For: 9th Crete Conference very preliminary version

The Deregulation of Central Banking: Towards an International Market for Good Monetary Policy

Reiner Eichenberger and Sergio Rossi* *University of Fribourg, Switzerland*

27/12/2004

^{*} Both authors are in the Department of Economics, Avenue de Beauregard 13, CH–1700 Fribourg, Switzerland. E-mail addresses: Reiner.Eichenberger@unifr.ch; Sergio.Rossi@unifr.ch The authors thank Alex Cukierman, David Mayes, Paul Moser-Böhm, Guido Tabellini, and Carl Walsh for their helpful comments and suggestions. Research assistance by Dante Caprara, Szymon Klimaszewski, and Shauna Selvarajah is gratefully acknowledged.

Abstract

The effectiveness of a central bank's monetary policy depends on the incentives of its

executive staff to pursue a stability-oriented policy over the long run. Today, however,

these incentives are considerably weakened by three kinds of regulations. First, in

almost all countries, only nationals may be elected as central bank head or board

members. Secondly, only individuals may be appointed to such offices, but not

monetary policy firms, organizations, or political parties. Thirdly, the compensation of

central bank governors and executive officers is regulated by law or statute, and in

general is far below the amount potential candidates may earn in the private banking

sector. This paper proposes to abolish these regulations. This enables monetary policy

suppliers to become active in more than one country or currency areas, and so to gain an

international reputation for pursuing credible, stability-oriented monetary policies in the

interest of citizens. Hence, an international market for good monetary policies could

arise, allowing countries to import stability-oriented policy makers, which benefits the

general public and, in particular, weakly-organized social groups.

Keywords: monetary policy, deregulation, open markets, protectionism

JEL classification: E58, F13

2

1. Introduction

In many countries, notably in developing and emerging economies, monetary policy is not effectively enhancing economic performance and macroeconomic stability. Even when price stability is attained, monetary policy often elicits important real costs in terms of output and employment losses, as has been pointed out in the literature on the so-called sacrifice ratio (see Ball, 1994, 1995). Obviously, monetary policy is not only driven by welfare considerations. From a public choice perspective, this is not surprising, as the government and special interest groups seek to influence the central bank's policy. Thus, before elections, the government opts for an expansionary monetary policy with low interest rates. While export-oriented businesses are generally interested in low exchange rates, agents with debts in local currency but assets in foreign-exchange struggle for a devaluation of the local currency. In contrast, participants in financial markets have specific preferences on the structure of interest rates, which often does not correspond to the one needed for good aggregate economic performance. A monetary policy that serves such particular interests is, in fact, shortterm oriented, expansive, and volatile. This jeopardizes price level stability and decreases employment and output growth over the long run. However, since long-run economic performance affects voters' behaviour, both the government and the political parties have an interest in promising stability-oriented monetary policies. Their problem, however, is to credibly do so, for rational voters expect that, after elections, government officials and political parties pursue again their own interests by pushing for monetary policy decisions that serve their own interests. Therefore, government and the political parties are interested in finding and implementing rules that reinforce monetary policy credibility, making it more costly for policy makers to care for private goals and thus deviate from economic stability.

Several countries, however, have so far been unable to develop credible monetary policy institutions which care for the long-run interests of the citizens but are immune to short-term pressures from government and special interest groups. Therefore, many countries have tried to constrain their monetary policy via fixed pegs, currency boards, and even dollarization. However, empirical evidence shows that these regimes function

well only under specific circumstances. As evidenced, e.g., by Argentina's most recent crisis, these monetary policy institutions often lead to important macroeconomic cost, such as higher unemployment and lower growth.

This paper addresses the effectiveness of monetary policy institutions from a public choice perspective. It proposes to strengthen the incentives of the monetary policy decision makers to cater for long-run macroeconomic stability, by creating an international market for monetary policy by allowing non-nationals to run for office as a central bank's head and board member. In this respect, this paper proposes that, beyond individuals, also parties, firms, and organizations should be allowed to take executive positions at a central bank; and also that the compensation for a central bank's head and board members should be set freely by the market forces of supply and demand for monetary policy services.

In such an international market, both individuals and institutions may supply their monetary policy services to one or several central banks. This internationalization and deregulation of monetary policy making increases the incentives to pursue stabilityoriented policies by several mechanisms. First, deregulation increases competition between monetary policy suppliers. Secondly, if there is a lack of competent nationals as top central bankers, non-nationals may step in, thus providing the required skills. Thirdly, monetary policy makers are led to care more for the long-term interests of the citizens, and thus ignore well-organized pressure groups and their short-term particular goals, in order for them to build up a reputation of being independent and credible central bankers, as this increases their chances to be appointed in other countries as well. Fourthly, both the government and the citizens can more easily assess the monetary policy skills of individuals and institutions if the latter are in office in more than one central bank. Additionally, and in contrast to protected national markets, in an international market it would be possible as well as desirable from a political economy stance to let the citizens choose, by direct election, monetary policy makers. In fact, democracy would further strengthen the incentives for monetary policy suppliers to care for the long-term interest of the citizens and to offer therefore a stability-oriented monetary policy.

The paper is organized as follows. Section 2 critically reviews today's theoretical and practical approaches to increase the credibility of monetary policy and to ensure that it serves the interest of the general public. Section 3 identifies a number of regulations that, today, reduce the incentives of the government as well as of the central bank to credibly pursue stability-oriented monetary policies. It then presents our proposal for internationally opening and deregulating the markets for monetary policy making. Section 4 illustrates the main advantages of this proposal, while section 5 discusses various criticisms that have been raised against it. In section 6 we argue that deregulation offers new opportunities to democratize monetary policy. Section 7 briefly concludes.

2. Monetary policy credibility: a critical review of current institutions

The credibility of monetary policy has already been the focus of the debate on "rules versus discretion". According to the seminal contributions by Kydland and Prescott (1977) and Barro and Gordon (1983), monetary policy rules are desirable to limit the central bankers' leeway for using expansionary policies to go beyond potential GDP. Further, monetary policy rules are also desirable to limit the policy makers' tendency to pursue private goals. Moreover, rules reduce the uncertainty of the private sector, which is otherwise pressing as monetary policy is characterised by long, and variable, time lags (see for example Friedman, 1960, Ch. 4).

