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Bosnia and Herzegovina: Selected Issues

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BOSNIA AND HERZEGOVINA

Selected Issues

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Approved by the European Department

September 21, 2010

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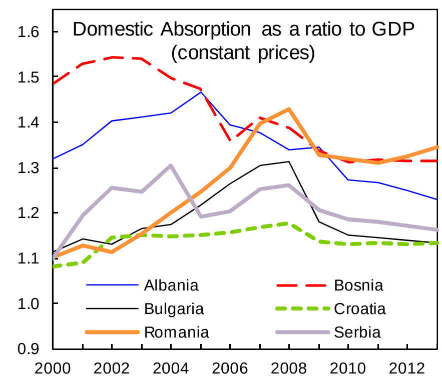
A. Introduction

1. **In this study, we examine the sources of post-crisis economic growth, identify the main impediments to domestic supply expansion, and highlight the need for growth-promoting government policies.** We start by evaluating the BiH's growth performance relative to potential. We then analyze the BiH economy's production process to quantify the contributions of physical and human capital and technological change to real GDP growth. We use the developed growth accounting framework to structure the discussion of the potential drivers of future economic growth, the main stumbling blocks faced by domestic producers, and identify growth-promoting government policies.

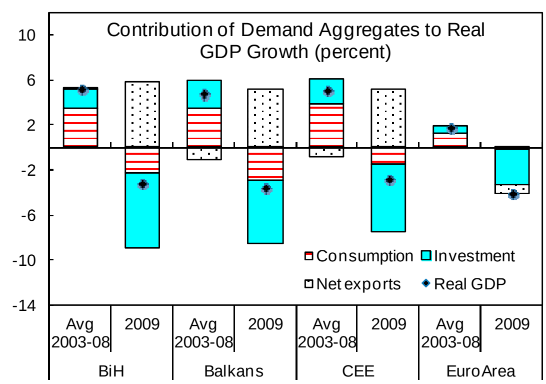
B. Growth Performance and Medium-Term Prospects

2. **Like elsewhere in the region, Bosnia and Herzegovina's pre-crisis growth model relied on booming domestic demand financed from abroad.** While in all Balkan countries residents spent more than they earned from domestic sources in 2000–2008, Bosnia and Herzegovina (BiH) boasted some of the highest ratios of domestic absorption over GDP.[2] This was made possible mainly by large remittances from family members working abroad (15–18 percent of GDP each year), foreign direct investment, unrequited transfers to government, and a credit boom funded by foreign banks.



Source: IMF's WEO database and Fund staff estimates.

3. **The BiH economy fell into recession in 2009.** The global financial crisis and recession triggered a collapse in the demand for Bosnian exports and severely curtailed cross border financial inflows. Private investment and spending on consumer durables collapsed, while private current consumption softened to a lesser extent, on the back of moderate growth of wages and social benefits. The slump in



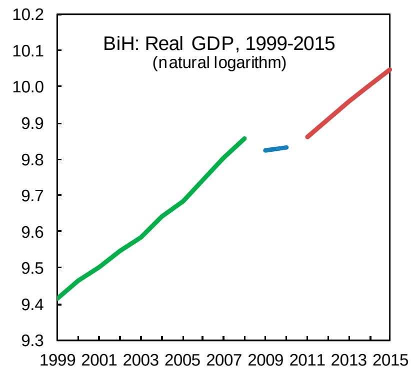
Source: IMF's WEO database and Fund staff estimates.

[1] Prepared by Plamen Iossifov and Khaled Abdelkader (both EUR).

[2] Domestic absorption equals the sum of residents' private and public consumption and investment of domestic and foreign goods and services.

domestic demand led to a large improvement in the external trade balance.

4. **Following a stagnation in 2010, growth is expected to rebound.** Whereas the world economy appears solidly on the path of recovery, BiH main trading partners (EU and Western Balkan countries) are expected to lag behind booming emerging Asian economies, tempering external demand for BiH noncommodity exports. Domestic demand in 2010 will also remain soft, as banks are likely to hoard capital and keep interest rates high to shore-up flagging profitability, as they work through the losses in their loan portfolios. Over the medium term, domestic demand is expected to remain below pre-crisis levels relative to domestic income, reflecting fiscal consolidation and the end of the credit boom funded from abroad. As a result, real GDP is expected to remain permanently below the prevailing pre-crisis trend, despite a rebound in real GDP growth.



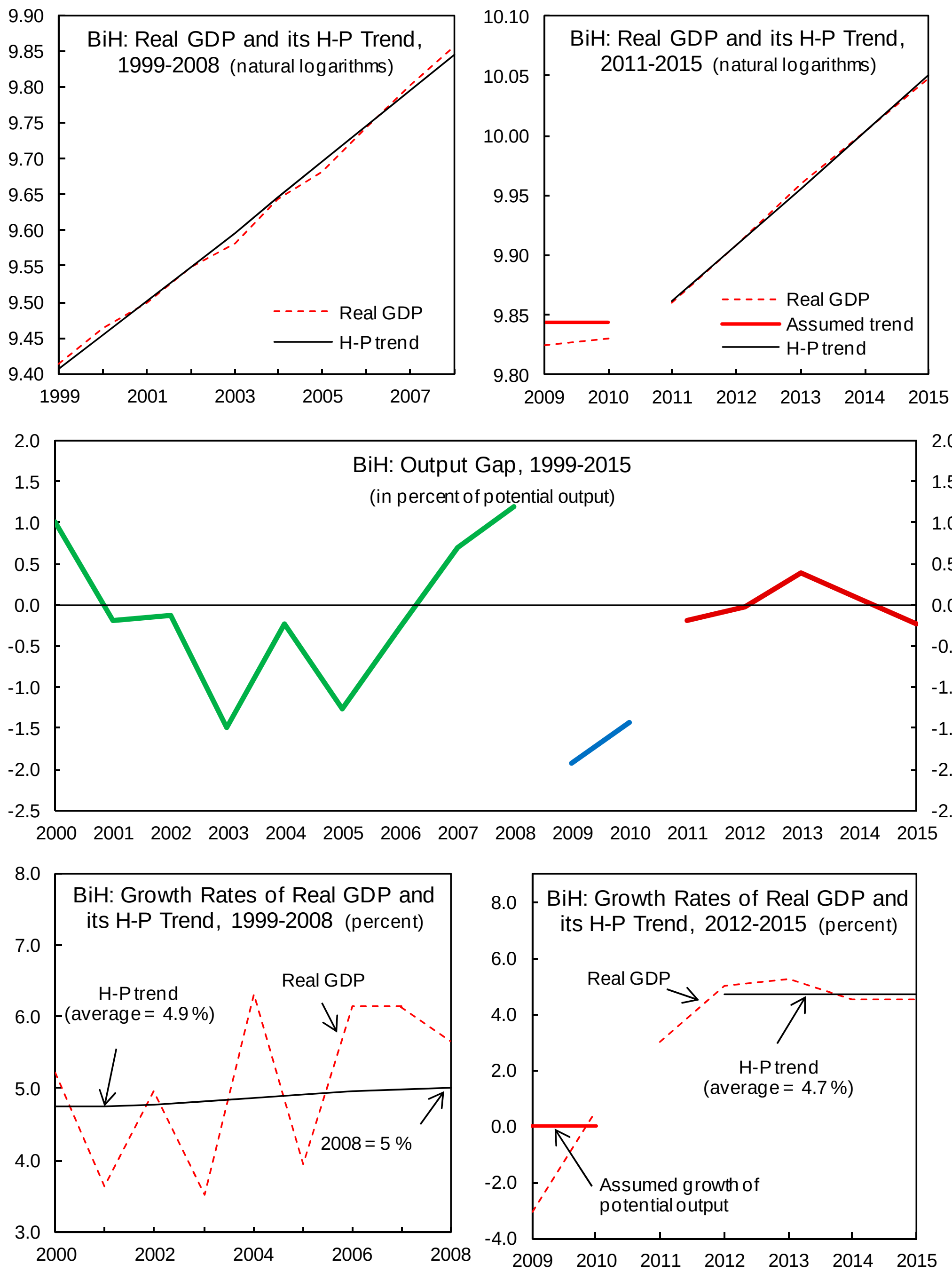
Source: BiH Statistical Agency and Fund forecasts.

C. Potential Output and the Output Gap

5. **The post-crisis potential growth rate of the BiH economy is projected to be slightly below its pre-crisis value, resulting in domestic output remaining permanently below the prevailing pre-crisis trend.** We decompose domestic output into a long-run potential and a business-cycle component, by applying the Hodrick-Prescott filter with a smoothing parameter of 100 to the real GDP series (in natural logarithm). Under current Fund staff projections, the BiH's real GDP series exhibit a structural break (in domestic demand) in 2009–10. Applying the H-P filter on a series containing a structural break produces spurious estimates of the long-run trend, as a shift in the latter across two sub-periods would be amalgamated in an overall slope that is different from those in each sub-period. Therefore, to obtain the potential output series over 1999–2015, we run the H-P filter separately on the sub-periods (1999–2008 and 2011–2015), and assume that its growth rate during and in the immediate aftermath of the global crisis was zero.[3] Results show that the post-crisis potential growth rate of the BiH economy is likely to be, on average, slightly below its pre-crisis value (4.7 percent vs. 4.9 percent), leaving the real GDP permanently below its prevailing pre-crisis trend (Figure 1).

