

Grünbichler, Andreas et al.

**Research Report**

## Supervisory Systems, Fiscal Soundness and International Capital Movement: More Challenges for new EU Members

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**SUPERVISORY SYSTEMS, FISCAL SOUNDNESS  
AND INTERNATIONAL CAPITAL MOVEMENT:  
MORE CHALLENGES FOR NEW EU MEMBERS**

*Three Papers by*

*Andreas Grünbichler and Patrick Darlap  
Sinikka Salo*

*Leslie Lipschitz, Timothy Lane and Alex Mourmouras*

**Introduction**

*by Morten Balling*

**A joint publication with the Central Bank of Malta**



SUERF – The European Money and Finance Forum  
Vienna 2004

CIP

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## TABLE OF CONTENTS

<b>Introduction</b> (by Morten Balling)	5
<b>Integration of European Supervisory Systems: Harmonisation or Unification?</b> (by Andreas Grünbichler and Patrick Darlap)	9
References	19
<b>The Relevance of Fiscal Soundness for Monetary Stability</b> (by Sinikka Salo)	23
1. Introduction	25
2. Inflation tax	27
3. Fiscal Theory of the Price Level	29
4. Debt Sustainability and some reflections on “fiscal dominance”	32
5. Fiscal challenges in the accession countries	35
6. Conclusions	39
7. References	41
<b>How Capital Flows will influence the EU Accession Countries of Central and Eastern Europe</b> (by Leslie Lipschitz, Timothy Lane and Alex Mourmouras)	45
Introduction	47
1. The Microeconomics	48
2. Arbitrage	50
3. Monetary Policy, Independence, and the Pricing of Risk	53
4. Policy Implications	55
What then are the implications for monetary and exchange rate policy?	56
References	58
<b>SUERF – Société Universitaire Européenne de Recherches Financières</b>	61
<b>SUERF STUDIES</b>	62



## Introduction

by **Morten Balling**

*Chairman of the Editorial Board  
Professor, Department of Finance  
The Aarhus School of Business*

On May 1, 2004, ten countries in Central, Eastern and Southern Europe will become full members of the EU. The parliaments and monetary authorities of the ten accession countries have already to a large extent adapted their legal and institutional structures to the new Europe-wide environment. The papers in this *SUERF Study* analyse from different perspectives the challenges to regulators, supervisors, Governments and central bankers that are related to safeguarding financial stability in a large economic union with financial markets that are open to global competition. The papers were presented in March 2003 at a seminar jointly organised by SUERF and the Central Bank of Malta.\*)

In the First paper, *Andreas Grünbichler* and *Patrick Darlap* (Austrian Financial Market Authority) look at the challenges that must be met by financial supervisors. The EU accession process implies a fundamental change in the financial landscape. Regulators and supervisors must be given the capability to deal with strong and free market forces. It must be decided how macro and micro aspects of monetary stability shall be handled, and the degree of integration of the supervision of different types of financial intermediaries must be chosen.

The authors stress the importance of regulatory and supervisory independence. Some European supervisors operate under rule-based systems that leave little scope for decisions based on factors other than objective assessments of individual cases. Other supervisors have more room for discretion and accordingly the ability to respond in a flexible way.

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\*) Three other papers from the Malta Seminar were published in SUERF Study No. 2003/4: *Securing Financial Stability: Problems and Prospects for New EU Members*, by Michael C. Bonello, Fabrizio Saccomanni, Claudia M. Buch, Jörn Kleinert and Peter Zajc.

It is not an easy task to decide how the supervisory structure in an accession country should be adapted in order to fit into the EU-wide environment. It is like aiming at a moving target. The national supervisory structures have been in a restructuring process all over Europe for some time and the process can be expected to continue. The activity of the supervisors has been adapted to new international banking and insurance standards. At the national level, a clear trend in Europe can be observed towards integrated financial market regulators. Integrated financial supervisors have been established in Norway, Denmark, Sweden, UK, Germany, and Austria. The emergence of financial conglomerates is, of course, one important reason for this trend. The authors expect that the so-called “Solvency II exercise” in insurance supervision that brings capital adequacy regulation of insurance companies closer to that of banks will support the integration trend among the regulators. According to the authors, there is also a trend in Europe towards a decentralised supervisory structure with coordination between the national supervisors rather than a trend towards a centralised European system of financial sector supervision. It is therefore not clear what shape a possible future European system of financial sector supervision may take.

There are different models of cooperation and division of labour between central banks and supervisory authorities in Europe. Ireland and Belgium are mentioned as examples of countries that have given their central banks far-reaching supervisory responsibilities. The authors warn against mixing up responsibilities and moving away from clear cut and separable responsibilities augmented by a strongly developed culture of accountability. They underline also, however, the necessity of all involved parties – central banks and financial sector supervisors – to cooperate closely and to exchange information on a regular basis.

In the Second paper, *Sinikka Salo* (Bank of Finland) discusses the relevance of fiscal soundness for monetary stability. Government debt sustainability is closely related to fiscal soundness. In practice, fiscal authorities seldom have well-defined policy rules. The imprecise character of policy rules makes debt sustainability a rather vague concept. There might be problems with lack of data and imprecisely defined off-budget and contingent liabilities. There might also be problems in projecting flows of Government revenues and expenditures and key macroeconomic variables such as interest rates, rates of economic growth, and exchange rate changes over sufficiently long periods.

There is always an element of judgment involved in assessing whether an individual country’s fiscal position is sound or not. The ageing of the

European population contributes to the pressure on Government budgets of the European countries.

EU accession will in several ways strain the budgets of the new member countries. Investment in public infrastructure, complying with EU environmental standards etc. will be only partly compensated by net transfers and positive budgetary effects of tax harmonisation. Absorbing structural and cohesion funds requires domestic co-financing. Since the share of foreign currency denominated public debt is significant in many accession countries, exchange rate changes may increase public debt.

The author characterises the medium-term fiscal picture foreseen by the EU accession countries as very favourable. On the other hand, she warns against the risk of increasing deficits and of a continuous increase in the level of governments' indebtedness. Such fiscal policies would place a heavy burden on national monetary policies in the new member states.

Fiscal pressures in the new member states may intensify political pressures to weaken the rules of fiscal surveillance in the EU. According to the author, this implies a risk that EU enlargement in 2004 will both directly and indirectly increase the burden that fiscal policies place on monetary policies. Some of the new member states may have difficulties in complying with the requirements of the Stability and Growth Pact. But the temptation to weaken the pact is dangerous and should be firmly resisted.

In the Third paper, *Leslie Lipschitz, Timothy Lane and Alex Mourmouras* (IMF) examine the potential influence of capital flows on developments and policy choices in the transition countries of Central and Eastern Europe. They apply a simple model in which an identical Cobb-Douglas production function for all countries allows a discussion of the relationship between marginal products of capital, interest rates, capital flows and exchange rates. Production in the transition countries is characterized by capital/labour ratios that are much lower than those of their more advanced Western neighbours. This implies in the simple model that the marginal product of capital is relatively high. The difference in the marginal products of capital explains to some extent the cross-border flows of investment to the transition economies. At the same time, the model contributes to an explanation of the upward tendency in the real value of the currencies of the transition countries relative to those of the Western countries.



The analysis has implications for the monetary authorities of the accession countries. Interest arbitrage conditions tend to establish an equilibrium real interest rate that is relatively low. But if the actual interest rate is set so low, it will be far below the marginal product of capital. This in turn will cause capital inflows and a rapid accumulation of external liabilities. If, on the other hand, the authorities try to set the real interest rate at a level closer to the marginal product of capital, the high real rate will elicit huge arbitraging capital inflows and, correspondingly, large current account deficits.

The result may be a significant build-up of vulnerabilities. In case of a crisis of confidence, a reversal of the direction of cross-border capital flows may cause serious difficulties. At the end of their paper, the authors list some recommendations to the monetary authorities of the accession countries: 1) They should build adequate shock absorbers, 2) They should be careful about the level and composition of public debt, 3) They should be concerned about the debt exposures and vulnerabilities in the private sector, and 4) They should be generous with information and data. The mechanisms described are real rather than nominal. There are accordingly no easy answers for monetary and exchange rate policy. Still, exchange rate policy is important because it influences market behaviour and perceptions. In the view of the authors, a reasonable amount of room for symmetric exchange rate flexibility is likely to be useful.

Read together, the three papers illuminate important aspects of the demanding task of securing financial stability in the EU accession countries.