One of the rules-based approaches is to select the decision makers exhibiting the desired characteristics. In the models of, e.g., Rogoff (1985), Lohmann (1992), and Waller (1992), the optimal degree of *ex ante* commitment results from appointing a so-called conservative central banker, i.e. an individual who is especially averse to inflation. In other models, the principal (represented by the parliament or the central government) designs a contract in order to motivate the agent (the central bank head) to act in the interest of the principal (Fischer, 1994, p. 291). However, such *ex ante* commitments are only credible when they are backed by effective mechanisms preventing *ex post* violations (see Walsh, 1993, 1995). But to design such mechanisms is no easy task, because of the multilevel principal–agent problem involved and the weak accountability

of modern central banks (see Fischer, 1994, Dixit, 1996, Muscatelli, 1998, Ripoll, 2002). The accountability concept implies that there are adverse consequences for the central bank head when monetary policy targets are not met. However, a central bank's head (or board member) is hardly punishable by removal from office, owing mainly to the time-consuming administrative process and the political costs entailed. Further, owing to asymmetric information, it is very difficult to prove a central banker's misbehaviour. As a result, central bank governors enjoy wide leeway during their term of office and may therefore bring to fruition their own specific preferences, be it either on opportunistic or partisan grounds (see de Haan, 2000).

In addition, there must be a decision on who is deciding whether monetary policy targets have been missed, whether this is really the result of the central bank mismanagement, and what actions should be taken against the central bank.² As a matter of fact, the central bank is accountable to the government or parliament, which are in turn accountable to the citizens. The problem with present central bank regulations is that those authorities that should control, and sanction, a central bank's head are those that also appoint it. The central bank head, therefore, may be committed to the interests of the political party (or parties) to whom it owes its (re-)appointment. Central bankers lose, thus, their independence and are led to consider the short-term interests of their electors to stay in office. Hence, there exists today a vicious circle allowing the central banker to stay in office despite non-attainment of monetary policy targets, if this serves the interests of the government.³ Thus, the price stability target of monetary policy is often missed, all the more so as the short-term preferences of the political party (or parties) in power often do not coincide with the interests of the citizens over the long run.

To increase credibility as well as consistency of monetary policy, the recent literature has called for a number of alternative institutions. These solutions, however, suffer from both theoretical and empirical shortcomings worth considering here briefly.

2.1 Central bank independence

By far the most prominent approach to avoid opportunistic behaviour of government-appointed central bankers is to grant full independence to the central bank. Three different notions of independence emerge from the literature: goal independence, instrument independence, and personal (or political) independence (see Bofinger, 2001, pp. 207–216, for a recent survey).

Many authors (e.g. Persson and Tabellini, 1993, Fratianni et al., 1997) argue that a central bank's independence guarantees monetary policy stability and curbs inflation. However, independence from democratically elected bodies allows a central bank's decision makers to care for their own preferences as well as the interests of special interest groups, which leads to new inefficiencies. Therefore, several authors have focused on the concept of a sacrifice ratio (see Ball, 1994, 1995), i.e. the systematic positive correlation between the degree of independence of the monetary authority and production and employment losses resulting from disinflation policies (Debelle and Fischer, 1997, Gärtner, 1997, Jordan, 1999). Also, despite a central bank's goal and instrument independence, government can indirectly affect monetary policy via fiscal policy. Or, the other way round, by accommodating open-market operations the central bank can buy any government securities, and thus sustain their yield, which the no-bailout clauses would actually prohibit. This threatens a central bank's credibility, with all its negative consequences for macroeconomic stabilization. Further, in spite of a central bank's political independence, monetary policy makers may tend to cater for the interests of the government, since they are at least informally close to government officials and members of parliament. Actually, central bank executives generally owe their appointment to the parliament and the government.

2.2 Fixed exchange rates and hard pegs

To enhance credibility of monetary policy in emerging and transition countries, several economists call for fixed exchange rates and hard pegs. Tying a nation's currency to another currency, or to a currency basket, would help the national economy to achieve

macroeconomic stability by importing it from abroad. Those countries that adopt this solution, however, undergo a costly loss of monetary sovereignty: the exchange rate of their currency has to remain fixed, or within the established narrow fluctuation band, even when this implies employment and output losses for the domestic economy. Further, although such fixed exchange rate regimes may prove helpful under favourable circumstances and for a limited period of time, they may result in costs when a country faces asymmetric shocks with respect to the currency area to which it is linked (see Eichengreen and Bayoumi, 1999, and Rossi, 2004a).

Tying the hands of monetary authorities may therefore be an expensive way to increase monetary policy credibility. Furthermore, the banking systems of transition or emerging market economies often lack experience in creditworthiness assessment, which may lead local banks to overlend to potentially default borrowers, with an ensuing risk of financial breakdown and crisis. In particular, transition economies often suffer from rather poor banking supervision by the national central bank, which does not yet meet international standards on accounting, capital adequacy, insolvency, prudential supervision, and avoidance of moral hazard problems (Mishkin, 2001, Sbracia and Zaghini, 2001, Bank of Italy, 2002). In fact, the transformation of these countries' financial systems has yet to be achieved (see, e.g., European Commission, 2002, Herrmann and Jochen, 2003, and Rossi, 2004b). As the 1994–95 Mexican crisis and the 1997–98 Asian crisis showed, it can become impossible to the central bank to react to upheld pegs when banks run into trouble (Eichengreen and Bayoumi, 1999, p. 355).

2.3 Currency boards and dollarization

As an alternative to fixed exchange rate regimes, academics and policy makers have recently put forward the concept of currency boards, which tie the national monetary base to a 100 per cent foreign exchange reserve (Hanke and Schuler, 1999). Thus, Hong Kong (since 1983) and Argentina (from 1991 to 2002) have linked their currency to the US dollar, while Estonia (since 1992), Lithuania (since 1994), and Bulgaria (since 1997) have anchored their currency to the euro. According to their advocates, currency boards enhance price stability and therefore macroeconomic stability, growth, and

welfare. While there is some empirical evidence in favour of currency board regimes achieving price stability (Bennett, 1994, Enoch and Gulde, 1998, Gulde et al., 2000), they neither eliminate the exchange rate risks nor the risk of speculative attacks on the local currency, which could jeopardize the monetary policy goals. For instance, the huge official reserves held by the Hong Kong Monetary Authority (which even exceeded the 100 per cent reserve rule) did not suffice to avoid exchange rate instability during the 1998 Asian crisis. Further, the fixed exchange rate and the concomitant constraint on monetary policy may contribute to output and welfare losses in case of asymmetric shocks hitting the local economy. Argentina is a recent case in point: besides its unsustainable public debt and structural budget deficits, the strong appreciation of the US dollar over the period 1999–2001 forced the peso to appreciate too, which made the demand for Argentine exports to shrink. The central bank of Argentina, however, could not react to this situation via an expansionary monetary policy, because of the currency board agreement. To the contrary, agents who deemed the parity between the peso and the US dollar not to be sustainable exchanged their pesos into dollars, which led to a fall in the demand for pesos thus aggravating Argentina's crisis.

