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MACROECONOMIC POLICIES IN TRANSITION

The Relations between Fiscal, Monetary and Debt Management Policies in
Countries of Economic Transition

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MACROECONOMIC POLICIES IN TRANSITION – The Relations between Fiscal, Monetary and Debt Management Policies in Countries of Economic Transition

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ABSTRACT

The purpose of the study is to discuss the macroeconomic policy change in the former planned economies of Central and Eastern Europe. The focus is on fiscal, monetary and debt management policies and on the interactions between these policies. Particular attention is paid to the Central European countries in transition that have managed the transition the best, namely Hungary, Poland and Czech Republic, and to Russia. The macroeconomic situation in the economies of transition during 1995 is compared to that of the EU member states.

The results of the empirical analysis suggest that the fiscal situation was better than expected in the transition economies compared to the members of the EU. Also, debt ratios were lower in the former planned economies. A possible explanation for the outcome is the lack of standardised accountancy practices in these countries. The significantly higher inflation rates in the transition group supported the hypothesis that there are severe problems in monetary management due to the transition from planned to market economy. In addition, the outcome was that investors consider the governments of the former planned economies less reliable than the governments of Western European market economies.

A significant correlation between the fiscal deficit and debt ratio was found. However, support for the hypothesis that economies in transition have eroded debt through inflation could not be found with this data gathered from the publications and databases of the OECD, IMF, United Nations Economic Commission for Europe and Eurostat.

KEY WORDS: economic transition, fiscal policy, monetary policy, debt management

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1. INTRODUCTION

When the collapse of planned economies became evident, the countries in the Central and Eastern Europe began to take actions to transform their societies into market economies – each at a different time and at a different pace. Removing the elements of central planning and replacing them with the infrastructure needed for a Western type of market economy required, and still does, a lot of work. Budgets of these countries expanded since rebuilding a society is rather expensive when even the basic infrastructure is in a poor condition or non-existent. In addition, a sufficient social safety net in a situation where prices suddenly reach levels substantially higher than before weighs heavily on the expenditure side of government finances.

Normally, a state finances its expenditure mainly through taxation. Economies in transition have had to introduce new taxes corresponding those in market economies and then to try to provide efficient fiscal control. So far, tax evasion has been a common practice among enterprises in countries of economic transition. In addition, the vast majority of private citizens has a very low level of income. Thus, the state cannot rely on fiscal revenues to cover its expenditure and is obliged to resort to credits or money creation when financing a deficit. There seems to be a straightforward connection between fiscal, monetary and debt management policies. However, studies made present little evidence of a correlation between public debt and inflation in Western economies. (E.g. King 1998; Bleaney 1996; Joines 1985).

Although the issue of linkages between the three macroeconomic policies might not be relevant in Western countries, for countries with low level of economic development the situation is different. Guidotti and Kumar (1991) have studied the evolution of domestic public debt in developing countries with a high level of external debts and the implications of high domestic debt ratios for stabilising policies and the management of external debts. They focused, first, on the development of domestic debt stock and its relationship to external debt stock and the underlying fiscal policy. Secondly, they developed an analytical framework integrating different aspects of a country's fiscal situation in order to examine the linkages between taxes, subsidies, government spending and domestic and external debt. Thirdly, they studied domestic debt management strategies and their implications for designing stabilisation policies and controlling inflation.

According to Guidotti and Kumar the growth of domestic debt stock can lead to sharp increase in debt-service payments and further weaken the ability to service the external debt. Also, a sharply increased inflation rate has accompanied the increased fiscal deficits and domestic debt burden since the beginning of 1980's. In the sample countries real interest rates were increasingly negative and volatile while the average of inflation rates grew from 3,2 % for the period of 1975-1981 to 6,9 % for the period of 1982-1988.

In a majority of countries studied, the growing domestic debt ratio reflects inadequate fiscal adjustment in a situation where private external financing is nearly ceased and the terms of trade have been deteriorating. The serious fiscal situation was partly due to the low and sometimes even declining ratio of tax revenues to GDP. Guidotti and Kumar came to the conclusion that it is not the growth in domestic debt in itself that is responsible for a vicious circle of failed stabilisation efforts, i.e. the failure to control inflation, and the increasing likelihood of debt runs. Instead, the underlying fiscal situation is, at least partly, to be blamed. They argue that inflation affects the real value of nominal debt only when it is unanticipated, and that the existence of nominal debt may accelerate inflation.

The economies of transition have faced, and mostly still do, a situation where they lack the sophisticated elements of market economy and also, to some extent, the knowledge to manage economic policies in a 'market-like' fashion. Fiscal, monetary and debt management in a planned economy is entirely different from the management of these policies in a market economy. A transition between the two economic systems is also a transition of policy practices. The economic goals of the transition also lead to the transformation of economic and budgetary management cultures. Fiscal, monetary and debt management policies are at the core of the change.

This study will focus on two issues: the transition from a planned economy to a market economy as regards fiscal, monetary and debt management policies, and on the connections between these policies. In other words, the aim is to examine whether there is any significant difference between the countries of economic transition and the EU member states as regards public debt, budget deficit and inflation rate and whether these variables correlate with each other. Attention is also paid to the credibility of a government as a borrower. This is done by adding interest rates to the analysis. Since the data on government finances in transition economies is often not available or it exists only for a very short-period, simple statistical

tools are used for the analysis. The shortcomings of the data prevent the use of complex statistical methods.

The study progresses in the following order: First, after the introduction, fiscal and monetary policies and debt management and relationships between them are discussed in general. Credibility in connection with public debt is discussed in particular. At the end of the chapter some empirical evidence based on experiences in Western countries is presented. The third chapter focuses on economies in transition. The aim is to survey the transition of the above-mentioned three macroeconomic policies in general and then discuss some examples. The Central European countries most advanced in the transition, i.e. Hungary, Poland and the Czech Republic, are of special interest. Also, references are made to fiscal, monetary and debt management policies in Russia. Finally, the macroeconomic policies in EU member states and in the economies of transition are analysed empirically. In addition, the possible correlations between fiscal, monetary and debt management policies are studied.

2. INTERACTIONS BETWEEN FISCAL, MONETARY AND DEBT MANAGEMENT POLICIES

Economic theories and history suggest that macroeconomic behaviour can be influenced by monetary and fiscal policy interactions. Stabilising both can be a difficult task for a government. In the European market economies, the following issues regarding debt and monetary policy have been of concern (Dornbusch 1998: 4):

1. Large debts are seen as an invitation to inflation designed to reduce the debt burden.
2. High interest rates can create an exponentially growing public debt stock as the interest adds to the debt hampering the exercise of a sound monetary policy.
3. Balance sheet fragility may cause monetary policy to become a tool of financial engineering instead of being a tool of price stability.

The member states of the European Union have had to pay particular attention to public debt, because of the Maastricht criteria, which include a requirement of a debt to GDP ratio less than 60 %. The criterion was introduced because large debt stocks were seen as a threat or, at least, a serious complication, to the integrity of the single European currency. As mentioned above, high debt ratios are also a potential threat to the exercise of sound monetary policy.

A government, i.e. the ministry of finance, is usually in charge of drafting the state budget, while the central bank is responsible for monetary policy. Typically, it is also the central bank that carries out debt management for the government because it has more market expertise than government departments, such as treasuries. When the central bank is responsible for managing government debt, it has a direct access to information related to net stock of government securities. Thus, it can manage liquidity planning and control more efficiently.

The tendency in Western market economies has been to separate fiscal policy, debt management, and monetary policy. Central banks have moved towards greater independence, and in some countries separate debt management agencies have been established. With independent debt management agencies two credibility problems will be avoided: First, it will be more difficult for central banks to intervene in order to lower the interest rates of new government debt issues. Secondly, the central bank does not have an incentive to try to reduce

the real value of government debt through inflation. For instance, a conflict of interest regarding funding crises and liquidity management is possible. In other words, if the central bank is responsible for a smooth functioning of government securities issuance, it cannot be solely concerned in pursuing stability. Independence of the policies may increase accountability of debt management resulting in reduced uncertainty and eventually in lower costs for credits. (King 1998:23; Kroszner 1998: 100; Giovanni 1997: 48-49)

A good example of this tendency is the creation of the Central Bank of Europe (CBE), which conducts monetary policy independently from political institutions. Meanwhile, fiscal or budgetary policies are in the hands of the Commission. Since the central banks in the member states participating in the economic and monetary union function under the CBE, monetary policy is clearly distinct from fiscal and debt management policies also in the national level.

However, objectives of these policies should be co-ordinated in order to be able to set internally consistent targets and to facilitate mutually supportive information sharing and structural policies. Co-ordination of monetary and debt management policies also helps to develop financial markets. If co-ordination is not particularly agreed on, due to strict separation of these policies, it can be achieved through the work of market forces, as is the case in the European Union. In this case, arrangements for information sharing should, however, be in place. (Sudararajan & Dattels 1997: 3)

2.1 Concepts necessary for this study

Budget or fiscal balance, i.e. a surplus or a deficit, is usually defined on a cash basis as the difference between government's revenues and expenditures. Revenues include total cash receipts such as tax and non-tax revenues and grants but exclude borrowing proceeds. The expenditure side consists of interest payments on public debt but excludes amortisation payments. Primary balance is the difference between receipts and outlays that does not include debt service. Generally, the deficit or surplus indicates the balance of a consolidated central government budget. In other words, the balance includes the revenues and expenditures of the general government and local governments. Often extrabudgetary units and social security funds are also included in the formation of the surplus or deficit. In any

circumstances, the fiscal deficit is a rather crude tool for assessing the impact of fiscal policy in an economy. (Oblath 1995: 311; Tanzi, Blejer & Teijeiro 1987: 714)

A generally used indicator of inflation rate is the change in the consumer price index over a given period. Since money creation is one source of inflation, consumer prices are used to indicate monetary policy developments in this study. Money creation includes the cash printed by the central bank and also highly liquid government securities. When printing money a government may receive seigniorage revenue, if the printing costs are lower than the 'market' value of money.

The concept of debt management can be defined through the concept of government debt. The latter should include all assets issued by central and local governments, e.g. treasury bills, notes and bonds as well as long-term bonds. According to a wide definition of government debt, private sector's deposits in a central bank or in other government agencies should also be considered as government debt. In addition, money is an asset issued by the government and, thus, should be included in public debt. In the widest sense of the concept all future commitments of a government to pay out money in the form of social benefits, pensions etc. could be regarded as part of government debt.

Therefore, public debt management can be defined as the government's composition of all the outstanding securities entering the liability side of its balance sheet. However, it is the government's net position vis-à-vis the private sector that should count and not the gross liabilities. In empirical studies dealing with debt management many of the instruments that could be considered as government debt have been excluded. Instead, the attention has been limited to the so-called pure debt management operations, which should be considered separately from monetary and fiscal policies. Nevertheless, it might be difficult to make the distinction between the three policies.

An example of debt management and monetary operations which do not affect the fiscal deficit in a short notice but have some effects in the long run, are changes in the composition of debt and open-market operations. The former includes changing current debt instruments into instruments with different maturities in order to obtain a particular maturity structure. An example of open-market operations could be that monetary authorities sell securities and remove cash from the financial system in order to cover the financing needs of the

government. Open-market operations like that will eventually increase the size of the public debt. (Leslie 1993: 19; Tanzi et al 1987: 715)

In any case, a government can finance its spending in three ways: through taxation, money creation and borrowing. The amount of spending and tax financing determines government's fiscal policy, whereas the amount of money creation is set by the monetary policy. Traditionally, the purpose of debt management has been to minimise government's costs of borrowing, but it has been suggested that debt management could also serve as an instrument of stabilisation policy. (Giovanni 1997: 48-49)

2.2 Formal presentation of government finances

Government finances can be expressed formally in different ways (E.g. Leslie 1993, Agell & Persson 1989). Setting the expenditures of a government to equal the revenues in the following manner is a simple way of doing it:

$$G_n + rB_{n-1} = T_n + (B_n - B_{n-1})\frac{1}{\Delta n}, \quad (1)$$

where G_n = government expenditure during period n,
 r = the annual interest rate,
 B_n = the value of public debt during period n,
 T_n = government's tax revenue during period n,
 Δn = the change in the period of time¹.

The left-hand side represents payments for which the state funds are used. The right-hand side denotes the funds the government can raise. Basically, the expenditure side consists of the general government expenditure, i.e. payments on social security, pensions etc., and of the repayments of debt and interest payments. Revenues are raised through different taxes and tariffs and by issuing new debt.

