CURRENT ACCOUNT DEFICIT SUSTAINABILITY IN BOSNIA AND HERZEGOVINA:

Research Paper

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March 2007

Draft version.

This Research Paper was written in the context of an EC funded programme supporting the BiH Economic Policy Planning Unit (EPPU). This programme is managed by a consortium led by Ecorys and including, among others, Vienna Institute for International Economic Studies (wiiw). One component of the programme was a series of "mentoring" activities through which a senior economist (international expert) would "mentor" a junior staff from EPPU to enhance his /her professional expertise as a policy-oriented economist, through a dedicated research project. This paper is therefore one result of this mentoring activity. Vladimir Gligorov is the senior economist at the wiiw, and Nermin Didik is an EPPU economist working on national accounts and real sector issues.

Opinions and views expressed in this paper are those of the authors and do not represent the EC or the EPPU/BiH authorities' views.

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I. Introduction

One of the main features of the Bosnian economy during its post war period (1996-2007) was a huge current account (CA) deficit driven by a large trade deficit. Despite a rather high GDP growth in both nominal and real terms (5-10% in real terms), the CA imbalance grew from 8% to 22% of GDP[1] during 2000-05. Of course, this would not be possible without proper financing. As in most post conflict developing countries, the deficit came as a consequence of large inflows of foreign capital. Until the year 2000, most of it was financed by foreign aid to Bosnian government (mainly through grants and loans), whereas starting from 2001, the financial account took over the primary role. Foreign direct investments (FDI) along with foreign currency and deposits started to become increasingly important. So, what would happen to the Bosnian economy if the inflows were suddenly stopped or reduced to a minimum?

As in most transitional economies, the CA deficit has been an important factor for the Bosnian economic growth, and its sustainability is a major issue to be analyzed. In other words, preventing or limiting foreign capital inflows could prove to be a costly policy to reduce the CA deficit in terms of economic growth. A very low standard of living and a desperate need for a quick economic recovery put additional weight to the adverse effects of such policy in a country like Bosnia.

Given the sources of finance, the sustainability issue is analyzed through sustainability of external debt. Closely related is also an issue of external competitiveness that plays a major role. Milesi-Ferretti and Razin (1996) define the CA deficit to be sustainable if it is not going to provoke any drastic policy shift. This is not likely to happen if a country's inter-temporal solvency is not violated. In addition, country's willingness to repay debts and foreign investors' willingness to lend must not be jeopardized. Milesi-Ferretti and Razin (1996) have provided a very useful theoretical framework that plays a pivotal role in this paper from the methodological point of view. Unfortunately, lack of data and complicated task of structuring the future prevented the use of its principal solvency equations.

[1] Official GDP figure published by the Agency for Statistics BH does not include estimates of the gray economy. Therefore, indicators based on GDP ratios, such as standard of living (GDP per-capita), country debt burden, current account balance as a share of GDP ect, are distorted for this omission. This is a very serious problem given the widespread opinion that the gray economy reaches up to 30% of the Bosnian official GDP.

Analyzing sustainability in a situation where there is no official data on net foreign assets, country external debt, external interest rates, stocks of FDI for more than two years, investments, GDP that includes gray economy, GDP at constant prices, ect poses a great challenge. It makes one wonder whether it makes any sense doing it at all given the level of assumptions and estimates that need to be made. Therefore, the quantitative analysis is limited to a use of sustainability indicators offered by Milesi-Ferretti and Razin (1996), without setting any benchmarks directly pointing to sustainability. The paper also attempts to address the issue of huge net errors and omissions in the BoP that distort analysis of the external debt dynamics.

The paper has the following structure. First, significance of the CA deficit for the Bosnian economy is assessed; Second chapter sets the theoretical framework. Part three addresses the data issues with large emphasis on the net errors and omissions. Part four deals with estimation of the level of the BH external debt and the debt burden. Part six is concerned with the current account deficit dynamics and its means of financing. Part seven examines relation between the CA balance and the estimated external debt. Part eight analyzes the external imbalance sustainability through the sustainability indicators identified within the theoretical framework. Finally, the part nine contains conclusions and policy recommendation.

II. Why is the CA deficit important?

An intolerably low standard of living in Bosnia (GDP per-capita of BAM 4,108, or USD 2,612 in 2005) puts a lot of weight on significance of its economic growth. Hence, a real GDP growth of at least 5% per year is simply a must for Bosnia. It is most likely that the CA deficit has played an important role in the growth achieved so far. Its growth impact has mainly been achieved through consumption.

A current account deficit of 21.7% of GDP in 2005 represents what economic agents in Bosnia consumed over what they produced. It also indicates how much foreign capital inflows the country needed to generate beyond its current transactions in order to finance such consumption. Therefore, the main purpose of the inflows is to finance demand for goods and services the Bosnian economy is unable to efficiently produce itself due to scarcity of capital.

Foreign capital inflows increase economy's disposable income, thus increasing consumption. However, positive impact of the foreign exchange inflows (through the capital and financial account in the BoP) on the national accounts is cancelled out by the net outflows in the CA. This is especially expected to be the case in a country with a currency board arrangement. So does this mean the foreign capital inflows and the CA deficit have no impact on the growth after all? Of course not. Growing disposable income usually results in increased spending even beyond the increase of the income itself. This is a natural reaction because people tend to feel more optimistic, and will likely raise more loans and generally spend more relative to their earnings. This is just one likely mechanism between the CA deficit and the GDP growth in Bosnia and it does not exclude other scenarios.

However, even though it is impossible to prove a direct link between high economic growth and the large CA deficit in Bosnia (due to insufficient data), their parallel existence during the last ten years and experiences of other countries suggest positive relation between them.

III. Theoretical framework

The theoretical framework chosen for analyzing sustainability of the BH external imbalances was the one created by Milesi-Ferretti and Razin (1996). Its feasibility given the scarce Bosnian data was the primary reason for choosing it. This is a rather simple descriptive approach, and the analysis is based on several so called "Sustainability indicators". At the beginning of their paper, Milesi-Ferretti and Razin (1996) made it clear that there was no "magic" number on how big the CA deficit as a share of GDP can be before it becomes unsustainable. Every economy is a case for its self and the sustainability of its external imbalance depends on specific environment factors. According to the approach, the sustainability depends on the country's solvency (ability to repay debts), its willingness to repay debts, and foreign investors' willingness to lend. All the sustainability indicators refer to these three elements.

The sustainability is primarily related to solvency. An economy is solvent if it is able to generate sufficient future trade surpluses to repay its existing debts. In other words, cumulated present value of its future foreign net inflows needs to exceed its stock of liabilities in order for an economy to be solvent. The country's external imbalance is sustainable only if it does not lead to insolvency. In other words, the external imbalance is unsustainable if continuation of the current economic policy leads to a drastic policy shift.

This means that the solvency and the sustainability both depend on future events, and it takes putting structure on the future scenarios to analyze them by this approach. This is to some extent possible for the fiscal imbalance sustainability by assuming further continuation of the current policies into the indefinite future combined with an unchanged macro-environment. On the other hand, putting structure on the whole economy is very difficult. The economy's external imbalance comes as a result of actions and interactions between various agents (government, private sector and foreign investors), and it takes complicated modeling of the whole economy to capture them. The problem is that the model imperfections make it very difficult to determine and quantify a desirable level of imbalances. Therefore, Milesi-Ferretti and Razin (1996) use the model primarily to identify and derive important factors that are likely to influence solvency without attempting to put structure on the future. Their analysis of solvency is strictly descriptive and it relies on so called "Sustainability indicators" identified in the theoretical framework.

Therefore, as previously mentioned, their theoretical modeled approach is primarily used to identify potential indicators that are likely to influence the sustainability. According to them the CA balance can be defined from a few different aspects (1). First, it is equal to a change of a country's net foreign assets. At the same time, it is also equal to the difference between the country's income and spending. Finally, the CA balance is equal to the difference between savings and investments.

$$\begin{aligned} CA_t \equiv F_t - F_{t-1} &= Y_t + rF_{t-1} - C_t - I_t - G_t \\ &= S_{pt} + S_{gt} - I_t \end{aligned} \tag{1}$$

F – stock of net foreign assets;
Y – GDP;
r – world interest rate (assumed for simplicity to be constant)
C – private consumption;
G – government current expenditure;
I – total investment (private and public);

To create a formal condition for solvency, one needs to assume that all macroeconomic aggregates are a constant share of GDP, and that the interest rate and the rate of change of the real exchange rate are constant over time. Otherwise, it would be difficult to have a model with operational use. Having in mind these assumptions Milesi-Ferretti and Razin (1996) started building their quantitative condition for solvency by rearranging the equation (1):

$$CA_t \equiv s_t p_t^* F_t - s_{t-1} p_{t-1}^* F_{t-1} = p_t \left(Y_t - C_t - I_t\right) + i^* s_t p_{t-1}^* F_{t-1} \tag{2}$$

γ – GDP growth;
s – nominal exchange rate;
p – domestic GDP deflator;
p^* – foreign GDP deflator;
i – world nominal interest rate;

After dividing both sides of the (2) with the nominal GDP and rearranging it, they came up with an equation for the CA balance as a share of the GDP:

$$f_t - f_{t-1} = tb_t + \frac{(1+r)-(1+\gamma_t)(1+\varepsilon_t)}{(1+\gamma_t)(1+\varepsilon_t)} f_{t-1} \tag{3}$$

f – net foreign assets as a share of GDP;
tb – trade balance as a share of GDP;
ε – rate of real appreciation of the domestic currency;

The equation (2) indicates that the country's foreign liabilities as a share of GDP are related not only to the international trade but also to the so called "Debt dynamics" term. The trade deficit increases the external liabilities, while the influence of the debt dynamics is ambiguous. The debt dynamics refers to factors that change the economy's indebtedness (as a share of GDP) other than directly through international trade. In other words, the external assets/liabilities of a country my change over some period even if its external trade was in balances, and there were neither raising new debts nor debt repayments, capital transfers ect. Factors that may cause this change, according to the equation (3), are the world interest rate, the GDP growth and the real appreciation of the domestic currency.

Finally, to derive the solvency condition, one needs to assume the economy is in a steady state where the investment, consumption, government expenditures and net foreign assets are a constant fraction of the GDP over time. To keep the level of external debt as a share of GDP constant, the economy needs to produce a long term trade balance derived in the equation (4):

$$tb = 1 - i - c - g = -\frac{(1+r)-(1+\varepsilon)(1+\gamma)}{(1+\varepsilon)(1+\gamma)} f \tag{4}$$

According to Milesi-Ferretti and Razin (1996), equation (4) has been used in practice as a rough solvency indicator. Unfortunately, non existence of official data on the net foreign assets, as well as difficulty to derive them from (4) due to large net errors and omissions in the BoP that may be related to the trade balance, makes using the solvency indicator in Bosnia hardly possible. In addition, non-reliable official GDP (do not include the gray economy) and non-existence of figures on the official GDP deflator further adds to the problem. Therefore, the equation (4) is used only as a theoretical benchmark for solvency in this analysis.

