Fiscal Foundation of Convergence to European Union in Pre-Accession Transition Countries

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Abstract

Pre-Accession Transition Countries (PATCs) aim at early admittance to the monetary club. Their fiscal indicators – deficit and debt - do not show any serious symptoms. Closer scrutiny reveals, however, that the interest burden of their public debt might be underestimated, and that restructuring and unavoidable fiscal transparency may increase their debt significantly. All in all about 1 per cent primary surplus might be sufficient to remain on the safe side of their debt in the medium run. According to the estimated model the fiscal adjustment is driven by the external imbalance, the monetary conditions are determined by the fiscal stress and their growth is affected by fiscal and monetary stimuli.

Zusammenfassung

Die fiskalpolitischen Grundlagen für die Konvergenz der Transformationsländer hin zur Europäischen Union.

Die Transformationsländer wollen möglichst schnell dem monetären Club beitreten. Ihre fiskalischen Indikatoren – Defizite und Verschuldung – weisen nicht auf ernsthafte Symptome für Probleme hin. Eine nähere Betrachtung zeigt jedoch, dass die Zinslast ihrer öffentlichen Verschuldung möglicherweise unterschätzt wird und dass eine Restruktierung im Zusammenhang mit einer unvermeidlichen fiskalischen Transparenz die Verschuldung beträchtlich ausweiten wird. Insgesamt wird ein Primärüberschuss von etwa 1 Prozent ausreichend sein, um in der mittleren Frist bei der Verschuldung auf der sicheren Seite zu sein. Nach dem geschätzten Modell wird die fiskalpolitische Anpassung durch das aussenwirtschaftliche Ungleichgewicht bestimmt, die monetären Bedingungen werden durch den fiskalischen Druck determiniert und das Wachstum wird durch fiskalische und monetäre Impulse beinflusst.

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1   Introduction

Most of the Pre-Accession Transition Countries[1] (PATCs) have already explicitly expressed their interest in an early Euro-zone membership, as they expect substantial net gains from joining the common currency area. The procedure of the next enlargement seems to be 'smoother' than that of previous ones, as after gaining admission to the EU, the new members will have a status of member state with derogation without an 'opting out' possibility. Hence, according to the principle of equal treatment, when meeting the convergence Maastricht-criteria, the countries will gain 'automatic' admission to the euro area. Of course, it will not take place in an ad hoc manner, but via a 'sustainable' process, and decision will be based on the assessment of EU authorities. How far are the PATCs at present from meeting their objective of becoming a Euro-zone member at the earliest possible date? Is it realistic to expect 2006-2007 to be the year for first-wave countries? In this paper we intend to assess the chances of a relatively rapid accession procedure and the prospects of a sustainable catching up - involving relatively high growth and low inflation accompanied by an equilibrium real appreciation of the currency - by PATCs.

The official - EU and ECB - statements estimate the whole admission process to be a gradual and long-term rather than a short-term prospect, taking more than one decade to be completed.[2] Policymakers in PATCs are in the forefront giving too much weight in their words and writings to how close their countries are to fulfilling the relevant criteria. Indeed, a quick comparison of Maastricht indicators of the candidates with those of less developed EMU-12 members suggests that advanced PATCs - say the Czech Republic, Estonia, Hungary, Poland, and Slovenia - are better placed today than current Euro-zone members were at a comparable time. This paper is about the utmost relevance of fiscal issues - their transparency, the public debt dynamics and the relationship of fiscal policy

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[1] For the sake of simplicity we use this abbreviation for Central European and Baltic Associated Countries: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia.

[2] See e.g. in W.F. Duisenberg - ECB Press conferences January 24, 2001 and 13 April 2000.

with other policies - in the convergence process. A closer look might reveal that despite the fact that transition economies have made a valuable progress in their fiscal consolidation, cross-country results and prospects are nevertheless heterogeneous and many problems remain.[3]

The main features of fiscal stabilization in PATCs during the transition period will be presented in Section 1, analysing the budgetary constraints stemming from debt dynamics decomposition and from the investment-savings balance. Section 2 deals with fiscal and monetary policy interaction, displaying the joint development of fiscal stance and monetary conditions. A reduced form model of the fiscal and monetary policy cooperation will be estimated in Section 3, allowing us to make a comparison between the adjustment and the policy-mix changes the transition countries carried out in the 1990s and those followed by the EMU-12 countries in order to achieve convergence to the Euro. Conclusions relate to the tasks ahead of the PATCs.

2   Fiscal Consolidation in PATCs during the 1990s

Having suffered a transition shock in the early 1990s, the PATCs have been able to stabilize their economy so that by the end of 2000 they all have quit hyper- or high double-digit inflation and shifted towards a relatively high growth path. (See Table 1.) Nevertheless, as countries differed widely in terms of the complexity and timing of basic reforms[4], the establishment of market conditions and stabilization they have achieved so far are heterogeneous and the sustainability of their growth and disinflation remains still an open question. Therefore, in our analysis we distinguish two groups of PATCs: countries who started enlargement negotiations first and those that still face a few basic tasks of 'transition' and also stabilization problems. The first group, marked PATC-I, comprises the Czech Republic, Estonia, Hungary, Poland and Slovenia, the countries that have been recently enabled to focus more intensely on convergence. The second group is here called PATC-II, comprising Bulgaria, Latvia, Lithuania, Romania and Slovakia, supposed to join the monetary union in a second wave.

Fiscal issues reflect all the aspects of macroeconomic developments and compose the interface between macro policies and politics. Transition, in general, ensures the existence

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[3] See e.g. in Pelkam et al (2000), Gros (2001).

[4] See the Regular Reports of PATCs and country assessments in EBRD Transition Report (2001).

of necessary conditions for fiscal transparency, but it takes a long period - and not only in transition countries - until the limits and costs of 'creative accounting' are acknowledged.

According to the official figures[5] (Table 1), neither deficit nor the public debt is likely to constitute an obstacle to an early membership of PATC-I. It is often concluded that achieving a fiscal deficit below 3 per cent is basically a question of political will and the public debt dynamics does not imply any burden, as almost everywhere in the PATCs indebtedness is much below the EU reference value of 60 per cent. Looking behind the headline indicators, however, we can detect a few details that are worth clarifying before accepting this general positive statement.

The size of PATCs' deficits and debts in 2000 seems to be quite 'EMU-compatible', especially if it is compared with Euro-zone fiscal indicators five years prior to the Euro, in 1994-95. The development of the fiscal stance[6] during the last ten years displays, however, a very different profile in the transition world from that in EU countries converging towards the Euro. The EU was characterized by falling deficits, rising primary surplus and – with a lag - somewhat decreasing public debt. (See Figure 1.) More particularly, the cyclically adjusted primary surplus has manifested a steady and continuous upward trend, reflecting the vigorous consolidation efforts during the run-up to EMU. The catching up EU economies have been running above the average primary surpluses over the decade (Figure 2). The PATCs' fiscal indicators did not show such a consistent time path in the 1990s (Figure 3), which is quite understandable in view of the circumstances of the deep restructuring they underwent. The general government deficits of PATC-I, except for Hungary, were almost always below the Maastricht reference value during the 1990s, while most of the PATC-II were characterised by a more volatile and worse fiscal stance, related to the deep crises inducing substantial fiscal adjustments.

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[5] About data sources see Appendix 1.

[6] In high inflation and/or indebted countries, the operational deficits (excluding the inflationary component of interest payments, see in Tanzi et al. (1993) would reflect better the true fiscal stance. Due to the unavailability of data, however, we could not produce these indicators. The operational deficit calculations based on a 'below the line' approach – filtering the inflation from the outstanding debt stocks – are particularly useful for detecting failures in headline cash flow based budget balances. See this exercise for Hungary in Barabás et al. (1999).

**Table 1.   Selected EMU Countries and PATCs five year before Euro-zone
Membership**

(per cent, per cent of GDP)

	GDP growth	CPI*		Budget balance**		Public Debt	
	1995-00 annual average	1995	2000	1995	2000	1995	2000
Czech Republic	1.5	9.1	4.1	-1.6	-4.6	15.3	17.3
Hungary	3.7	28.2	9.8	-6.7	-3.8	86.5	56.7
Poland	5.6	27.8	9.9	-2.7	-3.0	57.9	43.9
Slovenia	4.3	13.5	8.6	-0.3	-1.3	18.8	25.0
Estonia	4.5	29.0	3.8	-2.0	-1.7	..	7.0
Bulgaria	3.3	62.0	7.0	-5.7	-1.5	104.1	97.0
Romania	-0.5	32.3	45.0	-3.4	-4.0	17.6	34.6
Slovakia	4.4	9.9	11.9	0.2	-3.7	24.6	29.5
Latvia	3.2	25.0	2.9	-3.9	-2.7	16.1	14.0
Lithuania	3.0	39.6	1.0	-4.7	-2.9	18.5	26.3
	1994-98 annual average	1994	1998	1994	1998	Highest***	1998
Ireland	9.8	2.4	2.1	0.5	1.2	94.0	55.6
Finland	4.7	1.1	1.4	-1.9	0.6	58.3	49.0
Greece	3.1	10.7	4.5	-9.2	-3.0	111.3	104.4
Italy	1.9	4.1	2.0	-8.5	-2.5	123.8	116.3
Spain	3.4	4.7	1.8	-5.4	-2.3	68.0	64.9
Portugal	3.3	5.4	2.2	-5.4	-2.0	64.7	56.5
EU-15	2.4	3.0	1.3	-4.9	-1.2	72.2	69.1

** Consumer price index for PATCs, HICP for EMU-countries, annual averages.

** For PATCs general government balances include municipalities, extra-budgetary funds and social security but exclude privatisation revenues. Sources: EBRD Transition Report, UNECE Economic Survey of Europe 2001/1. For EU countries cyclically adjusted general government budget balance. Source: European Economy 2000 No.3.

