

R A P O R T Y C A S E
C A S E R E P O R T S

*Centrum Analiz
Społeczno-Ekonomicznych*



*Center for Social
and Economic Research*

M a r e k D ą b r o w s k i

**Macroeconomic and Fiscal
Challenges Facing Central
European Countries during
the EU Accession Process**

W a r s a w , 1 9 9 9

No. 26

The views and opinions expressed in this publication reflect Author's point of view and not necessarily those of CASE.

This paper was prepared for the research project No. P 96-6089-R (ACE PHARE Programme 1996) on "The Medium and Long-term Perspectives of Fiscal Adjustment of Selected Central European Countries".

CASE gratefully acknowledges financial support from ING Barings, that made this publication possible.

DTP: CeDeWu – Centrum Doradztwa i Wydawnictw
"Multi-Press" Sp. z o.o.

Graphic Design – Agnieszka Natalia Bury

© CASE – Center for Social and Economic Research,
Warsaw 1999

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, without prior permission in writing from the author and the CASE Foundation.

ISSN 1506-1647 ISBN 83-7178-175-X

Publisher:

CASE – Center for Social and Economic Research
ul. Sienkiewicza 12, 00-944 Warsaw, Poland
tel.: (48 22) 622 66 27, 828 61 33
fax (48 22) 828 60 69
e-mail: case@case.com.pl

Marek Dąbrowski
Professor of Economics
V-Chairman and one of the founders of the CASE
– Center for Social and Economic Research in Warsaw

From 1991 involved in policy advising for governments and central banks of Russia, Ukraine, Kyrgyzstan, Kazakhstan, Georgia, Uzbekistan, Mongolia, and Romania; 1989 – 1990 First Deputy Minister of Finance of Poland; 1991 – 1993 Member of the Sejm (lower house of the Polish Parliament); 1991 – 1996 Chairman of the Council of Ownership Changes, the advisory body to the Prime Minister of Poland; 1994 – 1995 visiting consultant of the World Bank, Policy Research Department; from 1998 Member of the Monetary Policy Council of the National Bank of Poland. Recently his area of research interest is concentrated on macro-economic policy problems and political economy of transition.

Abstract

At the end of 1997 five transition countries – the Czech Republic, Estonia, Hungary, Poland, and Slovenia – were invited to start negotiations on their accession to the EU. Three other countries – Latvia, Lithuania, and Slovakia – may still join the first group. Two other countries – Bulgaria and Romania – have concluded free trade and association treaties with the EU and have less clear accession perspectives, as their transition performance has lagged behind the frontrunners.

The purpose of this paper is to present an overview of the main macroeconomic and fiscal challenges that may appear during the accession process, and indeed post-accession.

Attention will be concentrated on fiscal problems, since fiscal performance plays a crucial role in determining of macroeconomic balances. At the same time, it also often reflects the progress achieved in structural and institutional reforms.

The paper summarizes the results of the comparative ACE-PHARE research project on "Medium and Long-Term Perspectives of Fiscal Adjustment of Selected Central European Countries" (P96-6089-R), which covered four Central European countries: the Czech Republic, Hungary, Poland, and Romania.

Contents

ABSTRACT	5
1. Introduction	8
2. Is catching-up to EU national income levels likely?	9
3. Balance of payments problems	10
4. Disinflation, monetary and exchange rate policies.	13
5. Fiscal outlook at the beginning of the accession process.	15
5.1. Fiscal imbalances and public debt	15
5.2. High level of fiscal redistribution	16
5.3. Hidden fiscal liabilities	17
6. Medium and long-term fiscal sustainability	17
6.1. Long term sustainability test	17
6.2. Revenue and expenditure projection	19
6.3. Fiscal challenges connected with the accession process	21
7. Review of some crucial expenditures and revenues items.	21
7.1. Public pension programs	21
7.2. Health care	23
7.3. Agriculture sector	24
7.4. Indirect taxation	25
7.5. Direct taxation	26
8. Concluding remarks	28
References	30
Tables and graphs	33

I. Introduction

At the end of 1997 five transition countries – the Czech Republic, Estonia, Hungary, Poland, and Slovenia – were invited to start negotiations on their accession to the EU. Three other countries – Latvia, Lithuania, and Slovakia – may still join the first group. Two other countries – Bulgaria and Romania – have concluded free trade and association treaties with the EU and have less clear accession perspectives, as their transition performance has lagged behind the frontrunners.

Until now (i.e. spring of 1999) accession negotiations have concentrated on various institutional, legal, and micro-economic issues. The macroeconomic problems of candidate countries have not been discussed extensively as yet, and it is not clear what kind of macroeconomic criteria will be finally applied as conditions of membership. Most researchers and analysts while discussing the macroeconomic perspectives of candidate countries traditionally refer to the five criteria set by the Maastricht Treaty. However, these were formally binding only on the first group of the EMU candidates and will not be automatically applied to the new EU members [see Kosterna, 1998, p. 10]. Moreover, as we shall see below, these criteria are not necessarily always relevant to the specificities of the macroeconomic situation of candidate countries.

The above does not mean that the candidate countries will not face serious macroeconomic and fiscal challenges or that these problems will not complicate the accession process. At the moment, this issue is overshadowed by the negotiations relating to the legal harmonization process and the restructuring of certain sensitive sectors. Assessing the macroeconomic situation of candidate countries using the Maastricht criteria gives the erroneous impression that they are already close to fulfilling the requirements of EMU membership, and will not experience serious problems with macroeconomic convergence. In addition, too frequent acknowledgement of the leading position of some countries in the transition process (particularly of Hungary or Poland) does not also help them face the scale and nature of possible difficulties.

The purpose of this paper is to present an overview of the main macroeconomic and fiscal challenges that may appear during the accession process, and indeed post-accession.

Attention will be concentrated on fiscal problems, since fiscal performance plays a crucial role in determining of macroeconomic balances. At the same time, it also often reflects the progress achieved in structural and institutional reforms.

To this end, the paper will summarize the results of the comparative ACE-PHARE research project on "Medium and Long-Term Perspectives of Fiscal Adjustment of Selected Central European Countries" (P96-6089-R), which covered four Central European countries: the Czech Republic, Hungary, Poland, and Romania [1]. The first three are already involved in accession negotiations and are widely considered as leaders of the post-communist transition process, while Romania has still to complete the first stage of transition, and its EU accession perspectives are as yet unclear.

Our analysis will start from the differences in GDP per capita between the CEECs and EU member countries, relative growth performance, and growth prospects (section 2). Then we will turn to problems of financing growth, i.e. the savings-investment gap, capital inflows, and current account deficits (section 3). This will be followed by an analysis of monetary and exchange rate policies and inflation performance (section 4). Fiscal policy may play an important role in supporting the disinflation process, mitigating excessive current account deficits, and creating favorable conditions for economic growth. At first glance, the current fiscal situation of the countries analyzed does not look bad (though it is differentiated), but there are a number of problems that are not reflected in the standard cash-basis fiscal statistics. Examples are the implicit pension debt or contingent liabilities in the banking system (section 5). Moreover, the medium and long-term fiscal perspectives of the countries analyzed depend strongly on the expected rate of GDP growth, and under a low growth scenario, they are very bad indeed. The accession process itself will also influence both the expenditure and revenue sides of the applicants' budgets. This means that a further fiscal adjustment may be needed in order to meet these challenges (section 6). Such an approach leads us to a more detailed analysis of some aspects of both revenue and expenditure policies, and also of institutional reforms which determine the expenditure side of the budget (section 7). Finally, we will try to specify possible strategies for dealing with the problems identified (section 8).

[1] The summary nature of this paper means that I will extensively draw from a number of other papers prepared under the same research project by its participants: Stanislaw Gomulka, Urszula Kosterna, Georges de Menil, Peter Mihalyi, Jacek Rostowski, and Pavel Stepanek (project partners), and Max Gillman, Michal Gorzelak, Piotr Jaworski, Wojciech Maliszewski, Jaroslaw Neneman, Ryszard Petru, Ondrej Schneider, Joanna Siwinska, Marek Styczeń, Magdalena Tomczynska, Zoltan Vajda, Mateusz Walewski, and Katarzyna Zawalińska (research assistants). The mentioned papers relate either to problems of specific country or analyze certain problems from the cross-country comparative perspective. The contribution of individual authors will be noted and acknowledged. In addition, Atilla Hajos and Monica Iosif helped us to collect data on Hungary and Romania. Miroslaw Gronicki provided the econometric consultation. Stanislaw Gomulka and Jacek Rostowski helped author with final version of this paper. However, author accepts sole responsibility for the content and quality of this paper.

2. Is catching-up to EU national income levels likely?

Former communist countries lost at least a half-century of normal economic development. The nature of their growth built serious structural distortions into their economies, which made them highly inefficient, compared to the rest of the world. This led to an unavoidable output decline after the collapse of communism [see Gomulka, 1998]. According to the simulation of Fischer, Sahay, and Vegh (1998a), GDP per capita in the six Central and East European countries, i.e., Bulgaria, former Czechoslovakia, Hungary, Poland, Romania, and former Yugoslavia, would have been at least three times higher on average by 1992, if they had continued the capitalist way of development after WWII. Making up for this lost time will take at least 15 years in the case of the Czech Republic, 20 years in the case of Hungary and Poland, and 30 years in the case of Romania.

Table I illustrates the 1995 per capita GDP level of the candidate countries calculated in PPP terms and compares it with the average GDP per capita level of three lowest income countries in the EU, i.e. Greece, Portugal, and Spain. The gap ranges from 74% of the average EU level in the case of Lithuania to 30.1% in the case of the Czech Republic.

After a few years of output decline, the countries, which were more advanced in the transition process returned to economic growth, when first set of necessary market reforms began to bear fruit. However, the rate of growth has been uneven, as is demonstrated in **Table 2**.

So far, Poland has presented the best cumulative growth record. However, one must take into consideration that Poland was the first country to start comprehensive economic reforms (at the end of 1989) and the first to overcome the output decline (in 1992). Among countries which began transition somewhat later Slovakia, Slovenia, and the three Baltic countries can also be classified as fast growing countries. Hungary, starting its transition very early, was surprisingly a slow growing country until 1996, partly as a result of the 1994–1995 macroeconomic crisis. The Czech Republic, another reform leader recorded only one year of fast growth (1995), while 1998–1999 has brought a return of output decline. Again, the macroeconomic crisis of 1997 seems to be at least a partial explanation for this phenomenon. Romania started its economic growth relatively early (1993), in spite of very limited progress in macroeconomic stabilization and microeconomic restructuring at that time. This "premature recovery" led to a macroeconomic crisis in

1996–1997, which turned into a serious recession in 1997–1999. The same happened with the Bulgarian growth experience of 1994–1995, which ended with one of the most severe financial crises in the whole transition and a deep output decline in 1996–1997. Due to a very tough reform program, Bulgaria seems to have returned to economic growth, as is reflected by its 1998 results.

Explaining the "transformation recession" and the subsequent recovery and growth, as well as their differentiation across countries is no easy task [see Gomulka, 1998]. Relatively short time series, of not necessarily good quality, and inherent difficulties in measuring various qualitative factors influencing growth behavior, make any econometric analysis quite risky. However, most attempts [2] have come to the following conclusions:

1. The size and length of the initial transformation output decline [3] was determined both by the size of accumulated macro- and microeconomic distortions, and by the transition policy pursued by governments.

2. During the recovery, the conventional determinants, i.e. investment, labor, and human capital accumulation, played only a limited role. The reallocation of existing resources as result of elimination of previous distortions (e.g. price and trade liberalization) seems to have been much more important. Thus, uncharacteristically of other depressions, macroeconomic stabilization, and progress in structural and institutional reforms usually emerge as the most important factors determining growth performance.

3. External trade shocks and political shocks also seriously influenced growth, at least in the short run. Among many such impulses, one can mention the succession of Balkan conflicts or the financial crisis in Russia and other CIS countries in 1998 (which affected Poland and the Baltics in 1998–1999).

4. Once the initial recovery is completed, further growth will probably be determined, to a greater extent than before, by conventional determinants, i.e. investment, labor, and human capital.

This last conclusion brings us to the problem of the growth prospects of the candidate countries. There is a widespread expectation that these economies will grow faster than the current EU members, gradually closing the development gap. The first obvious argument supporting such an expectation is based on the well known convergence hypothesis: countries with lower initial GDP per capita usually grow faster, other things being equal, than countries with higher GDP per capita level [see Barro and Sala-i-Martin, 1992; Sachs and Warner, 1996].

Rostowski (1999) gives a number of additional arguments connected with the expected continuation of eco

[2] Among the latest ones see e.g. De Melo, Denizer, Gelb and Tenev (1997), Fischer, Sahay and Vegh (1998b), Havrylyshyn, Izvorski, and van Rooden (1998), IMF (1998a). All these exercises base on the theoretical foundation of the contemporary endogenous growth theory.

[3] It should be noted that the size of this decline has been usually overestimated for many methodological reasons. Overestimation of the initial GDP level, underestimation of the unofficial sector rapidly expanding during transition, difficulties with estimating quality changes are the most frequent statistical problems observed in individual countries.

conomic reforms. EU candidate countries will probably be fast growing for the following reasons:

1. They have stopped pursuing the very bad economic policies, which they had in the past under central planning (pervasive government control, extensive subsidies, massive foreign trade distortions, etc.).

2. The existence of considerable gains from learning by doing within the institutional infrastructure of the market economy, which was initially non-existent (e.g. the bankruptcy courts, customs services, and financial institutions), which can be expected to continue for some time to come.

3. New structural reforms which are coming on stream (e.g. pensions' reform, privatization of utilities).

4. Expected benefits of EU and EMU membership.

In the light of the earlier discussion of the sources of early post-transition recovery, one needs to ask to what extent these potential sources of growth have already been used up (particularly the first two factors). Visual inspection of **Table 2** does confirm the feasibility of the fast growth hypothesis (at a rate of at least 4–5%) though there is no guarantee that such a high rate will be sustained through the whole of the next decade. Among the first group of candidates, the Czech Republic seems the most problematic. Among the remaining five countries, Romania appears to be in the most dramatic situation.

Using 1995 GDP per capita PPP based data, Fischer, Sahay and Vegh (1998a) tried to forecast the future average rates of growth of the CEE countries basing on Barro (1991) and Levine and Renelt (1992) growth equations. They also estimated the number of years needed by each country for convergence to the average level of per capita GDP of the three lowest income EU countries (Spain, Portugal and Greece), assuming that the latter will grow at an average annual rate of 2%. Results are presented in **Table 3**.

Two important conclusions can be drawn from this simulation. First, growth rates in the range of 5–7% seem to be a realistic forecast [4]. Thus, the fast growth hypothesis may be taken as a reasonable assumption for projecting other macroeconomic and fiscal variables. However, such an optimistic scenario strongly depends on further progress in economic reforms and sound economic policy. Second, even the fast growth scenario does not give prospects of fast convergence, even to the lowest-income EU countries. In the best case (that of the Czech Republic), according to Barro equation catch-up will take 11 years, in the worst cases (Lithuania, Romania) – more than 30 years. Such a long lasting convergence may create many economic, social, and political problems, which may themselves complicate the accession process.

Growth prospects have important implications for other macroeconomic variables and policies. The fast growth

hypothesis implies, for example, strong pressure for real appreciation and expanding current account deficits on the one hand (see next section), but on the other it also gives much more room for maneuver in the fiscal policy sphere (see section 6). A slow growth scenario makes balance of payments problems less acute, but seriously challenges the sustainability of the long-term fiscal position of candidate countries.

3. Balance of payments problems

A fast growth scenario in the candidate countries (far faster than the UE itself) will lead to continuous real appreciation of national currencies and widening current account deficits. These phenomena can be explained from at least three theoretical points of view:

1. The investment-saving imbalance (balance of payments identity).

2. Consumption smoothing models.

3. Real appreciation coming from the Harrod-Balassa-Samuelson (H-B-S) effect.

Focussing on the investment-saving imbalance, a high growth scenario may require an increasing investment to GDP ratio as non-investment sources of growth (improving X-efficiency and the efficiency of factor allocation) have been substantially exploited in the first stage of the post-transition recovery in a number of countries. **Table 4** presents the investment and saving data for eight candidate countries: Bulgaria, the Czech Republic, Estonia, Hungary, Poland, Romania, Slovakia, and Slovenia. Both indicators are highly differentiated across the countries, which may partly reflect measurement problems. However, some interesting observations can be drawn from this table as well as from **Table 5**, which records current account balances of the ten candidate countries.

Apart from Bulgaria and Slovenia, the candidate countries record in 1997 insufficient savings (relatively to investment) and, as a result, current account deficits. Moreover, in almost all countries significant deterioration of the current account balance can be observed from the mid 1990s. In 1997 in the Czech Republic, Estonia, Latvia, Lithuania, Romania, and Slovakia current account deficits exceeded in the 5% of GDP level, which is usually considered as the threshold indicating external vulnerability.

Apart from the Czech Republic, Romania, and Slovakia, the gross domestic investment to GDP ratio seems to be too low to permit the fast growth scenario [5]. Mediterranean countries (Portugal, Spain and Greece) during their accession process to the EU and just after accession record

[4] Table 3 contains forecasted rates of growth of GDP per capita. If we assume some population growth it will give a higher GDP growth rates.

[5] We do not have opportunity to analyze effectiveness of the existing investment spending. We can only suspect that in countries less advanced in transition process, particularly delayed in microeconomic restructuring at least part of estimated investment spending can be of very low efficiency.

ed gross investment rates of about 30–35% of GDP [Jakubiak, 1999]. This may indicate the scale of investment growth to be expected in the candidate countries in the coming decade.

The current investment boom in some candidate countries may support the above hypothesis. For example, in both Poland and Slovakia real gross fixed investment has increased at an average annual rate of 20% during 1995–1997, and in Poland the rate of increase has accelerated in each successive year [EBRD, 1998, p. 223].

Increasing gross domestic investment to GDP will need increases in either gross domestic saving or in the current account deficit. Gross domestic saving rates to GDP are determined by number of policy and institutional factors, many of them historical (for example, high inflation episodes, or financial crises in the past). One may expect that continuing disinflation, further development of the financial sector, and the introduction of funded pension systems, will push up the savings rate. Nevertheless, increasing the savings rate is likely to be a very gradual process, conditional on a number of developments [see Liberda and Tokarski, 1999 for Poland]. Thus, further widening of current account deficits due to the import of foreign savings seems to be unavoidable in most countries.

Importing foreign savings, i.e. capital inflow, also has its own supply side dynamics. There are a number of "supply factors" inducing capital inflows, which are likely to be present in the applicant countries [Rostowski, 1999]:

- Consequences of H-B-S effect (see below). Increased productivity in the tradable goods sector and increased relative prices in non-tradables lead to an increased return on capital in both sectors in the fast growing country.

- Progressive liberalization of capital flows in candidate countries.

- Increased maturity of the institutional infrastructure will strengthen creditors' property rights and exit possibilities for shareholders [6]. The prospect of imminent EU membership can be expected to raise foreign investors' awareness of the progress, which has been made in this regard.

However, massive inflows of foreign savings, even if provoked by supply side factors, may crowd out part of domestic savings. This can happen through the interest rate channel: other things being equal, capital inflows put downward pressure on interest rates discouraging domestic savings.

Likely, saving behavior can be also assessed from the intertemporal consumption smoothing perspective. People who expect to be richer in the future than they are at present will behave rationally if they smooth their consumption

path by borrowing today in order to consume more now, and repaying their debt later. At the level of a whole country this leads to foreign borrowing (capital inflow) and a current account deficit [Rostowski, 1999].

Finally, the H-B-S effect leading to continuous real appreciation of candidate countries' currencies should be discussed. Although H-B-S effect itself does not lead to worsening current account positions, as real appreciation of the domestic currency is matched by productivity gains [7], it can provoke other phenomena causing increased saving-investment imbalance [see Rostowski, 1999]. First, real appreciation means that national income measured in foreign currency rises faster than when it is measured in domestic currency. As a result, the command of domestic residents over foreign resources increases faster than indicated by the growth of real GDP at domestic prices (in which the inflation in the non-tradables sector is discounted). This higher than conventionally measured real growth justifies more smoothing of consumption, and a higher current account deficit than otherwise. Second, if a large part of the government's debt is denominated in foreign currency (as is the case in many transition countries) then real appreciation leads to a decline in the ratio of public debt to GDP, and therefore of the ratio of public debt to the potential tax base [see Siwinska, 1999a]. Even if Ricardian equivalence is only partial, residents can be supposed to expect a lower share of taxes in national income will be needed to service the existing public debt. This raises future disposable income and the desire to smooth consumption (and raise the current account deficit) along with it. Third, from the perspective of foreign investors, high expected growth rates and real appreciation in applicant countries means increasing asset values. This may induce a further inflow of capital to buy while the assets are still relatively cheap, worsening current account balance.

Why is the problem of avoiding "excessive" current account deficits so important for the macroeconomic policy of candidate countries? If transition economies have the possibility of importing additional savings that contribute to a higher rate of economic growth, why reject such an opportunity by restricting the current account deficit? Part of the answer has been already given: the "appreciation – capital inflow" bubble, secondly there is possible inefficient use of imported saving if domestic absorption capacities are inadequate. The history of the former communist countries and of developing countries gives many examples of the wasteful use of imported saving. The availability of cheap foreign financing can also discourage some countries from the fiscal adjustment effort required (a negative political

[6] In the presence of limited liability and asymmetric information in the provision of finance, there is increased risk to lenders as leverage increases, so that only part of the current account deficit can be financed through the accumulation of foreign debt by the private sector. The rest is financed by foreign direct investment (FDI).

[7] The H-B-S in transition economies was empirically analyzed by Halpern and Wyplosz (1995). For other empirical research see also Halpern (1996) and Maliszewska (1998).

economy effect). However, the potential unsustainability of a large current account deficit, and the unpleasant consequences of a sudden reversal of capital flows, is the most serious problem.