The IMF on the other hand uses its own external debt sustainability framework – IMF (2002). It is essentially very similar but narrower approach in comparison to Milesi-Ferretti and Razin (1996). In stead of the net foreign assets, it uses the economy's external debt burden to derive its debt dynamics. Similar to the net foreign assets, there is no official figure on the level of the external debt. However, it is possible to estimate it and this is a very important segment of the whole analysis. Unfortunately, the IMF approach does not provide a formal solvency indicator. It only offers a debt dynamics framework useful to make distinction between different sources of the debt dynamics (present and future), as well as the future external debt projections. The IMF framework is presented by equations (5) and (6):

$$D_{t+1}=(1+r)D_t - TB_{t+1} \tag{5}$$

D_{t+1} – end period external debt in BAM;
TB – debt creating component of the balance on goods and non interest services;

$$d_{t+1} = \frac{(1+r)}{(1+g)(1+\rho)} d_t - tb_{t+1} \tag{6}$$

g – real GDP growth;
ρ – growth rate of BAM value of the GDP deflator;
d – external debt to GDP ratio;
tb – debt creating component of the balance of goods and services (in percent of GDP);

After adding the nominal exchange rate appreciation, the equation for the debt dynamics is the following:

$$d_{t+1} = \frac{r - g - \rho(1+g) + \varepsilon\alpha(1+r)}{1+g+\rho+g\rho} d_t \tag{7}$$

Limits of the IMF methodology are best illustrated in their external debt sustainability analysis for BH (IMF Article IV -2006) where residual factors largely exceeded identified external debt creating flows in almost all years (2000-2005). Valuation changes on cross-exchange rates, and similar factors could hardly cause such residuals. Low quality of the data used in the analysis is likely to be the prime suspect. In relation to that, extremely (unrealistically) high changes of the GDP deflator of 21 and 12 percent in 2003 and 2004 respectively indicate attempts to reduce the residual.

Even if the country is able to repay its debts (solvent) it does not mean it is going to be willing to actually do so. In addition, the foreign investors may not be willing to lend even to a solvent country if their perceptions about it are not favorable. Milesi-Ferretti and Razin (1996) maintained a country would have an incentive to default on its debts if its costs of the debt repayment exceeded the default costs. According to them, events such as rise in world interest rates, a negative supply shock (for example terms of trade decline), ect may increase the repayment costs, thus increasing likelihood of the debt default. On the other side, the foreign investors who are usually well aware of the change in the incentives may choose to stop further lending to a country whose likelihood of the external debt default have dangerously increased. Any event raising the default costs may trigger a stop in foreign capital inflows and in turn a BoP crises. To prevent such a scenario, the foreign investors may try to increase debtor countries costs of default by lobbying sanctions for defaulted countries in the form of isolation from international trade, international capital markets ect.

Sustainability indicators

In accordance with the solvency and willingness to pay and lend Milesi-Ferretti and Razin (1996) suggested a few groups of the sustainability indicators.

Structural indicators are usually related to sustainability issues that are not directly related with macro policy reversals. They refer to the problems deeply implanted into the structure of the whole economy. For example, savings and investment can influence investor's perception about an economy. Sectoral composition of the economic growth indicates potential solvency in the future. Composition of external liabilities with respect to equity and debt financing indicates an economy's vulnerability to external shocks. Indicators of the country's financial structure also indicate vulnerability. These indicators refer to financial intermediation, role of the banking supervision, exchange rate regime ect. Openness of the capital account can have both positive and negative effects on the sustainability.

Second group of indicators is a macroeconomic policy stance. They mainly deal with the exchange rate flexibility and policy. In addition, these indicators are also concerned by the fiscal balance. In particular, they are concerned with link between the fiscal and the CA deficit.

Finally, political instability, policy uncertainty, credibility and market expectations are the last two groups of indicators. Similar to the other indicators, they also influence investors' expectations and the economy's vulnerability to external shocks.

IV. Data issues

Application of usual methodologies for analyzing sustainability of the external imbalances based on scenario analysis is very difficult in Bosnia due to a number of data issues. The fact is that most of the data are either missing or have poor quality. Therefore, the analysis is based on examining indicators without a mechanism explicitly pointing to (un)sustainability.

First of all, official statistics in Bosnia do not publish a figure on a size of the Bosnian external debt. To make things worse, the officially published GDP in Bosnia does not include estimates of the gray economy witch additionally distorts findings on the debt burden. In addition to that, the balance of payments statistics are also rather inaccurate. They suffer from large net errors and omissions witch in some years almost equal the size of the capital account. According to findings presented further in the text, it is likely that the main portion of the net errors comes from the overestimated trade deficit and underestimated worker remittances. Hence, the level of the CA deficit could be largely overestimated. Finally, external interest rates were also estimated, due to lack of official data.

What causes the net errors and omissions?

Large net errors and omissions (around 4%of GDP) pose a serious problem for identifying magnitude of the CA deficit in BH, its means of financing, and finally dynamics of the country's external liabilities. Existence of the net errors and omissions in combination with seriously underestimated GDP blurs the picture on how serious the external imbalances in the Bosnian economy really are, as well as on their contribution to creating new debts. To address this problem, findings of the IMF were used together with results of a regression analysis.

The IMF in Selected Issues (2006) p.3-6 suggested the CA deficit to be largely overestimated mainly due to unrecorded current receipts. These refer to worker remittances, donor grants and cash withdrawals at ATM machines. In addition, they also mentioned shortcomings in recording of trade in goods and services. According to them the main problem of underestimation are the remittances. Therefore, this was the focal point of their analysis. All the other items tend to reduce their shares in the distortions over time and/or are small in value. In turn, the IMF concluded that the CA deficit could range between 6 and 14 percent of GDP after taking into account the gray economy as well as unrecorded current receipts.

To deepen the analysis, logs of absolute values of the net errors and omissions were regressed against all the other items in the BoP. Namely, quarterly data for balance of goods, services, income, current transfers, capital account and financial account balance were used as regressors for a period 2000-2006. Out of the total 28 observations, four had to be estimated given that only annual data for the 2000 BoP were available. To distribute the annual values for the year 2000 across quarters, quarterly shares were produced by averaging each quarter's share over the following three years (2001-03). The problem with producing data for the year 2000 was the fact that at that time banking sector was going through a number of structural changes (especially changes related to banking reforms, and privatization) that possibly influenced quarterly shares relative to other years. Nonetheless, diagnostic tests indicated there were no problems with serial correlation, functional form, normality and heteroscedasticity.

The first regression results (appendix 1a) indicated the balance on goods, and the financial account were the main sources of the net errors and omissions. In addition, the capital account could also be of some influence. The biggest coefficient was on the balance of goods (4,5), and was statistically significant on a 5% confidence level. Its positive sign means that a single percent of increase in the balance (positive or negative) of goods raises the net errors and omissions in absolute terms by 4,5%. The situation following introduction of the VAT during the 2006 might support the regression findings. A significant portion of improvement in the balance of goods in 2006 was likely to be caused by better trade recording (due to more efficient indirect tax collection related to the VAT) witch might suggest that the deficit in previous years was somewhat overrated. In addition, a large trade deficit in goods (around 50% of GDP) supports by far the largest coefficient.

The financial account was also significant on a 5% confidence interval. However, its coefficient was negative and relatively small (-0,27). This is consistent with the fact that a large portion of the financial account data originates from some of the most reliable sources such as the banking sector and the Central Bank of BH. Therefore, the negative coefficient suggests that a one percent increase of a reliable balance (in absolute terms) mildly (by 0,27%) decreases the net errors and omissions. Perhaps the (negative) coefficient would be larger if the portion of the foreign exchange circulating outside the banking sector was smaller. This item is estimated by the Central Bank under other investments to other sectors within the BoP and its accuracy is rather questionable. Finally, balance on the capital account was almost significant on a 15% level of confidence. Its correlation (71%) with current transfers was the main reason why it was not tested for deletion in the variable deletion test.

This proved to be right, and after deleting the balance on services, income and current transfers, the capital account balance became significant on a 15% confidence level. Following the deletions, intensity of the negative and rather large coefficient decreased from -2 to -1,2. Therefore, instable coefficient along with statistical insignificance on 10 and 5 percent confidence indicate ambiguous role of the capital account in creating the net errors and omissions.

The deletion of variables generally improved the regression properties. Most importantly, it resolved a problem with heteroscedasticity in the first regression. The coefficients generally increased their statistical significance while coefficients on goods and the financial account proved to be very robust as well. The financial account coefficient remained virtually unchanged, whereas the coefficient on goods slightly (by 0,5) decreased after the deletion. The capital account was already identified as ambiguous.

Finally, the regression results generally complement those of the IMF. The main difference between the two findings was relative significance of the balance in goods and remittances. The regression indicated primary role of the balance on goods in creating the net errors and omissions, whereas the IMF pointed to the remittances. Surprisingly, the remittances were statistically insignificant (within the current transfers) in the regression. To address this a little deeper, the net errors and omissions should be regressed on the BoP sub items to confirm this with greater certainty[2]. In conclusion, the primary factors accountable for the net errors and omissions were the balance of goods, and the financial account, whereas the influence of the capital account and the remittances remain unclear.

V. External indebtness of the BH economy

Level of the external debt

Size of the Bosnian external debt is the main piece of information needed to analyze sustainability of the CA deficit. As already mentioned, such figure is not produced by official statistics in Bosnia, so it had to be estimated for the purpose of this analysis. To make things worse, the officially published GDP in Bosnia does not include estimates of the gray economy witch distorts the debt burden findings.

As table 1 show, estimated external debt of the BH economy reached BAM 9,5 billion, or 60,2% of the official GDP. It was estimated through four main components: public external debt, commercial banks foreign liabilities, FDI borrowing to the non-banking private sector and finally cross border loans from foreign located banks to the non-banks in Bosnia. These components are expected to capture most (over 90%) of the total debt. It is assumed that Bosnian government has been unable to borrow on commercial terms directly from abroad due to the country's poor credit rating. Therefore, almost half of the economy's total debt is non commercial and is created by the government sector. It came mostly through foreign aid to Bosnia (with favorable terms) during the postwar period. On the other hand, Bosnian subsidiaries of foreign commercial banks were able to borrow from their mother companies and increase the economy's foreign liabilities on commercial terms. In addition, some 20-30% of the total FDI came through borrowing. Given the fact that the FDI borrowing is already included within the banking sector foreign liabilities, this item was subtracted from the total FDI borrowings in order to avoid double counting. In result, the FDI borrowing to the non-banking section of the external debt was calculated.

[2] At the time of writing this, the new BoP data for 1998-2006 were not disposable on a disaggregated level. Hence, such regression will be performed once the data become available.

Unfortunately, data on stocks of FDI borrowing were available only for 2003-05[3]. To estimate borrowing in previous years, stocks of the total FDI had to be estimated first. For example, in order to produce such an estimate for 2002, level of the total FDI change in 2003 (from the BoP) was subtracted from the 2003 FDI stocks. Than, the 2003 share of borrowing in the total FDI stock (23,5%) was used to estimate stock of borrowing in 2002. The same procedure was applied to estimate FDI borrowing in 2000 and 2001.

Table: 1 – Estimation of Bosnian External Debt in BAM mil

EXTERNAL DEBT ESTIMATION	2000	2001	2002	2003	2004	2005	2006*
Public debt - external[1]	4.056	4.421	4.290	4.014	4.032	4.338	4.063
Commercial banks foreign liabilities[1]	1.577	1.527	1.794	2.437	2.651	3.559	4.011
FDI borrowing to nonbanking[2]	256	287	364	401	527	645	833
Inter company loans (FDI's)	*292*	*353*	*483*	*638*	*903*	*1.263*	*1.452*
FDI borrowings to banking sector	*37*	*66*	*119*	*237*	*376*	*618*	*619*
Cross-border loans from foreign located banks - to NONBANKS[3]	218	278	862	732	879	966	1.062
Total external debt - estimate	**6.107**	**6.512**	**7.310**	**7.583**	**8.089**	**9.508**	**9.970**

1. Source: Central Bank of Bosnia and Herzegovina
2. Source for 2003-05 is Central Bank of Bosnia and Herzegovina and data for 2000-2002 and 2006 were estimated
3. Source: Joint External Debt Hub (JEDH) database
** Estimates for 2006*

Finally, data from the Joint External Debt Hub database were used to estimate cross border loans from foreign located banks to the non-banks. Finally, loans of foreign company located abroad to the Bosnian companies operating in the country are assumed to be insignificant.