¹ This is a necessary factor in order for the dimensions of the equations left and right hand side to be equal. The left hand side represents an amount of money per a period of time, while the right hand side would represent only an amount of money without $1/\Delta n$.

The following equation illustrates better how the expenditure and revenue items are usually organised in the state budget:

$$G_n + rB_{n-1} - T_n = [B_n - B_{n-1} + M_n - M_{n-1}] \frac{1}{\Delta n}, \quad (2)$$

where M_n = the amount of money circulating in the economy at period n.

Public finances are expressed in nominal terms in the equation. $G_n - T_n$ denotes the primary balance, and interest payments and repayments of debt, $(1+r)B_{n-1}$, are an addition to it. If the primary balance is positive, it denotes a surplus, and if it is negative it means there is a budget deficit. For simplicity, it is assumed that all debt is issued for one period only. Otherwise, debt servicing costs and the principal $(1+r)B_{n-1}$ should be a sum of all interest payments and the principals of the liabilities maturing at this period. Thus, the left-hand side of the equation represents the financing need of the government. Sources of financing are found on the right-hand side, where $M_n - M_{n-1}$ is an expression of money creation.

If D_n is set to equal $G_n - T_n + rB_{n-1}$ the relationship between fiscal, debt management and monetary policies, can be expressed through the equations 1 and 2 as following:

$$D_n = [B_n - B_{n-1} + M_n - M_{n-1}] \frac{1}{\Delta n}, \quad (3)$$

Thus, D_n denotes fiscal policy while $M_n - M_{n-1}$ is the formal expression of monetary policy. $B_n - B_{n-1}$, i.e. net borrowing, refers to debt management policy.

In this pattern of thinking debt is assumed to have a longer maturity than one period or then it is the question of debt management policy what to do with the maturing debt. The equation neither takes into account that debt instruments can have different maturities. In any case, for a given value of net borrowing debt management has a scope provided that the changes in the composition of debt can affect the real economy. In the long run different borrowing strategies will have different implications for the future finances of a government. (Agell & Persson 1989: 8-11; Sundararajan & Dattels 1997: 7)

2.3 Deficit, inflation and the public debt

Dornbusch (1992) sums up the linkage between fiscal and monetary policy by arguing that budget deficit is the ultimate source of inflation. This stems from the fact that when external financing or the domestic capital markets cannot offer funds to finance the deficit it must be adjusted through money creation. The formal expression above supports this straightforward statement. The connections between fiscal, monetary and debt management policies can, however, be discussed in a more profound manner.

As the formal expression indicates, an increase in the nominal interest rate paid on public debt reflects on government expenditures and, thus, in the size of the budget deficit. Tanzi et al (1987) suggest that an increase in the rate of expected inflation could lead to dramatic increases in fiscal deficit if the domestic debt to GDP ratio is very high. In a period of high inflation the growth of interest payments is often explained by the Fisher effect. According to it, in an inflationary situation, the real interest rate added by the expected inflation tends to approximate the nominal rate. In reality, the increase in nominal interest rate could naturally be more, or less, than the level according to the Fisher effect. Nevertheless, the conclusion is that the rise of expected inflation directly affects the nominal rate of interest, unless it is artificially constrained by the government.

If it is in the interests of a government to show a smaller budget deficit, it might be tempted to repress nominal interest rates. That could cause problems for the financial sector and difficulties in the allocation of financial resources. However, the growth of nominal interest payments is generally beyond the control of fiscal authorities, as it is tied to market rates and to possible indexation clauses. The tax system, on the other, hand is adjustable. (Tanzi 1993: 701; Tanzi et als 1987: 716-718)

Under the assumption that nominal interest rate adjusts completely to the expected inflation rate, in order to yield a constant expected real rate of return, nominal interest payments increase more than proportionally to the price level. This leads to a rise in the deficit to GDP ratio. It is assumed that actual and expected inflation rates are equal, and that there is only domestic public debt. In addition, primary deficit should not be affected by surprise inflation. Therefore, in the presence of inflation and domestic debt, particularly when it is short-term,

the fiscal deficit to GDP ratio becomes a function of inflation rate, the size of domestic public debt and the composition of domestic versus external debt.

The deficit is not affected by a rise in unanticipated inflation rate if public debt is either index-linked or denominated in foreign currency. As regards long-term fixed interest bonds, the nominal interest payments are not affected if the increase in inflation rate was not anticipated at the time of issuance. As a result the ratio of fiscal deficit to GDP tends to fall. (Tanzi et al 1987: 718)

Calvo, (1989) has propounded the argument that inflation erodes the value of national debt. The rationale behind this argument lies in the following reasoning: First, in a case where the deficit is zero, the nominal value of debt remains constant, because the financial deficit includes nominal interest payments on the public debt. Then, with a moderate rate of inflation debt would quickly be eroded. This reasoning assumes that there are no inflation surprises. When unanticipated inflation bursts are possible, as can be the case in real life, the real value of debt can also be eroded with high inflation. With a sufficiently high inflation surprise the real rates of return fall and could even become negative. In such a situation the government needs less tax revenues for the repayment of its debts. Hence, it can be argued that the authorities could cause a considerable repudiation of the public debt if they deliberately generate a higher than anticipated rate of inflation. This leads to discussion on the credibility of governments as debt issuers. (King 1998: 23; Leslie 1993: 17-22)

Persson, Persson and Torsten (1998) illustrate the question of debt erosion through inflation with a simulation. They use actual figures of Swedish public debt in the mid-1994 with artificial inflation rates. At that time, the total amount of debt was 1224 billion crowns, which equalled 80 % of GDP. First, the items that could not be inflated had to be deducted. These included debt denominated in foreign currencies (31,2 % of the debt) and indexed bonds (0,2 %). The real interest on the government bonds was assumed to be constant. Initially, the annual inflation rate was set to 2 %, from which it was increased to 12 %. The average maturity of the gross public debt was 3,0 years in June 1994. The duration of net debt² was 3,9 years. The simulation resulted in a 39 % decrease in the present value of nominal debt. However, the estimation produced values higher than what they were in reality.

² Net debt is the gross debt less the domestic debt held by the central bank and the liabilities of the pension system.

Table 2.1 presents a summary of the budgetary gains generated through increasing inflation. The total gain is fairly remarkable. In the 1998 budget it is 3,6 % of GDP, while in present values of 1994 the benefit amounts to 95,8 % of GDP. It is noteworthy that the major gains did not come from debt erosion as the theories might suggest. Instead, they were consequences of nominalistic features of tax and transfer system. (Persson et al 1998: 34-43)

Table 2.1. Gains from a 10 % inflation increase.

	1998 budget		1994 present value	
	bln kr	% of GDP	bln kr	% of GDP
Real value of government debt	4,3	0,3	85	5,6
Seigniorage	6,9	0,5	213	14,0
Transfers				
Delayed indexation	7,5	0,5	219,5	14,5
Incomplete indexation	16,8	1,1	500,5	33,0
Taxes				
Income tax schedules	15,6	1,0	427,8	28,2
Pension funds	-3,8	-0,3	-126,7	-8,4
Capital income tax	13,9	0,9	325,2	21,4
Tax collection	-6,2	-0,4	-190,0	-12,5
<i>Total</i>	55	3,6	1454,3	95,8

2.3.1 Debt and credibility

Debt erosion through an inflation surprise generated by a government has a drawback. As the real rates of return fall, due to inflation, investors in financial markets react to this change by decreasing the values of the government bonds in question. In other words, the market value of the bonds will fall. This is due to the higher discount rate used for valuing bonds. With inflation surprise expectations change and the value is recalculated. This also affects the pricing of future bond issues. Therefore, it could become expensive for a government to generate unanticipated inflation. (Leslie 1993: 22)

In a world of high international capital mobility, it may be possible for relatively small countries in the international capital markets to repudiate the high level of domestic public debt. This is possible even when the monetary authorities are not able to provoke unexpected inflation if maturities of the debt are very short. When capital is highly mobile, the domestic nominal interest rate is highly sensitive to devaluation expectations. Therefore, a once-and-for-all devaluation gives rise to inflation but does not necessarily lead to an increase in the nominal interest rate, if the public does not expect a further devaluation in the future. Thus,

keeping the maturity of nominal domestic debt short is a possible way to react to inflationary expectations and imperfect policy credibility, but it is not a sure method to discourage inflation as a debt-repudiation device. The existence of a relatively large outstanding nominal public debt might raise suspicions that the government is trying to use inflation to reduce its debt-servicing costs. (Calvo 1989)

Lately, the tendency has been to hold short debt and distribute it to a wide audience. In addition to this, the sensitivity of markets to inflation has made it unacceptable to escape from the debt burden with an old inflationary style. If any government tries that, it could get a bad reputation in inflation control and face higher real interest rates in the future, after which delivering low inflation becomes difficult and expensive. One of the ways to avoid this is to finance a budget deficit with index-linked debt, which also tends to have a longer maturity than nominal domestic bonds. Then, low inflation would be cheaper in terms of the tax revenues needed for the repayment of the debt as compared to offering debt with sufficiently high nominal interest. Another way to avoid higher costs of credit due to inflation is debt denominated in more stable foreign currencies. (Barro 1998: 77; Dornbusch 1998: 16-19)

The argument on the possibility of eroding debt with high inflation can be turned around into a proposition that a high debt ratio is a risk to the integrity of monetary policy. According to the technical statement of the paradigm, financing a deficit with real interest rate that exceeds the growth rate of output leads to rising debt. The increasing amount of debt then causes an increase in deficit, and so a vicious circle is created. Monetary policy enters in the picture as the more inflation the monetary authorities accept the smaller the deficit and the accumulation of debt. This kind of analysis assumes that repudiation or deficit correction does not exist – only monetisation. Thus an argument could be made that the more the monetary authorities support tight monetary policy, the worse the debt problem. There are four bad outcomes of tight monetary policy:

1. Real interest rates increase, because of which debt service costs become higher and the debt stock grows more rapidly.
2. Primary surplus will be reduced due to the cyclical component of the budget: reduced tax revenues and increased unemployment compensation.
3. Higher real interest rates will slow down economic growth and, thus, accelerate the increase in debt ratio.

4. Advantages from inflation, such as seigniorage, could be reduced; hence, more debt is needed to finance the deficit.

Nevertheless, a high debt ratio can create a presumption of inflation. This leads to scepticism as to the seriousness of monetary policy in highly indebted countries and to an extra cost to government borrowing. Credibility is a problem mainly in connection with new issues of debt. In addition there are social costs to be considered if higher inflation is chosen for deficit financing. (Dornbusch 1998: 12-14; Persson et al 1998: 50)

In conclusion, it can be argued that fiscal policy undermines monetary policy in two ways. First, a given fiscal policy puts monetary authorities in a difficult position as they have to decide whether to accept inflation now to ease fiscal burden or should they pursue stability, which might lead to inflation in the future. The problem is that fiscal authorities have the first move, and monetary authorities will have to adjust to their policy. Also, benefits from inflation, such as seigniorage, are usually not an important source of revenue, at least not in developed countries. The second argument is that high debt ratio creates a pressure to an unanticipated inflation increase, which in turn could reduce the debt ratio. As discussed, this could cause erosion of monetary credibility. (King 1998: 23-24)

Furthermore, there are two factors that should be considered regarding real demand for public debt and the stability of the demand. The first is related to the overall confidence inspired by a government's economic policies. The persistence of high inflation rate generally leads to erosion of economic agents' confidence in the ability of authorities to conduct sound economic policies. This could eventually diminish the share of assets linked directly to government policies in private portfolios. Thus, a credibility crisis tends to shift preferences away from government bonds, most likely, towards foreign or speculative domestic assets. The second consideration is that during periods of high and sustained inflation new alternative debt instruments enter the market in response to the demand for hedging against inflation. In such circumstances, the demand for government bonds may not be stable enough to ensure full refinaneability of the whole volume of inflation-induced interest payments. (Tanzi et als 1987: 726)

2.3.2 Empirical evidence

The extreme relationship between debt and monetary policy has occurred in the context of hyperinflation in Germany at the end of World War I. In that particular case the public debt stock was simply wiped out. By 1918 the German government had more than 40 % of the debt in bonds and a share of Treasury bills with maturities longer than a few months. It is understandable that an unexpected rise of inflation rate decreases the real value of long term bonds. However, in the German case all of the debt was gone – even the short-term debt. This means that either the short-term debt was paid off by money creation or the explosive inflation was a continuing surprise. The latter reason is less probable. There is no evidence that hyperinflation was deliberately created either. (Dornbusch 1998: 5-8)

An example of debt repudiation in a period of moderate inflation can also be found. In the United States part of the government debt accumulated during the World War II was eroded during 1948–1980. The debt consisted of long-term bonds with low interest rates, as the post-war rates of inflation were expected to be significantly lower. After the war the debt to GDP ratio was nearly 80 % while in 1980 it had dropped to less than 30 %. There were long periods of budget surpluses but more importantly real interest rates were low. Part of the debt liquidation was due to the existence of long term debt in a time of a moderately rising inflation rate. In the beginning of the period, the average maturity of the public debt was about 6 years; in the mid-1970s it had fallen to less than 3 years. (Dornbusch 1998: 9-12; Tanzi et als 1987: 718)

Besides the examples above economists have not found much evidence of any strong linkage between the debt ratio and inflation. King's (1998) pooled regression of inflation on the debt to GDP ratio does not support any significant correlation for the period 1960–1994 in G7 countries. When he splits the sample into two periods, into a period of time between 1960 and 1970 and to the period 1980–1994, the positive correlation coefficients for countries with a high debt ratio do, in fact, reach significant levels.

