

1 Introduction and Overview of Conclusions

This paper analyses sustainability of Croatia's public and external debt with the help of standard indicators used by international financial institutions, investment banks and rating agencies. Public discussions and analyses of debt issues in Croatia presently rely on only few summary measures, such as gross public and external debt and their shares in GDP. Movements in these summary indicators are often used to make hasty conclusions about the level of indebtedness or even policy measures required to stabilise or reduce the debt level. Other standard indicators such as the primary and overall balance needed to stabilise the debt; the ratio of debt service payments to exports of goods and services; or the ratio of short-term debt to net usable international reserves are rarely monitored and analysed. Such an approach does not build on a sufficient level of expertise and may easily lead to wrong conclusions about the level of debt as well as wrong fiscal and monetary policy decisions. This paper argues that debt sustainability analysis requires the monitoring and analysis of a whole range of indicators that enable timely signalling of negative trends in the solvency and liquidity of the public and external sectors, and allow policy makers to implement appropriate corrective measures. Systematic monitoring of standard debt sustainability indicators is also a prerequisite for a more efficient short-term fiscal policy and a better co-ordination of fiscal policy with other macroeconomic policies. The costs of setting up a framework for monitoring debt sustainability indicators are relatively small (and to a large extent one-off) compared with the costs of a potential debt or external crisis.

The paper is divided into three sections. The first section outlines a framework for debt sustainability analysis. It calculates the overall and primary budget balance as well as real interest rates needed to stabilise public debt. Fiscal positions that stabilise Croatia's public debt have last been reached in 1999. The gap between the actual deficits (overall and primary) and those needed to stabilise public debt has improved in recent years. In 2003, the additional fiscal effort required to stabilise public debt at 55 percent of GDP amounted to roughly $\frac{3}{4}$ percentage points of GDP. While this fiscal effort does not seem large, one should remember that the financing conditions in recent years have been very favourable. Should conditions in global financial markets deteriorate – as is currently projected, given that

thresholds, whereas the paper by Babić et al. (2003) performs the remaining steps of debt sustainability analysis.

2 Debt Sustainability Indicators

Debt sustainability is generally defined as the ability of borrowers to fulfill their long-term financial obligations while maintaining economically acceptable balance of income and expenditure. Debt becomes unsustainable when it accumulates at a faster rate than the borrower's capacity to service it. Whether certain level of debt is sustainable will depend on many variables - interest rates, the exchange rate, income growth - that will determine the movements in outstanding liabilities and debt-servicing capacity. More precisely, debt sustainability will depend on market expectations of movements in these variables. As a result of the development of international capital markets and the liberalisation of domestic financial markets in the 1990s, most countries today finance their debt under market conditions. Whether borrowing from banks or issuing bonds, debtors, including governments, can no longer issue debt at an interest rate lower than the one the market demands for a particular profile of credit risk at given time.¹

Because analysis of debt sustainability depends on market expectations, one cannot easily determine whether a certain level of debt is sustainable. Market expectations are constantly changing. Since these changes are often sudden and sizeable, not even industrial countries are immune to them. In emerging market economies such as Croatia, the problem of changing market expectations is much more pronounced because macroeconomic and political developments are less stable and financial markets less developed than in mature market economies.

From an analytical point of view, dependence on market expectations requires a comprehensive static but also *dynamic* analysis of debt sustainability. However,

¹ *The shift to market-based financing of fiscal deficits has occurred as a result of several factors, including the removal of ceilings on deposit rates and the lifting of prohibitions on interest payments on current accounts financial crises; privatisation of state-owned commercial banks; the relaxation of capital controls and restrictions on operations of foreign-owned banks; new IT developments and the spread of global financial institutions to emerging market economies, at first to assist their clients investing in these economies and later in search of new profit opportunities. See Hawkins and Mihaljek (2001).*

$$(3) \quad d(1 + g^n) = d - b \rightarrow b = -d g^n$$

Under further assumptions that both the growth rate of real GDP (g) and of GDP deflator (π) are constant, so that $g^n = (g + \pi)$, equation (3') defines the overall budget balance needed to stabilise the debt to GDP ratio:

$$(4) \quad b^* = -d (g + \pi)$$

where b^* is a “sustainable” or “stabilising” ratio of budget balance to GDP. The parameters g and π are usually the “potential” rates expected under reasonable medium-term economic prospects. For instance, the potential growth rate in the euro area is estimated at 2.5 percent a year, and the long-term growth rate of the GDP deflator also at 2.5 percent. With a debt level of 60 percent of GDP (the limit envisaged under the Maastricht Treaty), equation (4) would imply a sustainable budget deficit of 3 percent of GDP, which is precisely the value envisaged by the Maastricht Treaty: $b^*_{\text{EMU}} = -0.60(0.025 + 0.025) = 0.03$.

Debt sustainability criteria can be also expressed in terms of the primary budget balance, i.e., the difference between revenues and expenditures excluding interest payments. One advantage of this approach is that the primary balance gives a clearer picture of the budget position that may be actually influenced by fiscal policy. The reason is that interest payments primarily depend on developments in international capital markets. Looking at the overall balance may therefore blur the picture on the necessary scope of fiscal consolidation - a potentially significant part of the overall deficit may be accounted for by interest payments, over which the fiscal authorities in highly indebted countries have little, if any, control.

Based on equation (2), public debt dynamics can be expressed in terms of the primary balance as follows:

$$(5) \quad \begin{aligned} D_{t+1} - D_t &= iD_t - B_t^p \rightarrow d_{t+1}(1 + g^n) = (1 + i)d_t - b_t^p \\ d_{t+1} &= \frac{(1 + i)}{(1 + g^n)} d_t - \frac{1}{(1 + g^n)} b_t^p \end{aligned}$$

where i is the average nominal interest rate, B_t^p is the primary budget balance, and iD_t represents the amount of interest paid on public debt. Equation (5) is a

$$(4) \quad b^* = -d (g + \pi)$$

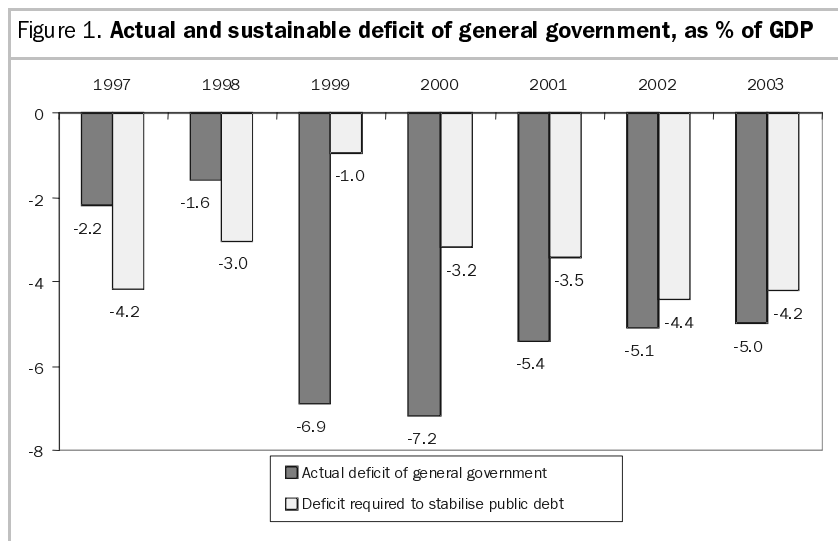
When the debt ratio is on a growing trend, (when the overall budget deficit, $-b$, is higher than the sustainable deficit, $-b^*$), the difference between b^* and b indicates by how much the overall balance of payments deficit (which may be easier to monitor than the primary deficit) needs to be cut to stabilise public debt d at its current level over one period. One should note that the interest rate is embedded in this criterion because the overall deficit reflects interest payments: when payments and hence the deficit rise, the difference between b and b^* increases, i.e. greater budgetary effort is needed to stabilise the debt ratio.

Table 1 shows the levels of “stabilising” deficit for Croatia derived from equation (4). Contrary to the above assumptions, the level of debt and the nominal growth rate of GDP are not assumed to be constant and actual values of these variables are used. Debt-stabilising deficits are thus calculated from the level of public debt in the previous year. This approach assumes that only three variables are available the current year: debt level at the end of the previous year, interest rate and the nominal growth for the current year. For instance, the value of b^* for 2003 is calculated as: $b^*_{2003} = -d_{2002}(g + \pi)_{2003} = -0.554^*7.6 = -4.2$.

Figure 1 compares actual deficits of the general government with deficits required to stabilise public debt at the level of the previous year. In 2003, for instance, general government deficit should be reduced by an additional 0.8 percent of GDP (from the planned 5 percent to 4.2 percent of GDP) in order to maintain public debt at the end-2002 level of 55.4 percent of GDP. The largest gap between the “stabilising” and actual deficits was registered in 1999 (as much as 5.9 percent of GDP) and the smallest in 2002. On the other hand, actual deficits in 1997 and 1998 were smaller than those required to stabilise the debt. This is not surprising in view of the low level of public debt and small budget deficits in those years.

	1997	1998	1999	2000	2001	2002	2003
Total public debt (as % of GDP)	27.3	33.5	41.1	50.7	53.5	55.4	51.4
Nominal GDP growth (%)	14.7	11.1	2.9	7.7	6.8	8.3	7.6
Real GDP (%)	6.8	2.5	-0.9	2.9	3.8	5.2	4.5
Actual deficit of general government (as % of GDP)	-2.2	-1.6	-6.9	-7.2	-5.4	-5.1	-5.0
Deficit required to stabilise public debt (as % of GDP)	-4.2	-3.0	-1.0	-3.2	-3.5	-4.4	-4.2
Required total fiscal effort¹	-2.0	-1.4	5.9	4.0	1.9	0.7	0.8

Note: ¹Difference between the deficit required to stabilise the public debt and actual deficit of general government.
Sources: Central Bureau of Statistics, Croatian National Bank, Ministry of Finance, Babić et al. (2003) and author's calculations.