*** Finland, Ireland and Italy in 1994, Portugal in 1995, Greece, Spain and EU-15 in 1996.

Figure 1. The Fiscal Stance in EU-15
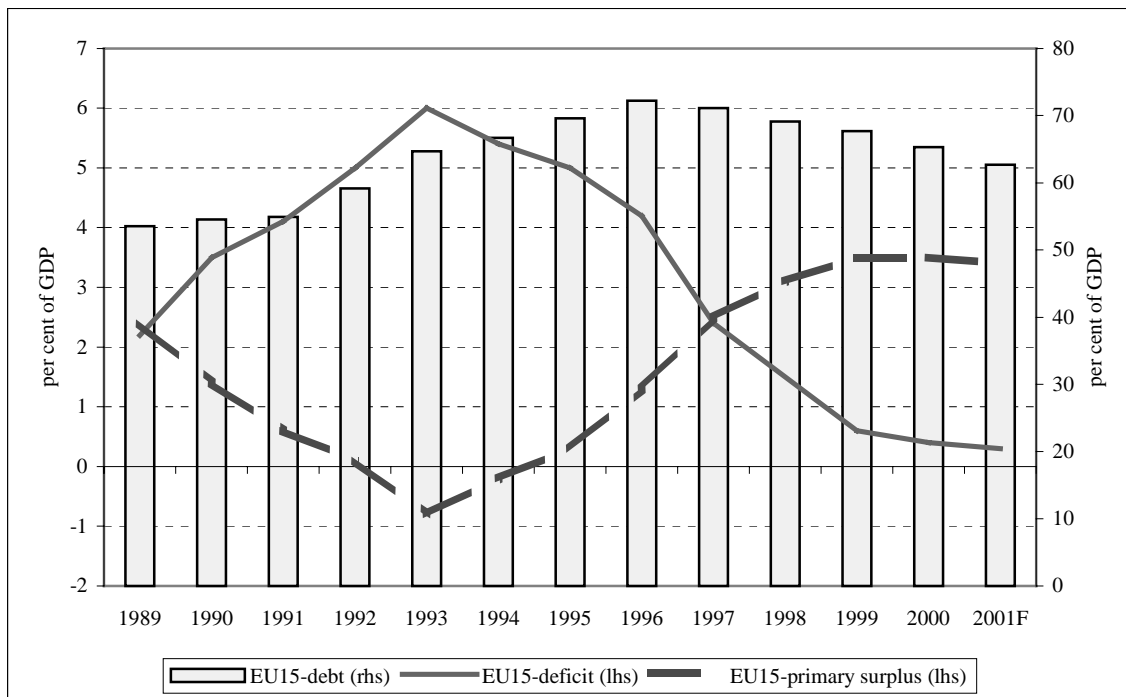
Figure 2. Primary Balance in Selcted EMU Countries (%)
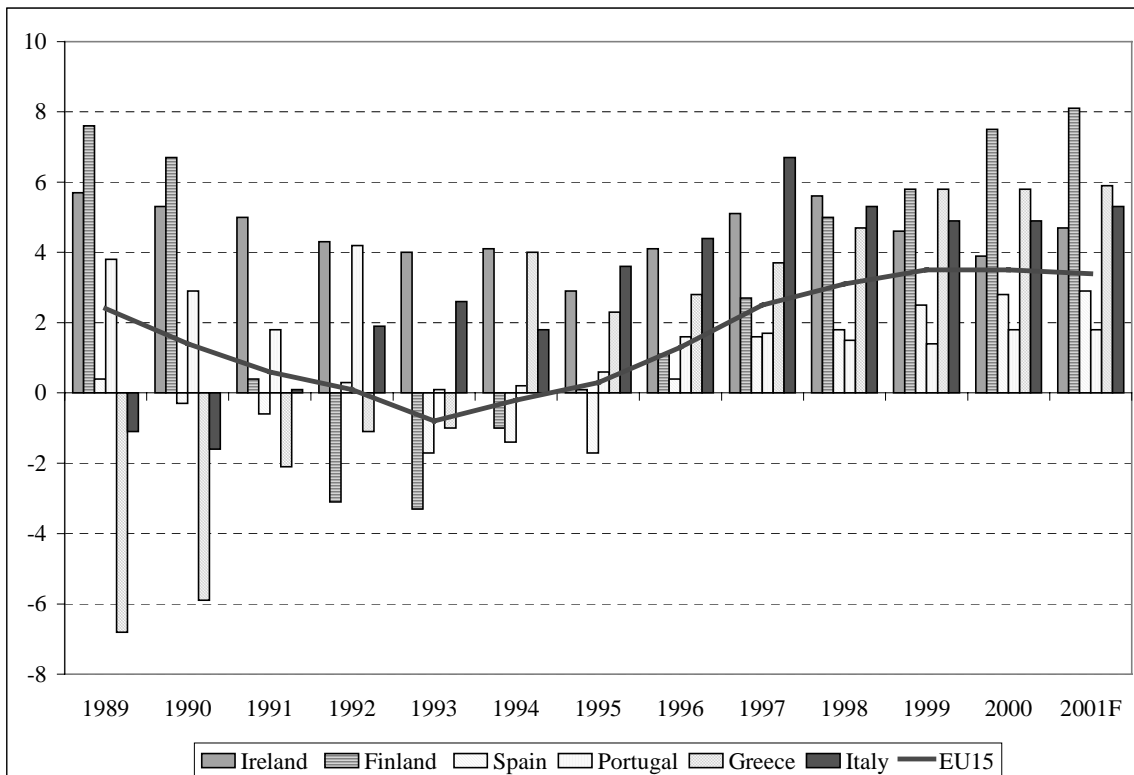
Figure 3a. General Government Deficit in PATC-I
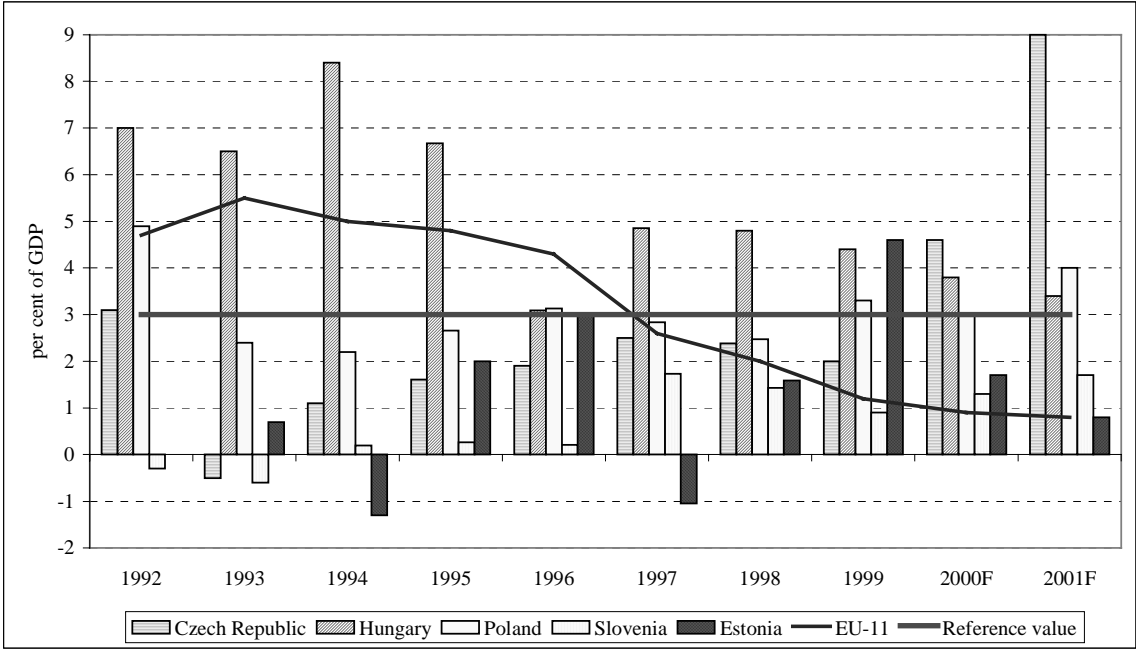
Figure 3b. General Government Deficit in PATC-II
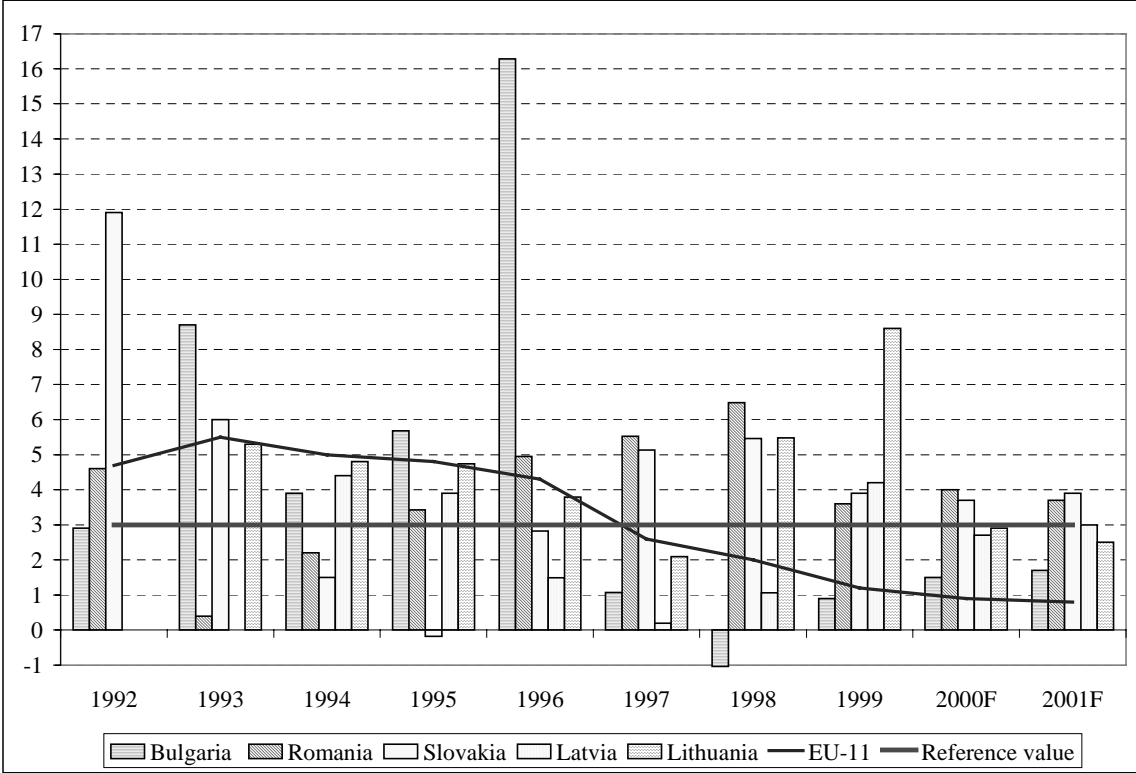
Deficits and debt development could sometimes significantly deviate during the transition. In a number of countries the fiscal stance has somewhat deteriorated during 1999-2000 and according to the available forecasts[7] either due to the consolidation programs necessary for fiscal transparency (like in the Czech Republic) or because of adjustment problems (like in Poland). The majority of PATCs have been running a primary deficit over the 1990s (Figure 4) or alternating between deficits and surpluses, and does not reflect a clear-cut orientation of fiscal policy over the medium term.