[3] The short time span of the second sub-period makes the derived long-run trend from the H-P filter indistinguishable from a simple fitted time trend.

Figure 1. BiH: Actual and Potential Output and Real Growth, 1999-2015



Source: BiH Statistical Agency and Fund staff estimates and projections.

Notes: The Hodrick-Prescott Filter with a smoothing parameter of 100 is applied on the pre- and post-crisis series of real GDP (in natural logarithm). The growth rates of the H-P trend series are derived from the logarithmic differences of the underlying series.

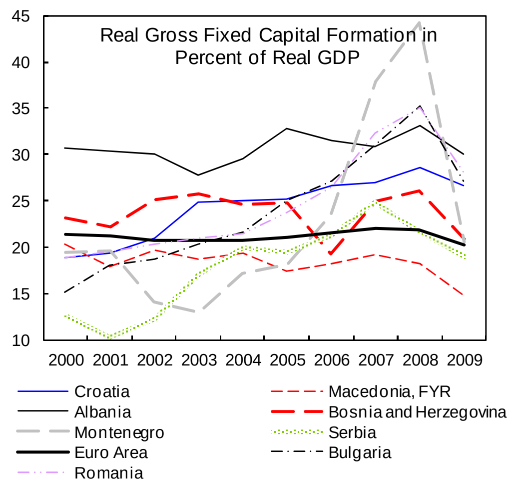
D. Growth Accounting

Setup and calibration

6. **We analyze the BiH economy's production process to quantify the contributions of physical and human capital and technological change to real GDP growth.** We calibrate a Cobb-Douglas aggregate production function for Bosnia and Herzegovina and use it to decompose the growth of real GDP into contributions of factors of production and the Solow residual, which captures changes in output per unit input. The Solow residual—commonly referred to as total factor productivity (TFP)—represents "...the effect of 'costless' advances in applied technology managerial efficiency, and industrial organization..." (Abramovitz, 1962, as cited in Jorgenson and Griliches, 1967). The implementation of the growth accounting framework (Box 1) requires the mapping of theoretical concepts to existing data and in the process overcoming deficiencies in BiH statistics (Appendix Table 1):

- **Real GDP** . We use the real GDP estimates under the production approach published by the Agency for Statistics of Bosnia and Herzegovina (ASBiH).[4]

- **Investment flows and depreciation rate**. We measure investment flows using national accounts data on real gross fixed capital formation (GFCF). The share of investment in real GDP in BiH is similar to that in other Balkan countries and higher than in the Euro area, reflecting the need to retool the economy in its transition from market socialism to a market economy. We apply a constant annual depreciation rate of 4 percent, which is commonly used in cross-country studies (Nehru, Swanson, and Dubey, 1993; Chow and Lin, 2002).



Source: Eurostat; BiH statistical agency; and staff estimates.

- **Physical capital stock**. We construct the real capital stock series using the perpetual inventory method, which starts with an estimated value of the capital stock in a base year and recovers the remainder of the series by adding to the base stock the investments net of depreciation made in subsequent years ($K_t = (1-\delta)K_{t-1} + I_t$) (Nehru, Swanson, and Dubey, 1993).

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[4] The discrepancy between the production and expenditure measures of GDP is high (between 10 and 13 percent in 2006–2008). The production-approach GDP is the primary approach used by ASBiH.

Box 1. Overview of Growth Accounting

The starting point of growth accounting is an aggregate production function—typically parameterized in the Cobb-Douglas form with constant returns to scale—that relates economy's total real output *[Y]* to real factor inputs (physical *[K]* and human *[H]* capital) and output per unit input *[A]*:

$$Y_t = A_t K_t^{\alpha} H_t^{1-\alpha} \tag{1}$$

The parameter *[A]* represents shifts of the production function and is commonly referred to as total factor productivity (TFP). Using the fact that in continuous time, the instantaneous rate of growth of output equals the ratio of its derivative with respect to time and the value at which the derivative is evaluated, we can differentiate both sides of (1) with respect of time, divide by *Y*, and rearrange:

$$\frac{\dot{Y}}{Y_t} = \frac{\dot{A}}{A_t} + \left(\frac{\partial Y}{\partial K}\frac{K_t}{Y_t}\right)\frac{\dot{K}}{K_t} + \left(\frac{\partial Y}{\partial H}\frac{H_t}{Y_t}\right)\frac{\dot{H}}{H_t} \text{ , where} \tag{2}$$

$$\frac{\dot{Y}}{Y_t} = \frac{\partial Y}{\partial t}\ ;\ \frac{\partial Y}{\partial K} = A_t \alpha K_t^{\alpha-1} H_t^{1-\alpha} = \frac{\alpha Y_t}{K_t}\ ;\ \text{and}\ \frac{\partial Y}{\partial H} = A_t(1-\alpha)K_t^{\alpha}H_t^{-\alpha} = \frac{(1-\alpha)Y_t}{H_t} \tag{3}$$

$$\frac{\dot{Y}}{Y_t} = \frac{\dot{A}}{A_t} + \alpha\frac{\dot{K}}{K_t} + (1-\alpha)\frac{\dot{H}}{H_t} \tag{4}$$

The elasticities of real output with respect to physical (α) and human capital ($1-\alpha$) can be estimated by invoking the result that under the assumption of perfect competition in product and factor markets, the factors of production are paid their marginal products (e.g., Barro and Sala-i-Martin, 1999):

$$\frac{\partial Y}{\partial K} = r \text{ and } \frac{\partial Y}{\partial H} = w \text{ , where} \tag{5}$$

r – real return on capital
w – real wage

Substituting (3) in (5), we can show that the elasticity of real output with respect to human capital is equal to the observed share of labor (i.e., compensation of employees) in real income, which is equal to real output as per the circular income-expenditure flow diagram of economic activity and the system of social accounts associated with it (Jorgenson and Griliches, 1967; Hulten, 2000):

$$1-\alpha = \frac{w_t H_t}{Y_t} \text{ and } \alpha = \frac{r_t K_t}{Y_t} \tag{6}$$

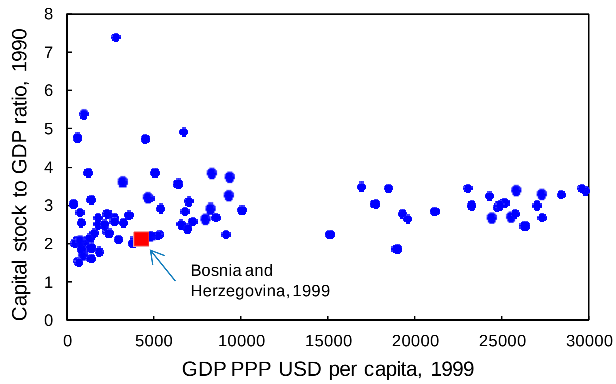
In our analysis, we use the discrete time approximation of (4), in which $1-\bar{\alpha}$ is the average share of labor in real income:

$$\frac{\Delta Y_t}{Y_{t-1}} = \frac{\Delta A_t}{A_{t-1}} + \bar{\alpha}\frac{\Delta K_t}{K_{t-1}} + \left(1-\bar{\alpha}\right)\frac{\Delta H_t}{H_{t-1}} \tag{7}$$

Equation (7) allows us to estimate the growth rate of TFP as the difference between the growth rate of output and the weighted growth rates of factor inputs, the weights being their respective aggregate income shares.

Source: Hulten (2000).