Rostowski (1999) points out the danger of a "capital inflow – real appreciation" bubble, with the real exchange rate rising ever more above its medium term equilibrium level [8] until, finally, the bubble bursts, causing a currency crisis and sometimes also a banking crisis. Sudden capital outflows and thus sharp pressure for devaluation can be also caused by external factors, such as a financial crisis in a neighboring country or rapidly worsening sentiment on the international financial markets. In any case, sharp devaluation may have serious negative consequences: it can undermine the solvency of the domestic banking and corporate sectors, increase burden of external debt service (both public and private), provoke a new wave of inflation, stop economic growth for a number of years, and seriously hurts a government's credibility. All these consequences could reduce the EU accession prospects of a country affected.

What kind of policies can help avoid "excessive" current account deficits and the danger of balance of payments crises? The answer is not easy. First, deciding on what is the sustainable level of the current account deficit seems an impossible task, particularly for very small open economies. Second, there is the problem of the absence of effective policy tools for keeping the current account deficit at the desired level.

In some of the transition economies (Hungary, Poland, and Slovenia) monetary and exchange rate policies have been used to try to prevent excessive real appreciation and deterioration of the current account balance (see next section). However, this has led to a softening anti-inflationary policy and has involved significant fiscal costs [see Dąbrowski et al., 1999], while the positive effects on the current account have been rather doubtful. Defending the exchange rate against nominal appreciation (or alternatively a reluctance to slow down the pace of nominal depreciation) could not prevent real appreciation through higher inflation or solve the problem of the fundamental saving-investment imbalance. As capital accounts of transition countries are being progressively liberalized, monetary policy will become even more ineffective for targeting the current account position [see Rostowski, 1999].

Fiscal tightening seems at first sight to be the other available measure keeping the current account position under control [see e.g. Rybiński and Szczurek, 1998]. Although fiscal adjustment, is, without any doubt, very desirable from the point of view of the medium and long term fiscal sustainability of candidate countries (see section 6), it may not

improve their current account positions as a "crowding in" phenomenon may well take place [see Rostowski, 1999]: improving fiscal balances will improve candidate countries' financial rating (decreasing country risk) and encourage more private capital inflow, which has to be balanced by a larger deficit on the current account.

Continuation of microeconomic and regulatory reforms may contribute to marginally decreasing demand for external financing on the part of financial and corporate sectors not exposed sufficiently until now to hard budget constraints [9]. Again, though positive from the point of view of avoiding the insolvency of part of the banking and corporate sectors (and the possible contingent fiscal consequences), it is unlikely that such developments will improve current account positions significantly.

The danger of balance of payment crisis could be eliminated through a radical change of the monetary regime, i.e. by the country's giving up its independent monetary policy. This can either take the form of a currency board, or full substitution of the national currency by one of the main world currencies (in the case of EU applicant countries the euro is the most natural choice).

So far, three of the EU candidate countries, i.e. Estonia, Lithuania, and Bulgaria have introduced currency board arrangements, and have accomplished remarkable macroeconomic stabilizations. The very high current account deficits of Estonia and Lithuania (see Table 5), with no signs of serious speculative attacks against their currencies even during the August 1998 Russian crisis, show how effective currency boards can be in resolving the problem of balance of payment vulnerability.

A currency board regime has a fiscal advantage over the adoption of another country's currency: it allows the retention of seigniorage revenue. However, it can be still subject to speculative attacks, which is no longer the case once the domestic currency has been abolished (a new domestic currency would have to be created if the country concerned wished to leave the eurozone). Experience of attacks against the Argentinian peso after the Mexican and Asian crisis shows that it is not merely a hypothetical danger.

This is reason why recently the idea of total substitution of the domestic currency by one of the major international currencies has enjoyed an increasing popularity. A "dollarization" proposal for Argentina [see Hanke and Schuler, 1999] got the biggest publicity. Bratkowski and Rostowski (1999a, 1999b) proposed the idea of unilateral "euroization" for Poland, even before membership of the EU. Robert Mundell (1999) suggests either unilateral euroization or a currency board based on the euro as an attractive option for all the EU candidate countries. The authors concerned stress the

[8] And the current account deficit rising ever more above its sustainable level. The IMF has a very crude procedure for estimating the level of a country's sustainable current account deficit [Knight and Scacciavillani, 1998].

[9] It relates, for example, to big state owned banks or big infrastructure monopolies such as railways, energy producers and suppliers, etc.

following benefits: (i) importing low inflation, (ii) importing low interest rates, and (iii) importing the scarcity relationships from the EU countries.

Certainly, giving up monetary independence will not totally eliminate the problem of sudden capital outflow provoked, for example, by bad economic policy, deterioration of the fiscal position or unfavorable political developments. Such an outflow may cause, among other things, a stock market crash, contraction in the real sector and increased unemployment. However, some of the reasons for possible sudden capital outflow (a current account deficit perceived as "excessive", expectation of changes in exchange rates, limited credibility of domestic monetary policy, etc.) will no longer exist, and the country concerned should be able to enjoy the benefits of greater macroeconomic predictability and stability as well as lower international transaction costs.

On the other hand, the exchange rate will no longer serve as a shock absorber, or as a mechanism compensating for various microeconomic rigidities, particularly in the field of income policy. This may create pressure for the real sector to increase its flexibility. Since such a change in microeconomic behavior needs time, moving to a fixed exchange rate regime will probably cause some temporary output and employment costs. However, there are at least three serious arguments in favor of moving in this direction. First, the macroeconomic performance of Estonia shows that giving up independent monetary policy combined with tough fiscal discipline and fast microeconomic reforms can create very good foundations for sustainable economic growth. Second, and more fundamentally, the relation between macroeconomic policy and microeconomic reforms is that "...the former shifts around the burden of the problem while the latter solves the problem" [Gillman, 1999]. If an economy suffers microeconomic distortions (e.g. labor market rigidities), the first best solution is to eliminate these distortions, while attempts to compensate for them through macroeconomic policy clearly amounts to a second best solution. Thus, the complete elimination of the exchange rate mechanism as an accommodative mechanism may force economic agents into greater flexibility (as they cannot expect accommodative devaluation anymore), and may force governments to accelerate microeconomic reforms. Third, the first group of five candidate countries can be expected to join the third stage of EMU (adoption of the euro) in the relatively near future (at the latest by 2010), so the adjustment discussed above is unavoidable. Speeding up accession to the eurozone can bring them not only efficiency gains in the medium and long run, and eliminate the risk of balance of payments crisis in the meantime, but it also helps them avoid what is likely to be a very difficult and painful period of ERM-II membership [Bratkowski, and Rostowski, 1999a and 1999b].

4. Disinflation, monetary and exchange rate policies

In 1998 eight of the ten candidate countries found themselves with single digit inflation, while Hungary was a bit above the 10% threshold and Romania remained still in the zone of high inflation (see **Table 6**). Only Bulgaria, Lithuania and Latvia were close to the euro zone countries recent performance (1-1.5% in 1998) while Estonia and Slovenia were next in this ranking. All other countries have still a quite long way to converge to the euro zone inflation performance and to meet Maastricht inflation criterion (i.e. inflation not exceeding the average of the three best performers within EMU + 1.5 percentage points). In addition, it is necessary to note that strong deflationary trends on the international oil and other basic commodities markets contributed significantly to impressive disinflation progress in all countries recorded in Table 6. As this deflationary trend is being reversed in the course of 1999 the question of how sustainable the disinflation achieved in 1998 is remains open.

Looking back into all the transition period, only the three Baltic countries show a fast and continuous trend of disinflation from the hyperinflation of 1992 to the low one digit level, close to that of the EU. Poland also started from near-hyperinflation in the second half of 1989 and followed a continuous disinflation path. However, the speed of Polish disinflation has not been as impressive and its current level is higher than that of the Baltic countries. On the other extreme, Hungary never had 12 consecutive months' inflation higher than 35% but it had not manage to decrease CPI inflation below 18% by the end of 1997. The Czech Republic and Slovakia experienced relatively limited and short lived inflation jumps resulting from price liberalization (in 1991 end of year inflation reached 52.0% in the Czech Republic and of 58.3% in Slovakia). From 1994 until the end of 1997, the 12-month inflation rate stabilized around 8-10% in the Czech Republic and 6-7% in Slovakia. A similar situation can be observed in Slovenia. Only 1998 brought more substantial disinflation in these four countries, but it is not yet clear whether the low inflation level be sustained given the reversal of price trends on the world commodities markets. Bulgaria and Romania have become examples of several stabilization failures due to weak monetary and fiscal policies, and an inability to impose the hard budget constraints on large enterprises and commercial banks. Bulgaria seems to have finally learned from its mistakes, has introduced a currency board regime in 1997, balanced its budget and accelerated the pace of microeconomic reforms, while Romania continues balancing on the verge of financial crisis.

The slow pace of disinflation in the Central European countries, which are the most advanced in the transition process, can be explained by the generally accommodative

character of their monetary policies. In Hungary and Poland (until the end of 1997) central banks have regularly financed fiscal deficits (**Table 7**). This has also happened, at least occasionally, in the Czech Republic and Slovakia. Additionally, the National Bank of Hungary was deeply involved in quasi-fiscal operations (see **Table 8**), connected mainly with servicing public foreign debt on behalf of government.

Exchange rate policies oriented towards export promotion and current account targeting, rather than supporting disinflation have been another part of this story. This has been the case formally in Poland and Hungary, which have used a pre-announced crawling peg devaluation regime and in Slovenia, which has done the same in less formal way. Such an orientation of exchange rate policy not only deprives a small open economy of the most effective anti-inflationary anchor [see Dąbrowski et al., 1999; Antczak and Górski, 1998] but also causes serious complications in controlling the money supply. Struggling against market pressure for nominal appreciation (or at least for slower depreciation than induced by the crawling peg/crawling band mechanism) the central bank must regularly purchase foreign exchange. In order to avoid uncontrolled growth of money aggregates central bank interventions on the forex market must be heavily sterilized by decreases in the net domestic assets of the central bank. This reduces the level of reserve money but involves significant fiscal and quasi-fiscal costs. The frequent appearance of negative signs in the net value of quasi-fiscal operations for Poland and Slovenia (see Table 8) indirectly reflect the size of their central banks' involvement in defending the exchange rate against appreciation through sterilization operations.

The slow and opportunist disinflation policies we have noted in most CEE countries have given hardly any benefits in term of better growth performance. On the contrary, empirical research related to transition economies [see e.g. Chrostoffersen and Doyle, 1998; Gillman, 1999] confirm the negative correlation between inflation and growth, as does research conducted on broader groups of countries [see e.g. Gosh, and Phillips, 1998].

In the light of the above analysis, monetary policy of some of the candidate countries should be seriously modified. Crawling peg/crawling band mechanisms which continue in operation in Hungary, and in much more liberalized version in Poland, are evidently inconsistent with the expected EU membership criteria. They also delay the perspective of inflation convergence, as they multiply inflationary consequences of the H-B-S effect. It seems very unlikely that candidate countries

will be allowed to continue this administratively orchestrated competitive devaluation. Indeed, on accession, the applicants will be probably asked to peg their exchange rates to euro under the ERM-II mechanism.

However, even an early abandonment of the crawling devaluation mechanisms does not solve the problem of internal inconsistency of the Maastricht convergence criteria: a fixed exchange rate (or early adoption of euro in the candidate countries as suggested in the previous section) remains in conflict with the inflation convergence criterion (i.e. inflation not exceeding 1.5 percentage points the average of the three best EMU performers), as a result of the expected much faster growth rate in the candidate countries than in the core EU countries (see section 2) and the H-B-S effect [Rostowski, 1999; see also Halpern and Nemenyi, 1999, for Hungary] [10]. In fact, this kind of inconsistency is already observed in the case of fast growing EMU members (Ireland, Spain).

Solving this dilemma can go in one of two opposite directions. The first would give priority to inflation convergence, delaying the date of the ultimate fixing the exchange rates of the candidate countries in relation to euro and, therefore, their EMU membership (and interest rate convergence). This variant implies nominal exchange rate appreciation with all the political costs and balance of payment risks connected with such a scenario [see Rostowski, 1999]. Moving in this direction will require a truly independent central bank able both politically and technically to pursue consistent disinflation targeting and build a strong anti-inflationary reputation. The second solution would be to go ahead with EMU membership, giving up the inflation convergence criterion after the ultimate fixing of candidate countries' exchange rates to the euro. Taking into consideration all the arguments, including balance of payment challenges discussed in the previous section, the second option seems to be more promising for the candidate countries growth prospects and overall macroeconomic stability. A slightly higher inflation in some regions of the common currency area, if only caused by the productivity differentials (the H-B-S effect), should not undermine the credibility of macroeconomic policy, the propensity of the population of these regions to save (here the introduction of the euro will have much bigger positive importance than any possible negative impact of a modest inflation differential), or investment/growth prospects.

[10] Assuming that real appreciation will come from the H-B-S effect only and that the share of tradables to GDP will amount ca. 50%, danger of violating the inflation convergence criterion will be actual if the growth rate difference will be higher than 3 percentage points.

5. Fiscal outlook at the beginning of the accession process

5.1. Fiscal imbalances and public debt

Fiscal adjustment was one of the most difficult and painful components of the transition process, reflecting in fact progress achieved in economic reforms and the quality of policy conducted during the transition period in individual countries [see Dąbrowski, 1998]. **Table 9** gives a general overview of the fiscal performance of the candidate countries.

The fiscal situation of the candidate countries is quite differentiated. Estonia and Slovenia record general government balances fluctuating around zero. Latvia recorded a substantial fiscal deficit early on, and subsequently improved its fiscal position achieving general government surplus in 1997. The Czech Republic and Poland represented moderate, stable levels of general government deficits in the range of 1–3% of GDP. Slovakia, generally belonging to moderate deficit group, recorded more volatility and deteriorating fiscal balances in 1997–1998. Hungary, Bulgaria, Lithuania, and Romania [11] represented high general government deficits, reflecting serious difficulties with fiscal adjustment. The first two have improved their fiscal performance in 1997–1998 [12], while Romanian fiscal disequilibrium remains severe. Lithuania, after improving general government fiscal position in 1997 deteriorated it again in 1998.

While the fiscal position of general government illustrates current flow imbalances, public debt statistics (**Table 10**) show the extent to which past imbalances have accumulated and what is a room for maneuver for fiscal policy in the future.

Individual countries started the transition with very different levels of public debt. Romania and Czechoslovakia had practically none. Bulgaria, Hungary, the former Yugoslavia, and Poland were heavily indebted, while the former USSR had a moderate level of indebtedness. After the collapse of the USSR, all of its foreign assets and liabilities were taken over by Russia (the so-called zero option). All other FSU countries, including the Baltic states started their independent existence with no debt. In the case of the former Yugoslavia, however, the principles of succession to former national debt are not fully yet agreed. Poland and Bulgaria were beneficiaries of large foreign debt reductions.

Hence, individual countries have differing scope for further expansion of public debt. Bulgaria presents the most

dramatic case. Despite 46% debt reduction from the London Club in July 1994 the total public debt still exceeded the level of 100% of GDP. Although Romania started the transition process with zero public debt, later it increased quite dramatically, particularly in 1996–1997. Latvia and Estonia have managed to keep their public debt close to zero. Lithuania, on the other hand, shows a strong upward trend in public debt/GDP, though the level remains relatively low as yet. Slovenia has a moderate, though steadily growing, level of public indebtedness.

The comparative study by Siwińska (1999a) gives a more detailed picture of the public debt structure and dynamics of four CEE countries: the Czech Republic, Hungary, Poland, and Romania [13]. Hungary and Poland, which entered the transition period with the largest debt burden, have managed to substantially lower their debt to GDP ratios. The improvement in the Hungarian debt ratio can be attributed to the conduct of fiscal policy, that resulted in primary surpluses, as well as to the inflow of non-debt deficit financing, mainly privatization receipts. The fall in the public debt ratio in Hungary was also due to a high nominal growth rate of GDP which was greater than the interest rate on public debt, which resulted in the economy "outgrowing" the debt. In the case of Poland the improvement can be assigned mainly to the external debt reduction, which was the result of the agreements with the Paris and London Clubs. Other important factors were also the high rate of real GDP growth and the real appreciation of the zloty. Both resulted in a phenomenon that has also occurred in Hungary, namely, that the nominal rate of GDP growth was bigger than interest payments on the debt. Romania has experienced an increase in the debt/GDP ratio, although its indebtedness is still lower than that of Hungary and Poland. The debt build up has occurred since 1994, and was especially strong in 1996 and 1997. The chief reasons are the high fiscal and quasi-fiscal deficit combined with a contraction of GDP.

The structure of the debt of the four countries analyzed has also undergone major changes. In the Czech Republic, Hungary and Poland, the share of foreign debt has fallen in favor of domestic debt. In Romania on the contrary, the share of foreign debt has substantially increased. The shift to market financing has resulted in a growing share of securities in domestic debt financing, and progress in the development of public debt markets and the growing credibility of governments has allowed lengthening bond maturities.

Although the debt ratios of Hungary and Poland are falling and both countries display primary surpluses, and the

[11] In the case of Romania, official fiscal statistics does not cover the quasi-fiscal operations of the National Bank of Romania actively conducted until 1996. For example, in 1996 general government deficit on the cash basis augmented by the fiscal deficit amounted to 6.5% of GDP instead of officially recorded 3.9% of GDP [Daianu, 1999].

[12] Bulgaria moved from high fiscal deficit (until 1996) to fiscal surplus position in 1998.

[13] The remaining part of this subsection draws extensively from Siwińska (1998).

debt ratios of Czech Republic and Romania are relatively low, each country faces hazards that threaten further fiscal sustainability. Although the Czech Republic seems to be in the best position among the four, the decline in its debt/GDP ratio has been reversed since 1997 due to devaluation of the *koruna*, GDP decline, and a significant loosening of fiscal policy [see Stepanek and Schneider, 1999]. Additionally, the Czech Republic, unlike Poland and Hungary, has not as yet resolved the problem of bad debts in the banking sector, therefore its true public indebtedness is seriously underestimated (see below).

Future fiscal developments in Hungary and Poland may prove vulnerable to negative shocks. Both countries face large interest payment obligations. In 1997, these reached almost 4% of GDP for Poland, and – 9% of GDP in Hungary. They are likely to increase in future. These payments are larger than the primary surpluses run by the governments of both countries, and therefore add to the debt accumulation process. Any slowing of GDP growth may cause the interest payments to outweigh the nominal GDP increase, which may lead to a snowball effect of growing debt-to-GDP ratio and interest payments (see next chapter). Poland, although it has small interest payments at present, will face an increasing debt service obligations after 2001 (as a consequence of the debt reduction agreements it has signed).

Superficial inspection of Tables 9 and 10 may suggest an optimistic assessment of the prospects for the convergence of the candidate countries on the EMU fiscal criteria as specified by the Maastricht and Amsterdam Treaties (the so-called Stability and Growth Pact). Apart from Hungary, the other countries in the group of the first five candidates formally meet both the deficit and the debt criteria for EMU membership. However, such optimism may be premature for many reasons. Some countries recently recorded a deterioration of their current fiscal balances (for example, Czech Republic and Slovakia). The level of fiscal redistribution is excessive (see subsection 5.2). Implicit pension debts are high where pension reform has not been implemented (everywhere except Hungary and Poland!), and some countries (Czech Republic) additionally have large unrecorded contingent fiscal liabilities (see subsection 5.3). Medium and long-term fiscal prospects are uncertain (see section 6). Additionally, the same ratio of the budget deficit and public debt to GDP that is easily financed in developed countries is not necessarily equally easily financed in transition economies, due to their lower level of monetization, less developed domestic financial markets and lower international financial ratings [see Kosterna, 1998]. These drawbacks can be probably removed only when applicant countries become members of the EMU.

5.2. High level of fiscal redistribution

Table 9 also illustrates the generally high level of fiscal redistribution of GDP in CEE transition countries. Looking at the ratio of general government expenditure to GDP in 1997 one can distinguish:

- A group of high spending countries (between 40 and 50% of GDP), which contains all of Central Europe – Hungary, Slovenia, Slovakia, Poland, and the Czech Republic.
- A group of medium spending countries (between 30 and 40% of GDP), which contains the three Baltic countries (Estonia, Latvia, and Lithuania), Bulgaria [14] and Romania.

According to "Wagner's law", the level of fiscal redistribution is positively related to the level of development. However, the general level of fiscal redistribution in the EU candidate countries is too high, in fact it is comparable with that in current EU members, which have a much higher GDP per capita. When Western European countries had the same level of economic development as the most developed Central European countries do today (some 30 years ago) their general government expenditure to GDP ratio did not exceed 30–35% [see Kosterna, 1998]. Similar (or even lower) levels of fiscal redistribution can be observed at present in Latin America, which has GDP per capita levels close to those of Central Europe.

The high share of government expenditure in GDP will not stimulate economic growth in the long run, as it reduces the rate of private saving available for investment financing. This effect is particularly adverse in transition economies where the rate of saving is rather low and government expenditure is strongly dominated by consumption spending (see below). The high tax rates needed to finance such large public expenditures [15] hamper private business activity and stimulate its outflow abroad (or to the shadow economy). In effect, high taxes lead to the erosion of the tax base. High social spending usually discourages legal employment and distorts the labor market. High government expenditure and revenues also create a temptation of discretionary fiscal redistribution. This, in turn, leads to distortions in resource allocation, tax evasion, intensive rent seeking, corruption, etc. Finally, the microeconomic effectiveness of government spending is generally lower than that of private spending. This relates both to consumption and investment expenditures.

Analyzing the structure of general government expenditure one must note the role of overly generous social programs, particularly pension systems that are responsible for the general over-expansion of government expenditures in transition countries and the crowding out of such items as public infrastructure investments. **Table 11** shows the level

[14] From 1997 only. Earlier Bulgaria belonged to the high spending group.

[15] We assume that high expenditure level must be eventually financed by taxpayers. If country runs a fiscal deficit, the latter will have to be covered either by the inflation tax (immediately or with certain time lag), or by higher tax burden in future (necessary to finance public debt service).

of social security transfers and **Table 12** – the size of public pension expenditures representing a major component of social transfers [16]. According to these data, only Lithuania and Romania could still avoid the trap of the 'premature post-communist welfare state'.