Despite the fact that PATCs - except for Bulgaria and Hungary - have had much lower public debt to GDP ratio than the Maasticht reference value, it is worthwhile paying attention to the fact that recently debt ratios started to increase in several countries, though from a low level. It is also important to note that indebtedness of PATCs seems to be consistent with their level of development.[8] The development of primary balances and debt ratios suggests that in the PATCs there might still be a non-negligible stock of contingent liabilities, producing quasi-fiscal deficits (financial system restructuring, central bank preferential crediting, etc.). When these loss-producing activities are phased out, the quasi-fiscal deficits are accounted for, adding to the primary deficits or appearing directly in the increase of public debt as so-called off-budget obligations. The long lasting effects of these consolidation operations, prevailing through the higher debt service, may be important[9] though the privatisation revenues might offset part of the one-time jump in the borrowing requirement. Moreover, the deficit statistics in the PATCs are being shifted towards the ESA basis just these days. Therefore the official figures often do exclude large state-owned institutions financed by off-budget money (direct transfers, guaranties etc.), appearing sooner or later in an increase in the public debt. Thus, looking at the headline indicators of

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[7]   We take the forecasts for 2001 from government medium term programs if available, otherwise from the Deutsche Bank Research database.

[8]   The average gross debt-to-GDP ratio of the small open European economies (Austria, Finland, the Netherlands, Norway and Sweden) at a comparable development levelwas around 20 percent in the 1960s.

[9]   One could collect a long list of examples. For instance in Hungary the restructuring program of the banking system 'generated' a sizable stock of additional public debt directly through special bond issues in 1992-95, or by adding to the budget expenditures and borrowing needs later on. According to the Pre-accession Economic Convergence Report of the Czech Republic, subsidies to transformation institutions are expected to grow up to 5.1%, 3.6% and 1.5% of GDP in 2001, 2002 and 2003, respectively, which is expected to be almost fully covered by the privatisation revenues of 8.3%, 2.7% and 1.7% of GDP projected for the same period. However, the public debt ratio is forecast to be steadily growing.

Figure 4a. Primary Balance in PATC-I Countries
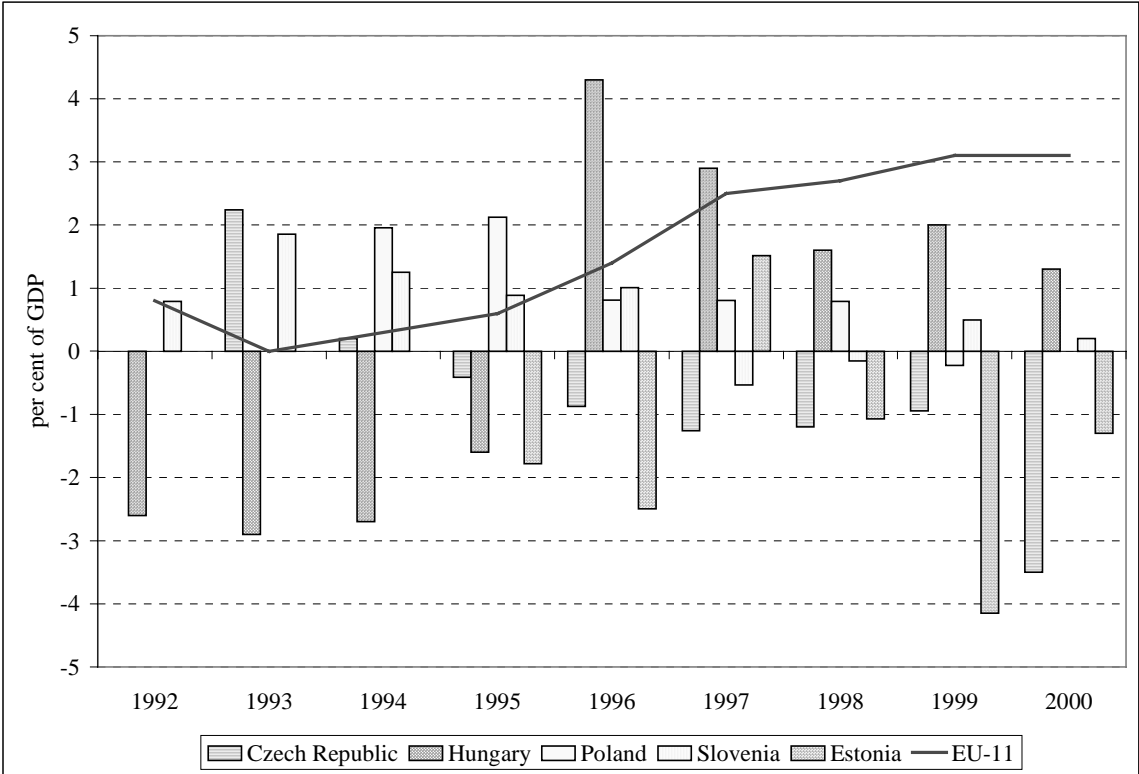
Figure 4b. Primary Balance in PATC-II
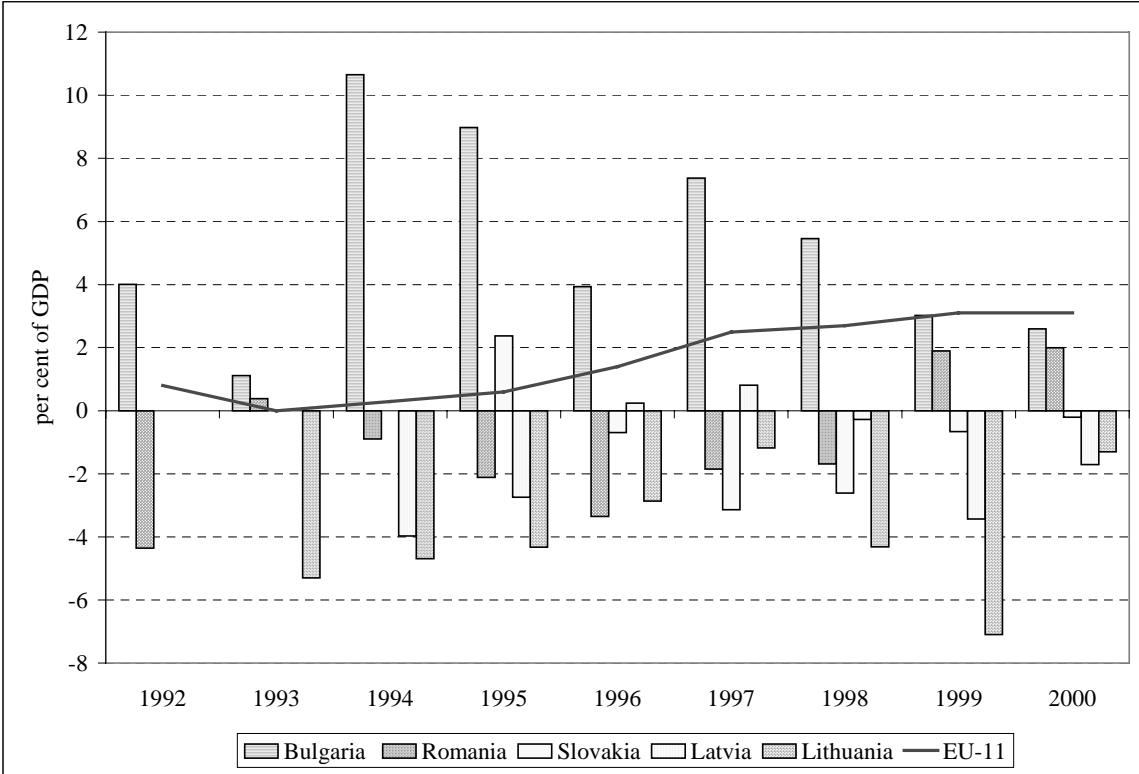
Figure 5a. Public Debt to GDP in PATC-I