Bleaney (1996) has studied the relationship between the debt to GNP ratio and inflation rate across a sample of 15 OECD countries. The data was for two time periods: a period of moderate inflation during 1989-1989 and a period of relatively high inflation during 1973-1982 characterised by oil price shocks. Bleaney does not find any significant impact of debt

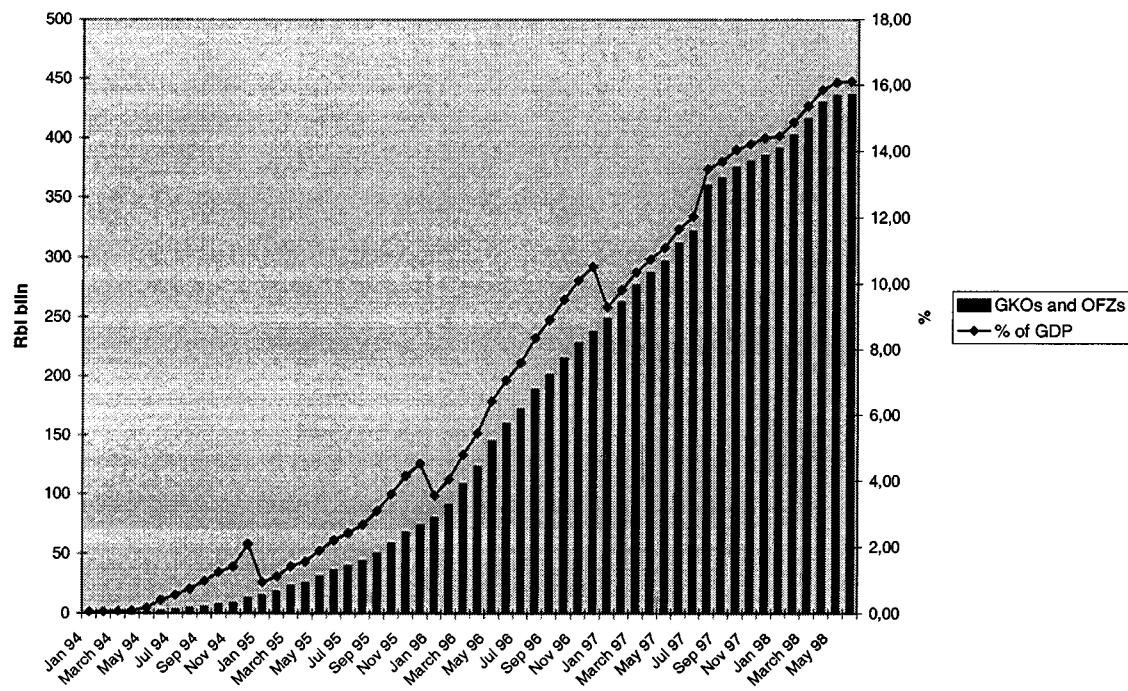
denominated in domestic currency on inflation, even if differences in political stability are taken into account.

There is relatively little evidence of high debt ratios leading to higher inflation than monetary authorities would normally accept. As for the yield differentials, the countries with high debt ratios do not seem to be singled out for accelerated inflation. The yield premia in countries with large debt are very small. (Dornbusch 1998: 17-18)

Joines (1985) found no evidence of systematic erosion of fiscal deficits through money creation. He studied the relation between the fiscal deficit in the USA and the growth of the most liquid money reserves during the period of 1872–1983. Regression over the period 1953–1985 suggests a positive relation between deficit and money growth. However, this appears to be partly due to a common upward trend in the money growth rate, the inflation rate and the inflation-induced depreciation of the real-valued government debt. The money growth did correlate positively with government spending during the war when spending was a substantial fraction of GNP.

A recent example of a situation where financial system's vulnerability becomes a constraint on monetary policy and the pursuit of price stability finds its limitations is the Russian crises culminated in August 1998. The constraint emerged as the large deficits of the state and the increasing public debt stocks needed financing. As a result the Russian government had to offer yields that were attractive enough to investors. In August the government defaulted on several debt repayments and froze the Treasury-bill markets.

Figure 2.1 illustrates the development of the stock of Russian short-term treasury securities, namely GKO and OFZs, until the crisis. As it can be seen, the stock of these securities rose more or less exponentially. The yields of the GKOs were offering substantial returns to investors. During 1995 and early-1996, the GKO yield in rouble terms fluctuated between 60-150 %. Taking into account the rouble depreciation against the dollar, the annualised rate of return has varied between 40-130 % for foreign investors. When taking into account the inflation rate, the return for domestic investors has topped at 90 %. Such high returns were mainly due to the fact that the GKO yield had to exceed the high inflation rate, in order for positive real rates of return to exist. (Goncharov 1996; Leito 1996: 14)



Source: Tacis

Figure 2.1. Stock of short-term treasury securities and its share of GDP.

3. FISCAL, MONETARY AND DEBT MANAGEMENT POLICIES IN ECONOMIES OF TRANSITION

Economic transition has been defined as the period when economy is no longer centrally planned but has not yet achieved the status of market economy (Calvo & Frenkel 1991). During the transition process authorities try actively to implement the elements of market economy, i.e. the infrastructure needed for the functioning of market forces. The developments of different macroeconomic policies during transition are closely connected. The progress of reforms in fiscal and monetary policy is reflected in the development of government debt management. Therefore, following the evolution of debt management policy gives an idea of the progress made in the transition of other macroeconomic policies.

According to Sundararajan and Dattels (1997: 6) there are four stages in the transition to market-based monetary and debt management:

1. Undeveloped stage,
2. Preparatory stage,
3. Transitional stage,
4. Developed stage.

The stages are named according to the level of progress in the transition of monetary and debt management policies. Undeveloped stage represents the situation after the collapse of the planned economy. Thus, it was the starting point in the transition economies. The next three stages could be considered as the actual transition process, as they involve the institutional and policy changes required in the transition towards a market economy. The development of fiscal policy practices can also be added to these stages.

This chapter aims to discuss the reforms in fiscal, monetary and debt management in further detail. The division of the transition process into different stages is used as a framework for the discussion. Also, developments in transition processes in Hungary, Czech Republic, Poland and Russia are used as examples. First, however, a brief overview of the implications the past practices have on the economy in general is presented as they also affect macroeconomic policies during the transition process.

3.1 The legacy of planned economy

The collapse of the communist or socialist regimes in Central and Eastern Europe was mainly due to economic factors. Planned economy, as an economical system, could no longer support the socialistic society. The five-year plans of production were not feasible and the structure of production needed to be changed in order for it to answer the demand of the markets. Another essential change involved the exchange rates. The non-tradable currencies of the former planned economies were freed for commerce. Meanwhile, prices were liberated, i.e. prices were to be formed according to supply and demand. The joint effect of these changes was a plummeting purchasing power of national currencies. Since production in most cases could not answer to the needs of the public, due to the poor condition of equipment and facilities, many of the basic products were imported. The loss of national currency's value and a higher price level resulted in worsened living conditions in many of these countries. For example, the poverty rate increased in Poland from 20 % to 40 % after 1989. (Hjerppe 1997: 10; Clague 1992: 5-6)

Many 'fiscal' functions, as defined in market economies, were carried out by state enterprises and not by the government. In addition to employment, the enterprises often provided housing, health care, vocational training, kindergarten facilities, shops, pensions, different forms of welfare assistance etc. Public investments were, to a certain degree, also the responsibility of state enterprises. Official unemployment was non-existent since enterprises were obliged to hire workers even when there was no need for new employees. Therefore, the government had no need to run any public programmes for unemployed workers. One objective of the transition is to shift the most legitimate social functions to the government, which results in a rise of government spending and a fall of enterprises' expenditures. (Tanzi 1993: 697)

The double transition from closed to open societies and from centralised to open market economies is particularly challenging. Governmental institutions are usually weak and lack resources to implement the complex agenda of rebuilding the society. As already mentioned, the problem is even worse since the transition process created severe social and economic problems such as unemployment and poverty. In addition, the requirement for macroeconomic stability and for a budget balance is often reached by cutting social services.

Governments must also deal with another legacy of the socialist rule: the badly distorted allocation of resources. Under the communist regime Eastern European economies were strongly oriented towards trade within the eastern block. They exported shoddy manufactured goods to the Soviet Union and to one another and imported under-priced oil and other raw materials. The air and water in the countries of transition are dangerously polluted as a result of the under-priced energy, the absence of private property rights and the neglect of any kind of environmental protection. Thus, there is an enormous task of restructuring apart from the institutional reform. In addition to this, the state has to pay attention to the reform of educational system in order to produce professionals with skills required in a modern market economy. All this puts a heavy pressure on the expenditure side of the government. (Hjerppe 1997: 14)

The prerequisite of an efficient market economy is a stable legal framework. The countries of economic transition were obliged to create new legislation in almost all issues concerning the economy. First of all, an institutional infrastructure for markets had to be created through clearly defined property rights, company law, contract law, laws on financial markets, tax law, competition law etc. Secondary objective has been to create standards designed to protect society and environment. However, the creation of the legal framework is not enough – an efficient enforcement of law also has to exist. This has been a major problem in most countries of transition. The governments lack resources to enable efficient control of rules and regulations and the states are losing revenues because of this. For instance, tax evasion is a common practice in most countries of transition. Furthermore, the inability to raise taxes may also be a result of corruption. (Sutch 1997: 18-25; Hjerppe 1997: 12)

3.2 Macroeconomic policies during the undeveloped stage of transition

During central planning, money on the whole had a passive role. Budgeting was a process closely connected with the five-year plans of production and consumption, hence the name planned economy. In fact, the budget was an instrument for centralised allocation of resources. It was always expected to be in balance, since the authorities had, at least theoretically, unlimited power to direct monetary flows. Thus, the government could generate revenues from the cash surpluses of enterprises to match expenditures, such as particular subsidies to enterprises and consumers. Recorded deficits were usually financed with deposits

formed from the surpluses of previous years. There was no need for personal income taxation or indirect taxes. It was also possible for the government to deprive enterprises arbitrarily of their assets in order to keep the state finances in balance.

In those countries that started the transition gradually, before the actual collapse of the communist regime, such as Hungary and Poland, money began to gain a more essential role in the economy. Also, the work force became increasingly aware of the purchasing power of money. Because of this, governments in these countries had difficulties with the revenue side of the budget as in a planned economy they were constrained in manipulating indirect taxes and other revenue sources. In addition, the ongoing fiscal reforms prevented the authorities from using the enterprises' assets to arrange the items of the general budget. The deficits caused by these developments were then financed through money creation. The increase in money reserves was included 'above the line' among the revenue items making the budget to appear balanced on paper. The public became aware of the existence of substantial state budget deficits for the first time in 1989 and 1990. During the undeveloped stage of transition financing fiscal deficits through money issuance was a common practice in all economies in transition. (ECE 1991: 57).