5.3. Hidden fiscal liabilities

Official fiscal statistics on a disbursement basis do not necessarily cover all fiscal activities and the entire fiscal disequilibrium of a country. An example is the restructuring of bank and enterprise debt by issuing special government bonds, as has occurred in Bulgaria, Hungary, Poland, and some other countries in the first half of 1990s. This increased public debt and future fiscal burdens though it was not reflected in the current budget composed on a disbursement basis [17].

So-called contingent fiscal liabilities, in the form of explicit and implicit public guarantees, constitute another form of potential fiscal burden reflected neither in budget deficits, nor in public debt statistics. As mentioned earlier, this is particularly important in the Czech Republic. The contingent fiscal liabilities in that country are estimated by Stepanek and Schneider (1999) at 12.7% of GDP in 1998 (see **Table 13**), i.e. higher than the officially recorded public debt. Furthermore, these liabilities are expected to expand rapidly in future. These liabilities were built up mainly in the process of isolating the bad debts of the banking and enterprise sectors and transferring them into special financial institution such as the Consolidation Bank, the Czech Encashment Corporation, and the Czech Financial Corporation. Losses by the National Property Fund and various kinds of credit, and export guarantees add to the overall balance.

Finally, implicit pension debt (unfunded pension liabilities) should be added to the overall specification of fiscal liabilities (see **Table 14**). Total implicit pension debt corresponds to more than 200% of GDP in Romania. The equivalent figures for Poland and Hungary before the pension reforms in these two countries were more than 300% of GDP in Poland, and more than 400% GDP in Hungary [see Gomułka and *Styczeń*, 1999] and Vajda, (1999). The implicit debt for those already retired turns out to be close to 100% of GDP in the Czech Republic, Hungary and Romania, but close to 200% of GDP in Poland. The main reason

for this difference is the unusually large number and size of disability and survivors' pensions in Poland (see section 7).

Comparison with the developed countries at the beginning of 1990s [18] shows that the four Central European countries analyzed are closer to the EU situation, rather than to that of the UK, US and Japan, where the level of implicit public debt is much lower. Poland and Hungary with their extraordinary high pension liabilities are close to Italy in 1990, while the Czech Republic's and Romania's obligations are similar to those of France and Germany.

6. Medium and long-term fiscal sustainability

Even the best current fiscal record can be misleading if it cannot be sustained for a longer period of time. In the previous sections, we mention various possible vulnerabilities and challenges facing candidate countries. In order to assess the fiscal perspectives of the four countries until the end of the next decade (year 2010) two different kinds of projections were prepared. The *first* [Maliszewski, 1998] starts from the requirement that each country meet Maastricht debt criterion (60% of GDP) [19] and estimates, under a number of exogenous assumptions related mainly to growth rates and interest rates, the primary fiscal balances required to achieve this aim. The *second* [Gorzela, 1999] projects revenues and expenditures and checks whether these primary fiscal balances of Maliszewski are feasible.

6.1. Long term sustainability test

The first projection [20] is based on the assumption that by the year 2010 the gross public debt to GDP ratio should not exceed the current one for Czech Republic, Poland and Romania and should be reduced to 60% in the case of Hungary already in the year 2002. The purpose of the projection was to find the primary fiscal balance consistent with this debt to GDP target. The required primary surpluses have been calculated according to the following formula:

$$-d_t \equiv b_{t-1}(r_t - g_t)(1 + g_t)^{-1} + b_{t-1}^* [(1 + r_t^*)(1 + a_t) - (1 + g_t)](1 + g_t)^{-1}$$

[16] It is important to note, however, that data presented in Table 12 may not be fully comparable due to a different tax treatment of the pension benefits. For example, in the Czech Republic pensions are not subject to personal income tax [see Tomczyńska, 1999a], and this distorts comparison with other countries. If taxes were applied, pension expenditure would be some 1.5% of GDP higher than officially reported [Gomułka, 1999].

[17] Markiewicz (1998) gives the extensive overview of different concepts and definitions of fiscal deficit.

[18] Since that time a number of OECD countries, for example Italy, carried out pension reforms that decreased burden of the implicit pension debt recorded in Table 14.

[19] The new Polish constitution of 1997 prohibits any actions, which could increase public debt to GDP ratio above the level of 60% [see Tomczyńska, 1999c].

[20] This subsection draws extensively from Maliszewski (1998).

where d is primary deficit to GDP ratio, b is the stock of domestic debt to GDP ratio, b^* is the stock of foreign debt to GDP ratio, r is the real interest rate on domestic debt, r^* is the real interest rate on foreign debt, a is the rate of real appreciation of domestic currency and g is real GDP growth.

This method is a simplification of the usual approach to the analysis of fiscal sustainability in developing countries outlined in Anand and van Wijnbergen (1989) or in Buiter (1997). The main difference is that the budget identities of the Government (Treasury) and the Central Bank are not aggregated into the single budget identity of the consolidated Government. The Central Bank is not introduced into the analysis since the contribution of the Bank's profits to Government revenues is small and diminishing in the countries under investigation. Central Banks in advanced transition economies are relatively independent, their main task is maintaining price stability and their fiscal functions are limited.

The following assumptions were made in the projection:

– Economic growth. For the 1998–1999 period the *Consensus* forecasts were used for Hungary and Poland, the Czech Ministry of Finance forecast were used for the Czech Republic and the author's own forecasts were used for Romania. For the remaining years two scenarios, one with high growth (5% per year) and the other with low growth (2% per year) for all countries have been considered.

– Real foreign interest rates. As a large share of foreign debt is denominated in US dollars foreign interest rates have been assumed to be equal to interest rate on US Treasury bonds plus a risk premium, which is different for each country. The real interest rate on US Treasury Bonds has been assumed to be constant at the 3 per cent level, which is consistent with a 5 per cent nominal interest rate and a 2 per cent rate of inflation. Risk premia for the Czech Republic, Hungary and Poland have been projected to remain on their October 1998 level, i.e. 1 percentage point for the Czech Republic, 1.5 percentage points for Hungary and 2 percentage points for Poland. After accession to the EU and ERM-II (in 2003 under the optimistic scenario and 2005 under the pessimistic) risk premia are expected to drop to 50 basic points and disappear completely after EMU accession (2005 under the optimistic and 2007 under the pessimistic scenario).

In the case of Romania, there were no grounds for assuming any particular date of accession to the EU, and therefore, 1998 situation has been extrapolated with a gradually declining risk premium – 7 percentage points in 1998, 10 percentage points in 1999 and gradually declining (by 10% annually) afterwards.

As actual interest rate paid on the Polish foreign currency denominated debt is significantly lower than in other countries due to a debt reduction agreement with the Paris Club, the World Bank projection of the principal and interest repayment until the year 2006 has been used. Thus, the share of the low-interest debt is declining over the projection period and the new debt has been assumed to be serviced at the market interest rate (as discussed above).

– Real domestic interest rate. Domestic and foreign determinants of the real interest rate have been identified, where the domestic component has related to GDP growth and the second element has been the real foreign interest rate. The weight given to the domestic determinant was assumed to decrease over time by one twentieth annually, dropping to 0.3 after EU accession and later to zero after EMU accession (with two variants of the accession date, as above). The initial weights given to the domestic component (0.3 for the Czech Republic, 0.5 for Hungary and Poland and 0.9 for Romania) has reflected the degree of integration of each country with international financial markets.

– Real appreciation of the exchange rate. In order to be consistent with the H-B-S effect (see section 3) an elasticity of the real exchange rate with respect to real GDP of 0.5 has been assumed. After joining the EMU, real appreciation of exchange rate is determined by the accession criteria. Since nominal exchange rates are fixed and the inflation rate cannot be higher than the average rate of three "best performers" by more than 1.5 per cent, we assume that the real appreciation after joining the mechanism will be 1.5 per cent [21].

For domestic interest rates and real appreciation different assumption have been used for the Czech Republic for 1998–1999 (forecasts of the Czech Ministry of Finance) and for Romania for 1999 (author's own forecasts).

Figures 1 to 4 show the simulation results for primary deficits (-) or surpluses (+).

The specific assumptions adopted for the 1998–1999 period have determined the results for the first years of the projected period. The assumption of low GDP growth explains initial primary surpluses in the Czech Republic. Similarly, the initial high growth allows for primary deficits in Poland and the expected strong real appreciation leads to the 1998 primary deficit in Romania. Reduction of the debt to GDP ratio in Hungary requires initial primary surpluses despite the high growth forecast for 1998–1999.

In the high growth scenario, the primary deficits permitted for the 2000–2010 period are similar for Hungary and Poland. Paradoxically, they are higher than the deficits allowed for the Czech Republic under the same assumptions. In the strategy of constant debt to GDP ratio, ana-

[21] This assumption can be questionable in the light of discussion on possible high real appreciation and conflict between the exchange rate and inflation criteria (see sections 3 and 4 of this paper). However, assumption on higher real appreciation does not have significant influence on projection results, as it will be shown in the next subsection.

lyzed here, gains from high growth and real appreciation are proportionally greater when the debt/GDP ratio is higher. Thus, keeping this ratio at the constant level constrains fiscal policy in the Czech Republic more than in the other transition countries. However, the reverse is true for the low growth scenario: the lower debt to GDP ratio requires lower primary surpluses to keep it constant. Thus, in this case the required surplus is lowest for the Czech Republic (below 0.2 per cent of GDP) and the highest for the most indebted country Hungary (about 0.65 per cent of GDP on average). The difference between the low and high growth scenario is the smallest for the Czech Republic (about 0.4 per cent of GDP) and significantly higher for Hungary and Poland (about 2 per cent of GDP).

For the Czech Republic, Hungary and Poland, the permissible deficits are the highest (with the high growth) and the required surpluses are the lowest (with the low growth) when the process of European integration is accelerated. Postponed accession to the ERM-II and to the EMU increases the risk premium and drives up the domestic interest rate (through the prolongation of the influence of the domestic component). Because of higher costs of borrowing, the resources required to keep the public debt to GDP ratio constant also increase. However, the differences between the early and late accession scenarios do not exceed 0.5 per cent of GDP annually for Poland and Hungary. The cumulated difference is also small: about 1.5 per cent of GDP for Hungary and below 1 per cent for Poland. For the Czech Republic, annual differences are negligible and the cumulated difference is below 0.25 per cent of GDP. Obviously, predicted gains from the accession crucially depend on the assumption about interest rate convergence.

The initial indebtedness of Romania is the lowest among the four investigated countries. However, poor macroeconomic performance and consequently very high-risk premiums increase the costs of foreign debt service. Our assumption of slowly decreasing spread makes the constant debt to GDP ratio strategy difficult to implement, even under the high growth assumption. The average primary surplus required is about 1.5 per cent of GDP in the low growth scenario and 0.5 per cent of GDP in the high growth scenario respectively.

6.2. Revenue and expenditure projection

The purpose of the second projection was to check the probability of countries achieving the fiscal performance resulting from Maliszewski's (1998) projection. Gorzelak

(1999) simulation covers main elements of general government revenues and expenditures, subject to the assumption that no dramatic changes in their current proportions will occur over the next decade. This provides a forecast of the future streams of general government primary balances, which is different for each country and for each scenario. Then, these balances are used as inputs into the procedure used by Maliszewski (1998), to calculate the debt/GDP ratios for years up to 2010 [22], maintaining also Maliszewski's assumptions regarding the two growth scenarios, foreign and domestic real interest rates, and real appreciation of domestic currencies.

The time horizon adopted – up to the year 2010 – should be long enough to encompass the process of accession to the EU and EMU. Other great challenges that CEE countries have to overcome – such as pension system and health care reforms – should be already well advanced. The forecast should also include post-accession events, such as any major changes in the environmental policies of new members, forced by the EU regulations [23].

Revenues and expenditures were split into main groups (see Table 15). It has been generally assumed that in the short term revenues depend on the overall performance of the national economies (measured by the growth rate of GDP), while expenditures tend to stay at some constant real level. In other words, governments cannot reduce its costs below some minimum level, while its revenues may fall rapidly when the economy gets into crisis. During years of growth, increase in production shifts up revenue (via taxes), while expenditures do not necessarily have to be increased.

Taxes are assumed to grow in the same rate as GDP, with the exception of customs duties. The latter will fall to zero after the accession, since there will be no taxation on trade between EU members, while customs on external trade will no longer be the revenue of the member states' budgets. Until accession, customs duties are assumed to maintain their real level, as a result of gradual decreases in the level of duties in the pre-accession period (while the volume of imports is assumed to continue growing).

All non-tax revenues are assumed to remain constant in real terms. This item includes, for example, transfers from the central bank, capital revenues and dividends.

On the expenditure side, wages and salaries are also expected to stay constant in real terms. This is another hypothesis that may be doubtful, since economic growth may provoke demands for increases in real wages. On the other hand, however, ongoing privatization reduces the army of workers paid by the state [24].

[22] This subsection draws extensively from Gorzelak (1999).

[23] The above concerns the Czech Republic, Hungary and Poland. As no forecasts about date of Romania's accession to EU and EMU can be made at this moment, slightly different procedure has been used to assess development of Romanian debt/GDP ratio.

[24] An assumption of 1% annual growth of real wages in the low growth scenario, and 2% in the high growth scenario changes insignificantly projection results [see Gorzelak, 1999].

The share of subsidies and transfers in GDP is expected to remain stable. The same is assumed for investment and other current expenditures. Interest payments have been calculated using the same basic formula and the same assumptions as in Maliszewski (1998).

As it was discussed in section 5, state public pension expenditures constitute the main elements of government transfers. It is expected that reforms of the pension systems will contribute to a decrease of these expenditures (as the PAYG pillar will be downsized) but it will take many years before saving will occur while the costs of reform will have to be paid already in the coming decade. This brings us to the problem of the extra costs of big "social" reforms and the fiscal consequences of the EU accession process.

The Czech Republic and Hungary have already implemented health care reform. A similar process has just started in Poland. Both countries noted an increase in health care expenditures, of about 2 per cent of GDP annually. One can expect that similar expenditure increase will occur in Poland. We have assumed that in the first 4 years of the reform there will be an annual increase of expenditures related to health care of 0.5% of GDP, after which a stable additional burden of 2% of GDP must be added to budget expenditures annually forever [see Mihalyi and Petru, 1999].

Pension system reform is being introduced in Hungary, Poland, and Romania. According to Gomulka and Styczen (1999) the Polish government will have to spend on average 1.7% of GDP each year (the cost of partial transition to the second mandatory, fully funded pillar of the pension system). A simplified estimation was used for Romania: the cost of pension reform for Poland was adjusted taking into account the difference in the ratio of current pension expenditures to GDP in the two countries. For Hungary, an estimate prepared by Vajda (1999) was adopted (see **Table 16**).

The Czech Republic, Hungary and Poland will have to increase their environmental expenditures, in order to fulfil EU directives. It has been assumed that after EU accession environmental expenditures will be doubled in these countries.

There may also be some additional government revenues, resulting from the process of EU accession such as EU transfers to candidate countries. **Table 17** gives a projection of expected net EU transfers during the period analyzed based on the decisions of the Berlin EU summit in March 1999 and Tomczynska's (1999b) estimates.

Charts 5–12 present the results of Gorzelak's (1999) simulation. While Maliszewski's (1998) results looked mostly optimistic, this exercise gives a gloomier picture. Even under the high growth scenario, the development of the debt to GDP ratio is rather pessimistic for the Czech

Republic [25] and Poland. Romania has the smallest costs of reforms, so even the lack of EU transfers could not prevent the ratio from falling. Hungary noted a small upward movement of the debt to GDP ratio, followed by an (also small) fall. Things look more dramatic in the low growth scenario – rapid increases of debt to GDP ratios are visible in all countries.

The Czech Republic, Hungary and Romania note high primary deficits, together with visible increases of domestic debt to GDP ratios (it is assumed that deficits are financed domestically). Over the 10 years period, they will have to cover additional expenses of up to 36 per cent of GDP, plus interest on that. It therefore comes as no surprise that debt to GDP ratios increase.

The debt trend depends mostly on two factors. One of them is the real GDP growth. In the high growth scenario but without costs of reforms and EU transfers [see Gorzelak, 1999] all countries enjoy a decrease in their debt to GDP ratio. When 2 per cent growth is assumed, the ratios increase. The pace of this increase depends on the second main factor: the initial debt burden. Hungary suffers from its high initial debt to GDP ratio, having the slowest pace of decrease of that ratio in the high growth scenario, and the fastest debt increase if low growth is assumed.

Another main factor is the interest rate. Not all countries may take advantage of the same basic foreign interest rates, because of presence of different risk premia. Romania could achieve a much better debt to GDP ratio reduction, if it did not face the highest risk premium.

When few assumptions have been changed (real appreciation of 5 per cent annually in the high growth scenario and 0 per cent in the low growth scenario, the new debt may be also taken from external sources, higher domestic interest rates in Romania) simulation results do not differ substantially from the basic variant (with the costs of reforms and EU transfers). Only in the high growth scenario, the debt to GDP ratios look a little bit better than under initial set of assumptions.

In all variants, the situation of Romania seems to be very good in this particular simulation. One cannot forget however that the real GDP growth rates were assumed to be the same for all countries. Thus, it is rather doubtful whether Romania could really achieve 5 per cent annual real growth in the period up to 2010, as assumed – its economy is in a worse state than that of other CEE countries, and the transition process is not well advanced [see Daianu, 1999]. Also other results should be treated with reservations, as many of the assumptions adopted may not hold true.

When costs of reforms were introduced into the analy-

[25] Even more pessimistic fiscal perspectives for the Czech Republic in the next decade are forecasted by Ondrej Schneider [see Stepanek and Schneider, 1999]. According to him, fiscal deficit in the Czech Republic may increase up to 5% of GDP, and public debt up to level of 50–65% of GDP. This projection is basing on the extrapolation of the 1998–1999 fiscal performance and further relaxation of fiscal policy intended by the current Czech government.

sis, three countries noted dramatic deteriorations in their debt/GDP ratios even in the high growth scenario. The EU transfers do decrease these additional costs, but cannot fully compensate for them. This increase would mean that costs of reforms should not be financed from additional borrowing. In practice, either additional revenue should be found, or other expenditures reduced. This is the most important conclusion of Gorzelak's paper: all countries will be probably forced to make additional fiscal adjustments in the period up to 2010, and those will have to come mainly on the expenditure side (as the ratio of total revenue to GDP is already high).

6.3. Fiscal challenges connected with the accession process

The simulation presented in the previous subsection shows that scanty EU transfers to the candidate countries will have probably very limited if any cushioning impact on their fiscal situation. This makes the situation of the current candidates very different from that of Mediterranean countries fifteen or twenty years ago. In fact, the fiscal burden connected with the accession process will be probably greater than we assumed in the above projection. Some costs will have to be paid already in the pre-accession period and these will not be limited to environmental issues only as was assumed in our projection. The additional expenditures will also be needed in public investment (transportation and energy infrastructure), public administration (for example, strengthening border and customs controls on the new external EU borders, improving the administration of justice, etc.). According to World Bank (1997) estimates, Poland should spend an additional 1.5% of GDP annually for infrastructure and energy security purposes already in the period of 1998–2000. In addition, the Czech Republic, Hungary and Poland must bear some costs connected with their NATO membership.

To make the picture even more complicated, the balance of fiscal flows connected with the adoption of the Common Agriculture Policy in the candidate countries is not as clear as is commonly supposed. According to Zawalinska's (1999) estimation, the Czech Republic and Poland may contribute more to the EU budget in the form of the tariff revenue contributions than they will get from the CAP in the form of export refunds (under the assumption that the current trade structure of candidate countries does not change). Only Hungary is certain to gain from the CAP budget.

Generally speaking, EU accession does not offer any

relaxation of fiscal constraints on the candidate countries. On the contrary, future EU membership seems an expensive investment. Hopefully, this investment will facilitate faster economic development in the next few decades.

7. Review of some crucial expenditures and revenues items

As fiscal adjustment in the four countries analyzed seems to be unavoidable in order to maintain long-term fiscal sustainability, further analysis should concentrate on a few key items of general government expenditures and revenues.

7.1. Public pension programs

As public pension expenditures constitute the biggest transfer item in all candidate countries (as confirmed by the statistical data presented in Table 12), we will start with this area of government financial liabilities [26].

A comparative survey of pension systems in transition countries [see Cangiano, Cottarelli and Cubeddu, 1998] identified a number of 'stylised facts', which lead to the high pension burdens observed:

- Early retirement has reached a massive scale in most countries, as the pension system was used to cushion the effects of transition on open unemployment.

- This use of the pension system was more common in Central and Eastern Europe (CEE) than in the countries of the FSU. It was also more common in countries where restructuring was deeper and faster.

- The system dependency ratio (the ratio between pensioners and contributors) has been rising rapidly, reflecting both decline in the number of contributors and growth of the number of pensioners (see **Table 18**). The latter reflects, among others, the extension of pension protection to farmers.

- The fall in the number of contributors reflected rapid growth of the informal economy and a large drop in total output.

Despite these common features, developments in pension finances in individual countries have been remarkably diverse. As can be seen from **Table 18**, this relates also to the four countries analyzed. On the one hand, Poland records an exceptionally high number of disability pensioners making Poland an outlier not only in Central and Eastern Europe, but also worldwide [27]. Reform of the disability

[26] This subsection is based on the papers done by Gomulka (1999), Gomulka and Jaworski (1998), Styczeń (1999), Gomulka and Styczeń (1999), Schneider (1999), Vajda (1999), De Menil, Hamayon, and Seitan (1999).

pension system (tightening of eligibility criteria and elimination of the so-called third category of disability) which started in 1996 has not brought any visible results as yet. Additionally, Poland was the only country among the four where the replacement rate significantly increased during transition as a result of too generous indexation rules. Only in 1996 was wage indexation replaced by a mixed formula (price indexation plus some arbitrary increase in real pension benefits), and this has helped in decreasing somewhat the replacement rate and the share of pension expenditure in GDP, in 1997–1998.