Legend: Czech Republic, Hungary, Poland, Slovenia, Estonia, EU-11, Reference value
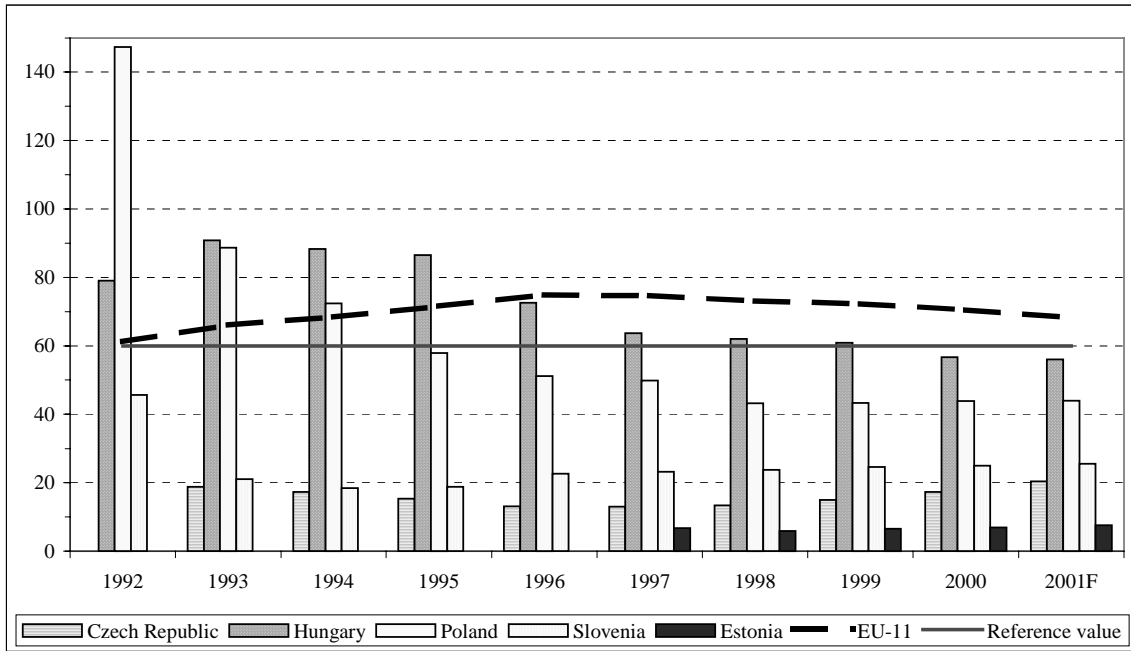
Figure 5b. Public Debt to GDP in PATC-II

Legend: Bulgaria, Romania, Slovakia, Latvia, Lithuania, EU-11, Reference value
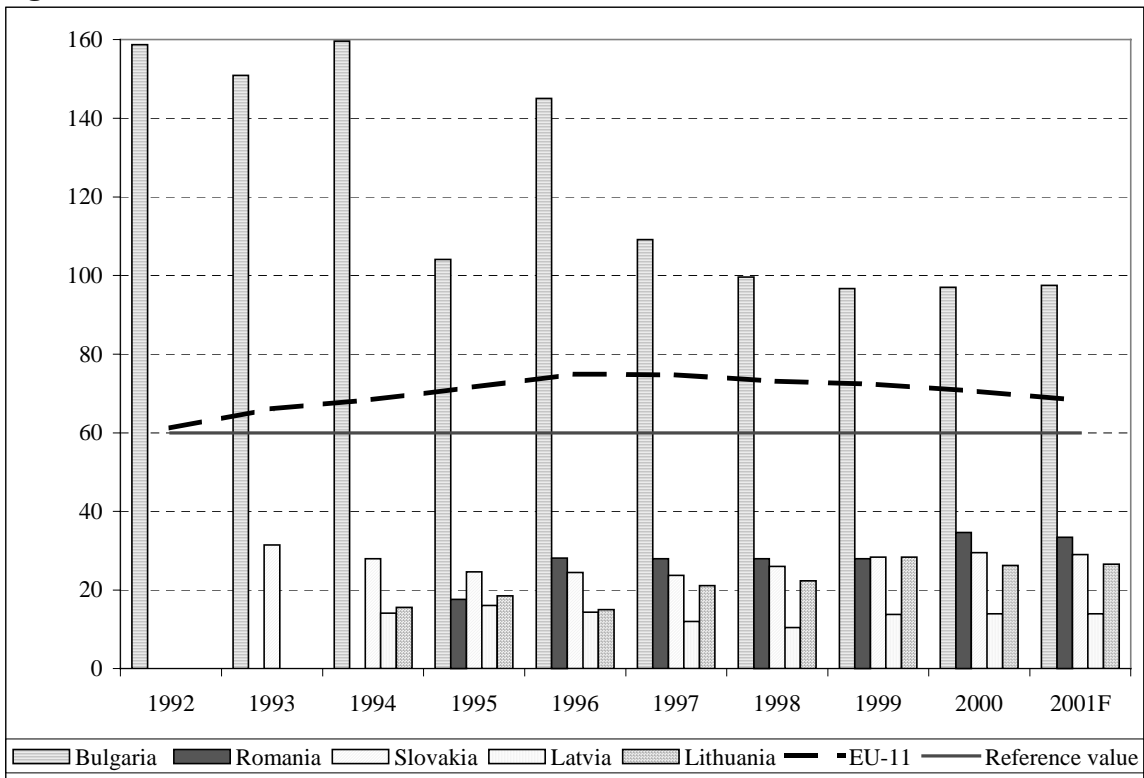
general government balances and debts, we may guess that it is not easy to make judgement about the true fiscal stance in the PATCs, or to estimate the necessary adjustment for an early Euro-zone membership.

The analysis of public debt dynamics provides further evidence for the doubt about the reliability of headline indicators. In the analysis that follows we have used general government balances and gross debt of general government, the indicators that the Maastricht fiscal criteria relate to.[10]

Using the government budget constraint (Equation A in Appendix 2) and dividing by the gross domestic product (Y), the change in debt to GDP ratio can be written as:

$$\Delta d_t = pb_t + (r_t - g_t)/(1+g_t) * d_{t-1} - s_t + sf \qquad (1)$$

where Δd_t change in the debt to GDP ratio in period t

        pb_t primary deficit to GDP in period t

        d_{t-1} public debt to GDP in period t -1

        g_t real growth of GDP in period t

        r_t real interest rate on debt in period t-1

        s_t seigniorage

        sf   stock-flow adjustment

The above decomposition of the public debt dynamics contains the so-called 'snowball' effect (second term on the RHS) which arises from a positive difference between the real interest rates on public debt (r) and GDP growth (g), and pushes up the debt to GDP ratio over time on an explosive (unsustainable) path, unless fiscal adjustment in the primary balance (pb) counterbalances it. The seigniorage (s) facilitates avoiding the explosive debt ratio. However, relying on this type of financing would involve the risk of higher inflation and lower credibility of policies.

This decomposition disregards that part of the public debt is denominated in foreign currency. The foreign interest payments should be adjusted by the exchange rate change.

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[10] The Maastricht (ESA) definition of deficit is the difference between transactions in assets and transactions in liabilities, thus it corresponds to the changes in net, and not in gross public debt. If we consider, however, that non-performing government assets or preferential crediting of the private sector occurred rather frequently in transition economies, we easily arrive at the conclusion that meaningful analysis of the budgetary constraint in the transition period could be done only on the basis of the net debt. Balassone and Monicelli (2000) arrived at the same conclusion for Italy. Due to lacking data we failed to do this.

Due to lacking data, unfortunately, that part of interest payments is accounted for in the last term and the snowball effect is underestimated in case of devaluation The size of this bias depends on the foreign debt exposure and exchange rate changes.

Table 2. The snowball effect in the PATCs and EU

(per cent of GDP)

	1994	1995	1996	1997	1998	1999	2000
1. Czech Republic	-1.3	-1.3	-0.8	0.5	0.2	0.8	0.2
2. Hungary	-11.3	-14.6	-8.7	-6.3	-3.3	-0.9	-1.9
2a. Hungary*	1.1	2.9	3.2	1.4	1.4	3.0	1.3
3. Poland	-23.4	-15.0	-8.2	-5.7	-4.0	-1.4	-2.4
4. Slovenia	-3.3	-1.9	-1.2	-1.6	-1.2	-1.2	-0.9
5. Estonia	..	..	..	..	-0.3	0.3	-0.4
6. Bulgaria	-50.6	-49.5	-31.5	-121.7	-18.4	-1.3	-6.2
7. Romania	..	..	-7.5	3.1	2.6	0.7	0.2
8. Slovakia	..	-2.0	-0.5	-0.9	0.8	1.2	1.2
9. Latvia	..	-1.0	-1.1	-0.9	-0.2	-0.3	-0.5
10. Lithuania	..	-4.4	-3.5	-2.1	-1.3	1.4	0.2
11. EU-11**	2.5	2.5	2.8	3.6	1.9	1.4	0.8
12. Ireland**	-0.5	..	-5.2	-5.2	-5.1	-3.4	-3.3
13. Greece**	..	-0.5	..	-2.1	-0.9	1.0	0.7

*** Based on net consolidated debt.
** Source: European Economy (2000)

As a result of the debt dynamics decomposition for the PATCs, the combined effect of the real interest rate and the GDP growth rate was often negative in many of these countries, especially in the early transition. (See Table 2.) In the EU countries, by contrast, the snowball effect had a permanent upward pressure on the debt ratio during the 1990s (Row 11), except for countries having high output growth for long periods, like Ireland, or having faced transition-like consolidation problems in public finance, like Greece. One can hardly believe that the snowball effect has not been prevailing in the majority of PATCs, meaning that these emerging countries were able to finance themselves at a substantially lower interest rate than developed countries. According to the figures it helped them to continue running primary deficits without taking the risk of rising debt ratios.