External debt burden in BH

An external debt burden of a country is defined as a share of its external liabilities in its income. According to Figure 1 burden of the external debt in Bosnia was relatively stable over the years and ranged around 57% of GDP over 2000-05. Data in tables 1 and 2 indicate that structure of the external debt changed during the past periods. The external public debt burden fell from 38% of the GDP in the year 2000 to only 23% in 2006. This was mainly a result of a gradual fall in foreign aid to the government sector. On the other hand, the private sector started to take over in creating new debts. Its external debt rose

[3] Central Bank of Bosnia and Herzegovina – External sector statistics: Stocks of FDI 2003-05

from 19 to 33 percent of the GDP during the same period. Among the private sector, the commercial banks were the primary force increasing the debt.

Figure 1

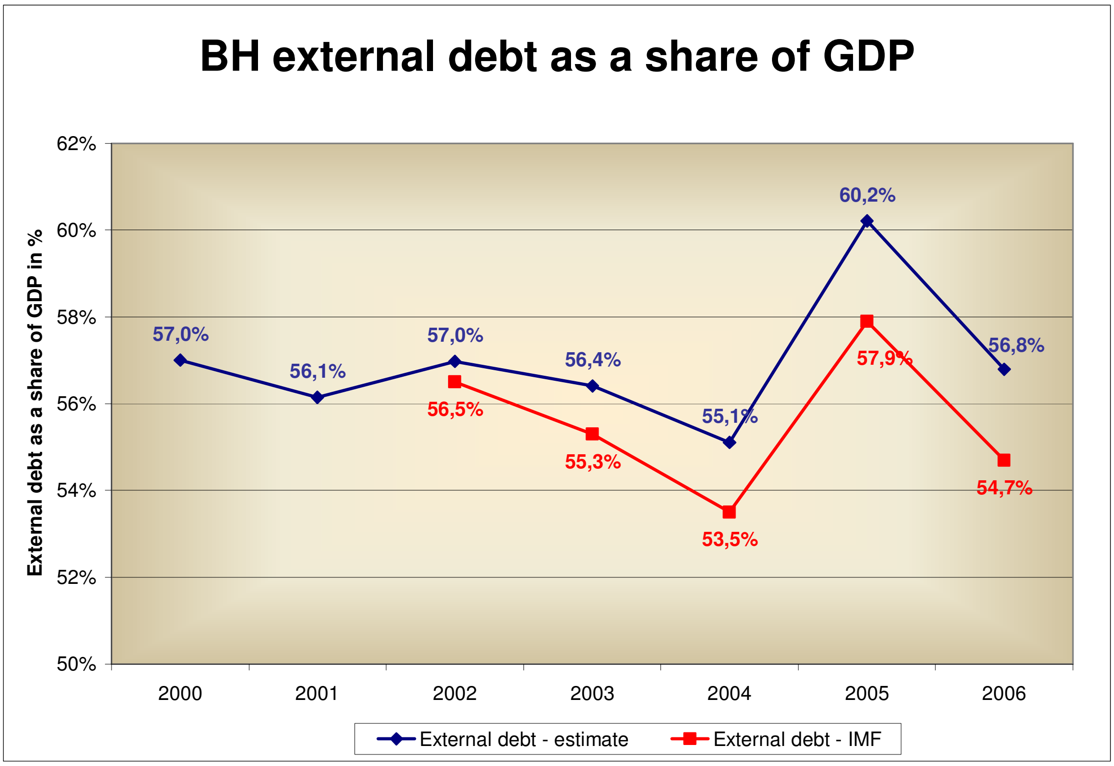


Table: 2 - External DEBT BURDEN

Share of GDP in %

External debt BURDEN - estimation	2000	2001	2002	2003	2004	2005	2006*
Public debt - external	38%	38%	33%	30%	27%	27%	23%
Commercial banks foreign liabilities	15%	13%	14%	18%	18%	23%	23%
FDI borrowing to non-banking	2%	2%	3%	3%	4%	4%	5%
Inter company loans (FDI's)	*3%*	*3%*	*4%*	*5%*	*6%*	*8%*	*8%*
FDI borrowings to banking sector	*0%*	*1%*	*1%*	*2%*	*3%*	*4%*	*4%*
Cross-border loans from foreign located banks - to NONBANKS	2%	2%	7%	5%	6%	6%	6%
External debt - estimate	**57,0%**	**56,1%**	**57,0%**	**56,4%**	**55,1%**	**60,2%**	**56,8%**

* Estimates for 2006

As already mentioned, the official GDP in BH does not include the gray economy. The IMF in Selected Issues (2006) p.9 has found that underestimation of the BH GDP ranged from 30 to 50 percent. They have also suggested a possible increase of non-observed activity over time. In addition, GDP at constant prices is also not produced by the official statistics in BH. In stead, there are only estimates of the GDP deflator and the real

GDP growth[4] made by various national and international institutions. Assuming 30% of unobserved activities, the level of the external debt burden would decrease by 12-14 percentage points in various years.

VI. Current account deficit and its financing

According to the official figures[5], the CA deficit in BH was generally rising in both nominal values and as a share of GDP during 2000-05 (Figure 2). Even though it started to become stable over 2002-04 the CA deficit reached a record 21,3% of the official GDP in 2005. A great deal of the 2005 increase had to do with the forthcoming VAT introduction in 2006. However, situation reversed in 2006, when the deficit decreased by a record 39% relative to the previous year[6]. Besides the real effects of the VAT in terms of inter-temporal reallocations of exports and imports between 2005 and 2006, it is likely that a mechanism for collecting a new indirect tax enhanced recording of the BH international trade witch in turn additionally improved the trade figures for 2006. This leads to a suspicion that the trade deficit in previous years could have been largely overestimated. If this was really the case, the trade deficit was probably the main source of the huge net errors and omissions (around 4% of GDP) in the BoP. Despite unclear true size of the current account deficit, one can still analyze its trends (especially as a share of GDP) and make inferences about its effects on the external debt dynamics.

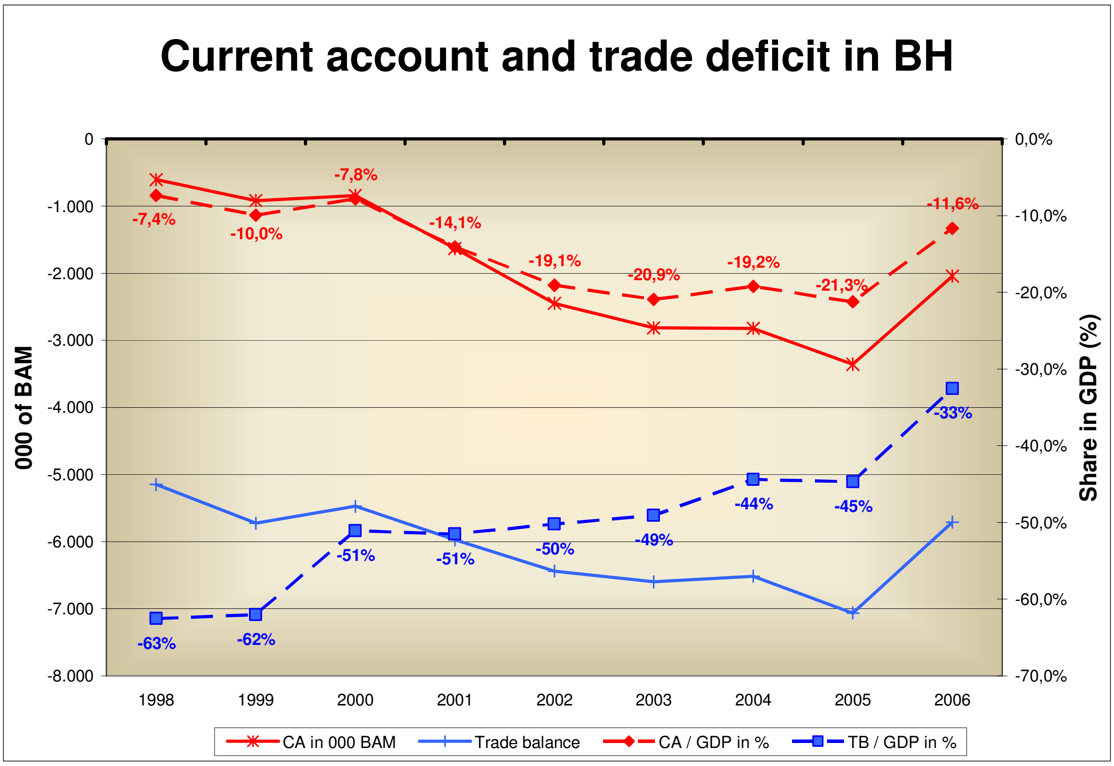
The main cause of the CA worsening during the past was the growing trade deficit coupled with generally decreasing current transfers and incomes. At first, a lot of the trade deficit was covered within the current account. The current transfers and the income covered around 88% of the huge trade deficit (of BAM 5.1 billion) in 1998, whereas only 52% was covered in 2005. The coverage improved again in 2006 mainly due to an unprecedented decrease of the trade deficit. While the deficit in goods within the trade deficit played a primary role in the CA widening, the balance of services was positive and grew modestly from 4% to 5% of GDP during 1998-2006. Despite its major fall from 67 to

[4] Estimates made by the DEP/EPRU were used for the purpose of this analysis.
[5] Official BoP and GDP produced by the Central Bank of BH and the BH Agency for Statistics respectfully.
[6] If the EPPU forecast of 11,2% nominal GDP growth in 2006 turns to be correct, the CA deficit could be at 11,6% of GDP in that year.

38 percent of GDP over the same period the deficit of goods remained the main source of the CA dynamics.

Despite the falling trend of the trade deficit share in GDP, the CA deficit as a share of GDP increased over the years, mainly due to its significantly smaller levels relative to the trade deficit (especially in the starting years[7]). Hence, even a relatively modest trade deficit aggravation in absolute terms caused a large (percentage) widening of the CA. In turn, the CA deficit grew faster than the GDP, and in turn its ratio to GDP increased.

Figure 2



Decelerating growth of the deficit in goods came as a result of accelerated both exports and imports with exports growing faster by roughly twice than imports until 2005. The only exceptions were the years 2001 and 2002 when the imports grew faster. Nonetheless, import coverage by exports reached only a modest 34% in 2005. Structural

[7] Even though the ratio between the trade and the CA deficit has been shrinking it is still relatively high, thus enabling the trade balance to be the main factor that determines the CA. In 1998 the trade deficit was almost ten times hgher than the CA deficit, wheras in 1995 the ratio was arround two to one.

brake in the data due to the VAT introduction caused imports to stop growing in 2006 witch resulted with a 15% decrease in the deficit of goods. In turn, the imports coverage also improved and reached a record 44%. Therefore, the year 2006 should not be compared to pervious years. In stead, it should only be used as a base year for comparison with subsequent periods.

Despite relatively insignificant value, the positive balance on services was the biggest offsetting item to the deficit of goods within the current transactions. Travel (personal and business) along with construction, communication and other business services were the main contributors to the improving surplus of services. On the other hand, negative balance of freight transport largely offset this positive momentum witch in turn resulted with only a modest growth of the positive balance on services. Natural beauties in BH are a potential for a serious future improvement of tourism in BH. If successful, the tourism could trigger a significant rise in, passenger transportation, communication, financial and other services.