Financial stabilisation through the reduction of budget deficit and the monetary emissions of central bank has been considered as the primary objective of a government in the beginning of the economic transition (Walters 1992: 101). This is a reasonable argument since the economies going through transition commonly encountered inflation in the early stages of the process. This was due to the once-over increase in wages, interest rates and in the prices of energy, intermediate products and basic consumer goods. Under central planning prices were fixed to levels creating excess demand, while relative prices did not correspond to scarcity values. Another cause for a sudden rise in inflation was the loss of control over governments' budgets and the volume of credit. As these causes overlapped at the end of the planned era a so-called monetary overhang emerged. In that situation the authorities had lost fiscal and monetary control but still continued to control wages and prices. During the undeveloped stage of transition one of the essential actions has been the implementation of stabilisation programmes. Financial stability was to be achieved through fiscal balance accomplished with an effective tax collection system that is not vulnerable to inflation. (Clague 1992: 11-14)

One of the main outcomes of economic transition is the separation of governmental and non-governmental sectors of the economy. It has been important to determine the assets and liabilities of the governmental sector and separate them from those of the private sector. Some of the former planned economies had tried to sustain the economic system with sizeable external debt, while others, e.g. Poland, were externally indebted because of the need to finance a gradual transition. Russia had also taken loans to support the exports of the state enterprises. In most cases it has been very difficult to clarify the amount of the debt inherited from the past era. Domestic government debt, on the other hand, played a very small role in the traditional centrally planned economy. During the undeveloped stage of transition there was typically no domestic government debt or only limited amounts existed outside the central bank. (Cornia, Honkkila, Paniccià & Popov 1996: 24-25)

In Hungary the reforms started as early as 1968 including the elimination of quantitative planning targets and reformation of the price system. Revenues were raised mainly through taxes on enterprises and on their turnover. In addition to the problems already discussed, the accelerating transition introduced other economical difficulties during the late 1980's and early 1990's in Hungary. These problems consisted of a proportionately large grey economy, privatisation and reduction of subsidies to state enterprises, high social security expenses, and a large antiquated bureaucracy involved in macroeconomic management. They were common also in other countries of transition. (Le Loup, Dietz, Hogue Papai, Urban & Varadi 1998: 90)

The Central and Eastern European countries differed greatly in the degree of macroeconomic imbalance faced at the beginning of the actual transition process. Hungary had an annual inflation rate of approximately 30 % during 1989 and 1990 and a fairly large amount – about 20 billion dollars – of external debt. Poland's attempts to retreat from central planning and gradually introduce the elements of market economy led to a severe macroeconomic instability. The annual inflation rate exceeded 1000 % in the end of 1989 and the foreign debt amounted to some 47 billion USD. Czechoslovakia had succeeded in keeping the inflation rate at a modest level of less than 3 % during the 1980's. Furthermore, the external debt reached only 7 billion USD. (Hjerppe 1997: 12)

3.3 The macroeconomic development in Central Europe and Russia

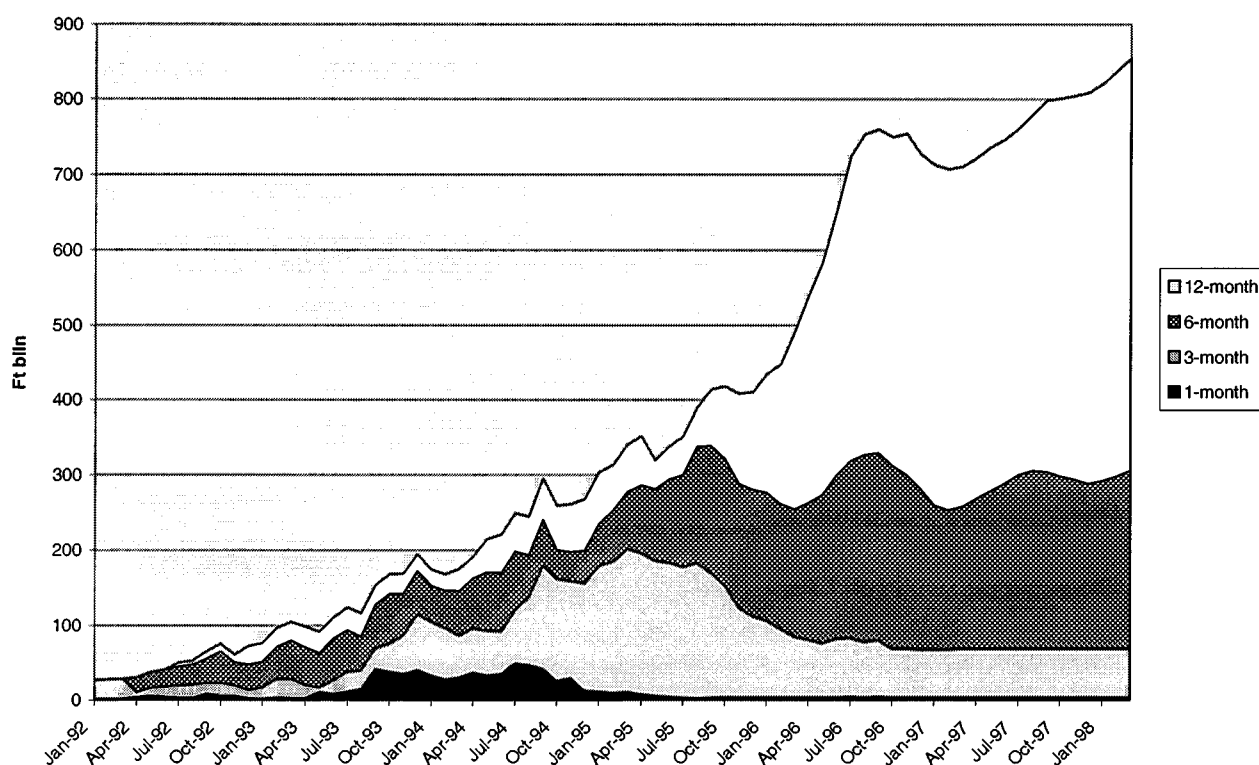
After the undeveloped stage countries in transition move to the preparatory stage. It involves the introduction of marketable securities, which are typically treasury bills (T-bills). Preparatory stage is also characterised by the introduction or testing of other indirect instruments of monetary policy. Interest rates are largely controlled by authorities, and, therefore, they are not flexible. There are no secondary markets for government securities and only weak interbank markets exist.

The objective of transitional stage is to foster government debt markets, which means developing marketable debt and monetary policy instruments with greater flexibility in interest rates, increased volumes and a wider range of debt holders. In addition, the aim is to introduce a comprehensive public debt management regime and medium-term debt securities with rates set administratively or tied to T-bill rates. The transitional stage also involves more active liquidity management by the central bank and planning regulatory and institutional arrangements for secondary trading, e.g. more efficient interbank markets, clearing and settlement arrangements and banking supervision.

The last stage before market economy is called the developed stage. The main objective of authorities during this stage is to strengthen the markets. This means that interest rates should be made fully flexible and the appropriate regulatory and supervisory arrangements for secondary markets should be introduced. In this stage the liquidity of government debt instruments should be ensured by markets, while the central bank could manage liquidity at its own initiative using more flexible market-based instruments such as repurchase agreements. In addition, the auctions of medium and long-term debt instruments could be introduced.

Hungary was the first to introduce marketable securities with the first interest bearing T-bill auction that took place in 1988. By the end of 1991 several types of T-bills with different maturities existed. These included one year floating rate T-bill, 30 and 90 day discounted bills, liquidity treasury bill with a 3-month maturity and a discounted consortial T-bill. By that time the government had also issued bearer bonds with a floating interest rate. Bonds had been issued already in 1983 by the government, local authorities, financial institutions and enterprises, but they were not traded. (National Bank of Hungary 1992)

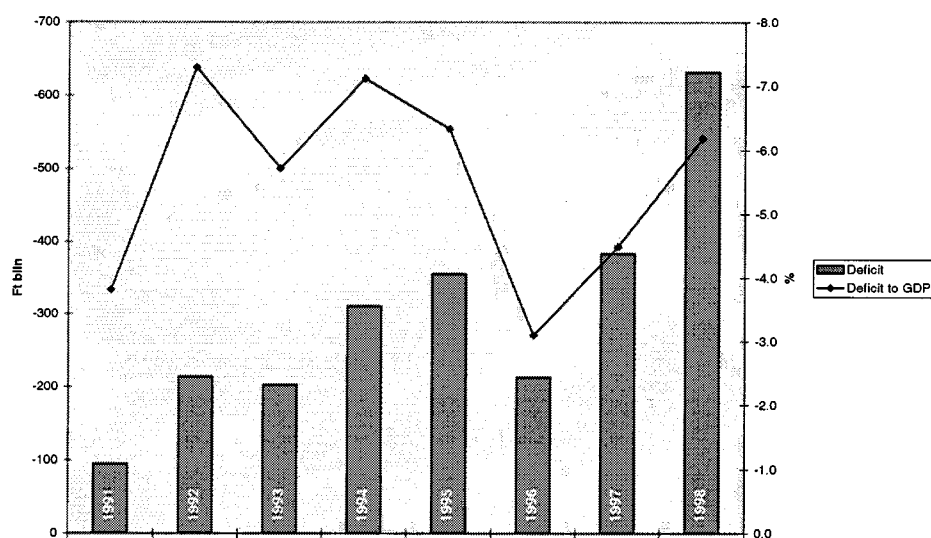
The evolution in the Hungarian treasury bills supply during 1992 – 1998 illustrated in figure 3.1 gives some idea of the progress in debt management. In the beginning of the period, the 3-month bill is the most common instrument but over time as the government has gained credibility as an issuer it has been able resort to securities with longer maturities. The rise of the debt stock is also worth noting. It is a result of the increasing need to finance the budget deficit and the repayments of the previous issues.



Source: National Bank of Hungary

Figure 3.1. The stock and maturity structure of Hungarian treasury bills.

The early 1990's was a time of growth in Hungary. The foreign exchange reserves increased and the net external debt decreased. However, as the domestic debt stock grew the amount of total state debt was rising. Meanwhile the absolute amount of deficit was growing moderately until the mid-1990's. After that, in 1996, the government seems to have had control over the deficit until which it started growing steadily in absolute and relative terms, as can be seen in figure 3.2. (CCEET 1993: 11, 48)



Source: IMF

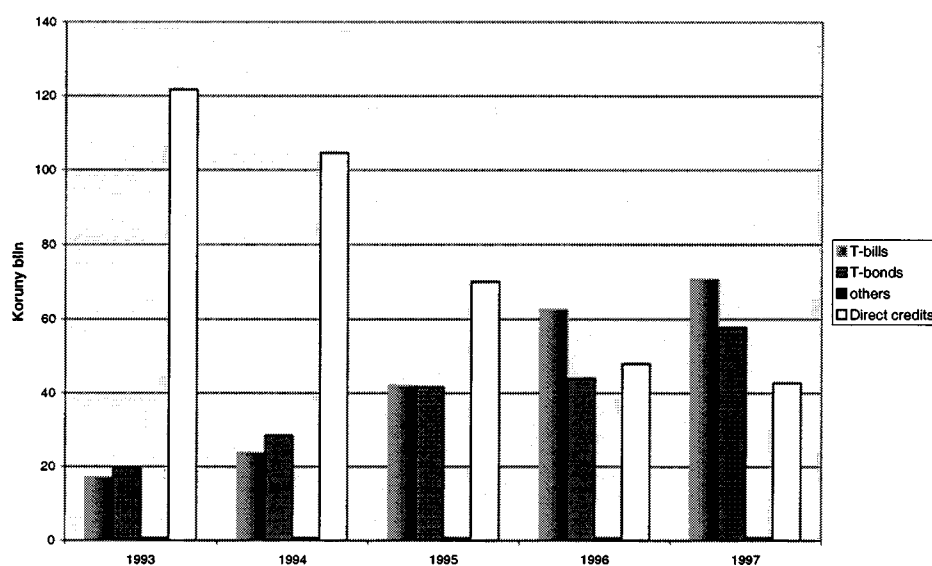
Figure 3.2. Budget deficit of Hungary in absolute and relative terms during 1991-1998.

In Poland the transition process was launched in 1989. The Ministry of Finance, which is the manager of government debt – as in the rest of the countries presented in this chapter – issued the first bond during that same year. It was a one time-issue of the so-called ‘convertible bond’ as it could be exchanged into shares of state enterprises. It was meant for the mobilisation of the sizeable internal non-marketable government debt denominated in foreign currency and the domestically placed pre-war debt.

Treasury bills were issued in weekly auctions organised by the National Bank of Poland since May 6 1991. The central bank had issued its own bills since 1990 in order to remove excess liquidity from the markets. These issues were eventually ceased as they were competing with treasury security issues. One-year index linked treasury bonds and three-year floating rate bonds were issued regularly since mid-1992. In 1994 two- and five-year fixed rate treasury bonds were issued for the first time. 10-year floating rate bonds were launched in 1995. The fiscal situation and debt management policy of the government increased the need for new issues with longer maturities. Thus, the development of government debt has been similar to that of Hungary, while the deficit has been lower in Poland. (Ministry of Finance 1997)

Although Hungary and Poland were earlier in the introduction of preparatory and transitional stages, it seems that Czech Republic has been managing its fiscal and debt management policies more efficiently. It even managed to have a budget surplus during the early years of

transition. However, this does not reflect the true state of fiscal policy because revenues and expenditures were not fully consolidated. Also, the privatisation proceeds used to finance government spending are included as well as transfers from the State Financial Assets, which is an account where surpluses are stored. Since the revenues from privatisation have helped the government to finance its expenditure, the share of domestic debt has remained fairly low, the structure of which is presented in figure 3.3.