Table 3. Primary balances in the PATCs

(per cent of GDP)

	1994	1995	1996	1997	1998	1999	2000
1. Czech Republic	0.2	-0.4	-0.9	-1.3	-1.2	-0.9	-3.5
2. Hungary	-2.7	-1.6	4.3	2.9	1.6	2.0	1.3
3. Poland	1.7	1.8	0.6	0.6	0.8	-0.2	0.0
4. Slovenia	1.3	0.9	1.0	-0.5	-0.2	0.5	0.2
5. Estonia	..	-1.8	-2.5	1.5	-1.1	-4.1	-1.3
6. Bulgaria	10.7	9.0	3.9	7.4	5.5	3.0	2.6
7. Romania	-0.9	-2.1	-3.4	-1.8	-1.7	1.9	2.0
8. Slovakia	..	2.4	-0.7	-3.1	-2.6	-0.7	-0.2
9. Latvia	-4.0	-2.7	0.2	0.8	-0.3	-3.4	-1.7
10. Lithuania	-4.7	-4.3	-2.9	-1.2	-4.3	-7.1	-1.3
11. EU-11*	0.3	0.6	1.4	2.5	2.7	3.1	3.1

*** Source: European Economy, EU Commission 2000.

Instead, we prefer to think that until public finance regimes did not operate according to market principles, interest payments included in the budgets of PATCs did not reflect all the costs of financing and the real interest rates derived from these data tend to underestimate the true real interest rate paid on public debt. If gross public debt figures include preferential central bank loans but exclude liabilities at market interest rate at the central bank, the real interest rates computed on the gross general government debt stock are misleading. It may be the case if there is important foreign exchange denominated long-term loan or the central bank issues sterilisation instruments. In addition, central banks could ease monetary conditions helping the budget to obtain cheaper funding. They could also lend to the - state-owned - corporate sector at preferential interest rates. Therefore, the central bank profit/loss and asset/liabilities accounts should be consolidated with the general government to cover all the costs of public financing. In Table 2 we included for Hungary the results obtained for the snowball effect if the debt dynamics computation is based on consolidated net debt.[11] (Row 2a.) The difference is quite substantial, therefore, we tend to conclude that the snowball effect would have been positive for the other PATCs, as well, if computation were based on consolidated data. It is true that when transition to a market-based public financing regime is complete or, put differently, when all the accumulated preferential stock expires, the difference between gross and consolidated approaches will be negligible. Policy adjustment should be based on a more reliable consolidated approach until contingent liabilities are present.

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[11] In computation based on consolidated debt, the assets and liabilities between the budget and the central bank are filtered out, and the net interest payments of the CB adds to the interest payments of the budget. For Hungary a complex debt dynamics analysis based on net debt was presented in Halpern and Neményi (2000).

Although a complex decomposition on a consolidated basis was impossible due to lack of data, we were able to identify one important factor influencing indebtedness, that is, the role of money financing, seigniorage. Taking into account that government debt can be held by the central bank and substituting the monetary base and assets and liabilities from the balance sheet of the central bank for the government liabilities at the central bank (see Equation B in Appendix 2), the role of monetary seigniorage in alleviating the debt burden can be assessed.

Table 4. Monetary seigniorage* in the PATCs

(per cent of GDP)

	1994	1995	1996	1997	1998	1999	2000
1. Czech Republic	4.8	8.7	0.1	0.0	4.3	2.0	2.0
2. Hungary	0.5	2.3	1.6	1.6	1.7	1.6	1.7
3. Poland	1.7	3.1	1.6	2.6	1.4	-0.1	-0.6
4. Slovenia	1.6	0.9	0.6	0.9	0.9	1.0	0.1
5. Estonia	1.5	2.0	2.1	3.6	0.7	3.3	2.0
6. PATC-I	*2.0*	*3.4*	*1.2*	*1.8*	*1.8*	*1.6*	*1.0*
7. Bulgaria	6.4	7.5	11.3	10.7	1.0	1.5	0.2
8. Romania	3.6	3.0	2.8	4.9	1.2	4.4	3.4
9. Slovakia	1.9	5.1	1.1	2.3	-0.6	3.7	..
10. Latvia	2.1	0.2	2.2	3.2	0.8	1.4	0.9
11. Lithuania	3.3	2.7	0.1	2.1	2.2	-0.4	-0.3
12. PATC-II	*3.5*	*3.7*	*3.5*	*4.6*	*0.9*	*2.1*	*3.3*

* Change in the monetary base to GDP: ΔM0/Y

From Table 4 we can infer that monetary seigniorage did not really provide transition governments with cheap finance in most PATCs. In more advanced countries monetary seigniorage was less than 2 per cent of GDP in the second half of the 1990s.[12] The high and moderate inflation rates have brought about relatively high inflation tax rates – still prevailing in Romania - counterbalanced by changes, sometimes a fall in the real base money. (See Table 5.)

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[12] According to Buiter (1995 p. 822) monetary seigniorage was more or less the same size in EU countries of comparable inflation before starting with the convergence plans to the Euro (in 1990-94).

Table 5. Inflation tax in the PATCs

(per cent of GDP)

	1994	1995	1996	1997	1998	1999	2000
1. Czech Republic	1.5	1.5	1.8	2.0	1.4	0.6	1.0
2. Hungary	2.7	3.0	2.1	1.8	1.0	1.2	1.1
3. Poland	2.2	1.6	1.5	1.1	0.7	0.8	0.6
4. Slovenia	0.6	0.4	0.4	0.4	0.3	0.4	0.4
5. Estonia	4.8	2.9	1.5	1.3	0.5	0.5	0.6
6. PATC-I	*2.4*	*1.9*	*1.4*	*1.3*	*0.8*	*0.7*	*0.7*
7. Bulgaria	10.7	3.8	19.4	11.2	0.1	0.7	0.5
8. Romania	2.7	1.6	3.0	5.3	2.2	2.9	2.6
9. Slovakia	1.0	0.8	0.7	0.8	0.7	1.8	1.5
10. Latvia	2.8	2.4	1.3	0.8	0.4	0.4	0.3
11. Lithuania	3.3	2.7	1.0	0.6	0.2	0.0	0.1
12. PATC-II	*4.1*	*2.3*	*5.1*	*3.7*	*0.7*	*1.2*	*1.0*

Finally, the change in the debt ratio depends on the stock-flow adjustment (sf in Equation (1)). It comprises the revaluation items, in principle, which can be substantial if large exchange rate realignments are taking place, which happened several times during transition in PATCs. In countries, however, where large-scale consolidation programs - aiming at restructuring the banking system and the previously state-owned sector - are carried out, these items also contain the increase in 'off-budget' obligations of the government (guarantees, consolidation bond issues, etc.). The effect of off-budget obligations are reduced by privatisation revenues, considered as a financing item in our calculation. Thus the term *sf* includes all the factors that affect the dynamics of the debt ratio, but are excluded from the deficit as defined according to Maastricht. We have found - see in Table 6 - that the off-budget items affected the debt development. In countries where restructuring programs could be postponed, this 'off-budget' source of indebtedness may become significant in the coming years.

To sum up: Due to the missing elements of transparency in public sector accounting, the budgetary constraints derived from debt dynamics computations based on the headline budget deficit and gross government debt data have limited validity. The necessary primary surplus preventing the public debt to GDP ratio from a steadily increasing path might exceed these magnitudes if accounting is completed according to EU standards.

Table 6. Contribution of 'other than deficit financing items'
   to the change in debt ratio

(in per cent if GDP)

	1994	1995	1996	1997	1998	1999	2000
1. Czech Republic	0.0	-1.1	-2.2	-1.8	-1.0	-0.1	-1.4
2. Hungary	11.3	11.2	-0.9	0.2	3.3	1.8	-1.0
3. Poland	4.5	2.5	2.0	5.2	0.4	1.2	3.4
4. Slovenia	2.0	3.1	6.1	1.5	1.5	2.5	2.1
5. Estonia	..	..	..	..	-1.6	-3.7	-0.8
6. Bulgaria	69.9	3.0	76.3	93.2	14.4	1.3	9.2
7. Romania	..	..	14.3	19.6	-0.6	-2.1	5.6
8. Slovakia	0.0	0.9	-0.5	-3.1	-1.1	0.6	0.9
9. Latvia	..	-0.1	-0.5	-0.6	-1.5	-0.7	-1.5
10. Lithuania	..	2.9	-2.9	6.6	-1.9	-2.8	-4.1
11. EU-11*	0.1	1.2	1.9	-1.2	-0.8	0.8	0.6

* Source: EU Commission European Economy 2000.