- **Base-year estimate of capital stock**. We estimate the stock of real capital in 2003 using a widely used approach first suggested by Harberger (1978). It evokes the result that in the Solow model the capital stock and output grow at the same rate in steady state (e.g., Jones and Manuelli, 1997). Therefore, $\frac{K_t - K_{t-1}}{K_{t-1}} = -\delta + \frac{I_t}{K_{t-1}}$ or $K_{t-1} = \frac{I_t}{\delta + g}$, where (g) is the steady-state growth of output. However, the BiH economy circa 2003 cannot be treated as being in a steady state, given the socialist heritage of outdated capital stock and the significant loss of productive capacity during the 1992–1995 war. Convergence of the BiH economy to EU standards requires a higher growth rate of the capital stock than that of potential output for a number of years. At the same time, the post-2002 pace of capital accumulation—fueled by a credit boom funded from abroad—was, in hindsight, exuberant. In this paper, we use a value for the potential growth rate of the capital stock circa 2003 of 6.8 percent (see notes to Appendix Table 1). The obtained ratio of real capital stock to real GDP in BiH in 1999 of 2.15 falls between the official estimates of the ratio of capital stock to GDP in Poland and the Czech Republic in 1998 (1.95 and 3, respectively, see Doyle, Kuijs, and Jiang, 2001), positioning BiH in the cluster of countries with similar per capita income; and, as expected, below the reported values in developed countries in 1990 (text figure).[5]



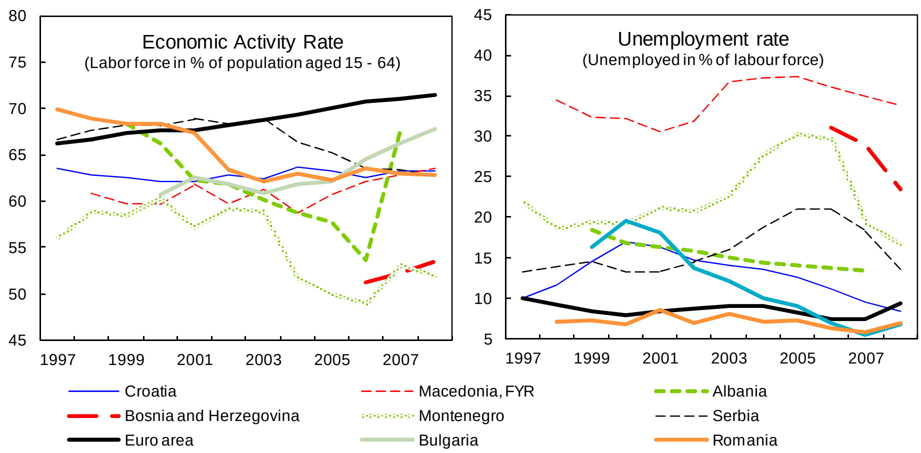
Source: Nehru and Dhareshwar (1993), IMF's WEO database, and authors' estimates.

- **Human capital stock**. We use as proxy the number of employees. We do not attempt to augment our measure of human capital to reflect its quality—typically accomplished by taking into account the average years of schooling and the return on education (Chow and Lin, 2002)—due to lack of data on BiH in existing cross-country datasets (Barro and Lee, 1996). The total number of employees can be viewed as an outcome of the interaction of a number of characteristics of the labor market in BiH, in particular the dynamics of total population, its age distribution, economic activity rate, and rate of unemployment (Appendix Table 1). Bosnia and

[5] Overestimation of the base-year capital stock will underestimate the contribution of capital to real GDP growth (and hence overstate the importance of total factor productivity gains), as it would result in lower real growth of capital for a given path of investment flows (Nehru and Dhareshwar, 1993).

Herzegovina has one of the lowest labor force participation rates and one of the highest unemployment rates in Europe (Figure 2).

Figure 2. BiH: Labor Market Characteristics Relative to Peers, 1997-2008

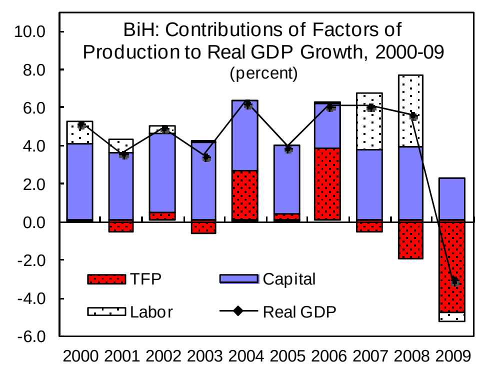


Source: Eurostat; BiH statistical agency; and staff estimates.

- **Share of labor in real income.** The parameter $(1-\alpha)$ in the Cobb-Douglas aggregate production function is set to 0.468, which is the average share of compensation of employees in the income-approach estimates of real GDP in 2007–2008. This gives an estimate of α of 0.532.

Results for 2000–2009

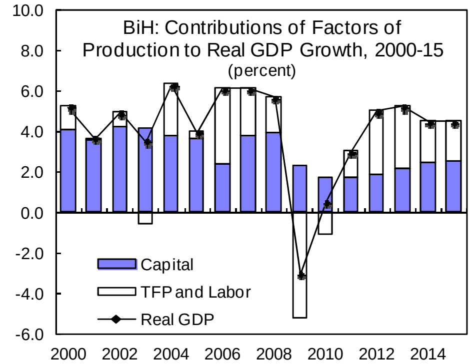
7. **On the supply-side, the pre-crisis growth of output was mostly driven by rapid accumulation of factors of production.** The massive build-up of productive capacity alone—financed by foreign direct investment and a credit boom funded by foreign savings—on average accounted for three-forth of the observed output growth in 1999–2008. The decline in the unemployment rate in 2007–08 has helped boost the contribution of the labor force to observed output growth. On the other hand, the 2009 output loss was accompanied by a decline in the effectiveness of capital utilization and employment losses.



Source: BiH statistical agency; and staff estimates

Implications for future growth

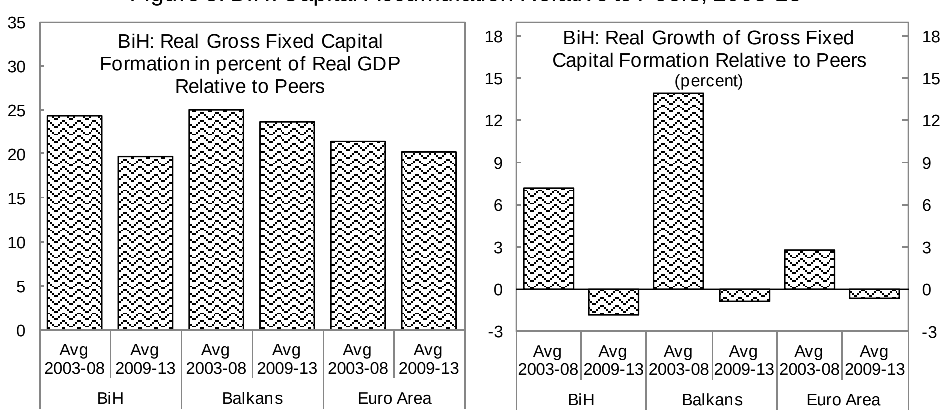
8. **Post-crisis, the growth of the BiH economy will likely become more dependent on gains in human capital and total factor productivity.** The projected return to normalcy



Source: BiH statistical agency; and staff estimates

of credit growth—reflecting the switch of banks' funding from foreign borrowing to domestic deposits—suggests that, unless private and public savings increase significantly relative to the baseline projection and/or structural reforms create fiscal space for stepped up public infrastructure investment, the pace of capital accumulation and its contribution to real GDP growth will be lower in the post-crisis period (Figure 3). This is consistent with the results of a large cross-country study of the effects of past financial crises on factors accumulation, which finds a permanently lower post-crisis growth of capital (IMF, 2009). Future growth will hence need to rely to a bigger extent on gains in human capital and total factor productivity.

Figure 3. BiH: Capital Accumulation Relative to Peers, 2003-13



Source: IMF's WEO database and Fund staff estimates

E. Growth-Promoting Policies

9. **Enhancing BiH's human capital and speeding-up the pace of technological change would require a renewed emphasis on structural reforms to unleash BiH's human capital and entrepreneurship potential.** In this section, we analyze the main characteristics of the BiH labor market and business environment and identify specific government policies that can help unleash BiH's human capital and entrepreneurship potential.

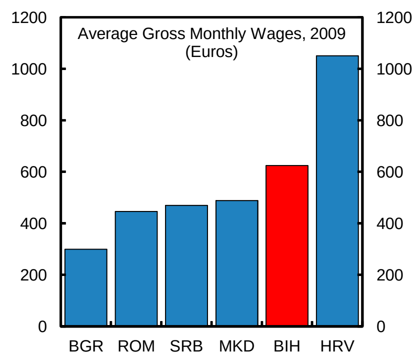
Labor market

Main characteristics

10. **The profound change in the structure of the BiH economy in the 1990-s created large imbalances in the labor market, which have persisted ever since.** Prior to the dissolution of Yugoslavia and the subsequent armed conflict in Bosnia and Herzegovina, the

economy of Bosnia and Herzegovina was heavily industrialized and dominated by large-scale, export-oriented enterprises in the energy, raw materials, and the military complex (World Bank, 1997). The end of the cold war, the severance of the industrial links between Yugoslavia's constituent republics, and the destruction of physical capital during the 1992–1995 war led to a massive deindustrialization. The resultant slack in economic activity was partially absorbed by a burgeoning public sector and small-scale, often "grey economy," private firms operating in agriculture, services, and light manufacturing. The share of heavy and light industries in total value added declined from 43 percent of GDP in 1990 to around 20 percent in 2008, while the shares of both merchant and public services increased by 10 percentage points in 1994–2008. At present, the economy appears to be following a path of low-skill specialization, with 43 percent of exports classified as low-skill goods (ETF, 2007). The destruction of jobs in the old large-scale industrial enterprises and the war damages to the production infrastructure swelled the ranks of the unemployed, while the shift from heavy industry and military production to services and light manufacturing created major skill gaps and mismatches that impeded the quick re-entry of unemployed in the formal labor market.