Source: OECD

Figure 3.3. The structure of domestic debt of Czech Republic during 1993–1997.

As the figure shows, the amount of government securities has been increasing over the years while the stock of direct credits has been decreasing. This demonstrates the measures taken to create a functioning market for marketable domestic debt securities, which unlike the direct credits from the central bank do not have inflationary effects. Compared to Hungary and Poland, Czech Republic started the preparatory and transitional stages late – the first government bonds were not issued until 1992. (OECD 1998:40)

Russia inherited most of the Soviet Union's debt left in the position of the Central Bank of Russia. In addition, the fiscal deficit of the early 1990's was at its highest at almost 19 % of GDP. At that time, the increasing public debt accumulation was in reality less obvious as a large part of deficits was financed through issuance of money and not through an increase in government debt. This argument gets support from table 3.1, which shows the inflation rates of some countries in transition. Inflation in Russia was at a remarkably different level during

the first half of 1990 compared to the other transition economies discussed here. (OECD 1997; Cornia et al 1996: 24)

Table 3.1 Inflation rates in selected economies of transition during 1990-1998.

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Czech Rep.	9.9	56.7	11.1	20.8	10.0	9.1	8.9	8.4	10.6
Hungary	28.9	35.0	23.0	22.6	19.1	28.5	23.6	18.4	14.2
Poland	585.8	70.3	45.3	36.9	33.2	28.1	19.8	15.1	11.7
Russia	5.3	100.3	1528.7	875.0	309.0	197.4	47.8	14.7	27.8

Source: ECE

Before the year 1993, Russian government lacked means to finance the deficit. At that time the main debt instruments were the five series of dollar denominated fixed interest rate "taiga bonds". Then, the government started issuing GKO or treasury bills with maturities of 3-, 6- and 12-months through the central bank. Two years later floating rate treasury bonds or OFZs with maturities ranging from 18 months to two years were issued. The stock of treasury securities in Russia has grown almost exponentially since their issuance. The debt management policy in Russia appeared to be a bad one, since the government was no longer able to repay any debt on August 17 1998 and the GKO and OFZs markets had to be frozen. (RECEP 1998; CS First Boston 1995)

3.4 Future perspectives

The three Central European countries in transition that have been used as examples of the developments in fiscal, monetary and debt management policies seem to have reached the developed stage of transition, at least. Russia, on the other hand, took a leap backwards in its transition to market economy in 1998. Hungary, Poland and the Czech Republic aim to be among the first former planned economies to join the European Union. This imposes a constraint to government policies since the EU requires strict monetary and fiscal discipline and controlled debt management. Russia also has to commit to improvements in its economical conditions if it wants to receive financial aid from the West or from international organisations. In addition to disciplined management of macroeconomic policies, financial reporting comparable to the accounting standards and budgeting methods of market economies is an important element in the transformation of government finances.

An important issue concerning fiscal policy is social expenditure, namely the accumulation of pension-driven debt. Assuming non-inflationary financing, growing government expenditure on pensions results, other things being equal, in rising deficits and in the accumulation of public debt due to the future debt-servicing costs. The pressure is, thus, on cutting the expenditure side and developing the revenue side of government finances. (Cornia, et als 1996: 24-25)

Developing further monetary operations and strengthening the existing markets for government securities are also the objectives of present and future government policies. The transparency and liquidity of markets, which facilitates the correct pricing of securities, are important issues in addition to sufficient supervision. The more efficiently the markets function the more credible the governments appear, which makes it easier for them to raise funds domestically.

After the implementation of the market elements described earlier and policies supporting them, a country can be said to have reached the stage of market economy, provided that the elements also function sufficiently enough. Nevertheless, the countries will continue to struggle with budgeting and debt management, and monetary policy remains a concern for the governments before a state such as the Economic and Monetary Union in Europe is reached.

4. EMPIRICAL ANALYSIS

4.1 Description of data and methods

The data for the quantitative analysis of fiscal, monetary and debt management is collected mainly from statistics published by international organisations. The primary sources are the OECD Economic Outlook and the International Financial Statistics published by the IMF. Inflation rates for former centrally planned economies are taken from a database of the United Nations Economic Commission for Europe. In some occasions, as regards data for the economies of transition, the data is complemented by the figures of the WIDER-institute. Also, some of the figures concerning members of the European Union are taken from the publications of the Eurostat.

It should be noted that the economies of transition lack standardised accounting methods, which makes it particularly challenging to compare data within that group of countries and also between the two groups. Therefore, the figures for transition economies should be regarded as estimations of the real situation. In any case, the data gives some idea of the macroeconomic patterns in these countries.

The focus is primarily on the year 1995 mainly because data is only available from that year on for many transition economies. Also, by that year even those countries that started the transition process later than others have managed to have some experience and routine in conducting macroeconomic policies. Thus, the data is more reliable. When it is possible, the indicators of 1991 are also analysed, as at that time elements of a planned economy were mostly in place in the Central European countries of transition.

The indicators or variables used include budget balance, i.e. deficit or surplus, per GDP, debt ratio, inflation rate and short-term interest rate. The first two variables are relative to GDP, in order for the figures to be comparable. Budget deficit or surplus is counted as the difference between government revenue and expenditure. In order to calculate the debt ratio, OECD uses a measure called financial liabilities, which includes the debt of the entire public sector and other financial liabilities in addition to bonds. The debt ratio represents gross debt.

Inflation rate is the percentage change of consumer price index over the preceding year. Because the index represents the average of the whole year, it does not tell the entire situation in the former planned economies. Inflation might have had dramatic changes within a year. Short-term interest rates correspond usually to the 90-week Treasury bill rate or the closest equivalent to that. Interest rates are usually difficult to obtain for transition economies, since government securities have only been traded for such a short period of time.

Since the population is fairly small – 15 EU member states and from 8 to 27 economies of transition, all of which are listed in appendix 1, depending on the variable – and the samples, in most cases, do not follow the normal distribution, non-parametric tests are used for the analyses. These include Mann-Whitney (M-W) test for the equality of means and Spearman's rho test for correlations, which are available in the SPSS statistical analysis programme. Mann-Whitney test is based on the ranks of values in a distribution and the order of the ranks in two groups from the same distribution. Spearman's rho is also based on ranks. Values of correlation coefficients vary from -1 to +1. The sign indicates the direction of correlation while the absolute value indicates the strength of the correlation.

4.2 Analysis of fiscal, monetary and debt management policies

The first hypothesis to be tested is whether the fiscal, monetary and debt management policies differ significantly in the countries of economic transition and in the EU member states. Following what has been discussed earlier the assumption is that restructuring the society in the former planned economies has increased the expenditure side of the public sector. Since the revenue side of the state has evolved slowly, apart from some successes in the privatisation process, government expenditures are expected to exceed revenues. Thus, government finances are expected to show a deficit. If the public expenditure cannot be covered by taxes it is normally financed through borrowing. Therefore, the public debt of economies in transition is expected to make up a substantial share of the GDP.

As for the EU member states, the Maastricht criteria were set as the goals of macroeconomic policies. These criteria restricted the governments' conduct of the fiscal and debt management policies. According to the restriction the debt ratio should not be higher than 60 % and the maximum share of fiscal deficit to GDP could amount to 3 %.

As the theory suggests a government resorts to an inflationary measure, namely money issuance if the deficit cannot be financed through debt. It has also been stated, that a high inflation has been common since the beginning of the transition process in transition economies due to price liberalisation and the lack of experience with monetary management. The members of the EU, on the other hand, have been tied by the Maastricht criterion, according to which inflation rate should not be higher than 1,5 percentages plus the average of the three lowest inflation rates. Thus, it is reasonable to expect a significant difference between the average interest rates in these two groups.

4.2.1 Fiscal policy

The fiscal balance to GDP ratios for 1995 are examined first. Figure 4.1 illustrates the distribution of deficit/surplus to GDP and their means in the EU member states and in 19 economies of transition. As the figure shows, in both groups the deviation of observations is equally wide. However, the average balance in the transition economies represents a smaller deficit than in the EU member states. Hence, contrary to the hypothesis the fiscal situation in the transition group seems to have been better than in the group of EU countries.

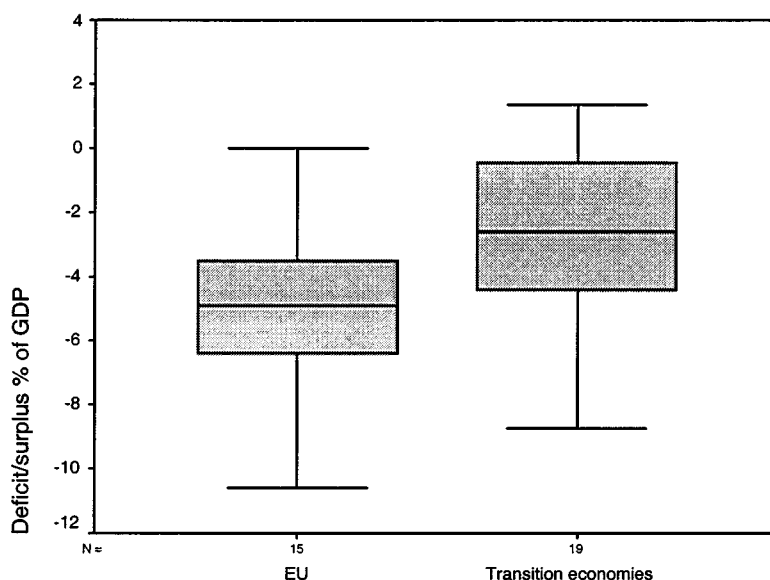


Figure 4.1. Budget balance to GDP distributions in 1995.

The mean of budget balance per GDP in the 15 EU member states was -4,92 % as can be seen in table 4.1. The negative sign indicates that the average represents a budget deficit. In

the sample of 19 economies of transition the average was a deficit of 2,72 % to GDP. According to the M-W test the difference of the statistical means is, in fact, significant at 0,05 level³ (see Appendix 2). Hence, in statistical terms the economies in transition have budget deficits almost significantly smaller than in the EU member states. The highest figure -27,8 % in this group is reported by Greece. None of the EU members had a clearly positive balance; the ratio for Luxembourg was 0 %. In the group of transition economies Macedonia is reported to have a budget surplus amounting to 1,34 % of the GDP. The highest deficit to GDP ratio in that group was in Albania.

Table 4.1. Statistics of budget balance per GDP distributions of 1995.

Deficit/surplus 1995	Statistic	Mean	Groups	
			EU	Transition economies
			-4,92	-2,72
	95% Confidence Interval for Mean	Lower Bound	-6,37	-4,00
		Upper Bound	-3,47	-1,44
	Median		-4,90	-2,60
	Variance		6,85	7,04
	Std. Deviation		2,62	2,65
	Minimum		-10,60	-8,77
	Maximum		,00	1,34
	Std. Error	Mean	,68	,61

The situation during 1991, which is presented in figure 4.2, gives more support to the hypothesis. The mean of fiscal balance to GDP ratios seems to be more or less equal in both groups, but the deviation of the distribution is much wider in the sample of 15 economies in transition. The two outliers (marked with the identification number used in the SPSS programme) that fall outside the rest of the distribution in the EU group represent the deficits reported in Italy and in Greece.

³ The significance of the p-value for the Mann-Whitney test is indicated in the row 'two-tailed asymptotic significance'.