Morten Balling

**Integration of European Supervisory Systems:  
Harmonisation or Unification?<sup>1</sup>**

by

**Andreas Grünbichler and Patrick Darlap**

**Corresponding author:**

Prof. Dr. Andreas Grünbichler  
Austrian Financial Market Authority  
Praterstrasse 23  
A-1020 Vienna

Tel.: +43 1 24959 6000  
Fax: +43 1 24959 6099  
E-mail: [andreas.grunbichler@fma.gv.at](mailto:andreas.grunbichler@fma.gv.at)  
<http://www.fma.gv.at>

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<sup>1</sup> This paper served as the basis for a speech by Andreas Grünbichler at the SUERF seminar held in Malta in March 2003. Andreas Grünbichler is Executive Director of the Austrian Financial Market Authority, Patrick Darlap is his assistant.



The notion of financial stability has changed over the last decades, following the abolition of the Bretton-Woods System. This new meaning has achieved increasing importance over the past years.

For the time being, there is no single definition of financial stability. Following a recent suggestion by Issing<sup>2</sup>, a distinction can be made between ‘systems approach’ definitions and those related to the volatility of directly observable financial variables. Andrew Crockett adheres to the first kind, defining financial stability as the unimpaired capacity of financial institutions and markets to efficiently mobilise savings, provide liquidity and allocate investment<sup>3</sup>. But for the sake of an operationally usable concept this convincing kind of definition is often replaced by the observation of the absence of banking crises, price stability, interest rate smoothness or the like. As a consequence of these different possible definitions, the attribution of regulatory and supervisory power to individual institutions is an ambiguous task.

What is regulation in the financial sector about? It may be designed around three well-known classical topics: financial stability, the protection for smaller, less informed clients and thirdly the danger of monopolistic behaviour. But it may also be about interest policy and rent seeking. There are numerous and antithetical ideas about the rationale of regulation. Depending on how ideal or how real a picture they draw, they place a different emphasis on what is perceived to be influenced by regulatory action. And vice versa – that is: how regulatory action is influenced by external interests. This discussion is not exactly new and this is not the place to elaborate on the evolution of behavioural theories of regulation. But however old the theory, it is nevertheless an evergreen for understanding the processes around the establishment or refurbishment of regulatory structures.

What is supervision about? Being the executive force in financial market control, supervisors are clearly bound by the legal environment set by the regulators – that is mainly parliament or government, respectively. In addition, they are – more or less and depending on the legal tradition in their

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<sup>2</sup> Issing (2003)

<sup>3</sup> Crockett (2003)

## 12 Integration of European Supervisory Systems: Harmonisation or Unification?

respective environment – vested with certain ‘legislative’ powers, described by Andrew Crockett as part of the financial market infrastructure<sup>4</sup>. Thus, of course supervisory bodies are subject to the same problems and therefore may be examined using the same theories as the regulators themselves.

Due to the fact that the supervisory tasks were singled out only recently, there often is no easy differentiation between regulators and supervisors. There is an interesting example in this respect at the European level: CESR, the Committee of Exchanges and Securities Regulators, which is in fact a forum for supervisors.

An important study in describing how regulatory agencies function in the aforementioned sense was carried out by George Stigler and Richard Posner in the early seventies, introducing the self-interest of bureaucratic agents and notionally the idea of a political economy where those interest groups best organised make themselves heard.

Another batch of theories deals with the problem of an ideal distribution of responsibilities in the organisation of financial market supervision, in particular the different and maybe conflicting targets institutions are equipped with in their policy system by *Ordnungspolitik*. These discussions are useful theoretical tools to serve as the backbone of the topic to be addressed in this paper.

We have to be aware that the change in the financial landscape is driven by the twin forces of liberalisation – bringing along the duality of free market forces on the one hand and their regulation on the other – and innovation – e.g. in the forms of securitisation and risk transfer.

First we would like to touch upon the institutional setup of supervision, where two kinds of an integrated approach may be adhered to: the integration of financial stability supervision and banking supervision under the roof of the central bank on the one side and the integration of the supervision of all financial market intermediaries in an integrated supervisory body on the other

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<sup>4</sup> This ‘infrastructure’, which financial markets rely on to function properly, includes contract law; law enforcement procedures; accounting practices and valuation standards; prudential regulations; effective supervision; appropriate disclosure requirements and the creation of well-functioning payment and settlement systems (Crockett 2003).

Interesting research in the area of the impact of the legal system on economic performance is done by Shleifer (see e.g. La Porta/Lopez de Silanes/Shleifer 1998) and others (e.g. Barth/Caprio/Levine 1998).

side (or the integration of all tasks, which is a less popular idea due to fears of an overly accumulation of responsibilities in one single institution). In other words, it is about either the consolidation of macro and micro aspects of monetary stability supervision, or the consolidation of the supervision of all sectors of financial intermediaries – i.e. banks, insurers and all other forms of financial service providers – whether systemically relevant or not.

When addressing this topic we have to make reference to the excellent IMF working paper by Quintyn and Taylor (2002), in which they examine the twin goals of monetary and financial stability. These are both public goods having to deal in particular with the well-known problems arising under such circumstances, in particular externalities and information deficiencies. These public goods have to be supplied by public institutions, which are subject to the different strands of political economy theory mentioned before. The importance of regulatory and supervisory independence can be illuminated by the potential dangers of two kinds of interference often seen as one of the reason for an insufficient solution of crises in the financial market: political interests and capture by the industry itself, not to speak of the self-interests of regulators or supervisors themselves.

In the analysis of independence we have to distinguish between four dimensions of independence: regulatory, supervisory, institutional and budgetary independence. Even though all of these different kinds of independence are highly important, we should like to highlight one aspect of supervisory independence which we deem important for the further discussion: the discretion of a supervisor in individual cases versus his individual protection. A rule-based system of sanctions and interventions has the advantage of being more transparent and being amenable to judicial review than the exercise of discretion. The leeway for decisions based on factors other than an objective assessment of the technical merits of the case is therefore much reduced. This is opposed to a framework where discretionary space leaves room to move for flexible responses to each individual case. However beneficial such a flexible approach may be, the normative existence of objective parameters may protect the individual supervisor from adverse influences, as for example interest group pressure or the threat of being sued for a decision he made on the grounds of an ambiguous situation.

As mentioned earlier, the cross-sectoral integration of financial market intermediaries asks for integrated supervision, which may or may not be supplied by a central bank. The business model of, for example, Allianz

Group with Dresdner Bank makes it quite clear – at least to us – that an integrated view of such a group is a necessity for a serious supervisory approach given the possibilities of risk transfer, double gearing of regulatory capital and so forth.

Let us now turn to the European dimension of supervisory reform: What is going on and what are the medium- and long-term issues for the supervisory structure ahead? National supervisory authorities in Europe have been restructuring in the light of new international banking and insurance standards, while the current pan-European framework for financial supervision (notably the future work of European regulators and supervisors in prudential and legislative matters) has become subject to intense negotiations and discussions.

Taking the national level first one can see a clear trend in Europe towards integrated financial market regulators. Integrated financial supervisors have been established, for example, in Norway, Denmark, Sweden, UK, Germany, and Austria. Nevertheless, the real, i.e. constitutional, independence still remains to be achieved in most cases. The emergence of financial conglomerates, or financial ‘supermarkets’ as they are sometimes called, may be one reason for overcoming the traditional functional separation of supervisory bodies at a national level, though this trend has not yet been reflected in developing EU structures.

The micro-side of supervision – consumer protection – at first glance seems a much easier area to be defined than the macro questions. When we take a closer look at the tasks of financial supervision on the micro level across sectors, though, different legal objectives can still be identified. In the supervision of banks, for example, consumer protection is only an *a posteriori* goal (with the meta-objective, of course, being the need to safeguard the long-term ability of all banks to fulfil their obligations vis-à-vis their creditors); in the insurance sector the concentration on consumer protection is more clear-cut. This difference will decline as a result of the so called ‘Solvency II’ exercise in insurance supervision, a process which is all about implementing a sound risk-policy at enterprise-level for insurers parallel to the Basel II methodology for banks. This will bring the regulatory framework of the two sectors closer together, thus making regulatory arbitrage between the sectors less attractive.

In summary, supervisory structures in Europe not only have to cope with increasingly blurred sectoral borders; they also have to accommodate

a necessary, but in practice not-so-clear, horizontal segmentation of responsibilities. Leaving aside Article 105 of the Maastricht Treaty, what is the case for a European supervisory authority? It is interesting to note that this question is not always clearly addressed by the relevant expert groups, which are currently developing a clear-cut structure of strategic, legislative, supervisory and implementational coordination-groups. The comitology process initially proposed by the Lamfalussy Group for securities markets supervision and now extended to banking and insurance supervision is being designed to speed up decision processes. There is no lack of such committees to discuss and co-ordinate at a European level, but could there be a need for a supranational supervisor?