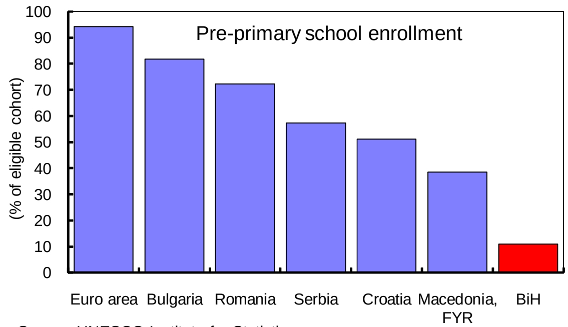
11. **The BiH labor market is characterized by high unemployment and robust nominal wage growth indicating the presence of structural bottlenecks.** The BiH average wage is the second highest in Southeast Europe and exceeds those of second-wave new EU members (Bulgaria and Romania). Though declining in recent years, at 24–25 percent, the BiH's unemployment rate remains one of the highest in Europe (Figure 2). Young people below the age of 25 are most affected, with close to 50 percent out of work. The structural nature of the unemployment problem in BiH is demonstrated by the fact that 75 percent of unemployed have been out of work for more than two years, and 50 percent for more than five years (BHAS, 2008). Among the main constraints holding back the development of the BiH's labor market are the low labor force participation rate, sizable skill gaps, the large informal sector which distorts the labor market, and the ineffectiveness of the labor mediation public services.



Sources: Haver Analytics; and IMF staff estimates.

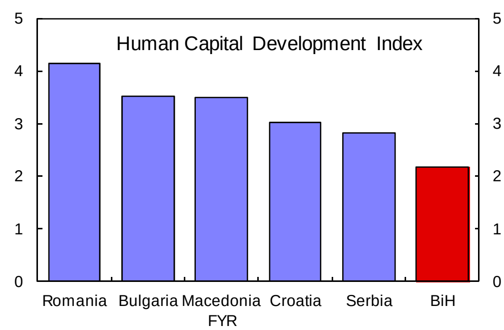
12. **Though on the rise in recent years, BiH's labor force participation rate remains one of the lowest in Europe (Figure 2) on account of the extremely low activity rate of women.** The share of economically active men in the 15–64 years' age cohort (around 67 percent) is comparable to those in other Balkan countries (Bulgaria, Croatia, Romania), but is 10 percentage points below the EU-wide average. At the same time, the labor force participation rate among working-age women is only around 40 percent, trailing the average in BiH's Balkan peers and the EU by 15 and 22 percentage points, respectively (BHAS,

2008; ILO 2009). Women activity rates are below regional and EU comparators in both entities, though the outcome in the RS is around 10 percentage points better than in the Federation. While this is a complex socio-economic phenomenon, one contributing factor is the very low enrollment of children in pre-school programs in BiH (due to their scarcity in rural areas and cost), which complicates the simultaneous carrying-out of family and work responsibilities (ILO 2009).



Source: UNESCO Institute for Statistics.

13. **The sub-par general level of educational attainment and acute skill mismatches hinder the employment of many job seekers.** Whereas near universal primary education has been achieved (ILO, 2009), the shares of the population with completed secondary and higher education fall short of the old and new EU members' averages (ETF, 2007, WB, 2009b). Approximately two-thirds of secondary school students are enrolled in four year technical schools or three year vocational schools with narrowly-specialized and sometimes outdated programs and leave the system ill-equipped with core work skills (e.g., communication skills, problem-solving and team-work, etc.) that are in high demand in the labor market (WB, 2009a). As a result, unemployment rates are particularly high among young job seekers (Tiongson and Yemtsov, 2008). In 2003, the primary and secondary education in BiH were overhauled with the introduction of a nine-year basic education and the establishment of a common core curriculum. The legislative reform of the pre-school, vocational, and higher education has, however, stalled in parliament (ILO, 2009). The problem is exacerbated by the loss of skilled workers through emigration, and the paucity of life-long learning and on-the-job training programs. In the 2009 Enterprise Survey carried out by the World Bank, one third of managers of exporting firms cited inadequate skill pool as an obstacle to their operations (WB, 2009b).



Source: OECD, 2010.
Higher score represents superior policy or institutional conditions. A score of 5 is equivalent to best practice in the OECD area or globally.

14. **The large informal sector creates disincentives and distortions in the labor market.** The size of the grey economy is estimated at around 37 percent of GDP in the Federation and 21 percent in Republika Srpska (ETF, 2007). The informal employment is heavily concentrated in agriculture and light manufacturing (ILO, 2009) and accounts for a large share of the net employment generation (WB, 2005). Informal jobs are much lower paid than in the formal economy, do not pay social security and health care contributions, and lack job security. Workers in the grey economy, therefore, lack incentives for lifelong

learning and opportunities for career development. The non-payment of social security and health care contributions, on the other hand, places a disproportionate burden for the running of the social security net on the formal sector.

15. **The entrenchment of informal work arrangements is in part explained by population's access to non-labor income and social benefits not conditioned on recipients' income and ability to work (WB, 2009b, WB, 2010a).** Private remittances from family members working abroad amount to between 15 and 18 percent of GDP each year. In addition, there are a number of government-run, noninsurance, cash benefits programs, which are not conditioned on recipients' income and ability to work. Outlays on these programs—war invalids benefits, medal holders benefits, demobilized soldiers unemployment benefits (the latter terminated on May 1, 2010), civilian victims of war benefits, and non-war invalids' benefits—collectively amount to 4.5 percent of GDP and cover 183,500 individuals.[6] There are also close to 21,000 recipients of pensions granted under favorable conditions to former military personnel (many involving early retirement), for whom the informal sector is the only option for employment. Furthermore, "fictitious" workers in state-owned and voucher-privatized enterprises (SOEs and VPEs)[7] prefer work in the grey economy rather than quitting the SOEs and VPEs and finding jobs in the formal sector, in the hope of large payouts of back wages and social security contributions. In the Federation, the system of unemployment benefits, though covering only 1.5 percent of registered unemployed (compared to 2.2 percent in the RS), does not provide sufficient incentives for quick re-entry in the workforce. The unemployment benefits of all recipients equal 40 percent of the average net wage (irrespective of the income and length of employment in the last job held), and are extended for periods of 3 to 24 months based on total years of work experience (ILO, 2009). At present, the unemployment benefit is slightly higher than the net minimum wage, which combined with the generous maximum length of the payout period discourages active job search. Finally, workers in the informal sector have access to free health care, as long as they remain registered as "formally" unemployed (see below).

16. **The labor market legislation in BiH is fairly modern, but the flexibility of the regulatory framework is undermined by some outdated features of collective**

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[6] Existing beneficiaries of non insurance social transfers include: civilian disabled – 42,000; civilian victims of war (disabled) –6,341; war veterans – 47,142; families of fallen soldiers – 46,000; and remaining case load of demobilized soldiers who are yet to receive benefits – 42,000 (WB, 2010A).

[7] In the past, SOEs were treated as a social safety net and were pressured into hiring of large numbers of veterans at the time of the demobilization of military personnel. Rather than going through the process of formal termination, many SOEs and VPEs dealt with surplus labor by stopping payments of wages and contributions while keeping workers nominally on their payroll (so called fictitious workers; see following section for further details).

bargaining agreements. The Labor Laws in both the RS and the Federation—which establish the broad regulatory framework of employment—are fairly flexible (ETF, 2007). They are, however, supplemented by an extensive and generally rigid set of rules in collective bargaining agreements, many aspects of which are carried over from the old market socialism mode of labor relations. For example, the WB (2005) lists 40 different allowances that exist between the two Entities, including a tenure premium that puts younger workers with cutting-edge skills at a disadvantage to older workers, whose skills acquired under the old regime are often obsolete. In addition, the wage setting relies on a system of coefficients—reflecting the complexity of the performed work and the worker's education—that is not compatible with the principles of a market economy. Furthermore, the minimum net wages in BiH (KM 308 in Federation, and KM 370 in RS (since July 1, 2010)) are among the highest in Eastern Europe, when expressed as a share of the average wage (WB, 2005). The potentially stifling effect of such provisions on labor relations is largely offset by wide-spread non-compliance, particularly in the private sector. However, the current *status quo* is sub-optimal, because "[n]on-enforcement of rigid regulations leads to informality, which creates rents for officials and uncertainty among employers and new investors, and leaves workers without protection (such as social insurance coverage)" (WB, 2005).