Source: Author's calculations.

2.3 Primary Balance Needed to Stabilise Public Debt

The second useful indicator of debt sustainability is the one given by equation (8), i.e. the primary budget balance needed to stabilise public debt:

$$(8) \quad b^{p*} = (i - g^n)d_t$$

When using this equation in empirical work one should keep in mind that market rates - as reflected, for instance, in spreads on government bonds - can be quite different from the average interest rate on outstanding debt stock.

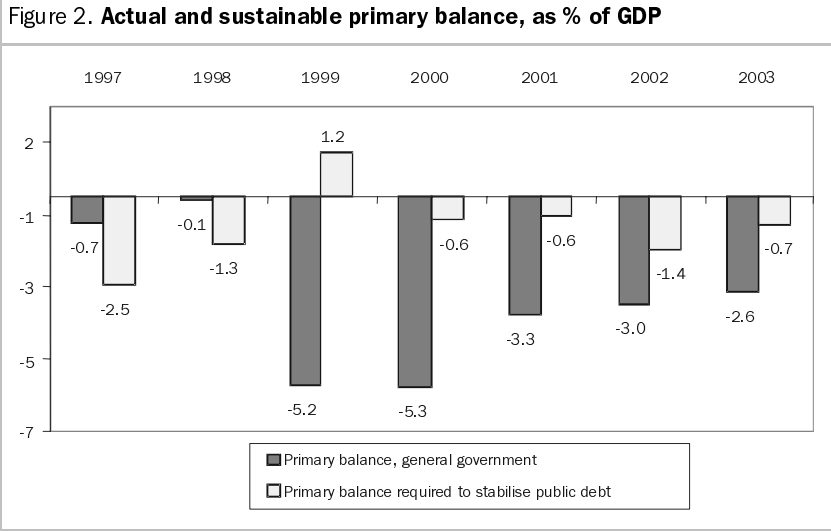
Table 2 shows the values of debt stabilising primary deficits and Figure 2 compares these values with actual primary deficits.³ In 2003, for instance, the primary deficit had to be 1.9 percent of GDP lower (i.e., 0.7 percent of GDP instead of 2.6 percent) in order to stabilise public debt at the 2002 level of 55.4 percent of GDP.

	1997	1998	1999	2000	2001	2002	2003
Interest payments (as % of GDP)	1.5	1.5	1.7	1.9	2.1	2.1	2.4
Nominal interest rate (%)	6.0	6.2	6.5	6.2	5.7	5.6	6.3
Actual primary balance (as % of GDP)	-0.7	-0.1	-5.2	-5.3	-3.3	-3.0	-2.6
Primary balance required to stabilise public debt (as % of GDP)	-2.5	-1.3	1.2	-0.6	-0.6	-1.4	-0.7
Required primary fiscal effort (as % of GDP) ¹	-1.8	-1.2	6.4	4.7	2.7	1.6	1.9

Note: ¹Difference between the primary balance required to stabilise public debt and actual primary balance. Sources: Central Bureau of Statistics, Croatian National Bank, Ministry of Finance, Babić et al. (2003), author's calculations.

As with the previous indicator, one should note that the debt-stabilising primary deficit is calculated for the debt-to-GDP ratio from the previous year, since it is assumed that only three variables are known with a sufficient degree of certainty at the time of calculation: the end-2002 debt level and interest rates and nominal growth in 2003.

³ Value b^{p*} for 2003 was calculated as follows: $b^{p*}_{2003} = d_{2002} (i - g^n)_{2003} = 0.554 * (6.3 - 7.6) = -0.7$.



Source: Author's calculations.

It is interesting to note that in 1999 the primary fiscal effort (Table 2, last row) was greater than the total fiscal effort (Table 1, last row). This substantiates the claim that the overall deficit can blur the picture of the required scope of fiscal consolidation.

2.4 Real Interest Rate Required to Stabilise Public Debt

The third debt sustainability indicator that can be derived from equation (8) is the real interest rate required to stabilise the debt-to-GDP ratio:

$$(6) \quad r^* = g + \frac{b_p}{d}$$

Table 3 shows the values of r^* corresponding to the values of parameters from Tables 1 and 2.⁴ For the past few years, stabilising the debt-to-GDP ratio would have required negative real interest rates. In other words, with the observed primary deficits and real interest rates it was not possible to stabilise public debt at

⁴ The value of r^* for 2003 was calculated as: $r^*_{2003} = g_{2003} + b_{2003}/d_{2002} = 4.5 + (-2.6/0.554) = -0.2$.

previous-year levels. This conclusion is important because Croatia has faced relatively low real interest rates of around 3 percent since 2001. Real interest rates in other countries have been considerably higher – in Bulgaria, for instance, the actual real interest rate was over 10 percent in 2002, and the debt-stabilising interest rate was 8½ percent.

	1997	1998	1999	2000	2001	2002	2003
Real interest rate (%)							
A. Actual value	-1.4	-2.2	2.7	1.5	2.8	2.7	3.3
B. Required to stabilise public debt	4.3	2.1	-16.4	-10.0	-2.7	-0.4	-0.2
Difference between interest rates (B) and (A)	5.7	4.3	-19.1	-11.5	-5.5	-3.1	-3.5

Source: Author's calculation.

One should note that the debt sustainability indicators in equations (4), (6) and (8) build on the concept of net debt, while the above calculations and public discussions in Croatia build on the concept of gross debt. One advantage of these three indicators is that they can be calculated relatively easily and quickly and their interpretation is clear. The disadvantage is that they are static and “backward looking”, i.e., they indicate the overall and primary deficits and real interest rates needed to stabilise public debt at the previous-year rather than the current-year level.

All three indicators clearly show that since 1999 Croatia has not achieved fiscal positions needed to stabilise the ratio of public debt to GDP. The gap between actual deficits (overall and primary) and deficits required to stabilise public debt has narrowed in recent years. The additional fiscal effort required to stabilise public debt in 2003 amounts to some ¾ percent of GDP. One should note, however, that Croatia has not been able to close this gap despite very low real interest rates in recent years. In fact, real interest rates would have to become slightly negative (about -0.20 percent) for Croatia to stabilise public debt at around 55 percent of GDP. This highlights the need to consolidate public finances as quickly as possible – as interest rates in the United States start to rise in 2004, conditions in international capital markets will turn less favourable for emerging

market borrowers and a much greater fiscal effort will be required to stabilise Croatia public debt at its current level.

3 Indicators of Fiscal and External Vulnerability

This section assesses debt sustainability with the help of various indicators of fiscal and external vulnerability. A key question in this context is what constitutes a critical level, or the so-called “vulnerability threshold”, for different debt indicators?⁵ Although such thresholds differ by countries and time periods, vulnerability indicators nevertheless have to be monitored systematically. As discussed in Box 1, some of the most devastating financial crises of the past decade resulted from the deterioration in the balance of assets and liabilities of debtor countries that could have been – but was not – detected on time.

Box 1. Balance Sheet Problems as Causes of Financial Crises

One explanation for the causes of financial crises in emerging market economies is that “panic” sometimes spreads among investors and spills over as a contagion from one economy to other similar economies. The crisis usually starts with liquidity problems stemming from maturity mismatches in the structure of assets and liabilities of financial institutions. Banks and other financial institutions typically extend short-term loans (often denominated in foreign currencies) in order to finance domestic projects that are expected to be profitable in the long term, but cannot be liquidated without losses in the short term. If banks maintain confidence in the ability of borrowers to service the loans, they will renew the loans even when times become difficult. However, due to rapidly shifting expectations in periods of market distress, banks and other creditors may start to panic and require that loans be repaid immediately, knowing that if they do not do so they might be overtaken by other creditors. Faced with the lack of liquid funds in such circumstances, banks may be forced to liquidate long-term projects, sustaining large losses. Companies may then go bankrupt, increasing the banks’ losses. In other words, financial crises could be avoided if debtors and creditors maintained sufficiently high liquid reserves, and if there was in place a system to monitor the balance of assets and liabilities in public and private sectors and warn debtors and creditors of upcoming liquidity troubles.

The fact that during the Asian crisis of 1997–98 countries with high international reserves – China, Hong Kong, Taiwan and Singapore – managed to overcome the liquidity crisis and protect their economies from deeper disruptions provides some support for this hypothesis. Likewise, central banks of countries with relatively low disposable reserves – Thailand, Indonesia, and Korea – quickly exhausted the possibilities of maintaining liquidity of the domestic financial system and were eventually forced to devalue their currencies substantially.

⁵ This question is addressed in more detail in *Dasking (2002)* and *Mulder (2002)*. For a methodological approach see *IMF (2003b and 2003c)*.

The question is, of course, how and why a financial panic ensues and spreads in the first place. An answer to the first part of this question could be quite discouraging: any piece of bad news – troubles at a certain bank or a big corporation; unfavourable movements in exports and imports; lowering of sovereign credit rating; unexpected drop in reserves; political disagreements and changes of government ministers – may lead to a sudden loss of confidence and a shift in investor's expectations. As a result, investments that look good ex ante might become seemingly worthless overnight, while a government that until yesterday successfully maintained macroeconomic balance could be faced with a liquidity crisis and failures of corporations and banks. As one country is hit by the crisis (e.g. Hungary) foreign investors might also change their expectations regarding neighbouring or similar countries (e.g. Slovakia, Croatia) and attempt to liquidate their assets in these countries as well, which could lead to a spread of the crisis as a contagion if these countries face foreign exchange liquidity problems.