Nevertheless, when a major part of additional debt creating restructuring is over, the PATCs will probably still have a public debt to GDP ratio well below 60%, and applying simple arithmetic calculations based on the government budget constraint, not more than about a 1 per cent surplus is required in the primary balance to counterbalance upward pressures on the debt ratio.[13] Assuming that (i) seigniorage will be more or less the same (in PATC-I) and somewhat decreasing (in PATC-II); (ii) the snowball effect will be positive, even if PATCs succeed in maintaining a relatively high growth path; (iii) and off-budget/contingent liabilities disappear as well as privatisation revenues. Then the convergence will require switching over to positive (maybe increasing) primary surpluses not only in order to prevent the public debt ratio from approaching the Maastricht reference value from below, but primarily to keep the current account on a sustainable path. An above the average growth in the PATCs, however, presupposes a relatively high rate of investment in these countries, which implies a growing borrowing requirement of the corporate sector even if a large part of the investments are supposed to be financed by FDI. As households' net savings tend to decline in PATCs[14], which can be considered a long lasting equilibrium process in these countries, the budget should counterbalance the deterioration of the current account and keep it on a sustainable path.

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[13] If PATCs' GDP growth is assumed to be around 4 per cent and suppose a 5-6 per cent real interest rate on public debt, a 0.3-1.2 per cent primary surplus might be sufficient to stabilize a public debt to GDP ratio between 30 and 60 per cent.

[14] Postponed consumption, housing investments, relaxed liquidity constraints, availability of new credit facilities etc. See more details in Economic Survey of Europe, UN ECE 2001/1.

It is often claimed that FDI is exogenous to the current accounts and its level as a long term commitment constitutes an upper bound for external imbalances. FDI may affect the import elasticity, hence reverse the causality, and capital outflows may precede the corresponding reactions in the current accounts, generating a currency crisis. That is why the link between external balance and fiscal stance is at the core of policy design.[15]

Fiscal tightening is regarded as a key to achieving price stability, as well. Moreover, coping with the possible speculative attacks and contagion from the emerging markets without hurting equilibrium conditions for sustainability, may further tighten the fiscal burden. This will be the major challenge of the five to six years up to the Euro.

3   Interaction of Fiscal and Monetary Policies

As conditions of financing the general government are largely determined by monetary policy decisions, the fiscal stance cannot be fully assessed without taking into account the overall policy mix. In the convergence period the PATCs will follow the double targets of relatively high growth and disinflation. At the same time their catching-up is characterized by an equilibrium real appreciation of their currency, stemming from productivity differences and depending basically on structural characteristics. The actual gap between service and traded goods price increases is, however, affected not only by supply side conditions but also by domestic demand.[16] High growth requires maintaining competitiveness so as to keep the export led character of catching-up. On the other hand, disinflation requires controlling domestic demand so as to prevent the economy from overheating.

Decision makers are supposed to have preferences on how much the real appreciation of the currency should be brought about by nominal appreciation or by inflation differential. Voting for nominal appreciation can help achieve faster results in disinflation, but this scenario can be risky in a small, open economy, because it may hurt, first of all, the tradable sector, if substantial nominal downward rigidities are present. It might endanger the export led character of growth, the sustainability of the relatively high growth rate and price stability as well. If price stability - as laid down in Maastricht regulation - is a priority, and the government is unwilling to let the exchange rate appreciate excessively, the only way to achieve convergence is to rely on fiscal tightening, controlling domestic

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[15] Begg (1998) and (2001) give insights in transition and EU countries.
[16] See Halpern and Wyplosz (2001) on the Balassa–Samuelson effect.

'excess' demand and curbing higher-than-equilibrium price increases of nontraded goods. Thus, both scenarios (the nominal appreciation and the fiscal tightening) might trigger subdued output growth. Therefore, a key issue of convergence is to find an efficient fiscal and monetary policy mix in the sense that disinflation and nominal convergence should be accompanied by a minimum of output loss.

The experience of Euro area convergence might provide instructive cases about fiscal and monetary policy co-operation. In the period between Maastricht and the Euro the policy mix on EU level consisted of continuous fiscal tightening parallel with the unavoidable relaxation of monetary conditions, due mainly to interest rate convergence. Nevertheless, the continuous fiscal consolidation aiming at satisfying the Maastricht-criteria as an overriding goal during the 1990s has facilitated a growth-friendly monetary stance and catching-up[17] in less developed EU countries. The fiscal adjustment aiming at returning to a sustainable budget position (according to the Stability and Growth Pact principles) after the surge in the deficits in 1988-93 resulted in a below-trend-growth in most of the countries in the run-up to the EMU. However, individual countries differed in their behaviour in many respects, depending primarily on their indebtedness and structural characteristics. High debt countries had to stop with the pro-cyclical fiscal attitude – which caused EU-11 average debt to GDP ratio to peak at 74.9% in 1996 - in order to halt debt expansion. Fast growing, 'catching-up' EU-countries- except for Ireland for a short period in 1996-1997 - have all avoided a continuous nominal appreciation of their currencies in the convergence period, though their real exchange rates have also been characterised by trend appreciation. Instead, they used fiscal adjustment on a larger scale than the EU-11 average - see Figure 2 - in order to meet the price stability criteria.

Comprehensive indicators for restrictiveness of fiscal and monetary conditions have to be chosen in order to monitor the policy mix prevailing in PATCs during the 1990s. The fiscal stance was measured by the annual change in the primary balance of general government. It would have been important to disentangle short-term cyclical factors from discretionary policy steps, the cyclically adjusted operational or primary balance being the most meaningful indicator for characterising the fiscal stance. However, it would not necessarily be the most reliable one, as measuring the output gap and potential output in the PATCs is an even more dubious exercise than in developed EU and OECD countries, due to the permanent restructuring that is going on and also because of the characteristics of

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[17] See in European Economy 2000, No.3 and von Hagen et al. (2001).

disinflation in these countries.[18] Therefore we have chosen the unadjusted primary balances to see whether the fiscal stance was tight or loose.

A monetary condition index[19] (MCI) was constructed for each country to measure the monetary policy stance, representing the combined effect of the real interest rate and the real exchange rate.

$$MCI = \alpha * (r_t - r_t^*) + \beta * (\Delta e_t - \Delta e_t^*) \qquad (2)$$

Taking into account the characteristics of PATCs - equilibrium real appreciation and the interest premium the emerging markets pay - the MCI was defined as a linear combination of the deviation of the real short-term real interest rate (r_t) from the real interest rate abroad (r_t^*) and the change in the real exchange rate (Δe_t) above its trend level (Δe_t^*). Using this definition the MCI reflects whether the actual monetary policy stance was tighter or looser than the monetary stance determined by equilibrium conditions. A positive MCI means restrictive monetary policy, while a negative MCI reflects monetary expansion.[20]

Parameters α and β are equal to the estimated effect that the real interest rate and real exchange rate changes exert on aggregate demand respectively. Their ratio (α/β) is assumed to indicate the relative impact of interest rate and exchange rate on the medium term target. Thus the parameters are model-dependent, but identification, estimation and interpretation of the underlying model raise several problems everywhere. Therefore we have derived the weights from exports to GDP ratios, characterising the openness of the economies. It also had to be taken into account that both investments and household savings seem to be relatively inelastic to the change in real interest rates in the PATCs, due to low leverage characterising the private sector in these countries, the liberalisation achieved so far and also the relaxation of liquidity constraints. The ratio α/β is higher in less open countries (like Poland) where the impact of monetary tightening via rising real

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[18] Measuring the output gap and potential output, as well as the estimation of budget response parameters raise a number of problems empirically and one has to be especially cautious with the interpretation of the most popular solutions, like trend GDP using the HP filter. Additional problems in PATCs are dealt with in Simon and Darvas (2000).

[19] The problems associated with the definition, computation, interpretation and targeting of the MCI is extensively debated. (See e.g. Eika et al., 1996, Mayes and Vire, 1998, Gerlach and Smets, 2000). The definition below was proposed in Bofinger (2000).

[20] High share of foreign exchange denominated debt might modify even significantly the impact of real appreciation. In case of PATCs, however, both the leverage and the share of foreign exchange loans of the cororate sector are quite low in international comparison, though increasing over the 1990s. (see in Schardax and Reininger (2001)). Hence, we accepted the above interpretation.

interest rates can be more efficient than in a more open economy – the majority of PATCs - where exchange rate changes have a stronger influence. The ratio α/β varies between 0.25 (Estonia) and 2.55 (Poland) in our sample, which is consistent with the relative openness of accession countries.[21]

Short-term real interest rates were computed from 3-month Treasury Bill yields[22], on a monthly basis, and using ex-post CPI-inflation, then taking the annual average. This can be considered as a partly forward-looking assessment of the monetary stance, which avoids underestimating monetary policy tightness, which would be the case if actual inflation were used. The yields on German TB3-month were used as reference for interest rates abroad. We have used detrended real effective exchange rate indices[23] to represent the deviation from the 'equilibrium' real exchange rate path.

The MCI is expected to increase when the domestic economy tends to overheat, that is, monetary policy reacts by tightening to a boom that endangers the sustainability of equilibrium. However, considering the commitments they have taken in their exchange rate regimes for enhancing credibility monetary policy makers in PATCs – have faced an additional constraint stemming from the uncovered interest parity condition, saying that the return on assets denominated in domestic currency should be equal to the sum of the expected return on foreign denominated investments - the foreign interest rate plus the expected exchange rate change - and the risk premium required on emerging markets' assets. The required risk premium varies both across time and country. If, in the light of domestic development, monetary policy decides on tightening monetary condition by raising interest rates above the level consistent with the UIP condition, the country may face a steady interest sensitive capital inflow, coupled with an undesired effect on the nominal and real exchange rates. If sterilised intervention is used by the central bank - intervening in foreign currency markets and sterilising the excess liquidity by issuing domestic assets - to prevent this effect, then the fiscal costs might be substantial. Taking into account that the PATCs have already become quite deeply integrated into the more developed countries through their foreign trade and largely liberalised capital markets, in practice their monetary policy was able to exercise a limited degree of independence during the 1990s.