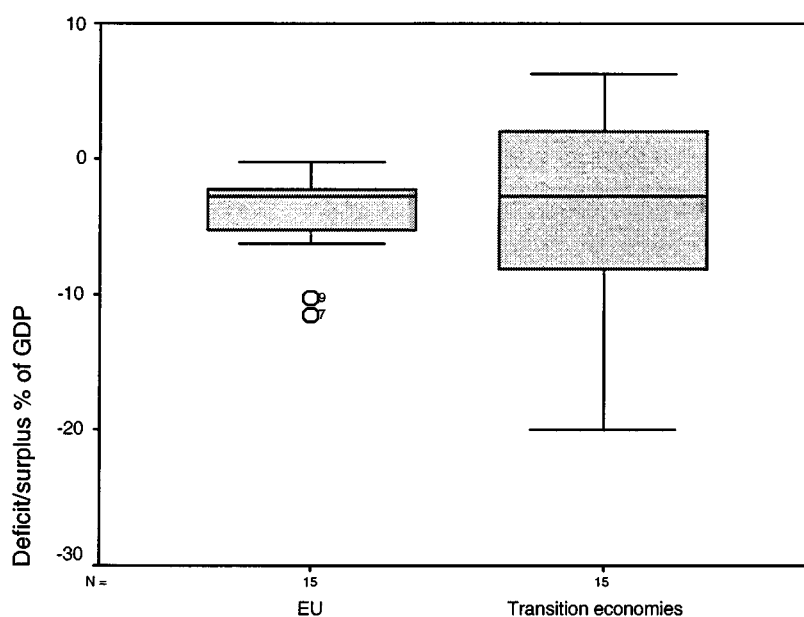


Figure 4.2. Budget balance to GDP distributions in 1991.

A possible explanation of these results is that there might still be something left of the Soviet legacy in public reporting, which induces the authorities to produce an image more positive than in reality. If it is assumed that the statistics at least approximately correspond to the real situation in different countries, it is still not a plausible conclusion that fiscal policy in economies of transition is managed better than in EU member states.

The lower average deficit to GDP rate of the EU group could be explained by the economic depression of the early 1990's that expanded government expenditure in the European market economies. Therefore, the 1995 data does not represent a 'normal' situation for the EU member states. Other possible reason could be that the privatisation process has been successful enough in creating revenues for the economies in transition, and that these proceeds are not fully incorporated into the state budget. Also, it could be argued that the figures used for measuring the GDP do not reflect its real value. In fact, assessing the impact of fiscal policy using GDP as a basis for comparison is particularly difficult for the times of high inflation. Monetary instability in the transition economies has made the GDP estimates rather unreliable (ECE 1992: 94). Indicators with GDP as the denominator should be taken into account with a large margin of uncertainty.

4.2.2 Debt management

Statistics concerning the public debt outstanding in countries of economic transition is rather difficult to obtain. For this analysis data for only nine economies in transition was found. All of the 15 EU members are included in the analysis. The difference between the distributions of the two samples, which are presented in figure 4.3, is fairly obvious. The average debt ratio is remarkably lower in the transition group, and the distributions barely cross. There are three exceptional observations in the EU group that fall outside the rest of the distribution. Belgium and Italy have exceptionally high debt ratios, and Luxembourg, at the other end, has a very low ratio of public debt to GDP. Hungary falls outside the distribution in the transition group with a debt stock amounting to 85,9 % of the GDP.

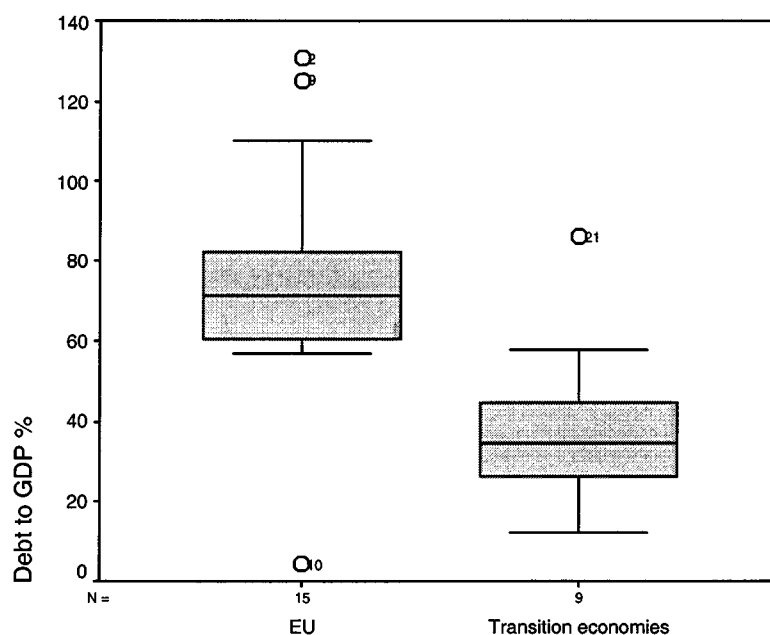


Figure 4.3. Means and distributions of debt ratios in 1995

The average debt ratio for the EU member states was about 75 % in 1995 – fifteen percentages above the Maastricht criterion. The corresponding average for the nine economies in transition was nearly 40 % as shown in the table 4.3 below. The difference between the average debt ratios in these two groups of countries is statistically significant according to the M-W test.

Table 4.3. Statistics of debt ratio distributions for 1995.

			Groups	
			EU	Transition economies
Debt ratio 1995	Statistic	Mean	75,34	39,45
		95% Confidence Interval for Mean		
		Lower Bound	58,37	22,71
		Upper Bound	92,31	56,19
		Median	71,40	34,51
		Variance	939,02	474,29
		Std. Deviation	30,64	21,78
		Minimum	4,20	12,33
		Maximum	130,80	85,97
	Std. Error	Mean	7,91	7,26

The clear difference between the average of debt ratios in these two groups could be partly explained by the economic recession in the beginning of 1990's, because of which also debt stocks increased substantially in many EU member states. On the other hand, the transition economies are in a worse position to obtain loans both domestically and externally than European market economies. In most cases there is not enough capital in the domestic markets and international capital markets are cautious to lend money because of the risks involved with the securities in transition economies. The higher risk involved with the government bonds of former planned economies is reflected in higher costs of credits. The doubt on the governments' reliability is also evident in lower ratings, an example of which is seen in appendix 3. In any case, the difference in the average debt ratios is not enough to make a conclusion that transition economies somehow manage their loans better than the members of the European Union.

4.2.3 Monetary policy

In 1995, the average inflation rate in 27 countries of economic transition in Europe and in the former Soviet Union was as high as 176,4 % as presented in table 4.4. Among the EU members the mean was fairly low. It did, however, exceed the Maastricht criterion, which was approximately 2,8 %. Thus, the statistics support the hypothesis that former planned economies have faced higher inflation rates during the transition process.

Table 4.4. Descriptive statistics of inflation rate distributions in 1995.

			Groups	
			EU	Transition economies
Inflation rate 1995	Statistic	Mean	3,06	176,41
		95% Confidence Interval for Mean		
		Lower Bound	1,92	69,16
		Upper Bound	4,20	283,66
		Median	2,20	39,50
		Variance	4,24	73503,33
		Std. Deviation	2,06	271,11
		Minimum	,80	-12,10
		Maximum	8,90	1105,30
	Std. Error	Mean	,53	52,18

Figure 4.4 illustrates the differences in the distributions and means but does not really show the substantial difference between the average inflation rates in these two groups because of the scale. However, it is clear that the deviation of inflation rates in the EU member states is almost non-existent compared to that of the transition group.

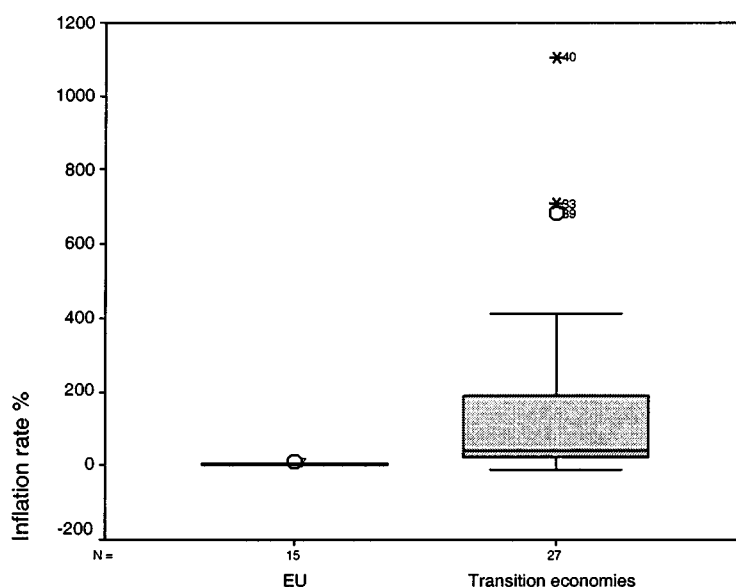


Figure 4.4. Distributions of inflation rates in 1995.

It could be reasonable to divide the countries of transition into two: the Central and Eastern European (CEE) economies of transition and the Commonwealth of Independent States (CIS), which are the independent former Soviet federations, the Baltic States excluded. Estonia, Latvia and Lithuania are included in the first group. There are 15 countries in the group of

Central and Eastern European transition economies and 12 in the group of CIS countries. As we can see in figure 4.5 the average inflation rate is substantially higher in the CIS group.

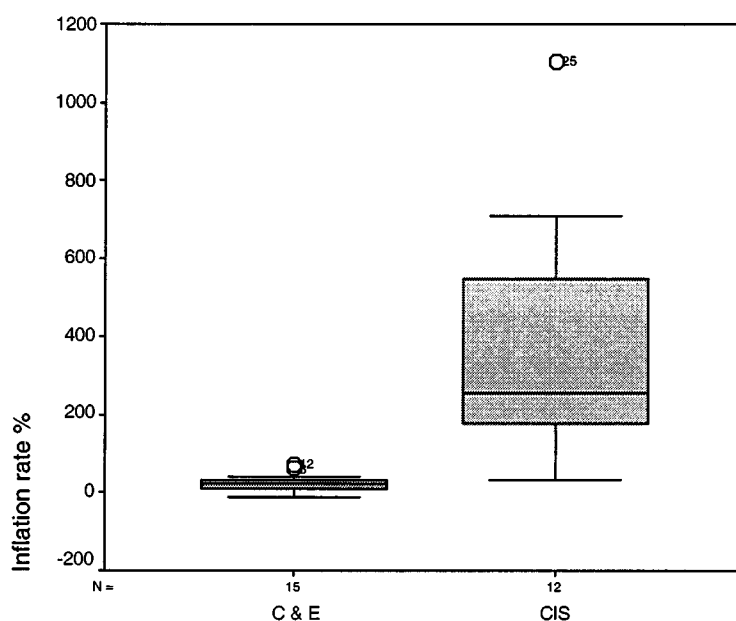


Figure 4.5. Distributions and means of inflation rates for transition economies.

The mean of the inflation rates in the CEE transition economies was 24,23 % and 366,63 % in the CIS countries as the table 4.5 shows. An explanation for this phenomenon is that the former Soviet states started their transition process later than the other economies in transition. The CEE economies are historically closer to the rest of Europe than the former Soviet federations, except for the three Baltic States. The elements and practices of market economy have been accepted more willingly in these countries, which might also explain the better management of monetary policy.

Table 4.5. Statistics of inflation rates in two groups of transition economies.

			Groups	
			Central and Eastern Europe	CIS
Inflation rate 1995	Statistic	Mean	24,23	366,63
		95% Confidence Interval for Mean	Lower Bound	12,09
			Upper Bound	36,37
		Median	25,00	256,45
		Variance	480,51	102070,40
		Std. Deviation	21,92	319,48
		Minimum	-12,10	29,90
		Maximum	71,80	1105,30
		Std. Error Mean	5,66	92,23

When the CEE economies of transition are compared to the EU member states the difference between average inflation rates is still significant. Also, the deviation of observations showed in figure 4.6 is still remarkably wider in the group of transition economies. Yugoslavia and Bulgaria fall outside the distribution with inflation rates amounting to 71,8 % and 62,1 %.

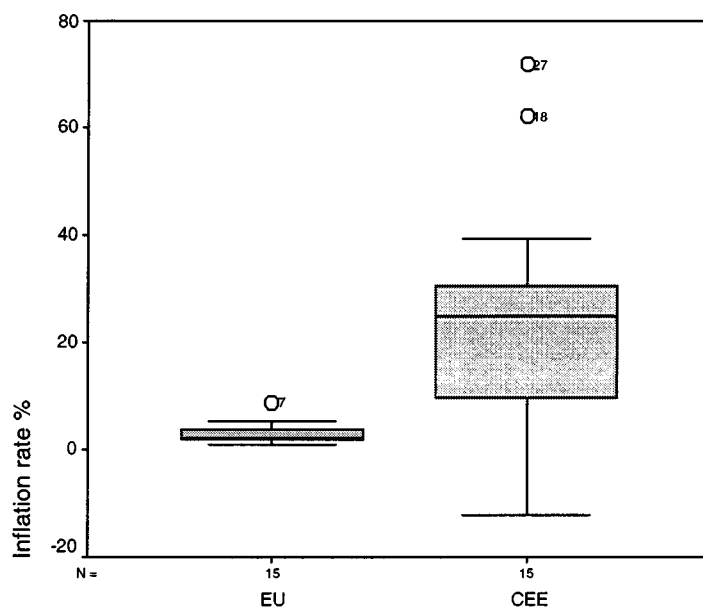


Figure 4.6. Distribution and means of inflation rates.