Taking stock of the instability and shortcomings of currency board regimes, some of their most fervent proponents have recently called for official dollarization (or euroization), that is, 'a situation in which a country abandons its own currency and adopts another country's currency (generically called the dollar) as a means of payment [...] and unit of account' (Calvo, 2001, p. 321). This has been the case already long ago in Porto Rico (1899) and Panama (1904), and more recently in Ecuador (2000) and El Salvador (2001). A number of countries in the so-called "euro-time zone" are now debating official euroization, too. Now, dollarization (be it official, semi-official, or unofficial) elicits a number of advantages for the countries concerned, e.g., lower inflation and interest rates, more integrated financial markets, exchange rate stability, and increased budget discipline (see Niskanen, 2000, Antinolfi and Keister, 2001, and Winkler et al., 2004). However, dollarization also involves macroeconomic costs, e.g., the loss of sovereignty with respect to monetary policy and seigniorage; abandon of both exchange rate policy and the discretionary use of exchange rates to counteract

external shocks; and the loss of a lender of last resort in case of a financial crisis. Thus, a negative shock hitting a dollarized economy burdens the real sector with the full adjustment, instead of using the exchange rate as a shock absorber. Therefore, dollarization is not always welfare-enhancing, especially if we consider that the main candidates for dollarization are developing countries, which usually suffer from economic shocks that are different from those hitting the dollar-issuing country, because they have – almost by definition – an economic structure that differs sharply from the one of the United States.

2.4 A competitive money supply

In light of the beneficial effects of competition in goods and services markets, some economists went as far as adhering to the free banking view, arguing in particular that competition among currencies induces their suppliers to care for price level stability (see Klein, 1974, Hayek, 1978/1990, Selgin and White, 1994, and Dowd, 2000). Now, despite its likely inflation-limiting properties, such a money supply system is extremely complex to put into practice. As one of its first and distinguished proponents already acknowledged, '[i]f there are many monies and many sets of prices, the unit of account and medium of exchange functions of money are hampered. Money exchange rates are now necessary to determine relative values, and there are now the added transactions costs involved in currency conversions. These computational-conversion costs increase with the number of independent monies within a market' (Klein, 1974, p. 443). Therefore, competition within the market for money supply does not represent a viable solution to ensure that monetary authorities pursue stability-oriented policies over the long run.

According to the above discussion, today's institutional solutions suffer from a number of drawbacks. One may ask whether there exist more effective institutional solutions.

3. A proposal for deregulating the market for central bankers

Our proposal is to create an international market for central bankers. However, effective markets for good policy can only develop, if the political process is deregulated to some extent (see Eichenberger 2001, 2003, who develops the idea with politics in general), for there are three kinds of regulations that hinder such a market to arise:

- First, in most countries the central bank's head as well as the board members have to be nationals. This rule insulates domestic monetary policy specialists from international competition and makes it impossible for them to become active in other countries. Thus, it decreases their incentives to provide a stability oriented policy. Moreover, it constrains the international transfer of know-how, and it makes it difficult for the electors to assess the characteristics of the local candidates as the latter are inexperienced and have no reputation. Further, local candidates may be inclined to pay particular attention to the preferences of local special interest groups with some of which they often have close relations.
- Secondly, in every country only individuals may run for office at the central bank's board. Political parties may sometimes propose candidates but neither they nor specialized firms or organizations may be in charge of monetary policy on their own, i.e. to delegate some of their affiliates to head the central bank, while retaining the power to dismiss them. As there is a pervasive lack of information on individual candidates' attitudes and goals, it is difficult for the parliament and the citizens to select and control individual central bankers. In contrast, there is most often more information on the reputation of international or domestic organizations.
- Thirdly, today the remuneration of central bankers is set by law or statutes, and the central bankers cannot offer their services at lower or higher prices. Typically, pay is well below what a skilled banker earns in the private sector. This, again, limits the set of possible candidates. Further, it raises the danger that special interest groups influence monetary policy making by offering an implicit compensation to the central bankers. Actually, it is by now widely acknowledged that low wages for bureaucrats foster corruption and bribes (see World Bank, 1997).

On the whole, these three sorts of regulations reduce the supply of able candidates as well as their incentives to cater for the preferences of the broad public.⁶ As a result, '[t]he content of monetary policy decisions will bear the imprint of those interest groups which are in a better position than others to influence the political process' (Bofinger, 2001, pp. 166–167).

Consequently, we propose to abolish these regulations in order to create an international market for good monetary policy. This is bound to raise economic welfare via two mechanisms. First, in an international market for monetary policy candidates have incentives to build up a reputation for being stability-oriented policy makers. Secondly, such a market reduces the influence of special interest groups to the benefit of general interest groups as well as the citizens. In the following, we elaborate on the underlying mechanisms.

3.1 Decreasing protectionist barriers in central banking

Today's nationality and residence requirements for central bankers are to be abolished. Foreigners are allowed to run for office, independently of their residence. This deregulatory step creates international competition for top positions at central banks. It increases the set of highly qualified candidates, and gears central bankers towards implementing sound policies and keeping their campaign promises. Actually, in nationally segmented monetary policy markets, central bankers have only few incentives not to adhere to the short-term interests of the government and the wellorganized pressure groups'. Their behaviour depends largely on their intrinsic motivation, which makes a careful selection of the candidates imperative. However, as discussed above, this is almost impossible in an institutionally-limited market where protectionist barriers are in place. In an open market, by contrast, central bankers have a much stronger incentive to pursue stability-oriented policies: if they carry out their mandate in the long-run interest of the citizens and the government of a country, their chances to be elected to run other central banks as well will increase. For them, it is therefore worth building up a reputation for pursuing a stability-oriented monetary policy. The effectiveness of a central bank's deregulation is thus analogous to the

effectiveness of free trade in the market for goods and services, and of the four economic freedoms within the European Union. Central banks benefit from an internationally open market, similarly to private businesses, universities, or even national sport clubs, which may hire decision makers abroad. Of course, this does not mean that the choice of a domestic central banker is to be excluded, if there are local candidates with the required skills.