The proponents of a Pan-European solution argue that such a framework would fit the needs of financial institutions doing business in the Common Market. They point out that a pan-European or global view of financial markets would make supervision of multinationals more effective. It is true that such an aggregate view may be useful with regard to a consolidated assessment of multinational financial services groups, providing for a seamless control over them, and – of course – for a single-handed responsibility for macro-stability in Europe. It is not clear, however, how to separate responsibilities from, and how to design, the necessary interfaces with national supervisors. The European view clearly cannot go beyond the systemic stability part of the exercise.

A two-tier system of supervisory responsibilities may be best-suited from that systemic stability point of view. As far as consumer protection is concerned, however, a division of competences between national and supranational supervisory entities might be suboptimal. A decentralised structure with coordination between the national supervisors, towards which we are currently striving, will nevertheless need strong secretariats. It will be their task to carry out the necessary horizontal studies on all topic questions and establish clear patterns of coordination for all possible cases.

It is not yet clear what shape a future European system of financial sector supervision may take. This will be a tricky task for the system's designers to bring the conflicting requirements under the same roof. On the other hand, in our view there is a chance to establish a new kind of regulatory competition that keeps the original European idea of institutional competition alive. In recent decades this has allowed innovation and best practices to flourish; such an approach may be the ideal way to ensure that Europe's supervisory



institutions – and therefore its capital markets – remain competitive against the US and Japan.

At the same time one can see across Europe a growing interest on the part of national central banks to play a pivotal role in the supervision of financial institutions. These institutions' fate affects the stability of the financial system and the smooth functioning of the payments system. Policymakers seem to be reluctant to support the central banks' wishes, however. There is perceived to be an inherent conflict of interest between the target of maintaining price stability and the target of ensuring the solvency of financial institutions. Then, there is always the question of political accountability.

Several European countries such as Ireland and Belgium have given their central banks new and far reaching responsibilities in the area of banking and other types of supervision. In other countries, such as Austria, there is a very close cooperation between the Supervisory Authority and the Central Bank. However, as Charles Goodhart has put it in his article on the organisational structure of banking supervision, no one particularly likes having an older relative looking over his shoulder. This may be especially true for young supervisory bodies having to prove their independence. And it is of course NOT simply self interest, as he states at the beginning, but actually strong factual arguments, which make some people favour the separation of banking supervision from the core central banking tasks. Besides – and for the sake of a realistic picture – one has to mention that central banks have of course been involved in different tasks of banking supervision much longer than the recently founded supervisory bodies around. Thus their knowledge and experience in the field must not be underestimated and doubtlessly is of invaluable help for the establishment of proprietary research in the new bodies. Nevertheless, there are a number of arguments for and against the separation of banking supervision from the central bank:

The first thing to mention is the conflict of interest between monetary and price stability on the one hand and financial stability on the other hand. It is not just that monetary and supervisory decisions will be done better when there is a single focus on each separate task. Nor is the main point that there is a potential risk to its reputation for the central bank in the event of a bank failure. This might harm the credibility of the central bank, which is so important for the conduct of monetary policy and the closely related necessary influence on expectations. We rather see the problem in a central bank having a target function primarily focused on monetary stability.

Of course, there are also strong arguments which favour the unification of the tasks to pursue the twin goals of monetary and financial stability. The necessity for a central bank to keep itself informed about the situation of the financial intermediaries, which are part of the monetary transmission mechanism, is undisputed. Nor are the implications of the central banks' function of being a lender of the last resort, if explicitly established, and the implicated information flows called into question.

Summing up, our main findings are:

- There are clearly defined interests of public institutions in the financial markets (such as central banks, legislators, regulators and supervisors), which should not be mixed.
- Every regulated industry has clear incentives to capture the regulators in order to reach their economic goals through regulations undermining the regulatory goals of other regulators (for example competition authorities, which would like to see low market entry barriers).
- The future design of financial supervision in Europe will have to take into account that the tasks of supervisors are highly connected with the enterprise-customer relationship and are therefore best fulfilled decentralised, while of course the ongoing integration of markets strongly underpins the necessity for harmonisation and coordination.
- Every institution is tempted to pursue its own institutional targets at the possible expense of others (leaving aside individual target functions of decision makers within these institutions). However, this makes target conflicts explicit and much more transparent and minimises political interference.

The importance of supervisory independence is often underestimated, and furthermore has to be safeguarded against all possible attempts of capture. It is thus a public good comparable to the – by now – well established monetary independence of central banks<sup>5</sup>.

Notwithstanding our general caution of mixing up responsibilities and moving away from clear-cut and separable responsibilities augmented by a strongly developed culture of accountability, we want to underline the

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<sup>5</sup> See Quintyn/Taylor (2002), p 34.

necessity of all involved parties – central banks and financial sector supervisors – to cooperate closely and exchange information on a regular basis. A clear institutional setup and relevant information directed to the place where it is needed will grant an optimal achievement of each individual goal best.

We finally refer to Andrew Crockett again, on the relationship of the parties involved: “Complexity, globality and institutional interdependence forcefully argue for close cooperation between central banks, regulatory authorities and other standard setters.” We are convinced it is this multidisciplinary perspective that is needed in Europe.

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**The Relevance of Fiscal Soundness  
for Monetary Stability**

**by**

**Sinikka Salo**

Member of the Board, Bank of Finland

Bank of Finland  
PO Box 160  
SF-00101 Helsinki  
Finland

Tel.: +358 9 183 2003

Fax: +358 9 183 2087

E-mail: [sinikka.salo@bof.fi](mailto:sinikka.salo@bof.fi)





## 1. Introduction

Relations between fiscal and monetary policies have been and are likely to remain the subject of many discussions in both academics and policy-making circles. Of these discussions, the best known is perhaps the so-called “policy mix” debate. This is concerned mainly with the design of fiscal and monetary policy responses to different macroeconomic disturbances, or more recently, design of different policy rules to different probability distributions of disturbances. The relation between fiscal soundness and monetary stability is a closely related but nevertheless distinct issue. It is concerned with disturbances that are of fundamental or extreme nature and it always has a bearing on the possibility of fundamental policy failures.

Of the different aspects of fiscal soundness and monetary stability, this presentation will focus on the sustainability of public finances and the risk of high inflation. High inflation is – at least in its extreme form, i.e. hyperinflation – largely a modern phenomenon, related to the need to print paper money to finance large fiscal deficits. These deficits are often but not always caused by exceptional events such as wars, revolutions, collapses of empires, and establishment of new states.

It would be interesting – and in the present economic situation, some would say more timely – to discuss also the other side of the coin, namely the relationship between fiscal stability and deflation, but I must leave this issue out of this presentation. For me, it is a side issue and the main theme is complicated enough even without it.

My presentation is structured the following way. I first discuss two rather different academic approaches that consider the relationship between fiscal soundness and monetary stability notably the so-called inflation tax literature and the fiscal theory of the price level. The latter literature distinguishes between monetary dominant (or Ricardian) and fiscally-dominant (or non-Ricardian) equilibria or regimes. In the monetary dominant regime fiscal primary surplus adjusts, given any sequence of prices, to guarantee fiscal solvency, whereas in the fiscally dominant regime the government’s inter-temporal budget constraint is satisfied only for some price paths and the price level is assumed to settle itself to a path satisfying the government budget constraint. No in-depth survey of the literature will be attempted here; my purpose rather is just to give some glimpses of research that has been done

on this subject. Thereafter I summarise in general terms some of the main steps usually adopted in practical assessments of the sustainability of public sector indebtedness.

Finally, in line with the general theme of this seminar, I discuss some of the fiscal challenges the accession countries may encounter in the coming years. Although the level of government indebtedness in most accession countries is now rather low and in any case lower than in most of the present member states, fiscal deficits are high and, in view of the forthcoming pressures, may rise further. The medium-term picture foreseen by the countries themselves in their Pre-Accession Economic Programmes is very favourable, but I see a risk of increasing deficits and of a continuous increase in the level of governments' indebtedness. Such fiscal policies would place a heavy burden on national monetary policies in the new member states. Furthermore, fiscal pressures in the new member states may intensify political pressures to weaken the rules of fiscal surveillance in the EU. There is thus a risk that the enlargement will both directly and indirectly increase the burden fiscal policies place on monetary policies.

## 2. Inflation tax

In the so-called inflation-tax literature, connection between fiscal policy and inflation is studied in a simple demand-for-and-supply-of-money framework. Inflation is treated as a tax on money balances and fiscal policy is connected with inflation through seigniorage revenues obtained from increasing money supply. The cost of increased money supply is borne by holders of money balances as the purchasing power of money decreases.

A substantial body of empirical evidence confirms that inflation is highly correlated with money growth, the long-run correlation between these two variables being close to one-to-one. In high inflation countries, the connection between money growth and inflation is broadly contemporaneous. In low-inflation countries, the effects of money growth are distributed rather evenly across the current and previous periods, and the short run correlation between contemporaneous and even lagged money growth and inflation appears to be in general rather low.

As to the relationship between public finances and money supply, a plausible and often advanced hypothesis is that money supply and seigniorage income should increase as a function of the fiscal needs, as reflected by the size of the budget deficit. However, empirical evidence of this link is weak. In their recent empirical analysis Fisher et al. found a negative relationship between budget balance and seigniorage in their cross-sectional data, but the coefficient was small. A ten-percentage-point increase in deficit leads on average to a 1.5 per cent increase in seigniorage revenue. Furthermore, even this weak relation seems to derive mainly from some exceptional observations with very high levels of seigniorage (over 6 per cent of GDP). These exceptional observations included, by the way, one accession country, namely Malta. For the lower-inflation countries the coefficient is even lower and insignificant.<sup>1</sup>

The basic message of the inflation tax literature for the analysis of fiscal soundness and monetary stability is that in some circumstances, monetary financing may be the only source of finance available for the government and that monetary financing is bound to affect the functioning of the monetary system. These are still valid messages.

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<sup>1</sup> Stanley Fisher, Ratna Sahay, and Carlos A. Végh, "Modern Hyper- and High Inflation", *Journal of Economic Literature*, 2002.

There is also some research on inflation tax as an element in an optimal or efficient system of taxation. Given the distorting effects of other types of taxation (either current or deferred through interest-bearing borrowing), second-best-type arguments are used to argue for the taxation of money balances – or more precisely, of the liquidity services provided by money balances.

I am not convinced of the usefulness of this aspect in the inflation tax analysis, for the following reasons. In conditions of low or moderate inflation, where the equilibrium assumption implicit in the optimal tax analysis may be broadly appropriate, the analysis is largely irrelevant, because the seigniorage revenues nowadays typically are negligible in comparison with the government's other revenues. On the other, in conditions of high inflation, rational taxation as well as other forms of rational behaviour is impossible or almost impossible because of the extremely erratic nature of price developments. Rather than an element in a system of optimal taxes, inflation is a symptom of chaos.<sup>2</sup>

There seems to be a widespread conviction that high inflation is almost always caused by fiscal pressures. Against that background, the lack of a firm ex post correlation between deficit and seigniorage may be surprising. However, among other harmful things, high inflation disrupts the budgeting of expenditures and wrecks tax collection systems. Thus, government receipts and disbursements are likely to vary erratically, which may explain the lack of a correlation between fiscal deficits and inflation.

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<sup>2</sup> D. Heymann and A. Leijonhufvud in "High Inflation", Oxford University Press, 1995, stress strongly inflation's 'pathological' or disequilibrium character.

### 3. Fiscal Theory of the Price Level

Another, recent strand of academic discussion, called the fiscal theory of the price level, deals explicitly with fiscal and monetary policy and their interactions. The theory focuses on the government's inter-temporal budget constraint and the sustainability of the fiscal position. There are many ways to state the government's inter-temporal budget constraint. One useful way to write it is in terms of the change of the (net) debt ratio, or

$$(1) \text{ db/dt} = -s + (i - g - p) b + e.$$

Here  $b$  is the government's net debt and  $s$  primary surplus, both as per cent of GDP.  $\text{db/dt}$  denotes the change in the debt ratio whereas  $i$  is the (average) interest rate on debt,  $g$  the growth rate of real GDP and  $p$  the rate of inflation. The stock-flow adjustment term  $e$  captures, as per cent of GDP, all other effects on the change in the debt ratio such as re-evaluations of debt items etc.

The fiscal theory of the price level assumes that agents optimise their behaviour over time in anticipation of future economic developments, including the expectation of future policy actions. There is also a shift of emphasis towards the analysis of budgetary and monetary policy rules and their time-consistency.<sup>3</sup>

The inter-temporal and optimising character of analysis makes models complicated and difficult to analyse, even given their strong simplifying assumptions. Nevertheless, the theory has made many interesting contributions to the analysis of fiscal soundness and monetary stability, including the analysis of the institutional framework needed to govern the interactions between monetary and fiscal policy. I will not try to provide even

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<sup>3</sup> The literature originates from E. Leeper, "Equilibria under 'active' and 'passive' monetary and fiscal policies", *Journal of Monetary Economics*, 1991, C.A. Sims, "A simple model for the study of the determination of the price level and the interaction of monetary and fiscal policy", *Economic Theory*, 1994, and M. Woodford, "Monetary policy and price level determinacy in a cash-in-advance economy", *Economic Theory*, 1994. Among other things, the literature distinguishes between the monetary dominant (or Ricardian) and fiscally dominant (or non-Ricardian) equilibria or regimes. In the monetary dominant regime fiscal primary surplus adjusts, given any sequence of prices, to guarantee fiscal solvency. In the fiscally dominant regime the government's inter-temporal budget constraint is satisfied only for some price paths and the price level is assumed to settle itself to a path satisfying the government budget constraint.

a selective survey of the results of the analysis here; rather, my intention is to draw some more or less subjective lessons from the literature.

Compared to the inflation tax literature, the fiscal theory of the price level extends both the time perspective and the spectrum of liabilities and assets considered in the analysis. Instead of a single instantaneous rate of inflation, the whole time path of the price level is relevant, and instead of the stock of money, the whole portfolio of government liabilities and assets is considered at least in principle.

Results from the theory illustrate the fact that irrespective of the starting position, the burden of irresponsible fiscal policies, if followed persistently over time, becomes excessive in the end even for strongly stability oriented monetary policies. The risk of vicious debt dynamics is rather explicit in equation (1). If primary budget deficit is large (as reflected in a large negative value of  $s$ ), debt tends to increase. When debt becomes large enough, it starts to grow at an accelerating rate, as nominal interest rate normally exceeds nominal output growth. At this stage, there is not much to be done to increase the real rate of growth ( $g$ ) and there are also limits to feasible primary surpluses ( $s$ ). For very high debt ratios, unsustainable debt dynamics can only be reversed if the rate of interest on debt ( $i$ ) is low enough and the rate of inflation ( $p$ ) is high enough, i.e. through monetary financing. In rational expectation models, this is of course clearly perceived by the public well before its actual occurrence.

Furthermore, models considered in the literature clearly illustrate the fact that monetary and fiscal policies need to be consistent in order to be able to produce balanced and harmonious policy outcomes. In fact, there is no guarantee in these models that a uniquely determined, well-behaving equilibrium time path for the price level exists, even for policy rules which in themselves seem to be quite sensible but not mutually consistent. For example, inflationary and deflationary spirals, stochastically fluctuating explosive inflation or sunspot equilibria may emerge even if monetary authorities let money stock grow at a constant rate or follow a Taylor rule.

It has been argued in the literature that Maastricht type criteria are sufficient for a Ricardian regime.<sup>4</sup> A recent paper by the Commission Services looks

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<sup>4</sup> M.B. Canzoneri and B.T. Diba, "Fiscal Constraints on the Central Bank Independence and Price Stability", CEPR Discussion Paper No. 1463, 1996, and M. Woodford, "Control of the Public Debt: A Requirement for the Price Stability", NBER Working Paper No. 5684, 1996.

jointly at fiscal and monetary policy behaviour in EU Member States in the pre-EMU and EMU periods. Interestingly, it is argued in it that while both periods can be characterised as being in monetary dominant regime, fiscal solvency has been ensured differently in the two periods. In the past, fiscal authorities responded systematically to debt accumulation in the past, but now debt accumulation is limited by the Stability and Growth Pact.<sup>5</sup>

Even though this literature has provided many useful insights, I have some doubts about the extent to which its results are relevant from an empirical or political point of view. By their very nature, analytical models are highly simplified and therefore unrealistic representations of complex reality. At least for the moment, the contributions from this literature have been more conceptual in nature, and the models involved appear to have left little marks on the way debt sustainability or interactions between fiscal and monetary policies are analysed in practice.

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<sup>5</sup> F. Ballabriga and C. Marinez-Mongay, "Has EMU shifted policy", European Commission, Economic Papers No. 166, 2002. M. B. Canzoneri, R.E. Cumby and B.T. Diba, "Is the Price Level Determined by the Needs of Fiscal Solvency?", The American Economic Review, 2001, find no evidence of a fiscal dominant regime for 16 OECD countries.