An answer to the question why a financial panic ensues and spreads is much more complex. One explanation builds on the theory of premature liberalisation of capital transactions in an environment of globally integrated financial markets. Under this theory, the capacity of central banks to ensure adequate liquidity in crisis situations is considerably limited by the liberalisation of capital transactions and globalisation of financial flows. Even in economies with high international reserves, a healthy financial system and a central bank prepared to raise interest rates sharply to fend off a crisis, the loss of confidence may lead to massive withdrawals of funds, which the financial system simply cannot hold out. One way to address sudden reversals of capital flows is to tax short-term speculative inflows of capital. An often cited example is Chile, where investors were charged fees (similar to fees for early withdrawal of funds in time deposit accounts) if they withdrew financial assets invested in the Chilean financial system within a period of less than one year. Another example is Spain, which used similar restrictions upon entering the EEC.

A second explanation points to imperfections in international capital markets. Under this hypothesis, three types of investors invest in emerging market economies, two of which are susceptible to financial panic:

- Foreign direct investors, who invest own or borrowed funds in acquisition of government companies offered for sale or greenfield projects, with or without participation of domestic companies. Their investments are usually considered to be long-term and they are not expected to participate in the spreading of financial panic.
- Investors focusing on emerging market bonds and equities, either special divisions of investment banks or dedicated emerging market investment funds. Due to the nature of their investments, these investors have long-term interests in emerging market economies. Nevertheless, in the case of a loss in one emerging market (e.g. Russia), these investors may have to liquidate quickly other claims in the same risk category (e.g. in Brazil), regardless of the possibly favourable outlook in the latter market.
- Foreign investors for whom emerging market economies are not the primary focus of operations. These are the so-called crossover investors, in particular pension and investment funds investing primarily in high-quality equities and bonds of industrial countries. These funds are generally allowed to allocate a certain percentage of their assets to high-risk investments, including emerging market bonds and equities. Since managers of these funds strive to maintain a benchmark rate of return, they are usually quick to withdraw the funds in case of disturbances in emerging markets. In view of the relative size of their assets in these markets, such withdrawals may have a decisive influence on liquidity and asset prices in local markets.

Foreign exchange illiquidity and sudden changes in expectations of domestic and foreign investors are ultimately the consequence of insufficient transparency in financial reporting

economy as a whole can use to settle total domestic and external debt; government budget revenues are a proxy for the funds available to settle *public* debt; and exports of goods and services are a proxy for foreign exchange earnings available to settle external debt, both private and public. For a detailed sustainability analysis, however, one needs to gain insight into the structure of debt and debt servicing capacity of borrowers. For instance, the maturity and currency structure of public and external debt, and the liquidity position of debtors are essential for an assessment of fiscal and external vulnerability.

Fourth, it is important to compare indicators across different countries and time periods. This is particularly the case with indicators used regularly by international financial institutions, investment banks and rating agencies. This paper compares fiscal and external sustainability indicators for Croatia with those for 11 EU candidate countries - Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia and Turkey - from 2001 to 2003.

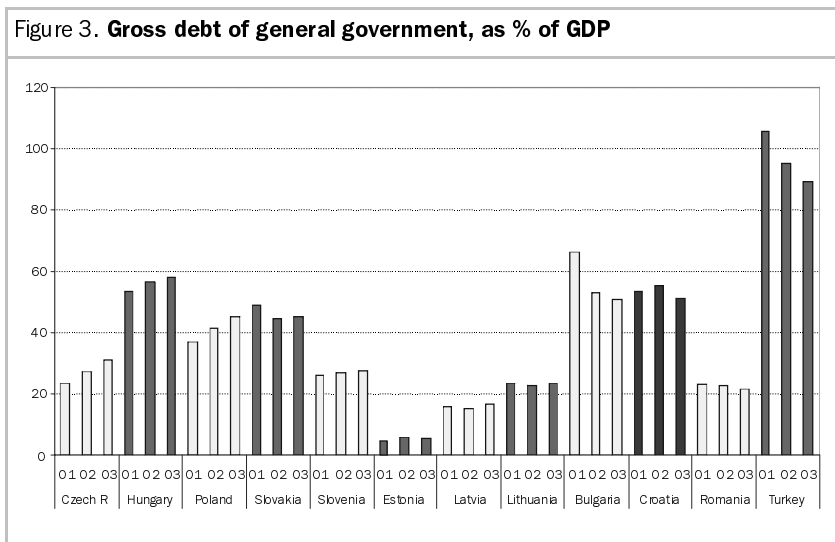
3.1 Aggregate Indicators of Public and External debt

Most commonly used aggregate indicators of fiscal and external vulnerability are the ratios of public and external debt to GDP, the ratio of public debt to budget revenues and the ratio of external debt to exports of goods and services.

A commonly used vulnerability threshold for the **ratio of public debt to GDP** is 60 percent. This threshold is the well-known criterion for euro area membership enshrined in the Maastricht Treaty. The analytical underpinnings of this criterion were discussed in the previous section. In 2003, public debt in Croatia amounted to 51 percent of GDP including government guarantees, and 41 percent of GDP excluding the guarantees. Among other Central and Eastern European countries only Hungary and Turkey had higher public debt ratios (Figure 3).⁶ Relative stability of this ratio over the past three years is good news for Croatia. However, the public debt ratio has moved too close to the critical level for any relaxation of fiscal policy and increase in public sector borrowing to be contemplated. In this

⁶ *A reliable and accessible source of fiscal data on EU candidate countries is European Commission (2003a and 2003b).*

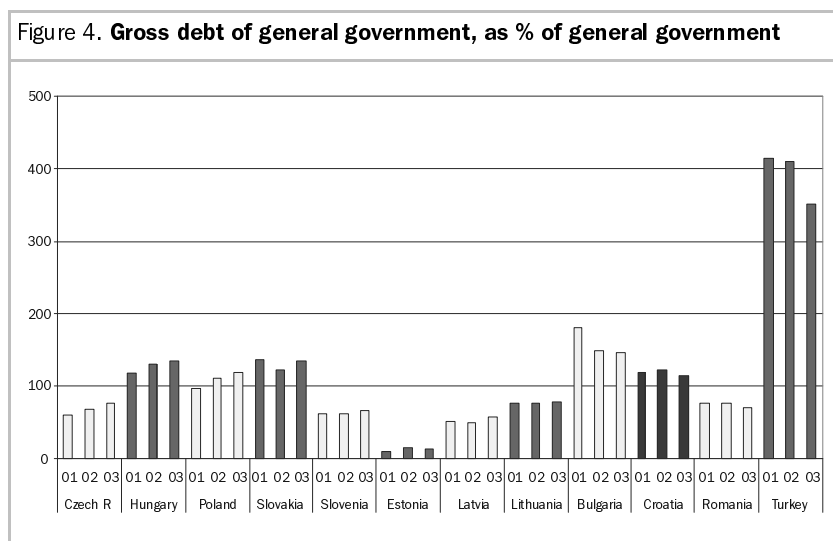
regard, it is interesting to note that in Poland there is a constitutional limit of 60 percent of GDP on the national public debt. Special prudential measures are triggered when public debt exceeds 50 percent of GDP. Specifically, the deficits of sub-national governments must be lowered, the council of ministers must submit a fiscal consolidation plan to parliament, and issuing of new state guarantees is limited (see OECD, 2002). With these fiscal rules in place there is almost no danger that the public debt in Poland might exceed 60 percent of GDP. This is also reflected in the favourable credit rating of Polish government bonds.



Sources: Central banks, IMF, European Commission, author's calculations.

From the perspective of macroeconomic stability, one should note that the debt-to-GDP ratio of 60 percent is probably too high for economies with shallow financial markets such as Croatia. Deep and liquid domestic financial markets make financial conditions more stable and allow the government and other debtors to borrow at home rather than abroad, which is particularly important when access to international capital markets is restricted. Over the past 30 years, total public debt was below 60 percent of GDP in 55 percent of cases of sovereign debt defaults; in 35 percent of the cases the default actually occurred at a debt ratio of less than 40 percent of GDP (IMF, 2003a).

Since public debt eventually has to be paid from fiscal revenues, the **ratio of public debt to budget revenues** offers the most general insight into the government's ability to service public debt. There are no analytically or empirically determined "safety zones" for this indicator. However, a useful benchmark is the average value of this indicator for industrial countries, equivalent to about 200 percent during 1992–2002 (IMF, 2003a). There are large differences in this indicator between industrial countries and economies in Central and Eastern Europe (Figure 4). Together with Bulgaria, Hungary, Poland and Slovakia, Croatia is in the group of countries where public debt-to-GDP ratio exceeds 100 percent. While this is considerably lower than in industrial countries, one should keep in mind that budget revenues in transition economies are on average lower and less stable due to narrower tax base, larger unofficial economies and less efficient tax administration.



Sources: Central banks, IMF, European Commission, author's calculations.

Croatia stands out as a transition economy with highest budget revenues: they amounted on average to 45 percent of GDP during 2001–03, compared with 40 percent in Central European countries, 33 percent in the Baltic states and 30 percent in South-East Europe. By comparison, government budget revenues on average account for about 44 percent of GDP in industrial countries. Croatia's

strong tax potential should therefore be viewed as a comparative advantage in terms of government's ability to borrow. On the other hand, one could argue that a public sector with a well-developed tax system should not borrow much at all. To achieve this however, public spending should be kept in line with revenues. There is also a broader issue whether such a high tax burden is appropriate at the current level of economic development in Croatia.

Regarding the **ratio of total external debt to GDP**, commonly used critical values are those established by the World Bank in its annual publication *Global Development Finance*. The World Bank classification has empirical foundations - it is based on long-term monitoring of developing countries' ability to service their external obligations. The indebtedness categories for middle income countries such as Croatia are shown in Table 4. According to this methodology, Croatia was a moderately indebted country in the period from 2001-03.