3.2 Deregulating the production process

Today's legal impossibility for firms, political parties, NGOs, and international organizations to be candidate for a term in office at a central bank head or board is to be abolished. This will allow political parties, monetary policy firms, and other organizations to run for office without nominating a specific individual. When a party or firm is chosen, it can delegate whomever it likes to carry out the tasks related to its mandate. It may also substitute new delegates for hitherto active ones, and thus bring in specialists for the specific problems to be solved. In such a framework, success of a firm, organization, or party depends on the professional skills of the whole institution involved, rather than on the individual performance of its members. As an example, this deregulation allows today's policy advisors (individuals as well as firms) to directly step into the market for monetary policy suppliers.

3.3 Deregulating the prices of monetary policy services

As it is very difficult to implement a market mechanism for setting the prices of monetary policy services, we propose that the remunerations for top positions at the central bank are raised to the level of equivalently skilled wage-earners in the private sector. This makes central banking also attractive to foreign candidates. The increase in explicit pay crowds out implicit compensations. Therefore, it makes the asymmetry between the well-organized special interest groups and weakly-organized general interest groups to decline.

Our proposal should not be misinterpreted as another call for more market and less state. We do neither demand to change the present central bank structures, nor do we yearn for the privatization of the central bank or a specific type of monetary policy. Rather, our approach is process-oriented. We propose new rules of the game, which compel monetary policy makers to care more for the interest and preferences of the citizens. In this framework, the aim of deregulation is to enhance a central bank's credibility. The proposal is thus evolutionary rather than revolutionary: all regulations and laws that are not directly affected remain unchanged. The proposed deregulation of monetary policy complements rather than substitutes other mechanisms to improve the quality of central banking by bringing about a large set of advantages.

4. Main advantages of an international market for good monetary policy

Deregulating the market for central bank head and board members gives rise to an international market for good monetary policy. It allows monetary policy specialists, be they individuals or institutions, to offer their services internationally. This makes it profitable to them to specialize in the "production" of stability-oriented monetary policies as well as in a reputation for doing so. The mechanisms involved are analogous to the deregulation of private banks and other business and industries.

The internationalization of the market for monetary policy services changes the constraints of all important actors. In this new framework, service providers may supply their services not only to one, but to several central banks. This increases the availability of monetary policy know-how as well as the intensity of competition. Thus, the incentives of central bankers to satisfy the preferences of their electorate, i.e. governments and parliaments, increase. While governments and parliaments are not geared at maximizing social welfare, they may, especially before elections, benefit from short-run policies with an inflationary bias. However, citizens demand a stability-oriented monetary policy, which induces the government to supply such a policy – provided the government can credibly commit to it. The deregulation of monetary policy gives the government the opportunity to provide stability-oriented policies because international suppliers have more effective incentives than local suppliers not to

give in to the short-term pressures by the government before elections. Rather, such international suppliers have incentives to build a reputation for pursuing a stabilityoriented monetary policy. Since their monetary policy performance in one country or currency area influences their appointment chances in the others, they are more inclined to attain the stated policy targets than in today's regulated framework. Additionally, the electorate can more easily assess the performance of an internationally active monetary policy service supplier as there is a larger sample of performance observations, which makes it easier to judge whether it tends to behave consistently with the announced targets, and whether observed discrepancies between targets and performance are the result of its own failure or rather of exogenous shocks. This increases the prospects of monetary policy decisions that consider the welfare of the citizens without being biased towards the interest of special interest groups. As a result, the differences in the influence of special and general interest groups decrease. The positive effects of this deregulation have also some important bearing on expectations. In fact, the expected stability does not only affect economic performance, but also the whole political system (see Eichenberger, 2004).

Interestingly, there already exist competitive international markets for some aspects of central banking, such as policy advice in specific areas, employees' education, and the execution of particular tasks (for instance, liquidity management, the production of bank notes and coins, and real estate administration). In these markets, private firms play an increasingly important role. Deregulating the market for central bankers will expand this fruitful development to the core of monetary policy making. Although this may look like a small additional step, it is indeed a crucial move. International suppliers will bear full responsibility for monetary policy, instead of merely attaining the short-term goals of national policy makers.

5. Alleged problems and shortcomings

Up to this section, we have emphasized the benefits of deregulating the market for monetary policy suppliers. Until today, however, no country has deregulated its central bank.⁸ Are there any neglected problems with this deregulation? In this section, we

discuss some of the arguments that are raised against our proposal (for a broader discussion of potential problems involved with the deregulation of general politics, see Eichenberger, 2001). As we come to the conclusion that these critiques are not valid, we provide a political-economy explanation of why deregulation of monetary policy has not yet been launched successfully.

5.1 Traditional critiques

(a) "The population would not accept non-national monetary policy makers"

This criticism is inconsistent with empirical evidence. Today, an increasing number of countries import large parts of their economic policy, including monetary policy, thus delegating important policy decisions to foreigners. Prominent examples are the May 2004 enlargement of the European Union (EU) and the achievement of the European Monetary Union (EMU). In all countries where there were referenda on these issues, the population accepted the proposals, i.e. they voted in favour of importing economic and monetary policies from Brussels and Frankfurt and delegating the corresponding power to foreign policy makers. Other examples are the various countries that have adopted hard pegs, currency boards, or even dollarization, which imply that foreign monetary policy decision makers are substituted for domestic ones. Related evidence is provided by the many international agreements by which countries accept to subject to the decisions of international organizations or courts. Interestingly, all these cases of policy importing imply a much stronger loss of national sovereignty than our own proposal. They all lead to an important, if not complete, loss of decision making autonomy, whereas our proposal fully guarantees national sovereignty in all monetary policy decisions.

(b) "Deregulation brings about new risks"

It is often claimed that deregulating the political process of monetary policy making may destroy the incentive structure enshrined in present central bank regulations, which have been designed in order not to jeopardize the interests of the citizens, i.e. economic stability and growth. In particular, it is sometimes argued that the legal restrictions on the nationality of a central bank's head or board member, and the personal mandate of monetary policy makers, helps bring them to court in case of misconduct. However, this argument is not persuasive. While there is not much difference with respect to bringing nationals and foreigners to court, it is much easier to call a firm to account than to arrest a specific individual, owing to the possibility for the latter to hide or escape the country. The important point, in fact, is to design the appropriate agreement, so that policy makers may be legally persecuted also in their home-country if they behave incorrectly and against the law. Obviously, this problem can be solved. Otherwise private businesses would not increasingly employ foreign managers for executive positions as they do nowadays.