17. **The work of the public employment mediation agencies in both Entities is bogged down by administrative mandates, with insufficient resources being allocated for active job placement policies.** The provision of employment services—both passive and active—is carried out by Employment Funds in the RS and the Federation (1 central and 10 cantonal funds), which are primarily funded by payroll contributions.[8] The Employment Funds in both Entities administer payments of "unemployment benefit for registered unemployed with paid contributions, health insurance coverage for all persons registered as unemployed, and, in the RS, pension insurance coverage for recipients of unemployment benefit" (ILO, 2009). In addition, until May 1, 2010 the Federation Employment Funds had the mandate to pay special unemployment benefits to demobilized soldiers. They continue to be responsible for the payment of "unemployment and pension benefits to all workers of state owned enterprises who become unemployed or receive early retirement as part of privatizations, liquidations or restructurings of those enterprises" (WB, 2009b). Furthermore, "applicants for all non-insurance cash transfers, except war veterans' benefits, are required to register as unemployed to qualify for benefits" (WB, 2010a). As a result, most workers in the grey economy are formally registered as unemployed to have access to various benefits.[9] The

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[8] In the Federation, individual cantonal employment funds are funded by the payroll contributions collected in their respective cantons, resulting in inadequate funding of employment programs in cantons with high rates of unemployment.

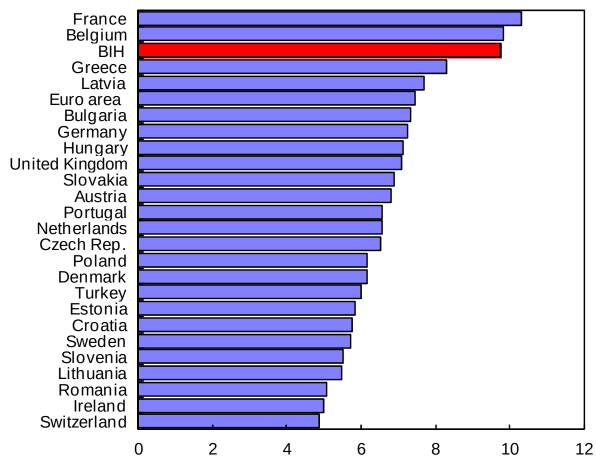
[9] The number of unemployed registered at the Employment Funds exceeds 40 percent of the BiH labor force, whereas labor force surveys suggest that the actual unemployment rate is around 24 percent.

administration of these passive services consumes a large part of Funds' time and treasure, leaving insufficient resources for job brokering, personalized counseling and guidance, and analytical work (ILO, 2009). The lack of emphasis on active job placement policies has opened sizable skill gaps in the area, particularly among staff with long tenure. The performance of Employment Funds is further impeded by stifling bureaucracy and the demoralizing effect on front-line staff of the extremely high ratio of unemployed to staff (1,100 to 1 in BiH).

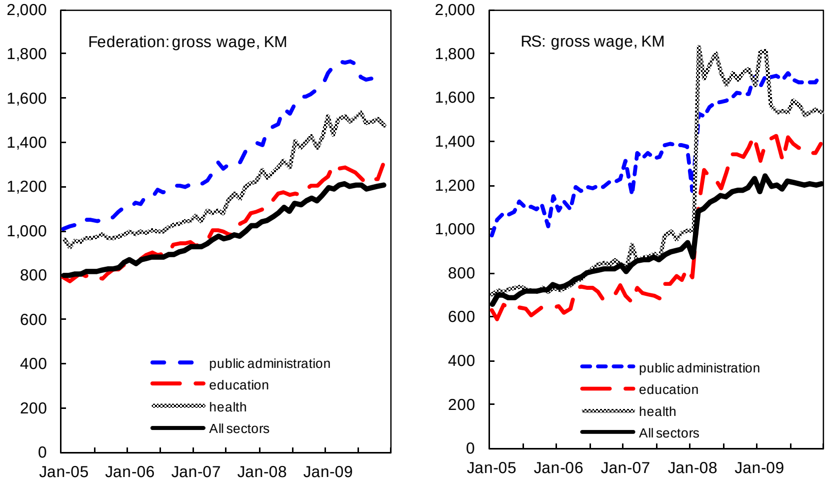
18. **The large labor tax wedge—the difference between the cost to the firm of employing a worker and the worker's take-home-pay—discourages new jobs creation in the formal sector.** The overall social security contribution rates in the RS and the Federation are similar (34 percent), when calculated at the average wage including allowances. While higher than the OECD average of 29.5 percent, they are not excessive in regional context (WB, 2005). However, when combined with the high level of wages in BiH relative to its Balkan peers, the magnitude of the labor tax wedge undermines the competitiveness of the country and makes informal employment more attractive to businesses (ILO, 2009).

19. **The public sector is a major employer and often prices out the private sector in attracting workers.** The BiH Constitution enacted as part of the Dayton Peace Accords created a decentralized governmental structure with numerous and often duplicating levels of government. As a result, the share of public sector in total employment in BiH is among the highest in Europe, and competition between the various levels of government has pushed the average public sector wage significantly above the level in the private sector. In addition to higher wages, public sector employment offers added job security and nonwage benefits, making private sector jobs less attractive.

Share of Public Administration in Total Employment, 2008 (percent)



Source: Eurostat and Fund staff estimates



Sources: BiH authorities; and IMF staff calculations.

Growth-promoting policies

20. **Unlocking BiH's full human capital potential requires renewed emphasis on labor market reforms.** Cognizant of the need for further alignment of the domestic regulatory framework with international best practice, the Federation government is working on draft amendments of three laws in the area of employment protection (Labor Law, Work Safety Law, and Law on Employment Mediation and Social Security of Unemployed). There are plans for a new Labor Law in RS as well. Furthermore, the employment strategies adopted at the level of the country as a whole and by the governments of the Federation and the RS in 2010 define the broad outlines of the problems facing the labor market and the objectives of public policies in the area. The next step is to prepare periodic action plans with concrete measures and costing linked to the annual budgets of the public agencies responsible for implementing the employment policies. Some of the pressing priorities identified in existing labor market studies (WB, 2005; WB, 2009b, WB, 2010a; ILO, 2009) that need to be addressed in the actions plans under preparation and amendments of the employment protection legislation are:

- **Better alignment of the systems of collective bargaining and wage determination with the principles of a market economy** through separation of the public sector wage determination from that in other sectors, formulation of criteria for representation of social partners involved in tripartite bargaining, limiting the coverage of collective agreements to those enterprises represented in the process, and rationalization and simplification of the system of "coefficients" and other aspects of wages, employment and benefit determination (WB, 2005);

- **Carrying out of the comprehensive reform of the education system** via completion of the legislative overhaul of the pre-school, vocational, and higher education, following through the reforms of the primary and secondary education (ILO, 2009), and designing framework for continued education and life-long learning.

- **Public sector hiring and benefits restraint** to contain the crowding out of formal private sector employment by generous public sector benefits and better job security**.**

- **Refocusing the work of Employment Funds to active job placement policies** by relieving them from the burden of administering benefit programs unrelated to their core mandate, elimination of incentives for registration as unemployed solely to gain access to benefits while working in the informal economy (ILO, 2009), and the development of job activation programs. The reorientation of work priorities needs to be accompanied by a fundamental reform of human resource management of Employment Funds aimed at increasing the active job placement competencies of staff and linking employee compensation and career progression to their contribution to the agencies' revamped mandate. Work in this area is supported by financing and technical assistance from the World Bank, under the recently approved "Social Safety Nets and Employment Support Project" (WB, 2010a), and the European Union project "Improving Active Labour Markets."

- **Increasing the incentives for quick re-entry in the workforce,** through
(1) Conditioning of all non-insurance cash benefits on recipients' income and ability to work and rigorous carrying-out of eligibility audits to weed out fraud. The reforms in this area are supported by the "First Programmatic Public Expenditure Development Policy Loan" approved by the World Bank in 2010 (WB, 2010b);
(2) Revising the system of unemployment benefits in the Federation to decrease the maximum length of the payout period, setting the minimum amount of the unemployment benefits below the minimum net wage, and explicitly conditioning the right of unemployment benefits on the payment of unemployment contributions over a minimum period of time prior to the termination of employment.

Business Environment

Main Characteristics

21. **The quality of the business environment in Bosnia and Herzegovina lags behind other countries in South-Eastern Europe.** According to the World Bank's Doing Business Report 2010, BiH ranks 116 out of 183 countries on overall quality of the business environment. An

Ease of Doing Business Rankings [1]

Economy	Ease of Doing Business	Starting a Business	Dealing with Licenses	Registering Property	Getting Credit	Protecting Investors
Albania	82	46	173	70	15	15
Bosnia and Herzegovina	**116**	**160**	**136**	**139**	**61**	**93**
Bulgaria	44	50	119	56	4	41
Macedonia, FYR	32	6	138	63	43	20
Serbia	88	73	174	105	4	73
Croatia	103	101	144	109	61	132
Romania	55	42	91	92	15	41

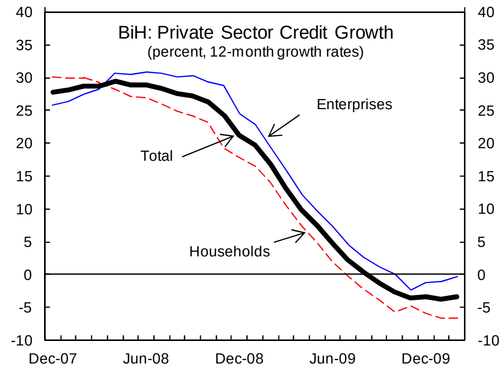
Sources: World Bank, Doing Business Database, 2010.
[1] Lower ranking means better environment.

enabling business environment encompasses an efficient regulatory and enforcement system, enhanced corporate governance, and quality infrastructure.