#### **4. Debt sustainability and some reflections on “fiscal dominance”**

The concept of fiscal dominance is related to the concept of government debt sustainability. In practical work on debt sustainability by institutions like the IMF, the government’s inter-temporal budget equation like (1) above is also the cornerstone of the analysis, but rules of thumb and back-of-the-envelope computations replace the solution of forward-looking rational expectations differential equations. In all likelihood, one is forced to rely on judgement. This is in part related to the fact that the authorities seldom have any well-defined “policy rules” assumed in the theory or, if they have, follow them with the consistency assumed in academic models. While the role of the monetary policy in the sustainability analysis is crucial, in practical work it is usually specified only indirectly through macroeconomic assumptions about inflation, interest rates, exchange rates etc.

The imprecise character of policy rules makes debt sustainability a rather vague concept. In practical terms, a government’s liability position can be regarded as sustainable if, given the cost of financing the government faces in the debt market, the government indebtedness does not grow continuously without major correction in the balance of income and expenditure. The exclusion of major corrections in income or expenditure captures the notion that there are social and political limits to adjustment that determine the willingness to pay.

The first step in a sustainability assessment is to determine the starting position. In theoretical models, this step is trivial but in actual assessments it may be difficult. The compilation and dissemination of basic data such as level of public sector indebtedness, primary balances, interest bills, the real interest rates, etc are complicated by difficulties such as outright lack of data and imprecisely defined off-budget and contingent liabilities.

A major step in the exercise is to project key macroeconomic variables, such as interest rates, rates of economic growth, and exchange rate changes, together with the flows of revenues and expenditures over sufficiently long period. To the extent that these variables are influenced by government policies, this part of the assessment is intrinsically uncertain. Alternative projections, based on assumptions substantially different from the baseline,

are necessary to evaluate the vulnerability of the fiscal position. In this analysis, important elements may be the vulnerability of the financial sector and different contingent claims, including explicit or implicit government guarantees of debt or bank deposits. Contingent claims are difficult to quantify, because both the amounts subject to these claims and their terms – the precise circumstances in which they would turn into actual liabilities – are usually unknown.

An almost overwhelmingly difficult decision is to determine the point at which the government can no longer be expected to be able to continue servicing its debt without unrealistic corrections in income or expenditure. No single threshold such as a given level of indebtedness can reliably define this point. But even though it is impossible to define precise limits, there are real limits to the debt the public sector can service. For some developing countries, a government debt level of 40 per cent of GDP may be unsustainable whereas some other countries have successfully managed a public sector debt in excess of 100 per cent of GDP.<sup>6</sup>

Ultimately, assessments of sustainability can be only probabilistic. There is always an element of judgement involved in assessing whether an individual country’s fiscal position is sound or not. The assessment of the debt sustainability made by the market participants and the public at large is also basically probabilistic. An increase in public sector debt is likely to increase the perceived risk of unsustainable public finances and thereby the perceived risk of a future loosening of the monetary policy and ultimately of monetary financing.

The size of the perceived risk depends on many things such as the level of government debt, the soundness of the fiscal policy framework as well as the status of and the credibility of the monetary policy strategy adopted by the central bank. An increase in indebtedness gives rise to less concern if it is associated with strong and credible overall policy framework and with strong commitments by the fiscal authorities to restore the debt level to a low level within a realistic timetable.

The composition of debt as well as related “stock-flow” corrections in the level of indebtedness symbolised by  $e$  in equation (1) are also relevant. Debt denominated in domestic currency may bring with itself a temptation to

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<sup>6</sup> Of the major industrialised countries, Italy has the largest ratio of net indebtedness ratio, about 107 %, and Japan the largest gross indebtedness ratio, about 155 %.

inflate in order to reduce the real value of the debt. As the risk is recognised by the public, inflationary pressures in the economy may emerge as domestic debt increases even if the government has no intention to take recourse to monetary financing. On the other hand, foreign-currency-denominated debt may bring with itself balance of payment problems and the risk of a rapid depreciation in the external value of the currency. The risk of a consequent increase in the level of indebtedness is recognised by the public, and pressure on the currency tends to increase well before the balance of payments problems become acute. In the transmission of the inflation in a small open economy, the exchange rate may be a much more important link than domestic money supply.<sup>7</sup>

Comprehensive medium-to-long-term fiscal programmes can be a key element in both in assessing and in shaping policies to avoid the risk of fiscal unsustainability. For that purpose, the stability and convergence programmes drafted by the EU member states now include a section analysing the sustainability of public finances from a longer run point of view. This work is based on and complemented by in-depth analyses by the Economic Policy Committee on the effects of ageing and the government’s contingent liabilities.

While official fiscal programmes may be useful, their usefulness depends entirely on the assumptions used in programme’s projections. The experience from the convergence and stability programmes suggests that official programmes tend to suffer from optimistic assumptions. Moreover, usually only marginal deviations from the baseline forecast are considered in such programmes and thus they do not provide proper stress tests for analysing the consequences of substantial risks to fiscal soundness.

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<sup>7</sup> M. Järvinen, Exchange rate strategies and fiscal policy in the EMU candidates, unpublished manuscript, 2002, provides an analysis of different exchange rate regimes in the “fiscal theory” framework. Komulainen and Pirttilä, “Fiscal Explanations for Inflation: Any Evidence from Transition Economies?” BOFIT Discussion Paper No.11, 2000, examine inflation in Bulgaria, Romania and Russia with VAR models, finding that fiscal deficits increased inflation only in Bulgaria. Even there the money aggregates proved more important.

## 5. Fiscal challenges in the accession countries

In view of the main theme of this seminar, I will now venture to reflect on fiscal challenges in the accession countries, keeping an eye on the soundness of public finances. This is a complex and sensitive topic. My intention here is not to try to present an exhaustive discussion of it – that would clearly be beyond my competence – but rather only to restate some of the points I have made earlier on fiscal soundness and monetary stability in somewhat more concrete terms, using accession countries as illustrative material.

As to the starting point, the public sector indebtedness in the 10 accession countries is not alarming, given the relatively high level of economic development achieved by these countries. In 2001, the ratio of government debt to GDP ratio was higher than 60% of GDP only in Malta.

On the other hand, the balance of income and expenditure is less favourable and many accession countries have large budgetary deficits. In 2001, five accession countries, including the three largest countries (Poland, the Czech Republic and Hungary) ran deficits above 3% of GDP. I have no data for 2002, but the deficit estimates presented in the last year's Pre-Accession Economic Programmes range from near zero in Estonia to between 5% and 7% of GDP in the Czech Republic, Hungary, Malta and Poland. (In Turkey's programme a deficit of over 13 % of GDP was forecast.) Given the low or moderate level of indebtedness, high deficits indicate, in general, large primary deficits.

In view of the large primary deficits there may be a risk that at least some of the accession countries are in the early phase of a perhaps rapid debt accumulation process. In fact, the debt ratio has already started in some countries to increase very rapidly. The risk of prolonged debt accumulation stems, among other things, from following fiscal challenges now facing the accession countries:

- Accession countries are undergoing tremendous structural and institutional changes, including the need to upgrade public infrastructure and to fulfil the commitments entailed in the European Agreement. These will have in future significant budgetary implications.
- While accession countries will benefit in net terms from the EU accession, the impact on budgets is thought to be negative. Investment in public

infrastructure, complying with EU environmental standards and the implementation of also rest of the EU acquis implied by the accession will be only partly compensated by net transfers and positive budgetary effects of tax harmonisation. In particular, absorbing structural and cohesion funds requires domestic fiscal co-financing.<sup>8</sup>

- The financial sector in most accession countries is still at an early stage of development and therefore governments must rely heavily on foreign savings to finance public deficits. This exposes them to balance of payments difficulties. Lack of progress in reining in excessive deficits could undercut market sentiment and economic activity in countries with large external deficits.
- Sharp stock-flow corrections may increase public debt. These corrections may include the impact of exchange rate changes on foreign currency-denominated public debt and the public assumption of private debt (for instance as a result of privatisation deals, bail-outs, calls of public guarantees etc.). The share of foreign currency denominated debt out of total public debt is significant in many accession countries already now and may increase in the future. In some cases, government guarantees may also be a matter of concern.
- The ageing of the population will affect profoundly economic developments in all EU countries, including the future members. It remains to be seen whether its effects are comparable to events like wars or end of empires, which in the past have been the major driving force behind fiscal and monetary instability. Anyway, while many accession countries have implemented comprehensive reforms of their pension systems, I expect that the ageing of the population poses considerable challenges for most if not all of them, especially in view of the consequences of the expected increase in labour mobility after the accession.