(c) "Deregulation is expensive"

It can be argued that, in many countries, the explicit compensation of the central bank executive staff would increase as a consequence of deregulation. However, increasing explicit compensation partly substitutes for implicit compensation. Thus, an increase in explicit pay would reduce the impact of the asymmetry among interest groups with respect to their ability to offer implicit compensations. In many developing countries, implicit compensation schemes via insider and foreign-exchange transactions are much higher than the explicit compensation for the most expensive international specialists, who would be more hesitant to accepting bribes as they have to safeguard their reputation. Further, the benefits of deregulating the market for monetary policy makers internationally must be considered alongside with the costs elicited by a market-determined wage bill. To be sure, the macroeconomic benefits of appropriate monetary policy decisions are much more important than the associated increase in personnel expenditures of the central bank or the public sector altogether.

(d) "Governments choose partisan candidates"

Up to this point, we have been arguing in favour of central bank deregulation on the assumption that governments are interested in stability-oriented monetary policies over

the long run and, therefore, appoint executive officers with a good reputation in this respect. This increases the incentives of monetary policy suppliers to build such a reputation. Now, if governments prefer partisan central bankers, most of the benefits from deregulating the market for monetary policy makers seem to be lost. One may even argue that for the latter individuals or institutions it is worth building an international reputation for being ready to adhere and fulfil any short-term preferences of the government. This would run counter the aim of our proposal. In fact, this danger is not real. If the government wants to look for partisan candidates to run the central bank, it does not need to look for them in an internationally open market: there are already plenty of them in its own country. Rather, deregulating the market for central bankers strongly incentivizes a short-term oriented government to give its monetary policy a long-run perspective. To be sure, in an international market for such a policy there will be suppliers with a reputation for offering stability-oriented policies, even though only few governments are interested in them. As soon as such a supply exists, however, it will be much more difficult for other governments to keep on hiring partisan central bankers, because this would be a clear signal as to their unwillingness to guarantee economic stability to the country. In order to increase the efficiency of deregulation further, the latter could be associated with the direct election by the population of the central bank head, an issue that we take up in section 6.

All in all, our deregulation proposal is not utopian. There already exist a very small number of migrating central bank governors or executive directors around the world. A prominent example is the New Zealander Peter Nicholl. After having served for six years (1990–95) as the Deputy Governor at the Reserve Bank of New Zealand, he became on November 1, 1997 the Governor of the Central Bank of Bosnia and Herzegovina. There he succeeded to Serge Robert, who spent twenty years at the Banque de France before holding the key position of Governor of the Central Bank of Bosnia and Herzegovina from October 29, 1996 to October 31, 1997. Although these cases are peculiar to the peacekeeping agreement that in 1995 led to enacting the new Constitution of Bosnia and Herzegovina, they show that non-national monetary policy makers exist and may indeed operate for the well-being of the citizens in any national economy. This is also confirmed by the fact that after the first six years of existence of

the Central Bank of Bosnia and Herzegovina, a period during which its governor could not be a Bosnian citizen (see footnote 5), Peter Nicholl was given the Bosnian citizenship, so that he could be reappointed on May 20, 2003 as governor of the same central bank for a further term until December 31, 2004.

5.2 A political-economy explanation

The above discussed critiques of our proposal do not seem to be convincing. Rather, we believe three political-economy aspects to be responsible for the fact that monetary policy deregulation has not yet emerged.

(a) Some beneficial processes do not occur spontaneously

Deregulation rarely occurs in a quick and comprehensive way. Beside monetary policy making, a number of other economic domains are being deregulated more slowly than academics would suggest. The reason for this discrepancy between theory and practice is that deregulation not only increases efficiency, but also implies to redistribute rents and income. In those areas where the negatively affected individuals or institutions are well organized, or where they have easily access to the decision makers, deregulation is particularly difficult to achieve. An obvious example is the deregulation of the political process in general (see Eichenberger, 2001, 2003). At all levels of government, politicians are not inclined to open their market to international competition. Owing to the close links between central bankers and politicians, the self interest of today's central bankers plays a prominent role in limiting deregulation. As can be easily understood, they are not enthusiastic about opening the market for executive positions at "their" central bank.

(b) The interests of current governments

We have been arguing so far that democratically elected governments are interested in a stability-oriented monetary policy from a long-run perspective. This is the reason why, after deregulation, they would appoint stability-oriented policy suppliers. This does not

mean, however, that today's governments are in favour of central bank deregulation. In fact, there is a big difference between deciding to exploit the room for manoeuvre given by the rules in a competitive system, and deciding to change the rules. As a matter of fact, current governments are formed by those political parties that won the election under the present rules. Obviously, they are the specialists to grapple under the present rules. This means that they also have solved the credibility problem better than their competitors. Therefore, they are likely to be less interested in changing the rules than their competitors are.

(c) Deregulation is an international public good

Consistently with the preceding arguments, one may argue that today's opposition parties should have a strong interest in deregulating monetary policy making. Compared to the government, the opposition often suffers from an even larger lack of credibility. Therefore, it is the opposition that should engage in the implementation of mechanisms that increase the credibility of stability-oriented monetary policies. Its problem is, however, that deregulating the market for monetary policy suppliers in only one country does not give rise to all benefits that result from a worldwide deregulation of this market. In fact, the benefits from deregulating monetary policy increase with the number of countries that deregulate their market. Potential central bank head and board members are indeed more stimulated to build up a reputation for being stability-oriented monetary policy suppliers if there is a large, and increasing, number of countries demanding this kind of policy. Hence, deregulating the market for central bankers has very important positive externalities that result from the first movers in this domain, and may thus be considered as an international public good.

6. A chance to make monetary policy more democratic

Today, the citizens have no direct influence on monetary policy: in no country are they allowed to elect the relevant decision makers (see Walsh, 1995, p. 150). In fact, as a general rule, the latter are elected by the government or the parliament. Now, when the mandate of a central bank's head may be renewed, a government-led renewal can lead

to some dependency of the incumbent central bankers from the relevant election body. In contrast, when central bank governors may remain in office until they retire, or die, they are not accountable to anybody, which is unsatisfactory from a democratic perspective, too. Further, if their mandate is not renewable, some sort of dependency from either the government or the parliament majority can develop, because, once their mandate is over, central bank governors might be interested in another position in the general government sector. In the last two cases, in fact, one can argue that the influence of government is very marginal and certainly not direct. The choice of monetary policy makers, however, may become even more political, because both the government and the well-organized interest groups wish to control, or at least influence, actual monetary policy by selecting the appropriate (that is, partisan) candidates. The direct election of monetary policy makers by the citizens would therefore bring about some important advantages: the central bank would become really independent of the short-term interests of the government and the pressure groups', but nevertheless would be democratically accountable.

The direct election of monetary policy makers, however, may be opposed by at least two arguments. First, in a regulated market for central bankers like today's, it is nearly impossible for the citizens to elect really independent policy makers. Of course, rational voters prefer independent candidates. In a closed market for monetary policy makers, however, the number of sufficiently skilled candidates is often poor. As a result, there is a danger that the elected candidates are closer to the government or to the parliament majority than, for instance, if the central bank head is elected by a qualified majority of the parliament. Secondly, in a closed market it is practically impossible for the citizens to assess the characteristics of those candidates who run for a term in office as head or board members of the central bank. Apart from the incumbent, candidates will find it almost impossible to gain a reputation of being stability-oriented policy makers.

Therefore, the argument that central bankers have to be carefully selected by a committee of experts and then approved by the government or parliament is not devoid of substance in the present, regulated system.

Both arguments against the direct election of central bank governors, however, become void of any substance by deregulating the market for monetary policy suppliers. In an international market for good monetary policy, there are plenty of suppliers who have no close connections with domestic political parties and are thus really independent. At the same time, it becomes much easier for the citizens to assess the motivation as well as the skills of monetary policy suppliers, since the latter may be actively involved in the conduct of monetary policy in other countries, thus revealing information on their professional experience and performance. Both mechanisms function particularly well when, besides individuals, also institutions may apply for an executive position at the central bank. In fact, for citizens it is easy to assess the quality and reputation of these institutions rather than that of individuals.

Introducing direct election for monetary policy decision makers and deregulating the market for central bankers are thus two reforms that form a virtuous circle. Deregulation enables direct election, and the latter further increases the effectiveness of the former. This is because, in several countries, the government is likely to be less willing than the citizens to choose either individuals or institutions with a solid reputation for carrying out a stability-oriented monetary policy over the long run.

7. Conclusion

To date, the deregulation concept has been put into practice in the economic domain. By contrast, the political domain has been protected from the efficiency-enhancing forces of markets, competition, and free trade. Therefore, this paper applies the deregulation concept to monetary policy. It argues that those forces that at present hinder competition in the market for monetary policy suppliers are to be weakened. In particular, it suggests (i) to abolish those legal restrictions that prohibit hiring foreign central bankers, (ii) to soften regulations of the production process of monetary policy services and opening the market to organizations as policy suppliers, and (iii) to raise compensation of central bank governors to a market-equivalent level. Elaborating on these points, the paper argues that these deregulatory steps increase the incentives of governments as well as

monetary policy decision makers to pursue stability-oriented policies in the interest of the citizens.

Deregulating the political process of monetary policy making is indeed beneficial to all economic systems, be they developing, emerging, in transition, or globalized. It has the character of an international public good, since the resulting advantages for any single country increase with the number of countries opting for this kind of deregulation. Thus, it should become an element of international agreements and an item in the agenda of international organizations. It is particularly beneficial for two groups of countries: in developing and transition economies, and in currency areas. Let us expand on this here.

As recent literature on financial crises points out, there is a close link between crises, central banking aptitudes, and the structure of the private banking sector (Sbracia and Zaghini, 2001, Mishkin, 2001, Bank of Italy, 2002). In particular, in developing and transition economies there is a poor central bank management in the supervision of the local banking system. In these countries the central bank does not yet meet international standards on accounting, capital adequacy, insolvency, effective prudential supervision, and avoidance of moral hazard problems. Also, incentives for a central bank executive officer to resist the pressure of well-organized interest groups and to carry out policy independently of the short-run interests of the government are small or totally missing. Deregulating the political process of monetary policy making is therefore particularly important for developing countries. The current lack of incentives and skills would be eliminated at one stroke. In those countries where, at present, monetary policy is strongly affected by short-term political interests, the potential gains and job opportunities resulting from a long-run stability-oriented monetary policy are indeed extraordinarily high. For an international supplier of monetary policy services it is thus particularly interesting to obtain a position at the central bank of these countries, and to carry out, like a turnaround manager, the reforms where they are most urgently needed.

In currency areas, by contrast, actual monetary policy is likely to be steered mainly by local interests and preferences. Euroland is a case in point. Whilst the ECB Governing Council, that is, the highest monetary-policy decision making authority within the euro

area, should guarantee price stability in the whole area, according to Article 112 of the EU Treaty all its members should be nationals of a euro-area country. To be sure, the governors of those national central banks that participate in the meetings of the ECB Governing Council continue to be organically integrated in their home institution, and remain therefore an integral part of the national administration (Ripoll, 2002, p. 11). As a result, there is some risk that the national interests of a particular member of the ECB executive board may influence the monetary policy decisions of the ECB, which will then apply at the level of the whole euro area, as *The Economist* pointed out already before the ECB started operating. Article 108 of the EU Treaty, in fact, claims that the ECB executive board members should decide without either taking instructions from or being influenced by national central banks or other national and European institutions. ¹⁰ In a number of statements, the European Central Bank (1999, p. 55) has been preaching the same set of guidelines: '[w]hen taking monetary policy decisions, the members of the Governing Council of the ECB do not act as national representatives, but in a fully independent personal capacity'. As Dornbusch et al. (1998, p. 15) noted, however, this kind of moral agreement is not enough to make the ECB really independent: '[t]he issue is not that bank presidents take or solicit direct instructions from their patrons, but whether they are cloned and then sent on their mission. When an issue of difference arises, a French appointee would vote in the style of France, and a German, as predictably, in the way of the Bundesbank'. Recent empirical evidence confirms this prediction: as shown by Meade and Sheets (2002, p. 15), 'the majority of ECB Council members typically voted on monetary policy changes in a manner that can be justified by the differential between their national inflation rate and the EMU average'. 11 National economic performance seems therefore to play a role in the voting behaviour of national representatives in the ECB Governing Council, an issue that may become even more worrying after the 2004 enlargement of the EU to the South-East when these new countries will become full EMU members (see Rossi, 2004a). Deregulating the political process of monetary policy making as suggested in this paper may therefore also help eradicate the home-country bias that seems to exist within the present ECB's decision making process. With an international market for good monetary policy there would be no need any more to restrict eligibility to the ECB Governing Council to EU nationals. In fact, a central bank executive board composed of members selected by the

market mechanism on the grounds of their reputation for pursuing stability-oriented policies, without caring for their nationality, would be immune to the diverging national interests and economic performance that may exist within the same currency area, be it named after the euro or the US dollar.

Notes

¹ We should not lose sight of the fact that, until recently, monetary policy making was a prerogative of government officials in several OECD countries, whilst the day-to-day operation of monetary policy has traditionally been delegated to central bankers. In many cases, the power to set the (ultimate) policy goals and sometimes also the choice of the policy instruments have been retained by the government, represented by the Finance Minister – or the Chancellor of the Exchequer, as in the United Kingdom –, who therefore depends upon (the preferences of) the political party in power.

² A further question that we do not consider here is who in the central bank should be accountable for failing to meet targets.

³ In New Zealand, for instance, dismissal of the central bank governor is not an automatic procedure (see Article 49.3 of the Reserve Bank of New Zealand Act), but has to be decided by the Government or the Minister of Finance. As Bernanke et al. (1999, p. 109) note, in the 1990s the inflation target was missed twice (in 1995 and 1996) in New Zealand, but the sanction of a dismissal was not applied. In its stead, the Government widened the inflation target range from 0–2 to 0–3 per cent.

⁴ Note, however, that 'the sacrifice ratio, by itself, represents an unsatisfactory criterion for evaluating the desirability or nondesirability of central bank independence, as it reflects the experience of disinflation periods only, rather than looking at entire cycles of disinflation and reinflation and the overall performance over longer periods of time' (Baltensperger and Kugler, 2000, p. 112). In fact, Baltensperger and Kugler (2000) express concern, both from a theoretical point of view and on empirical grounds, about the identification of output losses attributable to monetary policy and central bank disinflation operations as is usually done in the sacrifice ratio literature.

⁵ One of the few exceptions is the central bank of Bosnia and Herzegovina. According to Article 8.1 of the new Constitution of Bosnia and Herzegovina, enacted as part of the 1995 Dayton–Paris peace agreement, '[d]uring the first six years of operation of the Central Bank, the Governing Board shall be composed of a Governor appointed by the International Monetary Fund, after consultation with the Presidency of Bosnia and Herzegovina, and three members appointed by the Presidency of Bosnia and Herzegovina. The Governor appointed by the International Monetary Fund shall not be a citizen of Bosnia and Herzegovina or any neighboring state. The three members appointed by the Presidency of Bosnia and Herzegovina shall be one Bosniac and one Croat from the Federation of Bosnia and Herzegovina and one Serb from the Republika Srpska'. Article 8.2 stipulates, however, that after the first

six years of operation of the newly established central bank, all members of the governing board shall be citizens of Bosnia and Herzegovina.

⁶ To give only an example, consider the appointment of a too conservative central banker with respect to the employment or output stabilization goals of the population. This central banker may be so averse to inflation as not to care about unemployment in the country. In doing so, he can, in fact, be under the influence of well-organized interest groups, say rentiers, who do not want to see their wealth spoiled by unexpected inflation.

⁷ Needless to say, individuals are still allowed to run as candidates to the central bank's head.

⁸ In fact, there exist some countries (e.g., Finland, Israel, Japan, New Zealand, and Norway) where there are no legal restrictions on the employment of non-nationals for permanent, but not yet executive, positions at the central bank.

⁹ As noted by *The Economist* (October 31, 1998, p. 85), 'there is a risk that national governors will be unduly influenced by conditions in their home country'.

¹⁰ Article 108 stipulates that, '[w]hen exercising the powers and carrying out the tasks and duties conferred upon them by this Treaty and the Statute of the ESCB, neither the ECB, nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Community institutions or bodies, from any government of a Member State or from any other body. The Community institutions and bodies and the governments of the Member States undertake to respect this principle and not to seek to influence the members of the decision-making bodies of the ECB or of the national central banks in the performance of their tasks' (European Commission, 1999, p. 25). See also Article 7 of the ESCB and ECB Statute (European Commission, 1999, pp. 36–37).

¹¹ Meade and Sheets reach an analogous conclusion with respect to regional influences in the monetary policy decisions of the US Federal Open Market Committee: they show that over the period 1978–2000 an increase in a region's unemployment rate (for a given national rate) by one percentage point reduced by approximately 2 percentage points the probability that a FOMC member dissented from the majority vote. For Germany, Berger and de Haan (2002) present evidence that regional differences in inflation and growth had an important influence on the voting behaviour of the members of the *Zentralbankrat*.

References

- Antinolfi, G. & Keister, T. (2001) Dollarization as a monetary arrangement for emerging market economies, *Federal Reserve Bank of St. Louis Review*, 83(6), pp. 29–39.
- Ball, L. (1994) What determines the sacrifice ratio?, in: N.G. Mankiw (Ed.) *Monetary Policy*, pp. 155–182 (Chicago & London, University of Chicago Press).
- Ball, L. (1995) Time-consistent policy and persistent changes in inflation, *Journal of Monetary Economics*, 36(2), pp. 329–350.
- Baltensperger, E. & Kugler, P. (2000) Central bank independence and sacrifice ratios: some further considerations, *Open Economies Review*, 11(2), pp. 111–125.
- Bank of Italy (2002) *The Banking and Financial Sector in the Countries of South– Eastern Europe* (Rome, Bank of Italy).
- Barro, R.J. & Gordon, D.B. (1983) A positive theory of monetary policy in a natural rate model, *Journal of Political Economy*, 91(4), pp. 589–610.
- Bennett, A. (1994) Currency boards: issues and experience, *International Monetary Fund Papers on Policy Analysis and Assessment*, PPAA/94/18.
- Berger, H. & de Haan, J. (2002) Are small countries too powerful within the ECB?, *Atlantic Economic Journal*, 30(3), pp. 1–20.
- Bernanke, B.S., Laubach, T., Mishkin, F. & Posen, A. (1999) *Inflation Targeting:*Lessons from the International Experience (Princeton, Princeton University Press).
- Bofinger, P. (2001) *Monetary Policy: Goals, Institutions, Strategies, and Instruments* (Oxford, Oxford University Press).
- Calvo, G.A. (2001) Capital markets and the exchange rate with special reference to the dollarization debate in Latin America, *Journal of Money, Credit, and Banking*, 33(2), pp. 312–334.
- de Haan, J. (Ed.) (2000) *The History of the Bundesbank: Lessons for the European Central Bank* (London & New York, Routledge).