During 1991, inflation was more modest in the economies of transition as can be seen in the figure 4.7. The average in the EU group was 5,83 % while in the transition group it was

120,11 %. The minimum and maximum for the EU members were 2,4 % in Denmark and 19,5 % in Greece. The respective figures in the transition group were 35 % and 338,5 % reported by Hungary and Bulgaria.

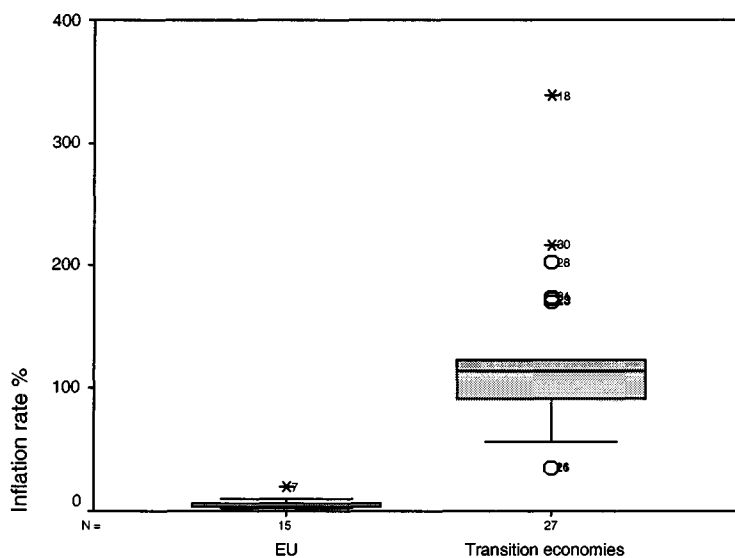


Figure 4.7. Inflation rate distributions during 1991.

The analysis of monetary policies in the economies of transition and in the EU member states can be concluded by stating that the former have many difficulties in controlling inflation, and the monetary discipline seems to be stricter among the latter. Problems with stability have entered the picture with the economic transition. Since prices were fixed during the era of a planned economy, there was no official inflation. The results suggest that the adaptation to the transition of an economic system as regards to monetary policy had not been very successful by 1995.

4.3 Correlations

The second hypothesis based on the theoretical arguments is that there is a relationship between fiscal, monetary and debt management policies. Testing the hypothesis is done through correlation matrixes. As explained earlier, the non-parametric Pearson's rho test is used for this analysis. T-tests are used to determine the significance of correlation coefficients. First, however, examining the scatterplot in figure 4.8 gives some idea of

possible connections between the three macroeconomic policies. The three boxes in the upper right corner of the figure are the ones that are examined. The other three plots are only the mirror images of these. Observations are marked differently according to the sample they belong to. The lines represent a linear regression curve which indicates the direction of a possible correlation.

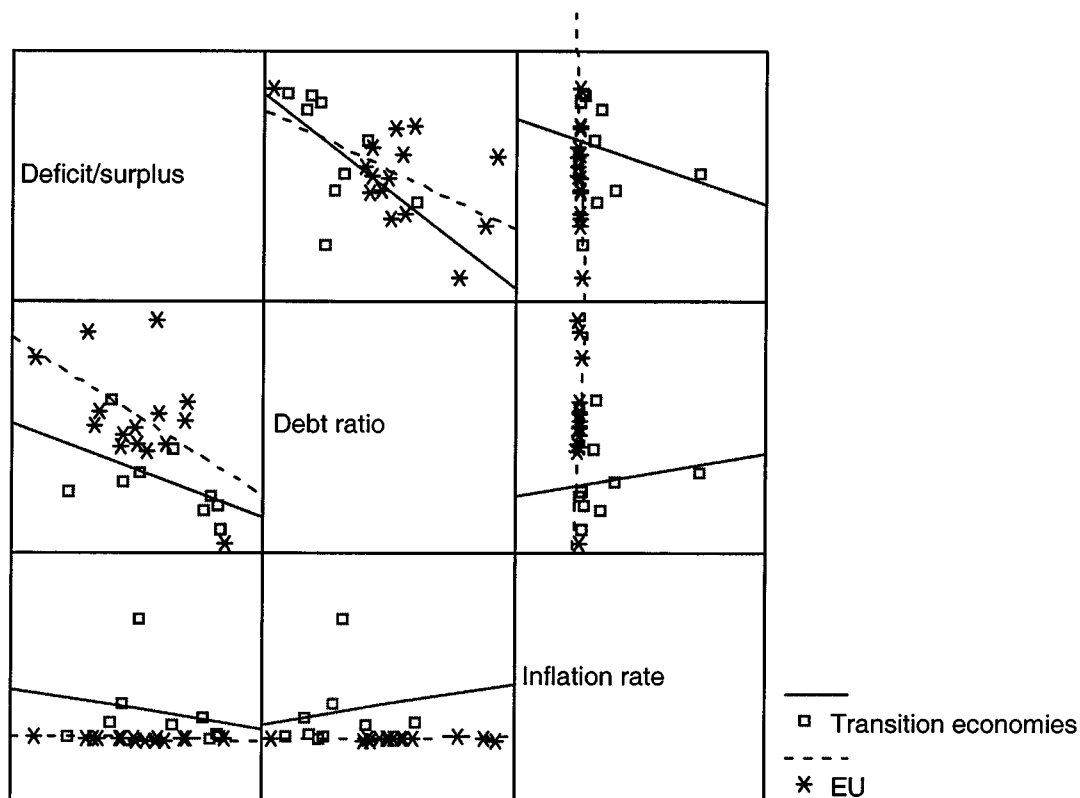


Figure 4.8. Scatterplot of 1995 balance, debt ratio and inflation.

There seems to be a negative correlation between fiscal balance and debt ratio as the first box in the first row shows. Hence, the figure suggests that the higher the debt ratio the bigger the deficit. This observation supports the hypothesis made earlier. Analysing the connections between inflation and the other two variables is more difficult as the regressions in the two samples are different from each other. In addition, an outlier, namely Russia, might distort the correlation coefficients.

More specific information on the relationships between the variables is presented in the correlation matrix in table 4.6. The statistical analysis supports the observation that there is a negative correlation between budget balance to GDP and debt ratio. The correlation is also

significant at 0,01 level, meaning that there is only a 1-% chance of making an error. There does not seem to be a significant correlation between the other variables. As can be seen from the scatterplot, the inflation rate in the EU member states appears to be the same no matter what value the other variables have. Correlations were also tested without the Russian observations. Their removal did not, however, make any substantial difference to the results (See appendix 4).

Table 4.6. Correlation matrix for three macroeconomic variables.

			Deficit/surplus 1995	Debt ratio 1995	Inflation rate 1995
Spearman's rho	Deficit/surplus 1995	Correlation Coefficient	1,000	-,538**	,135
		Sig. (2-tailed)	,	,007	,447
		N	34	24	34
	Debt ratio 1995	Correlation Coefficient	-,538**	1,000	-,227
		Sig. (2-tailed)	,007	,	,285
		N	24	24	24
	Inflation rate 1995	Correlation Coefficient	,135	-,227	1,000
		Sig. (2-tailed)	,447	,285	,
		N	34	24	42

** . Correlation is significant at the .01 level (2-tailed).

Testing correlations separately for the two groups produced an interesting result. In the group of EU member states the hypothesis of correlation between fiscal balance and debt stock is rejected as can be concluded from table 4.7. Instead, fiscal deficit and inflation rate seem to have a strong negative correlation, traces of which can also be seen in the scatterplot presented in appendix 3. Although, the focus of this study is not on the EU, it is interesting to notice that the separation of fiscal and monetary policies has not been successful, at least not during 1995.

Table 4.7. Correlation matrix for the 15 EU member states.

			Deficit/surplus 1995	Debt ratio 1995	Inflation rate 1995
Spearman's rho	Deficit/surplus 1995	Correlation Coefficient	1,000	-,289	-,708**
		Sig. (2-tailed)	,	,296	,003
		N	15	15	15
	Debt ratio 1995	Correlation Coefficient	-,289	1,000	,359
		Sig. (2-tailed)	,296	,	,183
		N	15	15	15
	Inflation rate 1995	Correlation Coefficient	-,708**	,359	1,000
		Sig. (2-tailed)	,003	,188	,
		N	15	15	15

** . Correlation is significant at the .01 level (2-tailed).

The only significant correlation in the group of transition economies reported in table 4.8 is between fiscal balance to GDP and debt ratios. The correlation is stronger than for the whole population although the level of significance is lower. Thus, a conclusion could be drawn that costs associated with debt do, in fact, affect the fiscal policy in the former planned economies. However, the connection of fiscal and debt management policies with monetary policy does not receive support in the data of the transition economies.

Table 4.8. Correlation matrix for a selection of transition economies.

			Deficit/surplus 1995	Debt ratio 1995	Inflation rate 1995
Spearman's rho	Deficit/surplus 1995	Correlation Coefficient	1,000	-,717*	-,212
		Sig. (2-tailed)	,	,030	,383
		N	19	9	19
	Debt ratio 1995	Correlation Coefficient	-,717*	1,000	,383
		Sig. (2-tailed)	,030	,	,308
		N	9	9	9
	Inflation rate 1995	Correlation Coefficient	-,212	,383	1,000
		Sig. (2-tailed)	,383	,308	,
		N	19	9	27

*. Correlation is significant at the .05 level (2-tailed).

4.4 Short-term interest rates

In order to get additional support for the argument that debt for governments in economies of transition is more expensive than for the EU member states, due to lower credibility, the short-term interest rates are examined. It would have been more meaningful to study the long-term interest rates on government bonds, which reflect the risks involved somewhat better than the short-term rates, but unfortunately that kind of data for economies of transition is very scarce. Short-term interest rates of 1995, however, were available for 12 countries of transition.

Figure 4.8 illustrates the differences in the nominal interest rates' distributions between the two groups of countries. It appears to support the hypotheses of higher rates in the transition group. The country with a rate exceptionally high is Russia with the annual rate of three-month treasury securities reaching 168 %. The mean of interest rates in the EU group was 7,22 % while it rose to 41,17 % in the transition economies.

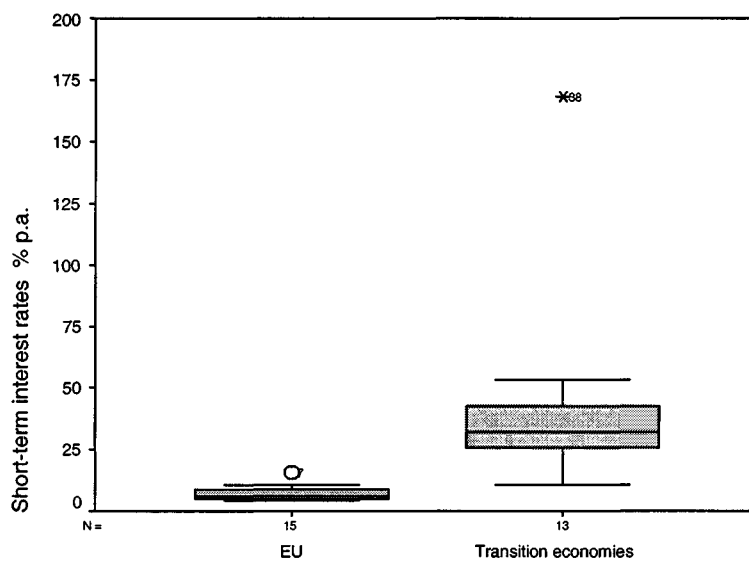


Figure 4.8. Boxplot of short-term interest rate distributions.

The lowest short-term interest rate of 10,9% in the transition group was in Czech Republic. Since the country has reported a moderate rate of inflation and fairly low debt ratio, as discussed earlier, the lowest interest rate supports the view that Czech Republic is among the countries that have managed the transition better than other former planned economies.

Russia, on the other hand, is notorious for the economical and political turmoil that has taken place during the transition process, which is also evident in the high interest rate.

Table 4.9. Statistical description of short-term interest rates in 1995.