On the other hand, Romania represents an exceptionally low replacement rate as a result of persistent high inflation and only partial indexation. This replacement rate makes Romania similar to the FSU and most of the OECD [Chend and Jaeger, 1996; Table 6], but different from the main EU countries: Germany, France and Italy, where replacement rates are close to those of Hungary and Poland. In addition, in Romania at the end of 1998 only about 46% of the active population were covered by the social insurance system as most farmers and people employed in the informal sector remained out of the system [De Menil, Hamayon, and Seitan, 1999]. This exceptional characteristic of the Romanian economy (in comparison with other Central European countries) may create a serious fiscal burden in the future when an aging population not entitled to receive pension benefits will need systematic social aid financed from public sources.

Unfavorable demographic trends in all of Europe, including the four countries analyzed [see Schneider, 1999; Vajda, 1999; Styczeń, 1999; De Menil, Hamayon, and Seitan, 1999] will push up the dependency ratio, causing, other things being equal, further deterioration of the PAYG system financial balance and a further increase in public pension expenditure as a proportion of GDP.

The prospect of a demographically induced crisis of the PAYG system has pushed most European countries to initiate different types of pension reform to cushion the negative fiscal effect of increasing dependency ratios. Among the four countries analyzed, only the Czech Republic has not decided as yet to start a fundamental pension reform involving a partial transition to a fully funded component. The threat of making explicit a substantial part of the implicit pension debt accumulated under the present system has served as the main argument against starting a Hungarian/Polish type reform [Schneider, 1999]. The Czech response to the expected demographic challenge has concentrated on changes in the PAYG system: a gradual increase in the retirement age (see table 18), linking benefits more directly

to contributions, and adopting a price indexation formula for pensions in order to lower the replacement rate [Gomułka, 1999].

Nevertheless, these reforms seem to be insufficient and the deficit of the PAYG system is expected to deteriorate from 0.7% of GDP in 1999 to 1.5% of GDP in 2010 with further deterioration after this date [Schneider, 1999]. Gomułka (1999) additionally points to the effects of the 1997–1999 recession and delayed enterprise restructuring which may bring a sharp increase in the unemployment rate and dependency ratio.

The threat of serious macroeconomic crisis forced Hungary to adopt a drastic stabilization program in 1995, and to initiate comprehensive reform of the pension system. The relevant legislation was adopted in July 1997. In January 1998, Hungary became the first transition country to start implementation of a 3-pillar pension system. Poland followed one year later, starting its comprehensive pension reform on January 1, 1999. A similar reform is being prepared in Romania.

The motivations, aims and principles of pension reform in all three countries have been very similar [see Gomułka, 1999; Palacios and Rocha, 1998; Gomułka and Styczeń, 1999; De Menil, Hamayon, and Seitan, 1999] [28]. First, all countries have the same fundamental flaws in the existing pension system: low effective retirement age, excessively liberal disability criteria, high replacement ratios, large redistributive components in the pension formula and excessive privileges for some categories of workers. Second, they wanted to create a far tighter link between pension benefits and pension contributions, thus strengthening the incentive to work and the disincentive to evade (through drastic reduction of the redistributive component and the establishment of individual accounts in the first pillar). Third, on the macroeconomic front two major goals were: (i) bringing down the aggregate level of public pension expenditures as a proportion of GDP, and (ii) stimulate private savings (through downsizing of the first pillar and development of the second and third pillars).

In practice, not all the above aims can be fully accomplished as reforms in Poland and Hungary are limited so far to retirement pensions and in Poland only to those outside agriculture. In Hungary these pensions account, in late 1990s, for some 80% of all pension expenditures, as against some 55% in Poland [Gomułka, 1999]. Thus, the prospects for lowering contributions clearly depend on progress in reducing the burden of disability pensions, particularly in Poland.

[27] However, other countries also recorded rapid increase in the number of disability pensions during transition. For example, in Romania the number of invalidity pensioners was more than doubled between 1990 and 1998 [see De Menil, Hamayon, and Seitan, 1999].

[28] This is not surprising that both in Eastern and Western Europe countries with the biggest fiscal problems were the first to reform their PAYG systems.

As discussed in subsection 6.2 and illustrated in Table 16, transition from the PAYG system to a fully funded second pillar involves significant fiscal costs connected with the loss of part of current pension contribution to the first pillar. On the other hand, reduction in the current expenditure of the first pillar will come very gradually, most likely after year 2010, i.e. beyond the horizon of our long term fiscal projection.

Nevertheless, the reforms carried out in Hungary and Poland (and planned in Romania) give the chance of avoiding the worst case scenario, i.e. further, fast deterioration of the PAYG financial balance which would happen in the absence of radical changes (see above) [see Vajda, 1999; Gomułka and Styczeń, 1999; De Menil, Hamayon, and Seitan, 1999].

According to Gomułka and Styczeń's (1999) estimates, the replacement rate in Poland under the old system (i.e. in the absence of the 1999 reform) would decline, but would nevertheless remain high, from 53% to 60% depending on the indexation rule. The reform will push this rate down to between 39% and 46% in 2040 (for the first and second pillars together), again depending on the indexation rule. For the first pillar (and it is this which is important for public finances) the replacement rate will go down to 30% in 2050.

Under the reform, an initial fiscal deterioration in the first pillar, by some 2% of GDP annually, is followed by a gradual improvement, amounting to about 3% of GDP by 2050. In the absence of any reform, the initial deterioration, also by about 2% of GDP, is followed by a further gradual deterioration, amounting approximately to an additional 2% of GDP by 2050. This deterioration, by some 4% of GDP during the first half of the 21st century, would bring the budget deficit of the state pension systems outside agriculture in Poland to about 5% of GDP by the end of that period. As the deficit of the agricultural pension fund is about 2.5% of GDP, the total pension related deficit would increase during next 50 year from about 3% to about 7.5% of GDP.

It is worth noticing, however, that not all the components of the old age retirement pension system in Poland are yet determined. This relates, in the first instance to early retirement and other branch/professional privileges. These were taken out the reformed system but not definitely abolished. Some are supposed to continue under the separate system of so-called "bridge" pensions, theoretically co-financed by employers and government. In practice, they will have to be financed mostly from the state budget as they concern employees in loss-making state owned sectors such as coal mining or railways. The range of professions covered by "bridge" pensions and their financing schemes have not yet been decided and remain subject to political bargaining. Additionally, new proposals for early retirement or quasi-pension benefits in pre-retirement are regularly demanded as a part of so-called

restructuring packages in politically sensitive industries.

In Hungary, reduction of pension expenditures in the first pillar will be visible soon, mainly due to up-front elimination of various pension privileges. Assuming zero contracting out from the first to the second pillar, the financial balance of the PAYG system will gradually improve from a small deficit at the end of the 1990s to a surplus exceeding 2% of GDP around the year 2014. Later on, this surplus will gradually diminish, moving again into deficit after 2038, due to unfavorable demographics. However, this deficit will be much smaller than under no reform scenario. In the latter case it would reach the level close to 6% of GDP in 2050 [Palacios and Rocha, 1998]. When we add the costs of partial transition from the first to the second pillar (see Table 16), the first pillar will record a deficit of 1% of GDP at the start of reform (1998–1999) with a continuous improvement in the next decade and surplus around the year 2008 [Vajda, 1999].

Generally, fiscal constraints may push the countries analyzed, particularly Poland and the Czech Republic, to tightening pension legislation related to the PAYG system further. In the first instance, this should relate to eligibility criteria for disability pensions (especially in Poland). The retirement age, particularly for women, and branch/professional privileges are the other main fields for potential cuts.

7.2. Health care

This is another major spending item exhibiting growth in most European countries. There are many factors contributing to this tendency: increase in GDP per capita, education levels, demographic factors, technical progress, etc. Increasing health expenditure need not necessarily give gains in terms of higher life expectancy as their marginal efficiency tends to decline [Mihalyi and Petru, 1999].

The demographic factor will probably play the most important role in the coming decades. In fact, assuming that most health expenditures are directed to eldest group of the population and financing comes from contributions paid by those currently employed, the logic of the financial mechanism of public health care, its problems and dynamics do not differ significantly from the PAYG pension system. Hence, the expected aging of the population will put enormous pressure on public health finances. As in the case of the public pension system, health care issues create a convenient issue for populist politicians, which makes expenditure cutting reforms very difficult. In addition, information asymmetry and supplier induced demand for medical services are serious obstacles in establishing effective costs control mechanisms in any type of health system financed from public sources [see Mihalyi and Petru, 1999]. Fast technical progress also induces demand for new medical equipment, technologies and medicines, which are usually more expensive than the traditional ones. All these factors

constitute a serious challenge to any system of public finances, particularly in transition countries, which inherited many distortions in the health sector from the previous system.

At the beginning of the 1990s the Czech Republic and Hungary moved from a tax financed government controlled system (involving also government responsibility for the provision of medical services) to a Bismarckian type mandatory public health insurance system. Poland followed in 1999. This was done mainly under the pressure from the doctors' lobby. There are serious doubts whether this is the best choice from the fiscal point of view, as the system of mandatory health insurance is usually more expensive than the British type of tax financed system with additional private provision of medical services on a competitive basis. The countries mentioned have also started partial privatization and commercialization of health care.

The level of health expenditures in the three countries as a proportion of GDP is still below Western European levels, despite considerable growth in the Czech Republic and a high initial level in Hungary (see **Table 19**). However, if their GDP per capita levels are taken into account, the opposite can be said: all three countries spend more on health than OECD countries spent when their per capita GDP was at similar levels [Mihalyi and Petru, 1999].

From a financial perspective, the health care reforms have brought mixed results. In Hungary, health care expenditures appear to have risen only moderately. The share of health expenditures actually fell relative to GDP. This was a result of the restructuring of the supply side: a 25% decrease in the number of expensive hospital beds without affecting patient care. Regional differences in care decreased. The number of family practitioners increased and their equipment improved with the majority of family physicians working in the privatized system, which offers better incentives [Mihalyi and Petru, 1999].

In the Czech Republic, on the contrary, insurance reform and the privatization of a large part of provision were not accompanied by adequate cost-containment measures. A fee-for-service system together with privatization led to a cost explosion (see **Table 19**). Ongoing increases in the unemployment rate (see previous subsection) may additionally worsen the financial situation of health insurance companies in the Czech Republic. The supply side has been restructured only somewhat – the number of hospital beds has decreased by 10%.

So far, it is hard to assess the financial effects of the Polish reform. On the one hand, there are some institutional solutions in the Polish system, such as wide prerogatives of the Health Insurance Funds Supervisory Office, the lack of a fee for service principle, the obligation of the health insurance funds to have balanced budgets, which should facilitate cost control [see Mihalyi and Petru, 1999]. On the other

hand, the very strong position and aggressiveness of trade unions in the health sector, political populism, weakness of the new institutional infrastructure, and delays in introduction of cost control instruments and methodologies will push health expenditures up. In addition, the relatively low level of public health spending in Poland compared to neighboring countries means that the assumption made in subsection 6.2 regarding the gradual increase of this expenditure seems to be justified.

The above analysis leads to the conclusion that candidate countries can hardly count on any decrease in the public health expenditure to GDP ratio in the coming decade. The realistic objective is to avoid an expansion of this expenditure in relation to GDP (Czech Republic and Hungary) or control the pace of this expansion (Poland). In terms of suggested expenditure containing measures, obligatory co-payments for a broader set of medical services and increased co-payment for medicines seem to be the most effective solution. They could help to limit the excessive, very often physician-induced demand for health services. However, this proposal will certainly meet a strong political resistance, especially when one takes into account the already existing level of co-payments (see **Table 20**), particularly in Poland.

7.3. Agriculture sector

In 1998 subsidies and expenditures related to agriculture amounted to 1.3% of GDP in Hungary (without expenditures for rural development), 1.2% of GDP in the Czech Republic, and 2.8% of GDP in Poland (without tax exemptions) [29]. However, calculating budget support on a per capita basis Hungary takes the first place (1,712.8 EUR per farmer in 1997) before the Czech Republic (1,491 EUR per farmer), and Poland (821 EUR per farmer). This is due to the very low share of agriculture in total employment in the Czech Republic (4.1% in 1996), a bit higher in Hungary (8.2%) and very high in Poland (26.7%) [Zawalińska, 1999].

The structure of budget support for agriculture varies significantly between the three countries analyzed. In 1998 price support amounted to 36% of the total budget expenditures for agriculture in the Czech Republic, 35% in Hungary and only 2% in Poland. In the Czech Republic the three biggest items, i.e. price subsidies (36%), direct payments (29%), and credit subsidies (23%) absorbed 88% of the total agriculture budget. Hungary represented a very similar spending pattern: 86% of the total expenditures was channeled to price support (35%), interest rate subsidies and other production subsidies (27%), and investment subsidies (24%). In Poland transfers to the pension fund for farmers amounted to 76% of the total budget allocation for agriculture, while all other items played a less significant role.

[29] For a deeper analysis of the agriculture policies in these three countries including their fiscal dimension – see Zawalińska (1999).

The above short characterization shows that most agricultural expenditure does not help to solve the long-term structural problems of this sector. The Czech Republic and Hungary try to follow the Common Agriculture Policy pattern, which means building price, structural, and fiscal distortions into their economies. On the other hand, Poland's budget has to support a too generous welfare system for farmers where ca. 94% of total expenditures is financed through budget transfers. However, reductions of agriculture related spending in the candidate countries seems rather unlikely, particularly in the pre-accession period as the farmers lobby will push for more state support for this sector following EU countries experience.

7.4. Indirect taxation [30]

The basic VAT rates in four countries (the Czech Republic, Hungary, Poland, and Romania) presented in **Table 21** are relatively high – similar to the high rates observed in the Nordic countries (see **Table 22**). Simultaneously, a relatively broad range of goods and services are taxed at reduced rate, exempted from VAT or taxed at zero rate, and tax avoidance makes the effective VAT rate much lower (see below). VAT preferences mean not only losses of budget revenues, but also distortions in consumer choice and resource allocation.

Table 23 presents the map of preferential VAT treatment in the four countries analyzed. The zero rate for some domestically consumed goods and services is still in use in Poland and Hungary, but these countries plan to abolish it (in accordance with EU directives). The relatively wide range of goods and services, which are zero rated in Poland shows how difficult it is to stop preferential treatment, once granted.

The scope of exemptions is very similar among the four countries. They include items, which are difficult to tax (banking, insurance, finance, leasing, etc.) and social services (education, health and social care, public utilities etc.). The exemption of agriculture is probably temporary.

Contrary to some OECD countries (such as Italy, France, and Belgium), the four countries analyzed use only two rates (standard and reduced). In Hungary and Romania the differences between these two rates are smaller than in Poland and especially than in the Czech Republic, which means smaller distortions in consumer choice and resource allocation.

Foodstuffs are the main item preferentially taxed. Others include pharmaceuticals, books and newspapers, public transportation, fuel for heating (Romania), energy for households (Hungary), accommodation services provided by low category hotels and restaurants (Poland), construc-

tion materials and house construction services (Poland and the Czech Republic – the latter in much more limited form).

Theoretically, if all consumption were taxed at single basic rate, and if there was no tax evasion, the share of VAT revenue in GDP would not be much lower than the VAT rate. Hence, the ratio of the VAT revenue as a share in GDP to the basic rate illustrates the coverage and effectiveness of this tax. A higher ratio reflects a smaller range of non-uniform taxation, VAT exemptions, and tax evasion. Usually the share of VAT revenue in GDP is about 0.4 of the basic rate. New Zealand has the best results in this respect: the uniform rate of 12.5% gives a VAT revenues share in GDP of 8.2% (the ratio of the tax rate and relative revenue is therefore 1.5). The other extreme among OECD countries is Italy, where a 19% basic rate gives of only VAT share of 5.6% of GDP (the analogous ratio is 3.4).

Table 24 shows the very low effectiveness of Romanian VAT. Rates of 18% and 9% (before 1998) yielded much less revenue than similar rates in other countries. The reason for such poor performance was a narrow tax base (it was broadened in February 1998), tax arrears and a non-efficient refunding procedure, which allowed massive fraud. The relatively low VAT threshold also does not help to generate more revenue. The future will show whether the Romanian fiscal authorities will manage to increase revenue from VAT significantly as result of legislation introduced in 1998.

The ratio of the basic rate to the share of VAT in GDP is similar in the Czech Republic, Hungary and Poland. In Hungary, after the reform of VAT in 1993 revenue soared. This example shows that from the economic point of view the best way to increase tax revenues is to enlarge the tax base. Such a move brings additional revenues not only from newly taxed goods, or goods taxed at a higher rate. Additional revenues come also from increased consumption of the goods taxed at a basic rate, which previously faced preferentially taxed substitutes.

Generally, VAT legislation in the four countries analyzed presents continuous improvement, in spite of strong resistance by various lobbies. The scope of VAT preferences is being slowly reduced. Probably the Czech Republic has the best VAT legislation among the four countries. The Czech VAT has two shortcomings only: the big difference between the basic rate and the reduced rate (17 percentage points) and an extensive preferential treatment of services. Despite an unfavorable overall macroeconomic situation and a very unsatisfactory pace of system reforms in Romania, VAT legislation in this country, especially after the changes introduced in 1998, looks good: the difference between basic and preferential rate is only 11 percentage points and the list of preferentially treated goods has been substantially limited. Evolution of the VAT in Poland and Hungary can

[30] This subsection bases mainly on Neneman (1999).

also be assessed positively, although both require further reduction of the scope of preferential treatment.

Except for the preferential treatment of the construction materials and services in Poland and energy in Hungary, the scope of preferential treatment matches the Sixth Directive of the EC with the amendment of 19 October 1992, attachment H, specifying the list of goods and services that can be taxed preferentially. To comply with EU regulations Poland, Hungary and Romania will have to restrict the zero-rate to exports only and shift construction materials and services (Poland) and energy (Hungary) to a standard rate and Romania will need to reduce the scope of exemptions. Obviously full integration with the EU will require far more changes in VAT legislation, but these will be rather of a technical or legal character and will not have much economic impact.

The scope of the excise duties in the four countries analyzed is very differentiated (see **Table 25**). Except for the Czech Republic, excise is levied on a wide range of goods, including goods other than those subject to common excise duties within the EU ("sin" goods: mineral oils, alcohol and alcoholic beverages, manufactured tobacco). Different ways of tax measurements (unit, *ad valorem* or a combination) and different currencies do not allow for precise analysis of the tax rates.

However, it is obvious that most excise tax revenues come from the "sin" goods. This means that the excise for the other goods could be abolished (as required by EU directives [31]) at a very low cost in terms of revenue lost. In some cases, revenue could even increase as many of heavily taxed goods can be, and in fact are, purchased abroad. The abolition of excise will lower or liquidate such price differences and, as a result, these goods would be purchased at home bringing increased VAT revenues.

The Czech excise system is the closest to that of the EU. On the other hand, Romanian excise is very far from that of the EU. Despite the long list of excise goods in Romania, tax revenues (measured in comparison to VAT revenue) are very low. In 1995, the revenues from VAT were 3.5 times higher than from excise duties and one must remember that VAT revenues are relatively small there. This ratio was about 2 in the case of Hungary and about 1.7 in Poland and the Czech Republic. In most EU countries this ratio varies from 1.5 to 2.

7.5. Direct taxation [32]

Hungary was the first country in Central and Eastern Europe that introduced a market-oriented income tax system. Personal income tax (PIT) was introduced in 1988,

while corporate income tax (CIT) was introduced in 1989. In Poland PIT was implemented in 1992, replacing a number of wage and income taxes, and CIT was first introduced in 1989. In Romania an individual wage tax was introduced in 1991, replacing the former wage tax based on the economy-wide gross average wage. The wage tax in that country, however, still suffers from important shortcomings, in particular, the complex rate schedule (14 tax brackets with rates ranging from 5% to 60%) and the fact that the tax only covers wages and salaries, while other income sources are subject to different tax schedules. The last revision of the profit tax was introduced on January 1, 1995 in Romania. The current Czech tax system of direct taxation was introduced in January 1, 1993.

In general, in the four countries analyzed PIT is progressive. The pattern of PIT differs among them in detail, regarding zero band/allowance, tax credit, marginal rates, ceilings, and deductions. In 1998, tax rates ranged from 19% to 40% in Poland, from 15% to 40% in the Czech Republic, from 20% to 42% in Hungary and from 5% to 60% in Romania.

General income consolidation rules in Poland, Czech Republic and Hungary are similar to those of the EU countries. Taxable income is understood as the sum of incomes derived from various sources (see **Table 26**). In the EU only in Great Britain, Ireland, Portugal and Belgium are different principles of income calculation applied. In most EU members, all kinds of incomes are liable to personal income taxation, including employment income, dividends, retirement pensions, income from the sale of real estate and movables. Among Central European countries analyzed, Poland has the highest level of consolidation. At the other end of the scale, Romania is still very close of the concept of wage tax inherited from the command system.

As **Table 27** shows, the four countries analyzed have reduced their highest marginal rates of PIT in the period of 1993-1998. Although all countries have moved in this direction, the Czech Republic has gone the farthest by reducing the top marginal rate from 47% in 1993 to 40% in 1998. The same tendency can be observed in most EU countries (see **Table 28**). In the 1980s most of member countries cut their top personal income tax rates by an average of over 10 percentage points. Since then, top rates have remained relatively stable. The top individual tax rates in the countries analyzed are comparable with the EU average level 45.6%.

In addition to cutting top marginal rates in the 1990s, many EU countries have restructured the rate schedule in order to reduce the number of tax rates. As a result the average number of positive rates in personal income tax systems decreased from 10 to less than 6. The same tendency is observed in the countries analyzed (see **Table 29**). In this

[31] The candidate countries will also have to converge their excise rates to those of the EU.

[32] This subsection bases, to significant extent, on Tomczynska (1999a).

respect, the Czech Republic (5 tax rates), Hungary (6) and Romania (6) are comparable with such EU countries as Austria (5), Finland (6) and France (6). Poland, where 3 tax brackets were introduced at the beginning of the tax reform in 1992, is comparable with Denmark, Netherlands and United Kingdom. Generally, the personal income tax became a flatter tax, with fewer tax rates and smaller differences between them.

European legal regulations provide for the possibility of tax allowances or tax credits. Only Germany, Italy and Portugal do not apply tax credits, but at the same time they tax incomes in the first tax bracket at the relatively low rate. In Italy the first ceiling is taxed at 10% and in Portugal at 15%. In the Central European group, the amount of tax credit is extremely low in the case of Poland and Romania bringing Poland close to a "flat tax".

