Bosnia and Herzegovina: Selected Issues

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INTERNATIONAL MONETARY FUND

BOSNIA AND HERZEGOVINA

Selected Issues

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Approved by the European Department

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I. ALTERNATIVE CURRENT ACCOUNT ESTIMATES[1]

A. Introduction

1.   **Official estimates of the current account deficit by the Central Bank of Bosnia & Herzegovina (CBBH) in recent years have fluctuated around 20 percent of GDP**, essentially driven by a 50 percent trade deficit, partially compensated by large current transfers (mostly workers' remittances).

Key Elements of the Current Account, 2003–2005
(In percent of GDP)

	2003	2004	2005
Trade balance	-53.2	-49.5	-50.2
Services, net	4.2	5.0	5.6
Income, net	6.8	4.9	4.7
Transfers, net	21.2	20.2	18.6
Current account balance	-20.9	-19.3	-21.3

Source: CCBH.

2.   **But official current account statistics suffer from several shortcomings**: inadequate methodology in estimating workers' remittances, lack of reporting of international organizations' employee compensation, inadequate reporting of donor grants, in particular to local entities, and no reporting of cash withdrawals at ATM machines (these operations are out of the banks' balance sheets). In addition, large adjustments to trade statistics in past years (to account for underreporting and smuggling) have blurred further the analysis of the current account. Since 2005, trade statistics have improved thanks to successful reforms at the customs administration. The introduction of VAT in 2006 appears to have increased further the coverage of trade statistics (as indicated, for instance, by the doubling of the number of registered companies to 32,000 in the first few months of this year).

3.   **The shortcomings of the current account statistics are also reflected in the large size of errors & omissions in the balance of payments**. Positive errors & omissions of around 10 percentage points of GDP per annum indicate large unrecorded inflows. Given that financial and capital account data are generally more reliable, as they are based on the monetary survey of the CBBH and on foreign loans to the private sector as reported by BIS, the bulk of these inflows are probably current receipts.

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[1] Prepared by Samir Jahjah.

4.   **This chapter presents a range of plausible alternative current account estimates**, *first* by using alternative estimates for remittances, obtained using a number of different methods; and *second* by deriving the current account from capital and financial account data "below the line". The two approaches can be combined to provide a range of plausible current account estimates. In addition, using previous research on the level of non-observed activity (NOA) to obtain a better estimate of GDP can provide a more accurate impression of the "true" magnitude of the current account deficit in relation to the size of the economy.

5.   **The main conclusion of this chapter is that the "true" current account deficit in Bosnia & Herzegovina relative to the size of the economy is probably in the range of 6 to 14 percent of GDP**. The magnitude of this range underscores the statistical weaknesses in the balance of payments and the concomitant uncertainties surrounding these alternative current account deficit estimates.

B.   Using Alternative Estimates of Workers' Remittances

6.   **Workers' remittances is just one of the categories where the CBBH figures likely underestimate receipts**. Other categories include trade, where data probably underestimate exports; other private transfers; official grants to local entities or municipalities; and unaccounted ATM and credit card transactions.

7.   **But in most other categories, either improvements are underway in the coverage and quality of the statistics or alternative sources of data are not available or both**. As regards trade, the CBBH has made a number of adjustments to historical data to account for under-reporting, smuggling, and deficiencies in the customs administration. Recent improvements in the statistical infrastructure, as well as the introduction of the VAT this year, which provides a strong incentive to exporters to record their activity, are likely to improve the quality of trade data and remove the need for such *ad hoc* adjustments in the future. For most of the other categories of services where underestimation is likely, getting alternative data is difficult. Moreover, official grants have been declining in recent years, and the underreporting is likely to get smaller. And as regards ATM and credit card transactions, the Payments System department of the CBBH is exploring ways to start compiling data on these transactions. This paper thus focuses on workers' remittances.

8.   **Workers' remittances are part of private transfers, which amount to about 20 percent of GDP in the balance of payments of Bosnia & Herzegovina as reported by the CBBH**. CBBH balance of payments statistics report three kinds of private transfers: workers' remittances, other current private transfers, and private capital transfers.

Private current and capital transfers 2003–2005
(In millions of KM)

	2003	2004	2005
1. Current Account			
Workers' remittances	1956.9	2042.2	2057.2
o/w through banks and Western Union	694.2	813.2	1015.0
Other private transfers	320.3	387.0	420.7
2. Capital Account			
Private transfers	492.4	532.2	492.0
3. Total	2,769.6	2,961.3	2,969.9
In percent of GDP	20.5	20.4	19.0
of which current transfers	16.9	16.7	15.9
workers' remittances	14.5	14.1	13.2
capital transfers	3.6	3.7	3.2
Memorandum items			
Nominal GDP (in millions of KM)	13492	14534	15605
Current Account Balance (in percent of GDP)	-20.9	-19.3	-21.3

Sources: CBBH.

9. **There are strong indications suggesting that official data underestimate remittances**.

- CBBH estimates are based on a 2002 household survey, according to which workers' remittances were about KM 2 billion. In the absence of more recent household surveys, the CBBH has kept this figure constant. But the 2005 *Global Development Finance* (GDF) reports that workers' remittances in Eastern Europe increased by more than 12 percent from 2002 to 2004.

- Remittances effected through banks and Western Union are a sub-item of total workers' remittances in the CBBH statistics. These have increased by almost 50 percent since 2003. However, the total amount of remittances reported by the CBBH has remained constant over that period (and declining in percent of GDP), implicitly assuming a one-for-one shift from informal (cash) to formal (bank) transfers. This is not in line with international experience, which suggests that about 50–60 percent of remittances are in cash, even in countries with developed banking systems.[2] Cash transfers remain important due to the high cost of wire transfers (averaging 13 percent);[3] limited access to banking services; and long delays in payment clearance. It should be noted that in Bosnia & Herzegovina, only 25 percent of households have a bank account, and for the large number of Bosnians working in neighboring countries, cash transfers are still convenient and cheap.

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[2] GDF, 2003.

[3] These costs are composed of wire fees, and exchange losses (GDF, 2003).

- The Third Congress of the World Association of Bosnia & Herzegovina Diaspora (WAD) in Sarajevo in May 2006, involving representatives from 21 diaspora organizations, evaluated workers' remittances at KM 7 billion, or about € 3.5 billion, almost three times the amount reported by the CBBH. Taken at face value, this would place Bosnia among the highest recipients of workers' remittances in the world in absolute terms, below India, Mexico (both about US$10 billion), Philippines, and Morocco; on par with Lebanon; and above Egypt and Turkey. The wars of the mid-1990s and the proximity of rich and/or fast growing neighboring countries certainly make this estimate plausible. But using just half the amount reported by the WAD would increase workers' remittances by 7 percentage points of GDP over the official estimates.

- The CBBH estimates private capital transfers at 25 percent of remittances. However, in kind capital transfers, like cars, equipment, and home appliances are essentially another form of remittances and should properly be recorded in the current account. Re-classifying these transfers would increase reported workers' remittances by another 3 percentage points of GDP.

10. **International comparisons of both the aggregate figure and the average per capita level of remittances also corroborate the impression that official data underestimate these flows**.

- Aggregate remittances are about 14 percent of GDP, a number comparable to Albania, Armenia, Slovak Republic, and Serbia & Montenegro, but lower than in Lebanon and Macedonia, two countries with which Bosnia & Herzegovina shares a similar past, as well as a similar share of the population living abroad. Measured against imports, workers' remittances in Bosnia & Herzegovina also appear low.

Workers' Remittances: Key Indicators, 2001–04

	In percent of GDP	Per Capita	In Percent of Imports
Albania	15	260	52
Armenia	10	150	37
Bosnia & Herzegovina	14	276	21
Croatia	4	222	8
Estonia	0	284	7
Lebanon	79	4360	n.a.
Macedonia, FYR	59	1261	119
Portugal	2	225	5
Slovak Republic	11	585	16
Slovenia	1	113	2

Sources: Development Indicators, World Bank, CBBH, IMF Staff estimates.

- The CBBH estimates suggest that Bosnian emigrants remit on average less money than those from other countries[4]: the average level of remittances per Bosnian legal emigrant implied by the official aggregate data is US$1,275 per year or about US$100 per month, well below the US$500 sent monthly by emigrants in the US[5] and the US$150–200 sent monthly by Russia-based Armenian workers.[6]

Figure 1: Emigrants by Host Country
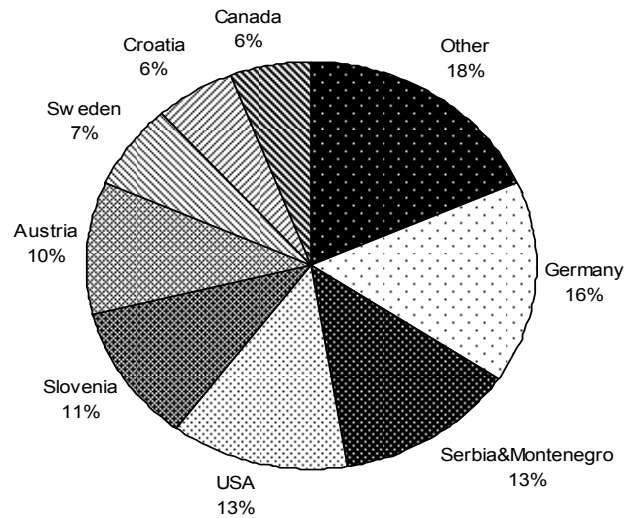
Source: Ministry of Foreign Affairs of BiH, 2006.

11.   **That official data underestimate remittances is a relatively common phenomenon**. There are essentially two ways to estimate remittances:

- Using data on the value of an average remittance to a representative household and estimates of the number of emigrants (Mellyn, 2003). Applying this methodology to the Philippines, Mellyn estimates remittances at more than twice the official figures.

- Using estimates of emigrant laborers, their average earnings, and how much they send back based on a representative emigrant. Using this approach in the case of Albania, Korovilas (1999) estimates remittances to be 2 to 3 times larger than official

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[4] More than one-quarter of Bosnians live abroad. According to the Ministry for Human Rights and Refugees, the diaspora is estimated at more than 1 million people (out of a population of about 3.8 million). Most of these emigrants have acquired legal status, with permanent residence or work permits, and are well-educated. The largest Bosnian communities are found in North America, Germany, Austria, and Slovenia. These figures do not include illegal emigrants or emigrants prior to 1992.

[5] The National Transmitters' Association, New York, 2006.

[6] *Remittances in Armenia, Size, Impact and Measures to Enhance their Contribution to Development*, USAID, 2004.

estimates. In the case of Armenia, Roberts (2004) estimates that workers' remittances are 4 to 5 times higher than the official figures.

12.   **All told, this evidence suggests that private transfers could be as much as 10 percentage points of GDP higher than the official estimates**, an amount similar to the observed errors and omissions in recent years.

13.   **A more conservative estimate would be that remittances are higher than official data suggest by some 4½ percentage points of GDP**. This is derived by *first*, assuming that half of capital transfers should be recorded as workers' remittances (about 1.5 percent of GDP); and *second*, by assuming that 60 percent of workers' remittances are informal and in cash, increasing remittances by about 3 percent of GDP.

C.   Estimating the Current Account From Capital and Financial Accounts Data

14.   **The current account deficit can be derived from the relationship between the current account (CA), the capital account (KA), and change in foreign international reserves (R)**. Given that $CA_t + KA_t = \Delta R_t$, the current account is:

$$\overline{CA}_t = \Delta R_t - KA_t \qquad (1)$$

The benefit of this approach is that capital and financial account data are generally of higher quality than many of the components of the current account. Data on government net borrowing, bank net borrowing, and official reserve movements are reliable; data on FDI and trade credits are also reasonably reliable; data on nonbank private sector net borrowing, on the other hand, are subject to a wide margin of error, but these financial flows are not substantial in Bosnia & Herzegovina and the absolute size of the error is likely to be small.

15.   **Capital account data need to be adjusted by the extent of possible overestimation of capital transfers**. As discussed above, private capital transfers as reported by the CBBH probably include a sizeable portion of in-kind remittances (cars, appliances). Shifting this part to current transfers would correspondingly reduce the capital account and thus the "below the line" estimate of the current account.

16.   **On this basis, the "below the line" estimate of the current account deficit in Bosnia & Herzegovina is in the range of 7–13 percent of GDP in recent years**. This alternative estimate, of course, is the sum of identified financial flows: it does not capture unidentified flows that could finance the current account deficit. As such, it should be seen as a lower bound estimate of the current account deficit.

D.   Relating the Current Account Deficit to the Size of the Economy

17.   **Official GDP in Bosnia & Herzegovina is highly underestimated**. Contrary to several other countries, the Statistical Agency (SABH) did not until recently adjust GDP data

for the unofficial (or grey) economy. A recent IMF staff study (IMF Country Report No. 05/198) showed that "true" GDP could be 30 to 50 percent higher than the official estimates (Box 1).

Box 1. Estimating Non-Observed Activity

Official national accounts statistics in Bosnia & Herzegovina understate activity, as suggested by a variety of ratios to GDP, the pace of credit growth, and the size of the external balance (IMF Country Report No. 05/198). International comparisons also suggest that non-observed activity (NOA) is higher in Bosnia & Herzegovina than in comparable countries and has in fact been increasing over time.

The latent variables method attempts to isolate "grey economy" factors in an equation explaining energy consumption or money demand. Estimates for the NOA are then derived from the parameters estimated in the energy or money demand equation.

Staff extended this method to a cross-country sample, using international panel data to estimate the "typical" correlation between such latent variables and GDP. Variables included in the panel were, among others, currency in circulation, exports per capita, and health care expenditure per capita. The panel was estimated on a sample of countries and the estimates were used to determine GDP in Bosnia & Herzegovina.

The results are robust to alternative methods of estimating NOA, and point to an underestimation of GDP ranging from 30 to 50 percent.

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18.   **In July 2006, SABH made the first adjustment to the official GDP estimates to account for imputed rents**. This adjustment—supposed to be the first step in a series of similar refinements to the GDP estimates—raised the level of GDP by about 10 percent.