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<sup>8</sup> The impact of the accession to public finances may be fairly large initially. I. Székely, "Fiscal policy challenges of EU accession for Central European accession countries", East-West Conference 2002, Oesterreichische Nationalbank, argues that largely because of pressures created by the EU accession, public finances in many Central European accession countries will remain fragile, unless a new fiscal policy strategy is adopted. Backé has argued that in the medium run overall effects can be expected to be neutral or slightly positive. Backé, Peter: "Fiscal effects of EU Membership for Central European and Baltic EU Accession Countries". OENB, Focus on Transition, 2002.

A scenario of growing or perhaps even accelerating public sector indebtedness seems to be in contrast with the scenarios presented in the accession countries' Pre-Accession Economic Programmes. Last year, the programmes forecast progressive fiscal consolidation at general government level, with budgetary positions in 2005 ranging from balanced budgets (Bulgaria, Estonia) to a deficit of 3.1 % and 5.5 % in Malta and Czech Republic, respectively. According to the programmes, the debt ratio would have risen significantly only in the Czech Republic and, to a lesser extent, Latvia and Poland.

While the scenarios in Pre-Accession Programmes certainly were not infeasible at the time of their drafting, they fail to be fully convincing. To some extent this is due to a lack of a throughout long-term sustainability analysis in the programmes, but a more important reason is the assumptions used in the programmes. The Pre-Accession Programmes assume high and even accelerating growth rates so that in all programmes the 2005 growth rate is the highest one projected. While the accession countries generally managed to post growth rates of 2–5 per cent in 2002, this was only because robust domestic demand helped to offset the impact of slowing exports. Large current account deficits underscore the risks related to these trends. In order to permanently achieve growth rates assumed for the later years, accession countries should achieve a significant acceleration in the pace of the catching-up process. Only by taking early action to dispel even the slightest doubts about fiscal developments which may over time lead to an erosion of debt sustainability one can be assured that macroeconomic environment is favourable for the achievement of this key priority.

Although the situations may differ, there is perhaps a general need to strengthen medium-term budgetary frameworks in the accession countries. There are several elements common to all strong medium-term fiscal frameworks. First of all, programmes should be based on realistic or preferably even cautious macroeconomic assumptions. Second, a careful review of government spending priorities and tax cut commitments is needed to secure the momentum of fiscal consolidation and the credibility of medium-term budget targets. In this respect, I note that most Pre-Accession Programmes fail to provide policy commitments to credibly underpin a medium-term path of fiscal consolidation. Nevertheless many of them envisage significant reductions of primary expenditures, in contrast with the rigidity of primary expenditures recorded in the past.

Finally, there is evidence showing that the institutional design of the budget process has affected fiscal outcomes in accession countries. Budget institutions that appear to be supportive for achieving fiscal discipline are those that strengthen the role of the minister of finance in the budget process and limit the autonomy of spending ministers and individual legislators without responsibility for the budget.<sup>9</sup>

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<sup>9</sup> See H. Gleich, “Budget institutions and fiscal performance in Central and Eastern European Countries”, ECB, Working Paper No. 215, 2003.

## 6. Conclusions

Fiscal soundness is essential for monetary stability. There is much evidence, some of which has been provided rather recently by the accession countries, that it is impossible to maintain price stability without sound public finances. Compared to those examples, the situation in Europe is now comforting. Many EU countries have achieved price stability, and also the accession countries have progressed considerably towards this goal. The fact that risk of high or even moderate inflation is now more or less latent implies that public finances must be on a relatively sound footing. Nevertheless, adopting a longer time perspective, there is no reason to believe that public finances have become for good irrelevant for monetary stability.

I have argued in this presentation that there is no clear line of demarcation separating sound public finances from unsound public finances. Rather, there is a risk of unsound public finances, which more or less continuously depends on a great number of variables such as the level and composition of liabilities, credibility of the fiscal and monetary policy, of the commitments adopted by the government etc. At very low risk levels the probability of a budgetary collapse is virtually zero and the burden the risk places on monetary policy is insignificant. In such a situation a weakening in the government's budgetary position may have insignificant effects on monetary policy. At very high levels of risk, the burden becomes overwhelming, and a weakening in the government's budgetary position may again be insignificant, because the collapse is doomed to be inevitable anyway. I would think that the situation relevant for both member and accession countries is somewhere between these two extremes. This means that much depends on the policy adopted by the authorities. An increase in deficit increases the risk of unsound public finances and thereby complicates the task of maintaining monetary stability.

In the accession countries, debt ratios are relatively low. With their higher expected growth rates, accession countries may feel that they are facing favourable debt dynamics, at least in comparison with the present member countries, and that their fiscal policies do not pose any concern for monetary stability. I do not think that this conclusion is warranted. On the contrary, fiscal pressures seem to be emerging at an alarming rate. Successful real convergence is likely to require substantial public expenditure to finance public investment and the expenditure needed to fulfil the obligations of the EU membership. Public expenditure needs also to be stepped up in order to



maximise the benefits from the EU membership through structural and cohesion funds. These challenges, some of which have already contributed to a widening of the fiscal deficits in the accession countries, may lead to a further weakening of the budgetary discipline.

A relaxation of budgetary discipline in the new member states would impose a heavy burden on their national monetary policies and could complicate the goal of attaining substantially higher levels of real and nominal convergence. Instead of a weakening of the budgetary discipline, the new member states would benefit from adopting strong and realistic stability-oriented medium to long-term fiscal frameworks, including where needed changes in budgetary institutions.

Once the accession countries join the EU, the Treaty provisions and all secondary legislation on economic and budgetary policy, in particular the Stability and Growth Pact, will apply to them. This, I believe, is one of the great benefits from the accession. Given the expected state of public finances in the new member states, some of the new member states may have difficulties in complying with the requirements of the pact. In view of the size of the economies, such difficulties would not necessarily directly threaten the monetary stability in the euro area, even in the case these economies would be part of the area. Rather, the main risk to monetary stability is an indirect one, namely that political pressures to loosen the pact may intensify after the accession. In a monetary union, fiscal rules like the Stability and Growth Pact are an essential element of overall policy framework. Therefore, even though one could allow more room for country specific factors in the interpretation of the Stability and Growth Pact in the future, the temptation to weaken it is dangerous and should be firmly resisted.

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**How Capital Flows will influence the EU Accession  
Countries of Central and Eastern Europe<sup>1</sup>**

**by**

*Leslie Lipschitz, Timothy Lane and Alex Mourmouras<sup>2</sup>*  
International Monetary Fund

Corresponding author:

Leslie Lipschitz  
International Monetary Fund  
700, 19<sup>th</sup> Street NW  
Washington, DC 20431  
United States of America

Tel: +1 202 623-8866  
Fax: +1 202 623-6440

E-mail: [llipschitz@imf.org](mailto:llipschitz@imf.org)

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<sup>1</sup> This paper draws upon IMF Working Paper (WP/02/11) *Capital Flows to Transition Economies: Master or Servant* (hereafter LLM (2002)).

<sup>2</sup> The views expressed should be construed as those of the authors alone and not of the International Monetary Fund.



## Introduction

This paper examines the potential influence of capital flows on developments and policy choices in the transition countries of Central and Eastern Europe (the CEE countries).<sup>3</sup>

Capital flows are an important fact of life for most of these countries. Inflows are usually seen as a vote of confidence in the economic management and prospects of the recipient countries, and they may help to accelerate real convergence. On the other hand capital flows can be very large relative to the size of the economies. Large inflows may constitute a challenge to stabilization policies, and erratic flows or sudden reversals may be overwhelming. Therefore, any serious consideration of policies – and especially policies for the interregnum after EU accession but prior to adoption of the euro – must include an assessment of the potential influence of capital flows.

The plan of the paper is as follows: Section **I** will reflect on some conventional (but often unstated) microeconomic fundamentals of convergence. These have implications for rates of return on capital, equilibrium real interest rates, and potential capital flows. Section **II** will look at the open economy macroeconomics of capital account arbitrage; here too there will be implications for interest rates and capital flows. Section **III** will juxtapose these two sets of ideas, and discuss the dilemmas posed for monetary and exchange rate policy. Finally, section **IV** will draw whatever policy implications are possible from the analysis.

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<sup>3</sup> CEE countries, for the purposes of this paper, comprise Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia.