Some countries give an opportunity of joint taxation of married couples, which can be an important relief for some families. In the countries analyzed, such regulations exist only in Poland.

Corporate income tax rates differ among the four countries (see **Table 30**). In 1998, they amounted to 18% in Hungary, 35% in the Czech Republic, 36% in Poland, and 38% in Romania. The rates were substantially reduced between 1993 and 1998. This trend largely followed that of the EU countries (see **Table 31**). Among the latter only Italy and Spain did not reduce corporate income tax rates over the period of 1986–1998. But their level is comparable with current average rate for all EU member countries. Since the mid-1980s, the cuts in CIT rates have averaged around 10 percentage points. The highest rates remain in Germany (45/30%) and Greece (35/40%) and the lowest in Finland (28%) and Sweden (28%). Hungary thus represents a competitively low level of CIT.

In order to have a complete picture of income taxation, the high rates of social insurance contributions (payroll taxes) should be taken into consideration. They usually finance public pension expenditures including disability pensions (see **Table 18**), unemployment benefits, sick leave, health insurance, and some other items.

In the period 1992–1996, revenues from direct taxes (i.e. PIT and CIT) in relation to GDP decreased in each of the countries analyzed with the exception of Poland. They declined by 8.4 percentage points in the Czech Republic, 2.8 in Romania and 2.2 in Hungary. In 1995, the direct taxes to GDP ratio in the Czech Republic (10.9%) and Romania (10.8%) was well below the EU average (14.4% of GDP) and was comparable with that of Austria (11.3%), Germany (11.8%), Spain (10.0%) and Greece (9.1%). In Hungary, this ratio (8.8%) was comparable with the lowest EU levels: France (7.8%) and Portugal (8.9%). In Poland, revenues from direct taxes have remained roughly at the same pro-

portion of GDP over the period analyzed. In 1996, total direct taxes in Poland were estimated at 12.3% of GDP. Romania obtains about half its total tax revenues from direct taxes, whereas Poland relies on direct taxes for about one-third of its total tax revenues. Hungary and the Czech Republic obtain about a quarter of their total tax revenues from direct taxes.

In 1996, PIT yielded from 5.3% of GDP in the Czech Republic to 9.2% of GDP in Poland (see **Table 32**). In Poland, from 1992 to 1996, the share of personal income tax in GDP increased from 7.7% to 9.2%. In this country, the PIT burden was nearest to the EU average of 11.3%. In the remaining three countries the personal income tax ratio showed a slight tendency towards declining. In the Czech Republic from 7.0% to 5.3% and in Hungary from 6.7% to 5.9%. The levels observed in these countries are the lowest in comparison to the EU countries. They are comparable with Greece (4.9%), Portugal (6.1%) and France (6.2%). The average for the CE countries (6.9%) was less than half that in Sweden (17.5%), Finland (16.2%), Belgium (14.6%) and a quarter that in Denmark (27.6%) [33].

In the period of 1992–1996, the share of CIT revenue in GDP decreased in all the countries analyzed, to the greatest extent in the Czech Republic (see **Table 33**). Although in the Czech Republic this ratio declined from 10.8% in 1992 to 4.1% in 1996 it was still the highest among the four countries analyzed: 1.3 higher than in Poland and twice as high as in Hungary. This last country represents an extremely low share of CIT revenues in GDP, even in the European context. They dropped from 2.5% of GDP in 1992 to 1.9% of GDP in 1996 and remained below the EU average of 2.9% of GDP. In 1996, the ratio of corporate tax to GDP was estimated at 3.1% in Poland and 3.8% in Romania. Such levels were comparable with Belgium (3.1%), Sweden (3.1%), Netherlands (3.3%), United Kingdom (3.3%) and Italy (3.6%) – the "high corporate tax revenue" EU countries.

The extent of necessary adjustment of direct taxes regulations of the candidate countries to EU standards is much narrower than in the case of indirect taxes as a consequence of a relatively low level of legal harmonization in this sphere in the EU itself. The *acquis communautaire* concerns mainly some aspects of corporate taxes and capital flows (mergers, divisions, transfers of assets and exchange of shares, taxation of parent companies and their subsidiaries, elimination of double taxation).

Looking at potential opportunities for increasing budget revenues one should rule out increasing income tax rates, as they are already high. Further increases would only provoke greater tax avoidance and flight of business activity to the informal sector. Some reserves may lie in broadening tax bases and in better tax administration. Another possibility is

[33] In Denmark PIT contains also social insurance contributions.

connected with a simplification of the tax system and flattening tax progression. Starting from the observation that higher marginal PIT rates and their steeper progression in Hungary as compared to Poland is associated with lower share of PIT revenues in GDP (see Tables 27 and 32), Walewski [1999] found some evidence of a Laffer-like relationship in three Central European economies, i.e. in the Czech Republic, Hungary, and Poland. Contrary to the original Laffer curve idea, this relationship relates to the number of tax rates (brackets), i.e. the steepness and complexity of the PIT scale rather than to the level of the tax burden. A smaller number of tax rates allows, other things being equal, to collect more revenues. The second difference refers to another transmission mechanism. In the original Laffer model, high tax rates decreased the motivation to work and to business activity, decreasing output, income, and thus, the tax base. In transition economies, the Laffer type relation seems to work mainly through the shadow economy channel: higher tax rates push entrepreneurs from the formal to the informal sector. As integration of capital markets progresses, all the countries – including the transition ones – will face increasing cross-border competition between direct tax systems. Currently PIT rates in EU countries do not seem to be competitive ones in comparison with the candidate countries (see Tables 27 and 28) but one should also take into account the high payroll taxes in the latter. Moreover, if candidate countries want to grow faster than the current EU members, and bring in more foreign investment, their tax systems should be much more attractive than those in Western Europe, so as to compensate for their relative institutional and infrastructural weaknesses.

If the above hypothesis is right, attempts of the candidate countries to simplify their tax systems, limit PIT progression, and systematically decrease CIT rates seem to be a good response to the above challenges. Estonia, which is not in our comparative analysis, presents the most impressive record in this respect. That country introduced, from the very beginning of its transition process (in July 1992) a single proportional rate of the PIT at 26% of a taxable income [see Bauc, 1995]. The proposal for the comprehensive PIT and CIT reform in Poland discussed in 1998–1999 (among others, lowering CIT rates, lowering and flattening PIT rates, elimination of numerous exemptions in both taxes) also goes in this direction.

Experimenting with the Laffer curve idea in practice, policymakers should remember, however, about two things. First, as Walewski (1999) documents, this relation is not very strong. Second, there is a certain time lag between lowering (simplifying, flattening) tax rates and positive supply side effects. Therefore, one must expect some revenues losses, particularly in the fiscal period immediately following tax rates cuts unless these cuts are compensated by other tax measures (broadening the tax base, increases in indirect taxation).

8. Concluding remarks

Central European and Baltic countries applying for EU membership will face several serious macroeconomic and fiscal challenges in the coming decade. Some of them result from the unfortunate past: Central and Eastern Europe lost half a century of normal capitalist development and must now catch up with Western Europe. Intensive catching up will create huge investment needs, and thus an investment-saving imbalance, high current account deficits, and pressure for appreciation of domestic currencies. The situation is further complicated by an unfinished transition agenda and an imperfect transition record in many countries. For example, fiscal deficits additionally worsen investment-saving imbalances, particularly in Hungary, Romania, and Lithuania. The financial sector is underdeveloped and in some countries (the Czech Republic) burdened with contingent liabilities, which hampers mobilization of domestic savings. Inflation still exceeds the Western European level, in some countries by a substantial margin (Hungary, Poland). Monetary and exchange rate policies in most countries in the first group of candidates (apart from Estonia) have been oriented towards accommodating fiscal imbalances, fine tuning growth, and export promotion rather than to fighting inflation consistently. Privatization, restructuring and market oriented institutional reforms are far from being finished (apart from Hungary, which has mostly finished its privatization agenda). The unfinished microeconomic agenda limits flexibility of the supply side response to shocks and creates additional sources of macroeconomic risk (for example, excessive borrowing of large enterprises not exposed to hard budget constraints).

Some contemporary challenges are common to all European countries or even to all countries around the world. Globalization is the first on this list and it has far going consequences for all aspects of life. Continuously increasing competition relates not only to markets for goods and services, but also to capital markets and (to a smaller extent) to labor markets. Widespread liberalization of financial flows enables economic agents to arbitrage between currencies, tax and regulatory systems, various levels of property rights' protection, legal infrastructure, levels of macroeconomic and political risks, moving business activity, investments and assets between countries or between currencies. This seriously limits national sovereignty in all spheres, not only those of economic policy but also of political life, raising required criteria of economic and political responsibility. This also relates to the question of small countries running their own independent monetary systems and independent monetary policies.

Another long term challenge, common to most developed and transition countries is connected with population

aging, which has a serious negative impact on the financial balance of the PAYG pension systems, health insurance systems, and some forms of social aid. In the much longer term (going beyond the time horizon in this study of 2010) population aging will also negatively influence rate of private saving and growth prospects. Only a radical liberalization of immigration policies will be able to limit these adverse consequences of population aging in developed countries, but at present, such liberalization does not seem to be very probable for political reasons.

Environmental needs will also create pressure for increased spending (including by government), particularly in less developed countries, including the EU candidates from Central and Eastern Europe. This pressure will exist irrespective of their EU membership, though accession conditions may call for faster adjustment in this field.

The accession process itself means another serious package of various reforms for the candidate countries with a complexity similar to the first stage of transition at the beginning of the 1990s. Many of these reforms will cost candidate countries taxpayers' money and only part of them will be compensated by net official EU transfers. In fact, looking at accession from the fiscal point of view it is a kind of investment, which should be recovered thanks to more

stable economic, legal and political environments, better infrastructure and institutions, higher quality of living standard, and therefore, better growth prospects. However, how quickly this additional spending will be paid off remains an open question and depends on the quality of the economic systems and economic policy of the EU itself and of its future members.

The prospect of EU membership offers, however, a unique chance for importing stable institutions, the new common European currency, and credibility of economic policies. The macroeconomic convergence criteria can also help governments to carry out the necessary fiscal adjustment measures, particularly those related to excessive social transfers. All these factors should facilitate eliminating a significant part of the macroeconomic fragility and external risk connected with high current account deficits (as this problem will mainly relate to interregional flows inside the common currency area), unstable domestic currencies (as they will cease to exist), high fiscal deficits (put under the control of the Stability and Growth Pact), etc. The new institutional and macroeconomic environment should facilitate stable and macroeconomically safe capital inflows, high investment rates, and rapid growth.

References

- Anand, Ritu, and Sweder van Wijnbergen (1989). "Inflation and the Financing of Government Expenditure: an Introductory Analysis with an Application to Turkey". *World Bank Economic Review*, 3.
- Antczak, Małgorzata, and Urban Górski (1998). "The Influence of the Exchange Rate Stability on Inflation: A Comparative Analysis". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 137.
- Augustinovic, Maria (1997). "Introduction, in: Pension Systems and Reforms: Britain, Hungary, Italy, Poland, Sweden". EC's Phare ACE Programme 1995, Final report, Budapest.
- Barro, Robert J. (1991). "Economic Growth in a Cross-Section of Countries". *Quarterly Journal of Economics*, Vol. 106, pp. 407–443.
- Barro, Robert J. and Xavier Sala-i-Martin (1992). "Convergence". *Journal of Political Economy*, Vol. 100, pp. 223–51.
- Bauc, Jarosław (1995). "Estonian Way to Liberal Economic System". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 38.
- Bratkowski, Andrzej S., and Jacek Rostowski (1999a). "Zlikwidować złotego" (Abolish zloty). *Rzeczpospolita*, March 6, Warsaw.
- Bratkowski, Andrzej S., and Jacek Rostowski (1999b). "Wierzymy w euro" (We believe in euro). *Rzeczpospolita*, April 26, Warsaw.
- Buiter, Willem H. (1997). "Aspects of Fiscal Policy in Some Transition Economies Under Fund-Supported Programs". IMF Working Paper, WP/97/31, April.
- Cangiano, Marco, Carlo Cottarelli and Luis Cubeddu (1998). "Pension Developments and Reforms in Transition Economies". IMF Working Paper, WP/98/151.
- Chand, Shetta K., and Albert Jaeger (1996). "Aging Populations and Public Pension Schemes". IMF Occasional Paper, No. 147.
- Christoffersen, Peter, and Peter Doyle (1998). "From Inflation to Growth: Eight Years of Transition". IMF Working Paper, WP/98/100.
- Dąbrowski, Marek (1998a). "Fiskal'nye problemy v period transformacii" (Fiscal problems in the transition period). CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 122.
- Dąbrowski, Marek et al. (1999). "Disinflation, Monetary Policy and Fiscal Constraints, Experience of the Economies in Transition". CASE – Center for Social and Economic Research, Warsaw, Reports, No. 16, March.
- Daianu, Daniel (1999). "Strain and Economic Adjustment. Romania's Travails and Pains". paper prepared for the 5th Dubrovnik Conference on Transition Economies: Ten Years of Transition: What Have We Learned and What Lies Ahead, June 23–25, Dubrovnik, Croatia.
- De Melo, Martha, Cevdet Denizer, Alan Gelb, and Stoyan Tenev (1997). "Circumstance and Chice: The role of Initial Conditions and Policies in Transition Economies". International Finance Corporation, Washington D.C.
- De Menil, Georges, Stephane Hamayon, and Mihai Seitan (1999). "Romania's Pension System: The Weight of the Past". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 177.
- Fischer, Stanley, Ratna Sahay, and Carlos A. Vegh (1998a). "How Far Is Eastern Europe from Brussels?" IMF Working Paper, WP/98/53, April.
- Fischer, Stanley, Ratna Sahay, and Carlos A. Vegh (1998b). "From Transition to Market: Evidence and Growth Prospects". IMF Working Paper, WP/98/52, April.
- Gillman, Max (1999). "Evaluating government policy in transition countries". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 156.
- Ghosh, Atish R., and Steven Phillips (1998). "Inflation, Disinflation, and Growth". IMF Working Paper, WP/98/68.
- Gomułka, Stanisław (1998). "Output: Causes of the Decline and the Recovery". CASE-CEU Working Papers Series, No. 8.
- Gomułka, Stanisław (1999) "Comparative Notes on Pension Developments and Reforms in the Czech Republic, Hungary, Poland and Romania". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 182.
- Gomułka, Stanisław, and Piotr Jaworski (1998). "Implicit Public Debt of the Polish Social Security System". CASE-CEU Working Papers Series, No. 14.
- Gomułka, Stanisław and Marek Styczeń (1999). "Estimating the Impact of the 1999 Pension Reform in Poland, 2000–2050". CASE-CEU Working Papers Series, No. 27.
- Gorzela, Michał (1999). "Medium Term Fiscal Projection for Selected Countries in Transition: The Czech Republic, Hungary, Poland and Romania. The Government Side". CASE – Center for Social and Economic Research, Warsaw, Reports, No. 19.
- Halpern, Laszlo (1996). "Real exchange rate and exchange rate policy in Hungary". *Economics of Transition*, Vol. 4 (1)
- Halpern, Laszlo, and Judit Nemenyi (1999): Fiscal Foundation of Convergence to European Union. Hungarian Economy Towards EU Accession, paper prepared for the 5th Dubrovnik Conference on Transition Economies: Ten Years of Transition: What Have We Learned and What Lies Ahead, June 23–25, Dubrovnik, Croatia.
- Halpern, Laszlo, and Charles Wyplosz (1995). "Equilibrium Real Exchange Rates in Transition." Centre for Economic Policy Research, London, Discussion Paper, No. 1145.
- Hanke, Steve H., and Kurt Schuler (1999). "A dollarization blueprint for Argentina, Friedberg's Commodity & Currency Comments Experts' Report". Friedberg Commodity Management Inc., Special Report, February 1.

Havrylyshyn, Oleh, Ivailo Izvorski, and Ron van Rooden (1998). "Recovery and Growth in Transition Economies 1990–97: A Stylized Regression Analysis". IMF Working Paper, WP/98/141, September.

IIF (1998). Comparative Statistics for Emerging Market Economies, Institute of International Finance, Inc., December.

IMF (1998a). Growth Experience in Transition Economies, International Monetary Fund, European II Department (in consultation with European I Department), September 4.

IMF (1998b). Disinflation in Transition: 1993–1997, International Monetary Fund, European I Department (in consultation with European II Department), September 4.

Jakubiak, Małgorzata (1999). "Saving, Investment, Financial Integration and FDI in Central Europe". CASE – Center for Social and Economic Research, Warsaw, mimeo, March 31.

Knight, Malcolm, and F. Scacciavillani (1998). "Current Accounts: What is their Relevance for Policymaking". [in:] O.Radzyner and A.Schubert (eds.): Current Account Imbalances in East and West: do they Matter?, Oesterreichische Nationalbank, Vienna.

Kosterna, Urszula (1998). "On the road to the European Union. Some Remarks on the budget. The performance in transition economies". CASE-CEU Working Papers Series, No. 1, January.

Levine, Ross and David Renelt (1992). "A Sensivity Analysis of Cross-Country Growth Regression". American Economic Review, Vol. 82, pp. 942–63.

Liberda, Barbara, and Tomasz Tokarski (1999). "Determinants of Saving and Economic Growth in Poland in Comparison to the OECD Countries". CASE-CEU Working Papers Series, No. 24.

Linn, Johannes F. (1999). "Ten Years of Transition in Central Europe and the Former Soviet Union. The Good News and the Not-so-good News". Paper prepared for the 5th Dubrovnik Conference on Transition Economies: Ten Years of Transition: What Have We Learned and What Lies Ahead, June 23–25, Dubrovnik, Croatia.

Maliszewska, Maryla (1998). "Modelling Real Exchange Rate in Transition: The Case of Poland and Romania". [in:] Real Exchange Rate, Foreign Trade and Economic Growth, CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 131.

Maliszewski, Wojciech (1998). "Medium-Term Fiscal Projection for Selected Countries in Transition". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 151.

Markiewicz, Małgorzata (1998). "Fiscal policy and disinflation in transition economies". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 127.

Mihalji, Peter, and Ryszard Petru (1999). "Health Care in the Czech Republic, Hungary and Poland. The Medium-Term Fiscal Aspects". CASE-CEU Working Papers Series, No. 28.

Mundell, Robert (1999). "The Priorities for Completing the Transition and the Model for the Future". Paper prepared for the 5th Dubrovnik Conference on Transition Economies: Ten Years of Transition: What Have We Learned and What Lies Ahead, June 23–25, Dubrovnik, Croatia.

Neneman, Jarosław (1999). "The Reform of Indirect Taxation in Hungary, the Czech Republic, Poland and Romania". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 149.

Nestor, Barbara, and Zoltan Vajda (1999). "Does a Pensions Overhang Threaten Macroeconomic Stability? The Case for Hungary". Central European University, mimeo, May, Budapest.

Palacios, Robert and Roberto Rocha (1998). "The Hungarian Pension System in Transition". Social Protection Working Paper Series; The World Bank, Washington D.C.

Polish Government (1999). "Strategy of Public Finances and Economic Development: Poland 2000–2010". June, Ministry of Finance, Warsaw.

Rostowski, Jacek (1999). "The Approach to EU Membership: The Implications for Macroeconomic Policy in Applicant Countries." CASE – Center for Social and Economic Research, Warsaw, CASE-CEU Working Papers Series, No. 26

Rybiński, Krzysztof, and Mateusz Szczurek (1998). "Current Account – Inflation Trade-Off. Lessons for Poland and Other Transition Economies". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 147.

Sachs, Jeffrey D., and Andrew M. Warner (1996). "Achieving Rapid Growth in the Transition Economies of Central Europe". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 73.

Schneider, Ondrej (1999). "Implicit Public Debt of the Czech Social-Security System". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 167.

Siwińska, Joanna (1999a). "Public Debt Structure and Dynamics in the Czech Republic, Hungary, Poland and Romania". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 162.

Siwińska, Joanna (1999b). "The External Public Debt of Baltic and Selected CIS Countries in Years 1992-1997: Estonia, Latvia, Lithuania, Kazakhstan, Kyrgyz Republic, Moldova, Russian Federation and Ukraine". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 169.

Stepanek, Pavel, and Ondrej Schneider (1999). "Present and future fiscal policy problems in the Czech Republic". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 180.

Styczeń, Marek (1999). "Socio-demographic Forecast of Poland, 1997-2050, for Modelling Incomes and Social Security Retirement Pensions". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 168.

Tomczyńska, Magdalena (1999a). "Comparative Analyses of Direct Tax Systems in Selected Central European Countries: Poland, Czech Republic, Hungary and Romania". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 161.

Tomczyńska, Magdalena (1999b). "European Union Financial Transfers to Applicant Countries". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 173.

Tomczyńska, Magdalena (1999c). "Assessment of the budget process in selected countries in transition: Hungary, Poland and Romania". CASE – Center for Social and Economic Research, Warsaw, mimeo, June.

Vajda, Zoltan (1999). "Macroeconomic Implication of the Pension Reform". CASE – Center for Social and Economic Research, Warsaw, Reports, No. 20.

Walewski, Mateusz (1999). "A Short Play on the Idea of the Laffer Curve in Transition Economies". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 175.

WEO (1998). World Economic Outlook, International Monetary Fund, May.

WEO (1999). World Economic Outlook, International Monetary Fund, April.

World Bank (1997). "Poland – Reform and Growth on the Road to the EU, Country Economic Memorandum". World Bank, November 26.

Zawalińska, Katarzyna (1999). "Agriculture of the Czech Republic, Hungary and Poland in perspective of joining Common Agriculture Policy – with some fiscal remarks". CASE – Center for Social and Economic Research, Warsaw, Studies and Analyses, No. 178.