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[21] There are a number of empirical studies for the OECD and EU (See in European Economy 2000, CEPS Annual Report 2000). The ratio of weights in MCIs is varying from 2 to 10. For the Euro area α/β is generally high between 6 and 8.

[22] Where it was not available we have used short-term money market rates.

[23] REERs were taken from the International Financial Statistics. For the Baltic countries the IFS does not publish REERs, so for them we used our own calculations.

The development of MCIs as well as their components can be seen on Figure 6. The most important thing we can observe is that except for the years of 'big bangs', when major adjustments were taking place, monetary policy has been almost neutral as compared to the equilibrium characterised by steady real appreciation in most of the countries. Although aware of the limited relevance of these indicators, we have plotted the change in primary balances and the MCIs together in a very simple chart, reflecting the joint development of the fiscal and monetary stance in the PATCs in the second half of the 1990s. (See Figure 7). No clearcut tendency can be identified. Nevertheless, the imagined trend would have a negative slope, meaning that fiscal policy tends to relax when monetary conditions become tighter and inversely, fiscal adjustment is accompanied by a relaxation of monetary conditions. We have to be cautious, however, with the interpretation of these charts because they display real time changes and disregard, necessarily, the lags prevailing in the interaction of the fiscal and monetary adjustments. They also neglect the possibility that both policies might influence and react to the real economic development with lags. To have an idea about the dynamic interrelationships between these policies we estimated a small panel model.

4   A Model for the Fiscal and Monetary Policy Mix

The model we have estimated is taken from von Hagen et al. (2001). It has a simple structure and its assumptions also seem quite general, so that it can be applied for transition economies as well. The model describes the interaction of the fiscal and monetary policy with real output. Accordingly, there are three endogenous variables: real GDP growth (Y), fiscal policy represented by the (cyclically adjusted) primary balance of the general government (F) and monetary policy described by the monetary condition index (M).

Figure 6.   MCIs and Their Components in PATCs
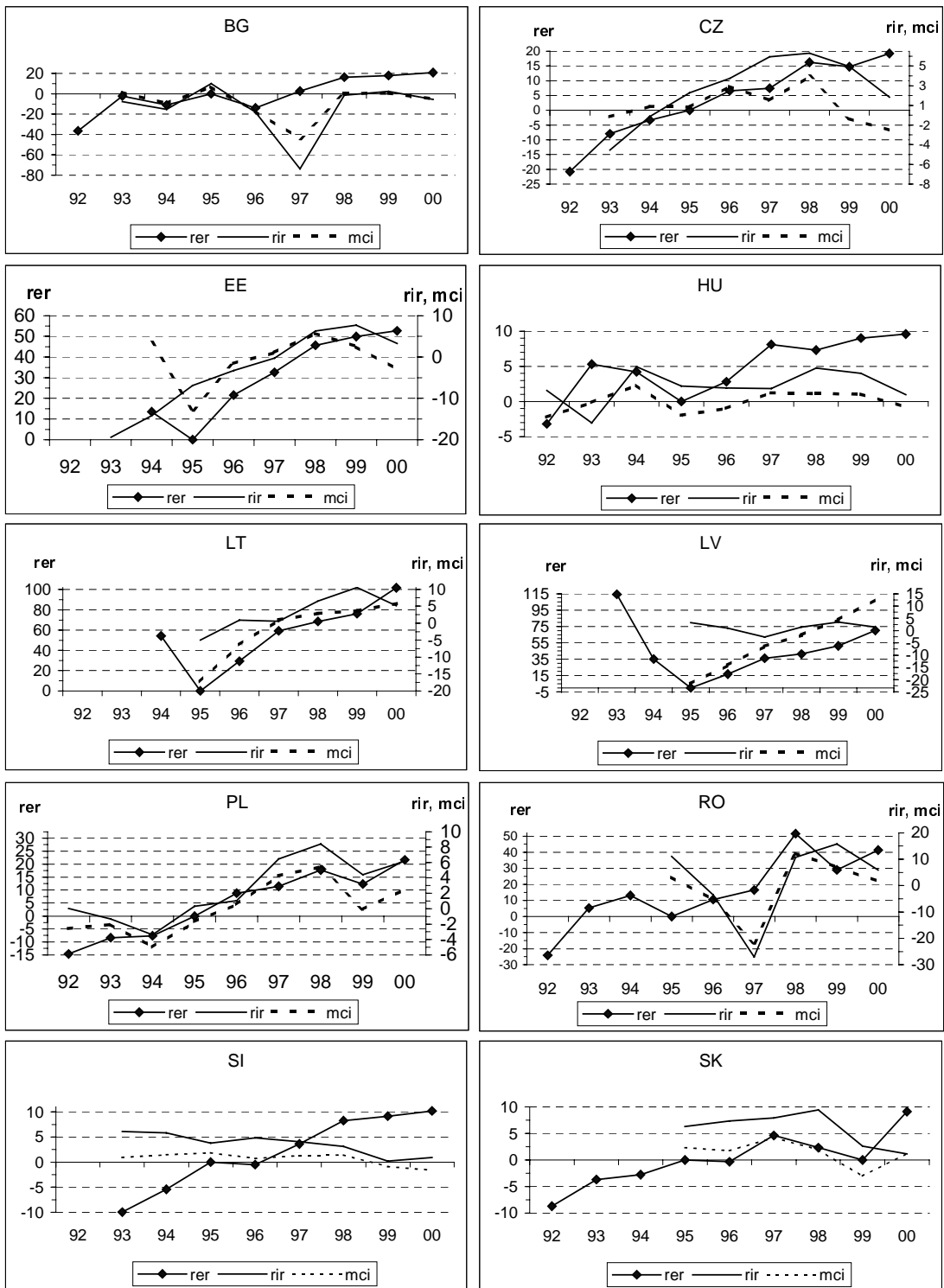
Figure 7.   MCI and Change in Primary Balance in PATCs
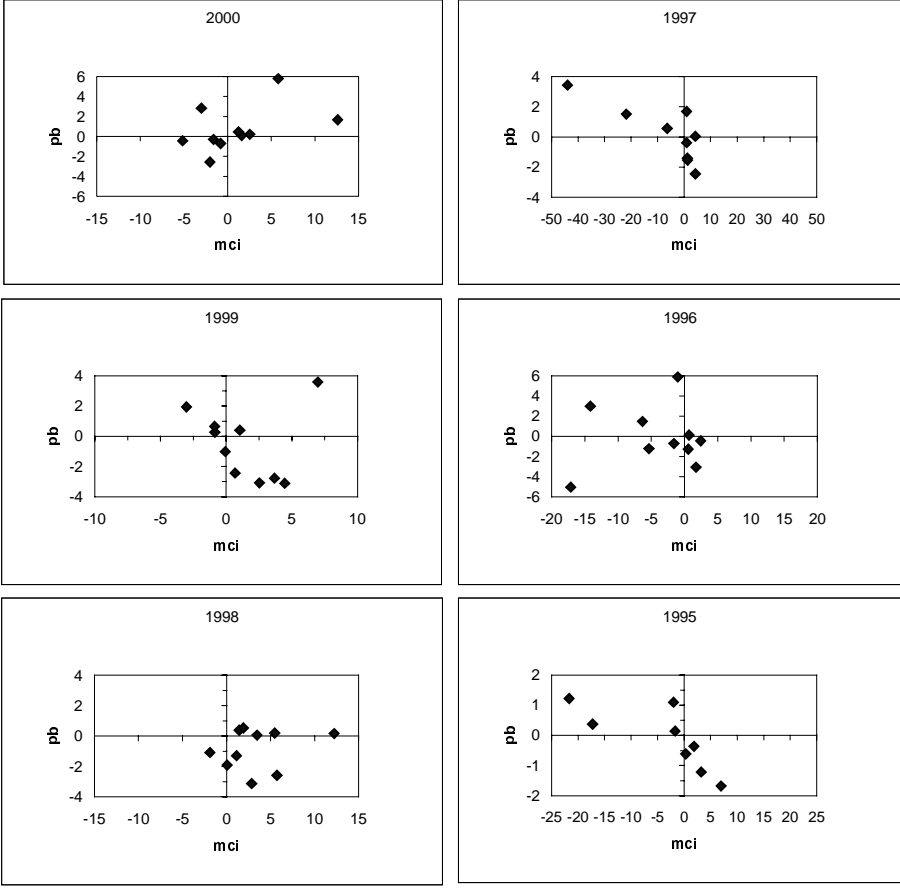
Shortness of the time series and changing structures a priori warn us not to expect much from this exercise. Why we have still decided to do this modelling is that this general framework allows us to put together all the factors influencing the adjustment both during the transition period and in the convergence period ahead.

We have nine years and 10 countries for the panel, with missing data for some of the countries. Data limitation (60 observations in average, due to the difference operators and lags) did not allow us to carry out structural VAR estimation. Instead, we used 3SLS estimation for the structural model.