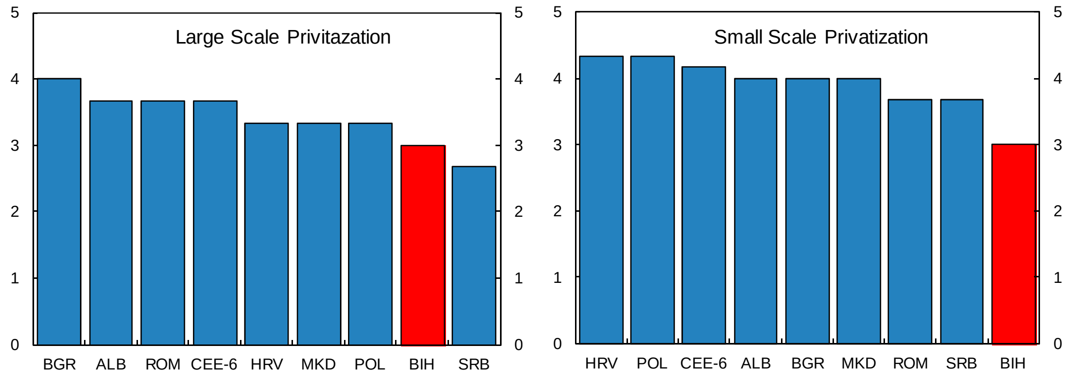
22. **The government has taken steps to improve the business environment in recent years, but more needs to be accomplished.** Following the signature of the Stabilization and Association Agreement, significant steps have been made to reduce or abolish customs duties on a wide range of imports from the EU. The adoption of the Value-Added Tax (VAT) in Bosnia and Herzegovina in January 2006 has been an important step in promoting tax efficiency and giving firms an incentive to register (EBRD, 2008). BiH has also taken some effective measures to reduce the cost of starting a business and the time needed to register property (OECD 2010). Procedures were cut by 7 percent, time by 15 percent, and cost by 26.5 percent on average (WB, 2010c). Bosnia and Herzegovina has seen a 33 percent growth in transferred titles since the computerization of all municipal cadastres (WB, 2010c). The FBiH House of Peoples also has recently adopted amendments to 34 laws and amendments that aim to improve the business environment and restrict the informal economic activities. The amendments are part of the so-called “regulatory guillotine” project, co-financed by the IFC that aims to reduce bureaucracy and simplify business procedures in the entity. The Republika Srpska, which is further ahead in the implementation of this project, has so far removed 58 percent of unnecessary regulations, with an estimate that this reform would bring KM 23 million of savings annually for businesses. The introduction of a new Companies Law in the RS, effective from July 2009, aims to simplify the registration of new companies and bring companies law closer to EU standards (EBRD, 2009). The European Commission’s formal recommendation in May 2010 to lift the visa-regime for BiH citizens opens the prospect for further integration of the local economy in the larger European marketplace. Nonetheless, more reform efforts are needed in Bosnia and Herzegovina in order to unlock the country’s long-run growth potential.

23. **Despite recent progress, the inefficiency and uncertainty of the regulatory regime continue to hamper the starting-up and running of businesses by imposing unnecessary costs and risks.** Progress towards creating a single economic space within the country—a key European Partnership priority—has been limited (OECD 2010). This leads to slow decision making, duplication of policies, and an unclear division of powers. According to the World Economic Forum’s Competitiveness Report 2009, key factors impeding private sector growth in BiH include complicated and “expensive” bureaucracy, corruption, and weak legislative framework. Delays for business licensing are significant and the number of different tax payments is high. For instance, ten procedures and 127 days are needed for a business to get connected to the electricity network in Bosnia and Herzegovina, compared to a South Eastern Europe (SEE) average of 5.7 procedures and 109.2 days (OECD, 2010). In the 2008/09 Business Environment and Enterprise Performance Survey (BEEPS IV), more than one-quarter of the enterprises surveyed identified political instability as the main problem affecting their operations. The Foreign Investor Council White Book highlights business registration as a particular problem for foreign investors (FIC, 2009).

24. **Bosnian and Herzegovina still lags other SEE economies on access to finance.** More than half of enterprises report access to financing as an obstacle to their development (OECD, 2010). The financial sector is dominated by banks, the vast majority of which are foreign-owned. The global financial crisis put an abrupt end to the rapid growth of credit in recent years. Faced with worsening financial health of enterprises and households, banks cut back their loan portfolios, and raised interest rates to shore-up flagging profitability (World Bank, 2010a). The nonbank financial sector is relatively underdeveloped. Stock exchanges are dormant and their potential for raising new funds for companies is limited. While the legal framework for leasing is currently developed and the market is expanding rapidly, no specific regulation covers factoring, which remains underdeveloped. Efforts at entity level to extend credit guarantees to private sector enterprises are in their infancy. In the RS, the RS Investment Development Bank extends credits to commercial banks for lending at below-market interest rates to individuals (mortgage financing) and companies in agriculture and export sectors. A national export guarantee scheme, run by the Export Credit Agency, is inadequately funded and has had a limited impact thus far.

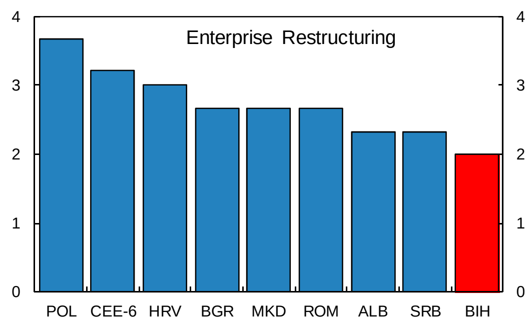


25. **The 1992–1995 war in BiH and the slow pace of the subsequent reconciliation resulted in substantial delays in privatization and enterprise restructuring relative to other Eastern European countries**. The slow progress in restructuring of underperforming state-owned companies is noted in both the *Investment Climate Assessment* performed by the World Bank in 2008 and the 2009 European Commission *Progress Report*. About 1000 enterprises in the Federation and 600 enterprises in the RS, holding around a quarter of total assets of state-owned enterprises, were privatized under a voucher privatization scheme in 2000–2001 (IMF, 2005). The follow-up privatization of strategic enterprises has been slow. Republika Srpska privatized its largest and most attractive industrial assets in 2004–2006. However, there are still a number of loss-making medium enterprises that will be hard to sell (World Bank, 2008). In the Federation of Bosnia and Herzegovina, a dozen or more large strategic companies operating in aluminum production, construction and telecommunications remain to be privatized, as well as many loss-making medium-size enterprises.



Source: *EBRD Transition Report*, 2009; and IMF staff estimates of unweighted regional averages.
The EBRD maximum score is 4.33, with maximum being best.
CEE-6 includes Bulgaria, Hungary, Romania, Poland, Slovalk Republic, and Slovenia.

26. **Many state-owned and voucher-privatized enterprises suffer from poor corporate governance and are heavily indebted.** The process of voucher-to-share conversion resulted in poor incentives for the new owners (investment funds or individuals) to put their own capital at risk, as the ownership transfer was provided on a grant basis from the government to citizens. As a result, many voucher-privatized enterprises (VPEs) remain undercapitalized and operate below potential. Furthermore, many low performing VPEs have accumulated arrears to the government for worker pension obligations, taxes, and unpaid salaries to workers. According to the World Bank (2008), broad calculation of pension and tax arrears owed to the government by VPEs, plus the additional capital estimated to be needed to ensure successful operating performance, yields an estimated gap equivalent to 15 percent of GDP. Many state-owned enterprises are also heavily burdened with arrears to suppliers, unpaid health and pension fund contributions, and delayed salary payments to workers.

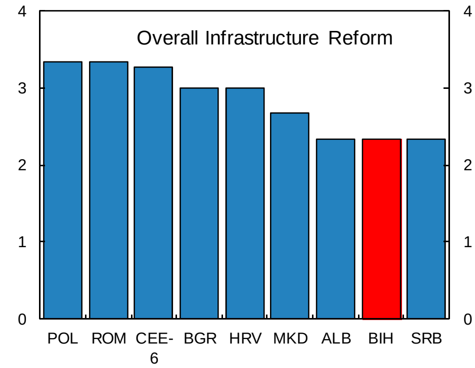


Source: *EBRD Transition Report*, 2009; and IMF staff estimates of unweighted regional averages.
The EBRD maximum score is 4.33, with maximum being best.
CEE-6 includes Bulgaria, Hungary, Romania, Poland, Slovalk Republic, and Slovenia.

27. **The rationalization of number of workers is still pending in many state-owned and mass-privatized enterprises (WB, 2005).** In the past, SOEs were treated as a social safety net and were pressured into hiring of large numbers of veterans at the time of the demobilization of military personnel (IMF, 2005). Rather than going through the process of formal termination, many SOEs and VPEs dealt with surplus labor by stopping payments of wages and contributions while keeping workers nominally on their payroll (so called fictitious workers; World Bank, 2005). This problem is perpetuated by the legal requirement for clearance of all unpaid wage and social security contributions arrears prior to dismissal of workers (IMF, 2005) and fictitious workers' expectation for government takeover of SOEs

and VPEs unpaid obligations and eventual payout (World Bank, 2005). The existence of fictitious workers deters potential buyers and delays corporate governance restructuring.

28. **The state of BiH's infrastructure is inadequate.** The telephony services in Bosnia and Herzegovina are available at high quality and lower cost compared with the region. Also, 96 percent of the roads are paved, which is high in comparison with the region. However, foreign investors have expressed concerns about the capacity of local transportation network to move their inputs and ship their final goods to market destinations in other countries (World Bank, 2008). Total road density and air traffic in Bosnia and Herzegovina is below the SEE average (OECD, 2010).



Source: *EBRD Transition Report*, 2009. The EBRD maximum score is 4.33, with maximum being best. CEE-6 includes Bulgaria, Hungary, Romania, Poland, Slovalk Republic, and Slovenia.

Growth-Promoting Policies

29. **Despite recent progress in reducing obstacles to business, significant further efforts are needed to attract foreign investors and empower domestic entrepreneurs.** Some of the pressing priorities identified in existing business environment studies by the World Bank (Doing Business Report 2010; Investment Climate Assessment 2008), OECD (Investment Reform Index 2010), EBRD (Transition Reports 2008 and 2009), and the World Economic Forum (Global Competitiveness Index 2009) are:

- **Increasing the efficiency of the regulatory system** by streamlining regulations to allow quicker business startups, fewer authorizations for business operations (in particular, simplification of licenses and permits), reduction in the number of different tax payments and mechanisms for business closure to facilitate restructuring (WB, 2008). To this end, speeding up the regulatory reform under the "regulatory guillotine" project and the IFC Subnational Competitiveness Programs, especially in the Federation, is crucial to improving the business environment.

- **Ameliorating access to finance** through greater emphasis on credit and export guarantees and the development of alternative financing sources, such as leasing and factoring (OECD, 2010).

30. **Corporate sector performance can be boosted by policies to enhance corporate governance via change in ownership and enterprise restructuring.** Government policies in this area should focus on:

- **Speeding up the privatization** of large strategic enterprises in the Federation and medium-size public companies in both entities.

- **Restructuring the underperforming voucher-privatized enterprises (VPEs).** As noted above, many VPEs suffer from hidden losses, pension and tax debt arrears, and salary payment delays. The government should use its status of de facto main creditor of such VPEs to effectuate their restructuring, which may entail the government temporary becoming a large shareholder. To avoid the government getting reengaged in the enterprise sector on a permanent basis, the conversion of debt to equity in viable VPEs should only take place when interested investor willing to participate are identified and should be accompanied by operational restructuring. The latter would likely entail debt forgiveness, which could be well offset by higher tax collections in the future (WB, 2008).

- **Resolving the issue of disguised unemployment in state-owned and voucher-privatized enterprises** by offering a cash-out option to such workers, based on a minimum severance and pension payment, which could be fully repaid from reduced future company losses, generation of more income, and thus increased taxes paid over the long term (WB, 2008).

31. **Full implementation of planned large infrastructure projects can support growth through a boost in investment spending.** Modern infrastructure enhances the competitiveness of an economy by efficiently linking firms to their customers and suppliers, and enabling the use of modern production technologies. In the roads sector, several projects have been signed in the past year with international financial institutions for building parts of the 330 km Corridor 5c (a branch of the fifth pan- European corridor), as well as strengthening the institutional development of the Motorway Directorate in both entities. In the railways sector, various projects to upgrade and modernize services are ongoing, with the support of bilateral donors and international institutions (EBRD, 2008).

F. Conclusions

32. **Following a recession in 2009 and stagnation in 2010, the potential growth rate of the BiH economy would likely stay slightly below its pre-crisis value, resulting in domestic output remaining permanently below the prevailing pre-crisis trend.** On the supply-side, the pre-crisis growth of output was mostly driven by rapid accumulation of factors of production. Post-crisis, the growth of the BiH economy will likely become more dependent on gains in human capital and total factor productivity.

33. **Enhancing BiH’s human capital and speeding-up the pace of technological change requires a renewed emphasis on structural reforms to unleash BiH’s human capital and entrepreneurship potential**:

- **Unlocking BiH’s full human capital potential requires renewed emphasis on labor market reforms.** Reform priorities include better alignment of the systems of collective bargaining and wage determination with the principles of market economy;

follow through the comprehensive reform of the education system; public sector hiring and benefits restraint; refocusing the work of Employment Funds to active job placement policies; and conditioning of all non-insurance cash benefits on recipients' income and ability to work and rigorous carrying-out of eligibility audits to weed out fraud.

- **Speeding-up the pace of technological change calls for a drastic improvement in business environment consistently ranked among the worst outside Africa.** The efficiency of the regulatory system can be improved by streamlining regulations to allow quicker business startups, fewer authorizations for business operations, and reduction in the number of different tax payments. Corporate sector performance can be boosted by policies to enhance corporate governance via change in ownership and enterprise restructuring. Full implementation of planned large infrastructure projects can also support growth by boosting investment spending.

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Appendix Table 1. BiH: Data Used in Growth Accounting Exercise

Year	Real GDP [1] (mln 2003 KM)	Real physical capital [2] (mln 2003 KM)	Gross fixed capital formation [3] (mln 2003 KM)	Real human capital (number of employees, mln)	Population [4] (mnl)	Share of working age population [5] (persons aged 15+) in total (%)	Activity rate [5] (share of labor force in working age population, %)	Unemployment rate [6] (share of unemployment in labor force, %)
	Y	$K = (1\text{-}0.04) \times K_{-1} + I$	I	H = P x D x LF x (1-U)	P	D	LF	U
1999	12,246	25,813	2,886	0.87	3.60	81.0	43.1	31.1
2000	12,884	27,764	2,984	0.89	3.69	81.0	43.1	31.1
2001	13,352	29,617	2,964	0.90	3.75	81.0	43.1	31.1
2002	14,014	31,953	3,521	0.91	3.78	81.0	43.1	31.1
2003	14,505	34,415	3,740	0.91	3.78	81.0	43.1	31.1
2004	15,421	36,831	3,793	0.91	3.78	81.0	43.1	31.1
2005	16,030	39,320	3,961	0.91	3.78	81.0	43.1	31.1
2006	17,015	41,028	3,281	0.91	3.78	81.0	43.1	31.1
2007	18,060	43,906	4,519	0.97	3.78	82.2	43.9	29.0
2008	19,083	47,131	4,981	1.05	3.77	82.5	43.9	23.4
2009	18,496	49,103	3,858	1.03	3.77	82.9	43.6	24.1

Sources: Agency for Statistics of Bosnia and Herzegovina, International Labour Organization's Labour Statistics Database, Fund staff estimates.

[1] Production-approach real GDP: 2003-–008–chained series constructed from Agency for Statistics of Bosnia and Herzegovina (ASBiH) data on real GDP at previous year's prices; 1999–2003–chained series constructed from unpublished data provided by the ASBiH.

[2] The real capital stock series is constructed using the perpetual inventory method ($K_t = (1-\delta)K_{t-1} + I_t$) applied on an assumed base value of real capital stock in 2003 and using a constant annual depreciation rate (δ) of 4 percent. Following an approach first used by Harberger (1978), the base value of real capital stock in 2003 is obtained by dividing the real gross fixed capital formation (GFCF) in 2003 by the sum of the rate of depreciation and the potential growth rate of the capital stock estimated at 6.8 percent.

[3] 2005–2008–nominal gross fixed capital formation is estimated by applying the share of gross fixed capital formation in expenditure-approach GDP published by ASBiH to the production-approach nominal GDP. The real GFCF is then estimated by dividing the nominal GFCF by its deflator, constructed as a chained series from ASBiH data on year-on-year changes in GFCF price index; 1999-2004–chained series constructed from unpublished data provided by the ASBiH.

[4] Population data for the period 1999–2015 from the International Labour Organization's Labour Statistics Database, which extrapolates annual values from the bi-decennial median estimates published by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (http://esa.un.org/unpp).

[5] 2006–2009–data from the BiH Labor Survey published by the Agency for Statistics of Bosnia and Herzegovina; 2010–2015–chained series constructed using the growth rates of the variable taken from the International Labour Organization's Labour Statistics Database; 1999–2005–assumed that values are the same as in 2006 (first available data point).

[6] 2006–2009–data from the BiH Labor Survey published by the Agency for Statistics of Bosnia and Herzegovina; 1999-2005–assumed that values are the same as in 2006 (first available data point).