Tables and Graphs

Table 1. EU candidate countries: per capita GDP in US dollars, PPP based

Country	GDP per capita	% of average for 3 low-income EU countries
Bulgaria	5132	43.9
Czech Republic	8173	69.9
Estonia	7203	61.6
Hungary	6211	53.1
Latvia	5002	42.8
Lithuania	3035	26.0
Poland	6364	54.4
Romania	3542	30.3
Slovakia	6671	57.1
Slovenia	6342	54.3
Average for 3 low-income EU countries	11690	x

Source: Fischer, Sahay, and Vegh (1998a) basing on the World Economic Outlook Database

Table 2. Real GDP growth in candidate countries, 1990–1998

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998
Bulgaria	-9.1	-11.7	-7.3	-1.5	1.8	2.9	-10.1	-6.9	4.0
Czech Republic	-1.2	-14.3	-3.3	0.6	2.7	6.4	3.9	1.0	-2.2
Estonia	-8.1	-7.9	-21.6	-8.2	-1.8	4.3	4.0	11.4	4.0
Hungary	-3.5	-11.9	-3.1	-0.6	2.9	1.5	1.3	4.6	5.0
Latvia	2.9	-10.4	-35.2	-16.1	2.1	0.3	3.3	6.5	3.8
Lithuania	-5.0	-13.4	-21.3	-16.2	-9.8	3.3	4.7	6.1	4.4
Poland	-11.6	-7.0	2.6	3.8	5.2	7.0	6.1	6.9	4.8
Romania	-5.6	-12.9	-8.8	1.5	3.9	7.1	3.9	-6.6	-5.5
Slovakia	-2.5	-14.6	-6.5	-3.7	4.9	6.9	6.6	6.5	4.4
Slovenia	-8.1	-8.9	-5.5	2.8	5.3	4.1	3.1	3.8	3.9

Source: Havrylyshyn, Izvorski, and Rooden (1998, Table 1), WEO (1999, Table 1.3)

Table 3. Simulation of average GDP per capita growth rates and number of years needed by the EU candidate countries for convergence to GDP per capita level of low-income EU countries

Country	Barro equation		Levine-Renelt equation	
	rate of growth	number of years	Rate of growth	number of years
Bulgaria	4.92	29	5.01	28
Czech Republic	5.44	11	4.40	15
Estonia	5.23	16	4.93	17
Hungary	5.28	20	5.02	22
Latvia	5.50	25	5.79	23
Lithuania	6.10	34	6.22	33
Poland	5.42	18	4.75	23
Romania	5.47	36	5.64	34
Slovakia	5.86	15	5.00	19
Slovenia	5.31	19	4.58	24

Source: Fischer, Sahay, and Vegh (1998a)

Table 4. Selected transition economies: gross saving and investment ratios as % of GDP, 1991–1997

Country / Indicator	1991	1992	1993	1994	1995	1996	1997
First group of candidates							
Czech Republic							
gross domestic saving rate ^{c)}	36.84	27.45	20.23	20.11	23.31	26.91	
gross investment rate ^{c)}	29.89	27.07	18.39	20.37	27.81	34.52	
Estonia							
gross domestic saving rate ^{c)}	34.48	32.75	22.18	18.29	18.19	14.08	
gross investment rate ^{c)}	20.93	21.03	23.93	26.59	25.62	24.81	
Hungary							
gross domestic saving rate ^{b)}	18.1	15.3	10.6	14.4	20.4	22.4	23.4*
gross investment rate ^{b)}	20.6	16.1	20.0	22.2	24.1	24.5	25.4*
Poland							
Gross domestic saving rate ^{a)}	15.86	15.44	15.77	17.29	18.31	17.1	
Gross investment rate ^{a)}	19.9	15.2	15.6	15.9	18.0	20.2	
Slovenia							
gross domestic saving rate ^{c)}	26.42	24.73	20.61	23.16	21.89	22.24	
gross investment rate ^{c)}	20.61	18.41	18.73	19.75	21.20	22.09	
Other candidate countries							
Bulgaria							
gross domestic saving rate ^{e)}	18.4	4.5	2.0	4.5	10.8	7.5	13.6
gross domestic investment rate ^{e)}	25.2	19.9	15.3	9.4	15.7	8.4	11.8
Romania							
gross national saving rate ^{e)}	24.8	22.9	24.2	25.4	21.0	23.0	19.6
gross domestic investment rate ^{e)}	28.0	31.4	29.0	26.9	25.7	31.3	28.3
Slovakia							
gross domestic saving rate ^{e)}	28.3	24.9	22.1	27.7	30.8	28.0	28.4
gross domestic investment rate ^{e)}	31.2	28.8	27.6	22.2	27.5	39.9	35.5

Source: Jakubiak (1999) basing on: a) GUS: SNA, b) IMF Staff Country Report No. 97/104, c) World Development Indicators, d) own calculations based on IFS and WDI databases; *IMF estimates. Author's estimate basing on: e – IIF (1998, Tables S305, S315)

Table 5. Current account deficit as % of GDP in candidate countries, 1991–1997

Country	1991	1992	1993	1994	1995	1996	1997	1998
Bulgaria	-7.2	-9.3	-12.8	-2.1	-1.0	-0.8	4.1	-2.6
Czech Republic	..	-1.7	2.2	-0.1	-2.9	-8.7	-6.0	-1.5
Estonia	..	-1.0	1.3	-7.1	-4.4	-9.1	-12.0	-8.7
Hungary	0.8	0.9	-9.0	-9.5	-5.6	-3.7	-2.1	-4.8
Latvia	..	15.2	19.7	5.5	-0.4	-5.5	-6.1	-11.0
Lithuania	..	5.4	-3.1	-2.1	-10.2	-9.2	-10.2	-12.1
Poland	-1.0	-0.3	-0.1	2.3	3.3	-1.0	-3.1	-4.5
Romania	-4.5	-7.5	-4.7	-1.7	-5.6	-7.8	-6.7	-7.9
Slovakia	..	0.4	-5.0	4.8	2.3	-11.1	-6.9	-9.7
Slovenia	1.5	7.4	1.5	3.8	-0.1	0.2	0.2	0.0

Source: Linn (1999)

Table 6. Selected transition countries: end-of year inflation, 1991–1998

Country	1991	1992	1993	1994	1995	1996	1997	1998
Bulgaria	338.7	79.4	63.8	121.9	32.9	310.8	578.6	0.9
Czech Republic	52.0	12.6	18.8	9.7	7.9	8.6	10.1	6.8
Estonia	...	942.2	35.7	41.6	28.8	15.0	12.5	4.5
Hungary	32.0	24.7	21.1	21.2	28.3	19.8	18.4	10.3
Latvia	...	958.2	34.8	26.2	23.3	13.2	7.0	2.8
Lithuania	...	1162.5	188.8	45.0	35.5	13.1	8.5	2.4
Poland	60.3	44.5	37.7	29.5	21.6	18.5	13.2	8.6
Romania	223.0	199.2	295.5	61.7	27.8	56.9	151.6	43.8
Slovakia	58.3	9.1	25.0	11.7	7.2	5.4	6.4	5.6
Slovenia	247.0	88.2	22.9	18.3	8.6	8.8	9.4	5.7

Source: IMF, EBRD and PlanEcon data

Table 7. Central Bank Credit to Government, 1992–7 (in % of GDP)

Country	1992	1993	1994	1995	1996	1997
Bulgaria	6.0	11.0	5.5	4.9	14.5	-0.1
Czech Republic	...	-2.1	-2.4	-1.0	-0.8	0.7
Estonia	...	0.0	0.0	0.0	0.0	0.0
Hungary	16.5	13.2	11.2	7.5	7.3	1.7
Latvia	0.0	0.0	0.0	0.0	0.0	0.0
Lithuania	0.0	0.0	0.0	0.0	0.0	0.0
Poland	5.2	1.5	1.5	0.1	0.1	0.5
Slovakia	...	...	...	...	...	1.5
Slovenia	0.0	0.0	0.0	0.0	0.0	0.0

Source: IMF (1998b, Table 5)

Table 8: The balance of quasi-fiscal operations – as percentage of GDP [1]

Country	1990	1991	1992	1993	1994	1995	1996
Czech Rep.	n.a.	n.a.	n.a.	1.3	-0.4	1.2	-1.3
Hungary	9.0	15.5	-0.4	10.9	6.5	7.1	n.a.
Estonia	n.a.	n.a.	-3.3	2.1	0.8	-0.2	-0.6
Latvia	n.a.	n.a.	n.a.	n.a.	1.5	-0.4	0.1
Poland	7.9	-2.5	-5.2	-2.0	-1.6	-2.7	-2.2
Slovenia	n.a.	n.a.	n.a.	-2.0	-2.9	-1.8	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.	-7.2	0.4	-1.1

Source: Markiewicz (1998) based on IMF data - IFS basis

[1] Positive sign means that central bank grants net QF transfers. Negative sign may indicate involvement in the large-scale sterilization of capital inflow

Table 9. Revenues, expenditures, and general government balance in transition economies on a disbursement basis, 1994–1997 (in % of GDP)

Country	Indicator	1994	1995	1996	1997
Bulgaria	Revenues	39.9	36.6	34.3	31.5
	Expenditures	45.7	43.0	47.6	34.1
	Balance	-5.8	-6.4	-13.4	-2.6
Czech Rep.	Revenue	44.9	43.8	42.7	40.7
	Expenditure	46.0	45.7	43.9	42.8
	Balance	-1.2	-1.8	-1.2	-2.1
Estonia	Revenue	41.3	39.9	39.0	39.4
	Expenditure	39.9	41.1	40.5	37.0
	Balance	1.3	-1.2	-1.5	2.4
Hungary	Revenue	51.4	48.1	46.8	44.9
	Expenditure	59.7	53.2	49.9	49.5
	Balance	-8.3	-7.1	-3.1	-4.6
Latvia	Revenue	36.5	35.5	36.5	39.0
	Expenditure	40.5	38.8	37.8	37.6
	Balance	-4.0	-3.3	-1.3	1.4
Lithuania	Revenue	32.7	32.8	30.1	33.5
	Expenditure	37.5	37.3	34.7	35.4
	Balance	-4.8	-4.5	-4.6	-1.9
Poland	Revenue	47.5	45.7	45.1	44.1
	Expenditure	49.5	48.4	47.5	45.8
	Balance	-2.0	-2.7	-2.5	-1.7
Romania	Revenues	32.1	31.9	29.8	27.0
	Expenditures	33.9	34.5	33.7	31.5
	Balance	-1.8	-2.6	-3.9	-4.5
Slovakia	Revenue	46.4	47.1	46.9	41.5
	Expenditure	47.7	46.9	48.3	46.4
	Balance	-1.3	0.2	-1.3	-4.9
Slovenia	Revenue	45.9	45.7	45.2	45.0
	Expenditure	46.1	45.7	44.9	46.2
	Balance	-0.2	-0.0	0.3	-1.2

Source: WEO (1998), tables 17-19

Table 10. Public debt to GDP ratio in selected transition countries, in %, 1994–1997

Country	1994	1995	1996	1997
Czech Republic	14.1	11.5	10.1	10.5
Estonia ^{a)}	2.1	3.2	4.2	3.8
Hungary	87.1	86.0	72.4	68.0
Latvia ^{a)}	3.3	5.1	5.5	1.1
Lithuania ^{a)}	3.3	5.6	9.9	10.7
Poland	72.3	57.9	51.1	48.0
Romania	17.0	18.0	23.0	33.0
Slovenia	15.4	16.8	22.2	24.1

Note: a) – Long-term public and publicly guaranteed external debt to GDP

Sources: Gillman (1999); Siwińska (1999a); Siwińska (1999b); Stepanek and Schneider (1999)

Table 11. Social security transfers in selected transition countries, 1996 (in % of GDP)

Country	Social transfers in % of GDP
Czech Republic	12.2
Estonia	11.0
Hungary	14.4
Latvia	16.1
Lithuania	8.8
Poland	20.8
Slovakia	14.5
Slovenia	20.2

Source: WEO (1998), p. 112, Table 24

Table 12. Public pension expenditures in transition countries, 1996 (in percent of GDP)

Country	Pension expenditures in % of GDP
Bulgaria	9.5
Czech Republic	8.4
Estonia	7.6
Hungary	9.7
Latvia	10.8
Lithuania	6.2
Poland	14.4
Romania	5.8
Slovakia	8.3

Source: WEO (1998), p. 115, box 10

Table 13. Czech Republic: public debt and contingent public liabilities (in % of GDP)

Public debt indicator	1993	1994	1995	1996	1997	1998
Officially reported gross government debt	15.8	14.1	11.5	10.1	10.5	11.8
Contingent public liabilities (net of provisions and reserves)	8.4	9.7	7.5	6.9	9.9	12.7

Source: Stepanek and Schneider (1999)

Table 14. Size of implicit [1] pension debt in % of GDP

Implicit pension debt	Total	already retired	Presently working	All – old age	all – disability
Czech Rep. (1998)	284	81	203	53 ²	19 ²
Hungary –WB (1994) ⁴	231	100	131	147	64
Hungary –Vajda –(1995)	407	..	..	..	..
Poland (1996)	302	197 (165) ³	105 (87) ³	108 ³ (81) ²	104 ³ (63) ²
Romania (1997)	211	100	111	68	17
Germany (1992)	221	106	115	..	..
France (1992)	264	128	136	..	..
Italy (1990)	358	171	187	..	..
Japan (1990)	166	68	98	..	..
USA (1990)	109	32	77	..	..

Notes: 1) Assumes 2% rate of growth of real pensions and 3% discount rate. 2) Current beneficiaries only 3) Outside agriculture 4) The World Bank estimates relate to the start of 1994. They exclude agricultural pensions and any other benefits financed from the central government budget

Source: Gomulka (1999) For the Czech Republic, official data as reported by Schneider (1999) and IMF (1998). For Hungary, Cangiano et.al. (1998), Augustinovic (1997), Palacios and Rocha (1997), Nestor and Vajda (1999) and Vajda (1999). For Poland. Polish Government (1999), Gomulka and Jaworski (1998) and Gomulka and Styczen (1999). For Romania, Cangiano et.al. (1998) and de Menil et.al. (1999). For OECD countries: Chand and Jaeger (1996)

Table 15. Long-term fiscal projection: assumptions related to main revenue and expenditure items.

Projected items	Method of estimation	Notes
REVENUES		
Tax revenue	Calculated	total of:
Direct taxes	Growth with GDP	
Indirect taxes	Growth with GDP	
International trade taxes	Constant real level	zero after EU accession
Other tax revenues	Growth with GDP	
Non-tax revenue	Constant real level	
EXPENDITURES		
Current expenditure	Calculated	total of:
Wages & salaries	Constant real level	
Subsidies	Growth with GDP	
Transfers	Growth with GDP	
Interest payments	Calculated	formula described
Other current expenditure	Constant real level	
Investment expenditure	Growth with GDP	

Sources: Gorzelak (1999)

Table 16. Cost of reforms and EU accession, in % of GDP, 1999–2010

Expenditures	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Czech Republic												
Environment					3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80
Hungary												
Pension system		0.35	0.70	1.05	0.92	0.79	0.66	0.53	0.39	0.26	0.13	0.00
Environment					1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Total		0.35	0.70	1.05	2.42	2.29	2.16	2.03	1.89	1.76	1.63	1.50
Poland												
Pension system	1.11	1.19	1.26	1.34	1.41	1.49	1.57	1.64	1.72	1.8	1.87	1.95
Health care	0.5	1.00	1.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Environment					1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Total	1.61	2.19	2.76	3.34	5.01	5.09	5.17	5.24	5.32	5.4	5.47	5.55
Romania												
Pension system	0.51	0.55	0.58	0.62	0.65	0.69	0.72	0.76	0.79	0.83	0.86	0.90

Source: Gorzelak (1999)

Table 17. Net EU transfers to candidate countries GDP, in % of GDP, 1999–2010

Transfers	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
High growth scenario										
Czech Republic	0.19	0.18	0.32	0.40	0.46	0.52	0.56	0.53	0.51	0.49
Hungary	0.19	0.18	0.31	0.39	0.45	0.51	0.55	0.52	0.50	0.47
Poland	0.56	0.54	0.93	1.16	1.36	1.52	1.64	1.56	1.49	1.42
Low growth scenario										
Czech Republic	0.20	0.20	0.36	0.47	0.57	0.67	0.76	0.74	0.73	0.71
Hungary	0.20	0.20	0.35	0.46	0.56	0.66	0.74	0.73	0.71	0.70
Poland	0.60	0.58	1.06	1.38	1.67	1.96	2.21	2.17	2.12	2.08

Source: Tomczyńska (1999b); Gorzelak (1999)

Table 18. Main characteristics of pension systems in the Czech Republic, Hungary, Poland, and Romania in 1990s

Category	Czech Republic	Hungary	Poland	Romania
Retirement age	62 for men since 1996; 57-61 for women (depending on number of children) in 2007	Progressively raised and unified to 62 for men (2001) and women (2009)	To be raised progressively to 65 for men and 60 for women until 2010 from effective ages of 59 and 55 respectively	62 for men and 57 for women, to be raised to 65 and 62 respectively
Number of pensioners as % of population of retirement age	116 (1990) 117 (1998)	105 (1990) 130 (1995)	128 (1989) 148 (1995)	73 (1989) 80 (1995)
Dependency ratio in %	44.4 (1990) 52.7 (1998)	46.1 (1990) 74.8 (1995)	ca. 40 (1990) ca. 60 (1995)	34 (1989) 60 (1995)
Replacement rate in %	62 (1990) 44 (1995)	64.4 (1991) 55-58 (1996-98)	43 (1989) 65 (1995)	47 (1990) 36 (1998)
Size of contribution, in % of GDP	Broadly constant at ca. 8-9% of GDP	11 (1991) 8-9 (1995-98)	7.8 (1989) 11.8 (1995)	6-7 (1990-93) below 5 (1996)
Contribution rate, % of wages, 1996	26	30.5	45	25.5 32.5 (from 1999)
PAYG financial balance, % of GDP	Small surplus	Deteriorating from balance to a deficit of 1-2%	Deteriorating from a surplus of 1.4% (1989) to a deficit of 3.2% in 1995	Deteriorating from a surplus of ca. 1% to deficit of ca. 1%

Sources: Gomulka (1999)

Table 19. Public health care expenditures in the Czech Republic, Hungary and Poland, 1990–1996, as a % of GDP

Country	1990	1991	1992	1993	1994	1995	1996
Czech Republic	5.3	5.3	5.5	7.6	8.1	8.2	8.2
Hungary	10.6	10.6	10.9	9.9	9.7	8.6	8.3
Poland	5.4	4.8	4.9	4.6	4.5	4.5	4.6

Source: Mihalyi and Petru (1999)

Table 20. Structure of health expenditures by the source of financing (% of total)

Country	Contribution	Budgets	Co-payments
Czech Republic	75%	15%	10%
Hungary	70%	15%	15%
Poland (before 1999)	-	app. 76%	app. 24%
Poland (1999)	55%	25%	20%

Source: Mihalyi and Petru (1999)

Table 21. Tax rate of VAT in the Czech Rep., Hungary, Poland, and Romania (basic rate in bold)

Country	Date of introduction	Rates at the introduction	Rates in 1998
Czech Republic	January 1993	23% , 15%, 5%, 0%	22% , 5%,
Hungary	January 1988	25% , 15%, 0%	25% , 12%, 0%
Poland	July 1993	22% , 7%, 0%	22% , 7%, 0%
Romania	July 1993	18% , 9%, 0%	22% , 11%, *

* New rates from February 1998

Sources: Neneman (1999)

Table 22. VAT rates in the European Union, July 1, 1994

Country	Standard rate	Reduced rate
Austria	20%	10%
Belgium	20.5%	12%, 6%, 1%
Denmark	25%	-
Finland	22%	12%, 9%
France	18.6%	5.5%, 2.1%
Germany	15%	7%
Greece	18%	8%, 4%
Ireland	21%	12.5%, 2.5%, 0%
Italy	19%	13%, 9%, 4%
Luxembourg	15%	12%, 6%, 3%
Netherlands	17.5%	6%
Portugal	16%	5%
Spain	15%	6%, 3%
Sweden	25%	21%, 12%
United Kingdom	17.5%	8%, 0%

Source: Kosterna (1998)

Table 23. VAT: main items in particular tax categories

Country / Threshold	Basic rate	Reduced rate	Zero rate	Exemption
Czech Rep. EUR 22,000	All goods with exceptions. Services: Wholesaling, retailing, accommodation and catering services (with some exceptions), road freight transport, and commercial services	Live animals, meat, fish, milk and dairy products, fats and oils, sugar, pharmaceuticals, books, newspapers, medical instruments, equipment for disabled. All other services	Export	Banking, insurance, postal services, radio and TV broadcasting, sale and lease of buildings (except for newly constructed), education, health and social care
Hungary EUR 8,500	All goods and services with exceptions	Electricity, gas, water, medical instruments, books, newspapers, dairy products, meat, bakery products, vegetable oil Services: accommodation	Pharmaceuticals, human nutrition products	Agriculture. Services: education, postal services, radio and TV broadcasting, culture etc.
Poland* EUR 21,000	All goods and services with exceptions	Medical equipment, equipment for disabled, most of foodstuff, children goods (up to 11 years), and construction materials Services: construction, transport (except for public municipal transport and TAXI)	Publishing and printing of books and newspapers, most of inputs for agriculture**	Unprocessed agricultural products, and handcraft. Services: banking, insurance, postal services, radio and TV broadcasting, agricultural, public municipal transport and TAXI, education, health and social care
Romania EUR 5,000	All goods and services with exceptions	Animals, meat, fish, dairy products, cereals, pharmaceuticals, medical equipment, municipal public transportation, children clothing, domestic fruits and vegetables, fertilizers Services: agricultural works	Export	Books and newspapers†, fuel for heating, energy for individuals, public utilities, imported equipment, tools and machines used for creation of new capacities or development of existing. Health and social care, education, research, banking, finance

* There was transitory rate of 2% for pharmaceuticals in 1998. This rate is 4% in 1999 and will increase to 7% in 2000

** Temporally, the rate of 7% is envisaged in the VAT Law

With the right to deduct VAT paid in the purchased goods and services (except for advertising), what in fact is almost equal to zero rate

Sources: Neneman (1999)