When estimating the model the primary balances and MCIs described in Section 1 and 2 have been used for representing fiscal and monetary policy, respectively. Three additional exogenous variables have been included: (i) the output gap in the EU (OY^{EU}), representing the impact of external demand on output; (ii) the debt-to-GDP ratio (D) is used here as a signal-variable; if it increases, fiscal adjustment should follow; (iii) and the lending interest rate (I), replacing long term interest rates that are still missing in most PATCs. We have tested the effect of external equilibrium on the fiscal adjustment by including the lagged current accounts (CA).

The results of the stepwise model selection procedure can be summarised as follows:

$$Y = y\ (Y_{-1}, \Delta F, M_{-1}, OY^{EU}) \qquad\qquad (4)$$

$$\Delta F = f\ (\Delta F_{-1}, Y_{-1}, D_{-1}, CA_{-1}, M_{-1}) \qquad (5)$$

$$M = m\ (M_{-1}, \Delta F_{-1}, \Delta Y, \Delta I) \qquad\qquad (6).$$

Although we went from general to specific when testing the model, we had a few simple feedbacks in mind, often assumed in policy analyses and policy making, without any empirical support. We expected to arrive at a model specification allowing us to enhance or reject these relationships. The framework we wanted to test empirically can be briefly described as follows. When the fiscal stance was deteriorating in transition economies, monetary policy tried to counteract by tightening monetary conditions. The most important variable, signalling that fiscal adjustment could not be further postponed, was the increasing imbalance in the current account. Whenever the sustainability of external equilibrium becomes uncertain, threatening by crises from international markets, it represents an 'efficient stimulus' to governments to cut next year's budget in order to meet consistency requirements. Then, output growth is cut temporarily by both the fiscal restriction and the preceding monetary tightening. Monetary easing (unanticipated

devaluation and surprise inflation) is almost always an accompanying phenomenon after crises, but its positive effect on output growth could only prevail when the credibility of new policies is strengthened. Although the limited validity of our results is obvious, we believe that a comparison with the model estimated for the OECD countries may provide some useful insights.[24]

Table 7. Estimation[*] results for PATCs

1	Dependent variable: GDP growth rate	Coef.	t-ratio	OECD[**]	t-ratio
	GDP growth rate (-1)	0.437	2.7	0.234	4.5
	Δ Primary balance (-1): BG, EE, LT, LV	0.134	0.5		
	Δ Primary balance: CZ, HU, PL, RO, SI, SK	-1.507	2.1		
	Δ Primary balance to GDP ratio (-1)			-0.117	1.9
	MCI (-1)	-0.074	1.0	-0.168	2.0
	Δ Output gap of EU15			0.733	9.4
	Output gap of EU15	2.258	2.0		
	Constant	3.054	3.5	1.967	9.1
	$\overline{R}^2$	0.151		0.321	
2	Dependent variable: Δ Primary balance to GDP ratio				
	Δ Primary balance to GDP ratio (-1)	-0.193	1.5	-0.33	5.6
	GDP growth rate			0.179	2.0
	GDP growth rate (-1)	-0.253	3.1	0.076	1.5
	Debt to GDP ratio (-1)	0.010	1.6	0.055	6.4
	MCI (-1)	0.003	0.1	-0.284	3.1
	Current account deficit (-1)	0.197	3.1		
	Constant	-0.673	1.1	-2.45	2.0
	$\overline{R}^2$	0.197		0.245	
3	Dependent variable: Monetary conditions index				
	MCI (-1)	0.543	6.4	0.531	9.9
	Δ Primary balance to GDP ratio			0.281	3.1
	Δ Primary balance to GDP ratio (-1)	0.664	2.3	0.158	3.9
	GDP growth rate			-0.098	1.5
	Δ GDP growth rate	0.165	0.7		
	Δ Lending interest rate	0.333	8.6		
	Long-term interest rate (-1)			0.032	1.6
	Constant	0.044	0.1	-0.613	1.8
	$\overline{R}^2$	0.678		0.245	

* 3SLS estimation using all the predetermined variables, time and country dummies as instruments.

** Baseline estimates are from von Hagen et al. (2001) p. 58.

All three equations have non-negligible explanatory power and point out relevant features, not contradicting the policy conclusions based on less sophisticated approaches.

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[24] The re-estimated model for the EU-11 countries in the period 1990-98 did not have really strong explanatory power (see in von Hagen et al., 2001 p. 61), therefore we have preferred to use as a reference the model version estimated for the OECD.

Output growth in PATCs has been strongly affected by the cyclical position of EU countries, which is consistent with the high level of integration of candidate countries. Fiscal tightening has quite strong instantaneous impact on growth. The fiscal impact, however, differs according to two country groupings. The fiscal tightening has the expected restrictive (negative) effect on output in the majority of transition economies, though the parameter is extremely large and seems quite implausible. The coefficient of fiscal policy is positive and insignificant for Bulgaria and the Baltic countries, according to the panel estimation. How to explain this lack of relationship for the second group? These countries – mostly operating under strong exchange rate commitment - have been successful in keeping their budget under control without the usual negative effect on output. The monetary conditions have a negative lagged - although insignificant - effect comparable to that in developed countries.

The fiscal policy variable reacts negatively to its own lag and to the lagged GDP growth rate. Interpreting the growth coefficient in comparison with OECD countries the difference is that in the PATCs the fiscal policy did not react directly to the output growth, while in the OECD the model supported the anti-cyclical character of fiscal policy. Neither the lagged debt ratio, nor the lagged MCI is significant. Instead, we have found that the lagged current account deficit exerts a very strong and positive effect on the fiscal stance. Whenever the current account deteriorated, the fiscal policy moved into tightening direction. A 1 per cent increase in the current account deficit induced a 0.2 per cent fiscal adjustment in the following year. We believe that the insignificant monetary and debt reaction parameters should not be interpreted as the fiscal policy was neutral to monetary tightening or indebtedness in transition countries - where the high debt was a real problem - but rather that the effect of these variables prevailed through increasing external imbalances, making fiscal restriction unavoidable. The difference between the fiscal adjustment patterns of developed and transition countries is obvious: developed countries are more indebted and monetary instruments have a stronger impact on the fiscal stance, while the reaction of fiscal policy in the small, open transition countries is more directly linked to the external imbalance.

Monetary policy depends on its own lag positively. The specification calls for the inclusion of a long-term interest rate representing how the change in the yield curve (inflation expectation) influences monetary decisions. In the majority of PATCs[25], however, long term instruments and interest rates did not exist for the whole observation period, and

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[25] Long-term interest rates according to Maastricht (10 year Tbonds) do exist in countries, like Hungary and Poland, having more developed government securities markets, but they still have only limited liquidity.

therefore we included the change in lending interest rate. It is positively signed and - not surprisingly - highly significant. Output growth change had an insignificant positive impact instantaneously. The lagged change in primary balance has a significant positive impact on monetary policy, comparable with developed countries.

5   Conclusions

The experience of the EU-12 'catching up' economies in the run-up to EMU revealed that the steady tightening of the fiscal stance was a major precondition for sustainable convergence in fast growing, small open economies, such as the PATCs. The process of establishing transparency in government finance, which should involve the identification and elimination of loss- (hidden deficit) and public debt-producing quasi-fiscal activities, has not yet been completed even in the most advanced of PATCs. Therefore, looking at the headline indicators of general government balances and debts, it is not easy to make judgement about the necessary fiscal adjustment for an early Euro-zone membership, which is 2006-2007 for the first wave of PATCs, according to the present schedule.

The model estimation for the transition period proposes that the external imbalance has the strongest impact on fiscal policy reaction and the monetary policy reacts with tightening to the acceleration of growth only if the fiscal stance deteriorates as well. The analysis of public debt dynamics and investment-saving conditions suggests that the requirement of current account sustainability remains the major binding condition over the convergence period.

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Appendix 1. Data

For the above analysis we used time series for the 1990s. We decided to include data for 1992-2000, when the initial transition shock was already over. We included 2000, though most of the data available are preliminary, as adjustment to market conditions has accelerated towards the end of decade and analysis should be focused on recent development as much as possible. The data used for the computations presented in this paper were collected from several sources: EBRD, IMF, UNECE, Deutsche Bank Research published databases, IFS and GFS publications, EU Commission Regular Reports and Pre-accession Economic programs (if available) for the associated countries.

Appendix 2. Government Budget Constraint

The basic relationship in any analysis of the fiscal stance is the general government budget constraint, describing that deficit is financed by issuing public debt.

$$BB + SF = PB_t - i_t * D_{t-1} + SF = \Delta D_t \tag{A}$$

where: BB   general government budget deficit,

                 PB   primary deficit,

                 i   nominal interest rate,

                 D_{t-1} outstanding public debt at the end of t-1,

                 SF   stock - flow adjustment,

                 ΔD change in public debt.

The government debt can be held either by the private sector or by the central bank.

$$\Delta D_t = \Delta DT_t + \Delta DG_t = \Delta DD_t + \Delta e * \Delta DF_t + \Delta M0_t - \Delta e * \Delta NFL_t - \Delta NDC_t + \Delta NW_t \tag{B}$$

where: ΔDT change in total government debt outside the central bank,

       ΔDG change in net government liabilities at the central bank,

       DD   domestic debt,

       DF   foreign debt,

       e   exchange rate;

and the net government liabilities are substituted from the balance sheet of the central bank by

$$\Delta DG_t = \Delta M0_t - \Delta e * \Delta NFL_t - \Delta NDC_t + \Delta NW_t$$

where $\Delta M0$ change in the monetary base,

        ΔNFL change in net foreign liabilities,

        ΔNDC change in net domestic credit,

        ΔNW change in net wealth.

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