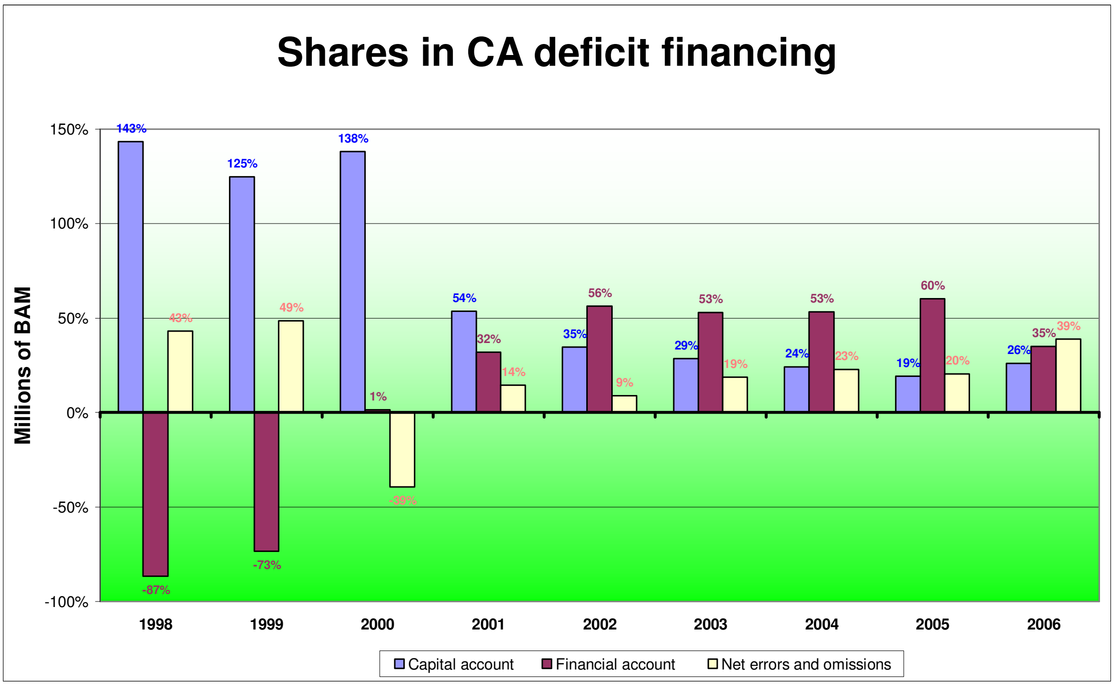
Falling surplus of employee compensations was the most important factor of a gradual fall in income account surplus from BAM 1.42 billion in 1998 to BAM 720 million in 2005[8]. The main reason behind this was a continuous process of reducing numbers of local and foreign staff working in foreign organizations and SFOR. In addition to that, balance of the investment income deficit was growing. However, despite its negative direct impact on the CA, the growing investment income deficit (especially its part referring to the direct investments) could be a positive signal of foreign investment activities in the country. Incomes generated by the monetary authorities through investing foreign reserves abroad were the only positive item within the investment income. This was enough to offset the deficit of the general government income in 2004 and 2005.

Current transfers also decreased gradually over the years (from BAM 3.47 billion in 1999 to BAM 2.99 billion in 2005) primarily due to a steady reduction in current government transfers combined with relatively unchanged surpluses in other sectors. A decline in the current transfers to the government could also be explained by the continuing reduction of foreign aid to BH. Worker remittances play an important role in the current transfers as well as the whole BoP in general. Their high level in absolute terms

[8] Employee compensations itself accounted for almost BAM 600 million out of the total fall of the income account surplus of BAM 700 million during 1998-06.

(around BAM 2 billion) has remained constant over the years witch in turn resulted with an 12 percentage point decline of remittances as share of GDP over 1998-06.

Figure 3



How did the Bosnian economy manage to finance such an external imbalance? To answer this question, history must be divided in two periods: before and after introduction of the EUR (that is before and after 2001). Until 2001 the capital account surplus was the main source of finance and in various years exceeded the CA deficit by 25 to 40%. It was a period when the government received substantial foreign aid, and capital transfers (mainly through grants) were one of the main channels. Loans within the financial account were another, even more important channel of receiving foreign aid until 2001. Nonetheless, the financial account was in huge deficit (87 and 73% of CA deficit in 1998 and 1999 respectfully) until 2000 mainly due to rising foreign assets in the form of currency and deposits. Year 2000 was the first year with a nonnegative financial account. The main improvement was achieved through reduced increase of assets in the form of currency and deposits (BoP outflow) within other investments as well as through decelerated growth of the foreign exchange reserves. However, huge positive net errors and omissions during that period throw suspicions over the whole analysis. The main suspicion arises over the trade and capital account statistics. Does this mean the trade deficit was smaller then recorded, or perhaps the amount of aid the government received through the current and the capital transfers was higher[9], or maybe a bit f both was involved?

Introduction of the Euro in 2001 forced a number of Bosnian citizens to exchange their (German) DM personal savings held at home (outside the banking system) in local banks as they were only source of new currency. Out of roughly BAM 4 billion that was exchanged during the conversion, 1.5 billion remained in the banking sector. From the BoP perspective, the foreign exchange inflow improved other investments within the financial account by decreasing foreign assets in the form of currency and deposits[10]. In turn, commercial banks used the inflows to create money through lending, thus increasing the Central Bank's foreign exchange reserves by roughly 1.5 billion. In addition, the capital account surplus fell shapely in 2001 by 300 million mainly due to declining capital transfers to the government.

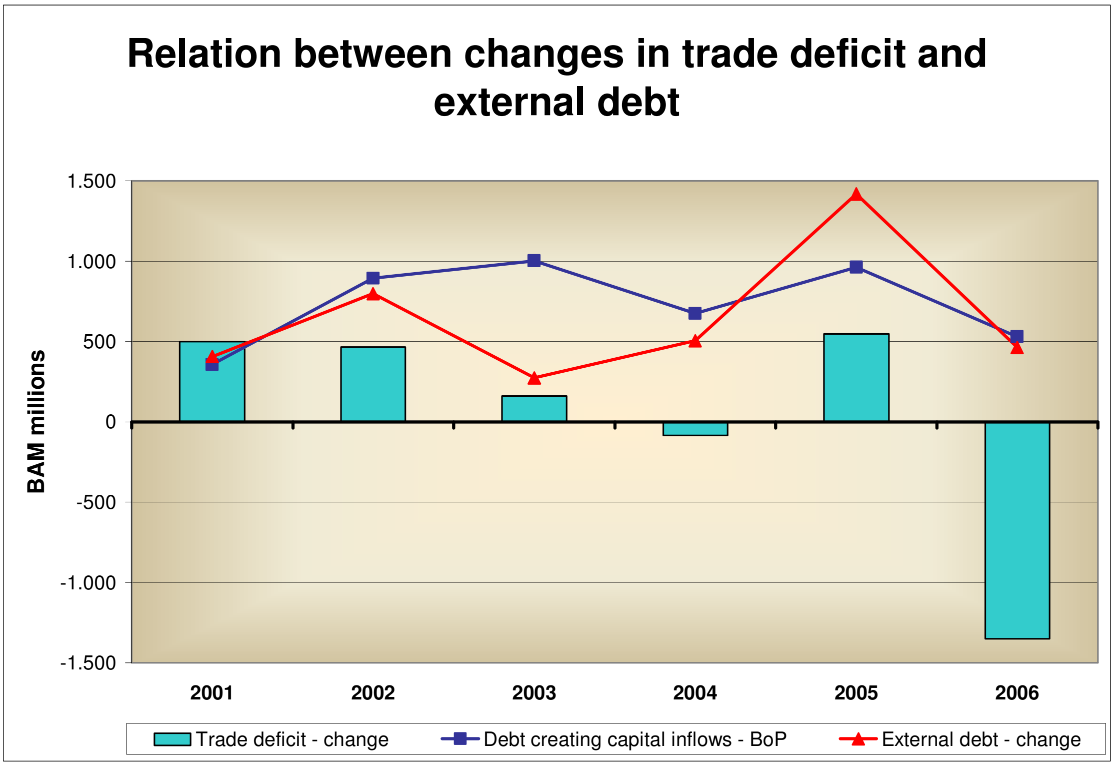
The capital account surplus has been constantly declining since the year 2000. It fell from BAM 1.6 billion in that year to only BAM 718 million in 2005. The main reason was a gradual fall in capital transfers to the government. Not even a steady increase of the capital transfers to other sectors was enough to offset this negative trend. Given a small volume (less than 5% in the capital transfers balance), influence of migrant transfers was insignificant with respect to the capital account growth.

VII. Balance of payments dynamics and the external debt

After discussing about the current account and the external debt, a logical question that comes to mind. How does the current account dynamics and the dynamics of its finances relate to the creation of the external debt (tables 1 and 2)? Looking at the figure 4 and having in mind everything presented, it is possible to argue that the trends and events related to the current account and the BoP in general, generally fit the estimated external debt dynamics within the chosen theoretical framework.

[9] This is quite possible especially in earlier years given poor recording of foreign aid to municipalities.
[10] Most of the inflow probably reflected a shift from savings at home to the banking system. In other words, the money (or at least the most of it) was in the country prior to the Euro, but was recorded according to BoP accounting rules as an outflow by investment abroad (in other words, increase in foreign assets).

Figure 4



Source: Central Bank BH for the trade deficit and the debt creating capital inflows whereas the external debt change was estimated – Table 1.

The figure 4 shows that the change in the estimated external debt (table 1) fits the debt creating capital inflows calculated on the BoP data (appendix 8) reasonably well. The main discrepancy occurred in the year 2003 and to some extent in 2005. Given that the change in the estimated external debt followed the trade deficit trend much closer in 2003, it is reasonable to assume that the financial account caused a significant portion of the net errors and omissions in that year. Therefore, apart from the year 2003, the external debt dynamics estimated by both methods follows the same trend witch in most years produced almost the identical debt creating inflows (as a share of GDP).

The figure 4 also indicates that the trade deficit is an important factor in creating the external debt witch is in line with the chosen theoretical framework. Generally speaking, a rise in the trade deficit was followed by increasing debt creating inflows (and vice versa) in most years. A fall in the trade deficit during 2004 and 2006 accompanied by rising debt inflows indicated a rising share of the debt creating inflows in the CA deficit financing.

Having in mind the theoretical framework, it is interesting to see how important recent events such as the EUR introduction and improvements in the trade balance reflected in the BoP and the external debt figures. Prior to the Euro introduction the public debt accounted for 76-78% of the total external debt. At the same time, the Figure 3 reveals the capital account dominated financing of the CA deficit mainly through grants to the government. A 1,5 billion BAM that remained in the banking sector as a consequence of the DM exchange into the Euro especially during 2001 did not aggravate imports because official foreign exchange reserves also increased. This in combination with the fall of the foreign aid to the government resulted in a deceleration of the external debt and a modest fall of the debt burden. In 2002, there was a shift in the CA financing structure and in turn the financial account went up by around BAM 800 million. The final result was an increase of the external debt burden. The external debt burden decline in 2003 and 2004 was likely because of the rise of non-debt creating FDI within the financial account and due to a rising amount of money that shifted from the informal economy into the banking sector. Finally, the trade aggravation in the 2005 resulted with another increase of the debt burden. However, the negative effect of trade was softened by the automatic debt dynamics through the nominal GDP growth that almost equaled the increase of the trade deficit. In turn, the debt burden worsened by only one percentage point of GDP (it increased from 44 in 2004 to 45 percent of GDP in 2005). The situation reversed in 2006 when the trade deficit strongly improved. The result was a decrease in the external debt burden.

VIII. BH current account sustainability indicators

Although important, trends of the external debt burden and the current account developments are hardly enough to explain sustainability of the Bosnian economy's external imbalance. To complete the picture, this chapter analyzes how structural indicators, macroeconomic policy, political instability, policy uncertainty and market expectations influence the country's solvency, its willingness to pay debts and finally willingness of the foreign investors to lend money to the Bosnian economy.

Solvency indicators

Data indicate that the solvency of the Bosnian economy primarily depends on its trade (figure 4) or to be more precise its future exports. Economic growth within the automatic debt dynamics is almost as equally important. The automatic debt dynamics seem to have decreased the external debt burden over the years. One of the main reasons for that is the fact that the external interest rates were much below the Bosnian economic growth. Foreign exchange risks and the foreign exchange policy regime may be important from the automatic debt dynamics point of view on the one hand, and the trade point of view on the other hand. Finally, heavy tax and social security contributions burden on the private sector may seriously jeopardize the solvency condition.

Lack of exports is probably the main threat to solvency of the Bosnian economy. Normally, the exports are expected to be a foundation of the foreign exchange inflows through current transactions. Otherwise, the country needs to find other channels of inflows through current and capital transactions in order to maintain its current level of consumption. The BH economy has found such channels mainly in large current transfers and non-debt and debt creating capital inflows. In fact, an important portion of its consumption was a direct consequence of these inflows. The problem with such inflows is that, even though very welcomed, they are rather uncertain in the future. Besides, unlike the exports, they increase the country's foreign liabilities. A sudden stop of the foreign capital inflows could, as mentioned in pervious chapters, result in a fall of the personal consumption witch in turn is likely to have adverse growth implications. Therefore, the BH economy needs exports as a largely internally determined[11] and a reasonably stable source of foreign exchange liquidity.

During the last couple of years, exports have been recording strong improvements. During 2003-06 they were growing more than twice faster than imports. Figure 5 show that the volume of exports could equal the imports in slightly over seven years should they both

[11] An economy's exports can be influenced much easier within the economy than the other channels of the foreign exchange inflows. For example, investment to increase productivity is much more likely to lift the country's competitiveness and provide sustainable additional source of the foreign exchange liquidity for several years than any government attempt to atract more foreign aid.

continue to grow by average 2003-05 respectful growth rates[12]. Growing investment activity in the economy indicated by 14% average 2003-06 growth of imports of machinery and equipment[13] points to potential source of additional export growth. To support that, slightly positive national net savings in 2004 and 2005[14] (Appendix 2) indicate the CA deficit was primarily driven by investment and not by a lack of the domestic savings. Besides improvements in the investment activities, export has also been supported by generally undervalued real exchange rate over the years (Appendix 3) and the fixed exchange rate policy within the currency board. The BAM real effective exchange rate was undervalued when calculated on the basis of nine main trading partners during 2003-06. However, when based on the main twenty partners, it was slightly overvalued in 2003 and 2006.

Despite positive trends, the exports did not seem to contribute significantly to value added creation so far. Figure in the appendix 4a shows that manufacturing accounts for around 87% of the total exporting activities, while together with electricity they both account for 92% of the total exports. Nonetheless, they accounted for only 13% of the GDP growth in 2005 (appendix 5). The reason is that the Bosnian exports are dominated by base metals, wood and wood products, as well as other similar products with low value added share in their gross value. Hence, providing the foreign exchange to finance imports seems to be the primary role of exports in the BH economy without a significant influence on the (debt burden decreasing) automatic debt dynamics through growth. Despite seemingly positive movements in the country's investment activities, the figure in the appendix 6 shows that a relatively small share of the gross fixed capital formation is export oriented. The share of the manufacturing and electricity and water supply in the 2005 gross fixed capital formation was only around 30%. In addition, the BH exports are highly concentrated witch makes them vulnerable to adverse shocks in export prices (appendix 4b). The base metals its self accounted for 23% of the total exports of goods in 2006, whereas six largest exporting industries accounted for almost 60%.

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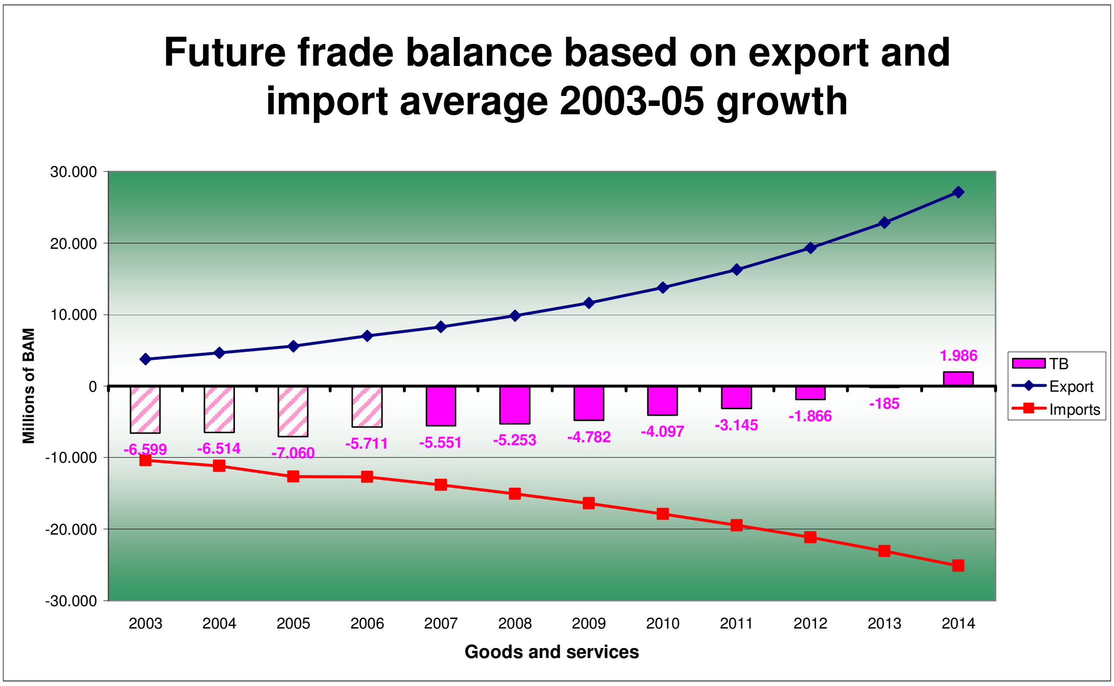
[12] Due to the improved recording of the foreign trade in 2006, that year was not used when calculating the average in order to avoid distortions. The real effects prior to the VAT introduction at the end of 2005 in terms of slowing the exports and accelerating the imports made the average exports growth rate somewhat conservative and the imports slightly overrated.

[13] In 2006 there was a fall in imports of machinery due to incentives to shift as much imports as possible into the 2005 when a strong import acceleration was recorded. Therefore, the average 2003-06 import growth was calculated.

[14] Official data on gross fixed capital formation exist only for 2004 and 2005. Therefore, national savings was calculated for those years only.

Figure 5



Source: Central Bank BH

The automatic debt dynamics reduced the external debt burden in Bosnia. This was mainly because of the very high GDP growth rates that by far exceeded the external interest rates[15]. For example, the average 2001-05 nominal growth of 8,1% completely outpaced a modest 2,3% average external interest rate over the same period. Low inflation over the years and seemingly favorable external debt structure were the main reasons why these factors did not play an important role in the automatic debt dynamics[16]. Finally, heavy burden of social security contributions and profit taxes make it harder for companies to repay debts. The social security contributions in the FBiH are 69% on the net wage and the profit tax rate is 30%. On the other hand, the rates in the RS are much smaller and are

[15] Income from other investments in the BoP was taken as a rough estimate for the external interest rates. To calculate the rate of interest, this value was devided by the average stock of the external debt at the begining and the end of a year.

[16] Even though there is no official data on the currency structure of the external debt, the data on the bublic debt indicate favorable structure (appendix 7). There is no reason to assume the private debt currency structure to be any less favorable. In fact, given the major BH banks ownership of by the European banks, the debt structure in this segment is probably much better.

much more in line with other countries. This factor is becoming increasingly important given a rising share of the private sector in the external debt.

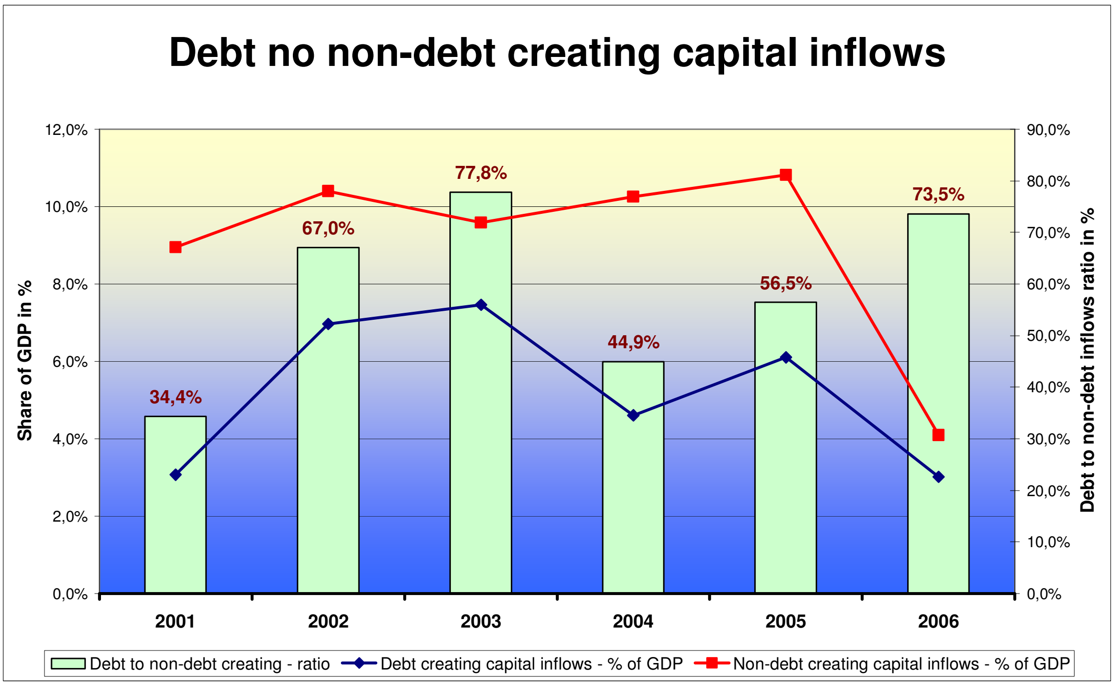
Willingness to pay and lend indicators

Lack of accountability for economic policy lowers the political cost of default. A decentralized organization of the country on entities and cantons resulted in a fragmentation of the economic policy between various government levels. In fact, there is no economic policy on the state level witch reduces political costs of the default given that in such circumstances the blame is typically shared with others.

On the other hand, shift from concessional loans to government toward commercial liabilities must have increased the repayment costs to the Bosnian economy. The government (mainly concessional) debt as a share of GDP decreased from 38% in 2000 to 27% in 2005. At the same time the commercial debt of the private sector (dominated by foreign liabilities of the commercial banks) rose from 19 percent in 2000 to 33 percent of the GDP in 2005. The Figure 6 demonstrates a rise of debt to non-debt creating capital inflows ratio (appendix 8) during 2004-06. This additionally confirms the country's gradual shift towards commercial debts in financing its CA deficit. Surprisingly, declining external interest rates do not support this story. Finally, the above mentioned heavy tax burden also increases the repayments costs.

On the other hand, the greatest opportunity cost of the debt default was probably the BH economy's high rates of economic growth. The default would stop the vital foreign capital inflows witch would in turn most likely result in giving up the growth rates. Therefore, the higher the economic growth, the greater the country's default costs. Existence of the currency board also increases the cost of the default. The currency board has been one of the main factors of the BH economy's macroeconomic stability. The default on the external debt would likely mean giving up the currency board. Finally, Bosnia's progress in its EU integrations increases the costs of default, and the final accession would raise them to an entirely new level.

Figure 6



Source: Central Bank BH - BoP

Importance of the foreign investors' expectations and their willingness to lend to the Bosnian economy has been growing over time given the increasing role of the debt creating flows in the BH balance of payments. The first and the most solid indication of the investors' expectations is a very poor credit rating the BH economy has in the world. A direct consequence of that was the government inability to raise commercial loans internationally. The main reasons behind such rating are huge political risks and problems with corruption. Very high interest rates within the country were another direct consequence of the country's risk assessment.

One of the worrying factors for the foreign investors might be a likely relation between the fiscal sustainability (largely plagued with uncertainty) and CA deficit. According to Milesi-Ferretti and Razin (1996), the link between the budget deficit and the current account deficit should be stronger in countries with underdeveloped financial markets where substitutability between the public and the private savings is small. In addition, they maintained that the link might be stronger on the lower levels of public debt.

Even though the government budget has been in balance in recent years, the question is for how long. There are several threats that may jeopardize its sustainability. First, the above mentioned decentralized organization of the country also means the decentralized budget spending. Even though attempts to coordinate the spending through the National Fiscal Council have been successful so far, it is uncertain for how long will this informal body based on voluntary membership be able to remain successful. An initiative to adopt a law on the National Fiscal Council is ongoing and its success may improve both the fiscal and the CA sustainability.

Besides the coordination of public spending, a few extremely high public expenditures that might arise in the future could also seriously jeopardize the sustainability. First, there is a BAM 500 million worth issue of maturity of frozen currency deposits that has recently been reduced by law from 13 to 5 years. Second, it is unknown how costly an adoption of a denationalization of the state owned property law might be. Third, repayments of debts to London Club of international creditors of around DM 430 million is uncertain and depends on weather the GDP per-capita in BH reaches USD 2.800 for two consecutive years. In any case, the repayment can begin no sooner than 2007 and no latter then 2017. Finally, the issue of establishing the EU integration related institutions as BH progresses towards association may also threaten the fiscal sustainability unless public spending is reduced on other budget items.

Besides the worrying factors, there are also positive ones as well as some promising developments. Macroeconomic stability produced mainly by the currency board arrangement is probably the most positive message sent to the foreign investors. An ongoing initiative to unite and improve banking supervision in the country is another positive signal. The real improvement would occur should the initiative be materialized. Finally, overall political consensus about the EU integrations offsets the uncertainty to some extent.

IX. Conclusions and policy recommendations

One of the main reasons to analyze the BH economy's external imbalance was its likely relation to the economic growth. Therefore, the key question was "can the imbalance be sustained". To find an answer, the analysis first had to reflect on how big the imbalance really was as well as on the size of the country's external debt. After that, relation between the CA and the external debt burden was examined on the basis of the BoP and the debt structure dynamics. Finally, the so called "sustainability indicators" were assessed.

Unfortunately, due to data deficiencies and according to the theoretical approach that was chosen, the analysis does not provide a clear cut answer on weather the imbalance is sustainable or not. It rather points to estimated trends recorded so far, as well as potential threats that might aggravate the situation. Based on that, a few policy recommendations are presented.

Milesi-Ferretti and Razin (1996) presented examples where various economies with similar levels of the debts and/or the external imbalance behaved differently and demonstrated differences in their external balance sustainability. Hence, there seems to be no universally “appropriate” level of the external debt for all countries. In stead, every country has its own level of the debt that can be considered acceptable. The problem with this concept is that the desired level of debt depends on a number of factors that may influence an economy’s solvency, its willingness to pay debts and finally the willingness of the foreign investors to lend money to it. Therefore the sustainable level of debt changes over time together with sustainability factors. This is especially the case in transitional growing economies such as Bosnia. For that reason, the focus of this analysis was to determine relevant trends, their principal causes and factors that may cause important shifts in the foreseeable future.

One of the main issues related to the external imbalance of the BH economy was its level. Both the IMF analysis and the regression findings indicated likely overestimation of the current account in Bosnia (official deficit in 2005 was 21%). The IMF pointed to underestimated remittances as the most likely cause, while the regression primarily pointed to the trade balance as the main cause of huge net errors and omissions. The underestimation of the external imbalance share in GDP was even greater, given the significantly underestimated official GDP. This also refers to the external debt burden witch according to the IMF might be 12-14 percentage points lower should the gray economy be accounted for.

Figures 1 and 2 indicate relatively stable trends of both the external debt burden and the current account deficit as a share of GDP during the last couple of years[17]. The trade deficit was the main source of the current account imbalance, and in turn the main source of the external debt creation. This was very much in line with the theoretical framework

[17] In fact, the debt burden was slightly falling until the VAT introduction effects started to emerge in 2005.

according to witch the debt creating component of the trade balance is a very important source of the debt burden. In reality, the situation was probably the other way around. The foreign capital inflows (debt and non-debt creating) were among the main causes of the consumption led economic growth accompanied by the current account deficit. However, increasing foreign exchange reserves indicate the inflows were not entirely transformed into the deficit. The best example of this was the exchange of the DM into EUR when the foreign exchange inflow from the conversion almost entirely went into the reserves in 2001.

The lack of exports and the debt burden decreasing automatic debt dynamics were the main features of the BH economy's solvency in recent years. Despite the low import coverage by exports, the exports were growing much faster than imports and the external trade could get into balance in slightly over seven years should the current trend be continued (figure 5). The undervalued real exchange rate, along with the fixed exchange rate policy was among the most important factors to support such a positive trend. On the other hand, the BH exports seem to be quite vulnerable to shocks in export prices due to their high concentration. Low export oriented investment, and exporting industries' low share in the value added creation is also a worrying factor for the future. On the other hand, the automatic debt dynamics was increasing solvency of the Bosnian economy. The output growth rates were much beyond the external interest rates, while the inflation rate was very low and the external debt (due to its currency structure) robust to exchange rate changes.

Some of the most important factors that influence possibility of the external debt default in Bosnia are accountability for economic policy, tax burden, economic growth, existence of the currency board arrangement and progress towards the EU integrations. The low accountability for economic policy reduces the political costs of the default, thus increasing its likelihood. On the other hand, high economic growth in Bosnia is one of the highest items in the country's default costs. In relation to that is the existence of the currency board as one of the main sources of the macroeconomic stability. Both of them reduce the default likelihood Heavy tax burden and high social security contributions increase the repayment costs to companies by reducing their profitability. The final result is increased probability of the default. Finally, progress in the process of the EU integrations significantly increases the both the political and growth related costs of the default.

The most worrying fact about expectations of the foreign investors is the country's very poor international credit rating. In result, the BH government has been unable to commercially borrow abroad, and the domestic interest rates in the economy are very high. A likely relation between the external and the fiscal balance raises importance of fiscal sustainability indicators. In effect, issues such as coordination of the public spending in the country, uncertainty related to the forthcoming government liabilities (on the frozen foreign currency deposits, denationalization of the state owned property, and liabilities to the London club), and finally cost issue of the new EU related institutions are becoming increasingly important. On the other hand, strong economic growth primarily a result of the macroeconomic stability (achieved by the currency board and the balanced government budget) was probably the most positive signal to the foreign investors. Slightly positive national savings indicating the current account deficit was mainly driven by investment is also a positive message to the investors. Ongoing initiative to legally formalize coordination of the public spending and to unite the banking supervision on the state level also sends positive signals. Finally, the overall consensus on the BH joining the EU to some extent offsets the negative picture created by the political instability in the country.

In the end, is the external imbalance of the Bosnian economy sustainable or not? If the exports and the external debt dynamics continued their current trends the economy should have no problem with sustaining its external imbalance. In fact, according to the current trends the imbalance is gradually reducing and might disappear completely in the near future. However, the economy has a number of vulnerabilities that might suddenly turn the situation around. The most immediate threats come from the exports weaknesses and the fiscal sustainability. Therefore, the country's economic policy should be targeted towards reducing those vulnerabilities.

Appendix 1a

Ordinary Least Squares Estimation

****

Dependent variable is LNETERROM
28 observations used for estimation from 2000Q1 to 2006Q4

****

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
CON	-22.4023	9.4792	-2.3633[.028]
LNGOODS	4.5376	2.1010	2.1597[.043]
LNSERV	-.12557	.97154	-.12925[.898]
LNINCOME	.96332	.68962	1.3969[.177]
LNCURRTR .	12036	2.2265	.054061[.957]
LNCAPACC	-2.0482	1.3800	-1.4842[.153]
LNFINACC	-.26934	.17714	-1.5205[.143]

****

R-Squared	.37699	R-Bar-Squared	.19899
S.E. of Regression	.80700	F-stat. F(6, 21)	2.1179[.094]
Mean of Dependent Variable	4.6409	S.D. of Dependent Variable	.90168
Residual Sum of Squares	13.6761	Equation Log-likelihood	-29.6986
Akaike Info. Criterion	-36.6986	Schwarz Bayesian Criterion	-41.3613
DW-statistic	1.9528		

****

Diagnostic Tests

****

Test Statistics	LM Version	F Version
A:Serial Correlation	CHSQ(4) = 4.2914[.368]	F(4, 17)= .76928[.560]
B:Functional Form	CHSQ(1) = 1.2401[.265]	F(1, 20)= .92687[.347]
C:Normality	CHSQ(2) = 1.1284[.569]	Not applicable
D:Heteroscedasticity	CHSQ(1) = 2.8925[.089]	F(1, 26)= 2.9954[.095]

****

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Appendix 1b

Ordinary Least Squares Estimation

****

Dependent variable is LNETERROM
28 observations used for estimation from 2000Q1 to 2006Q4

****

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
CON	-17.9300	7.7679	-2.3082[.030]
LNGOODS	4.0656	1.3053	3.1148[.005]
LNCAPACC	-1.2080	.78456	-1.5397[.137]
LNFINACC	-.26650	.14655	-1.8185[.081]

****

R-Squared	.29571	R-Bar-Squared	.20767
S.E. of Regression .	.80261	F-stat. F(3, 24)	3.3589 [.035]
Mean of Dependent Variable	4.6409	S.D. of Dependent Variable	.90168
Residual Sum of Squares	15.4605	Equation Log-likelihood	-31.4154
Akaike Info. Criterion	-35.4154	Schwarz Bayesian Criterion	-38.0799
DW-statistic	2.0197		

****

Diagnostic Tests

Test Statistics	LM Version	F Version
A:Serial Correlation	CHSQ(4) = 3.1893[.527]	F(4, 20)= .64273[.638]
B:Functional Form	CHSQ(1) = .37817[.539]	F(1, 23)= .31489[.580]
C:Normality	CHSQ(2)= .79584[.672]	Not applicable
D:Heteroscedasticity	CHSQ(1)= 1.5537[.213]	F(1, 26)= 1.5275[.228]

A:Lagrange multiplier test of residual serial correlation
B:Ramsey's RESET test using the square of the fitted values
C:Based on a test of skewness and kurtosis of residuals
D:Based on the regression of squared residuals on squared fitted values

Appendix 2

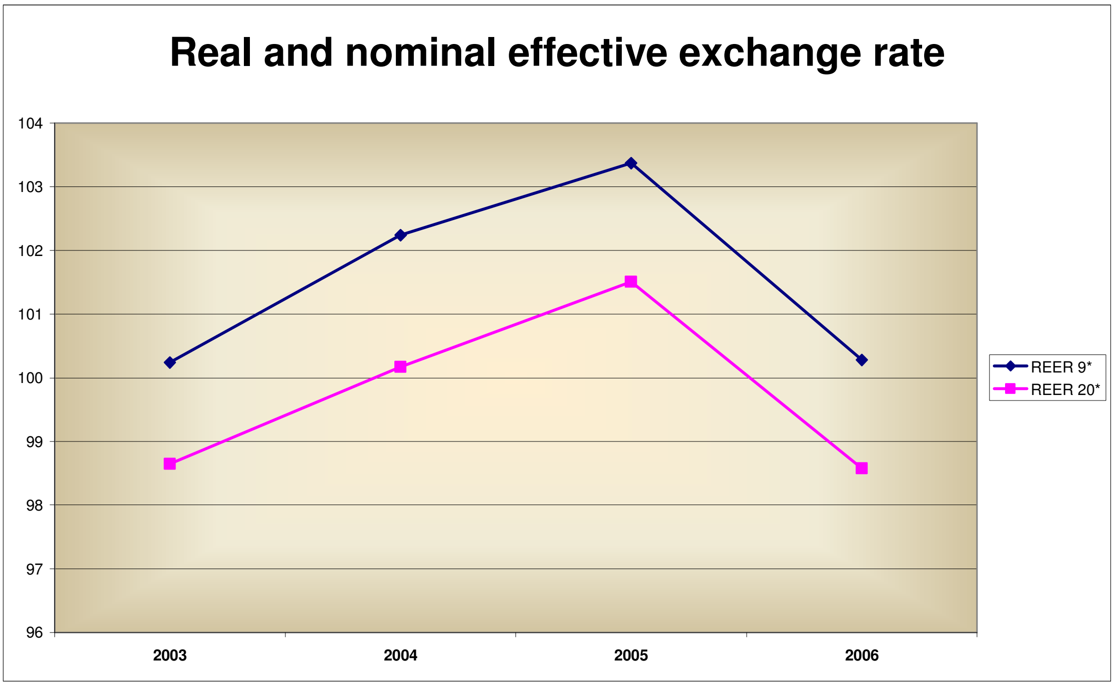
Domestic savings and investment in Bosnia (BAM mil)

	2004	2005
Gross Fixed Capital Formation[1]	2.908	3.512
Current account balance[2]	-2.898	-3.424
Savings BH	10	89

1. Source: Agency for Statistics of Bosnia and Herzegovina

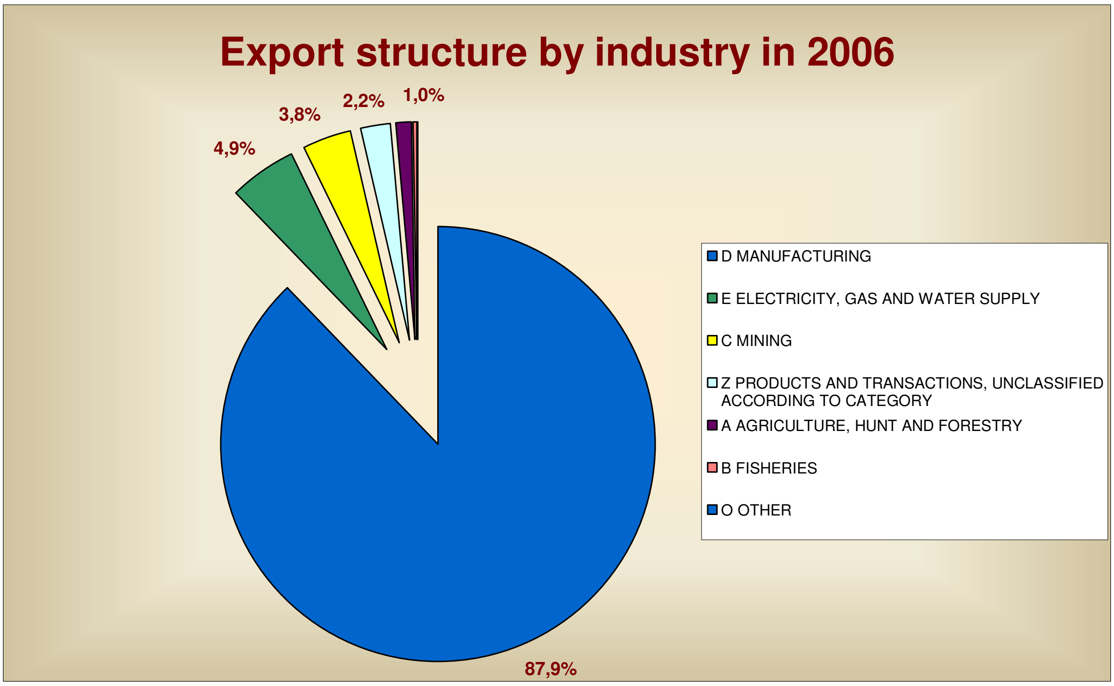
2. Source: Central Bank of Bosnia and Herzegovina