Table 4. **Classification of countries by degree of external indebtedness**¹

Indebtedness criterion ²	Highly indebted	Moderately indebted	Less indebted
External debt / GDP	$x > 80\%$	$80\% > x > 48\%$	$x < 48\%$
External debt / exports of goods and services	$Y > 220\%$	$220\% > y > 132\%$	$y < 132\%$
Countries	Serbia and Montenegro, Turkey Argentina, Brazil, Peru, Uruguay	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Hungary, Latvia, Poland, Russia, Slovakia Chile, Malaysia, Philippines, Thailand	Czech Republic, Lithuania, Macedonia, Romania, Slovenia China, Mexico, South Africa

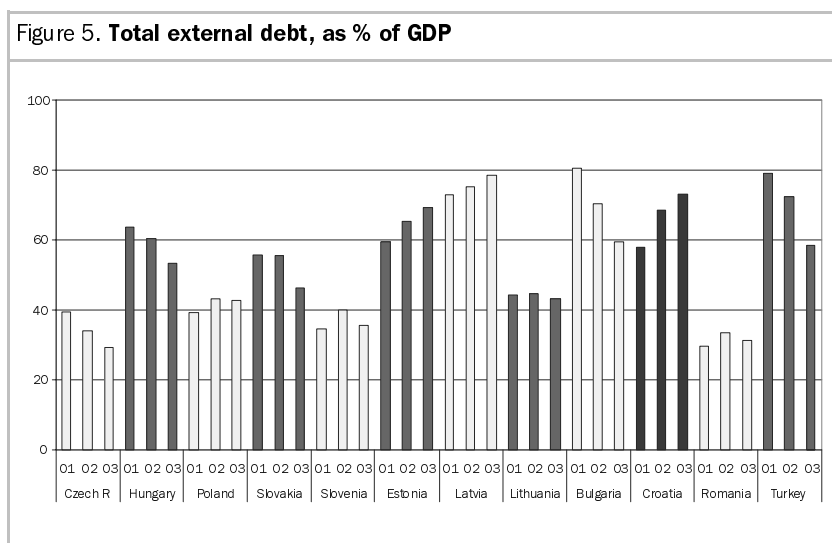
Notes: ¹For middle-income countries (with per capita GDP from USD 2,976 to USD 9,205 in 2001); based on average value of indicators for 2001-03.

²Countries are classified in a given category if one or both indicators exceed critical values of x and y .

Source: World Bank (2003).

The critical values in Table 4 should be interpreted with caution, in particular if indebtedness criteria are close to the stated limits. A marginal deterioration in one indicator, which may result in the shift of a country from the category of moderately to that of highly indebted country, does not necessarily imply that debt sustainability prospects have worsened. By the same token, the fact that a country is classified as moderately indebted does not mean it will not face debt

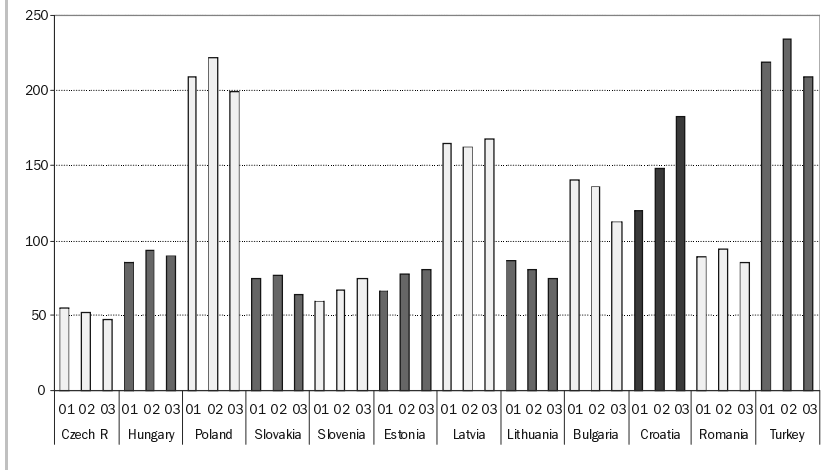
sustainability problems in the future. Data in Figures 5 and 6 illustrate this proposition. In Table 4, only Serbia and Montenegro and Turkey are classified as highly indebted. Yet it is obvious that Bulgaria, Croatia and Latvia, although classified as moderately indebted, have moved too close to the critical value of 80 percent of GDP to be complacent about their external debt.



Sources: Central banks, IMF, European Commission, author's calculations.

Data in Figure 6 show that Poland might also face serious problems in sustaining its external debt: along with Turkey, its ratio of **external debt to exports of goods and services** exceeds 200 percent. Croatia is also rapidly approaching this critical value. One should note in this context that debt sustainability prospects do not change linearly - countries can experience sudden (“non-linear”) deterioration in external sustainability. For instance, if a targeted reduction in the external current account deficit cannot be achieved due to a shortfall in tourism receipts, the country risk premium and interest rates on new issues of government bonds might increase sharply and thus worsen the outlook for debt sustainability. A medium-term fiscal framework with transparent rules would go a long way toward shoring up investor confidence in such circumstances.

Figure 6. Total external debt, as % of exports of goods and services



Sources: Central banks, IMF, European Commission, author's calculations.

Even countries with low public debt levels can face a marked and sudden deterioration of their fiscal position during times of financial distress. Hence, debt sustainability assessments can change rapidly, with three factors having particularly large effects on the debt-to-GDP ratio:⁷

- A protracted rise in interest rates, with the maturity structure of the debt playing a critical role (discussed below). One should note in this context that interest rates in international capital markets have reached record low levels in the past two years. This situation is not expected to last because the global economy rebounded in the second half of 2003 and in 2004 economic growth is projected to accelerate to 4 percent in the United States and 2 percent in the euro area. Most analysts expect the US central bank to start tightening monetary policy in mid-2004 at the latest. This is expected to lead to a gradual increase in interest rates in international capital markets and hence affect sovereign borrowers such as Croatia. Moreover, an upward cycle in interest rates often lasts several years, which means that costs of issuing and servicing new debt could increase significantly in the medium term.

⁷ See Mihaljek and Tissot (2003), p. 361.

- A sharp depreciation of the exchange rate, which increases the ratio of external debt to GDP, in particular in countries with large foreign currency debt (external or domestic) or domestic-currency debt indexed to the exchange-rate (discussed below). For instance, before the 2001–02 crisis, public debt-to-GDP ratio in Argentina was below 50 percent, but it soared above 100 percent of GDP after the collapse of the peso.
- A sudden recognition of unrecorded public liabilities, for instance when the government has explicitly or implicitly guaranteed the debt of other agents. As noted in Box 1, even in Southeast Asia, where countries had generally maintained a track record of fiscal discipline before the 1997–98 crisis, the issue of public debt sustainability arose as implicit state guarantees in the corporate or the banking sector emerged. Another example is Brazil, where recognition of already existing hidden liabilities (so-called “skeletons”) could lead to a rise in the debt-to-GDP ratio of around 10 percentage points over the next decade.

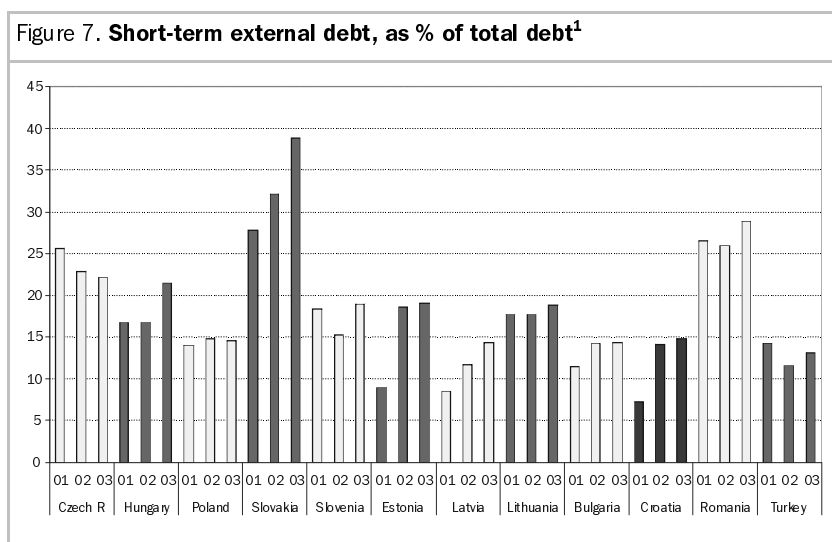
To be sure, such sudden increases in the debt level will not automatically weaken sustainability prospects. For instance, an increase in public sector debt is often the consequence of faster recapitalisation of financial institutions, which is welcome in order to clean up the banks’ balance sheets and allow resumption in bank lending. Abandoning an unsustainable exchange rate regime can also improve growth prospects and mitigate fiscal worries in turn. This seems to have been the case for Brazil in the immediate aftermath of the 1999 devaluation.