Table 24. Share of VAT, and VAT with excise duties in GDP, 1993-1997, in %

Country / Indicator	1993	1994	1995	1996	1997
Czech Republic: VAT/GDP	7.7	7.5	7.0	7.1	7.1
-- (VAT+excise)/GDP	11.6	11.5	11.2	11.1	11.9
Hungary: VAT/GDP*	8.3	8.0	7.9	7.8	8.3
--(VAT+excise)/GDP	12.7	11.9	11.6	11.1	11.5
Poland*: VAT/GDP	6.4	7.1	7.2	7.7	8.3
(VAT+excise)/GDP	8.4	11.4	11.4	12.0	12.3
Romania: Vat/GDP	3.6	4.6	5.2	4.9	4.7
(VAT+excise)/GDP	7.7	6.2	6.7	6.3	6.4

* For 1993 VAT encompasses also the turnover tax

Source: Neneman (1999)

Table 25. Excise duties in the Czech Republic, Hungary, Poland and Romania, 1998

Czech Rep.	Car petrol– CZK 12 950 per tone Diesel oil – CZK 8 700 per tone Alcohol and spirit – CZK 234 per litre Beer – CZK 24 per hectolitre for each percent of original malt extract Wines – CZK 2,50-16,4 per litre, sparkling wine – CZK 23,40 per litre Cigarettes – 0,64 or 0,74 per unit depending on size
Hungary	Jewellery and precious metals (excluding silver) – 35% Passenger cars - 10% (up to 1600 cm ³) and 20% (over 1600 cm ³) Coffee – 12% Wine – 11%, champagne – HUF 60 per litre Mineral oils (incl. Petrol and diesel) HUF 77,0-83,1 per litre Alcoholic beverages – HUF 1270 per hectolitre- degree Beer – HUF 60 per litre for each percent of original malt extract Tobacco
Poland	Mineral oils (incl. Petrol and diesel) PLN 664-1153 per tonne Alcohol - PLN2070 per hectolitre of 100% alcohol Beer – PLN 5 per hectolitre for each percent of original malt extract Wine – PLN 81 per hectolitre Cigarettes – PLN 50,00-76,50 per 1000. Salt – PLN 7,5%; 15% Jewellery – 25% Yachts – 15%; 20% Audio-video cameras - for particular items- 10% Fur-coats- 20% Chewing gum – 20% Perfumes – 20%
Romania	Alcohol –50% (for most popular drinks), up to 200% in case of whisky, gin, cognac etc. Wines – 20%, champagne – 115% Beer – 55% in metal cans – 70% Mineral water – 4% Coffee – 80% Cigarettes – ECU 4 + 20% Jewellery – 20% Crystal – 50% Petrol – 27%, leaded – 30%, diesel – 12% Cars (over 1800 cm ³) – 50% Perfumes- 20% Audio- video equipment, compact discs, tape – recorders etc. – 40% Audio-video cameras – 50% Micro-wave ovens – 50% Cameras – 20% Cordless phones – 20 or 30%

Sources: Neneman (1999)

Table 26. Coverage of consolidated tax base (X) and some special tax rates in the PIT of Central European countries

Source of income	Poland	Czech Republic	Hungary	Romania
Dependent activity	Yes	Yes	Yes	Yes
Independent activity	Yes	Yes	Yes	No
Social insurance benefits / rents	Yes	No	No	No
Agricultural production	Yes ¹⁾	Yes	Yes	No
Rental income	Yes	Yes	n.a.	No
Sale of real estate	Yes ²⁾	Yes	Yes ³⁾	No

Notes: 1) Only income from special branches of agriculture production is taxed and consolidated. 2) Before 5 years elapsed from the date of purchase. 3) Only half of the income from the sale of real estate is consolidated

Sources: Tomczyńska (1999a)

Table 27. Top marginal rates of PIT in CE countries in %

Country	1993	1994	1995	1996	1997	1998
Czech Republic	47	44	43	40	39	40
Hungary	40	44	44	48	42	42
Poland	40	45	45	45	44	40
Romania	60	60	60	60	60	60

Sources: Tomczyńska (1999a)

Table 28. Top marginal rates of PIT in EU countries in %

Country	1986	1990	1995	1996	1997	1998
Austria	62	50	50	50	50	50
Belgium	72	55	55	56.65	56.65	56.65
Denmark	45	40	34.5	34.5	34.5	34.5
Finland	51	43	39	39	38	38
France	65	57	56.8	56.8	54	54
Germany	56	53	53	53	53	53
Greece	63	50	40	40	40	40
Ireland	58	53	48	48	48	48
Italy	62	50	51	51	51	51
Luxembourg	57	56	50	50	50	46
Netherlands	72	60	60	60	60	60
Portugal	61	40	40	40	40	40
Spain	66	56	56	56	47.6	47.6
Sweden	50	20	25	25	25	25
United Kingdom	60	40	40	40	40	40

Sources: Tomczyńska (1999a)

Table 29. Number of positive rates in the PIT schedule in CE countries

Country	1993	1994	1995	1996	1997	1998
Czech Republic	6	6	6	5	5	5
Hungary	4	6	6	6	6	6
Poland	3	3	3	3	3	3
Romania	6	6	6	6	6	6

Sources: Tomczyńska (1999a)

Table 30. CIT rates in CE countries (in %)

Country	1993	1994	1995	1996	1997	1998
Czech Republic	45	42	41	39	39	35
Hungary	40	36	18	18	18	18
Poland	40	40	40	40	38	36
Romania	30/45	30/45	38	38	38	38

Sources: CASE database

Table 31. CIT rates in the EU countries (in %)

Country	1986	1991	1995	1996	1997	1998
Austria	30	30	34	34	34	34
Belgium	45	39	39	39	39	39
Denmark	50	38	34	34	34	34
Finland	33	23	25	28	28	28
France	45	34/42	33.33	33.33	33.33	33.33
Germany	56	50/36	45/30	45/31	45/32	45/30
Greece	49	46	35/40	35/41	35/42	35/40
Ireland	50	43	40	38	38	38
Italy	36	36	36	36	36	36
Luxembourg	40	33	33	33	33	30
Netherlands	42	35	35	35	35	35
Portugal	42/47	36	36	36	36	34
Spain	35	35	35	35	35	35
Sweden	52	30	28	28	28	28
United Kingdom	35	34	33	33	33	31

Sources: Tomczyńska (1999a)

Table 32. Personal income tax revenue as % of GDP

Country	1992	1993	1994	1995	1996
Central Europe					
Czech Republic	7	4.3	5.3	5.5	5.3
Hungary	6.7	7	6.5	6.5	5.9
Poland	7.7	9.2	9.8	9.8	9.2
Romania (wage tax)	6.8	7.6	7.6	6.6	6.5
(other direct taxes)	-	0.3	0.4	0.4	0.8
European Union					
Austria	9.2	9.4	8.5	8.8	
Belgium	13.9	13.6	14.5	14.6	
Denmark	26.4	26.4	27.7	27.6	
Finland	18.3	16.2	17.4	16.2	
France	6	6.1	6.2	6.2	
Germany	10.9	10.6	10.4	10.7	
Greece	4	3.7	4.3	4.9	
Ireland	11.3	11.3	11.4	10.4	
Italy	11.3	11.9	10.6	10.8	
Luxembourg	9	9.1	9.5	9.4	
Netherlands	11.6	12	9.2	8.3	
Portugal	6.8	6.3	6.2	6.1	
Spain	8.4	8.4	8.1	8.1	
Sweden	18	18.3	18.7	17.5	
United Kingdom	9.9	9.3	9.4	9.7	

Sources: Tomczyńska (1999a)

Table 33. Corporate income tax revenue (as % of GDP)

Country	1992	1993	1994	1995	1996
Central Europe					
Czech Republic	10.8	7.9	6.4	5.4	4.1
Hungary	2.5	1.7	1.9	1.9	1.9
Poland	4.6	4.3	3.4	3.3	3.1
Romania	7.1	5.1	5.3	3.8	3.8
European Union					
Austria	1.7	1.5	1.3	1.6	
Belgium	2.1	2.4	2.8	3.1	
Denmark	1.6	2.2	2.1	2.1	
Finland	1.7	1.2	1.9	2.5	
France	1.5	1.5	1.6	1.6	
Germany	1.6	1.4	1.1	1.1	
Greece	1.8	2	2.3	2.6	
Ireland	2.4	2.9	3.2	2.9	
Italy	4.4	4.1	3.7	3.6	
Luxembourg	5.3	7.1	7.5	7.7	
Netherlands	3.1	3.3	3.3	3.3	
Portugal	2.7	2.3	2.3	2.7	
Spain	2.3	2	1.7	1.9	
Sweden	1.5	2.2	2.7	3.1	
United Kingdom	2.6	2.4	2.7	3.3	

Sources: Tomczyńska (1999a)

Figure 1. Czech Republic – simulation results

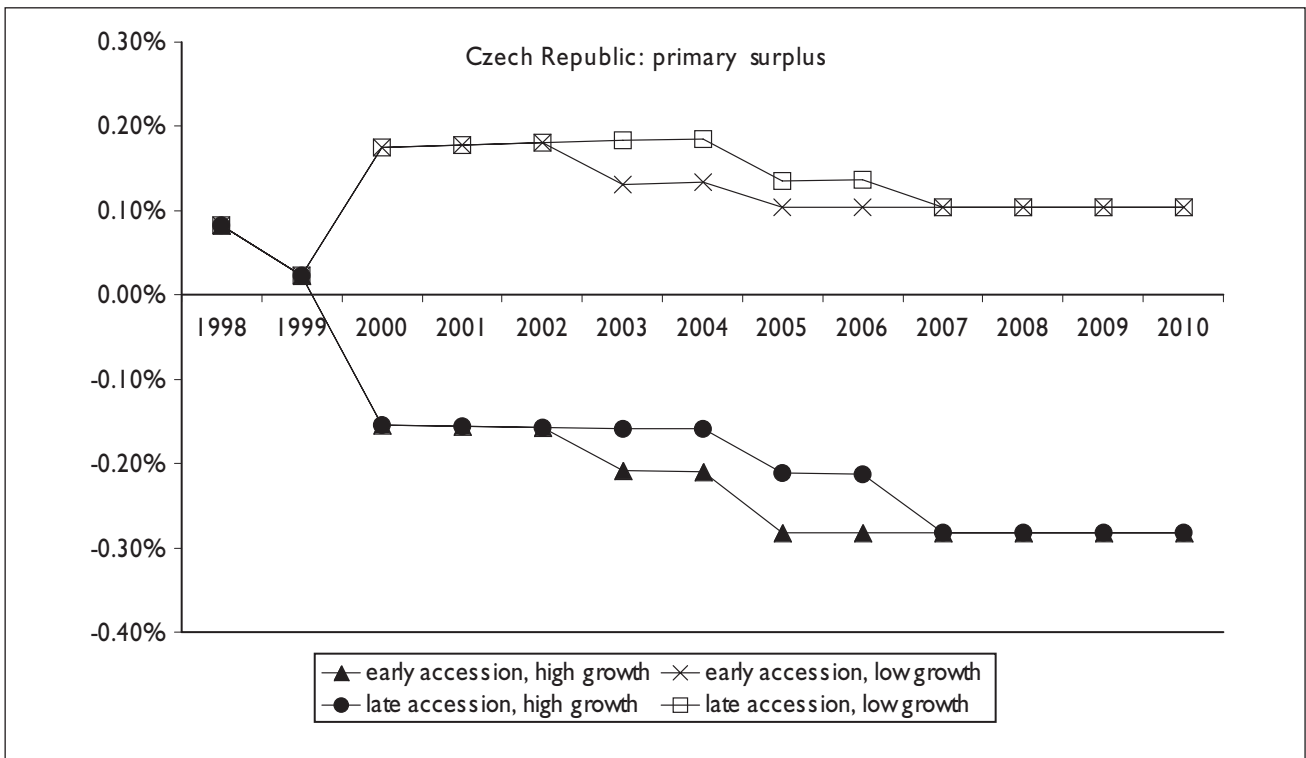


Figure 2. Hungary – simulation results

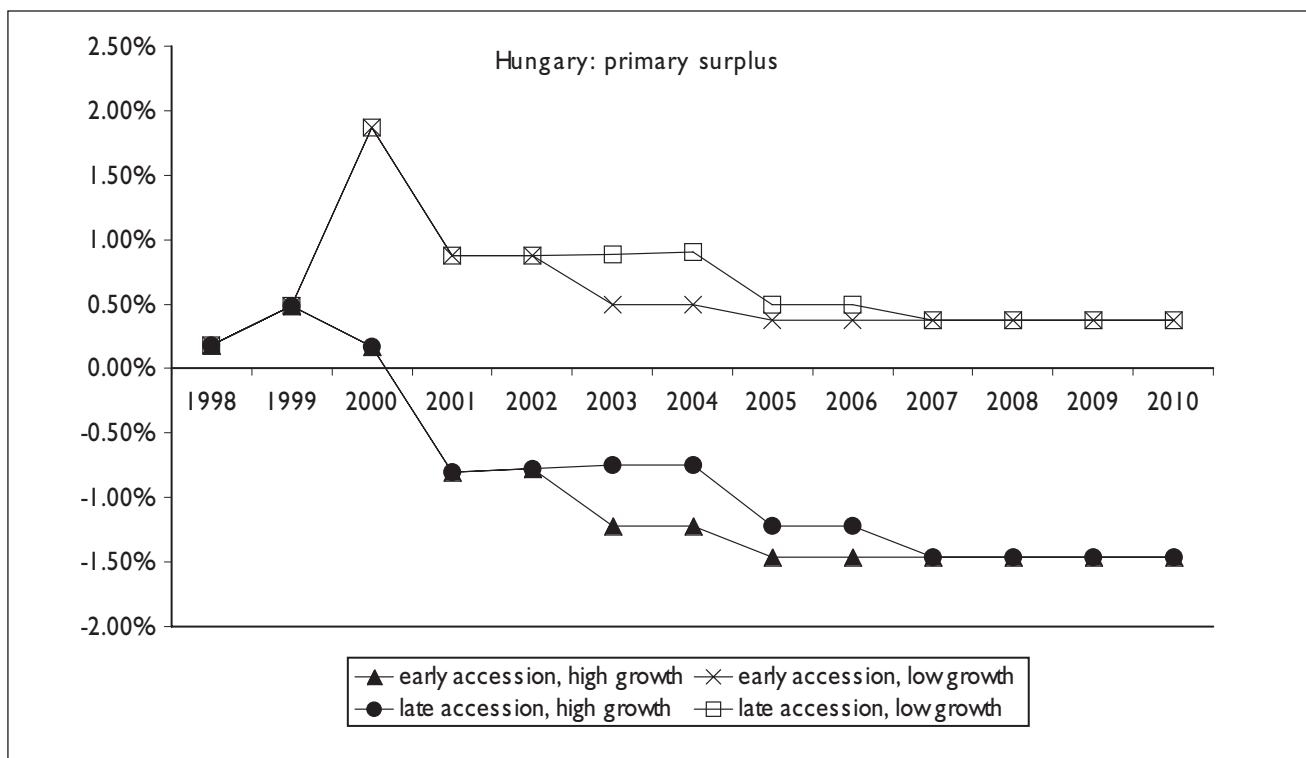


Figure 3. Poland – simulation results

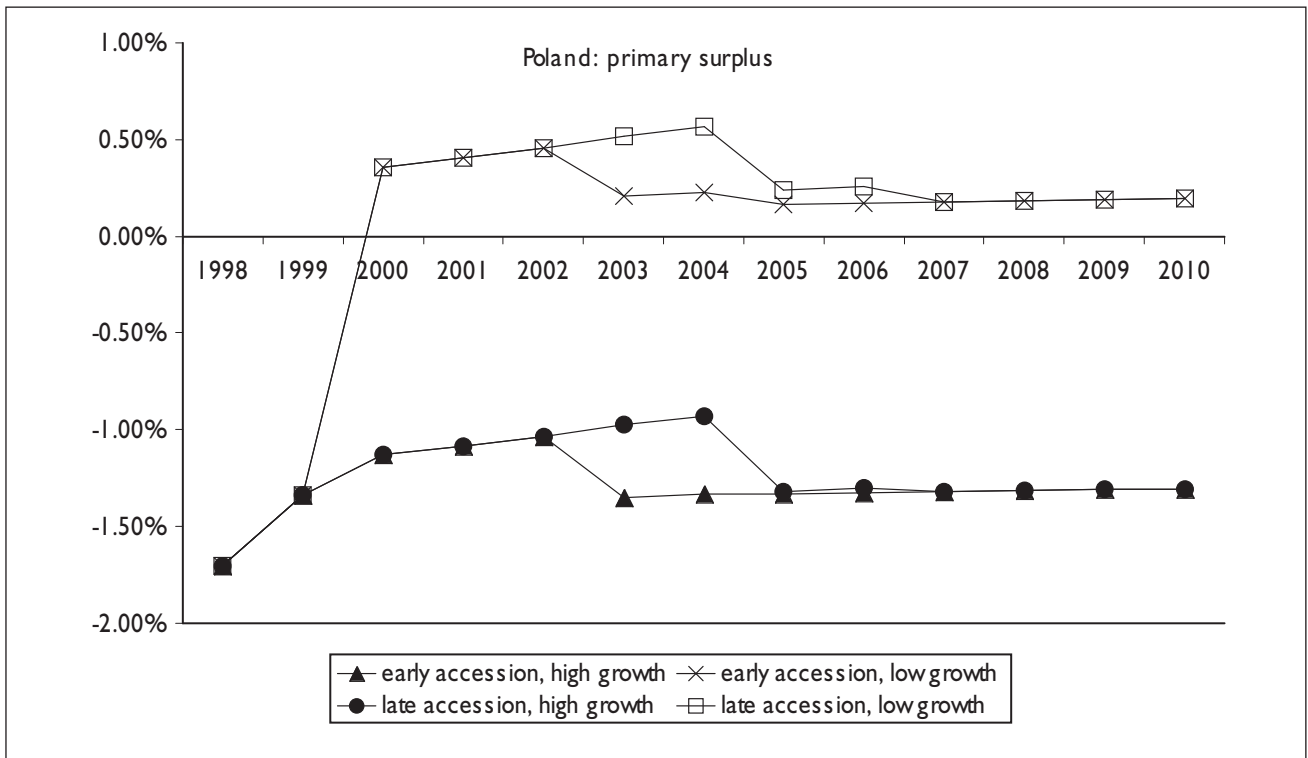


Figure 4. Romania – simulation results

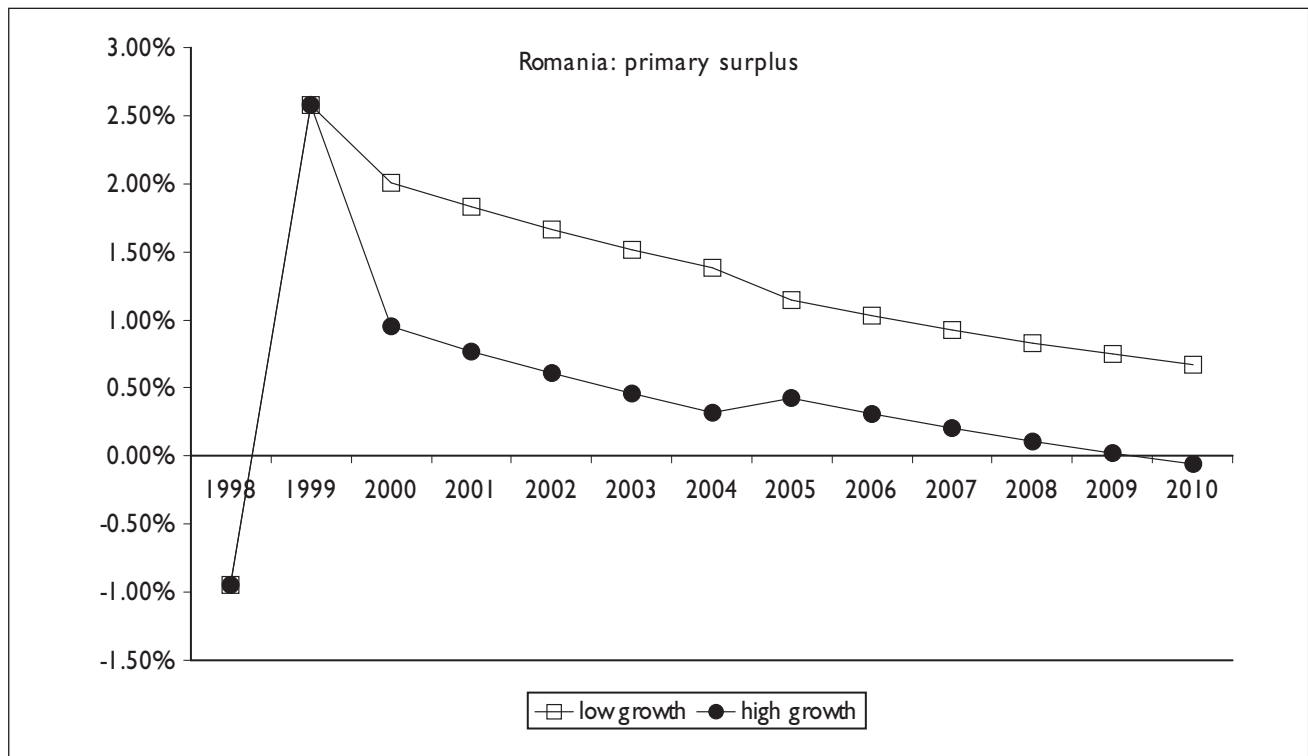


Figure 5. Simulation results: Czech Republic, high growth, with costs of reforms and the EU transfers