Appendix 3



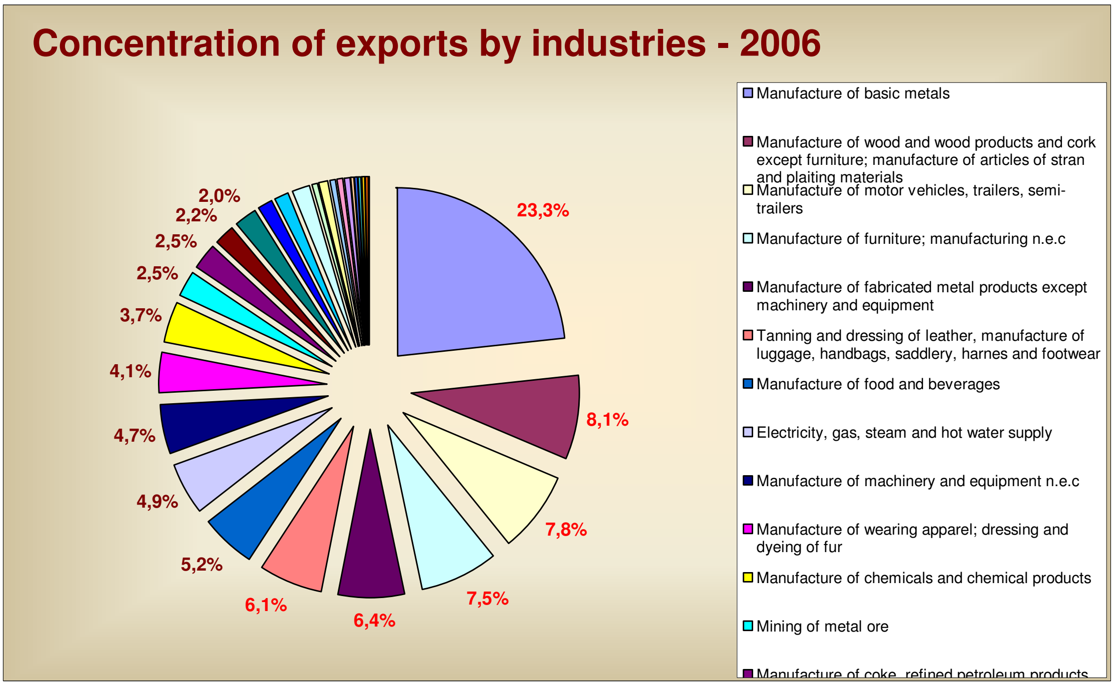
Source: Central Bank of BH

Appendix 4a



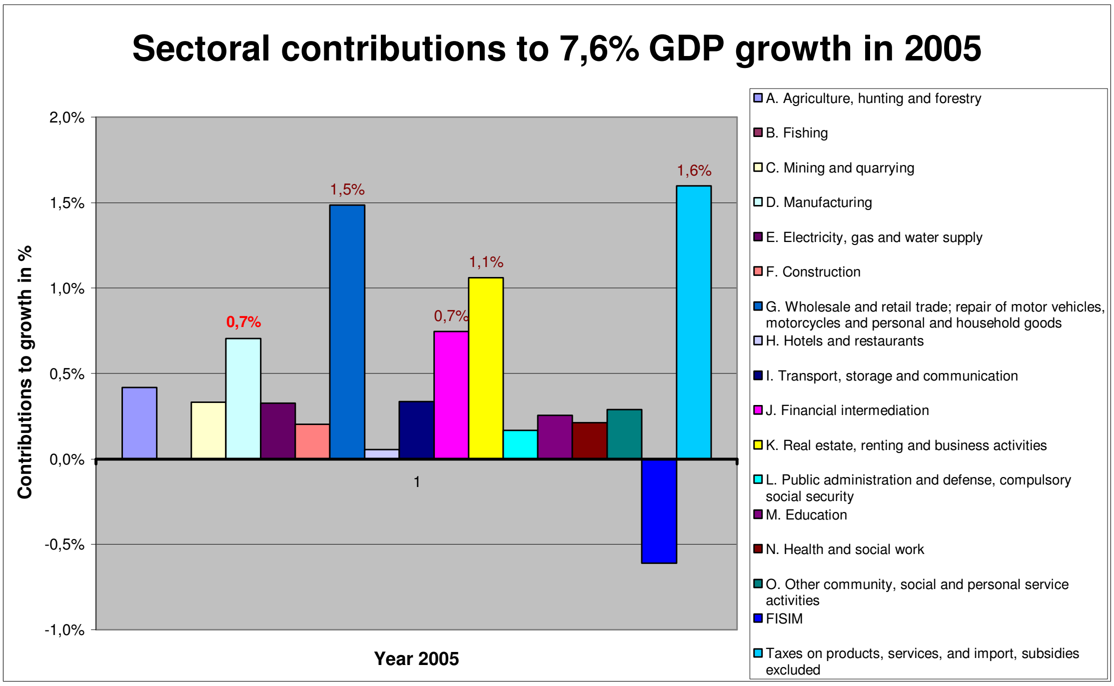
Source: Agency for statistics BH

Appendix 4b



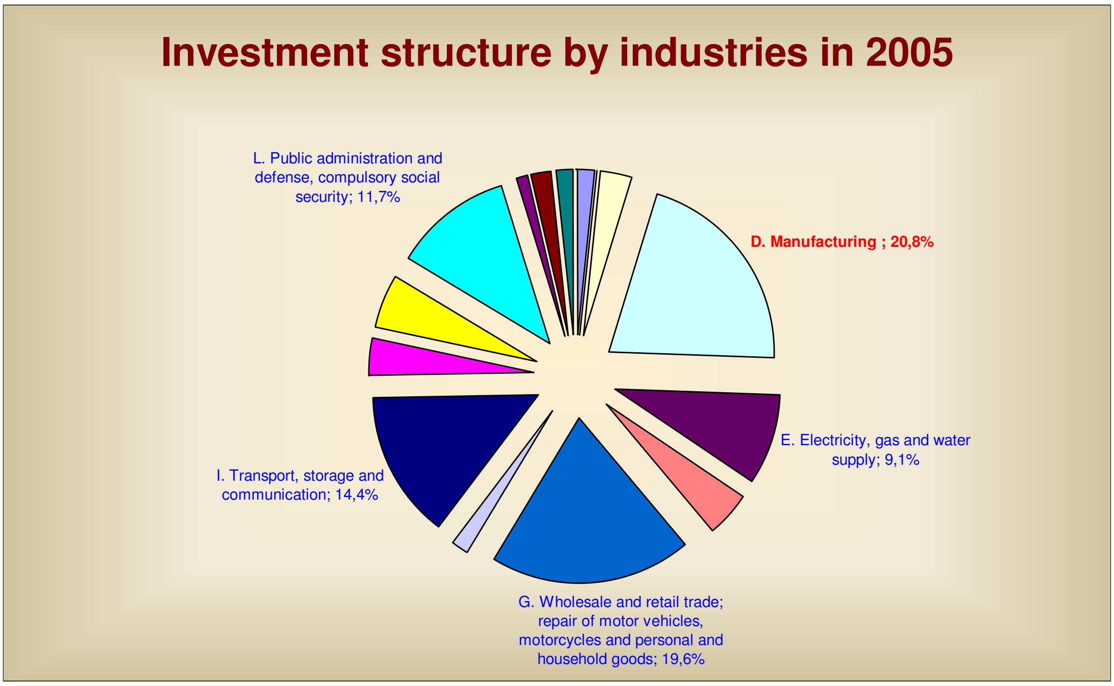
Source: Agency for statistics BH

Appendix 5



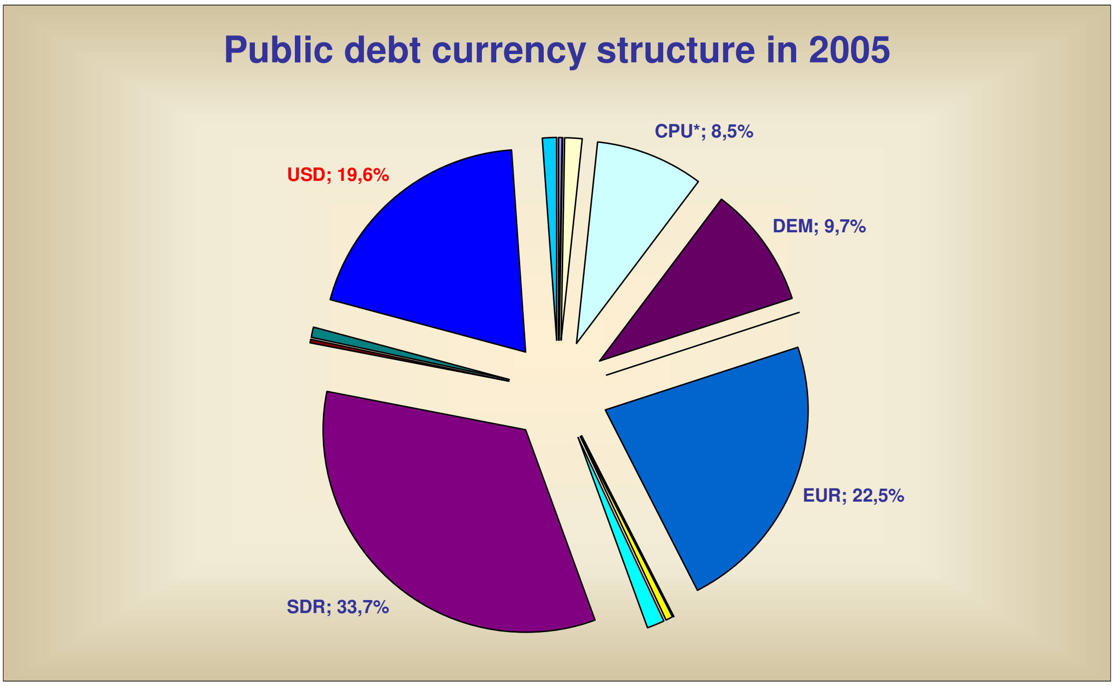
Source: Agency for statistics BH

Appendix 6



Source: Agency for statistics BH – Gross Fixed Capital formation – Publication 2006

Appendix 7



Source: Central Bank of BH

Appendix 8

Share of GDP

	2001	2002	2003	2004	2005	2006
Capital transfers	7,5%	6,6%	6,0%	4,6%	4,1%	3,0%
General government	*3,8%*	*2,8%*	*2,3%*	*1,6%*	*1,5%*	*0,8%*
Other sectors	*3,7%*	*3,9%*	*3,7%*	*3,0%*	*2,5%*	*2,2%*
Financial account non-debt creating liabilities	3,5%	4,1%	4,7%	6,6%	6,2%	4,8%
Non-debt creating FDI	*1,7%*	*3,3%*	*3,8%*	*5,4%*	*3,7%*	*2,7%*
Trade credits	*1,8%*	*0,8%*	*0,9%*	*1,3%*	*2,5%*	*2,1%*
Change in financial account assets	-2,1%	-0,3%	-1,1%	-1,0%	0,5%	-3,7%
Assets in other investments	*12,3%*	*-2,2%*	*1,3%*	*3,6%*	*5,2%*	*3,1%*
Reserve assets	*-14,4%*	*1,9%*	*-2,4%*	*-4,6%*	*-4,7%*	*-6,9%*
Non-debt creating capital inflows - % of GDP	**8,9%**	**10,4%**	**9,6%**	**10,3%**	**10,8%**	**4,1%**

Source: Central Bank of BH – Balance of payments statistics

Share of GDP

	2001	*2002*	*2003*	*2004*	*2005*	*2006*
FDI borrowing	0,5%	1,0%	1,2%	1,7%	1,5%	1,1%
Loans	1,8%	3,8%	3,5%	0,1%	1,1%	0,8%
Drawings	*6,4%*	*6,9%*	*5,8%*	*3,1%*	*4,2%*	*3,0%*
Repayments	*-4,5%*	*-3,1%*	*-2,3%*	*-3,0%*	*-3,0%*	*-2,2%*
Currency and deposits	0,5%	2,4%	2,8%	2,7%	3,5%	1,2%
Other liabilities	0,2%	-0,2%	0,0%	0,1%	0,0%	0,0%
Debt creating capital inflows - % of GDP	**3,1%**	**7,0%**	**7,5%**	**4,6%**	**6,1%**	**3,0%**

Source: Central Bank of BH – Balance of payments statistics

Appendix 9

Reported in million of KM	2000	2001	2002	2003	2004	2005	2006
I - CURRENT ACCOUNT (1+2+3+4)	**-840,0**	**-1.629,9**	**-2.450,0**	**-2.813,9**	**-2.822,6**	**-3.357,5**	**-2.041,3**
1. GOODS	**-5.868,3**	**-6.470,5**	**-6.891,6**	**-7.180,0**	**-7.192,7**	**-7.834,3**	**-6.661,2**
General merchandise: export, fob	2.398,4	2.480,2	2.285,5	2.548,4	3.279,8	4.082,3	5.255,8
General merchandise: import, fob	-8.266,8	-8.950,7	-9.177,1	-9.728,5	-10.472,5	-11.916,7	-11.917,0
2. SERVICES	**396,6**	**497,9**	**453,4**	**581,0**	**678,4**	**773,9**	**949,9**
Credit	955,2	1.087,3	1.079,6	1.244,4	1.361,4	1.500,5	1.736,7
Debit	-558,6	-589,5	-626,2	-663,5	-683,0	-726,6	-786,8
2.1.Transportation services, credit	56,6	61,2	66,7	76,7	81,0	109,2	142,0
2.2.Transportation services, debit	-262,1	-259,7	-276,4	-291,0	-307,8	-316,0	-324,9
2.3.Travel, credit	494,4	580,9	592,0	651,2	760,3	808,2	918,9
2.4.Travel, debit	-154,9	-163,1	-173,0	-184,1	-186,7	-194,5	-244,0
2.5.Other services, credit	404,2	445,2	420,9	516,5	520,1	583,1	675,8
2.6.Other services, debit	-141,6	-166,6	-176,9	-188,4	-188,6	-216,1	-217,8
3. INCOME	**1.253,2**	**1.163,1**	**1.055,2**	**925,0**	**760,3**	**712,2**	**720,5**
Credit	1.415,5	1.366,4	1.255,8	1.132,7	1.015,8	1.021,3	1.071,7
Debit	-162,3	-203,3	-200,6	-207,7	-255,6	-309,1	-351,1
3.1.Compensation of employees, credit	1.339,9	1.269,7	1.120,5	1.029,9	914,7	898,1	869,4
3.2.Compensation of employees, debit	-5,0	-12,7	-15,3	-18,2	-21,0	-19,3	-21,1
3.3.Investment income, credit	75,7	96,7	135,3	102,8	101,1	123,2	202,3
3.4.Investment income, debit	-157,3	-190,6	-185,3	-189,5	-234,6	-289,8	-330,0
4. CURRENT TRANSFERS	**3.378,5**	**3.179,7**	**2.933,0**	**2.860,1**	**2.931,4**	**2.990,7**	**2.949,4**
Credit	3.538,5	3.339,2	3.143,3	3.072,8	3.261,1	3.305,1	3.300,4
General government	662,0	880,1	678,8	582,9	509,9	486,6	292,1
Other sectors	2.876,5	2.459,0	2.464,4	2.489,9	2.751,2	2.818,6	3.008,2
Workers remittances	2.016,3	2.007,2	1.966,6	1.973,3	2.111,3	2.128,6	2.146,1
Other current transfers	860,2	451,9	497,8	516,6	639,9	690,0	862,2
Debit	-160,0	-159,5	-210,3	-212,7	-329,7	-314,4	-350,9
General government	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Other sectors	-160,0	-159,5	-210,3	-212,7	-329,7	-314,4	-350,9
Workers remittances	0,0	-10,9	-13,7	-16,4	-76,8	-43,8	-63,7
Other current transfers	-160,0	-148,6	-196,6	-196,3	-252,9	-270,6	-287,3
II - CAPITAL AND FINANCIAL ACCOUNT (1+2)	**1.171,1**	**1.394,5**	**2.228,3**	**2.290,4**	**2.181,5**	**2.671,6**	**1.247,6**
1. CAPITAL ACCOUNT	**1.159,9**	**875,5**	**848,6**	**804,5**	**679,8**	**645,8**	**532,4**
1.1.Capital transfers, credit	1.159,9	875,5	848,6	804,5	679,8	645,8	532,4
General government	781,4	444,2	353,8	312,2	238,0	243,7	146,1
Other sectors	378,5	431,3	494,8	492,4	441,9	402,1	386,3
Migrants transfers	55,9	54,4	62,9	18,9	29,7	22,0	0,0
Other transfers	322,6	376,8	431,9	473,5	412,1	380,1	386,3
2. FINANCIAL ACCOUNT	**11,2**	**519,1**	**1.379,7**	**1.485,8**	**1.501,6**	**2.025,7**	**715,3**
2.1.DIRECT INVESTMENT	310,1	259,8	551,1	660,3	1.041,9	820,7	660,6
2.2.PORTFOLIO INVESTMENT	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2.3.OTHER INVESTMENT	-134,0	1.924,7	583,6	1.141,5	1.136,4	1.943,4	1.259,2
Assets (sign "minus" means increase)	-1.432,9	1.426,1	-283,0	173,4	528,5	824,4	548,3
Liabilities	1.298,9	498,5	866,6	968,1	607,8	1.119,0	710,9
Trade credits	23,6	203,0	101,9	121,1	186,8	390,2	371,5
Drawings of new loans	1.276,5	741,1	889,6	773,3	456,5	656,4	525,2
Principal repayments	-70,9	-526,9	-398,8	-305,9	-447,3	-480,3	-392,0
Currency and deposits	64,8	53,5	304,7	375,1	400,9	557,2	205,1
Other liabilities	4,9	27,8	-31,0	4,5	10,9	-4,4	1,2
2.4.RESERVE ASSETS (sign "minus" means increase)	-164,9	-1.665,4	245,1	-316,0	-676,7	-738,3	-1.204,5
III - NET ERRORS AND OMISSIONS	**-331,1**	**235,4**	**221,7**	**523,5**	**641,1**	**685,9**	**793,6**

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