3.2 Maturity Structure and Currency Composition of Debt

If the financial markets were complete and efficient, differences between short-term and long-term interest rates, bilateral exchange rates and types of creditors would have no influence on the structure of debt. In practice, however, full arbitrage is not possible, so the choice of maturity and currency composition matters for debt servicing costs. For instance, when the yield curve becomes steep, issuing long-term bonds becomes more expensive. This may tempt the government to shorten the maturities or to rely more on debt with floating interest rates. However, if short-

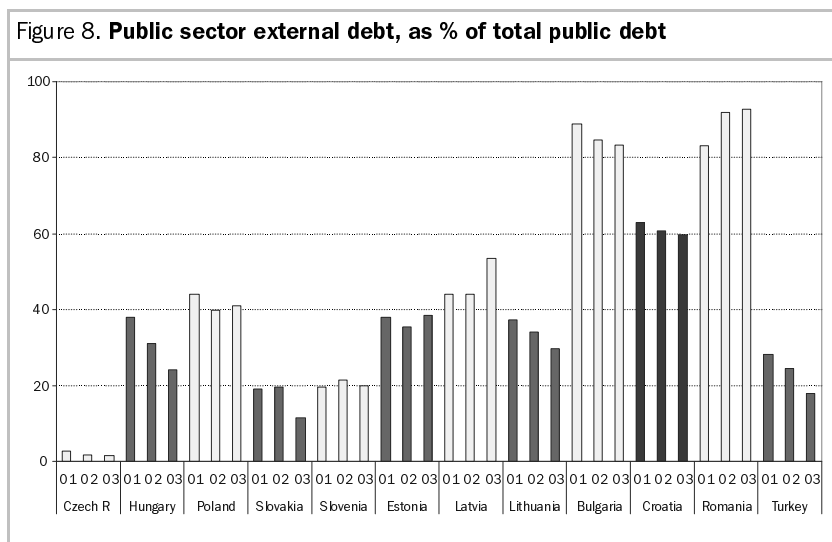
term interest rates then increase more than expected, debt sustainability will be put at risk. Therefore, it is widely held that debts with longer maturities are associated with lower financing risk.

As shown in Figure 7, the **maturity structure of external debt** in Croatia is relatively favourable: short-term debt accounts for about 15 percent of total external debt, compared with 20–30 percent in the Czech Republic, Hungary, Romania, Slovenia and Turkey, and as much as 45 percent in Estonia. The **maturity structure of public debt** in Croatia is, however, less favourable: short-term debt accounted for about 33 percent of total public debt in the past three years. A large share of short-term debt implies that the fiscal authorities have to roll over public debt in short time intervals. If short-term interest rates increase in the meantime, such debt structure can sharply raise interest expenses. This was the case in Turkey in early 2001, when the average maturity of domestic debt was only 140 days. Comparable data for this indicator in other Central and Eastern European countries are not available and are therefore not shown in a separate graph.



Note: ¹Short term liabilities to BIS reporting banks with maturity of up to one year.
Sources: Central banks, IMF.

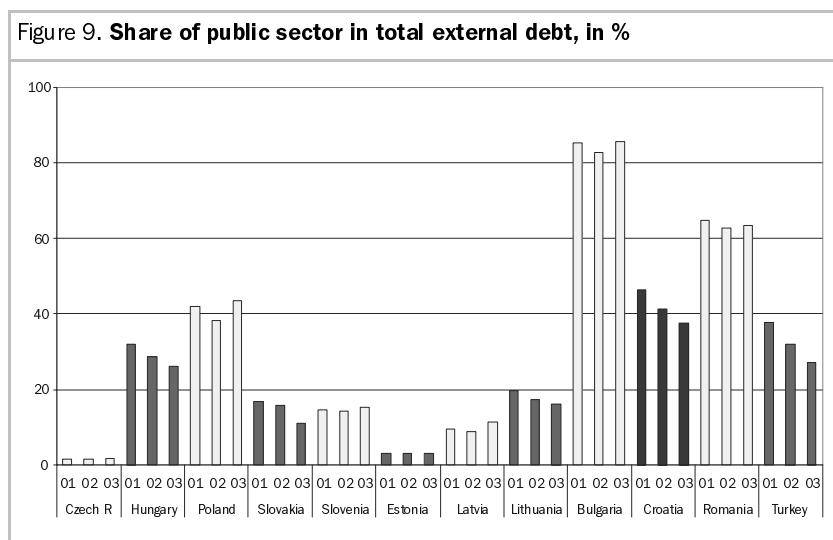
The **currency composition of public debt** in Croatia is rather unfavourable. Croatian authorities have neglected the development of the domestic financial markets and as a result the government has mostly borrowed abroad. The share of external debt in public sector debt is therefore very high, around 60 percent (Figure 8). Compared to other Central and Eastern European countries, this ratio is more unfavourable only in Bulgaria and Romania. Countries with more developed financial markets, e.g. the Czech Republic, have a much lower share of external debt in public sector debt. The high share of external debt considerably increases fiscal vulnerability: the larger the amount of public liabilities denominated in foreign currencies, the higher the risk of debt sustainability problems in the case of a significant depreciation of the domestic currency.



Sources: Central banks and IMF.

The **ratio of public sector debt to total external debt** in Croatia is also relatively high. At about 40 percent, this ratio is similar to that in Poland and somewhat higher than in Turkey and Hungary (Figure 9). In the Czech Republic, Slovakia and Slovenia, the share of public debt in total external debt is considerably lower, which partly reflects more developed domestic financial sector (in the Czech Republic) and partly greater fiscal discipline (in Slovakia and Slovenia). The high share of public sector debt in total external debt also indicates certain weaknesses

in the private sector. In countries where corporations and banks are financially stronger they can borrow abroad more easily and therefore the share of private sector in total external debt is higher. Where this is not the case, the government is the main agent that borrows abroad.



Sources: Central banks and IMF.

It is important to note that the private sector, in addition to foreign liabilities, also has significant foreign exchange liabilities towards domestic creditors. For the public sector as well as non-financial enterprises and households, these liabilities are in two main forms: straight foreign currency loans and loans in domestic currency indexed to the exchange rate. For banks and non-bank financial institutions, the main foreign exchange liabilities are foreign currency deposits of the domestic private sector.

Table 5 shows the first attempt so far to estimate this “internal” foreign currency debt in Croatia. As can be seen, total internal foreign currency debt is estimated at HRK 67 billion at end-September 2003, equivalent to about 50 percent of total external debt or 35 percent of GDP. In the case of banks, total internal foreign currency debt accounts for about 40 percent of banks’ total assets. In 2003, the internal foreign currency debt trended strongly upward, by as much as 8 percent of

GDP, fuelled by the HRK 18 billion expansion of loans indexed to the exchange rate. Foreign currency deposits cover more than 110 percent of liabilities arising from this debt. However, this ratio fell considerably after 2001, when it stood at 160 percent.

Table 5. **Estimate of internal foreign currency debt in Croatia, 2001–03¹**

	in billions of kuna			as % of external debt			as % of GDP		
	2001	2002	2003	2001	2002	2003	2001	2002	2003
Banks' foreign currency claims on government²	5.7	5.9	5.9	6.0	4.9	4.3	3.5	3.4	3.1
Banks' foreign currency claims on the private sector³	7.7	10.8	9.8	8.1	8.9	7.0	4.7	6.1	5.1
Loans in kuna index to foreign currency (estimate)⁴	31.7	32.2	51.5	33.6	26.6	37.2	19.4	18.2	27.1
Total internal foreign currency debt⁵	45.0	48.9	67.2	47.7	40.5	48.5	27.6	27.7	35.4
Foreign currency deposits of the private sector⁶	71.8	72.1	75.4	76.2	59.6	54.4	44.1	40.8	39.7
Net internal foreign currency debt of the private sector⁷	-26.8	-23.1	-8.2	-28.4	-19.1	-5.9	-16.5	-13.1	-4.3

Notes: ¹Data for 2003 as of September; for other years as of December.

²Based on Table D3 in CNB Bulletin.

³Based on Table D4 in CNB Bulletin.

⁴Based on Table D5 in CNB Bulletin. The share of kuna loans indexed to foreign currency estimated from the "relative importance" of loans extended at the end of the reporting period (Table G1 in CNB Bulletin).

⁵The sum of banks' foreign currency claims on the government and private sector and kuna loans indexed to foreign currency.

⁶Based on Table D8 in CNB Bulletin.

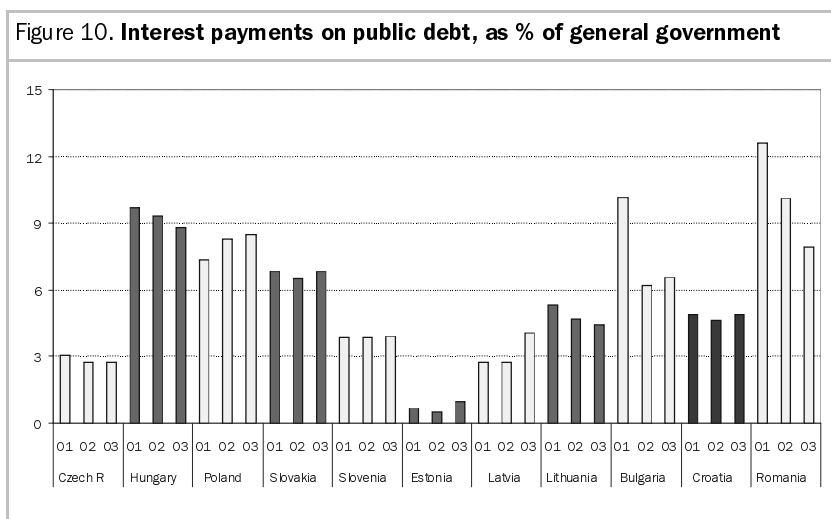
⁷Difference between total internal foreign currency debt and foreign currency deposits of the private sector; negative numbers represent private sector claims on banks.

Sources: CNB and author's calculations.