19.   **Adjusting GDP upwards by one-third to take these factors into account implies that the current account deficit on the basis of official CBBH data is about 14– 16 percent of GDP during 2003–05, while the alternative estimates derived above are at the 6–14 percent of GDP range**. These estimates suggest that far from being an extreme outlier, the current account deficit in Bosnia & Herzegovina may indeed be comparable to that in several other countries in the region. While still high, these estimates help place the analysis of current economic trends and the outlook for external sustainability in a new light.

20.   **While these estimates come with sizeable caveats, it should be stressed that there are still other sources of overestimation of the current account deficit**. These include notably official current grants and employee compensation from international organizations, which could amount to several percentage points of GDP in the late 1990s. The paper does not attempt to correct for these because there are no readily available alternative data. In addition, their relative importance for the current account of Bosnia & Herzegovina has been diminishing over time, with reduced military and UN personnel in the field and declining donor support, and is likely to become very small over the medium term.

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II. PUBLIC DEBT SUSTAINABILITY IN A LONG-TERM PERSPECTIVE[7]

A. Introduction

1.   **The results of the medium-term public debt sustainability analysis (DSA, Appendix I of the staff report) are potentially misleading**. Since the existing debt carries highly concessional terms, the stabilization of its ratio to GDP requires relatively unambitious primary balances: under the assumptions of the staff's baseline "no policy change" scenario, even relatively large primary deficits stabilize the debt ratio over the medium term. But over a longer time horizon, the growing share of non-concessional borrowing implies rising debt servicing costs, potentially leading to an explosive debt dynamics. Even during the next five years, the net present value of public debt starts increasing and, on the basis of unchanged policies, is on an accelerating trend over the longer term.

2.   **This Chapter shows that the policy requirements for ensuring long-term public debt sustainability are more stringent than suggested by the medium-term DSA**. The analysis proceeds in two steps. *First*, the baseline staff scenario used in the medium-term DSA is extended to 2050, showing that, on unchanged policies, as the concessionality of existing debt lapses and the net present value of the debt approaches its market value, the debt dynamics become explosive. *Second*, an alternative "adjustment" scenario illustrates debt dynamics under a tighter fiscal policy, aimed to achieve sustained primary surpluses of one percentage point of GDP per year. The analysis concludes that primary surpluses of this magnitude are sufficient to ensure that the ratio of (market and net present value of the) debt to GDP remains on a gently declining trend over the long term. Even with such primary surpluses, however, if growth turns out to be lower than assumed, the debt-to-GDP ratio may not fall continuously but, after an initial period of decline through the end of the next decade, remain broadly stable thereafter.

3.   **This Chapter concludes with a brief discussion of the possible sources of the savings that would be required to achieve a fiscal position consistent with long-term fiscal sustainability**. The combination of future expenditure pressures and the already high tax burden limits the scope of adjustment from the sources utilized thus far in Bosnia & Herzegovina. The fiscal consolidation achieved in the last five years has relied on nominal expenditure freezes, particularly on wages, a reduction in reconstruction-related investments, and moderate increases in revenue. But spending started increasing in 2006 in the runup to the elections and, unless checked, this trend will have a significant full-year impact in 2007. Over the medium term, more spending will result from the settlement war and other claims against the government, property restitution, and the costs of state-building and EU accession. Planned infrastructure projects and increasing costs of the pension system are

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[7] Prepared by Wojciech Maliszewski.

more uncertain but may also bring potentially large expenditure increases in the future. The room for savings has thus to be found elsewhere. The World Bank Public Expenditure and Investment Review (PEIR) identifies potential savings in wages and other administrative expenses—where duplication of functions and inefficiencies keep costs high—and transfers to households. According to the PEIR, savings up to 7 percentage points of GDP are possible in these areas. Savings of this magnitude would be more than sufficient to generate the primary surpluses required for long-term public debt sustainability, as well as provide room for meeting additional expenditure needs and possibly reducing the tax burden on the economy.

4.   **As with any kind of long-term forecast, the results of this analysis have to be treated with caution**. All long-term projections involve heroic simplifying assumptions about population and productivity growth rates, interest rates, and the long-run effect of policies. Error margins around these projections are compounded by the long time horizon. Alternative assumptions can provide some sense of the robustness of the model. Nevertheless, it behooves the reader to treat the quantitative estimates presented in this Chapter with caution.

B.   Long-Term Debt Dynamics in the Baseline (no Policy Change) Scenario

5.   **The key assumptions of the baseline scenario are detailed in Box 1**. Growth and inflation are projected consistent with the staff's baseline scenario in the DSA (Appendix I of the staff report). After a hike of ¼ percentage point of GDP in 2007 to reflect the full-year effect of expenditure increases in 2006, non-interest current expenditures are projected to grow in line with nominal GDP. Capital expenditures decline by 2 percentage points of GDP between 2007 and 2011—in line with lower projected grants and loan financing—and remain at the 2011 level of 7½ percent of GDP over the long term. The revenue ratio declines by 2½ percentage points of GDP over the 2007–2011, due to lower projected grants (1 percentage point of GDP) and trade taxes (1½ percentage point of GDP).[8]

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[8] The EU Association Agreement will entail a gradual reduction in duties on imports from the EU. If the schedule for the tariff reduction resembles agreements with FYR Macedonia and Croatia, a 10 percent reduction could be expected each year starting from the date of singing the agreement, which is assumed to take place in 2007. Given that the share of imports from the EU exceeds 50 percent, such a schedule would reduce the revenue ratio in Bosnia & Herzegovina by some 0.4 of a percentage point per year.
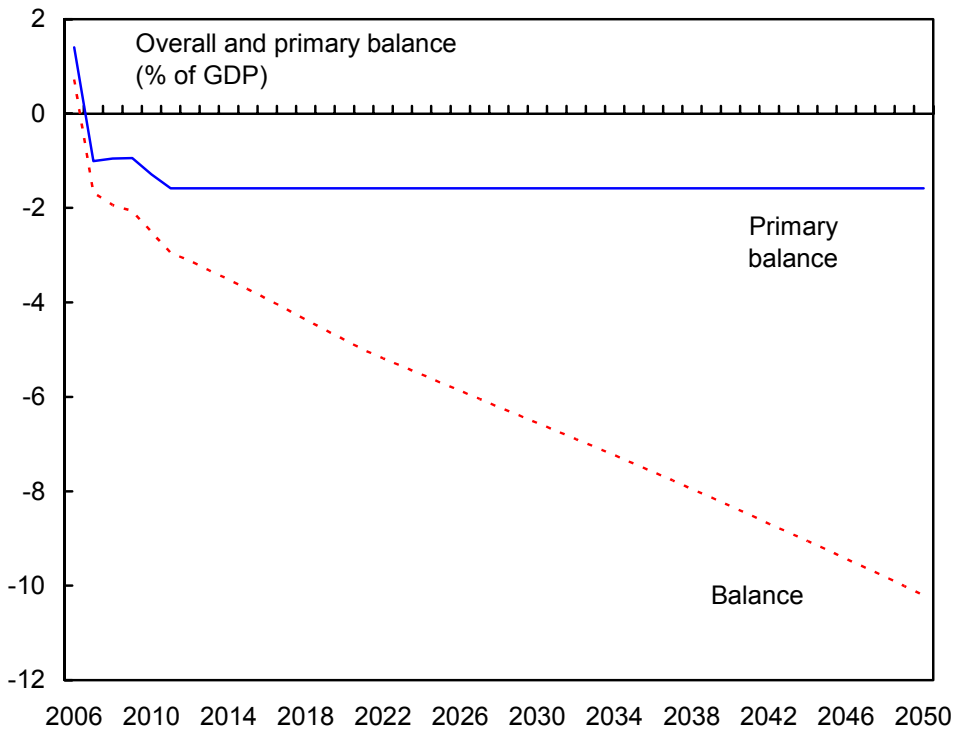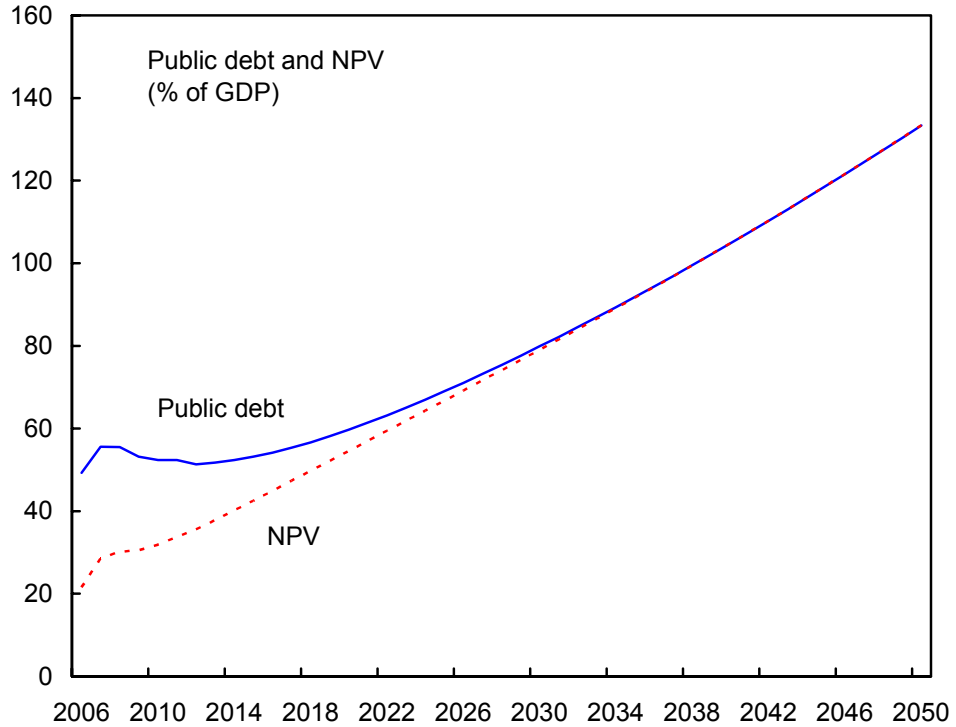

Box 1. Key Assumptions in the Baseline Scenario

- **Macroeconomic environment**. Continued strong growth and low inflation in line with the staff's baseline medium-term projections for 2006–11, and a slowdown to the annual growth of 4 percent beyond 2011. The currency board is assumed to stay in place throughout the projection period (or replaced by the euro).

- **Declining access to concessional external borrowing**. IDA disbursements are assumed to fall from ½ percentage point of GDP in 2007 to zero after 2011; financing from multilateral institutions on close-to-market terms (mainly EIB and EBRD) is expected to decline from 1 percentage point of GDP in 2007 to ½ percentage point in 2011 and to zero after 2015. Borrowing on commercial terms (average projected LIBOR at 5 percent + 200 basis points) is assumed to cover any additional financing needs.

- **Domestic claims**. An increase in the face value of debt by 17 percent of GDP is assumed in 2006 associated with the settlement of frozen foreign currency deposits (FFCD), war claims, and general government obligations. The average grant element of these settlements is expected to exceed 25 percent. Additional increases in the face value of debt equivalent to 10 percent of GDP in 2007 and 5 percent of GDP in 2008 are assumed to cover the possible recognition of additional domestic claims (losses of state enterprises, restitution claims, and other potential claims) on terms similar to those for the settlement of FFCDs.

- **Debt servicing costs** jump in 2015, when conditional bonds issued as a part of agreement with the London Club become payable. According to their terms, the conditional bonds will not become payable unless and until Bosnia & Herzegovina reaches a level of GDP per capita of US$2,800, as adjusted for German inflation from 1997, for two consecutive years in the period beginning in 2004 and ending in 2017.

- **Privatization receipts** of 2 percent of GDP in 2006 and in 2007 are assumed from the sale of RS Telecom.

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6.   **The baseline scenario generates an explosive debt dynamics in the long run** (Figure 1). The above revenue and expenditure assumptions result in the primary deficit increasing from 1 percentage point of GDP in 2007 to about 1½ percentage point of GDP in 2011 and further beyond. While this is sufficient to maintain the debt-to-GDP ratio at a level slightly above 50 percent of GDP in the medium-term, the ratio increases rapidly thereafter. The ratio of the Net Present Value (NPV) of the debt increases throughout the period: from 30 percent of GDP in 2007 to 35 percent in 2011 and further beyond.[9] The exploding debt path is also reflected in the growing debt service costs: as a result, the overall general government deficit increases from 1½ percent of GDP in 2007 to 3 percent already in 2011.

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[9] The NPV is estimated from loan-by-loan data till 2000, updated with available information about disbursements thereafter. Terms of newly-disbursed credits are estimated based on the historical loan-by-loan data. All NPV calculations assume a discount rate of 7 percent.

Figure 1. BIH: Debt Dynamics and Balances Under "No-Policy
Change" Scenario, 2006-50

Public debt and NPV
(% of GDP)

Public debt

NPV

Overall and primary balance
(% of GDP)

Primary
balance

Balance

Source: IMF staff estimates.

C. Long-Term Debt Dynamics in an Alternative (Adjustment) Scenario

7.   **The alternative (adjustment) scenario is based on similar macroeconomic assumptions as the baseline but assumes that fiscal policy will be aimed at a sustained primary surplus of about 1 percent of GDP**. The assumptions about the macroeconomic environment, debt servicing terms, debt assumptions to cover domestic claims, privatization, etc. are as described in Box 1. But in this scenario, general government expenditures adjust to generate a primary balance of 1 percentage point of GDP in 2008 and beyond, resulting in an overall balance close to zero in the 2007–2010 period and an overall surplus of about ½ percent of GDP thereafter.

8.   **The robustness of the adjustment scenario is tested by sensitivity analysis on different long-run growth rates and interest rates**. Two alternative cases are examined. A "low growth" case, which assumes a gradual deceleration of growth to an annual rate of 3 percent with correspondingly slower revenue growth. In this case, expenditures are assumed to be maintained at the same nominal level as in the main scenario until 2011—as State-building and EU accession commitments may limit spending cuts—and grow in line with the lower nominal GDP from 2012 onwards. It should be stressed that this is not akin to a "growth shock" experiment in the standard DSA: given the DSA's limited time horizon, a "growth shock" is essentially temporary. Here, however, the "low growth" case is equivalent to a permanently lower long-run growth rate. Experimenting with a lower long-run growth rate is not only important from a sensitivity analysis point of view: cross-country regressions suggest that the growth rate of 4 percent annually assumed in the baseline and main adjustment scenarios after 2011 may be optimistic for a country like Bosnia & Herzegovina in the long run (Box 2). In the "high interest" case, the risk premium applied to new borrowing by Bosnia & Herzegovina is assumed to be 100 basis points higher than in the main scenario (LIBOR+300).

9.   **The adjustment scenario generates rapidly declining debt and NPV ratios, but sensitivity analysis points to significant risks** (Figure 2). In the main scenario, the debt-to-GDP ratio declines consistently after the initial debt assumptions to cover domestic claims against the government and falls to zero by the end of the projection period. The general government balance deteriorates slightly until 2020, as the concessionality of new borrowing is reduced and debt servicing costs increase; returns to balance by about 2030; and moves toward a surplus thereafter, as debt servicing costs gradually converge to zero. The sensitivity analysis suggests that the adjustment scenario is not very sensitive to alternative interest rate assumptions. But alternative growth assumptions have a sizeable impact. In the "low growth" case, the NPV and debt-to-GDP ratios barely stabilize over the long term, while as debt servicing costs rise, the overall general government balance is maintained at around 2 percent of GDP.

Box 2. Long-Term Growth Prospects

The relatively strong medium-term growth performance projected in medium-term baseline scenario (staff report Appendix I) may reflect temporary factors rather than the underlying growth potential. The average GDP growth rate is close to 5 over 2007–2011, but is mainly driven by a temporary acceleration in metal processing activities, while activity in wide swathes of the economy remains subdued. It may therefore not be a sound basis for projecting the long-run growth rate.

An alternative approach is to use cross-country econometric evidence to assess the long-term growth potential in Bosnia & Herzegovina. Traditional growth regressions, such as in Levine & Renelt (1992), link growth with capital formation, population growth, human capital, and convergence to higher-income countries. Newer studies, such as Crafts & Kaiser (2004), add the role of institutional development to the determinants of growth. For purposes of this exercise, the growth potential in Bosnia & Herzegovina is estimated as a fitted value from both types of regressions. We use the equations reported in Crafts & Kaiser (2004), who repeat Levine & Renelt's (1992) results using various sub-samples of the data (for robustness), and augment their specification with a "rule of law" index developed by the World Bank (Kaufmann et al. 2006) as a proxy for institutional development.

The estimated long-term GDP growth rate for Bosnia & Herzegovina is in the range of 3–4 percent per annum. Per capita potential GDP growth predicted from the original Levine & Renelt regressions is in the range of 2½–3½ percent. Accounting for the effects of the current level of institutional development—using Crafts & Kaiser's equation—reduces per capita long-term growth to zero, reflecting the low degree of institutional development in the country. But replacing the current value of the institutional development index for Bosnia & Herzegovina with the 2005 value reported for Estonia increases the potential growth to 2 percent, indicating that higher growth is attainable through structural reforms. With the projected population growth of 0.5 percent per year, these results translate into a range of 3–4 percent for the original Levine & Renelt equations and 2½ percent for the augmented equations, assuming progress in institutional development.

Bosnia and Herzegovina: Long-Term Growth Estimates

Predicted long-term per capita GDP growth (in percent)

|	LR1 1/	LR2 1/	CK 1/
Current level of institutional development	2.3	3.2	0.3
With progress in institutional development	2.3	3.2	1.9

Source: IMF Staff estimates.
1/ LR1 –Levine and Renelt's growth equation, sample 1960–89.
   LR2 –Levine and Renelt's growth equation, sample 1980 – 99.
   CK –Levine and Renelt's equation augmented with a measure of institutional development.

Figure 2. BIH: Debt Dynamics and Balances Under "Adjustment"
Scenario, 2006-50
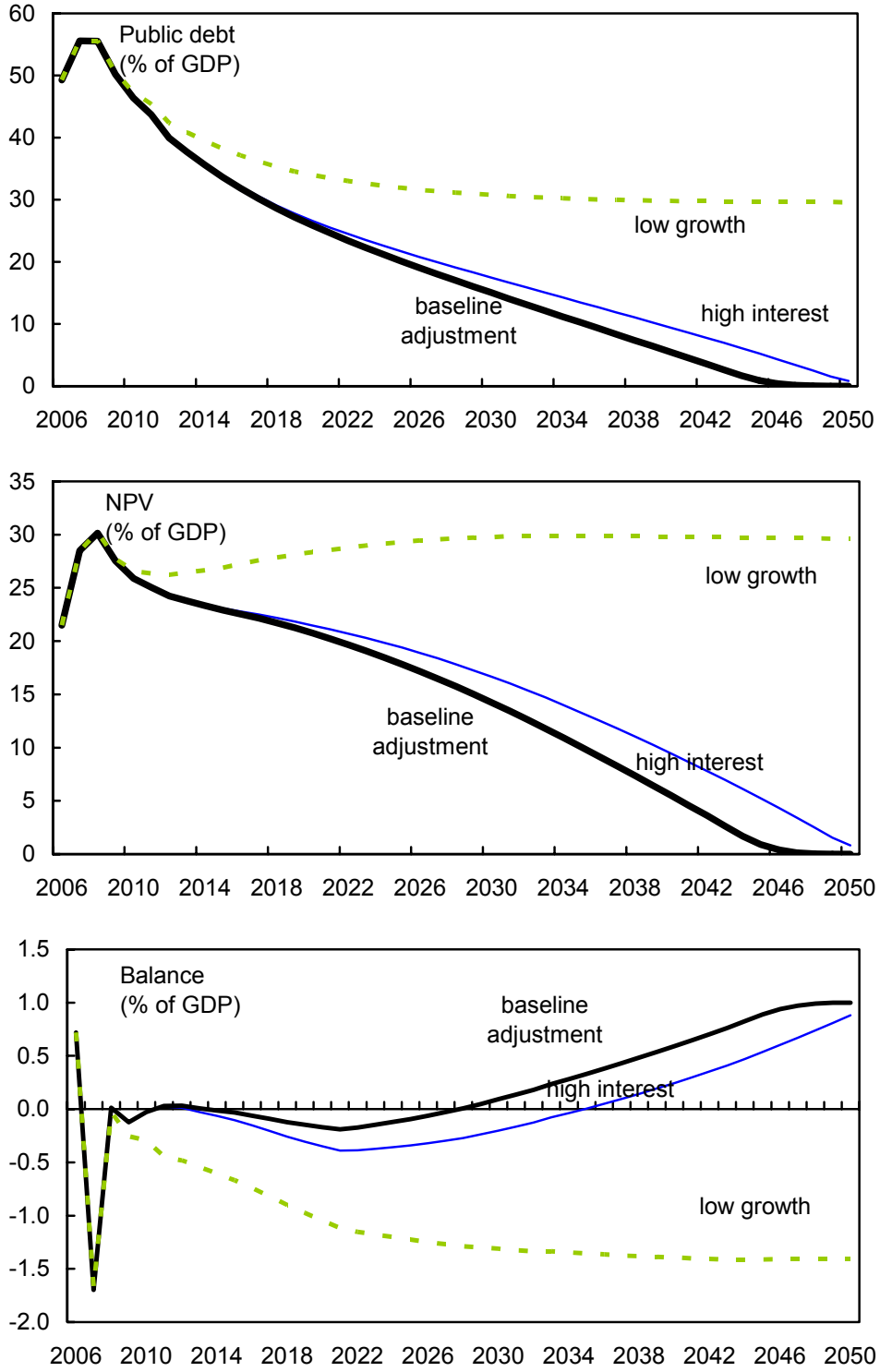
Source: IMF staff estimates.

10.   **These findings suggest that an even stronger adjustment might be needed to ensure long-term debt sustainability against the risk of lower growth**. As the research summarized in Box 2 indicates, the "low growth" case is not unrealistic for a country like Bosnia & Herzegovina in the long run. In such a situation, a combined shock (low growth and high interest rates—not shown here), even if relatively short-lived, could tip the debt dynamics into unsustainability. This means that, to be on the safe side, an even higher primary surplus than the 1 percent of GDP assumed in the adjustment scenario might be warranted, especially early in the projection period.

D. Possible Sources of Adjustment

11.   **Fiscal adjustment is needed not only to achieve the required primary surplus but also to offset emerging expenditure pressures**. Expenditure commitments made during 2006, if fully executed, would imply a substantial nominal increase in expenditures on wages and social spending. This year, they will be covered by higher-than-expected revenue but, given that the revenue gains are partly temporary, the full-year impact of these increases will result in a significant policy relaxation in 2007: on current trends, the primary balance is projected to deteriorate to a deficit of 1 percentage point of GDP. Beyond 2007, the state-building agenda will generate additional increases in spending of ¾ percentage point of GDP, mainly on account of the ongoing defense and police reforms, as well as a further modest strengthening of State institutions before EU accession.[10] Large infrastructure investment projects currently considered by the authorities and potential increases in the outlays of the pension system may create further expenditure pressures.

State-Building Agenda, 2006–2011						
	2006	2007	2008	2009	2010	2011
			(Percent of GDP)			
Defense and police spending						
Wage costs						
Defense	1.3	1.4	1.2	1.1	1.2	1.1
Police	1.8	1.8	2.0	1.9	1.9	1.8
Non-wage costs (defense)	0.3	0.8	0.8	0.7	0.6	0.6
Institution building	-	0.3	0.4	0.4	0.5	0.5
Total	3.4	4.3	4.4	4.1	4.3	4.1

Sources: BIH Ministry of Defense, World Bank, and IMF staff estimates.

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[10] The cost of defense reform is based on assumptions presented by the Bosnia & Herzegovina Ministry of Defense, including a temporary wage freeze after unifying defense employees' wages in the Q4 2006. The dynamics of wages in the police is assumed to be the same as in defense. Non wage defense costs are as presented by the Ministry of Defense.

12.   **To make room for these expenditure increases and ensure long-term debt sustainability, savings of 3–4 percentage points of GDP—in addition to the projected decline in capital expenditures of 2 percentage points—are necessary**. Such an adjustment would turn the primary deficit of 1 percentage point of GDP projected in 2007 to a surplus of 1 percentage point, while offsetting the identified fiscal pressures (¾ percentage point of GDP) and the projected decline in the revenue ratio (2½ percentage point). Although this required adjustment appears large, the magnitude is similar to fiscal consolidations achieved in other transition economies (e.g. Lithuania, Serbia & Montenegro).

13.   **Where would these savings come from?** The WB PEIR identifies expenditures savings of up to 7 percentage points of GDP in:

- *public wages and employment*: reducing wage rates in the judiciary, reducing employment in the health sector, and reducing wage bill in other categories of public employees by a combination of employment cuts and wage freezes;

- *education*: moving to per capita financing of primary and secondary education, reorienting education from technical to general, raising repetition fees and integrate faculties at the university level;

- *subsidies and transfers to non-profit organizations*: reducing subsidies to railroads, freezing agriculture subsidies in nominal terms, and reducing transfers to non-profit organizations;

- *veterans' benefits, social welfare and child protection*: tightening eligibility requirements for veterans and families, and reducing allocations for people with non-war-induced disabilities in the FBIH;

- *pensions*: limiting pension increases to inflation; and

- *pharmaceutical procurement*: centralizing.

Possible savings in these categories are quantified in the table below.[11]

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[11] The PEIR assumes that some savings measures would be implemented in 2006. Given that this is now unlikely, the earliest possible implementation date is 2007. The magnitude of the annual estimated savings would not change significantly with the delay.

Spending Measures Proposed in the World Bank PEIR, 2005-10

	2005	2006	2007	2008	2009	2010
			(Percent of GDP)			
Total spending in categories with measures	26.5	24.0	22.1	20.9	20.0	19.4
Narrow wage bill 1/	5.3	4.6	4.2	3.9	3.6	3.4
Judiciary	0.7	0.6	0.6	0.5	0.5	0.5
Health excl. medical professionals	0.3	0.2	0.2	0.2	0.1	0.1
Other categories	4.3	3.7	3.4	3.1	2.9	2.7
Education 2/	4.8	4.2	4.0	3.9	3.8	3.8
Subsidies	1.3	1.2	1.0	0.9	0.9	0.8
Transfers to non-profits	1.8	1.6	1.4	1.3	1.2	1.1
Social welfare	4.0	4.0	3.3	3.1	3.0	2.8
Pensions	8.4	7.8	7.5	7.2	7.0	6.6
Pharmaceutical procurement	1.2	0.9	0.9	0.9	0.9	0.8

Source: World Band and staff estimates.
1/ Excludes defense, police and education.
2/ Includes all outlays on education, including wages.
3/ Includes social welfare, child protection and veterans benefits.

14.   **These expenditure reductions add up to more than is necessary to achieve a primary balance consistent with long-term debt sustainability**. This provides flexibility to choose among them or implement them gradually. But implementing all or most of them, aside from realizing the resulting efficiency gains, would also provide room to start reducing the heavy tax burden on the economy of Bosnia & Herzegovina.

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III. CREDIT FLOWS, FISCAL POLICY, AND THE EXTERNAL DEFICIT OF BOSNIA & HERZEGOVINA[12]

A. Introduction

1.   **This chapter develops a theoretical model of the trade balance and uses it as the basis for estimating a quarterly regression model of Bosnia & Herzegovina's trade balance**. The estimated model is then used to shed light on the relative impact of fiscal policy and credit on the external deficit.

2.   **Bosnia & Herzegovina has a large trade deficit—50 percent of GDP in 2005—which has been deteriorating in recent years (Table 1)**. The size of the external imbalance largely reflects negative domestic saving due to widespread corporate lossmaking, but the recent adverse trends appear to be reinforced by a strong and persistent credit boom since 2002.

3.   **Booming credit has resulted from the entry of new foreign-owned banks as well as a surge in bank deposits following the introduction of Euro notes and coin at the end of 2001**. Several subsidiaries of large European banks have entered the Bosnian banking system, fostering keen competition for market share. Moreover, when the old Euro area currencies were phased out, Bosnians exchanged a substantial portion of their holdings of these currencies into deposits with the banking system, in addition to KM currency holdings.

Table 1. Bosnia & Herzegovina: Key Macroeconomic Indicators

	2001	2002	2003	2004	2005
			Percentage change		
Credit to the private sector	13.7	36.2	24.8	27.5	27.5
Exports (in Euro)	3.4	-7.9	11.5	28.7	24.0
Imports (in Euro)	8.3	2.5	6.0	7.6	13.6
Retail price index	3.2	0.3	0.6	0.2	2.8
Real GDP	3.6	5.0	4.1	5.8	5.0
			In percent of GDP		
Trade deficit	53.3	53.8	53.2	49.5	50.2
Current account deficit	13.3	19.1	20.9	19.3	21.3
Credit to the private sector	22.4	28.9	34.2	40.5	48.0
General government balance	-4.5	-3.3	-2.0	-0.4	0.9
Domestic saving	-31.4	-30.2	-28.6	-25.7	-25.4

Sources: Data from the Bosnian authorities and staff estimates.

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[12] Prepared by Daniel Kanda.

4.   **The bulk of credit flows have gone to households rather than the corporate sector**. With much of the corporate sector in bad shape as a result of soft budget constraints, poor governance, labor market rigidities, and damage from the war, banks have shied away from corporate lending until recently. Thus, export potential has remained limited—exports were only one third of imports in 2005. On the other hand, imports have grown strongly in most years, as booming credit has increased demand pressures.

5.   **The deterioration in the external deficit has occurred despite significant fiscal consolidation**. Between 2001 and 2005 the overall fiscal balance strengthened by 5½ percentage points of GDP. However, in this same period, credit to the private sector rose by 25¾ percentage points of GDP and evidently offset any negative impact the fiscal consolidation may have had on the external deficit.

6.   **And despite booming credit and strong demand pressures, self-sustained economic growth has yet to take root because of the poor state of the corporate sector**. Although GDP in 2005 is still substantially below pre-war levels, GDP growth rates have fallen from an average 22¾ percent during1996–2000 to an average of only 4¾ percent during 2001–05.[13] As a result, the unemployment rate is estimated to be over 20 percent, and poverty rates are high.

7.   **At an estimated 21 percent of GDP in 2005, the current account deficit is well above levels generally associated with sustainability**. Bringing it down to a sustainable level while at the same time increasing economic growth and employment represents the key economic challenge facing Bosnia & Herzegovina. Achieving this goal will require deep restructuring of the corporate sector over the medium term to entrench profit-seeking behavior and thus increase domestic savings and exports. However, this will need to be supported by demand restraint, particularly in the short run, to ensure that the current account deficit does not widen further before the corporate reforms take hold.

8.   **Demand restraint will have to come from further fiscal tightening, credit restraint, or a combination of the two**. This raises the question of just how to calibrate policy. How tight should the fiscal stance be? How much credit growth is too much? What is the tradeoff between the fiscal stance and credit growth?

9.   **The estimated model indicates that credit to households has a strongly negative impact on the trade balance, well above the impact of credit to enterprises**. Fiscal revenue and expenditure both have strong effects on the trade balance as well. And a one percent of GDP contraction in fiscal expenditure has a similar impact on the trade balance as a one percent of GDP reduction in overall credit to the private sector.

10.   **However, the currency board arrangement and open capital account imply that most traditional monetary policy instruments are unavailable or ineffective in**

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[13] The very high growth rates in 1996–2000 reflect the low base following the end of the civil conflict in 1995.

restraining credit. With an open capital account and a banking system dominated by foreign-owned banks with ample liquidity from their parents, the effectiveness of the rate of required reserves—the only monetary policy instrument available under the currency board—in restraining credit is very limited. Thus, given the substantial difficulties associated with targeting credit growth, the burden of generating demand restraint would have to fall more heavily on fiscal policy—which can be more precisely targeted and controlled.

A theoretical model of the trade balance

11.   **Since the aim is to estimate a (reduced form) empirical model of the trade balance, instead of a dynamic mathematical model with explicit functional forms, a static general equilibrium approach and general functional forms are used to identify the key explanatory variables of interest and shed light on how they affect the trade balance**. Dynamics in the data are then captured by the inclusion of appropriate lags of the explanatory variables in the regression equation.

12.   **The approach used here is an adaptation of the liquidity effects model of Lucas (1990), Fuerst (1992), and Christiano and Eichenbaum (1995), where the representative household separates into different agents during each period but reintegrates at the end of the period**. In those papers, this feature eliminates the need to track wealth effects for the different agents and allows the development of a tractable dynamic model incorporating a liquidity effect. In the static setting in this chapter, it also provides a simple framework which allows for the introduction of a government agent and a reasonably complete description of the key interactions determining the trade balance. For simplicity, labor market considerations are excluded.

13.   **Assume that the Bosnian economy can be represented by a small open economy, with a single representative household which contains four agents—the consumer, the firm, the bank, and government**. The household is endowed with fixed amounts of capital (K) and loanable funds (L). In addition, it receives a grant of foreign aid (A). There are two composite tradable commodities which are imperfect substitutes; an exportable good represented by (E), and an importable good represented by (M). The importable good is produced abroad, while the exportable good is produced domestically. Assume all markets are competitive, and that the Bosnian economy is so small relative to the international economy that Bosnian agents take the foreign currency prices of both exportables and importables as given.

14.   **This theoretical economy is assumed to exist for only one period. At the beginning of the period, the household splits into the four agents**. The loanable funds and foreign aid are placed in the bank to finance its lending activities, while the capital stock is given to the consumer. The firm rents capital from the consumer, and also purchases the importable commodity for use as an input in the production of the exportable commodity. The consumer goes to the market place to purchase both types of commodities for utility-yielding consumption. The government receives tax revenue from the consumer and also makes transfers to the consumer. Then at the end of the period, all the agents come back to form a single household, pool all resources together and pay all outstanding debts.

The consumer's problem

15.   **The consumer derives utility from the consumption of both types of commodities, and has a utility function given by** $U(C_M, C_E)$**, where** C_M **and** C_E **denote the consumption of the importable commodity and the exportable commodity, respectively**. In order to purchase these commodities the consumer needs resources, obtained by borrowing from the bank, by receiving a transfer from the government, or from after-tax income from renting the capital stock to the firm. Thus, the consumer faces the following budget constraint:

$$P_M C_M + P_E C_E = \Psi + \Phi^C \tag{1}$$

Where P_M and P_E represent the prices of the importable commodity and the exportable commodity, respectively, in domestic currency, which the consumer takes as given.

Ψ represents the consumer's disposable income, and is given by

$$\Psi = rK(1-T) + \Gamma \tag{2}$$

where r, T and Γ represent the rental rate on capital, the tax rate on income received from renting capital, and transfers from the government, respectively.

Finally, Φ^C represents bank credit to the consumer. Bank credit is assumed to be entirely at the discretion of the bank, and so is exogenous to the consumer. It is also assumed that the consumer's desired consumption level is significantly higher than his disposable income—which appears to be the case in Bosnia & Herzegovina—such that any amount of credit the bank approves will be used for consumption.

The consumer's problem is to maximize utility, subject to the budget constraint (1). The solution to this problem yields the consumer's demand functions for the two commodities as follows:

$$C_M = C_M(P_E, P_M, \Psi, \Phi^C) \tag{3}$$

$$C_E = C_E(P_E, P_M, \Psi, \Phi^C) \tag{4}$$

Under standard assumptions regarding the utility function, and given that there are only two commodities, the consumer's demand for each commodity will be decreasing in own-price, and increasing in the price of the other commodity, disposable income, and bank credit.

The firm's problem

16.   **The firm produces the exportable commodity using capital and the importable commodity according to the production function $F(f_K, f_M)$, where f_K and f_M represent the quantity of inputs of capital and the importable commodity used in the production process, respectively**. The firm is also assumed to be credit constrained, in that it has no liquid assets. Thus, in order to produce it must first borrow from the bank, and then use the borrowed funds to purchase the importable inputs and rent capital. Here also, the bank decides how much to lend to the firm, based on its assessment of the firm's creditworthiness and profitability, and therefore the amount of credit received is exogenous to the firm. Thus, the firm's problem is to choose f_K and f_M to maximize its profits, given by

$$P_E F(f_K, f_M) - P_M f_M - r f_K \tag{5}$$

Subject to the constraint

$$P_M f_M + r f_K = \Phi^F \tag{6}$$

Where Φ^F represents the bank credit to the firm. Solving this problem yields input demand functions given by:

$$f_M = f_M(P_E, r, P_M, \Phi^F) \tag{7}$$

$$f_K = f_K(P_E, r, P_M, \Phi^F) \tag{8}$$

Under standard assumptions regarding the production function, and with only two inputs, the firm's input demands are increasing in P_E, decreasing in own-price, increasing in the price of the other input, and increasing in credit to the firm.

Market clearing in the market for capital requires that the firm's demand for capital should equal the available capital stock. Therefore we have the condition:

$$K = f_K(P_E, r, P_M, \Phi^F) \tag{9}$$

Given the capital stock, prices, and credit, the rental rate for capital must adjust to ensure market clearing. Solving for this equilibrium level of r from equation (9) then yields:

$$r = r(P_E, P_M, \Phi^F, K) \tag{10}$$

Substituting (7), (8) and (10) into the production function gives us the maximum value function

$$F^{\max}(P_E, P_M, \Phi^F, K) \tag{11}$$

which gives the total output of the exportable commodity, given prices, capital stock, and bank credit to the firm. $F^{\max}(.)$ is increasing in P_E, Φ^F, and K, and decreasing in P_M. Since exportables not consumed domestically are exported, the export supply function is given by:

$$E = F^{\max}(P_E, P_M, \Phi^F, K) - C_E(P_E, P_M, \Psi, \Phi^C)$$

$$= E(P_E, P_M, K, \Psi, \Phi^C, \Phi^F) \tag{12}$$

Inspection of $F^{\max}(.)$ and $C_E(.)$ indicates that export supply is increasing in P_E, Φ^F and K, and decreasing in Φ^C, P_M and Ψ.

The government's problem

17.   **The government obtains funds by taxing the consumer and borrowing from the bank and then spends these funds as a transfer to the consumer.** Issues related to the government's objectives are not considered, for simplicity. Thus we have

$$\Gamma = rKT + \Phi^G \tag{13}$$

where Φ^G represents bank credit to government, and is also the fiscal balance.

The bank's problem

18.   **The bank receives loanable funds and the foreign aid grant from the household, which it lends to the other agents following an exogenous credit assessment process.** The bank cannot lend more than the available loanable funds, and any leftover funds following its credit operations are kept as a reserve (R). We abstract from the determination of interest rates charged on bank credit. Thus we have

$$L + A - R = \Phi^C + \Phi^F + \Phi^G \tag{14}$$

Import and export market clearing

19.   **It is assumed that Bosnia & Herzegovina is sufficiently small relative to international markets, and that there are sufficiently close substitutes for its exports, such that it is a price taker in both exportables and importables markets.** Thus, given

these exogenous prices the quantities of exports and imports are then determined by the optimizing decisions of the consumer and firm with regard to consumer and input demands and exportables output.

The trade balance

Now combining equations (2) and (13) yields:

$$\Psi = rK + \Phi^G \tag{15}$$

Substituting equations (10) and (15) into equations (3) and (12), substituting equation (10) into equation (7), and noting that total demand for imports (represented by Π_M) is given by the sum of consumer and firm demand for the importable commodity, we obtain:

$$\begin{aligned} \Pi_M &= C_M(P_E, P_M, K, \Phi^G, \Phi^C) + f_M(P_E, P_M, K, \Phi^F) \\ &= \Pi_M(P_E, P_M, K, \Phi^G, \Phi^C, \Phi^F) \end{aligned} \tag{16}$$

And the trade balance (B), denominated in foreign currency, is given by

$$B = P_E^* E(P_E, P_M, K, \Phi^G, \Phi^C, \Phi^F) - P_M^* \Pi_M(P_E, P_M, K, \Phi^G, \Phi^C, \Phi^F) \tag{17}$$

Here P_E^* and P_M^* represent the prices in foreign currency of the exportable and importable commodities, which are related to the respective domestic currency prices as follows:

$$P_M = eP_M^* \tag{18}$$
$$P_E = eP_E^* \tag{19}$$

where e represents the domestic currency price of a unit of foreign currency. Substituting equations (18) and (19) into (17) then yields the trade balance function

$$B(P_E^*, P_M^*, e, K, \Phi^G, \Phi^C, \Phi^F) \tag{20}$$

Considering equations (17) and (20), note that with the exception of credit to households and credit to government—which unambiguously have an inverse relation with the trade balance—all other explanatory variables have an ambiguous impact on the trade balance. For example, an increase in the price of exportables increases export supply, but also increases import demand; an increase in the price of importables reduces export supply but has an ambiguous effect on the overall value of imports; a change in the exchange rate changes the domestic currency prices of exportables and importables, which then has ambiguous effects on the trade balance; credit to firms increases the supply of exportables but also increases the demand for imported inputs; and an increase in the capital stock increases both export supply

and import demand. Thus, the net impact of changes in the explanatory variables on the trade balance will differ across countries, and will depend on the relative sizes of the various components of the trade balance and the responsiveness of each component to changes in the explanatory variables.

B. The Estimated Model

20.   **Assume that equation (20) is well approximated by a linear function.** On this basis a linear regression model was specified. Initially, many lags of the explanatory variables were included to capture any dynamics in the data. A general-to-specific approach was then employed, where lags found to be not statistically significant were eliminated. The exchange rate variable (which was taken to be the nominal effective exchange rate) was also dropped from the model because it was not significant, and its deletion did not adversely affect the forecasting ability of the model. However, the ratio of export to import prices (proxied as described below) was found to be significant, with a stable coefficient, and this is therefore how the price variables are introduced into the regression. Finally, seasonal dummies were also included. This approach yielded the following regression model:

$$B_t = a_0 + a_1 s_{1,t} + a_2 s_{2,t} + a_3 s_{3,t} + a_4 \Phi_{t-1}^F + a_5 \Phi_{t-1}^C + a_6 FR_{t-2} + a_7 FE_t + a_8 PEM_t + a_9 TR_{t-1} + a_{10}\varepsilon_t$$

$$(21)$$

Where s_1, s_2, and s_3, are seasonal dummies for the first three quarters, and FR, FE, ε, PEM, and TR represent fiscal revenue, fiscal expenditure, the error term, the ratio of export prices to import prices, and trend real GDP (see below), respectively.

Interestingly, note that the policy variables—fiscal expenditure, credit flows, and fiscal revenue—affect the trade balance with different lags.

Data considerations

21.   **Unfortunately, the lack of data implied need for some improvisations in order to generate the required quarterly data**. Proxy variables and interpolated data were used in several cases as a result, as described below. This therefore is a potential source of bias that must be borne in mind when interpreting the results. The appendix presents the data used in the estimation.

- **There are no data on the capital stock**. Moreover, the expenditure breakdown of GDP is also unavailable, so it is not possible to calculate a proxy for the capital stock using data on investment expenditure. Thus, trend real GDP is taken to be the proxy variable, based on the assumption that trend GDP is correlated with the productive capacity of the economy, and therefore with capital. Moreover, as the statistical authorities do not publish estimates of real GDP, IMF staff estimates of annual real GDP were interpolated using the industrial production index to arrive at estimates of quarterly real GDP. The trend was then extracted using the HP filter.

- **There are also no price indices available for Bosnia's exports or imports**. Thus, the export price index for Europe was taken as a proxy for the Bosnian import price index, and the import price index for Europe as a proxy for the Bosnian export price index.

- **However, good quality data on bank credit to households and enterprises are readily available from the monetary survey, and credit flows are calculated as the change in end-period stocks**. To calculate credit flow to enterprises data from the Bank for International Settlements (BIS) on credit by international banks to the Bosnian non-bank private sector was added to the monetary survey data on domestic bank credit to enterprises.

- **From equation (13), credit to government is equivalent to the fiscal deficit**. Data on general government are only available annually, but monthly fiscal data (which exclude external grants and expenditure on foreign financed projects) are available for the Entity central governments. Thus, to construct estimates of quarterly general government revenue and expenditure, the annual revenue (excluding grants) and expenditure (excluding foreign financed projects) data for the general government were interpolated using the Entity-level data. In addition, given that off-budget expenditure on foreign financed projects have been substantial, estimates of quarterly expenditure on foreign financed projects were added to those obtained for on-budget expenditure. The quarterly estimates for foreign financed projects were interpolated from annual data, assuming that spending on these projects was evenly distributed throughout the year.

Stationarity

22.   **Many empirical studies have found that key macroeconomic variables such as GDP, exchange rates, and interest rates are often non stationary**. As is well known, in such cases the estimation techniques and interpretation of results change markedly. Thus, unit root tests developed by Ng and Perron (2001) were applied to all the variables. Ng and Perron show in their article that their unit root tests have much improved size and power properties compared to earlier tests such as the Augmented Dickey Fuller and Phillips-Perron tests. Ng and Perron develop four test statistics, all with the same limiting distribution, and Table 2 presents results for all the four tests, generated using *Eviews* software.

23.   **The unit root tests reject non-stationarity in all cases (Table 2)**. Thus, levels of all the variables are used in the estimation.

Table 2. Ng-Perron Unit Root Tests of the Dependent and Explanatory Variables

	Test statistics 1/		Critical values		
			10 percent level	5 percent level	1 percent level
Trade balance					
Mza	-38.61	***	-14.20	-17.30	-23.80
MZt	-4.25	***	-2.62	-2.91	-3.42
MSB	0.11	***	0.19	0.17	0.14
MPT	3.12	***	6.67	5.48	4.03
Trend Real GDP					
Mza	-32.48	***	-14.20	-17.30	-23.80
MZt	-3.97	***	-2.62	-2.91	-3.42
MSB	0.12	***	0.19	0.17	0.14
MPT	3.13	***	6.67	5.48	4.03
Export price/Import price					
Mza	-298.57	***	-5.70	-8.10	-13.80
MZt	-12.22	***	-1.62	-1.98	-2.58
MSB	0.04	***	0.28	0.23	0.17
MPT	0.08	***	4.45	3.17	1.78
Flow of credit to enterprises					
Mza	-15.37	***	-5.70	-8.10	-13.80
MZt	-2.75	***	-1.62	-1.98	-2.58
MSB	0.18	**	0.28	0.23	0.17
MPT	1.68	***	4.45	3.17	1.78
Flow of credit to households					
Mza	-125.33	***	-14.20	-17.30	-23.80
MZt	-7.91	***	-2.62	-2.91	-3.42
MSB	0.06	***	0.19	0.17	0.14
MPT	0.73	***	6.67	5.48	4.03
Fiscal revenue (excl. grants)					
Mza	-237.53	***	-14.20	-17.30	-23.80
MZt	-10.90	***	-2.62	-2.91	-3.42
MSB	0.05	***	0.19	0.17	0.14
MPT	0.38	***	6.67	5.48	4.03
Fiscal expenditure					
Mza	-25.65	***	-14.20	-17.30	-23.80
MZt	-3.56	***	-2.62	-2.91	-3.42
MSB	0.14	***	0.19	0.17	0.14
MPT	3.66	***	6.67	5.48	4.03

Source: Author's calculations.

1/ ***, **, and * represent rejection of the unit root hypothesis at the 1 percent, 5 percent, and 10 percent levels, respectively.

Estimation results

24.   **Table 3 presents the results from the estimation of equation (21) on quarterly data from the first quarter of 1998 to the second quarter of 2004**.[14] Estimation was carried out using GMM, with instruments given by the following:
$s_1, s_2, s_3, \Phi^F_{t-1}, \Phi^C_{t-1}, FR_{t-2}, FE_{t-1}, FE_{t-2}, FE_{t-3}, PEM, OP, OP_{t-1}, TR_{t-1}$, and the constant term, where OP is an oil price index. This allows for possible endogeneity in fiscal expenditure, which enters the regression equation concurrently with the trade balance. The weighting matrix was set in *Eviews* to ensure that the estimates are robust to heteroskedasticity and serial correlation of unknown form.

Table 3. Estimation Results for Trade Balance Model
(Dependent variable, trade balance)

	GMM estimates		
	Coefficient	t-statistic	P-value
Constant	-1616.68	-6.25	0.00
Seasonal dummy for Q1	29.37	0.90	0.39
Seasonal dummy for Q2	-60.90	-3.46	0.00
Seasonal dummy for Q3	10.24	0.37	0.71
First lag of credit flow to enterprises	-0.21	-2.81	0.01
First lag of credit flow to households	-1.08	-3.51	0.00
Second lag of fiscal revenue	0.39	1.88	0.08
Fiscal expenditure	-0.45	-2.17	0.05
Export price/Import price	17.41	6.15	0.00
First lag of trend real GDP	-0.45	-1.40	0.19
Memorandum items			
R-square	0.86		
Test of overidentifying restrictions (Chi-square test, 4df)	1.68		0.79
Number of observations	23		

Source: Author's calculations.

25.   **The model appears to provide a good fit to the data. The test of overidentifying restrictions does not find any evidence of misspecification, with a p-value of 0.79**. R-squared is quite high at 0.86, and most coefficients are estimated with good precision with the exception of trend GDP and some of the seasonal dummies. The coefficients for the explanatory variables all have the expected signs.

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[14] Data from 2004 Q3 to 2005 Q3 was used for forecast evaluation.

Forecast evaluation

26.   **Forecast performance also appears to be good**. To investigate this, the model was used to generate forecasts of the trade balance for the period Q3 2004 to Q3 2005.[15] The Theil inequality coefficient (which ranges between 0 and 1, with 0 being a perfect forecast) is only 0.03, indicating strong forecasting ability, and the root mean squared error of the forecast is about Euro 55 million. The absolute forecast error is on average about 5 percent of the trade balance.

<div style="text-align:center">

Forecast Evaluation of Trade Balance Model
(Forecast period: Q3 2004–Q3 2005)

</div>

Root mean squared error	54.68
Mean absolute error	44.19
Mean absolute percent error	5.18
Theil inequality coefficient	0.03

Source: Author's calculations.

Figure 1. Trade Balance, Q1 1998-Q3 2005
Euro million
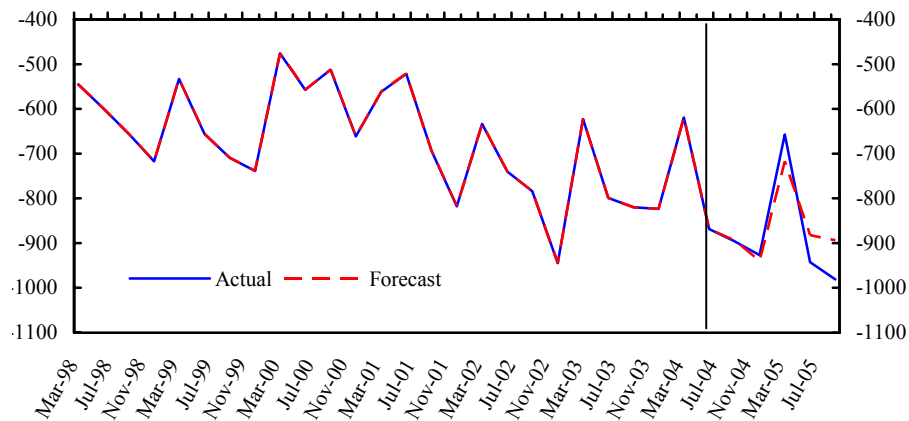
Source: Author's calculations.

27.   **This impression of strong forecasting performance is also borne out in Figure 1, which plots the actual and forecasted trade balances**. As we can see the actual and forecasted trade balances remain quite close over most of the 5-quarter forecast horizon.

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[15] A forecast for 2005Q4 is not included because of a large one-off surge in imports in December 2005 ahead of the introduction of VAT in January 2006.

C. Policy Implications

28.   **The estimated model raises a number of policy issues**. First, the impact of a given flow of total credit to the private sector on the trade balance depends strongly on the composition of credit. The flow of credit to enterprises has a markedly smaller negative impact on the trade balance than that of credit to households. Thus, to the extent that credit flows are led by credit to households, the adverse impact on the external deficit will be larger. This result implies that policies targeted primarily at restraining credit to households would be more effective in achieving a desired correction in the external deficit.

29.   **The estimated model also indicates that the policy variable with the most immediate impact on the trade balance is fiscal expenditure, followed by credit flows and then fiscal revenue**. This suggests that when an immediate correction to the trade balance is needed, the preferred policy option should be fiscal expenditure restraint.

30.   **Regarding the relative power of fiscal or credit policy to reduce the trade balance, empirical projections were made using the model, where plausible quarterly paths of the regressors were generated for 2006, and the impact on the trade balance assessed**. Given the already heavy burden of taxation, the assessment of fiscal policy focused on a fiscal tightening generated solely through expenditure restraint, while, for credit tightening, the impact of changes in the overall flow of credit to the private sector, keeping the breakdown between credit to households and enterprises the same as observed in 2005, was considered. These experiments indicate that a fiscal tightening through a one percent of GDP reduction in expenditure over a one year horizon generates a 0.45 percent of GDP reduction in the trade deficit, whereas a reduction in the flow of credit of one percent of GDP over the same horizon generates a 0.44 percent of GDP reduction in the trade deficit. Thus, fiscal expenditure and credit tightening appear to be roughly equally effective in achieving reductions in the trade deficit over a one year horizon.

31.   **However, the currency board and open capital account in Bosnia & Herzegovina imply that it is very difficult to target a particular credit growth rate**. Generally, to restrain credit one could either tighten the required reserves regime or tighten prudential regulations. But with the domestic banking system dominated by subsidiaries of foreign banks with access to ample liquidity from their parents, these instruments are typically ineffective. This leaves fiscal policy as the only instrument that can be precisely calibrated to affect the trade balance.

32.   **Thus, in practice most of the efforts to restrain demand over the near term should focus on fiscal policy**. Over the long term, however, deep structural reforms would be needed to bring the trade deficit down to sustainable levels.

APPENDIX I: Dataset Used in the Estimation

	TB (Euro million)	PEM (Percent)	TR (Euro million)	Φ^C (Euro million)	Φ^F (Euro million)	FR (Euro million)	FE (Euro million)	OP (Euro, 2000=100)
Mar-98	-545.6	98.9	1,039.7	7.1	71.2	370.8	582.1	42.9
Jun-98	-599.0	96.1	1,059.3	6.3	-20.1	416.6	581.7	39.7
Sep-98	-656.0	92.4	1,078.8	12.3	15.3	442.0	653.1	38.2
Dec-98	-717.7	88.4	1,098.2	39.0	58.7	494.4	678.4	32.8
Mar-99	-533.2	94.7	1,117.5	4.1	-57.6	399.3	682.9	33.8
Jun-99	-655.9	95.6	1,136.5	2.5	23.7	542.4	745.6	49.4
Sep-99	-709.4	94.3	1,155.2	-10.7	3.0	540.7	785.4	63.5
Dec-99	-738.8	92.5	1,173.7	14.6	-4.6	630.2	839.7	74.7
Mar-00	-475.7	102.0	1,191.8	10.1	28.0	490.8	802.9	87.9
Jun-00	-557.8	101.4	1,209.6	22.2	36.8	568.3	830.2	93.4
Sep-00	-512.6	99.5	1,227.2	14.3	18.7	540.4	821.8	107.6
Dec-00	-661.5	96.8	1,244.5	12.8	66.9	675.8	873.1	111.2
Mar-01	-562.2	103.2	1,261.6	7.3	-47.4	465.9	734.2	92.0
Jun-01	-521.7	103.1	1,278.7	41.7	122.8	555.3	820.6	99.7
Sep-01	-693.9	99.1	1,295.6	67.8	-88.8	663.3	853.6	92.2
Dec-01	-817.5	94.0	1,312.7	35.3	61.3	716.0	895.8	70.3
Mar-02	-633.8	99.2	1,329.8	54.8	60.0	542.3	701.8	77.8
Jun-02	-740.5	99.9	1,347.2	128.4	-10.9	616.1	793.1	89.2
Sep-02	-783.9	99.4	1,364.7	115.9	284.2	685.1	806.7	89.2
Dec-02	-944.8	94.3	1,382.5	88.4	32.7	703.0	840.2	87.4
Mar-03	-623.1	101.2	1,400.4	69.3	-18.3	669.9	828.4	95.1
Jun-03	-799.0	100.6	1,418.5	97.2	11.1	743.7	919.8	76.0
Sep-03	-820.0	98.7	1,436.9	66.8	84.3	812.7	933.3	82.3
Dec-03	-823.7	93.2	1,455.4	35.9	61.3	830.6	966.9	80.4
Mar-04	-619.2	99.2	1,474.1	53.4	128.0	717.5	825.5	83.7
Jun-04	-868.4	97.0	1,492.9	126.3	81.4	886.6	1,011.5	96.4
Sep-04	-896.1	96.1	1,511.9	89.8	84.7	842.7	909.8	108.1
Dec-04	-926.9	91.9	1,531.0	68.5	92.0	896.5	1,037.2	107.4
Mar-05	-657.3	99.6	1,550.1	63.9	80.2	793.1	898.0	114.3
Jun-05	-942.2	98.6	1,569.3	124.9	69.2	980.7	1,070.2	131.3
Sep-05	-980.8	97.3	1,588.5	110.1	96.6	962.7	950.8	160.2
Dec-05	-1,221.0	94.8	1,607.7	117.6	214.0	932.6	1,085.4	155.0

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IV. INSTITUTIONAL APPROACHES TO FISCAL COORDINATION: WHAT CAN BOSNIA & HERZEGOVINA LEARN FROM INTERNATIONAL EXPERIENCE?[16]

A. Introduction

1.   **The fiscal system in Bosnia & Herzegovina is fragmented and characterized by a small central State government with weak control over consolidated fiscal policy**. This situation has its origins in the 1995 Dayton Peace Accord which succeeded in securing peace but gave considerable authority for economic policy to the Entities and paid little attention to efficient fiscal design. Political fragmentation has complicated the task of coordinating fiscal policy among the State and Entity governments thereby undermining the authorities' ability to achieve and preserve macroeconomic stability. The importance of ensuring effective fiscal coordination is heightened by Bosnia & Herzegovina's euro peg, which effectively removes monetary policy from the tool kit of macroeconomic policies.

2.   **Fiscal coordination among the State and Entity governments was, until recently, achieved through the direct involvement of the Office of the High Representative (OHR)**, whose so-called 'Bonn powers' gave it considerable influence over fiscal policy. The IMF also provided significant guidance, both in its advisory role and through two Fund-supported programs between 1998 and 2004.

3.   **But the international community is now playing an increasingly less interventionist role.** The establishment in May of 2005 of the National Fiscal Council (NFC) as an informal body of economic policy-makers was intended to help fill the vacuum. But the chaos surrounding passage of the 2006 budgets revealed serious weaknesses in the ability of the NFC to coordinate fiscal policy. At the same time, Bosnia & Herzegovina is taking on significant amounts of public debt from the settlement of domestic claims and investment in infrastructure. These developments call into question the adequacy of Bosnia & Herzegovina's fiscal governance and suggest a need to strengthen the institutional framework for fiscal coordination.

4.   **Many other countries have adopted institutional mechanisms to facilitate fiscal coordination among levels of government**.[17] This chapter attempts to identify—among a sample of such countries—useful lessons for Bosnia & Herzegovina in its efforts to establish an efficient institutional setup for fiscal coordination. The chapter is organized as follows. Section B briefly describes some of the factors that affect the choice and efficacy of

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[16] By Jeffrey Allen Chelsky and John Norregaard.

[17] We take as given that fiscal institutions have a positive impact on fiscal performance, a point well illustrated in Fabrizio and Mody (2006). They conclude that "budget institutions—mechanisms and rules of the budget process—that create checks and balances have significant value even when the politics is representative but undisciplined...". The focus of this paper is on the *characteristics* of such institutions.

institutional arrangements for fiscal coordination, including in particular the relationship between fiscal coordination and a country's exchange rate regime. Section C describes the institutional mechanisms adopted by a small sample of federal states and discusses how each as dealt with common challenges faced by coordination regimes. Section D articulates key lessons from this experience and Section E discusses how these lessons can be applied to Bosnia & Herzegovina's efforts to strengthen fiscal coordination.

B. Analytical Background

5.   **Fiscal coordination refers to formal or informal procedures, practices and/or rules that guide fiscal policy decisions of various levels of government intended to secure overall fiscal sustainability and macroeconomic stability.** While there is a close relationship between fiscal coordination and intergovernmental fiscal relations, the latter focuses on maximizing economic efficiency. A large literature exists on intergovernmental fiscal relations which addresses, among other things, the distribution of taxation and expenditure powers among levels of government and the design of inter-governmental equalization and grant systems.[18] This lies outside the scope of this chapter, which focuses on the narrower issue of fiscal coordination.

6.   **Institutional set-up and administrative procedures are key for fiscal coordination.** These include factors such as the establishment of special coordination bodies to secure effective fiscal coordination in decentralized fiscal systems,[19] which have received relatively little attention in the literature. Similarly, the role of political culture in determining the appropriateness of a particular model has received little attention in the literature even though such factors tend to dominate decisions on the modalities of fiscal coordination.

7.   **There are many institutional "models" of fiscal coordination and many interconnected factors—political, economic, legal and cultural—which appear to influence relative effectiveness**. Consequently, it is difficult to establish a clear link between a particular model and fiscal performance. Improvements in the fiscal position could, for example, reflect a more general shift in policy sentiment in favor of fiscal prudence. The adoption of an institutional mechanism for coordination may simply be a reflection of that commitment and not necessarily the exact cause of the fiscal improvement. This chapter does not attempt to link overall fiscal performance to the form of fiscal coordination given the plethora of other explanatory factors (and the fact that some of these frameworks are relatively new).

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[18] See, for example, Ter-Minassian (1997).

[19] Exceptions include Annett (2006), who discusses the impact of the Stability and Growth Pact (SGP) and the political economy of fiscal frameworks and provides an overview of the associated literature. OECD (2003) provides a comprehensive overview of fiscal relations, including arrangements to facilitate fiscal coordination and measures used to ensure fiscal discipline at sub-national levels of government.

8.   **The importance of effective fiscal coordination is partly a function of the extent to which monetary policy can be actively used as tool of macroeconomic management.** Where monetary policy, as in the case of a pegged exchange rate, is constrained, sound fiscal policy—and by implication, effective fiscal coordination—becomes more important. The country experiences reviewed for this paper demonstrate this quite clearly.

- **Argentina and Brazil had pegged exchange rate regimes**. But Argentina's currency board arrangement collapsed due in part to its failure to rein in fiscal profligacy on the part of sub-national governments. Similarly, weaknesses in consolidated fiscal policy forced Brazil to abandon its crawling peg in 1999, resulting in a sharp depreciation of the currency.

- **Australia had a pegged exchange rate until 1983**. Prior to that, the Australian Loan Council (ALC) wielded considerable power and was required to approve all borrowing by national and sub-national governments. The abandonment of the peg in 1983 coincided with a move to a looser, voluntary framework for coordinating national and sub-national borrowing.

- **Switzerland, where there is little explicit effort to coordinate fiscal policy, has a fully floating exchange rate**. Monetary policy therefore can play an active role in macroeconomic stabilization.

- **Euro area members are part of the euro area and are constrained by its obligations**. The need to sustain the exchange rate regime requires discipline to be instilled (and free-riding dissuaded) at the national level by the explicit penalties contained in the Stability and Growth Pact (SGP).

C. Elements of Fiscal Coordination—International Experience

9.   **This chapter looks at institutional mechanisms that have played a role in the coordination of fiscal policy among levels of government in a small cross section of countries** and attempts to assess the extent to which elements of those mechanisms have relevance for Bosnia & Herzegovina. The mechanisms considered are those used in Argentina, Australia, Austria, Belgium, Brazil, the European Union, South Africa and Switzerland. The chapter looks at several key elements of these coordination arrangements, including their legal foundations, the degree to which key policy makers are directly involved in their operation, the extent to which the coordination mechanism is vested with formal power to influence fiscal policy, the comprehensiveness of coverage, and the track record of enforcement.

Institutional frameworks for coordination

10.   **Most of the countries reviewed have pursued fiscal coordination through cooperative institutions, the adoption of fiscal rules, or a combination of the two**

(Table 1 and Annex 1). The approaches differ in both structure and mandate, reflecting unique historical contexts, political culture and the economic conditions which motivated their creation. This, rather than an *a priori* assessment of the optimal mechanism for fiscal coordination, appears to explain much of the difference in approach. The frameworks considered range from purely advisory or consultative bodies (Financial and Fiscal Commission (FFC) in South Africa, Public Sector Borrowing Requirement Section (PSBRS) of the High Council of Finance (HCF) in Belgium, Conference of Cantonal Ministers of Finance (CCMF) in Switzerland) to the Australian Loan Council (ALC) whose decisions are legally binding on national and sub-national governments.[20] In between, are mechanisms such as the Domestic Stability Pact (DSP) in Austria and the Fiscal Responsibility Laws (FRL) in both Argentina and Brazil. The Austrian and Argentine frameworks also rely on institutions to foster and/or oversee fiscal coordination. Austria has a "consultation mechanism" for discussing the fiscal externalities associated with the actions of one level of government on other levels. Argentina has the Federal Council for Fiscal Responsibility (FCFR) which oversees compliance with its FRL. Brazil has not established a formal coordination body as part of its coordination framework, instead relying almost exclusively on the targets contained in the FRL.

11. **Fiscal rules are potentially of particular value to effective fiscal coordination in federal states.** Hallerberg *et al* (2004) argue that pre-established budgetary targets and rules (the defining characteristic of what they call the "contract approach") are particularly useful in promoting a comprehensive view of the externality problems in political systems characterized by multiparty coalition governments that emerge regularly in highly proportional electoral systems. The federal systems of government considered in this paper present similar governance problems with respect to consolidated fiscal policy, with sub-national governments exhibiting challenges similar to those that the authors associate with individual constituencies or parties in highly proportional electoral systems.

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[20] Our discussion of the Australian experience focuses mainly on the Australian Loan Council (ALC) as it functioned from its inception in 1927 until 1983. Its mandate has evolved significantly since that time, with its powers significantly curtailed through the replacement of binding borrowing limits with voluntary ones. Even this weaker structure was abandoned in 1992, when all restrictions on sub-national borrowing were removed and enhanced transparency and market discipline became the predominant mechanism through which discipline on consolidated borrowing was pursued.

Table 1: Coordinating Body and/or Mechanism		
		Mandate
Argentina	Federal Council for Fiscal Responsibility (FCFR) and the Fiscal Responsibility Law (FRL)[21]—adopted in 2004	The FCFR assesses compliance with the FRL and voluntary Federal-Provincial fiscal pacts and applies sanctions for non-compliance. Nineteen of 24 provinces have signed up to the framework as of June 2006.
Australia	Australian Loan Council (ALC)—est. 1927	Permanent supra-national authority with a mandate to set a ceiling on the amount and distribution of borrowing by national and sub-national governments.
Austria	Domestic Stability Pacts (DSP)— 1996, 1999, 2001, 2004[22]—and a "consultation mechanism"	The DSP sets balance targets for all three levels of government. Ensures consistency of consolidated fiscal position with national obligations under the SGP.
Bosnia & Herzegovina	National Fiscal Council (NFC)— est. 2005	Informal body setting consolidated fiscal balance and its distribution among State and Entity governments.
Belgium	Public Sector Borrowing Requirement Section (PBSRS) of the High Council of Finance (HCF)—est. 1989	The HCF is a technical and advisory body charged with providing advice on any question submitted by the Minster of Finance. In 1989, reflecting concerns with respect to the requirements of European economic and monetary union, a special section was created and mandated to produce 'advisory opinions' on the borrowing requirements of national and sub-national governments.
Brazil	Fiscal Responsibility Law (FRL) and Fiscal Crimes Law (FCL)—adopted 2000	The FRL requires balanced primary budgets, defines ceilings for various expenditures, promotes transparency in public accounts and prohibits refinancing of sub-national government debt by the national government; the FCL penalizes government officials who break fiscal parameters.
European Union	Council for Economic and Financial Affairs (ECOFIN) and the Stability and Growth Pact (SGP)—1998	Development of general economic guidelines and coordination of economic policies, surveillance and monitoring of members' budget policies (including their consistency with SGP targets), issuance of annual public finance reports, economic forecasts, cooperation and adoption of legislative decisions on tax policies, financial market issues and EU budget issues.
South Africa	Financial and Fiscal Commission (FFC), Budget Council (BC), and Budget Forum (BF)—est. 1996	The FFC is an advisory body constitutionally mandated to provide independent and impartial advice to government on intergovernmental fiscal matters; the FCC is required to render advice and present recommendations to government on intergovernmental fiscal and financial issues for the following year at least 10 months prior to the end of the fiscal year. The BC and BF provide, respectively, fora for national government and the provinces and for the national and local governments to discuss FFC recommendations.
Switzerland	Conference of Cantonal Ministers of Finance (CCMF)—est. 1993	Informal forum for discussion among cantons of vertical fiscal/financial matters; facilitation of common positions for presentation to the national government.

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[21] The Argentine federal government and several provinces also passed fiscal responsibility laws in 1999 and 2001 setting limits on deficits and expenditure growth. These did not prove very effective on account of weaknesses in the enforcement regimes.

[22] The first DSP was an informal arrangement. Subsequent DSPs were formalized in law.

12.   **The Australian Loan Council (ALC), in its original form, was arguably the most powerful of the institutional mechanisms reviewed**. It was established early in the life of the country, in response to concern that sub-national governments were competing on international markets for a relatively limited pool of financing to the detriment of individual governments. This, combined with a broadly shared state-building objective, explained much of the willingness of state governments to accept a constitutional amendment which ceded power to this body in which the national government was dominant.