- Debelle, G. & Fischer, S. (1997) How independent should a central bank be?, in: S.C.W. Eijffinger (Ed.) *Independent Central Banks and Economic Performance*, pp. 462–488 (Cheltenham & Lyme, Edward Elgar).
- Dixit, A.K. (1996) *The Making of Economic Policy: A Transaction-Cost Politics Perspective* (Cambridge & London, The MIT Press).
- Dornbusch, R., Favero, C. & Giavazzi, F. (1998) Immediate challenges for the European Central Bank, *Economic Policy*, 13(26), pp. 15–64.
- Dowd, K. (2000) The invisible hand and the evolution of the monetary system, in: J. Smithin (Ed.) *What is Money?*, pp. 139–156 (London & New York, Routledge).
- Eichenberger, R. (2001) Bessere Politik dank Deregulierung des politischen Prozesses, *Analyse und Kritik*, 23(1), pp. 43–60.
- Eichenberger, R. (2003) Towards a European market for good politics: a politicoeconomic reform proposal, *Jahrbuch für Neue Politische Ökonomie*, 22, pp. 221–237.
- Eichenberger, R. (2004) Wirtschaftspolitische Beratung wirkt auch bei rationalen Erwartungen: eine Skizze der Einflussmechanismen, in: C.A. Schaltegger & S.C. Schaltegger (Eds) *Perspektiven der Wirtschaftspolitik. Festschrift zum 65. Geburtstag von René L. Frey*, pp. 37–45 (Zürich, vdf).
- Eichengreen, B. & Bayoumi, T. (1999) Is Asia an optimum currency area? Can it become one? Regional, global, and historical perspectives on Asian monetary relations, in: S. Collignon, J. Pisani-Ferry & Y.-C. Park (Eds) *Exchange Rate Policies in Emerging Asian Countries*, pp. 347–366 (London & New York, Routledge).
- Enoch, C. & Gulde, A.-M. (1998) Are currency boards a cure for all monetary problems?, *Finance and Development*, 35(4), pp. 40–43.
- European Central Bank (1999) The institutional framework of the European System of Central Banks, *Monthly Bulletin*, 1(7), pp. 55–63.
- European Commission (1999) *Economic and Monetary Union: Compilation of Community Legislation* (Luxembourg, Office for Official Publications of the European Communities).

- European Commission (2002) Report on macroeconomic and financial sector stability developments in candidate countries, *European Commission Enlargement Paper*, no. 8.
- Fischer, S. (1994) Modern central banking, in: F. Capie, C. Goodhart, S. Fischer & N. Schnadt (Eds) *The Future of Central Banking: The Tercenary Symposium of the Bank of England*, pp. 262–308 (Cambridge, Cambridge University Press).
- Fratianni, M., von Hagen, J. & Waller, C.J. (1997) Central banking as a political principal–agent problem, *Economic Inquiry*, 35(2), pp. 378–393.
- Friedman, M. (1960) *A Program for Monetary Stability* (New York, Fordham University Press).
- Gärtner, M. (1997) Central bank independence and the sacrifice ratio: the dark side of the force, *Swiss Journal of Economics and Statistics*, 133(3), pp. 513–538.
- Gulde, A.-M., Kähkönen, J. & Keller, P. (2000) Pros and cons of currency board arrangements in the lead-up to EU accession and participation in the euro zone, *International Monetary Fund Policy Discussion Papers*, PDP/00/1.
- Hanke, S.H. & Schuler, K. (1999) A monetary constitution for Argentina: rules for dollarization, *Cato Journal*, 18(3), pp. 405–419.
- Hayek, F.A. (1978/1990) Denationalisation of Money: The Argument Refined: An Analysis of the Theory and Practice of Concurrent Currencies, 3rd edition (London, Institute of Economic Affairs).
- Herrmann, S. & Jochem, A. (2003) The international integration of money markets in the central and east European accession countries: deviations from covered interest parity, capital controls and inefficiencies in the financial sector, *Economic Research Centre of the Deutsche Bundesbank Discussion Papers*, no. 07/03.
- Jordan, T.J. (1999) Central bank independence and the sacrifice ratio, *European Journal of Political Economy*, 15(2), pp. 229–255.
- Klein, B. (1974) The competitive supply of money, *Journal of Money, Credit, and Banking*, 6(4), pp. 423–453.

- Kydland, F.W. & Prescott, E.C. (1977) Rules rather than discretion: the inconsistency of optimal plans, *Journal of Political Economy*, 85(3), pp. 473–491.
- Lohmann, S. (1992) Optimal commitment in monetary policy: credibility versus flexibility, *American Economic Review*, 82(1), pp. 273–286.
- Meade, E.E. & Sheets, D.N. (2002) Regional influences on U.S. monetary policy: some implications for Europe, *International Finance Discussion Papers*, no. 721 (Washington, Board of Governors of the Federal Reserve System).
- Mishkin, F.S. (2001) Financial policies and the prevention of financial crises in emerging market countries, *National Bureau of Economic Research Working Paper*, no. 8087.
- Muscatelli, A. (1998) Optimal inflation contracts and inflation targets with uncertain central bank preferences: accountability through independence?, *Economic Journal*, 108(447), pp. 529–542.
- Niskanen, W.A. (2000) Dollarization for Latin America?, *Cato Journal*, 20(1), pp. 43–47.
- Persson, T. & Tabellini, G. (1993) Designing institutions for monetary stability, *Carnegie–Rochester Conference Series on Public Policy*, 39, pp. 53–84.
- Ripoll, J. (2002) National appointments to multinational monetary policymaking: a role conflict?, mimeograph.
- Rogoff, K. (1985) The optimal degree of commitment to an intermediate monetary target, *Quarterly Journal of Economics*, 100(4), pp. 1169–1189.
- Rossi, S. (2004a) The enlargement of the euro area: what lessons can be learned from EMU?, *Journal of Asian Economics*, 14(6), pp. 947–970.
- Rossi, S. (2004b) Monetary integration strategies and perspectives of new EU countries, *International Review of Applied Economics*, 18(4), pp. 443–469.
- Sbracia, M. & Zaghini, A. (2001) The role of the banking system in the international transmission of shocks, *Temi di discussione*, no. 409 (Rome, Bank of Italy).
- Selgin, G.A. & White, L.H. (1994) How would the invisible hand handle money?, *Journal of Economic Literature*, 32(4), pp. 1718–1749.

- Waller, C.J. (1992) The choice of a conservative central banker in a multisector economy, *American Economic Review*, 82(4), pp. 1006–1012.
- Walsh, C.E. (1993) Central bank strategies, credibility, and independence: a review essay, *Journal of Monetary Economics*, 32(2), pp. 287–302.
- Walsh, C.E. (1995) Optimal contracts for central bankers, *American Economic Review*, 85(1), pp. 150–167.
- Winkler, A., Mazzaferro, F., Nerlich, C. & Thimann, C. (2004) Official dollarisation/euroisation: motives, features and policy implications of current cases, *European Central Bank Occasional Paper*, no. 11.
- World Bank (1997) World Development Report 1997: The State in a Changing World (Washington, World Bank).