Foreign currency liabilities of the private sector towards banks are covered entirely with foreign currency deposits of companies and households. However, for many debtors there are mismatches in the currency structure of revenues, which are mostly in kuna, and liabilities, which are mostly in euros or in kuna but indexed to the exchange rate. Changes in the kuna exchange rate would quickly widen these mismatches. Prudential regulations require Croatian banks to balance their open foreign exchange positions. Banks often do this by extending loans in euros based on the foreign currency deposits they have received from households and

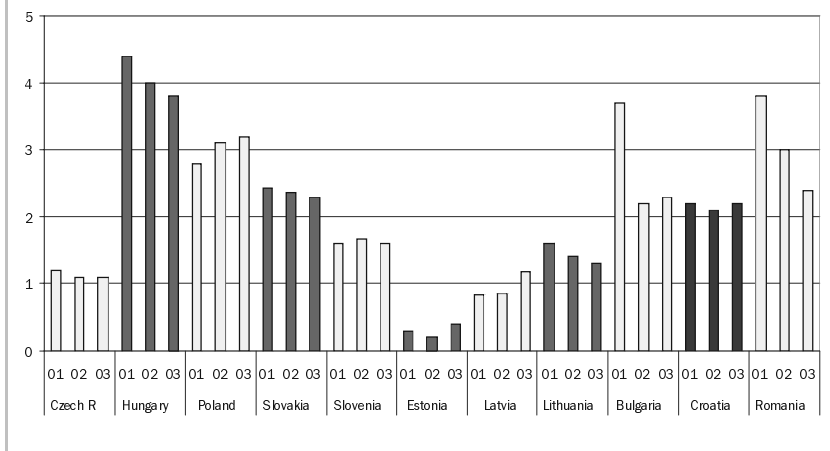
past three years, or slightly more than 2 percent of GDP. These ratios are also moderate when compared with other Central and Eastern European countries: in Bulgaria, Hungary, Poland, Slovakia, and Romania interest payments accounted for as much as 7-10 percent of budget revenues, or 3-4 percent of GDP.

When assessing public sector liquidity, one should remember that the funds that are more or less freely available in the budget are often highly constrained. Allocating a seemingly modest amount of 5 percent of total revenues for the payment of interest expenses may therefore squeeze the government budget considerably. In most Central and Eastern European countries, 70-80 percent of budget revenues are “reserved” in advance for pensions, wages of public servants and social security payments. These expenditures are to a large extent determined by laws outside the annual budget, and in most cases cannot be influenced by fiscal policy. In other words, the government has in general at its disposal only a fraction of revenues for expenditure items such as interest payments.



Sources: Central banks and IMF.

Figure 11. Interest payments on public debt, as % of GDP

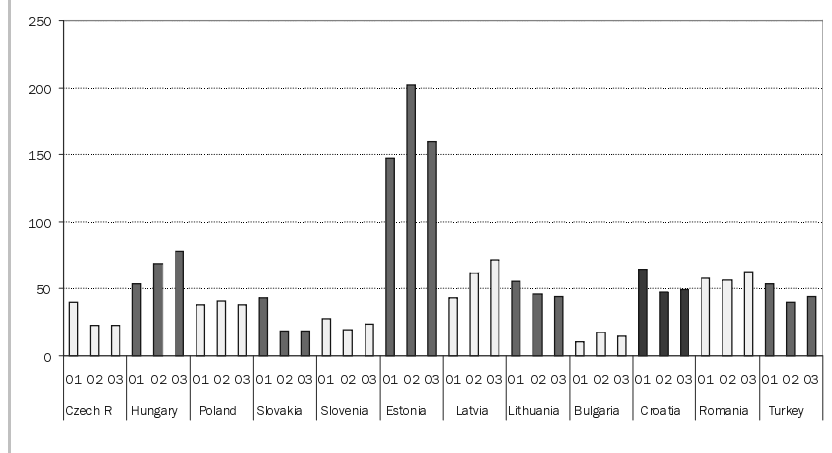


Sources: Central banks and IMF.

Empirical research on recent emerging market crises has shown that one of the best ex ante indicators (“warning signals”) of external liquidity is the **coverage of short-term external debt by international reserves**.⁹ This indicator is rather unfavourable in the case of Croatia: despite apparently high (gross) international reserves, both in absolute terms (USD 6.6 billion in August 2003) and in terms of imports of goods and services (7 months), net usable international reserves covered only one half of short-term external debt in the past three years (Figure 12). Judging by this indicator, Bulgaria, the Czech Republic, Poland, Slovakia and Slovenia maintained much higher levels of liquidity than Croatia.

⁹ In the run-up of the Asian crisis that started in June 1997, official reserves covered only 49 percent of short-term liabilities in Korea, 59 percent in Indonesia and 69 percent in Thailand. Latin American countries maintained higher liquidity because of negative experience with crises in the 1980s, and were not hit at the time by the drying up of liquidity in international financial markets. In June 1997, official reserves covered 222 percent of foreign exchange liabilities in Chile, 127 percent in Brazil and 83 percent in Mexico and Argentina (Chang, 1999).

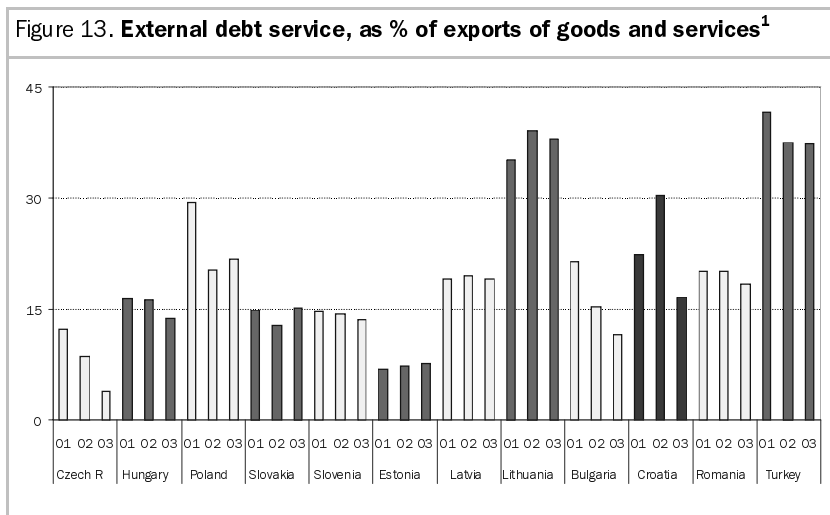
Figure 12. **Short-term external debt, as % of net international reserves**¹



Note: ¹Short-term liabilities to BIS reporting banks with maturity of less than one year.
Sources: Central banks, IMF and Deutsche Bank.

This example illustrates why it is important to analyse a larger number of alternative liquidity indicators. Looking at only one indicator, the ratio of international reserves to imports of goods and services, might lead us to conclude that the liquidity situation in Croatia is very favourable, as it is commonly held that the reserves cover of imports of more than 3 is appropriate. However, the comparison of net international reserves with short-term debt shows that Croatia's external liquidity position is not that favourable after all, as it is usually recommended that net reserves cover all liabilities with maturity of less than one year. In the case of Croatia this would require a significant increase in net reserves and a concurrent decrease in short-term external debt. On the other hand, one should keep in mind that in small open economies a significant portion of short-term external debt is accounted for by trade credit, i.e. suppliers' loans to domestic importers. In normal circumstances a high proportion of trade credit is not seen as a sign of increased external vulnerability even though this type of credit is classified as short-term debt. Problems, however, may arise if a balance of payments crisis breaks out. Experiences of Argentina and Turkey in 2001 and Brazil in 2002 indicate that foreign suppliers are usually the first foreign creditors to stop renewing the loans when a crisis breaks out. In countries where exports are highly dependent on imported inputs – as is the case in Croatia – a sudden suspension of

trade credit may automatically result in decreased exports and thus additionally complicate the balance of payments crisis.

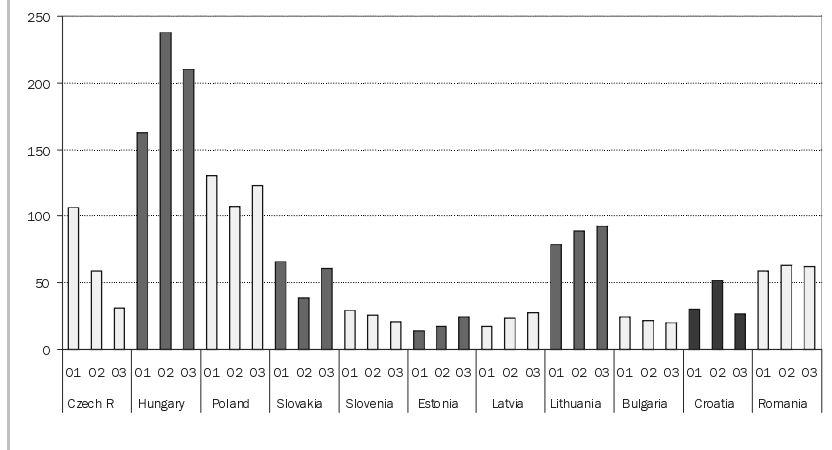


Note: ¹Repayments of principal and interest on external debt.

Sources: Central banks, IMF and Deutsche Bank.

Two other important indicators of external liquidity are the **ratio of external debt service to exports of goods and services** (Figure 13) and the **ratio of external debt service to net international reserves** (Figure 14). These indicators are more comprehensive than those discussed above because they include repayments of the principal as well as interest on external debt. Since all Central and Eastern European economies are highly open, a relatively small portion – about 20 percent – of export revenues is used for the repayment of external debt (with the exception of Lithuania and Turkey). For comparison, in Argentina this ratio was above 400 percent in 2001, a consequence of both Argentina’s closed economy (exports and imports accounted for only 10 percent of GDP) and its high external indebtedness.

Figure 14. **External debt service, as % of net international reserves¹**



Note: ¹Repayments of principal and interest on external debt.
Sources: Central banks, IMF and Deutsche Bank.

When capital moves freely across borders it is necessary to monitor not only revenues from imports of goods and services but also net income from investments (including direct, portfolio, and other investments) and net capital inflows. For instance, Croatian companies have started to invest abroad and generate factor income that is registered in the current account of the balance of payments. At the same time, foreign investors are investing large amounts of long-term and short-term capital in Croatia. As long as a country is able to attract foreign capital on a sustainable basis it will be able to service its external debt not only from export revenues but also from inward investments and as well as net factor income.