## 1. The Microeconomics

The marginal product of capital in a country depends on the capital/labor ratio and on total factor productivity (which should be broadly construed to incorporate the state of technology and institutions). Given free trade and factor mobility, convergence between countries in the level of per capita output will be associated with convergence in technology, institutions, and capital/labor ratios.<sup>4</sup>

The case of EU accession countries is interesting in that, in general, education levels are high but physical capital is scarce. Moreover, it is envisaged that, with the adoption of various EU directives, there will be a very rapid diffusion of institutional arrangements: besides the basics – such as strong judicial systems with laws that protect private property, and effective governance that limits corruption and discourages other aspects of rent-seeking behaviour – there will be similar rules governing the financial sectors, trade, competition policy and the like. It is, therefore, interesting and not entirely idle to speculate on differences in the marginal products of capital between Western Europe and the CEE transition countries in the limiting case of identical institutions and technologies. It is also interesting to speculate on the potential capital inflows.

Table 1 shows the marginal product of capital in each of the CEE countries derived on the basis of data from 1999 and a few extreme simplifying assumptions: output in the EU and in the CEE countries is produced by a single sector with the same Cobb-Douglas production function so that the sole difference between countries is in the capital/labor ratios. These illustrative results are, of course, quite dramatic: the marginal product in the transition economies is between 2 and 23 times the marginal product of capital in Germany. But even if one allows for a reasonable range of values for the relative state of technology and institutions, the marginal product of capital in the CEE countries is usually appreciably above that in Germany (the EU reference country in our calculations).<sup>5</sup>

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<sup>4</sup> Note that “capital” here is broadly defined to include human capital.

<sup>5</sup> See Lipschitz, Lane and Mourmouras (2003), hereafter LLM (2003).

**Table 1. CEE: Marginal Product of Capital Relative to Germany<sup>1</sup>**

Bulgaria	19.1	Lithuania	12.3
Czech Republic	3.5	Poland	6.7
Estonia	10.3	Romania	13.8
Hungary	3.2	Slovak Republic	5.6
Latvia	22.9	Slovenia	1.9
Minimum	1.9	Median	8.5
		Maximum	22.9

<sup>1</sup> Marginal product of capital as a multiple of German marginal product of capital. Calculations based on data for 1999 and identical Cobb-Douglas production functions for all countries with  $y_i = A_i k^\alpha$  where  $y$  is output per worker,  $k$  is capital per worker,  $A$  is total factor productivity, and the capital share parameter ( $\alpha$ ) is set at  $1/3$ .

If this simple model were true and world capital markets were free and complete, these differences in marginal returns on capital would induce sizable investment flows from Germany and other capital-abundant countries to the CEE transition economies.<sup>6</sup> In a frictionless world – i.e., assuming that flows are such that differences in rates of return are not sustainable for long – with rapid institutional and technological convergence, the flows would be truly massive – that is, many times as large as GDP in the recipient countries in a single period.<sup>7</sup> In practice, of course, the world is not frictionless and the convergence of technology and institutions is a gradual process; to the extent that these extreme assumptions are relaxed, capital flows would be much smaller. Nevertheless in most cases a successful process of convergence is likely to be associated with pressure for relatively large inward capital flows.<sup>8</sup>

The analysis thus far also raises an interesting question about the equilibrium real rate of interest in the CEE countries. If one equates the equilibrium real rate of interest with the marginal product of capital and assumes a real rate of interest of  $2\frac{1}{2}$  percent in Germany, then, in the extreme case of Table 1, the equilibrium real rate of interest in the CEE countries varies from  $4\frac{3}{4}$  to  $57\frac{1}{4}$  percent with a median value of  $21\frac{1}{4}$  percent. Rates of interest below these notional equilibrium rates would elicit very rapid capital accumulation and entail large gaps between investment and domestic saving – that is, large current account deficits and a significant accumulation of external obligations.

<sup>6</sup> See Lucas (1990)

<sup>7</sup> The potential one-time flows are reported in LLM (2002). Not surprisingly, they are substantially larger than those calculated in a similar exercise for Spain's experience with capital flows following financial liberalization in 1986 (Fernandez de Cordoba and Kehoe (2000)).

<sup>8</sup> Estimates of the effects of relaxing these extreme assumptions are contained in LLM (2002) and LLM (2003).

## 2. Arbitrage

Interest parity conditions require that differences in real interest rates between countries reflect risk premia and expected changes in real exchange rates. If real interest rates in the CEE countries are above this level, arbitrage should induce capital inflows that lead to interest parity. Abstracting for the moment from risk premia, it is useful to examine what this means for arbitrage-equilibrium real interest rates in the CEE countries.

Table 2 shows real GDP growth in the CEE countries between 1992 and 2002. Conventionally-measured GDP growth is modest. The growth of GDP measured in terms of Deutsche Mark, however, is very high, reflecting a very large real appreciation vis-à-vis the Deutsche Mark (RER). The rate of appreciation slowed down in the latter half of the period, but it remained significant. This table thus captures an informative stylized trend: there has been a sustained upward tendency in the real value of the currencies of the CEE countries relative to that of Germany.

**Table 2. Real GDP and Real Exchange Rates: 10 CEE Countries<sup>1</sup>**  
(Cumulative Percentage Change)

	1992–1997 <sup>2</sup>			1997–2002 <sup>2</sup>		
	Real GDP	DM GDP	RER	Real GDP	DM GDP	RER
Total	7.6	176.7	144.2	18.5	57.8	27.6

Source: IMF, *World Economic Outlook*.

<sup>1</sup> Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.

<sup>2</sup> RER are cumulated percentage changes of the real exchange rate vis-à-vis Deutsche Mark.

There are various possible alternative interpretations of these real appreciations: adjustment to an undervalued currency at the start of the transition, Balassa-Samuelson effects, or rapid capital accumulation and labor productivity growth in the wage-setting traded-goods sectors.<sup>9</sup> The important

<sup>9</sup> See Halpern and Wyplosz (1996) for a discussion of the CEE countries, Obstfeld and Rogoff (1996) for a general discussion of the Balassa-Samuelson effect, Lipschitz and McDonald (1992) for a broad discussion of real factors influencing exchange rates, and LLM (2002) for a more textured discussion of the alternative possible explanations.

point, however, is that, insofar as these real appreciations are seen as part of a longer-term equilibrating process, they will influence interest arbitrage and thus the relationships between exchange rates and relative interest rates.

Uncovered interest parity relies on arbitrage to move real interest rates in the transition country toward the real interest rate in Germany minus the expected real appreciation of the transition currency. Column three of Table 3 shows parity real interest rates calculated on the assumption that the trend real appreciations of recent history will be sustained.<sup>10</sup>

**Table 3. Actual and Parity Real Interest Rates for Selected European Transition Countries, December 1999**

Countries	Actual Real Interest Rate <sup>1</sup>	Real Currency Appreciation <sup>2</sup>	Parity Real Interest Rate <sup>3</sup>
Bulgaria	-10.4	8.5	-5.8
Czech Republic	-2.0	4.9	-2.6
Estonia	-6.2	10.1	-7.2
Hungary	3.1	2.4	-0.3
Latvia	3.4	11.4	-8.3
Lithuania	8.8	14.5	-10.8
Poland	4.4	5.8	-3.4
Romania	21.7	4.1	-1.9
Slovak Republic	7.4	4.4	-2.1
Slovenia	-5.1	2.3	-0.1

Sources: IMF, *International Financial Statistics* and staff calculations.

<sup>1</sup> Short-term treasury bill rates are used except for the Czech Republic, Estonia, and Slovak Republic, for which we use deposit rates.

<sup>2</sup> Average annual rate, December 1994 to December 1999.

<sup>3</sup> The parity real interest rate is calculated using the average German real interest, December 1994 to December 1999.

The calculations suggest that, under the assumptions of unfettered capital mobility with full portfolio substitutability between domestic and foreign securities, real interest rates in the CEE countries would be driven well into negative territory. With a couple of exceptions, there are appreciable gaps between actual and parity interest rates that, other things being equal, should create a strong incentive to import capital into these countries. In practice, of

<sup>10</sup> These figures are intended as illustrative, and are subject to caveats regarding the limited comparability of data. For instance, in Latvia treasury bill yields are lower than other interest rates, reflecting their value to banks as collateral.

course, capital inflows would be lessened by institutional and regulatory hurdles and by risk premia. Nevertheless the interest parity mechanisms have often posed a serious constraint on monetary policy in the CEE countries: central banks have been loath to raise interest rates above a certain level for fear of eliciting capital inflows that might undermine the intended monetary stance.

The level of risk premia is critical to determining the degree (or range) of monetary independence. Risk premia are ignored in the foregoing analysis, but are discussed further below.