Short-term interest rates 1995	Statistic	Groups		
			EU	Transition economies
	Mean		7,22	41,17
	95% Confidence Interval for Mean	Lower Bound	5,52	16,81
		Upper Bound	8,92	65,53
	Median		6,20	32,00
	Variance		9,43	1624,57
	Std. Deviation		3,07	40,31
	Minimum		4,40	10,90
	Maximum		15,50	168,00
	Std. Error	Mean	,79	11,18

The results here coincide with the discussion earlier, that the transition economies face higher debt servicing costs than market economies. However, since the debt ratios in transition economies were on the average lower than in EU member states during 1995, the higher costs of borrowing have not increased budget deficits as much as might have been expected. This was proven earlier in the analysis of budget balance distributions in the two groups of countries.

4.5 Discussion

After the initial years of transition in, the attention towards the former planned economies has somewhat diminished. Research on the change of economic system is mainly conducted by international organisations. They have a particular interest in the economic area because of the financial aid given to governments of the countries in question. However, as the process has progressed and with the improvements in welfare the countries in this area are becoming more interesting for private organisations as well. As the economic conditions improve the economies in transition could become a profitable market area for many private companies.

Previous studies about transition economies mainly focused on the privatisation process. Some studies on the macroeconomic environment and policies can also be found. There are, for instance, studies made on budgeting and the deficit in Hungary (LeLoup et als 1998; Tanzi 1993). There is also a study by Oblath (1995), that examines the macroeconomic effects of fiscal deficit in Hungary. The outcome was that in spite of the fiscal expansion the Hungarian government could not induce domestic demand or economic growth. However, comparative studies on macroeconomic policies, such as the study by Guidotti and Kumar (1991), within the group of transition economies and between these countries and Western market economies are scarce. Guidotti and Kumar focused on fiscal developments in the context of high public debt ratio. The target of the study was 15 heavily indebted countries. These were mainly developing countries but also Yugoslavia was included. They came to the conclusion that there are potentially important links between debt, inflation and the credibility of economic policy.

The purpose of this study has been to examine these links mainly in Central European economies in transition. Fiscal policy has also been added to the analysis. Due to the scarcity of data the focus was on the year 1995 and on some occasions also on the year 1991. The outcomes were that economies in transition had a better fiscal position and lower levels of public debt in 1995 than the EU member states. The fiscal situation had somewhat improved from 1991 in the group of countries in transition. However, this outcome may be more due to the accountancy practices of a planned economy than to a better fiscal policy management. As was expected, inflation turned out to be substantially higher in transition economies. In addition, the monetary situation had deteriorated as the transition process had progressed.

Although, budget deficit and debt ratio on the average turned out to be greater in the member states of the European Union, many of the economies in transition also reported high deficits. Since the governments struggle with public finances in the West, as well, their example might not be worthwhile to be taken literally. However, there are serious considerations to be made about the effective collection of revenues and on public expenditures that are needed in a Western style of society.

As fiscal deficit and public debt appeared to correlate with each other, the effects of the composition of public debt on the deficit could be worth analysing. Hence, a further study on how the maturity structure of debt affects the expenditure side of the budget could be worth

conducting. In addition, the currency the debt is denominated in might have repercussions on the costs of credit. The results concerning the connection between inflation and public debt could be interesting if the correlation between long-term foreign currency denominated debt and inflation was compared to that of long-term domestic debt and inflation.

Since no significant evidence between inflation and public debt or fiscal deficit was found for the transition economies, the financing of deficit through money creation was apparently not the main practice. Nevertheless, it has undoubtedly taken place in these countries. Neither was there any evidence of monetising the public debt through inflation. It should be noted though, that this analysis had a very general nature and focused on a fairly small sample during one year. More comprehensive study could probably produce other kinds of results.

5. SUMMARY

Transition from planned to market economy involves the introduction of new kinds of economic policies. This includes the restructuring of government finances due to the division of assets into private and public. As the government can no longer directly transfer payments from enterprises to finance its expenditure, new sources of revenues have to be found. These include different direct and indirect taxes and tariffs. Economies in transition have not succeeded in their fiscal policies. Tax evasion is a common practice, authorities are corrupt, and tax control over enterprises is insufficient. Therefore, governments in these countries have had to resort to other ways of financing their budgets.

One way to finance public spending is to borrow from domestic and international capital markets. As the expenditure sides of budgets in transition economies have expanded, debt securities have been issued to finance deficits. The growth of public debt has often been exponential; Russia is a warning example of this. There are at least two reasons for concern in this kind of development: First, debt-service payments increase, and the fiscal position of a country is weakened. Secondly, there is empirical evidence that when the domestic debt has increased, inflation has grown simultaneously. This has effects on the emergence of negative and volatile real interest rates. Also, a country's credibility in the eyes of investors is deteriorated because inflation can be used to repudiate the domestic debt stock. However, the connection between fiscal deficit, inflation and domestic debt is not clear. It could, for example, magnify the size of fiscal adjustment, which is needed in order to get rid of the deficit.

This study found a significant correlation between fiscal deficit and public debt during 1995 in nine economies of transition and fifteen EU member states. Surprisingly, the deficits in former planned economies were lower than in the latter group of countries. Debt ratios were also lower in the economies in transition. The result can be partly explained by inaccurate accounting practices in former planned economies. Inflation rates and interest rates were lower in the EU group, as was expected. Thus, the economic and political credibility of governments in transition economies is lower than in the Western Europe.

The ongoing transition process in Central and Eastern Europe has generated many problems. While the governments continue to struggle with their finances, more open and transparent economic policies have to be implemented. The countries wanting to join the European Union have to pay particular attention to the change in the conduct of macroeconomic policies. Czech Republic, Hungary and Poland are among the countries that have progressed further in the transition process than other former planned economies. However, they still have a lot to do in fostering market forces in order to achieve a stable economic environment and a better welfare to their citizens.

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APPENDICES

APPENDIX 1. The countries examined in the study.

Transition economies	EU member states
1 Albania	1 Austria
2 Bosnia & Herzegovina	2 Belgium
3 Bulgaria	3 Denmark
4 Croatia	4 Finland
5 Czech Republic	5 France
6 Hungary	6 Germany
7 Poland	7 Greece
8 Romania	8 Ireland
9 Slovakia	9 Italy
10 Slovenia	10 Luxembourg
11 Macedonia	11 Netherlands
12 Yugoslavia	12 Portugal
13 Estonia	13 Spain
14 Latvia	14 Sweden
15 Lithuania	15 UK
16 Armenia	
17 Azerbaijan	
18 Belarus	
19 Georgia	
20 Kazakhstan	
21 Kyrgyzstan	
22 Moldova	
23 Russia	
24 Tajikistan	
25 Turkmenistan	
26 Ukraine	
27 Uzbekistan	

APPENDIX 2. Mann-Whitney tests for the variables used in the empirical analysis.

Ranks

	Status	N	Mean Rank	Sum of Ranks
Deficit/surplus 1995	EU	15	13,23	198,50
	Transition economies	19	20,87	396,50
	Total	34		
Deficit/surplus 1991	EU	15	14,60	219,00
	Transition economies	15	16,40	246,00
	Total	30		
Debt ratio 1995	EU	15	15,60	234,00
	Transition economies	9	7,33	66,00
	Total	24		
Inflation rate 1995	EU	15	9,67	145,00
	Transition economies	27	28,07	758,00
	Total	42		
Inflation rate 1991	EU	15	8,00	120,00
	Transition economies	27	29,00	783,00
	Total	42		

Test Statistics^b

	Deficit/surplus 1995	Deficit/surplus 1991	Debt ratio 1995	Inflation rate 1995	Inflation rate 1991
Mann-Whitney U	78,500	99,000	21,000	25,000	,000
Wilcoxon W	198,500	219,000	66,000	145,000	120,000
Z	-2,220	-,560	-2,773	-4,660	-5,318
Asymp. Sig. (2-tailed)	,026	,575	,006	,000	,000
Exact Sig. [2*(1-tailed Sig.)]	,025 ^a	,595 ^a	,004 ^a		

a. Not corrected for ties.

b. Grouping Variable: Status

M-W test for the equality of means in the EU member states and CEE transition economies:

Test Statistics^b

	Inflation rate 1995
Mann-Whitney U	25,000
Wilcoxon W	145,000
Z	-3,630
Asymp. Sig. (2-tailed)	,000
Exact Sig. [2*(1-tailed Sig.)]	,000 ^a

a. Not corrected for ties.

b. Grouping Variable: Status

APPENDIX 3

Moody's sovereign bond ratings as of 27 September 1999.

	Bonds and notes		
	Long-term	Short-term	
Australia	Aa2	P-1	Aaa Issuers rated Aaa offer exceptional financial security. Changes in creditworthiness are most unlikely to impair their fundamentally strong position.
Bulgaria	B2	NP	Aa Issuers rated Aa offer excellent financial security. They are rated lower than Aaa entities because long-term risks appear somewhat larger. A
Canada	Aa2	P-1	A Issuers rated A offer good financial security. Some elements suggest a susceptibility to impairment sometime in the future.
Croatia	Baa3	P-3	Baa Issuers rated Baa offer adequate financial security. However, certain protective elements may be lacking or may be unreliable over any great period of time.
Czech Rep.	Baa1	P-2	Ba Issuers rated Ba offer questionable financial security. Often the ability of these entities to meet obligations may be moderate and not well safeguarded in the future.
Denmark	Aaa	P-1	B Issuers rated B offer poor financial security. Assurance of payment of obligations over any long period of time is small.
Estonia	Baa1	P-2	Caa Issuers rated Caa offer very poor financial security. They may be in default on their obligations or there may be present elements of danger with respect to punctual payment of obligations.
Euroland	Aaa	P-1	Ca Issuers rated Ca offer extremely poor financial security. Such entities are often in default on their obligations or have other marked shortcomings.
Greece	A2	P-2	C Issuers rated C are the lowest rated class of entity, are usually in default on their obligations, and potential recovery values are low.
Hungary	Baa1	P-2	
Iceland	Aa3	P-1	
Japan	Aa1	P-1	
Kazakhstan	B1	NP	
Latvia	Baa2	P-3	
Lithuania	Ba1	NP	
Moldova	B2**	NP	
Norway	Aaa	P-1	
Poland	Baa1	P-2	
Romania	B3	NP	
Russia	B3	NP	
Slovakia	Ba1	NP	
Slovenia	A3	P-2	
Sweden	Aa1	P-1	
Switzerland	Aaa	P-1	
Ukraine	B3	NP	
UK	Aaa	P-1	
USA	Aaa	P-1	

** under review for possible downgrade

Short-term ratings

P1 Issuers rated Prime-1 have a superior ability for repayment of senior short-term debt obligations. Prime-1 repayment ability will often be evidenced by many of the following characteristics:

P2 Issuers rated Prime-2 have a strong ability for repayment of senior short-term debt obligations.

P3 Issuers rated Prime-3 have an acceptable ability for repayment of senior short-term obligations.

P4 Issuers rated Not Prime do not fall within any of the Prime rating categories.

Source: Moody's Investor Service <<http://www.moodys.com>>

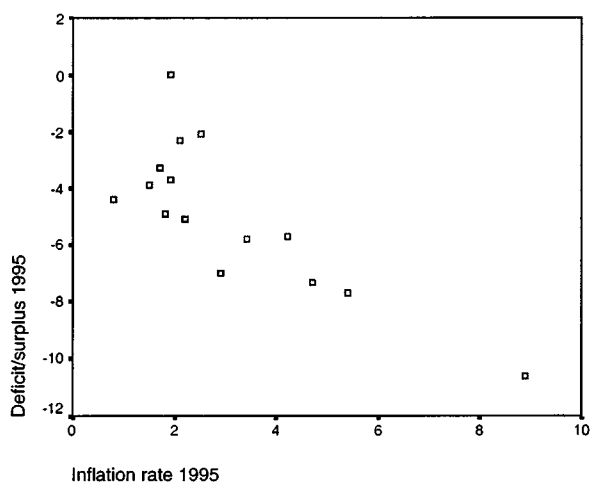
APPENDIX 4

Correlations without Russia:

			Deficit/surplus 1995	Debt ratio 1995	Inflation rate 1995
Spearman's rho	Deficit/surplus 1995	Correlation Coefficient	1,000	-,556**	,164
		Sig. (2-tailed)	,	,006	,361
		N	33	23	33
	Debt ratio 1995	Correlation Coefficient	-,556**	1,000	-,179
		Sig. (2-tailed)	,006	,	,414
		N	23	23	23
	Inflation rate 1995	Correlation Coefficient	,164	-,179	1,000
		Sig. (2-tailed)	,361	,414	,
		N	33	23	41

** . Correlation is significant at the .01 level (2-tailed).

Scatterplot of fiscal balance and inflation rate for the EU member states:



For transition economies:

