992, 14). The Act altered the FOMC’s composition to give the Board not only a vote but also a permanent majority in open market policy. It reduced the representation of the Reserve Banks to five members, with the President of the New York Bank as the only permanent member. Furthermore, the Act assigned a very powerful role to the New York Bank – with 40 percent of all assets the biggest Bank in the System. While the other eleven Banks were still allowed to issue Federal Reserve notes, New York alone was empowered to execute open market operations and assigned the responsibility of the System’s lender of last resort.

The new Federal Reserve System worked so well that it became a model for history's third decentralized central banking system, the Bank Deutscher Länder System (BdL) of West Germany which started with the introduction of the deutschmark in 1948. In this system the BdL, located in Frankfurt am Main, was a daughter of the eleven West German states' central banks, the Landeszentralbanken (LZBs). The eleven LZB-Presidents together with the six Executive Directors of the BdL formed the Council of Governors, the Zentralbankrat. The presidency was shared by the President of the BdL with the President of the LZBs chosen by the eleven LZB-Presidents. Yet, the BdL Directors clearly ruled the roost because they could make decisions without waiting for the Council's consent. More importantly, the BdL had the monopoly to issue banknotes. Therefore, it alone executed open market operations and relegated the LZBs to mere branch offices.

When, in 1958, the Bundesbank replaced the BdL, its decentralized system with a powerful center did not have to change very much. No longer two Presidents were heading the System but only one, the President of the Bundesbank. Because the German central bankers had learned the American way so well, the deutschmark became for Europe what the dollar had achieved in the world.

However, it was in the field of lender-of-last-resort responsibility in which the Bundesbank had something to learn on its own. This resulted in an independent contribution to the art of central banking. In the wake of the 1974 bankruptcy of the Herstatt-Bank the Bundesbank created the Liquiditäts-Konsortialbank (Liquidity Consortium Bank [Likobank]) with a capital of DEM 2.7 billion of which the Bundesbank provided 30 percent, whereas its counterparties, 136 (today) commercial banks, had to contribute the remaining 70 percent. The Likobank is the institutionalized alternative to the discussed *ad-hoc-*

convocations of commercial banks by the Federal Reserve Bank of New York and the Bank of England.

When European politicians began to form a monetary union they entrusted, at the European Council meeting at Hannover on 27 and 28 June 1988, a Committee chaired by Jacques Delors, then President of the European Commission, “the task of studying and proposing concrete stages leading towards economic and monetary union”. The resulting report was distributed to experts who delivered their comments between September 1988 and April 1989 after which both report and experts’ papers were collected in a publication known as the “Delors Report” (Delors Report, 1989). The proposal for an institutional framework managing the European Monetary Union (EMU) was christened in the report as *European System of Central Banks* (ESCB). The Maastricht Treaty of 7 February 1992 still used that name. At the start of EMU, on 1 January 1999, it was changed to *Eurosystem*.³ The System outlined was brief and vague: (i) “This new System [...] could consist of a central institution (with its own balance sheet) and the national central banks” (§ 32 [25]). (ii) “The ESCB Council would determine the broad lines of monetary policy and the Board [of the central institution] would be responsible for its day-to-day execution” (§ 33 [27]).

The all decisive relation between the new central monetary institution and the NCBs was discussed by Niels Thygesen, a Danish economist, Jacques de Larosière, the later President of the International Monetary Fund (IMF), and Carlo A. Ciampi, President of the Banca d’Italia and now President of Italy. Thygesen, in his discussion of a “European Central Banking System” (1989), did not touch the problem of a powerful center at all. De Larosière (1989)

³ From this time onward, the term ESCB relates to the ECB and *all* fifteen NCBs of the European Union (EU), *i.e.* it includes also the NCBs of Denmark, Sweden and the United Kingdom which are not members of EMU.

approached the problem by ventilating the creation of a European Reserve Bank as well as of a European Reserve Fund. However, he omitted the role of the NCBs.

Only Ciampi (1989) discussed both elements of the Eurosystem. His proposal took into account the breakdown of Europe's earlier monetary unions – especially the Latin and the Scandinavian monetary union of the decades before World War I – as well as the quagmire of the old Federal Reserve System. They had failed because they lacked a central monetary institution. Therefore, Ciampi developed a model of central banking in EMU which consisted of three levels: “the central monetary institution, national central banks and commercial banks”. In this hierarchy, the central monetary institution would be placed at the top and “act as the central bank of the national central banks”⁴ (§ 10 [227]), while the latter would maintain their present relationships with domestic commercial banks. Ciampi's proposal meant the first establishment of a two-stage central

⁴ It was the Swedish economist Erik Lindahl (1930, 170-172), however, who already in 1930 had coined the term “central bank of central banks” which he named “main central bank”. Unfortunately, the 1939 English translation of his book does not contain this section.

Lindahl developed his model of central banking in a theory of a monetary union of independent nations with a unified currency. Each nation would have its own central bank issuing banknotes for domestic use. In addition, the main central bank would issue “international” banknotes for payments between the nations: the national banks would be obliged to obtain at par the international notes from the main central bank in the same way as commercial banks obtain domestic notes from their national central banks: “In this manner, the central bank in each country would be dependent on the main central bank” in the same way as their counterparties on them.

Lindahl was aware, however, that monetary stability could not be guaranteed by the monetary authority alone but in addition by the fiscal authority, especially through the balance of its budget. (Lindahl was the first economist who recognized that a public deficit adds to aggregate investment and a surplus to aggregate savings [Steiger, 1987, 196 a-b]). Therefore, he recognized that his comparison, of the relation between the main central bank and the national central banks on the one side with the relation between a national central bank and the domestic banks on the other, suffered from a decisive weakness: “A central bank for several nations is not supported by a central governmental power but has to base its action on agreements between the nations. Therefore, it is difficult to conceive of a cooperation between the governments of different nations and the main central bank as intimate as between central bank and government within a nation”. Here, Lindahl already saw further than even Ciampi.

banking system in history. It implied three fundamental components: (i) the central institution would have an autonomous balance sheet allowing it to take operational decisions; (ii) it would have the monopoly of issuing ECUs, today called *euro*; (iii) it would control the NCBs' demand for ECUs in credit operations with the latter: "To bring the creation of ECUs [...] under strict control, the central monetary institution should be given the power to grant member central banks discretionary credit in ECUs, in the same way as a central bank refinances commercial banks through open market or rediscount operations" (§ 15 [228]). This meant that the NCBs could not create ECUs but would have been forced to obtain them by delivering good securities to the central institution and depositing there "*compulsory and free reserves*" (§ 16 [228]).

In Ciampi's ingenious plan the NCBs would indeed have suffered a severe "loss of monetary autonomy" (§ 30 [232]). The prospective European currency, however, would have thrived. Yet, nothing of this proposed structure of the Eurosystem made it into the Maastricht Treaty or the Statute of the ESCB and the ECB. These documents paved the way for the NCBs domestic monopoly to issue notes alongside with the ECB in the Eurosystem. As will be shown below, the supposedly central bank in Frankfurt am Main, however, has nothing whatsoever in common with a central monetary institution.

Yet, every possible manoeuvre to make the ECB look like a central bank of the NCBs is relentlessly employed: (i) the name of the Delors Report, "ESCB Council", indicating the decentral focus of the System was substituted for the misleading term "Governing Council of the ECB"; (ii) the euro banknotes, which are issued by the NCBs between Helsinki and Lissabon, are designed as if they are issued by the ECB in Frankfurt giving no hint – against the clear

Indeed, for the success of EMU it is not sufficient to have a powerful European Central Bank

indication on every dollar note – of their source; (iii) the monetary policy of the Eurosystem is presented as *The Monetary Policy of the ECB* (ECB 2001b) though the rate of interest and the volume of liquidity to be allotted are determined by the Governing Council, the NCBs exclusively execute the main refinancing operations, and the ECB has no power whatsoever to function as lender of last resort.

The success of concealing the true character of the ECB was so overwhelming that, in *Germany*, hardly anybody knows how the Eurosystem is constructed. The top brass of politics, commercial banking, central banking and economic sciences go out of their way to praise the power of the ECB as the central monetary institution of the Eurosystem. They can be grouped with respect to truly functioning decentralized monetary systems to which they liken the ECB. Their statements run more or less as follows, with exemplary proponents listed below (for the precise wording cf. Heinsohn/Steiger, 2000b, pp. 84 f.; for the most insightful exception in Germany cf. Seidel, 2001).

(i) *The Eurosystem resembles the Bundesbank System:*

former Chancellor Helmut Schmidt, also known as “world economist”,
 former President of the Bundesbank, Karl-Otto Pöhl,
 chief economist of the Deutsche Bank, Norbert Walter,
 prominent monetary economist, Hans-Joachim Jarchow.

(ii) *The Eurosystem resembles the Bank Deutscher Länder System:*

former President of the Bundesbank, Hans Tietmeyer,
 Vice-President of the Bundesbank, Jürgen Stark,
 prominent monetary economist, Peter Bofinger (“the ECB is the strongest
 central bank in the world”).

(iii) *The Eurosystem resembles the Federal Reserve System:*

President of the Bundesbank, Ernst Welteke.

but also a strong and centralized European Treasury.

(iv) *The Eurosystem resembles a two stage central banking system with the ECB as the central bank of the NCBs (Ciampi's proposal)*⁵:

President of the IFO research institute, Hans-Werner Sinn.

President of the Institut für Weltwirtschaft, Horst Siebert.

The *Anglo-Saxon* views of the Eurosystem are divided between the typical (a) German line of reasoning and a more sound (b) recognition of its decentralized structure:

(a) Michael Bordo and Lars Jonung (2000, 35) see the EMU “under the leadership of a common monetary authority”. Samuel Brittan (2000, 42) believes “that there is a single central bank – the ECB – which runs the currency”. David Currie (2000, 48) states: “The ECB has very clear and undivided authority over monetary policy”. Anna Jacobson Schwartz (1997, 90) was convinced early on that the NCBs would “be superseded by a single European central bank. [...] Existing national moneys would disappear, replaced by a new currency that the single European central bank would issue”. Mark A. Wynne (1999, 4 f.) realizes that the six directors of the ECB’s Executive Board are in minority in the 17 – with Greece now 18 –

⁵ In an analysis of the struggle for allocation of the seignorage of the Eurosystem, the prestigious *Frankfurter Allgemeine Zeitung* (bf, 2001) has maintained that the Bundesbank will receive a share of “the seignorage which the ECB yields by issuing Euro banknotes”. According to the Statute of the ESCB and the ECB, however, the ECB does not yield any seignorage by monetary operations. It merely pools and allocates the seignorage earned by the NCBs in such operations, according to the share of the NCBs in the capital of the ECB. The share of the Bundesbank in the latter is 30.24 percent while its share in circulating banknotes is 36.06 percent (as at 31 December, 1999). If the Governing Council had followed the Statute’s rules, the Bundesbank would have lost 16.14 percent of its seignorage to the other NCBs.

From 1999 to 2001, however, the seignorage income of the – then still national – banknotes was not yet pooled and allocated. In a decision of the Governing Council of 6 December 2001 (ECB 2001c, 1 f.), the statute was confirmed allowing, however, the inclusion of all banknotes in the monetary liabilities of the NCBs for the purpose of calculating monetary income from the start of 2002: “During the transitional period up to the end of 2007, monetary income to be allocated to NCBs will be adjusted by taking into account the differences between the average value of banknotes in circulation of each NCB in the

member Governing Council of the European Central Banks and controlled by the latter. Yet, he still perceives an overriding resemblance between the Eurosystem and the Federal Reserve System.

- (b) As early as 1998 (3), *Financial Times* author Wolfgang Münchau adopted our analysis of a weak ECB *vis-à-vis* the NCBs (Heinsohn and Steiger, 1997b). In 2000, he emphasized his view: “The strong presence of national central banks has prevented the ECB from establishing its own identity. [...] The ESCB is one of the most extreme forms of a decentralized central banking network ever invented. [...] The perceived weakness of the ECB is beginning to effect the credibility of the system – and perhaps even the value of the Euro” (Münchau, 2000, 19). Only Arthur B. Laffer (2000, 11) had a real grasp of some of the gruesome details of decentralization in the Eurosystem: “Unlike the U.S. Federal Reserve, which tightly controls the operations of its local branches, the ECB serves as a kind of overlapping institution placed on top of the existing central banks. They do have authority. They do continue to write and enforce regulations. [...] This means that national central banks continue to exert effects on overall liquidity [...] over which Mr. Duisenberg has little control”.

In the *rest of Europe* the division between the two camps – (a) and (b) – repeats itself:

- (a) Giancarlo Corsetti (2001, 20), a prominent monetary economist from the University of Rome III and editor of the Euro Homepage, is stunned by the failure of the ECB to accommodate the fall of the Euro’s exchange rate in autumn 2000 “with standard open-market operations”. This renowned euro expert is not aware that the ECB does not have such authority.
- (b) Daniel Gros (1999), chairman of the Macroeconomic Policy Group of the

period from July 1999 to June 2001 and the average value of banknotes that would have

Brussels based Centre for European Policy Studies, emphasizes that the Eurosystem cannot be compared with the Bundesbank System or the Federal Reserve System. He recognizes that the NCBs are not subordinate to the ECB and is worried about the “too many risks [...] of decentralized lending of last resort” (17).

3. The European Central Bank is only the Torso of a Central Bank

“What Is a Central Bank? [...] A central bank is, first of all, a ‘bank of issue’ – that is, it stands responsible for the currency” (Mayer, 2001, 55 f.).

It is the first Federal Reserve System, for good reason demolished in 1935, with which the Eurosystem has the strongest resemblance. However, there is one difference between the old Fed and the Eurosystem that has helped to confuse the experts. The Washington based institution consists – before and after 1935 – only of the Board of Governors while the Executive Board at the Frankfurt entity also entails a bank with its own balance sheet – the European Central Bank.

A quick glance at the ECB’s first balance sheets for 1999 and 2000 (ECB 2001a, see *table 1* below) immediately reveals, however, that this bank in *no* way whatsoever is a *bank of issue*. What is the decisive difference between a mere commercial bank without a right to issue notes and a bank of issue? The former has to refinance at the bank of issue. Therefore, the latter’s asset side is dominated by an item called “lending to credit institutions related to monetary policy operations”, and its liability side by the items “banknotes in circulation” and “liabilities to financial sector” (minimum and free reserves of commercial banks), the latter two forming what is called central bank money⁶. The ECB’s

been allocated to them during that period under the ECB’s capital key“.

balance sheet as at 31 December 2000 does neither have “lending to credit institutions related to monetary policy operations” nor central bank money. Thus, the ECB is clearly *not* a bank of issue, *i.e.* it is excluded from the main refinancing operations of the Eurosystem. To have a balance sheet of its own, which the ECB indeed has, is not sufficient to meet the requirements of a bank of issue. Notwithstanding its exclusion from major refinancing operations, the ECB, in its official document *The Monetary Policy of the ECB*, stubbornly misleads the public: “The ECB is the monopoly supplier of central bank money and, by virtue of this monopoly, the ECB can set the refinancing conditions to credit institutions in the euro area” (2001b, 26).

Tab. 1 – European Central Bank. Balance Sheet as at 31 December 2000 (€ mill.)

<i>Assets</i>	2000	1999	<i>Liabilities</i>	2000	1999
Gold and gold receivables	7,041	6,957	Liabilities in euro	4,789	1,382
Foreign currency	41,300	44,518	Liabilities in foreign currency	4,803	4,709
Other claims	4,654	6,540	Intra-Eurosystem liabilities equivalent to the transfer of foreign reserves	39,468	41,190
Intra-Eurosystem claims	13,080	0	Other liabilities	1,680	1,540
Other assets	1,264	1,468	Provisions	2,637	22
Loss for the year	0	247	Revaluation Accounts	7,973	6,860
			Capital and Reserves	3,999	4,027
			Profit for the year	1,990	0
Total assets	67,339	59,730	Total liabilities	67,339	59,730

Source: ECB, *Annual Report 2000*, Frankfurt am Main: European Central Bank, 2001, pp. 172-173. (Due to rounding, totals may not add up).

Is the ECB, then, “a central bank of the national central banks” as proposed by Ciampi and believed by Sinn and Siebert? To qualify as a “main central bank”

⁶ In the Eurosystem the uniformity of central bank money that neither notes of nor deposits at the central bank (“liabilities to financial sector”) carry interest is destroyed. Other than in the Federal Reserve System and the former Bundesbank System but in accordance with the practice of several European central banks before EMU, *e.g.* that of the Banca d’Italia, minimum and free reserves at the NCBs carry interest.

(Lindahl) it has to have on the asset side an item called “lending to national central banks” and on the liability side one called “liabilities to national central banks”. Again, both these items are missing from the ECB’s balance sheet. The ECB, therefore, has no means to control the lending of euronotes brought into circulation by the NCBs. With respect to repurchase transactions, which provide the bulk of money to the financial sector and are executed regularly each week with a maturity of two weeks, the ECB states unequivocally in its *Single Monetary Policy in the Euro Area* (2002, 15, our emphases): “*They are executed in a decentralized manner by the national central banks*”. Longer-term refinancing operations too are exclusively left to the NCBs. These transactions, aimed at providing additional refinancing to the financial sector, are executed regularly each month and have a maturity of three months.

What banking operations, then, can the ECB perform at all after it is excluded from main and longer term operations as well as from “structural reverse operations” aimed at adjusting the structural position of the Eurosystem *vis-à-vis* the financial sector? The ECB may be called into action in four operations necessary to deal with unexpected changes in the level of liquidity in the markets: (i) *fine-tuning reverse operations* to smooth the effects on interest rates caused by sudden liquidity fluctuations; (ii) *outright transactions* for structural and fine-tuning purposes; (iii) *foreign exchange swaps* consisting of simultaneous spot and forward transactions of the euro against foreign currency and used for fine-tuning purposes; (iv) *collection of fixed term deposits* in order to absorb liquidity. Even these four operations shall normally be executed by the NCBs. However, “the Governing Council of the ECB will decide whether, *under exceptional circumstances*”, these operations “*may be executed by the ECB*” (2002, 15-20, our emphases). Though these cases handled by the ECB are truly exceptional ones, the Board

still cannot take action on its own but has to wait for the Council's decision making. Until now, the ECB has not been involved in these four operations. Otherwise it would have shown respective positions in its balance sheet. Therefore, no euronotes have been created by the ECB.

There is, however, one case in which it may appear as if the Board can act independently: the *issuance of ECB debt certificates* to absorb liquidity from the market. Even these certificates, however, "are tendered and settled in a decentralized manner by the national central banks" (2002, 18). As its balance sheet reveals, such issuance by the ECB has so far not taken place.

A case of genuine ECB independence is related to the handling of standing facilities in the Eurosystem, the *marginal lending facility* (to obtain overnight liquidity) and the *deposit facility* (to make overnight deposits). Although these facilities too are executed by the NCBs, the ECB may set the interest rate for them or even suspend them at any time (2002, 23 f.). Marginal lending, in any case, plays a very limited role. It seldom exceeds a level of € 400 million, which represents about two per thousand of the Eurosystem's total refinancing.

Another exceptional operation in which the ECB may create euronotes is not discussed in the ECB's *Single Monetary Policy in the Euro Area* (2002). The ECB could create banknotes in the case of intervening in the foreign currency market by buying and, thereby, increasing its main asset "foreign currency" (€ 41.3 billion in 2000). Yet, this item is not owned by the ECB. It is administered by the NCBs which allow the ECB – however, again only after a decision by the Council – to operate with a modest fraction of all their foreign currency (€ 275 billion in 2000). Therefore, the ECB's main item on the liability side are "Intra-Eurosystem liabilities equivalent to the transfer of foreign reserves" (€ 39.5 billion in 2000).

Until today the ECB has not created euronotes. It did not buy foreign currency but was forced to sell it in several interventions in the autumn of 2000 to slow the bewildering fall of the Euro. Consequently, the ECB's holdings of foreign currency shrunk by nearly 10 percent. The decrease in this item would even have been bigger if the value of the remaining stock, mainly consisting of dollar, would not have been increased by the rise of the dollar. The euronotes in circulation on the liability side of the Consolidated Balance Sheet of the Eurosystem as at 31 December 2000 (see *table 2* below), which aggregates that of the ECB and those of the NCBs, have only been created by the NCBs.

Tab. 2 – Consolidated Balance Sheet of the Eurosystem as at 31 December 2000 (€ mill.)

<i>Assets</i>	2000	1999	<i>Liabilities</i>	2000	1999
Gold and gold receivables	117,073	116,610	Banknotes in circulation	371,370	374,964
Claims in foreign currency	274,611	269,267	Liabilities to financial sector	124,947	117,584
Lending to credit institutions related to monetary policy operations	269,226	250,657	Debt certificates	3,784	7,876
Other claims	29,821	29,571	Liabilities to public sector	57,047	1,762
			Liabilities to non-euro residents	10,824	9,048
Government debt	57,671	59,180	Liabilities in foreign currency	13,220	12,831
Other assets	87,559	81,567	Counterpart of special drawing rights allocated by the IMF	6,702	6,534
			Other liabilities	72,215	54,222
			Revaluation accounts	117,986	106,782
			Capital and reserves	57,866	55,249
Total assets	835,961	806,853	Total liabilities	835,961	806,853

Source: ECB, *Annual Report 2000*, Frankfurt am Main: European Central Bank, 2001, pp. 188-189.

(Due to rounding, totals may not add up).

4. The ECB's Masquerade as a Bank of Issue

In the history of central banking the ECB is the first central bank without banknotes on its liability side. This embarrassing innovation did really hurt the Governing Council of the Eurosystem – especially in the wake of the introduction of euro banknotes as from 1 January 2002. Therefore, on 6 December 2001, the Council came up with a no less surprising remedy. Not only the NCBs but also the ECB “shall issue banknotes” (ECB 2001c, 1) without, however, changing anything in substance. What does that mean?

The Council simply stated: “The ECB will be *allocated* a share of 8% of the total value of the euro banknotes in circulation from the start of 2002, while 92% of the euro banknotes will be issued by the 12 NCBs”. At the same time, however, the Council confirmed that – as practiced until 31 December 2001 – the twelve NCBs exclusively will continue to “put into and withdraw from circulation [...] *all* euro banknotes, *including those issued by the ECB*” (ECB, 2001c, 1, our emphases).

The statement is intentionally awkward and yet very clear. Awkward because it conveys the impression of genuine note issuing at both the NCBs and the ECB. Clear because it is careful to use two different terms – (i) “put into circulation” for the NCBs but “issue” for the ECB. Yet, the ECB does not itself “issue” 8 percent of the euro banknotes but 8 percent of all notes issued by the twelve NCBs are statistically allotted to the ECB's balance sheet. Therefore, the ECB from the start of 2002 has not become a bank of issue in its own right. Whereas before 2002 the ECB was a central bank only by name, over night it has become a central bank by balance sheet. Even this additional qualification cannot hide, however, that the ECB is still only a torso of a central bank.

Why did the Council allot 8 percent of the total value of the euro banknotes to the ECB's balance sheet? According to Jürgen Stark, Vice President of the Bundesbank, it was determined by a simple rule of thumb, not as could be assumed according to the ECB's share of the total assets of the Eurosystem – € 67 billion out of € 835 billion or 8.02 percent at 31 December 2000. The total value issued by the twelve NBCs was divided through thirteen because the ECB is number 13 in the Eurosystem. The resulting 7.69 percent was rounded-up to 8 percent (Heinsohn/Steiger 2002, 27). Thus, what will appear as notes issued by the ECB under the item “banknotes in circulation” in its new balance sheets from 1 January 2002 onward is indeed a misleading label.

Tab.3 – European Central Bank. Balance Sheet as at 31 December 2002 (€ mill.)

Assets	2002	2001	Liabilities	2002	2001
Gold and gold receivables	8,058	7,666	<i>Banknotes in circulation</i>	28,681	0
Foreign currency	37,316	41,235	Liabilities in euro	1,264	1,293
Other claims	3,231	4,028	Liabilities in foreign currency	5,192	5,858
Intra-Eurosystem claims			Intra-Eurosystem liabilities equivalent to the transfer of foreign reserves	40,497	40,497
(a) related to the allocation of euro banknotes within the Eurosystem	28,681	0	Other liabilities	1,493	1,853
(b) others	5,468	9,697	Provisions	2,645	2,803
Other assets	7,512	5,535	Revaluation Accounts	4,405	9,429
			Capital and Reserves	4,870	4,506
			Profit for the year	1,220	1,822
Total assets	90,268	68,061	Total liabilities	90,268	68,061

Source: ECB, *Annual Report 2002*, Frankfurt am Main: European Central Bank, 2003, pp. 198-199, our emphases. (Due to rounding, totals may not add up).

In the first published new balance sheet as at 31 December 2002 (see *table 3* above) – blown from € 68 to 90 billion in just one year – the ECB, for the first

time in its history, presents itself as a bank of issue. On the liability side one finds an item not seen before – ”banknotes in circulation“ and at a value of € ca 29 billion. What is the corresponding item on the asset side? Lending to credit institutions and/or NCBs related to monetary policy operations? Not at all! Instead, one finds a particular innovative category: “*Intra-Eurosystem claims related to the allocation of euro banknotes within the Eurosystem*” (our emphasis) at € 29 billion. How is this never heard of item explained to the public? “This item consists of the claims of the ECB *vis-à-vis* the euro area NCBs relating to the allocation of euro banknotes within the Eurosystem” (ECB 2003, 205).

The rest of decency exhibited in the 6 December 2001 decision by letting the NBCs “put into circulation” whereas the ECB “issues” is gone for good. Hidden in a statement in the ECB balance sheet’s “accounting policies”, the Bank casually informs: “The ECB *and* the 12 euro area NCBs have *issued* euro banknotes as from 1 January 2002” (ECB 2003, 203, our emphases). This goes already far in fooling the trustful reader of the the *Annual Report 2002*. Yet, the costume of the impostor of a bank of issue still needs some mending. This comes in another statement in the “accounting policies”: “The ECB’s share of the total euro banknote issue is *backed by claims on the NCBs*” (ECB 2003, 203 f.; our emphasis). Suddenly the ECB looks like an incarnation of Lindahl’s “main central bank” or Ciampi’s “central bank of the national central banks”, *i.e.* that the ECB grants credit to the NCBs. A mere statistical allotment of the ECB’s twelve mothers to their helpless daughter is turned into the rare case of a dowry given by the daughter to the parents.

5. The ECB’s Masquerade as the Central Monetary Institution of the Eurosystem

Somehow it was sensed that a misleading name - *Central Bank* - and a

threadbare balance sheet-costume of a bank of issue were not sufficient to pull the wool over the eyes of Euroland's citizenry. The name of the Governing Council, the determination of the rate of interest and the volume of central bank money as well as the design of the euro banknotes – everything cried out to be assigned to the ECB to make it look like the central monetary institution of the Eurosystem.

To secure at least a rudimentary central banking activity for the ECB one could, indeed, have thought of giving it the power to determine the single monetary policy in the Eurosystem. After all, the individual NCBs have lost their autonomy in setting the rate of interest for refinancing. Who does set the rate of interest in the Eurosystem and who determines the amount of liquidity to be allotted in the tenders to be executed by the NCBs?

This is done by the Council of Governors of the Eurosystem which, however, is not the “Council of the *ECB*” as its official name suggests. The Executive Board of the ECB does not form a council of its own but is a minority group in the Council. As Board it functions only as an intermediary, a vicarious agent, between the 18 member Council, in which the six directors of the Board sit together with the twelve NCB Presidents, and the NCBs which implements the Council's policy. Other than the Board of the Federal Reserve System or the Directorate of the former Bundesbank the ECB's Executive Board cannot take any independent decision. In every respect it is controlled by the Council which until now has only assigned the ECB some 1,200 employees out of over 60,000 in the Eurosystem.

In its official documents on the monetary policy of the Eurosystem (ECB, 2002 and 2001b) the ECB is ambiguous on who exactly determines what. In both documents (2002, 26-36; 2001b, 65-69) it gives the conflicting impression that it

is the ECB as well as the Council of Governors who specify in advance the interest rate and the amount of liquidity to be allotted in tenders to be executed by the NCBs. A closer look at the Eurosystem's tender procedures clearly reveals, however, that it is the Council who rules the roost leaving to the ECB the role of vicarious agent. "The interest rate is specified in advance by the Governing Council" which also "indicates in advance the volume to be allotted in forthcoming tenders" (ECB, 2001b, 65 and 67).⁷ As the Council only meets once a month for monetary policy decisions while the tenders are executed each week, the ECB has of course a margin in deciding the amount of liquidity to be provided. Notwithstanding this margin, it means in no way an independent "ECB's decision" (ECB, 2001b, 66). The ECB can only modify by degree what the Council has determined in advance.

The NCBs do not only have the majority in the Council but also in the committees which prepare its decisions. Their experts are indispensable because they collect the necessary information from the national markets which the Council and the ECB's directors have to rely on. Yet, this highly decentralized nature of the decision making process and its results in the monetary aggregates of the Eurosystem's thirteen central banks cannot be seen by the public. Most importantly, both the ECB and the NCBs are explicitly forbidden to publish up-to-date statements of the balance sheets of the individual central banks. All they are permitted to let the public see is the weekly statement of the consolidated balance sheet of the Eurosystem. Only in their annual reports the ECB and the NCBs are allowed to publish their own balance sheets as at 31 December.

The lack of centralization in the Eurosystem is mirrored by the absence of a European supervision and regulation authority for the financial markets. The

⁷ A definite decision on how the amount of liquidity will be allocated to the NCBs was made by the council first on 6 December 2001: "As from 1 January 2002, [...] each NCB will

responsibilities are entirely left to the national authorities which do not even act under a common set of rules⁸. Moreover, the exclusive right to authorize the issue of banknotes within the Eurosystem does not lie with the ECB but, again, with the Governing Council (Article 16 of the Statute of the ESCB and the ECB)⁹.

There is some reflection of the alarming lack of power of the ECB which the Maastricht Treaty reveals in its Article 73f – unchanged as Article 59 in the Amsterdam Treaty. This Article states that in the case of a currency crisis the Council of the European Community (ECOFIN, *i.e.* the ministers of finance of the fifteen member states of the EU) can suspend capital flight from the euro, a decision over which the ECB is only consulted. Therefore, Wilhelm Hankel (2003), quoting the Article, characterize the euro rightly as a “mousetrap currency”:

“Where, in exceptional circumstances, capital movements to or from third countries cause, or threaten to cause, serious difficulties for the operation of economic and monetary union, the Council, acting by a qualified majority on a proposal from the Commission and after consulting the ECB, may take safeguard measures with regard to third countries for a period not exceeding six months if such measures are strictly necessary.”

After all these caveats, there remains, however, one field in which the ECB

show in its balance sheet a share of the euro banknotes issued corresponding to its paid-up share in the ECB’s capital” (ECB 2001c, 1).

⁸ Jan Kregel (2003) shows, that this leaves capital markets nationally segmented in the euro area. Therefore, these markets are not as deep as their counterparts in the US – a decisive cause for the weakness of the euro *vis-à-vis* the dollar.

⁹ It has to be mentioned, however, that the Maastricht Treaty in its Article 105a states that “the ECB shall have the exclusive right to authorize the issue of banknotes” – unchanged as Article 106 of the Amsterdam Treaty of 17 June 1997.

has a monopoly which always secures the public's attention. Its President alone has the privilege to make the Council's decisions known to the public in press conferences immediately after its meetings. Only the real ECB *connaisseur* will be able to point to one additional feature where the ECB is truly in charge: the "real time" in which cross-border transfers throughout the euro area are settled is called *ECB time*, which is nothing more but Central European Time.

Notwithstanding all the missing qualities of a central monetary institution, the Frankfurt entity always managed to impress the Europeans with the design of the euro banknotes circulating from the start of 2002. All the notes appear as if they were issued by the ECB. They only carry its initials in all the different languages of the EU and the signature of the ECB's President. Only the *eurocoins* are marked with national symbols indicating that they are issued by the national governments. Any hint to the NCBs which issue the euronotes is omitted. This blunt decision to conceal the ECB's impotency regarding the issue of banknotes was taken by the Governing Council on 11 September 1998. The desperate attempts of the Bundesbank to make the Eurosystem follow the Federal Reserve System in which every dollarnote can be traced back to its bank of issue were deliberately stalled by the Council. The Bundesbank had made the proposal to name the bank of issue above the serial numbers in the upper half of the twelve star circle of the EU printed on the reverse of the notes: "With one exception the banknotes are [...] identical: each note has a section indicating the bank of issue" (Deutsche Bank, 1998, 10; Deutsche Bundesbank, 1997, 21). Both sources expose the exclusion of the public from the discussion whether there should be national logos on the euronotes.

What possible reason did the Council have to violate the fundamental rule for every debt title – of which the banknote is one variety – to clearly indicate its issuer? The Italian economic historian Luca Einaudi (1999, 15) has tried to

reconstruct the decision behind closed doors. The national layouts of the eurocoins were seen “fully adequate to satisfy reasonable requests of national identity within a common framework”. An analogous extension of national symbols on euronotes, however, “would create the risk of a re-nationalization of the currency”. Because the Council perfectly knew that the euro was issued by the NCBs, it very well understood that any crisis in one nation would lead to a problem well known from the period of private banks issuing notes of the same denomination. As discussed in section 1 above, their notes were not always exchanged at par but, due to the reputation of the bank, with a discount or an agio: “If a member country of EMU were faced with a political or economic crisis a form of discrimination against the euro banknotes of that country could appear, reintroducing a sort of discount and therefore an exchange rate fluctuation, which would cancel the benefits of the single currency”. The mere symbols of nationality were feared as unnecessary concession to national sovereignty only aimed to support “those wishing to prevent any real union from being formed”, thereby weakening the chances of success of EMU.

Einaudi’s judgement was later confirmed by Hans Tietmeyer, as President of the Bundesbank member of the Governing Council of the Eurosystem in September 1998: “National symbols on coins posed relatively few problems. National symbols on euronotes of some countries, I felt, would have *endangered* their *acceptance* in the others” (Tietmeyer 2001, 9, our emphases).

All these hideous efforts to make the ECB look like the powerful center of the Eurosystem are, however, doomed to fail. Since every expert will be able to identify the bank of issue by the serial numbers printed on the notes, the public at large will feel cheated and lose exactly the confidence the wise Council tried to embellish. The different national central banks were put in alphabetical order according to their nations’ name in official language and then provided with the

letters of the inverted alphabet which was put before the banknotes' serial numbers on the reverse, *e.g.* Belgium - *België / Belgique* – as alphabetical first nation got the last letter, **Z**, and Finland – *Suomi* – as alphabetical last nation the 12th letter from the end, **L**. The only exception from this rule was made later for an EU-nation which in 1998 was not considered at all because at that time nobody thought it would meet the Maastricht criteria: Greece – *Ellas* – which as alphabetical third nation got the second letter from the end, **Y**. In 1998, this letter had been reserved for Denmark – *Danmark* – as alphabetical second nation but who will not join EMU in a near future, as will be the case for Sweden (?) – *Sverige* – and Great Britain & Northern Ireland – *United Kingdom* – who got the letters **K** and **J** respectively. Letters like **Q** and **W**, which do not exist in some languages, or **B**, **I** and **O**, which can be confused with numbers, were deleted.

A complete list of the Euro notes according to the different nations' banks of issue runs as follows: **Z** = *België / Belgique*, **Y** = *Ellas*, **X** = *Deutschland*, **V** = *España*, **U** = *France*, **T** = *Ireland / Eire*, **S** = *Italia*, **R** = *Luxembourg / Luxemburg*, **P** = *Nederland*, **N** = *Österreich*, **M** = *Portugal*, **L** = *Suomi / Finland*.

There does not exist a letter yet for the ECB, of course, because until now it has not issued any euro banknote. The desired trust of the time and again fooled Europeans has suffered even further because of different printing techniques in the member nations. Simply touching two different materials used in two notes of the same face value will horrify the common citizen. In addition, it is only in 2006 that every euro note will be well protected against counterfeiting (Bender, 2000 and 2001).

6. High Risk Securities in the Creation of Euro Banknotes

Worries about a crisis-induced re-nationalization of the euro that led to the omission of the banks of issue on the euro banknotes are not only justified for political reasons but even more so for violations of the principles of central banking when it comes to collateral demands for the issue of euronotes. Despite the ECB's declaration in its report on *The Single Monetary Policy in the Euro Area* (2002, 38) that the Eurosystem's credit operations should be "based on adequate collateral", the details clearly reveal that the ECB's standards fall alarmingly below the demands of the former Bundesbank. The report does not define only one type of assets against which euronotes can be issued. Instead, it divides them in two groups, "tier one" assets and "tier two" assets (see *table 4* below).

Tab. 4 -- Eligible Assets for Eurosystem Monetary Policy Operations

Criteria	Tier one	Tier two
Type of asset	<ul style="list-style-type: none"> • ECB debt certificates • Other marketable debt instruments 	<ul style="list-style-type: none"> • Marketable debt instruments • Non marketable debt instruments • Equities traded on a regulated market
Settlement procedures	<ul style="list-style-type: none"> • Instruments must be centrally deposited in book-entry form with national central banks or a SSS fulfilling the ECB's minimum standards 	<ul style="list-style-type: none"> • Assets must be easily accessible to the national central bank which has included them in its tier two list
Type of issuer	<ul style="list-style-type: none"> • Eurosystem • Public sector • Private sector • International and supra-national institutions 	<ul style="list-style-type: none"> • Public sector • Private sector
Credit standard	<ul style="list-style-type: none"> • The issuer (guarantor) must be deemed financially sound by the ECB 	<ul style="list-style-type: none"> • The issuer/debtor (guarantor) must be deemed financially sound by the national central bank which has included the asset in its tier two list.
Place of establishment of the issuer (or guarantor)	<ul style="list-style-type: none"> • European economic area (EEA) 	<ul style="list-style-type: none"> • Euro area
Location of asset	<ul style="list-style-type: none"> • Euro area 	<ul style="list-style-type: none"> • Euro area
Currency	<ul style="list-style-type: none"> • Euro 	<ul style="list-style-type: none"> • Euro
Cross-border use	<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • Yes

Source: ECB, *The Single Monetary Policy in the Euro Area*, Frankfurt am Main: European Central Bank, April 2002, p. 41.

Already, the first "tier" gives reason for concern. Although marketable assets are put in this category along with ECB debt certificates, these assets are by no

means as low risk as those securities which the former Bundesbank accepted for its issue of deutschmark. Like the Bundesbank until 31 December 1998, the NCBs in the Eurosystem carry out transactions with repurchase agreements where the risk of devaluation of the securities lies with their counterparties commercial banks. But unlike the former Bundesbank's custom to avoid outright transactions, the NCBs may do exactly that without limitation, thereby pulling the risk into the Eurosystem.

As stated in section 1 above, a central bank shall not accept as underlying assets debt instruments issued by its counterparties, or by any other entity with which the counterparties have close links. Formally, the ECB seems in accordance with that basic rule. However, hidden in a footnote, it states (2002, 40/fn 15, our emphases): "This provision does *not* apply to [...] close links between the counterparty and the *public* authorities of EEA [European Economic Area, *i.e.* EU members plus Norway, Iceland and Liechtenstein] countries". This means a privilege for state owned banks which are closely connected with public authorities and, therefore, a circumvention of the Maastricht Treaty's sound prohibition to favor such entities by allowing them credit facilities with the ECB or the NCBs.

Most disturbing is, however, what comes next. There are in the "tier two" list assets which a genuine central bank should never accept. The ECB justifies them by declaring that, in the euro area, "due attention has to be paid to existing differences in financial structure across Member States" (2002, 38). The ECB extols the admission of soft "tier two" assets by giving the impression that it is a particular strength of the Eurosystem to be able to use a wide range of collateral. But when speaking of such a range, one generally implies a solid foundation.

Most of the "tier two" assets, as we showed already more than half a decade

ago (Heinsohn and Steiger, 1997a), are high risk paper. Its issuers are not, other than those of “tier one” assets, checked by the ECB but have to be “deemed financially sound” by the NCBs. As can be seen from *table 4* above they consist, besides marketable debt instruments and equities traded on a regulated market, consist of *non marketable* debt instruments. The latter may be issued not only by the private but also by the *public* sector. Thus, besides highly volatile and, therefore, risky equities, non marketable debt titles of the public authorities pose the greatest threat to the stability of the Euro. As the Consolidated Balance Sheet of the Eurosystem reveals (*table 2* above), these debt instruments with restricted liquidity, most of them accumulated before the start of EMU, comprise the amount of € 57.7 billion (2000). Thus, the euro may be permanently undermined by loans of public banks to local authorities which can be used on a cross-border basis to obtain fresh money at any NCB¹⁰. The Bundesbank is fully aware of this disastrous scenario. Therefore, it has not only excluded equities as eligible “tier two” assets but also non marketable debt instruments not only of German but also of other public authorities in EMU. Furthermore, the Bundesbank has applied considerable valuation haircuts – 10 to 20 percent – to non marketable debt titles issued by private companies.

While the European Monetary Institute (EMI), the forerunner of the ECB, in its report on *The Single Monetary Policy in Stage Three* (1997, 23) still insisted on a complete disclosure of high risk collateral of public institutions, the ECB – again hidden in a footnote (2002, 40/fn 18, our emphasis) – has left it to the NCBs whether to inform the public: “For non marketable tier two assets and debt instruments with restricted liquidity and special features, national central banks, may decide *not to disclose information* on individual issues, issuers/debtors or guarantors in the publication of their national tier two lists.”

We are no longer surprised that with respect to “tier two” assets, in nearly the same wording as with respect to “tier one” assets, public banks are privileged: “This provision does *not* apply to [...] close links between the counterparty and the *public* authorities of EEA countries” (2000, 43/fn 24, our emphases).

The ECB is not in the dark about the risks of non marketable “tier two” assets, and of the significant losses they could imply for the Eurosystem. But it hopes that the risks can be controlled by “initial margins, which correspond to a certain percentage of the amount of liquidity provided which is to be added to the requirement for the value of the underlying assets” (2002, 43). Considered are measures like limits in relation to issuers, valuation margins and haircuts, additional guarantees as well as exclusion. Yet, these risk control measures are at the disposal of the Eurosystem which as a whole, in contrast to the ECB, has not been vested with legal personality. They are not at the disposal of the ECB which, because of its tiny personnel, in any case could not perform such a vital function. Thus, in the end it is each NCB which controls itself.

¹⁰ Klaus Reeh (1999) has shown how the simultaneous use of high and low risk collateral for the issue of the same euro banknotes can lead to involuntary “monetary transfers” between NCBs.

7. The Missing Lender of Last Resort in the Eurosystem

The most bizarre violation of the principles of central banking in the design of the Eurosystem is the simple omission of the very rationale of a central bank, its responsibility as lender of last resort. Both in the treaties of Maastricht and Amsterdam as well as the Statute of the ESCB and the ECB it is not even mentioned. In the different documents of EMI and ECB on the single monetary policy in the Eurosystem it is not discussed either. The first institution which noticed this lack was the International Monetary Fund: “The lender-of-last-resort responsibility has not been assigned to any institution in EMU; consequently, there is no central provider or coordinator of emergency liquidity in the event of a crisis” (Adams *et al.*, 1998, 106).

In the Eurosystem, there does neither exist an equivalent to the German Likobank nor to the Federal Reserve Bank of New York. The ECB’s means to procure a solution to a banking crisis at the EMU level are negligible in comparison with those of the Bundesbank or the New York Bank. On the other side, the decentralized organization of the Eurosystem leaves neither NCBs nor national governments clearly responsible for supervision of pan-European banks or for ensuring EMU-wide financial market stability¹¹: “As European banking groups emerge, the question of whether national central banks could adequately assess the risk of contagion and whether the home country central bank of each bank could be easily identified will become increasingly relevant. In addition, decentralized lender-of-last-resort policies may create an uneven playing field and introduce different levels of moral hazard across EMU” (Adams *et al.*, 1998, 110).

¹¹ Charles Goodhart (2003) discusses the kind of supervision policy needed in the integrated European financial market.

The missing lender of last resort responsibility has been most extensively discussed by several authors in Charles Goodhart's (2000a) famous collection of essays, *Which Lender of Last Resort for Europe?*. Tommaso Padoa-Schioppa, Italy's executive member of the Board of the ECB, expresses his confidence that the existing institutional framework of the Eurosystem is effective enough to manage financial crises. Most of the contributors, however – Michel Aglietta, Alessandro Prati and Garry J. Schinasi, Franco Bruni and Christian de Boissieu, Rosa Maria Lastra as well as Lorenzo Bini Smaghi –, regard the national (NCB) level for lender-of-last-resort responsibility as a sub-optimal solution. They strongly demand a more centralized arrangement in which a single institution – either a European one or the ECB itself – takes on a leading and coordinating role in the management of crises. On the other side, Dirk Schoenmaker (2000) and Goodhart himself (2000b) have no trust in centralization as such because – as discussed in section 1 above – there exists no central fiscal authority in EMU which in any severe case has to form the final line of defense in euro area wide lender-of-last-resort operations. Therefore, it would be best to leave the responsibility at the national level.

Most interestingly, the Bundesbank has recognized the missing lender of last resort in the Eurosystem. In 2000 it proposed to transform the Likobank to an EMU-wide institution by increasing its own share in the capital of this bank from DEM 810 million to € 5 billion, with the 136 German member banks of the Likobank increasing their share from DEM 1.89 billion to € 10 billion. This would have meant a centralization of the Eurosystem in analogy with the transformation of the Federal Reserve System by the Banking Act of 1935, bringing the Bundesbank a big step closer to the role of the New York Bank within the Federal Reserve System. This was a sound plan indeed. Yet, it did not materialize, because German commercial banks were not ready to increase the

volume of their capital, thereby risking to bail out non domestic European competitors (Heinsohn and Steiger, 2000b).

As long as there is no lender of last resort in Euroland it will face the problems rampant in the pre-1935 *Fed*. There, in 1933, the Federal Reserve Bank of New York had to “curtail its lender-of-last-resort activity” (Eichengreen 1992, 32), because nobody could force the Federal Reserve Bank of Chicago to support its New York sister which was committed to help its member banks and Wall Street bleeding money on an unprecedented scale. Chicago had plenty of the then most needed excess gold reserves but feared that in case of losses there would, again, be no central authority to reimburse it. Such a scenario could repeat itself in Euroland if *e.g.* the Banque de France was approached by the Bundesbank for a bailout of its German counterparties which at present suffer heavy losses. There would be no authority which could either put pressure on Paris or any other NCB or protect them from weakening their positions.

A wiser proposal to bring about a lender of last resort in the Eurosystem taking into account national sensitivities, especially in France, would be to dissolve the Frankfurt ECB altogether and move its Executive Board as a new “Board of Governors of the Eurosystem” to the French European capital Strasbourg (Heinsohn and Steiger, 2000b, 106). In this scenario the Bundesbank, with 30.24 percent of the Eurosystem’s assets its strongest central bank, would execute open market operations decided upon in a French city. This proposal would, of course, transform the Eurosystem into a European Federal Reserve System indistinguishable from its US counterpart.

Barry Eichengreen’s more radical proposal “of reducing existing European central banks to mere branch offices of the ECB or of eliminating them entirely”

(1992, 14), making the ECB the sole central bank in the Eurosystem, definitely stood for sound art of central banking à la Lindahl and Ciampi . However, it was not a politically wise proposal as it simply modeled the Eurosystem after the Bundesbank system. This institution, as everybody knows, was opposed by many European nations. Especially France suffered from the loss of monetary authority to a single central bank in Europe, the Bundesbank. Therefore, France spearheaded the design of the decentralized Eurosystem as we know it.

Both the Bundesbank and the Eichengreen proposals – as well as that of the authors – do not take into account that, as Lindahl had first pointed out, a central monetary authority in the Eurosystem could only function properly with a no less central and powerful European ministry of finance. After all, Brussels only handles 2 percent of the European GDP. It goes without saying that the intimacy between the Bundesbank in Frankfurt and the German Minister of Finance in Berlin as well as that between the Federal Reserve Bank of New York and the Secretary of the Treasury in Washington cannot be matched in Euroland.

References

- Adams Ch. *et al.* (1998), *International Capital Markets: Developments, Prospects, and Key Policy Issues*, September, Washington, DC.: International Monetary Fund
- Andréadès A.M. (1909), *History of the Bank of England 1640-1903* (1904), translated from the French by C. Meredith, London: P.S. King & Son
- Bagehot W. (1873), *Lombard Street: A Description of the Money Market*, New York: Scribner, Armstrong; reprint New York: John Wiley & Sons, *et al.*: 1999
- Bender K.W. (2000), “Die Fälscher warten: Der Euro soll mit neuen Sicherheitsmerkmalen ausgestattet werden“, in: *Frankfurter Allgemeine Zeitung*, 28 February, p. 16
- Bender K.W. (2001), “Schon wieder Ärger mit den Euro-Banknoten: Der Sicherheitsfaden löst sich auf“, in: *Frankfurter Allgemeine Zeitung*, 19 March, pp. 17-18
- bf (2001), “Ringeln um den Geldschöpfungsgewinn: Regel für Verteilung fehlt immer noch“, in: *Frankfurter Allgemeine Zeitung*, 8 November, p. 16
- Bordo M., Jonung L. (2000), *Lessons for EMU from the History of Monetary Unions*, London: The Institute of Economic Affairs
- Brittan S. (2000), “Few Lessons from History“, in: Bordo M., Jonung L. (2000), pp. 41-46
- Ciampi C.A. (1989), “An Operational Framework for an Integrated Monetary Policy in Europe“, in: Delors Report (1989), pp. 225-232
- Corsetti G. (2001), “The Mystery of the Weak Euro“, in: *Newsweek*, 11 June, p. 20
- Currie D. (2000), The Euro and History Lessons, in: Bordo M., Jonung L. (2000), pp. 47-51
- Delors Report (1989), *1. Report on Economic and Monetary Union in the European Community / 2. Collection of Papers Submitted to the Committee for the Study of Economic and Monetary Union*, Brussels: European Commission, pp. 11-42 and 47-232
- Deutsche Bank (1998), *Rund ums Geld* (1997), partially reprinted in: “Wenn der Euro kommt: Keine Probleme für Privatkunden“, in: *Bremer Anzeiger*, 1 January, p. x
- Deutsche Bundesbank (1997), “Euromünzen“, in: *Informationsbrief zur Europäischen Wirtschafts- und Währungsunion*, no. 9, pp. 21-23
- ECB (2001a), *Annual Report 2000*, Frankfurt am Main: European Central Bank
- ECB (2001b), *The Monetary Policy of the ECB*, Frankfurt am Main: European Central Bank
- ECB (2001c), “Decisions on the Issue of Euro Banknotes and on the Allocation of Monetary Income“, *ECB Press Release*, 6 December, pp. 1-2
- ECB (2002), *The Monetary Policy of the ECB: General Documentation on*

- Eurosystem Monetary Policy Instruments and Procedures*, Frankfurt am Main: European Central Bank, April
- ECB (2003), *Annual Report 2002*, Frankfurt am Main: European Central Bank
- Eichengreen B. (1992), "Designing a Central Bank for Europe: A Cautionary Tale from the Early Years of the Federal Reserve System", in: Canzoneri M.B., Grilli V, Masson M (eds), *Establishing a Central Bank: Issues in Europe and Lessons from the US*, Cambridge: Cambridge University Press, pp. 13-40
- Einaudi L. (1999), "Monetary Unions: History Offers a Pertinent Lesson", in: *Financial Times Survey: The Pink Book – Quarterly Review of the European Economy*, 26 February, p. 15
- EMI (1997), *The Single Monetary Policy in Stage Three: Specification of the Operational Framework*, European Monetary Institute, Frankfurt am Main, January
- Federal Reserve System (1994), *The Federal Reserve System: Purposes and Functions*, Board of Governors of the FRS, Washington, D.C.
- Friedman M., Schwartz A.J. (1963), *A Monetary History of the United States, 1867-1960*, Princeton: Princeton University Press
- Goodhart C.A.E. (2000a) (ed.), *Which Lender of Last Resort for Europe?*, London: Central Banking Publications
- Goodhart C.A.E. (2000b), "Introduction", in: Goodhart C.A.E. (2000a), pp. 3-12
- Goodhart C.A.E. (2003), "Financial Integration and Prudential Control Segmentation: What Kind of Integration Does Prudential Policy Need in the Integrated European Financial Market?", *in this volume*
- Gros D. (1999), *Macroeconomic Policy in the First Year of Euroland: 1st Annual Report of the CEPS Macroeconomic Policy Group*, Brussels: Center for European Policy Studies
- Hankel W. (2003), "The Euro Illusion Confronted with Reality: Why the Currency Union Must Fail – A Rejoinder to Hajo Riese", *in this volume*
- Hawtrey R.G. (1932), *The Art of Central Banking*, London: Longmans; new impression, London: Frank Cass & Co., 1970
- Heinsohn G., Steiger O. (1997a), "Why the Euro Will Be a Weak Currency", in: *The European Journal*, vol. 4, no. 6, March, pp. 17-18
- Heinsohn G., Steiger O. (1997b), "A Weak Bank Means a Weak Euro", in: *The Wall Street Journal Europe*, 31 July, p. 6
- Heinsohn G., Steiger O. (2000a), "The Property Theory of Interest and Money", in Smithin J. (ed.), *What is Money?*, Routledge, London, pp. 67-100
- Heinsohn G., Steiger O. (2000b), "Die Konstruktionsfehler des Eurosystems", in: Ehrig D., Himmelreicher R.K., Schaefer H. (eds), *Finanzmarktarchitektur, ökonomische Dynamik und regionale Strukturforchung: Festschrift für Gerhard Leithäuser und Thomas von der Vring*, Bremen: Universität Bremen / Institut für Konjunktur- und Strukturforchung (IKSF), pp. 83 –110
- Heinsohn G., Steiger O. (2002), "The Eurosystem and the Art of Central Banking", in: *Studi economici*, no. 76, 2002 (no. 1) [printed 2003], pp. 5-30

- Ip G. *et al.* (2001), “Y2K Blueprint Helps Banks Coordinate Intervention”, in: *The Wall Street Journal Europe*, 18 September, pp. 1 and 6
- Jonung L. (2003), “Centralization versus Decentralization in Monetary Unions: What Does History Tell Us about the Future of EMU?”, *in this volume*
- Kregel J. (2003), “Nationally Segmented Capital Market and Decentralized Central Banking: What Will Happen to Banks in the Eurosystem?”, *in this volume*
- Laffer A.B. (2000), “What Ails the Euro? Try the ECB for Starters”, in: *The Wall Street Journal Europe*, 11 May, p. 11
- Larosière de J. (1989), *First Stages towards the Creation of a European Reserve Bank – The Creation of a European Reserve Fund*, in Delors Report (1989), pp. 177-184
- Lerrick A. (2001), “A Way Out for Japan”, *Financial Times*, 1 May, p. 13
- Lindahl E. (1930), *Penningpolitikens medel* (The means of monetary policy), Lund: C.W.K. Gleerup, abbreviated translation as “The Rate of Interest and the Price Level”, in: Lindahl E., *Studies in the Theory of Money and Capital*, London: George Allen & Unwin, 1939, pp. 139-268
- Mayer M. (2001), *The Fed: The Insight Story of How the World’s Most Powerful Financial Institution Drives the Markets*, New York *et al.*: The Free Press
- Münchau W. (1998), “ECB: Subsistence or an Identity of Its Own”, in: *Financial Times*, 3 November, p. 3
- Münchau W. (2000), “Bundesbank Searches for Useful Part to Play”, in: *Financial Times*, 19 June, p. 19
- Reeh K. (1999), “Zahlungsbilanzausgleich in der Währungsunion: Viele Fragen, aber noch keine Antworten”, in: Stadermann H.-J., Steiger O. (eds), *Herausforderung der Geldwirtschaft: Theorie und Praxis währungspolitischer Ereignisse*, Marburg: Metropolis, pp. 295-328
- Schoenmaker D. (2000), “What Kind of Financial Stability for Europe?”, in: Goodhart, C.A.E. (2000a), pp. 213-223
- Schwartz A.J. (1997), “Central Banking”, in Glasner, D. (ed.), *Business Cycles and Depressions: An Encyclopedia*, New York & London: Garland, pp. 88-91
- Seidel M. (2001), *European Economic and Monetary Union: Constitutional and Legal Aspects*, Berlin: Berlin Verlag Arno Spitz
- Stadermann H.-J., Steiger O. (2001), *Allgemeine Theorie der Wirtschaft – Erster Band: Schulökonomik*, Tübingen: Mohr Siebeck
- Steiger O. (1987), “Lindahl, Erik Robert”, in: *The New Palgrave: A Dictionary of Economics*, Macmillan, London, vol. 3, cols 194a-197a
- Steiger O. (2002), “Der Staat als ‚Lender of Last Resort‘ – oder: Die Achillesferse des Eurosystems“, in: Barends I., Pickardt M. (eds), *Die Rolle des Staates in der Ökonomie – Finanzwissenschaftliche Perspektiven: Festschrift für Otto Roloff zum 65. Geburtstag*, Marburg: Metropolis, 2002, pp. 51-84
- Steuart J. (1767), *An Inquiry into the Principles of Political Oeconomy: Being*

- an Essay on the Science of Domestic Policy in Free Nations*, London: A. Millar & T. Cadell, reprint Verlag Düsseldorf: Wirtschaft und Finanzen, 1993, vol. II
- Thornton H. (1802), *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain*, ed. with an introduction by F.A. Hayek, London: G. Allen & Unwin, 1939
- Thygesen N. (1989), A European Central Banking System – Some Analytical and Operational Considerations, in: Delors Report (1989), pp. 157-175
- Tietmeyer, H. (2001): “Die Euro-Skepsis wird bald verschwinden“, interview with Klaus Dieter Oehler, in: *Stuttgarter Zeitung*, 24 December; reprinted in: *Deutsche Bundesbank - Auszüge aus Presseartikeln*, no. 1, 3 January 2002, pp. 8-10
- Wynne M.A. (1999), “The European System of Central Banks”, *Federal Reserve Bank of Dallas Economic Review*, First Quarter, pp. 2-14
- Zhang, P.G. (1995), *Barings Bankruptcy and Financial Derivatives*, Singapore *et al.*: World Scientific

2008		
B01-08	Euro-Diplomatie durch gemeinsame „Wirtschaftsregierung“	<i>Martin Seidel</i>
2007		
B03-07	Löhne und Steuern im Systemwettbewerb der Mitgliedstaaten der Europäischen Union	<i>Martin Seidel</i>
B02-07	Konsolidierung und Reform der Europäischen Union	<i>Martin Seidel</i>
B01-07	The Ratification of European Treaties - Legal and Constitutional Basis of a European Referendum.	<i>Martin Seidel</i>
2006		
B03-06	Financial Frictions, Capital Reallocation, and Aggregate Fluctuations	<i>Jürgen von Hagen, Haiping Zhang</i>
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>
B01-05	Macroeconomic Adjustment in the New EU Member States	<i>Jürgen von Hagen, Iulia Traistaru</i>
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>
B29-04	Deutschlands Wirtschaft, seine Schulden und die Unzulänglichkeiten der einheitlichen Geldpolitik im Eurosystem	<i>Dieter Spethmann, Otto Steiger</i>
B28-04	Fiscal Crises in U.S. Cities: Structural and Non-structural Causes	<i>Guntram B. Wolff</i>
B27-04	Firm Performance and Privatization in Ukraine	<i>Galyna Grygorenko, Stefan Lutz</i>
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>
B24-04	The Endogeneity of Money and the Eurosystem	<i>Otto Steiger</i>
B23-04	Which Lender of Last Resort for the Eurosystem?	<i>Otto Steiger</i>
B22-04	Non-Discretionary Monetary Policy: The Answer for Transition Economies?	<i>Elham-Mafi Kreft, Steven F. Kreft</i>
B21-04	The Effectiveness of Subsidies Revisited: Accounting for Wage and Employment Effects in Business R+D	<i>Volker Reinthaler, Guntram B. Wolff</i>
B20-04	Money Market Pressure and the Determinants of Banking Crises	<i>Jürgen von Hagen, Tai-kuang Ho</i>
B19-04	Die Stellung der Europäischen Zentralbank nach dem Verfassungsvertrag	<i>Martin Seidel</i>

B18-04	Transmission Channels of Business Cycles Synchronization in an Enlarged EMU	<i>Iulia Traistaru</i>
B17-04	Foreign Exchange Regime, the Real Exchange Rate and Current Account Sustainability: The Case of Turkey	<i>Sübidey Togan, Hasan Ersel</i>
B16-04	Does It Matter Where Immigrants Work? Traded Goods, Non-traded Goods, and Sector Specific Employment	<i>Harry P. Bowen, Jennifer Pédussel Wu</i>
B15-04	Do Economic Integration and Fiscal Competition Help to Explain Local Patterns?	<i>Christian Volpe Martincus</i>
B14-04	Euro Adoption and Maastricht Criteria: Rules or Discretion?	<i>Jiri Jonas</i>
B13-04	The Role of Electoral and Party Systems in the Development of Fiscal Institutions in the Central and Eastern European Countries	<i>Sami Yläoutinen</i>
B12-04	Measuring and Explaining Levels of Regional Economic Integration	<i>Jennifer Pédussel Wu</i>
B11-04	Economic Integration and Location of Manufacturing Activities: Evidence from MERCOSUR	<i>Pablo Sanguinetti, Iulia Traistaru, Christian Volpe Martincus</i>
B10-04	Economic Integration and Industry Location in Transition Countries	<i>Laura Resmini</i>
B09-04	Testing Creditor Moral Hazard in Sovereign Bond Markets: A Unified Theoretical Approach and Empirical Evidence	<i>Ayse Y. Evrensel, Ali M. Kutan</i>
B08-04	European Integration, Productivity Growth and Real Convergence	<i>Taner M. Yigit, Ali M. Kutan</i>
B07-04	The Contribution of Income, Social Capital, and Institutions to Human Well-being in Africa	<i>Mina Baliamoune-Lutz, Stefan H. Lutz</i>
B06-04	Rural Urban Inequality in Africa: A Panel Study of the Effects of Trade Liberalization and Financial Deepening	<i>Mina Baliamoune-Lutz, Stefan H. Lutz</i>
B05-04	Money Rules for the Eurozone Candidate Countries	<i>Lucjan T. Orłowski</i>
B04-04	Who is in Favor of Enlargement? Determinants of Support for EU Membership in the Candidate Countries' Referenda	<i>Orla Doyle, Jan Fidrmuc</i>
B03-04	Over- and Underbidding in Central Bank Open Market Operations Conducted as Fixed Rate Tender	<i>Ulrich Bindseil</i>
B02-04	Total Factor Productivity and Economic Freedom Implications for EU Enlargement	<i>Ronald L. Moomaw, Euy Seok Yang</i>
B01-04	Die neuen Schutzklauseln der Artikel 38 und 39 des Beitrittsvertrages: Schutz der alten Mitgliedstaaten vor Störungen durch die neuen Mitgliedstaaten	<i>Martin Seidel</i>
2003		
B29-03	Macroeconomic Implications of Low Inflation in the Euro Area	<i>Jürgen von Hagen, Boris Hofmann</i>
B28-03	The Effects of Transition and Political Instability on Foreign Direct Investment: Central Europe and the Balkans	<i>Josef C. Brada, Ali M. Kutan, Taner M. Yigit</i>
B27-03	The Performance of the Euribor Futures Market: Efficiency and the Impact of ECB Policy Announcements (Electronic Version of International Finance)	<i>Kerstin Bernoth, Juergen von Hagen</i>
B26-03	Sovereign Risk Premia in the European Government Bond Market (überarbeitete Version zum Herunterladen)	<i>Kerstin Bernoth, Juergen von Hagen, Ludger Schulknecht</i>
B25-03	How Flexible are Wages in EU Accession Countries?	<i>Anna Iara, Iulia Traistaru</i>
B24-03	Monetary Policy Reaction Functions: ECB versus Bundesbank	<i>Bernd Hayo, Boris Hofmann</i>
B23-03	Economic Integration and Manufacturing Concentration Patterns: Evidence from Mercosur	<i>Iulia Traistaru, Christian Volpe Martincus</i>
B22-03	Reformzwänge innerhalb der EU angesichts der Osterweiterung	<i>Martin Seidel</i>
B21-03	Reputation Flows: Contractual Disputes and the Channels for Inter-Firm Communication	<i>William Pyle</i>
B20-03	Urban Primacy, Gigantism, and International Trade: Evidence from Asia and the Americas	<i>Ronald L. Moomaw, Mohammed A. Alwosabi</i>
B19-03	An Empirical Analysis of Competing Explanations of Urban Primacy Evidence from Asia and the Americas	<i>Ronald L. Moomaw, Mohammed A. Alwosabi</i>

B18-03	The Effects of Regional and Industry-Wide FDI Spillovers on Export of Ukrainian Firms	<i>Stefan H. Lutz, Oleksandr Talavera, Sang-Min Park</i>
B17-03	Determinants of Inter-Regional Migration in the Baltic States	<i>Mihails Hazans</i>
B16-03	South-East Europe: Economic Performance, Perspectives, and Policy Challenges	<i>Iulia Traistaru, Jürgen von Hagen</i>
B15-03	Employed and Unemployed Search: The Marginal Willingness to Pay for Attributes in Lithuania, the US and the Netherlands	<i>Jos van Ommeren, Mihails Hazans</i>
B14-03	FICs and Economic Activity: Some International Evidence	<i>Charles Goodhart, Boris Hofmann</i>
B13-03	The IS Curve and the Transmission of Monetary Policy: Is there a Puzzle?	<i>Charles Goodhart, Boris Hofmann</i>
B12-03	What Makes Regions in Eastern Europe Catching Up? The Role of Foreign Investment, Human Resources, and Geography	<i>Gabriele Tondl, Goran Vuksic</i>
B11-03	Die Weisungs- und Herrschaftsmacht der Europäischen Zentralbank im europäischen System der Zentralbanken - eine rechtliche Analyse	<i>Martin Seidel</i>
B10-03	Foreign Direct Investment and Perceptions of Vulnerability to Foreign Exchange Crises: Evidence from Transition Economies	<i>Josef C. Brada, Vladimír Tomsík</i>
B09-03	The European Central Bank and the Eurosystem: An Analysis of the Missing Central Monetary Institution in European Monetary Union	<i>Gunnar Heinsohn, Otto Steiger</i>
B08-03	The Determination of Capital Controls: Which Role Do Exchange Rate Regimes Play?	<i>Jürgen von Hagen, Jizhong Zhou</i>
B07-03	Nach Nizza und Stockholm: Stand des Binnenmarktes und Prioritäten für die Zukunft	<i>Martin Seidel</i>
B06-03	Fiscal Discipline and Growth in Euroland. Experiences with the Stability and Growth Pact	<i>Jürgen von Hagen</i>
B05-03	Reconsidering the Evidence: Are Eurozone Business Cycles Converging?	<i>Michael Massmann, James Mitchell</i>
B04-03	Do Ukrainian Firms Benefit from FDI?	<i>Stefan H. Lutz, Oleksandr Talavera</i>
B03-03	Europäische Steuerkoordination und die Schweiz	<i>Stefan H. Lutz</i>
B02-03	Commuting in the Baltic States: Patterns, Determinants, and Gains	<i>Mihails Hazans</i>
B01-03	Die Wirtschafts- und Währungsunion im rechtlichen und politischen Gefüge der Europäischen Union	<i>Martin Seidel</i>
2002		
B30-02	An Adverse Selection Model of Optimal Unemployment Assurance	<i>Marcus Hagedorn, Ashok Kaul, Tim Mennel</i>
B29B-02	Trade Agreements as Self-protection	<i>Jennifer Pédussel Wu</i>
B29A-02	Growth and Business Cycles with Imperfect Credit Markets	<i>Debajyoti Chakrabarty</i>
B28-02	Inequality, Politics and Economic Growth	<i>Debajyoti Chakrabarty</i>
B27-02	Poverty Traps and Growth in a Model of Endogenous Time Preference	<i>Debajyoti Chakrabarty</i>
B26-02	Monetary Convergence and Risk Premiums in the EU Candidate Countries	<i>Lucjan T. Orłowski</i>
B25-02	Trade Policy: Institutional Vs. Economic Factors	<i>Stefan Lutz</i>
B24-02	The Effects of Quotas on Vertical Intra-industry Trade	<i>Stefan Lutz</i>
B23-02	Legal Aspects of European Economic and Monetary Union	<i>Martin Seidel</i>
B22-02	Der Staat als Lender of Last Resort - oder: Die Achillesverse des Eurosystems	<i>Otto Steiger</i>
B21-02	Nominal and Real Stochastic Convergence Within the Transition Economies and to the European Union: Evidence from Panel Data	<i>Ali M. Kutan, Taner M. Yigit</i>
B20-02	The Impact of News, Oil Prices, and International Spillovers on Russian Financial Markets	<i>Bernd Hayo, Ali M. Kutan</i>

B19-02	East Germany: Transition with Unification, Experiments and Experiences	<i>Jürgen von Hagen, Rolf R. Strauch, Guntram B. Wolff</i>
B18-02	Regional Specialization and Employment Dynamics in Transition Countries	<i>Iulia Traistaru, Guntram B. Wolff</i>
B17-02	Specialization and Growth Patterns in Border Regions of Accession Countries	<i>Laura Resmini</i>
B16-02	Regional Specialization and Concentration of Industrial Activity in Accession Countries	<i>Iulia Traistaru, Peter Nijkamp, Simonetta Longhi</i>
B15-02	Does Broad Money Matter for Interest Rate Policy?	<i>Matthias Brückner, Andreas Schaber</i>
B14-02	The Long and Short of It: Global Liberalization, Poverty and Inequality	<i>Christian E. Weller, Adam Hersch</i>
B13-02	De Facto and Official Exchange Rate Regimes in Transition Economies	<i>Jürgen von Hagen, Jizhong Zhou</i>
B12-02	Argentina: The Anatomy of A Crisis	<i>Jiri Jonas</i>
B11-02	The Eurosystem and the Art of Central Banking	<i>Gunnar Heinsohn, Otto Steiger</i>
B10-02	National Origins of European Law: Towards an Autonomous System of European Law?	<i>Martin Seidel</i>
B09-02	Monetary Policy in the Euro Area - Lessons from the First Years	<i>Volker Clausen, Bernd Hayo</i>
B08-02	Has the Link Between the Spot and Forward Exchange Rates Broken Down? Evidence From Rolling Cointegration Tests	<i>Ali M. Kutan, Su Zhou</i>
B07-02	Perspektiven der Erweiterung der Europäischen Union	<i>Martin Seidel</i>
B06-02	Is There Asymmetry in Forward Exchange Rate Bias? Multi-Country Evidence	<i>Su Zhou, Ali M. Kutan</i>
B05-02	Real and Monetary Convergence Within the European Union and Between the European Union and Candidate Countries: A Rolling Cointegration Approach	<i>Josef C. Brada, Ali M. Kutan, Su Zhou</i>
B04-02	Asymmetric Monetary Policy Effects in EMU	<i>Volker Clausen, Bernd Hayo</i>
B03-02	The Choice of Exchange Rate Regimes: An Empirical Analysis for Transition Economies	<i>Jürgen von Hagen, Jizhong Zhou</i>
B02-02	The Euro System and the Federal Reserve System Compared: Facts and Challenges	<i>Karlheinz Ruckriegel, Franz Seitz</i>
B01-02	Does Inflation Targeting Matter?	<i>Manfred J. M. Neumann, Jürgen von Hagen</i>
2001		
B29-01	Is Kazakhstan Vulnerable to the Dutch Disease?	<i>Karlygash Kuralbayeva, Ali M. Kutan, Michael L. Wyzan</i>
B28-01	Political Economy of the Nice Treaty: Rebalancing the EU Council. The Future of European Agricultural Policies	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B27-01	Investor Panic, IMF Actions, and Emerging Stock Market Returns and Volatility: A Panel Investigation	<i>Bernd Hayo, Ali M. Kutan</i>
B26-01	Regional Effects of Terrorism on Tourism: Evidence from Three Mediterranean Countries	<i>Konstantinos Drakos, Ali M. Kutan</i>
B25-01	Monetary Convergence of the EU Candidates to the Euro: A Theoretical Framework and Policy Implications	<i>Lucjan T. Orłowski</i>
B24-01	Disintegration and Trade	<i>Jarko and Jan Fidrmuc</i>
B23-01	Migration and Adjustment to Shocks in Transition Economies	<i>Jan Fidrmuc</i>
B22-01	Strategic Delegation and International Capital Taxation	<i>Matthias Brückner</i>
B21-01	Balkan and Mediterranean Candidates for European Union Membership: The Convergence of Their Monetary Policy With That of the European Central Bank	<i>Josef C. Brada, Ali M. Kutan</i>
B20-01	An Empirical Inquiry of the Efficiency of Intergovernmental Transfers for Water Projects Based on the WRDA Data	<i>Anna Rubinchik-Pessach</i>
B19-01	Detrending and the Money-Output Link: International Evidence	<i>R.W. Hafer, Ali M. Kutan</i>