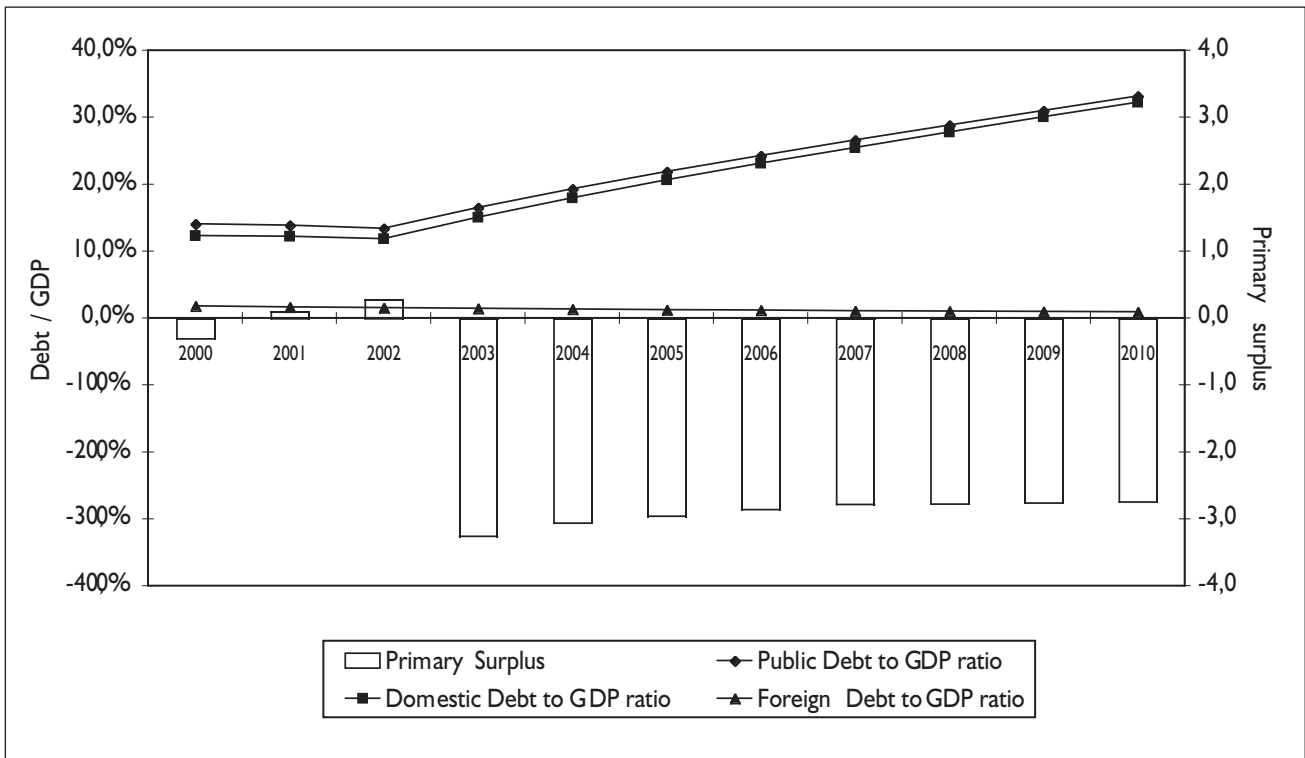


Figure 6. Simulation results: Czech Republic, low growth, with costs of reforms and the EU transfers

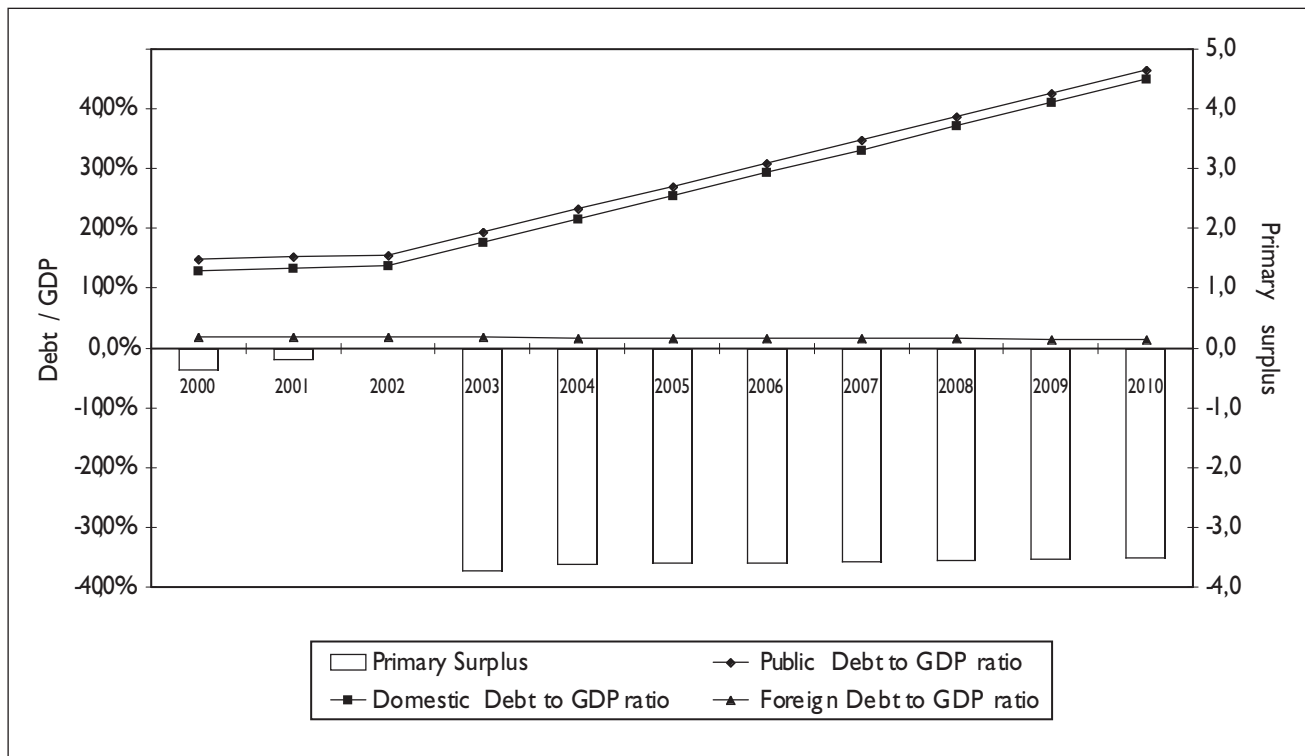


Figure 7. Simulation results: Hungary, high growth, with costs of reforms and the EU transfers

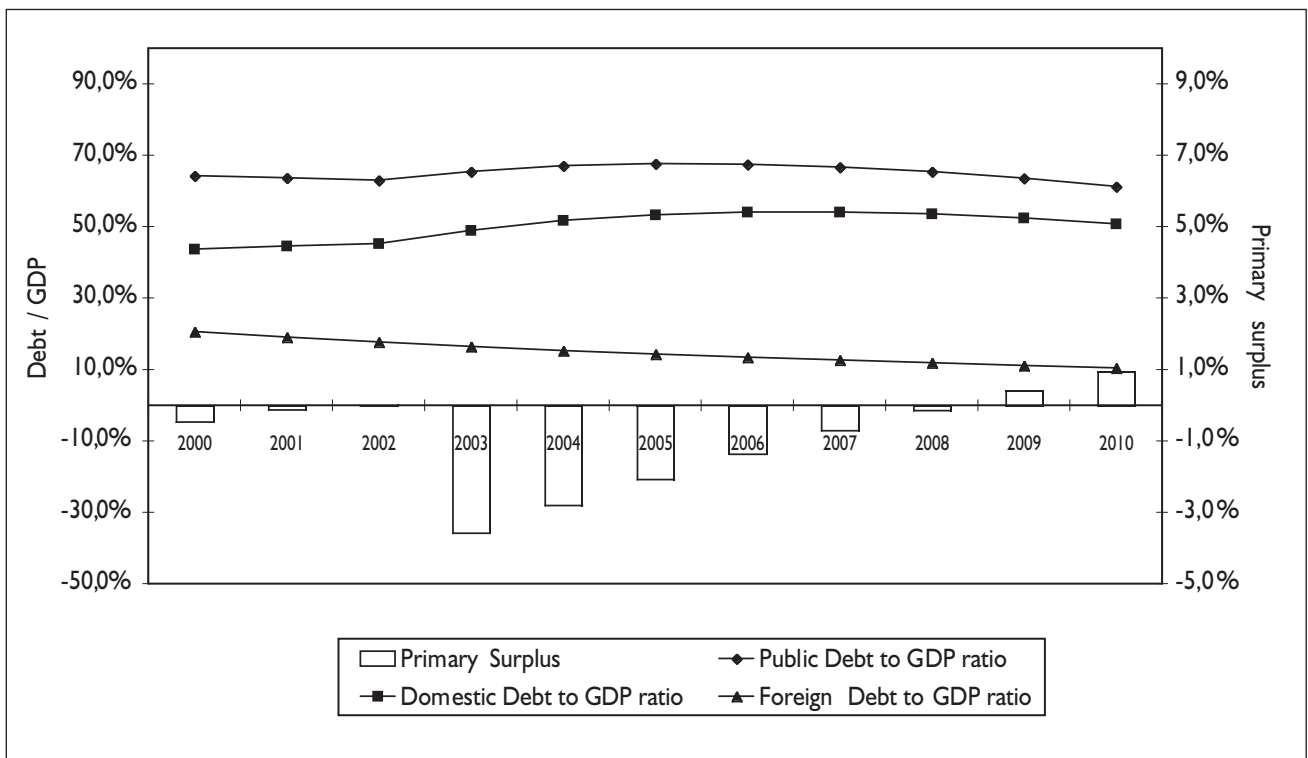


Figure 8. Simulation results: Hungary, low growth, with costs of reforms and the EU transfers

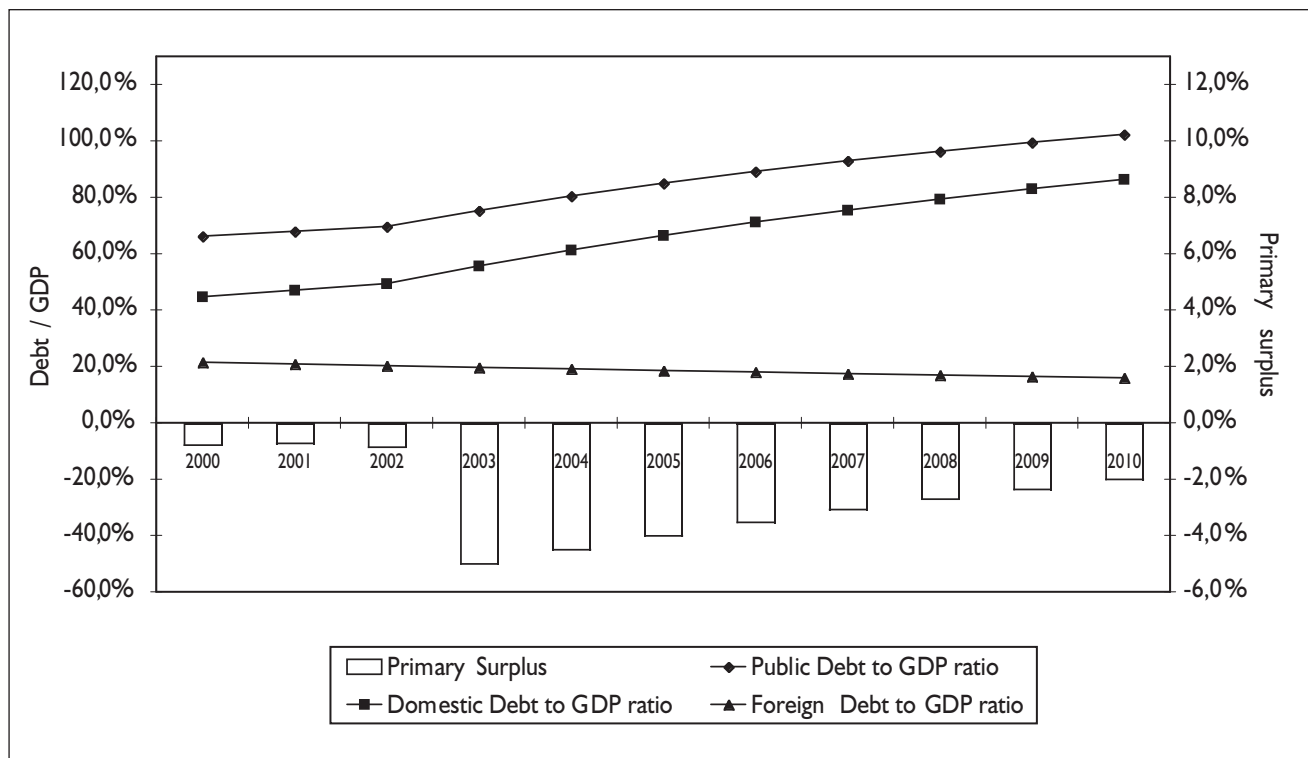


Figure 9. Simulation results: Poland, high growth, with costs of reforms and the EU transfers

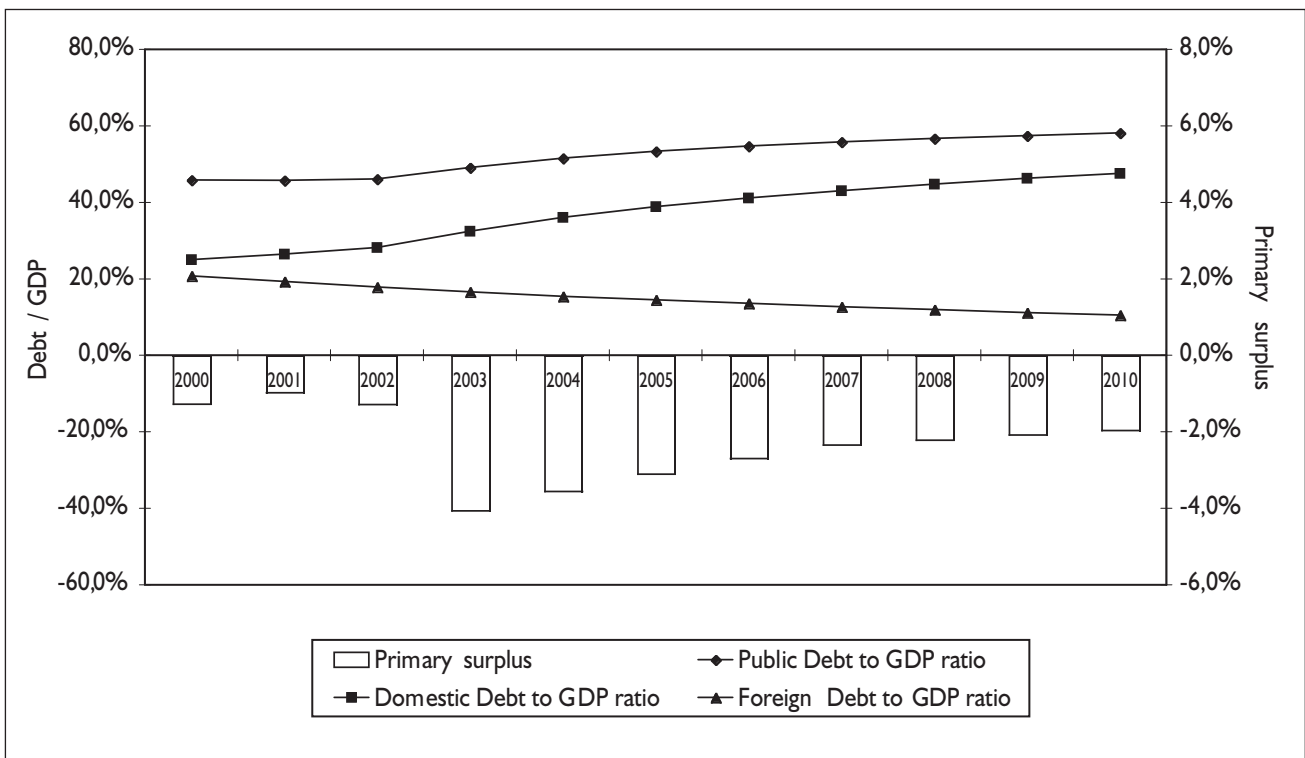


Figure 10. Simulation results: Poland, low growth, with costs of reforms and the EU transfers

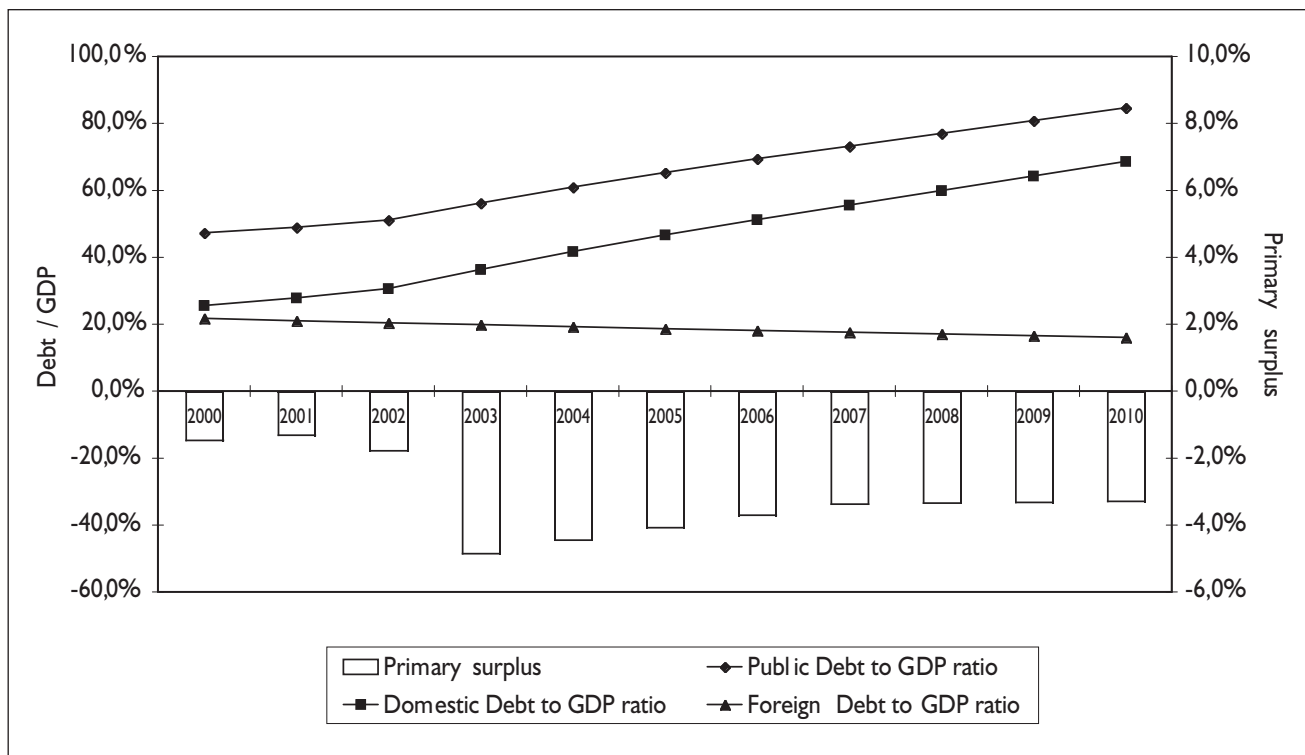


Figure 11. Simulation results: Romania, high growth, with costs of reforms

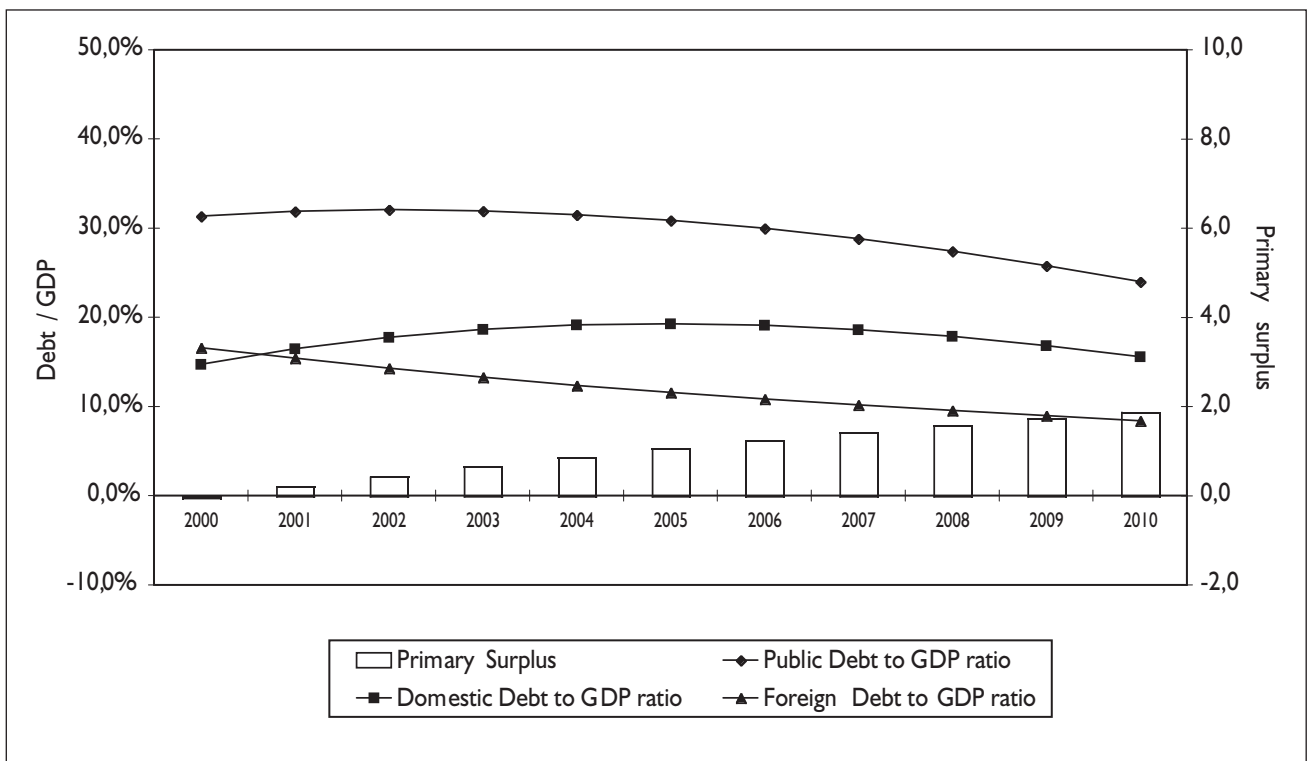


Figure 12. Simulation results: Romania, low growth, with costs of reforms