13.   **While political forces when the ALC was established could be characterized as centripetal, many of the other countries (e.g., Argentina, Switzerland and Brazil) are characterized by strong regional or local autonomy.** In these countries, centrifugal forces constrained the willingness of sub-national governments to be subjugated to national fiscal objectives. In both Argentina and Brazil, this aspect of the political culture was put under enormous pressure in the wake of the financial crises in the late 1990s and early 2000s despite the fact that both crises were triggered in no small part by a failure to coordinate sub-national fiscal policy with national fiscal goals. In Argentina, this contributed to the eventual collapse of the currency board, while Brazil bowed to pressure in 1999 to devalue its exchange rate by 70 percent against the U.S. dollar. In both cases, the design of coordination frameworks had to accommodate sub-national governments that were resistant to ceding sovereignty. Argentina was able to achieve this by way of a framework in which sub-national participation was voluntary but encouraged through financial incentives. The Brazilian framework—which appears to have been more successful—relied more heavily on fiscal rules enforced by the national authorities.

14.   **Strong pressure to preserve regional autonomy also exists in Switzerland, where explicit or binding fiscal coordination is seen as inconsistent with a tradition of cantonal independence**. But unlike Argentina, a culture of fiscal prudence at the sub-national level has enabled Switzerland to avoid the sort of economic crisis that compelled Argentina and Brazil to adopt frameworks that (at least in principle) sacrificed sub-national autonomy in pursuit of economic stability.

15.   **The establishment of the FCC in South Africa was, unlike in Argentina and Brazil, not a direct response to a period of economic stress but reflected the state-building agenda of post-apartheid South Africa**. The 1996 constitution reflected a widespread desire to limit subjective political decisions on the allocation of public resources. Australia, also with broad-based support to strengthen the state, is the only other country in the sample for which an institution for fiscal coordination was given constitutional status. But unlike in Australia, the FCC had no formal decision-making power, likely reflecting the dual objectives of the new South Africa—ensuring a prominent role for apolitical advice on intergovernmental and inter-regional fiscal relations while simultaneously supporting the evolution of democratic principles.

16.   **Political objectives—in this case, European integration and its monetary counterpart, currency union—also figured prominently in the motivation to strengthen fiscal coordination through the European Stability and Growth Pact (SGP).** Here, the supporting institutional framework was grounded in an international treaty, giving it stronger legal status in individual countries than mechanisms with constitutional underpinnings. The fiscal targets in the SGP apply only to the consolidated general government, while responsibility for non-compliance falls on central (i.e., national) governments. What is interesting is the diversity of approaches to internal fiscal coordination among those SGP signatories with federal systems of government. Austria, for example, adopted a series of Domestic Stability Pacts (DSPs), with numerical fiscal parameters and enforcement mechanisms formally linked to those of the SGP.[23] Belgium, on the other hand, created a new section within the pre-existing High Council of Finance (HCF) that relied mainly on persuasion to encourage fiscal coordination.

Membership

17.   **In most of the institutional frameworks reviewed, participation is dominated by politicians,** usually Ministers of Finance or Economy or heads of government from national and sub-national levels. Non-elected individuals (i.e., civil servants or "experts" from outside the official sector) are members only of the PSBRS of Belgium's HCF and South Africa's FFC, both purely advisory bodies. Membership in the PSBRS includes individuals nominated by the National Bank of Belgium, the Flemish and Walloon governments, the Brussels Capital Government, and the French Community Government. This has the potential to bestow a degree of political legitimacy on the HCF, although none of its members can be members of the national legislature or community regional councils or on the elected councils of municipalities with more than 30,000 residents. South Africa places even greater emphasis on the non-partisan nature of its advisory body, the FFC: commissioners of the FFC, although appointed by the President or nominated by the Executive Councils of the nine provinces and are not permitted to hold office in any political party or organization.

18.   **Drawing a link between membership in a coordination body and its effectiveness in enhancing fiscal coordination is difficult** given the small size of the sample and the plethora of other factors at play. Recently, 'fiscal councils' tasked with providing independent advice to policy makers have begun to receive attention as a means to improve the quality of fiscal policy. The European Union recently pointed to a "general perception that independent fiscal institutions have contributed to fiscal discipline" and that such institutions "seem to have a considerable impact on the public debate and the recommendations formulated are generally followed by governments".[24] But in South Africa,

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[23] Domestic stability pacts have also been adopted in Germany, Italy, Portugal, and Spain.

[24] European Commission, (2006).

despite the strict independence and explicit constitutional mandate of the FCC, there are concerns that it has become marginal to fiscal policy making.[25] While there may be several reasons for this, the fact that membership explicitly excludes members of the government and individuals with direct political association, may have undermined political ownership of FCC's advice. In contrast, Belgium's HCF—with its explicit links to particular political constituencies (although it excludes public office holders)—appears to be somewhat more effective. This contrast may suggest that the effectiveness of such an advisory council requires a balance between independence and political legitimacy.[26] The political dimension is likely particularly important with respect to fiscal coordination which involves distributional issues which are inherently political.

Decision-making

19.   **An institutional mechanism's ability to facilitate timely decisions on key fiscal parameters often depends on the existence of a well-specified voting formula or other mechanisms to resolve impasse**. Of those mechanisms which take formal decisions on fiscal targets or the application of penalties, most require unanimity. Only Australia's ALC, Argentina's FCFR and Europe's SGP have rules that permit decisions to be taken without unanimity. In the EU, the ECOFIN Council's decisions on compliance with SGP are made mainly by qualified majority (in some cases in consultation with the European Parliament). Argentina presents a similar situation. Here, while consensus is not required to impose sanctions for non-compliance, the dominance of provincial governments[27] has effectively prevented enforcement of sub-national fiscal targets.

20.   **While consensus on fiscal parameters or enforcement measures is desirable, it is frequently not possible.** If it is achieved, it is often by avoiding tough decisions. This could conceivably cause a problem for a country like Austria, where the framework is negotiated for only a few years at a time. However, continuity is assured through a provision that if agreement cannot be reached on a new pact prior to the expiration of the current pact, then the old pact would come back into force.

21.   **While voting rules differ, national government typically plays a key role in decision-making**. The ALC, for example, uses different voting rules for different decisions. Specifically, the decision on the consolidated borrowing ceiling required a simple majority

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[25] "Does South Africa Still Need the Financial and Fiscal Commission?" Budget Brief No. 71, July, Institute for Democracy in South Africa (IDASA Budget Information Service).

[26] That said, experience in Bosnia & Herzegovina suggests that the direct participation of even high-level members of government by no means guarantees that advice will be accepted and acted upon by all parties.

[27] Respectively, the federal government and provincial governments have 42 and 58 percent of the votes in the FCFR. Decisions require a simple majority of votes plus the approval of at least 5 provinces.

while the more politically-sensitive decision on the distribution of loan proceeds required unanimity. Failure to reach consensus resulted in a reversion to a distribution based on a pre-set formula based on relative net borrowing over the previous 5 years. But to facilitate decisions, particularly on the consolidated borrowing ceiling (arguably the key macroeconomic parameter), the national government was given two votes plus a "casting vote" while each of the six states possessed only one vote.[28] Giving greater weight to the national government is consistent with the observation of de Mello (2002b) that "in decentralized federations, fiscal consolidation is carried our predominantly by the central government. Because it is more accountable for macroeconomic stability, the central government often has stronger incentives for fiscal discipline and, therefore, bears the brunt of the adjustment costs in periods of fiscal retrenchment". In countries subject to the SGP, it is the national government which is ultimately responsible for staying within the consolidated deficit ceiling and—in the absence of mechanisms like the DSP in Austria, the national government would have to offset overruns by sub-national governments.

Determination of fiscal targets at national and sub-national levels

22. **Countries in the sample attempt to coordinate fiscal policy by targeting a range of variables** (Table 2). Some target a particular measure of the fiscal balance (e.g., overall balance, primary balance). Others set ceilings on expenditures or total debt. These targets can be applied to the national government, sub-national governments, or consolidated positions.

23. **A variety of arrangements are in place to guide the setting of these targets.** At one end of the spectrum is Switzerland, which makes no systematic attempt to set a consolidated target.[29] At the other end of the spectrum are those countries which have adopted explicit fiscal rules for all or some levels of government. These exist at either or both national and sub-national levels in Argentina, Austria, Australia, Brazil, and the EU, and are negotiated between the respective governments. A middle approach is found in South Africa and Belgium, where governments have the autonomy to determine their fiscal balances, but these are monitored by legislatively- or constitutionally-mandated bodies, which provide advice on the consolidated fiscal stance and intergovernmental fiscal issues.

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[28] This meant that it took five states to outvote the national government. However, with the support of any two states, the national government held sway.

[29] In Switzerland, some cantons and the federal government have adopted various budget rules, but these are voluntary and no effort has been made to coordinate or align them.

Table 2: Fiscal Parameters Targeted for Coordination

	Consolidated balance and/or borrowing	Consolidated debt level	Sub-national balances and/or borrowing	Sub-national debt levels	Sub-national debt service	Expenditure ceilings
Argentina			X		X	X
Australia	X		X			
Austria	X	X	X[/2]			
Belgium	X	X	X			X
Brazil	X	X	X	X	X	X
South Africa						
Switzerland	X		X			X

1/ Excludes most capital spending and IFI-financed current spending.
2/ Targets are set on all municipalities within a state *as a group* rather than individually.

Enforcement

24. **A number of mechanisms make use of various types of sanctions to enforce fiscal coordination** (Table 3). For Euro area countries like Austria and Belgium, the Excessive Deficit Procedure (EDP) of the SGP sets out explicit penalties for countries exceeding the 3 percent deficit ceiling. These penalties are in the form of noninterest-bearing deposits with the European Commission partly linked to the size of the actual deficit. Sanctions can be intensified by an additional deposit not to exceed 0.5 percent of GDP. The deposit is converted into a fine if the excessive deficit has not been corrected after two years. To date, no country has been subject to penalties. In these cases, the ECOFIN Council has suspended or delayed the EDP which has as its final step the imposition of penalties. The EDP can be suspended if, in the Council's judgement, the country is making sufficient progress in correcting its excessive deficit.[30]

Table 3: Enforcement Mechanisms

	Financial Sanctions	Administrative Sanctions	Peer Pressure	Market Discipline
Argentina	√		√	√
Australia			√	√
Austria	√		√	
Belgium		√	√	
Brazil	√	√	√	√
South Africa				
Switzerland				

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[30] Under the revised provisions of March 2005, members can avoid EDP if they experience negative growth (previously annual growth of less than -2 percent) or if a deficit results from an unusual event outside its control or from a severe downturn. The 2005 revision also included "enhanced surveillance" and "peer pressure" to discipline members.

25.   **There are few examples of systems of sanctions which could *potentially* be imposed on national governments for failing to comply with agreed fiscal targets**. The main exception is the EU's SGP and EDP but the sanctions associated with this framework, as noted above, have yet to be applied to any national government. Rather, if there are sanctions for non-compliance, these are applied to regional or local governments rather than central or national governments. Moreover, it is generally national governments that are tasked with enforcement of sanction regimes, typically because the national government is the only entity that possesses the legal or constitutional powers for enforcement. In some countries (e.g., Australia) the existence of a significant vertical imbalance allows the national government to use discretionary transfers or expenditures to leverage compliance with sub-national targets. In Argentina, the federal government is explicitly exempt from sanctions.

26.   **Sanctions under Austria's DSP are levied exclusively on sub-national level governments and are designed to mimic those of the European SGP.** Under the DSP, governments that fail to comply with the specified target are to pay 8 percent of the absolute amount of the targeted balance and 15 percent of the shortfall up to a ceiling. Sanctions are withheld by the Ministry of Finance and deposited on special account. If offsetting adjustments are not made by the non-complying government, the deposit is turned into a fine and is distributed among the complying governments. While this framework appears quite rigorous, no sanctions have been administered to-date on account of considerable flexibility having been introduced in the assessment of compliance.[31] On the other hand, the national government has instituted penalties for governments that failed to ratify the agreed pact on time. Such sanctions were applied only once; the pact was ratified shortly thereafter and the penalty was refunded.

27.   **Brazil promotes compliance through a variety of measures**, including a legislative requirement for a contingency reserve in its budget defined in percent of net current revenues. It also uses financial and administrative sanctions, such as withholding of federal transfers to sub-national governments if they are not effectively collecting their own taxes. Breaches of personnel spending ceilings must be eliminated within 8 months or the government in question is prohibited from engaging in new credit operations. There is some flexibility in enforcement of mandated fiscal targets, but this requires explicit congressional approval. The time frame for taking corrective action can be increased if the economy contracts by 1 percent or more over the previous four quarters or if a natural catastrophe is

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[31] For example, contrary to EUROSTAT rules, the DSP permits the proceeds of property sales to be applied to deficit reduction. The fiscal targets only apply on average over the period of the pact rather than on a yearly basis, a deviation of 0.25 percent form target is explicitly permitted, and the pact allows for revised deficit targets in the case of an "exceptional burden", defined only as revenue shortfalls and expenditure increases due to "severe" economic slowdown. See Diebalek, *et al* (2005) for more details.

declared by the legislature. The credibility of the framework is strengthened by the Fiscal Crimes Law, which provides for sanctions against officials who failed to adhere to fiscal parameters set out in the FRL. These include fines on individuals, loss of job, ineligibility for public office for a maximum of five years, and imprisonment.

28.   **Argentina's framework includes both penalties *and* incentives to encourage compliance.** Compliance with fiscal consolidation objectives is rewarded with financing from the federal government at interest rates reflecting the extent of the provincial government's fiscal consolidation[32] or favorable reschedulings of intergovernmental debt service obligations. In terms of penalties, if the Executive Committee of the FCRC concludes there has been a violation of agreed fiscal parameters, the province is given 10 days to explain. The FCRC can recommend remedial measures including, for example, publication on government websites of the infraction, restrictions on the power to vote on the FCRC, exclusion from federal tax incentive schemes, limitations on guarantees granted by the federal government, denial of new borrowing authority, and limitation on federal discretionary transfers.

29.   **The credibility of any enforcement regime depends on the ability *and* willingness of the relevant government to punish non-compliance**. Even when enforcement mechanisms are explicit, credibility is not guaranteed as most of the frameworks reviewed with formal systems of penalties allow discretion in their application (e.g., EU, Argentina, Austria, Brazil). This creates a potentially major loophole in enforcement, particularly when breaches result from financial distress since decisions on the application of penalties against political entities are themselves political.[33] For example, in Austria, the imposition of sanctions for non-compliance with agreed fiscal parameters requires a unanimous decision of a four-member 'conciliation committee' comprised of two central government representatives and two representatives from either the state or municipal governments (depending on which level has not complied). In Brazil, the loophole is somewhat smaller with the suspension of sanctions requiring a decision of parliament. In the euro area, the EC Directorate of Economic and Financial Policy has the mandate to recommend corrective measures, but in practice fines have been next to impossible to implement.

30.   **Conversely, the absence of an *explicit* system of penalties does not necessarily imply there is no effective enforcement.** Effective enforcement can be informal, relying for

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[32] These effectiveness of these bilateral agreements ('orderly financing programs' or PFOs) as a means to encourage fiscally-prudent behavior is dependent on the extent to which individual provinces need to rely on financing from the federal government. This limitation is reflected in the decline in the number of PFOs ratified in the year's following the financial crisis—16 in 2002, 12 in 2003 and 7 in 2004.

[33] Implementation could be de-politized somewhat if enforcement were in the hands of an independent body but this does not appear to be the case in any country likely because such a body, unless constitutionally empowered, would undermine the authority of parliaments.

discipline on peer pressure and/or the threat of *indirect* financial repercussions. Such mechanisms can be quite effective when the entity tasked with enforcement has both the resources and the commitment to protect the credibility of the coordination framework. In Brazil, the national government can withhold discretionary transfers to states and municipalities that do not demonstrate adequate tax collection effort. In Australia, the national government has offset undesirable sub-national fiscal behavior by redirecting tax revenues away from the non-complying state or reducing discretionary transfers to the non-complying state. The seriousness of the national government's commitment to enforcing the ALC framework was tested in 1932 when the Government of New South Wales exceeded it allotted borrowings. In response, the national government, under the authority granted it by the Financial Agreements Enforcement Act, declared that certain revenues due New South Wales would be paid directly to the national government and that its bank deposits would also become payable to the national government.

31.   **In Switzerland, while there is no coordinated framework to be enforced, the federal government adopted rules in 2003 imposing a ceiling on its own expenditures and requiring its budget to be balanced over the cycle.** Several cantons have also voluntarily adopted fiscal rules, some of which have been included in their cantonal constitutions. However, these rules are not coordinated or linked to any pre-agreed target. To a significant extent, Swiss governments are disciplined through public pressure for fiscal prudence[34] and individual cantons, in particular, are also disciplined through competition among one another (i.e., individuals and business are likely to move out of cantons with poor fiscal management) and/or through a requirement for referenda on major spending or revenue decisions.

Monitoring compliance with fiscal targets

32.   **For fiscal coordination to be enforceable, it must be supported by transparent and regular monitoring, which in turn requires consistent accounting rules and the use of common indicators of fiscal performance.** The willingness of governments to move in this direction is an important signal of commitment to any framework for fiscal coordination. A number of the countries in the sample have implemented major improvements in these areas. For example:

- **Argentina's** FRL mandates the use of homogenous fiscal indicators and requires national and state governments to publish information on budget execution, debt stock, and debt service with no more than a 3-month delay. A commission has been set up as part of the fiscal responsibility framework to monitor and promote the consistency of budget data among the federal government and provinces. Fiscal

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[34] This "bottom-up" fiscal restraint may derive from the use of referenda to directly involve taxpayers in deciding how their money is spent.

reporting requirements are also a feature of the bilateral agreements (PFOs) between the national government and individual states.

- **Brazil** has adopted requirements for timely budget reporting and the exchange of information among levels of government. Three times a year, jurisdictions produce a "Fiscal Management Report" containing indicators on compliance with the FRL.[35] In addition, the FRL requires the annual budget law to contain a "Fiscal Targets Annex" which assesses compliance with the previous year's targets. The Ministry of Finance also publishes a monthly list of governments that have exceeded their debt limits.

- In the **EU**, national accounting standards are set by EUROSTAT to reduce the scope for non-compliance with GSP through creative accounting (although clearly considerable scope remains). (However, neither Austria nor Belgium have made harmonized accounting mandatory for lower levels of government, although in the mid-1990s Belgium's HCF introduced accounting rules that were stricter that those imposed by the European Commission with the expectation that all governments would adopt them.)

- **Belgium's** HCF produces a report every March on compliance with the previous year's fiscal targets by all levels of government.

- **Austria** imposes no obligation for individual governments to publish budget balances as part of the DSP, although a fine may be imposed if important budgetary information is withheld from the coordination committee.

- In **Switzerland**, where the coordination framework is the loosest, there have been voluntary efforts to harmonize budget and accounting practices across cantons.

33. **Since 1983, as part of the movement towards a weaker ALC, sub-national governments in Australia have made a concerted shift toward improving fiscal transparency**. The intent was to rely on private markets and public pressure to provide fiscal discipline at the sub-national level. For example, borrowing in excess of 3 percent of the allocation agreed to in the ALC obliged the government in question to provide an explanation to the ALC, which was then made public. In 1993, the ALC began publishing a "National

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[35] The system has scope for improvement. de Mello (2002) found considerable heterogeneity among individual states in the coverage and presentation of data and the types of statistical indicators used. The Treasury has made efforts to improve consistency and is working with the Courts of Accounts to harmonize reporting standards.

Fiscal Outlook" report which presented, in a consistent format, fiscal forecasts for the public sector, including individual state governments.[36]

Role of the central bank

34. **While fiscal coordination is inherently a government function, central banks can play an important role in fiscal institutions, although they tend not to be direct participants in discussions of fiscal coordination**. Only in Belgium is the central bank governor a formal member of the coordinating institution. However, in Australia, the central bank has played an important role, first given its role as the principle underwriter of government loans, and second through its advice on the amount of money that could be raised on reasonable terms. It could therefore refuse to underwrite government borrowing in excess of what it deems to be macro economically appropriate. While the government could disregard the central bank's advice and float loans not underwritten by it, government were not surprisingly reluctant to do so.

D. Overview of Lessons From Other Countries

35. **A few common themes emerge from this brief review of the international experience**:

- **The adoption of a particular model is mainly determined by historical, political, and economic developments and the character of the country in question** (e.g., the importance assigned to regional and local autonomy). A model that may work well in one environment may not in another. And in all countries, coordination mechanisms evolve over time—in some cases substantially so.

- **The relative importance of strong fiscal coordination is determined, in part, by the availability of alternative channels to achieve and preserve macroeconomic stability.** In a country with a floating exchange rate and an independent central bank, monetary policy will be able to share the burden of macroeconomic stabilization. Where monetary policy is constrained by a currency peg, deliberate fiscal coordination will be essential. Failure to effectively coordinate fiscal policy in the context of a pegged exchange rate can—as in Argentina—have disastrous consequences.

- **Coordinated fiscal policy is not necessarily the same thing as good fiscal policy.** No institutional mechanism alone will prevent a country from adopting poor policies. Coordination mechanisms and institutions can only facilitate the adoption and

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[36] The NFO was discontinued in 1999 in light of improvements in the standard and consistency of budget reporting across all governments, including the release of mid-year budget reports.

implementation of good policies. But the majority of countries rely to some extent on fiscal rules to secure coordination and prudent fiscal policies.

- **No institutional framework for fiscal coordination can be effective without political will**. Legislative frameworks—including formal rules—are no substitute. Some coordination bodies are advisory with minimal powers. The effectiveness of such mechanisms depends on the extent to which policy makers have ownership of the resulting recommendations.

- **Where mechanisms exist to enforce coordination, enforcement is usually the responsibility of national governments.** This is easiest when the national government has sufficient resources at its disposal to leverage sub-national compliance. The only framework that allows for the application of penalties on national governments is that of the SGP (but, even in this case, sanctions have yet to be applied to any case of non-compliance). However, this is a special case as the SGP has the weight of an EU treaty obligation.

- **Discretion in application and enforcement is a feature of virtually all coordination models with enforcement mechanisms.** Discretion may have been necessary to achieve political consensus for the adoption of the overall framework. In such cases, the effectiveness of coordination depends heavily on the political will to impose and enforce sanctions. Frameworks that contain automatic penalties that require explicit decisions to be suspended are preferable to those that require decisions to impose penalties. The higher the hurdle to suspend sanctions, the less likely it is to happen.

E. Lessons for Bosnia & Herzegovina

36.   **As a federal state with significant resources and powers devolved to the sub-national level, effective fiscal coordination is essential**. But unlike in many other decentralized federations (e.g., Australia), the national government in Bosnia & Herzegovina does not itself have the budgetary resources to assume responsibility for fiscal policy in pursuit of macroeconomic stabilization.[37]

37.   **Effective fiscal coordination is particularly important if Bosnia & Herzegovina desires to maintain its currency board** since monetary policy is not available as a tool of macroeconomic policy. The country examples reviewed for this paper send a clear signal about the risks Bosnia & Herzegovina runs in attempting to maintain its currency peg without effective control over consolidated fiscal policy. It is therefore essential that fiscal policy

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[37] Budgeted State expenditures in 1996 accounted for only 4 percent of GDP compared with almost 50 percent for all other levels of government.

makers have a good understanding of the relationship between their decisions and the strength of the currency board. The existence of a pegged exchange rate may also point to the need to give the State government a relatively greater say in setting the consolidated deficit target (as in Australia) since it is this level of government that has the most direct responsibility for protecting the national currency.

38. **More active participation of the Central Bank (CBBH) in the NFC is one way to facilitate this.** At present, the central bank governor has observer status on the NFC. While it would not be appropriate for the governor to have a formal vote on fiscal policy decisions, there is scope for the CBBH to play a greater role in NFC deliberations by having it regularly present its views to the NFC on the macroeconomic conditions within which fiscal policy decisions are to be made.[38]

39. **The task of strengthening fiscal coordination is becoming increasingly urgent.** To date, Bosnia & Herzegovina has relied on pressure from, or outright intervention by, the international community to ensure the appropriateness of fiscal policy. However, the OHR, which until recently had used the powers vested in it as part of the Dayton Accord to ensure responsible fiscal management, has indicated its intention to exit Bosnia & Herzegovina in 2007.

40. **It is therefore of concern that the current framework for fiscal coordination in Bosnia & Herzegovina lacks many of the elements that have been associated with effective fiscal coordination in other countries**. For example:

- The NFC does not yet have legal status and the participation of key decision-makers in the NFC is erratic.

- There is not yet a formal agreement among the State and Entity governments on a harmonized budget calendar or on how to deal with the failure of policy-markers to come to timely decisions on key elements of fiscal policy.

- Reliable and timely data on the fiscal performance of lower levels of government is lacking.

- Enforcement of agreements on fiscal policy among governments is weak. Specifically, there are no penalties for non-compliance and public pressure has not yet shown itself to be a reliable source of discipline for prudent fiscal policy. And since Bosnia & Herzegovina has not yet borrowed on private markets, market

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[38] At present, this role is filled by Economic Policy and Planning Unit (EPPU) which is accountable to the Council of Ministers. A greater role for the central bank need not supersede that played by the EPPU but could provide a valuable alternative perspective on economic conditions.

discipline does not figure prominently as a means to ensure compliance with agreed fiscal parameters.

41. **At a minimum, effective fiscal coordination in Bosnia & Herzegovina will require** intergovernmental agreement on, and adherence to, a budget calendar that ensures decisions on key fiscal parameters and adoption of annual budgets by all levels of government occur in a timely and predictable manner. The authorities should also adopt a reporting system that secures comprehensive, accurate, and timely fiscal data on budgets and on budget execution, for all levels of governments and all off-budget fiscal operations, individually as well as on a consolidated basis.

42. **Decision-making within the coordination structure could be facilitated with the adoption of numerical fiscal rules** (for example, deficit or debt ceilings or the use of "golden rules") to help guide the setting of targets. While fiscal rules are neither necessary nor sufficient conditions for good fiscal policy making, they could help guide policy-makers as Bosnia & Herzegovina's political culture continues to mature and as the active involvement of the international community in setting fiscal policy diminishes. The "contractual" use of fiscal rules could also be of benefit given the "common pool" challenges associated with the diverse, multi-party character of Bosnia & Herzegovina's governance.

43. **There is a variety of ways to enforce agreed fiscal targets**. However, for Bosnia & Herzegovina, some form of penalty and/or incentive will be necessary to foster fiscal discipline among lower levels of government. Unlike countries that have a significant vertical imbalance, the national government in Bosnia & Herzegovina does not command sufficient resources to indirectly enforce compliance by lower levels of government with agreed fiscal targets. While there will likely be some level of discretion into the system of enforcement, it should be designed in such a way as to limit its use to exceptional circumstances.

44. **Regardless of the modality adopted, the authorities in Bosnia & Herzegovina need to strengthen the analytical capabilities for budget analysis and projections** over the longer term and to empower the State to monitor the operations of line ministries, other levels of government, and off-budget entities.

Elements of Fiscal Coordination									
	Argentina	Australia	Austria	Belgium	BiH	Brazil	EU	South Africa	Switzerland
legislative or constitutional underpinnings	Y	Y	Y	Y	N	Y	Y	Y	N
key policy makers represented	Y	Y	Y	Y	Y	n/a	Y	N	N
formal decisions taken	Y	Y	Y	N	Y	n/a	Y	N	N
formal voting formula/deadlock breaking mechanism	Y	Y	N	N	N	n/a	N	N	N
Penalties specified	Y	Y	Y	Y	N	Y	N	N	N
Past Use of Penalties	N	Y	N	N	N	Y	N	N	N
Explicit Budget Calendar	Y	Y	Y	N	N	Y	Y	Y	N
Harmonized Reporting and Accounting Standards across levels of government	Y	Y	N	N	N	Y	Y	N	N

n/a: Brazil's Fiscal Responsibility Law does not rely on a coordinating body for its implementation.

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