### 3. Monetary Policy, Independence, and the Pricing of Risk

The discussion in sections I and II raises some difficulties for the conduct of monetary policy. Interest arbitrage conditions establish an equilibrium real interest rate that is relatively low. But if the actual interest rate is set so low it will be far below the marginal product of capital. This gap will elicit investment flows that far exceed domestic saving and, correspondingly, a large current account deficit and a rapid accumulation of external liabilities. If, on the other hand, the authorities try to set the real interest rate at a level closer to the marginal product of capital (perhaps in a vain attempt to limit the current account deficit), the high real rate will elicit huge arbitraging capital inflows and, correspondingly, large current account deficits.

This problem is independent of the exchange rate regime. Under floating rates, the action will be in the foreign exchange market: for example high real interest rates will drive up the value of the currency to the point where a depreciation is expected, and the appreciation will be associated with the current account deficit. Under a fixed exchange rate regime, the action will be through reserve accumulation and inflation. For example a high interest rate policy will induce large capital inflows and rapid reserve accumulation. The authorities may seek to sterilize the monetary impact of these inflows, but sterilization will be expensive and they are unlikely to be willing or able to sterilize indefinitely.

The dilemma for monetary policy can be solved, and monetary policy afforded a degree of independence, by the way the market prices risk. For example, in a world where risk premia rose smoothly and steadily with the current account deficit, all countries would face an upward-sloping supply of funds. As the current account deficit widened and risk premia rose, it would be possible to increase domestic interest rates relative to those abroad. Eventually, at some equilibrium level of the current account deficit the risk premium on the currency would be large enough to allow the authorities to set domestic interest rates at a level that equilibrates saving (plus the resource transfer from abroad) with investment. Thus the country would be able to pursue real convergence – i.e., convergence of capital/labor ratios and productivity levels-with optimal assistance from global capital markets.

Of course one could argue that this is all old hat. There is nothing wrong with development relying on foreign capital, and foregoing characterization of

a dilemma for monetary policy is merely a pedantic description of the process of development. Moreover the problem is lessened to the extent that there are disincentives or impediments that contain the pace of capital flows and to the extent that risk is properly priced. But this is too glib a critique. The situation of the CEE accession countries is unique in a number of respects – the gaps in the marginal products of capital, the pace of institutional diffusion from west to east, the absence of capital controls and the difficulty of reversing capital account liberalization, and the fact that all this is happening in a period of vigorous global capital markets. Moreover, in the real world, the pricing of risk has been a complex phenomenon.

Risk premia are influenced by a broad array of considerations-domestic economic, financial, and political developments; exogenous global capital market conditions; and, perhaps, seemingly erratic bandwagon effects, contagion, and the like. They are seldom predictable, well-behaved, and consistently benign, and there are numerous instances of shifts in the pricing of risk that lead to sudden stops or reversals of capital inflows. All this militates against an indifference to current account deficits and a related dependence on large capital inflows.<sup>11</sup> Thus large capital inflows, even when they reflect equilibrating real forces, may be of considerable concern—they represent a serious challenge for economic policy and often result in a significant buildup of vulnerabilities.<sup>12</sup>

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<sup>11</sup> Capital account reversals are costly. The different pace of adjustment between the current account and the capital account usually entails an overshooting of the exchange rate and a rapid and agonizing compression of demand to effect current account adjustment.

<sup>12</sup> A useful reference is Schadler et al., (1993), which considered the experience of 6 countries faced with surges of capital inflows: within the five years following the publication of this study, three of these countries had undergone major crises. The countries experiencing crises were Spain (1993), Mexico (1994–95), and Thailand (1997–98); Chile and Colombia weathered international financial crises; while in Egypt, the episode of capital inflows proved short-lived.

## 4. Policy Implications

Insofar as the description of susceptibility to large capital flows is correct, all of the conventional desiderata from the recent discussions of capital account crises apply:<sup>13</sup>

- Build adequate shock absorbers: foreign exchange reserves and fiscal positions that afford room for discretionary action. These will both inspire confidence and permit a degree of policy flexibility in the event of incipient crisis.
- Be careful about the level and composition of public debt. A high level of debt, especially if much of it is of short maturity or is exchange rate linked, circumscribes the scope for policy action.<sup>14</sup>
- Be concerned about debt exposures and vulnerabilities in the private sector, particularly the financial sector. Banks may have direct foreign exchange exposure or indirect exposure (through their borrowers) that may entail crippling balance sheet losses in the event of a sudden exchange rate movement. All this underscores the importance of the prudential and regulatory regime.
- Be generous as a matter of course with information and data. Transparency and data dissemination guard against runs, panics, and sudden awkward discoveries.

None of this says anything about monetary and exchange rate policy, and this is not surprising. Insofar as the mechanisms that limit monetary independence and make the CEE countries vulnerable to capital account shocks are real rather than nominal, there are no easy answers for monetary and exchange rate policy. One could make something of a case for certain types of capital controls that

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<sup>13</sup> See Ghosh et al. (2002) and Hamann et al. (2003).

<sup>14</sup> It is worth pointing out that, even in countries with very strong fiscal positions, fiscal policies have not been able to act with the rapidity and magnitude required to offset the effects of a capital account crisis. In the 1997–98 Asian crisis, even once it was clear that a precipitous drop in private domestic demand was in the offing, it took some time before the room for a less stringent fiscal stance was acknowledged. Moreover, even after this the planned fiscal expansion was not implemented – and if it had been, it would not have been sufficient to prevent severe recessions (Lane et al. (1999)).



would afford some scope for independent monetary policy-especially insofar as erratic shifts in risk premia can be characterized as a market failure.<sup>15</sup> But this would require reversing a liberalizing trend and, as a practical matter, it is difficult to see controls of this sort playing much of a role in Europe.

### **What then are the implications for monetary and exchange rate policy?**

Exchange rate policy is important not because it can resolve the monetary policy dilemma described in section III, but because it will influence market behavior and perceptions. The question of the ideal exchange rate regime, especially in the interregnum between EU accession and the adoption of the euro, is very difficult to answer, and probably differs for different countries. There are, however, cautionary considerations.

The most dangerous regime would be one in which there is a perception of an exchange rate guarantee that, however, is not backed by the full weight of government policy. For example, an asymmetric band that allowed some upward movement for the currency but (explicitly or implicitly) very little downward movement would be dangerous. It would initially limit risk premia and encourage excessive foreign exchange exposure on the part of residents. Clearly, large foreign exchange exposure produces a “fear-of-floating” phenomenon – that is, in response to any market challenge the government is induced to intervene to defend the currency for fear of incurring large balance-sheet losses.<sup>16</sup> Of course, as pressure mounts opportunistic speculation increases, making government resistance ultimately futile. These are the clearest lessons of the recent capital account crises.

A very hard peg, on the other hand, may be a feasible option for a country that is highly open and with a good deal of intersectoral flexibility in factor flows and wage rates – especially if the interval between accession and euro adoption is seen as relatively short. The advantage of this regime is that large capital flows will not be allowed to push the value of the currency up to the point where it is detrimental to growth. However, capital inflows will probably mean rapid reserve accumulation, no monetary independence,

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<sup>15</sup> A relatively market-friendly option is price-based controls on short-term inflows. It is unclear how much immediate impact they have on the overall volume of flows, but they seem likely to influence the composition in a way that limits vulnerability (Montiel and Reinhart, 1999; Johnston et al., 1999).

<sup>16</sup> On “fear of floating” see Calvo and Reinhart (2000). It is informative to compare the experience of floating-rate Australia and New Zealand with that of the relatively-fixed-exchange-rate Asian countries in the 1997–98 crisis (see Boorman et al., 2000).

significant inflation in the nontraded sectors, and large current account deficits. It will be important for fiscal policy to have the scope to constrain demand, and for prudential management to do everything possible to forestall asset price bubbles in the nontraded sector. It may, of course, be near impossible to hold inflation down to the euro area level, as required by the Maastricht criteria. Moreover, credibility is extremely important: shocks along the way that cast doubt on the exchange rate commitment or on the path to euro adoption could be severely disruptive.

For most countries, a reasonable amount of room for symmetric exchange rate flexibility is likely to be useful. This will militate against unduly limited risk premia, one-way bets, excessive foreign exchange exposure, and fear-of-floating constraints on government policy. If, as seems likely in the interregnum, it is necessary to hold domestic interest rates above those in the euro area, the resultant currency appreciation will be smaller the greater is the risk premium – any exchange rate assurance that constrains risk premia will exacerbate the currency overshoot. The experience of Greece prior to euro adoption – a market exchange rate manageably above a credible central rate, coupled with interest rates that embodied the expectation of a depreciation – may be instructive.

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