B18-01	Monetary Policy in Unknown Territory. The European Central Bank in the Early Years	<i>Jürgen von Hagen, Matthias Brückner</i>
B17-01	Executive Authority, the Personal Vote, and Budget Discipline in Latin American and Caribbean Countries	<i>Mark Hallerberg, Patrick Marier</i>
B16-01	Sources of Inflation and Output Fluctuations in Poland and Hungary: Implications for Full Membership in the European Union	<i>Selahattin Dibooglu, Ali M. Kutan</i>
B15-01	Programs Without Alternative: Public Pensions in the OECD	<i>Christian E. Weller</i>
B14-01	Formal Fiscal Restraints and Budget Processes As Solutions to a Deficit and Spending Bias in Public Finances - U.S. Experience and Possible Lessons for EMU	<i>Rolf R. Strauch, Jürgen von Hagen</i>
B13-01	German Public Finances: Recent Experiences and Future Challenges	<i>Jürgen von Hagen, Rolf R. Strauch</i>
B12-01	The Impact of Eastern Enlargement On EU-Labour Markets. Pensions Reform Between Economic and Political Problems	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B11-01	Inflationary Performance in a Monetary Union With Large Wage Setters	<i>Lilia Cavallar</i>
B10-01	Integration of the Baltic States into the EU and Institutions of Fiscal Convergence: A Critical Evaluation of Key Issues and Empirical Evidence	<i>Ali M. Kutan, Niina Pautola-Mol</i>
B09-01	Democracy in Transition Economies: Grease or Sand in the Wheels of Growth?	<i>Jan Fidrmuc</i>
B08-01	The Functioning of Economic Policy Coordination	<i>Jürgen von Hagen, Susanne Mundschenk</i>
B07-01	The Convergence of Monetary Policy Between Candidate Countries and the European Union	<i>Josef C. Brada, Ali M. Kutan</i>
B06-01	Opposites Attract: The Case of Greek and Turkish Financial Markets	<i>Konstantinos Drakos, Ali M. Kutan</i>
B05-01	Trade Rules and Global Governance: A Long Term Agenda. The Future of Banking.	<i>Deutsch-Französisches Wirtschaftspolitisches Forum</i>
B04-01	The Determination of Unemployment Benefits	<i>Rafael di Tella, Robert J. McCulloch</i>
B03-01	Preferences Over Inflation and Unemployment: Evidence from Surveys of Happiness	<i>Rafael di Tella, Robert J. McCulloch, Andrew J. Oswald</i>
B02-01	The Konstanz Seminar on Monetary Theory and Policy at Thirty	<i>Michele Fratianni, Jürgen von Hagen</i>
B01-01	Divided Boards: Partisanship Through Delegated Monetary Policy	<i>Etienne Farvaque, Gael Lagadec</i>
2000		
B20-00	Breakin-up a Nation, From the Inside	<i>Etienne Farvaque</i>
B19-00	Income Dynamics and Stability in the Transition Process, general Reflections applied to the Czech Republic	<i>Jens Hölscher</i>
B18-00	Budget Processes: Theory and Experimental Evidence	<i>Karl-Martin Ehrhart, Roy Gardner, Jürgen von Hagen, Claudia Keser</i>
B17-00	Rückführung der Landwirtschaftspolitik in die Verantwortung der Mitgliedsstaaten? - Rechts- und Verfassungsfragen des Gemeinschaftsrechts	<i>Martin Seidel</i>
B16-00	The European Central Bank: Independence and Accountability	<i>Christa Randzio-Plath, Tomasso Padoa-Schioppa</i>
B15-00	Regional Risk Sharing and Redistribution in the German Federation	<i>Jürgen von Hagen, Ralf Hepp</i>
B14-00	Sources of Real Exchange Rate Fluctuations in Transition Economies: The Case of Poland and Hungary	<i>Selahattin Dibooglu, Ali M. Kutan</i>
B13-00	Back to the Future: The Growth Prospects of Transition Economies Reconsidered	<i>Nauro F. Campos</i>

B12-00	Rechtsetzung und Rechtsangleichung als Folge der Einheitlichen Europäischen Wahrung	<i>Martin Seidel</i>
B11-00	A Dynamic Approach to Inflation Targeting in Transition Economies	<i>Lucjan T. Orłowski</i>
B10-00	The Importance of Domestic Political Institutions: Why and How Belgium Qualified for EMU	<i>Marc Hallerberg</i>
B09-00	Rational Institutions Yield Hysteresis	<i>Rafael Di Tella, Robert MacCulloch</i>
B08-00	The Effectiveness of Self-Protection Policies for Safeguarding Emerging Market Economies from Crises	<i>Kenneth Kletzer</i>
B07-00	Financial Supervision and Policy Coordination in The EMU	<i>Deutsch-Franzosisches Wirtschaftspolitisches Forum</i>
B06-00	The Demand for Money in Austria	<i>Bernd Hayo</i>
B05-00	Liberalization, Democracy and Economic Performance during Transition	<i>Jan Fidrmuc</i>
B04-00	A New Political Culture in The EU - Democratic Accountability of the ECB	<i>Christa Randzio-Plath</i>
B03-00	Integration, Disintegration and Trade in Europe: Evolution of Trade Relations during the 1990's	<i>Jarko Fidrmuc, Jan Fidrmuc</i>
B02-00	Inflation Bias and Productivity Shocks in Transition Economies: The Case of the Czech Republic	<i>Josef C. Brada, Arthur E. King, Ali M. Kutan</i>
B01-00	Monetary Union and Fiscal Federalism	<i>Kenneth Kletzer, Jurgen von Hagen</i>
1999		
B26-99	Skills, Labour Costs, and Vertically Differentiated Industries: A General Equilibrium Analysis	<i>Stefan Lutz, Alessandro Turrini</i>
B25-99	Micro and Macro Determinants of Public Support for Market Reforms in Eastern Europe	<i>Bernd Hayo</i>
B24-99	What Makes a Revolution?	<i>Robert MacCulloch</i>
B23-99	Informal Family Insurance and the Design of the Welfare State	<i>Rafael Di Tella, Robert MacCulloch</i>
B22-99	Partisan Social Happiness	<i>Rafael Di Tella, Robert MacCulloch</i>
B21-99	The End of Moderate Inflation in Three Transition Economies?	<i>Josef C. Brada, Ali M. Kutan</i>
B20-99	Subnational Government Bailouts in Germany	<i>Helmut Seitz</i>
B19-99	The Evolution of Monetary Policy in Transition Economies	<i>Ali M. Kutan, Josef C. Brada</i>
B18-99	Why are Eastern Europe's Banks not failing when everybody else's are?	<i>Christian E. Weller, Bernard Morzuch</i>
B17-99	Stability of Monetary Unions: Lessons from the Break-Up of Czechoslovakia	<i>Jan Fidrmuc, Julius Horvath and Jarko Fidrmuc</i>
B16-99	Multinational Banks and Development Finance	<i>Christian E. Weller and Mark J. Scher</i>
B15-99	Financial Crises after Financial Liberalization: Exceptional Circumstances or Structural Weakness?	<i>Christian E. Weller</i>
B14-99	Industry Effects of Monetary Policy in Germany	<i>Bernd Hayo and Birgit Uhlenbrock</i>
B13-99	Financial Fragility or What Went Right and What Could Go Wrong in Central European Banking?	<i>Christian E. Weller and Jurgen von Hagen</i>
B12-99	Size Distortions of Tests of the Null Hypothesis of Stationarity: Evidence and Implications for Applied Work	<i>Mehmet Caner and Lutz Kilian</i>
B11-99	Financial Supervision and Policy Coordination in the EMU	<i>Deutsch-Franzosisches Wirtschaftspolitisches Forum</i>
B10-99	Financial Liberalization, Multinational Banks and Credit Supply: The Case of Poland	<i>Christian Weller</i>
B09-99	Monetary Policy, Parameter Uncertainty and Optimal Learning	<i>Volker Wieland</i>
B08-99	The Connection between more Multinational Banks and less Real Credit in Transition Economies	<i>Christian Weller</i>

- B07-99 **Comovement and Catch-up in Productivity across Sectors: Evidence from the OECD** *Christopher M. Cornwell and Jens-Uwe Wächter*
- B06-99 **Productivity Convergence and Economic Growth: A Frontier Production Function Approach** *Christopher M. Cornwell and Jens-Uwe Wächter*
- B05-99 **Tumbling Giant: Germany's Experience with the Maastricht Fiscal Criteria** *Jürgen von Hagen and Rolf Strauch*
- B04-99 **The Finance-Investment Link in a Transition Economy: Evidence for Poland from Panel Data** *Christian Weller*
- B03-99 **The Macroeconomics of Happiness** *Rafael Di Tella, Robert McCulloch and Andrew J. Oswald*
- B02-99 **The Consequences of Labour Market Flexibility: Panel Evidence Based on Survey Data** *Rafael Di Tella and Robert McCulloch*
- B01-99 **The Excess Volatility of Foreign Exchange Rates: Statistical Puzzle or Theoretical Artifact?** *Robert B.H. Hauswald*
- 1998**
- B16-98 **Labour Market + Tax Policy in the EMU** *Deutsch-Französisches Wirtschaftspolitisches Forum*
- B15-98 **Can Taxing Foreign Competition Harm the Domestic Industry?** *Stefan Lutz*
- B14-98 **Free Trade and Arms Races: Some Thoughts Regarding EU-Russian Trade** *Rafael Reuveny and John Maxwell*
- B13-98 **Fiscal Policy and Intranational Risk-Sharing** *Jürgen von Hagen*
- B12-98 **Price Stability and Monetary Policy Effectiveness when Nominal Interest Rates are Bounded at Zero** *Athanasios Orphanides and Volker Wieland*
- B11A-98 **Die Bewertung der "dauerhaft tragbaren öffentlichen Finanzlage" der EU Mitgliedstaaten beim Übergang zur dritten Stufe der EWWU** *Rolf Strauch*
- B11-98 **Exchange Rate Regimes in the Transition Economies: Case Study of the Czech Republic: 1990-1997** *Julius Horvath and Jiri Jonas*
- B10-98 **Der Wettbewerb der Rechts- und politischen Systeme in der Europäischen Union** *Martin Seidel*
- B09-98 **U.S. Monetary Policy and Monetary Policy and the ESCB** *Robert L. Hetzel*
- B08-98 **Money-Output Granger Causality Revisited: An Empirical Analysis of EU Countries (überarbeitete Version zum Herunterladen)** *Bernd Hayo*
- B07-98 **Designing Voluntary Environmental Agreements in Europe: Some Lessons from the U.S. EPA's 33/50 Program** *John W. Maxwell*
- B06-98 **Monetary Union, Asymmetric Productivity Shocks and Fiscal Insurance: an Analytical Discussion of Welfare Issues** *Kenneth Kletzer*
- B05-98 **Estimating a European Demand for Money (überarbeitete Version zum Herunterladen)** *Bernd Hayo*
- B04-98 **The EMU's Exchange Rate Policy** *Deutsch-Französisches Wirtschaftspolitisches Forum*
- B03-98 **Central Bank Policy in a More Perfect Financial System** *Jürgen von Hagen / Ingo Fender*
- B02-98 **Trade with Low-Wage Countries and Wage Inequality** *Jaleel Ahmad*
- B01-98 **Budgeting Institutions for Aggregate Fiscal Discipline** *Jürgen von Hagen*
- 1997**
- B04-97 **Macroeconomic Stabilization with a Common Currency: Does European Monetary Unification Create a Need for Fiscal Insurance or Federalism?** *Kenneth Kletzer*
- B-03-97 **Liberalising European Markets for Energy and Telecommunications: Some Lessons from the US Electric Utility Industry** *Tom Lyon / John Mayo*
- B02-97 **Employment and EMU** *Deutsch-Französisches Wirtschaftspolitisches Forum*
- B01-97 **A Stability Pact for Europe** *(a Forum organized by ZEI)*

ISSN 1436 - 6053

Zentrum für Europäische Integrationsforschung
Center for European Integration Studies
Rheinische Friedrich-Wilhelms-Universität Bonn

Walter-Flex-Strasse 3
D-53113 Bonn
Germany

Tel.: +49-228-73-1732
Fax: +49-228-73-1809
www.zei.de