Compared with other countries in Central and Eastern Europe, the ratio of external debt service to net international reserves in Croatia is fairly high (Figure 14). However, one should remember that only a portion of reserves and export revenue can normally be used for the repayment of external debt. This is particularly important when considering the repayment of public sector external debt. It is often implicitly assumed that governments can at any point use international reserves to repay external debt. However, most governments have only limited authority over international reserves, which are typically managed by the central bank in accordance with the central bank law, not in accordance with

deficit required to stabilise public debt could be a useful warning signal in this respect, even if other debt indicators look “sustainable”.

4 **Composite Indicators: Bond Spreads and Credit Ratings**

In addition to indicators analysed in the previous two sections, two composite indicators – the spread between government bonds and benchmark US or German bonds, and the credit rating of long-term government bonds – are also useful to assess debt sustainability. These indicators are “composite” because they reflect the views of investors and rating agencies not only about different aspects of macroeconomic policy (government budget, monetary and exchange rate policy, financial system stability) but also about the overall economic and political situation in a country.¹⁰ In other words, they “reduce” all the information about movements in the real sector, economic policy and politics that is relevant for assessment of government solvency into two simple measures. In addition, since they can be monitored in real time (in particular the bond spread), these indicators have become perhaps the most closely watched measures of the ability of governments to sustain their borrowings in international capital markets. Investors from industrial countries cannot ignore credit ratings because of capital adequacy regulations set by the Basel Committee on Banking Supervision. The governments of developing countries, on the other hand, cannot ignore credit ratings and bond spreads because they determine the cost of financing their budget and current account deficits.

Sovereign credit ratings are shown separately for liabilities denominated in domestic and foreign currencies. The rating for bonds denominated in foreign currencies has so far been more important for Croatia because the government has frequently borrowed abroad and foreign investors have not had unrestricted access to the kuna bond market. Against this background, this paper will not discuss separately Croatia’s credit rating for domestic currency bonds. Over the next few years, however, Croatian government would be well advised to put considerably more effort into the development of the domestic bond market, not least because

¹⁰ See for instance *Standard and Poor's (2003)*.

one of the criteria for accession to the European Monetary Union relates to interest rates on long-term government bonds denominated in domestic currency.

The credit rating for long-term bonds of the Republic of Croatia denominated in foreign currency is currently in the lower tier of investment grade (Table 6). Lower ratings in the region are assigned only to Bulgaria, Romania and Turkey. In contrast, government bonds of the Czech Republic, Estonia, Hungary and Slovenia are regarded as mature financial investments, carrying the risk similar to that of most EU member states. Moreover, Croatia's rating has not changed since it was first introduced in 1997, while the rating of the Czech, Hungarian and Slovenian bonds has improved even before it became clear these countries would join the EU in May 2004.

Rating agency	Croatia's rating	Rating description	Countries with similar rating
Moody's Rating system: Aaa, Aa, A Baa, Ba, B Caa, Ca, C	Baa3	Medium-grade obligations, neither highly protected nor poorly secured. Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well. Numerical modifier "3" indicates a ranking in the lower end of that generic rating category.	Higher rating: Slovenia, Czech Republic, Estonia, Hungary, Latvia, Poland, Lithuania, Slovakia Lower rating: Bulgaria, Romania, Turkey
Standard and Poor's Rating system: AAA, AA, A BBB, BB, B CCC, CC R, SD, D	BBB-	An obligor with an adequate capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments. A minus sign indicates a lower relative standing within the rating category. Obligors rated lower than BBB are regarded as having significant speculative characteristics.	Higher rating: Slovenia, Czech Republic, Estonia, Hungary, Latvia, Poland, Lithuania Same rating: Slovakia Lower rating: Bulgaria, Romania, Turkey
Fitch IBCA Rating system: AAA, AA, A BBB, BB, B CCC, CC, C DDD, DD, D	BBB-	Same as S&P's.	Higher rating: Slovenia, Czech Republic, Estonia, Hungary, Latvia, Poland, Lithuania, Slovakia Lower rating: Bulgaria, Romania, Turkey

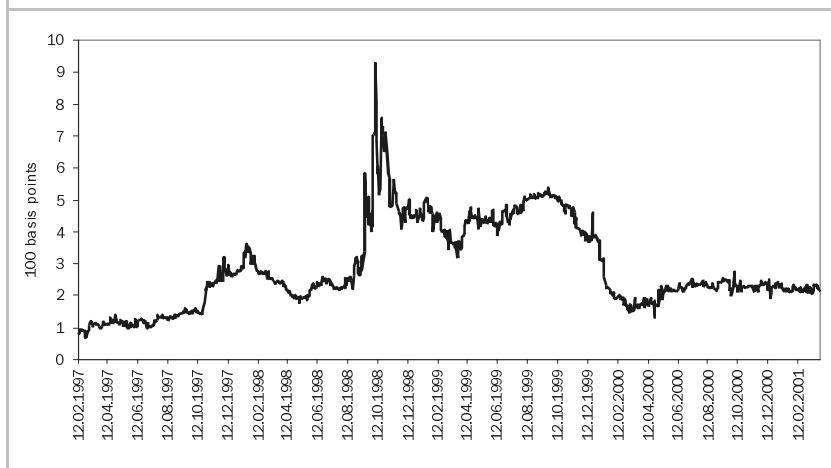
Sources: www.moody.com; www.standardandpoors.com; www.fitchibca.com

On the other hand, Croatia's sovereign credit rating is higher than that of most Latin American countries, even though their financial systems are generally far more developed. This can be explained by the fact that Croatia received its first credit rating after establishing macroeconomic stability in the mid-1990s, while the ratings of the Latin American countries have been negatively affected by the debt defaults of the 1970s and the 1980s and a long history of macroeconomic instability. International capital markets do not forget such mistakes easily. When Mexico graduated from the Moody's speculative grade to the lower investment grade (same as Croatia's rating) in the spring of 2000, it was after 30 years of considerable fiscal, banking and monetary reform efforts. One lesson of this experience for Croatia is that any weakening of macroeconomic stability would cost the country dearly in international capital markets and would probably have long-term consequences for its credit rating.

Since credit ratings are adjusted infrequently, bond spreads are more important for the assessment of economic policy performance in the short run. Government bonds are traded daily in secondary markets, so that bond spreads should reflect more or less accurately all important changes in short-term economic policy and the economic and political situation in a country.

Figure 15 shows the spread on the five-year eurobond of the Republic of Croatia issued in February 1997. This was one of the first bonds issued by Croatia after it received a credit rating. The spread on this bonds fluctuated between 0.66 percentage points (immediately after the issuance in 1997) and 9.32 percentage points (at the peak of the international liquidity crisis in October 1998), with an average of almost 3 percentage points above benchmark US Treasury bond. The bond spread fell sharply in early 2000 (to 1½-2 percentage points, from more than 5 percentage points in 1999) and stabilised at about 2½ percentage points in 2000 and early 2001.

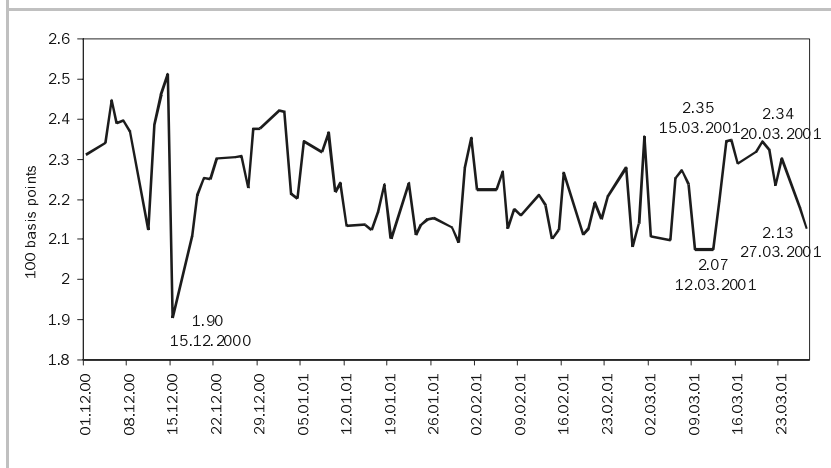
Figure 15. **Spread between five-year Croatian and US treasury bonds, 1997–2001¹**



Note: ¹Eurobond issued by the Republic of Croatia on 12 February 1997 and maturing on 12 February 2002 (coupon 7%) and benchmark US Treasury bond.
Source: Datastream.

Figure 16 shows a particularly interesting episode from March 2001. Following the conclusion of negotiations on a stand-by arrangement with the IMF, a group of Croatian economists publicly called into question the rationale for Croatia’s exchange rate regime and monetary and fiscal policies. This made some investors in Croatian bonds nervous about the future course of macroeconomic policy. As a result, the bond spread rose sharply between 12 March and 15 March 2001. This episode did not last long – ten days later the government clearly signalled to foreign investors that it intends to pursue the policy agreed with the IMF. Nevertheless, the sharp increase in bond spreads caused some indirect damage. It suffices to say that, with gross external debt of \$20 billion, a 1 percentage point increase in bond spread increases Croatia’s debt service by \$200 million a year. This amount corresponds to 40 percent of the annual budget for education, or almost 100 percent of the state budget for science and technology. Of course, higher interest rates arising from the widening of the bond spread apply only to new bond issues, so that indirect costs in the episode mentioned above were much lower.

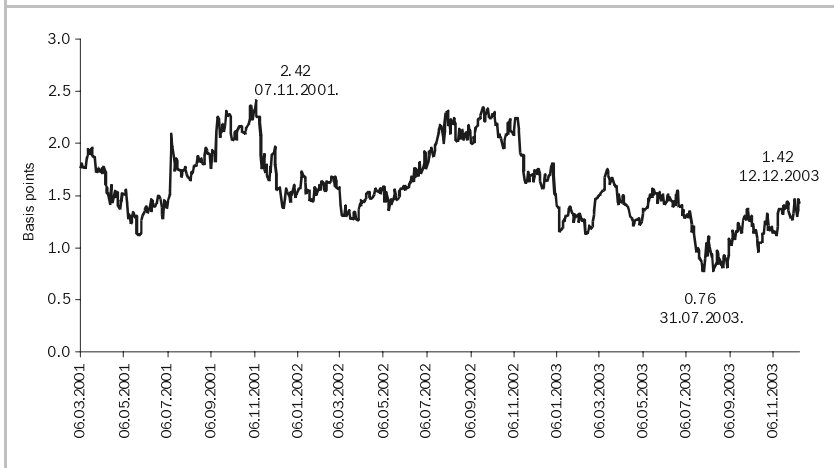
Figure 16. **Spread between five-year Croatian and US treasury bonds, December 2000–March 2001¹**



Note: ¹Eurobond issued by the Republic of Croatia on 12 February 1997 and maturing on 12 February 2002 (coupon 7%) and benchmark US Treasury bond.
Source: Datastream.

Figure 17 shows the spread over benchmark German bond on one of recently issued government bonds – the ten-year eurobond issued by the Republic of Croatia on 6 March 2001 with a 6¾ percent coupon. The spread on this bond is less volatile than on the bond shown in Figures 15 and 16. This reflects both more stable (and considerably more favourable) financing conditions in international capital market over the past three years and greater macroeconomic stability in Croatia. The average spread for the period shown in Figure 17 was 1.6 percentage points, with a maximum of 2.4 points (in early November 2001) and a minimum of 0.8 points (in late July 2003). The spread almost doubled from August to mid-December 2003, reflecting uncertainty about the outcome of parliamentary elections held in November.

Figure 17. **Spread between ten-year Croatian and German government bonds, 2001–03¹**



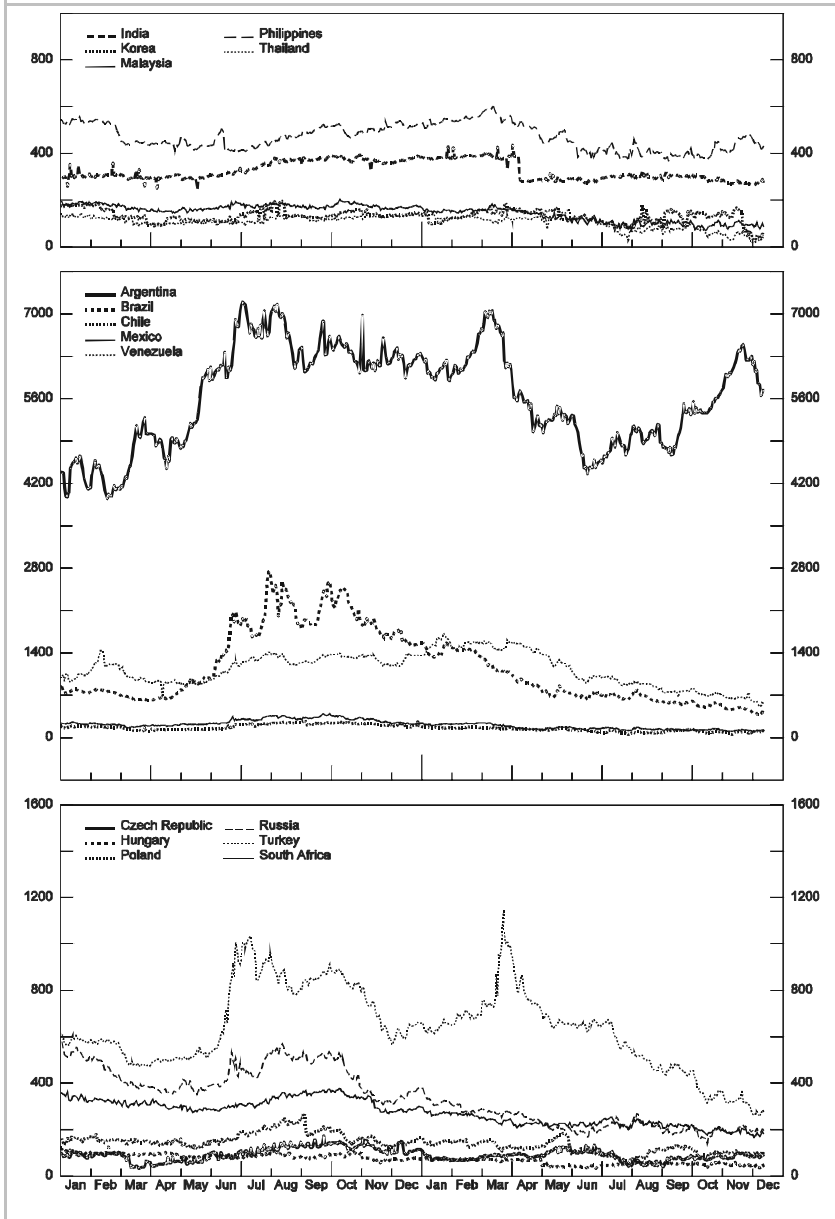
Note: ¹Eurobond of the Republic of Croatia issued on 6 March 2001, coupon 6.75%.
Source: Datastream.

Figure 18 compares spreads on government bonds in three major emerging market regions. Most Central European and Asian emerging economies had lower bond spreads than Croatia, while most Latin American countries had higher spreads. Since high bond spreads in Latin America reflect for the most part a history of high indebtedness and macroeconomic instability, one is again led to conclude that the weakening of macroeconomic stability would quickly result in higher bond spreads, which could have lasting impact on Croatia's position in international capital markets.

The spread on Croatian kuna bonds cannot be properly assessed because a liquid secondary market for kuna bonds is missing. This is in turn the result of the lack of regular issues of bonds with different maturities, which are essential to establish a yield curve for government bonds.¹¹ Currently, only one government kuna bond (maturing on 28 May 2008) is listed on the Zagreb Stock Exchange, which is of course insufficient for the pricing of bonds in secondary markets. Once again it should be pointed out that Croatia will not be able to meet the Maastricht criteria as long as benchmark long-term kuna bonds, providing for the spread comparison with benchmark bonds of EMU countries, are not issued.

¹¹ For more information see Babić (2003), and Mihaljek, Scatigna and Villar (2002).

Figure 18. Spreads on emerging market sovereign bonds, January 2002 – October 2003¹



Note: ¹Compared with the benchmark US Treasury bonds, in percentage points.
Source: Datastream.

References

- Babić, A., 2003, "Kunama se ne vjeruje", *Banka*, August, pp. 50–51.
- Babić, A., I. Krznar, D. Nestić and S. Švaljek, 2003, "Dinamička analiza održivosti javnog i vanjskog duga Hrvatske", *Privredna kretanja i ekonomska politika*, Vol. 13, Winter.
- Blanchard, O., 1990, "Suggestions for a new set of fiscal indicators", OECD Working Papers, No. 79, April.
- Buiter, W., 1995, "Measuring fiscal sustainability", <http://www.nber.org/~wbuiter/public.htm>.
- Chalk, N. and R. Hemming, 2000, "Assessing fiscal sustainability in theory and practice", IMF Working Papers, No. 00/81, April.
- Chang, R., 1999, "Understanding Recent Crises in Emerging Markets", *Federal Reserve Bank of Atlanta Economic Review*, 2nd quarter, pp. 6–16, <http://www.atlantafed.org>.
- Daseking, C., 2002, "Debt: how much is too much?" *Finance and Development*, Vol. 39, December, <http://www.imf.org>.
- Deutsche Bank, Global Markets Research, 2001, *Public debt sustainability in selected emerging markets*, 23 April.
- European Commission, 2003a, "Autumn 2003 economic forecasts", *European Economy*, No. 5, October, http://europa.eu.int/comm/economy_finance.
- European Commission, 2003b, "Projected trends in candidate countries' debt ratios in the light of the 2003 fiscal notifications", *Enlargement Papers*, No. 16, September, http://europa.eu.int/comm/economy_finance.
- Hawkins, J., and Mihaljek, D., 2001, "The Banking Industry in the Emerging Market Economies: Competition, Consolidation and Systemic Stability: An Overview", BIS Papers, No. 4, <http://www.bis.org>.
- IMF, 2003a, *World Economic Outlook: Public Debt in Emerging Markets*, Washington: IMF, September, <http://www.imf.org>.
- IMF, 2003b, *Sustainability assessments: review of application and methodological refinements*, 10 June, <http://www.imf.org>.

IMF, 2002, *Assessing Sustainability*, prepared by the Policy Development and Review Department, <http://www.imf.org/external/np/pdr/sus/2002/eng/052802.htm>.

Mihaljek, D., 2000, "Prilog razradi dugoročne strategije privrednog razvoja Hrvatske: Odakle početi, što poduzeti i kako to ostvariti?" *Financijska teorija i praksa*, 24(4), pp. 527-602, <http://www.hrvatska21.hr>.

Mihaljek, D., M. Scatigna and A. Villar, 2002, "Recent trends in bond markets", *BIS Papers*, No. 11, pp. 13-41.

Mihaljek, D. and B. Tissot, 2003, "Pogled središnjih banaka na fiskalne pozicije u novim tržišnim privredama", *Financijska teorija i praksa*, 27(3), pp. 349-86, <http://www.ijf.hr>.

Mulder, C., 2002, "Assessing the dangers", *Finance and Development*, Vol. 39, December, <http://www.imf.org>.

OECD, 2002, *Economic survey of Poland, 2001-02*, Paris: OECD.

Standard and Poor's, 2003, *Republic of Croatia*, <http://www.standardandpoors.com> .

World Bank, 2003, *Global Development Finance: Striving for Stability in Development Finance, Vol. I: Analysis and Statistical Appendix*, Washington: World Bank, <http://www.worldbank.org>.