II. External Sector Stability and Competitiveness[1]

A. Introduction

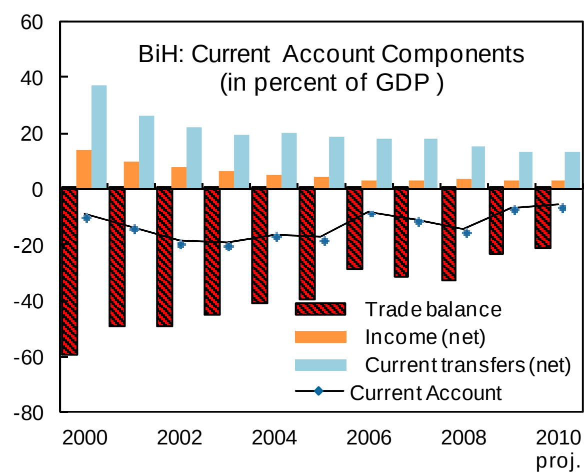
1. **Analysis and understanding of external stability and competitiveness are important, especially in the context of Bosnia and Herzegovina's (BiH) currency board arrangement.** Since its inception, in addition to being widely acceptable by the public and policymakers, BiH's currency board has proved to be an efficient tool of macroeconomic management and has ensured macroeconomic stability. However, maintaining its stability requires strong fiscal discipline and flexibility of wages and relative prices. The 2008 Article IV consultation and the analysis of BiH competitiveness highlighted growing imbalances that required immediate attention. Following a procyclical loosening of fiscal and public wage policies during 2006–08, internal and external imbalances continued to grow: the current account deficit approached unsustainable levels and inflation picked up. These developments hampered BiH's external competitiveness.

2. **This chapter analyzes BiH's external stability and competitiveness.** First, we discuss various measures of the current account deficit; and then, in Section C, we look into a number of indicators of external price and cost competitiveness, including export market shares, profitability of export industries, labor rigidities impeding competitiveness, and FDI pattern. Section D focuses on theoretical underpinnings of exchange rate assessment and practical application to BiH; this section also provides a range of estimates of the equilibrium real effective exchange rate and required adjustment and some recommendations on improving the external stability and competitiveness in BiH. Finally, Section E concludes.

B. Factors Behind Large Current Account Deficit and Adjustment During the Crisis

Pre-crisis developments

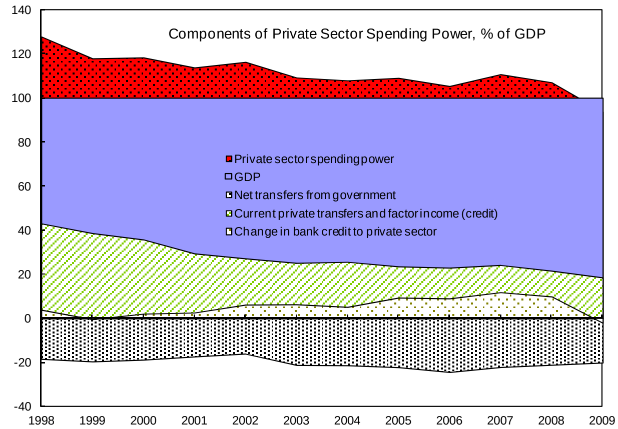
3. **Over the last decade, the current account deficit continued to remain high driven by policies stimulating rapid increase of domestic demand and credit boom.** In the initial post-war era, BiH's current account deficit remained at high levels for quite a few years. It was mostly driven by imports for rebuilding of the war-torn economy largely financed by government foreign grants and loans. In



[1] By Armine Khachatryan (SPR).

subsequent years, the current account deficit has declined (particualrly during 2003–2006) supported by prudent fiscal policies and significant improvement in the terms of trade.

4. **However, the current account deficit began to widen again in 2007.** Speedy credit growth financed by strong capital inflows, along with a procyclical loosening of fiscal and public sector wage policies, fuelled a domestic demand boom. These developments combined with deterioration in the terms of trade contributed to a sharp worsening in the current account deficit by about 6 percentage points of GDP; the deficit reached 15 percent of GDP in 2008. Exports growth moderated (15 percent in 2007 compared to an average of 30 percent during 2004–06), while the growth of imports accelerated (17 percent in 2007compared to an average of 7.1 percent during 2004–06).



5. **The boom in private consumption was a key contributor to the high savings-investment gap.** The share of GDP allocated to private consumption in BiH is among the highest in the Western Balkans. In the aftermath of the 1992–1995 war, the boom in consumption reflected the catching up of living standards after years of suppressed spending. Later on, the increase in private consumption was fueled by high private transfers and factor income from abroad (which averaged around 25 percent of GDP during 2002–06) and external grants and loans. Further, limited saving opportunities and financial instruments, have also created a favorable environment for consumption growth. As a result, domestic private savings remained negative throughout the entire post-war era. While public savings have improved significantly during 2002–05, they started to deteriorate during 2006–09 contributing to demand for foreign savings, thus increase in current account deficit.

Consumption in Selected Neighbor Countries
(Averages, In percent of GDP)

Total Consumption	1998-00	2001-05	2006-08	2009
Croatia	85.1	83.4	81.3	80.0
Macedonia, FYR	93.4	97.8	101.9	104.9
Serbia	96.9	98.8	92.7	96.6
Slovenia	77.4	74.9	70.6	75.0
Bosnia and Herzegovina	122.3	116.6	105.8	101.3
Public consumption	1998-00	2001-05	2006-08	2009
Croatia	16.2	19.8	18.1	19.1
Macedonia, FYR	19.4	20.6	17.2	16.6
Serbia	19.1	21.2	20.9	22.1
Slovenia	19.1	18.7	17.5	19.7
Bosnia and Herzegovina	21.0	19.9	19.9	20.8
Pivate consumption	1998-00	2001-05	2006-08	2009
Croatia	68.8	63.6	63.2	60.9
Macedonia, FYR	74.0	77.1	84.7	88.2
Serbia	77.8	77.7	71.8	74.5
Slovenia	58.4	56.2	53.0	55.3
Bosnia and Herzegovina	101.3	96.7	85.9	80.4

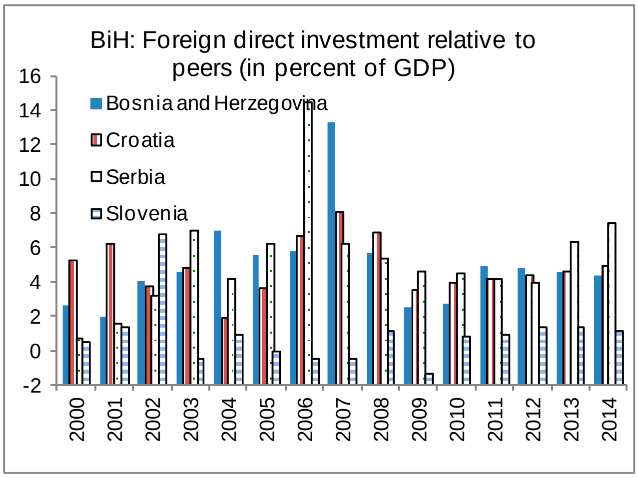
Sources: WEO, IMF Staff Estimates.

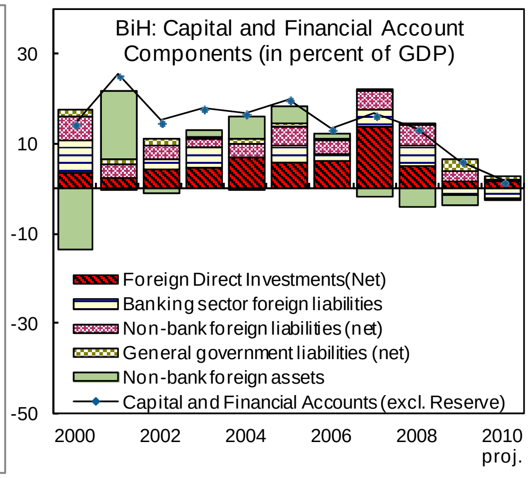
Domestic savings (In percent of GDP)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Domestic savings	-22.0	-26.2	-18.6	-20.6	-18.5	-16.8	-13.9	-13.2	-7.9	-4.1	-5.3	-1.3
Private	-19.3	-23.2	-14.7	-20.0	-18.4	-19.2	-17.2	-17.9	-12.6	-7.9	-5.8	-0.1
Public	-2.7	-3.1	-3.9	-0.7	-0.1	2.4	3.4	4.7	4.7	3.7	0.5	-1.1

6. **The above developments in economy have affected the structure and composition of the external financial flows**. The financial account inflows in the pre-crisis

period consisted mainly of FDI, which was primarily driven by privatization and external loans to banks and enterprises. Capital inflows helped finance the current account deficits and build foreign exchange reserves, which reached €3.2 billion or 5.7 months of imports at end-2008.





Developments during the crisis

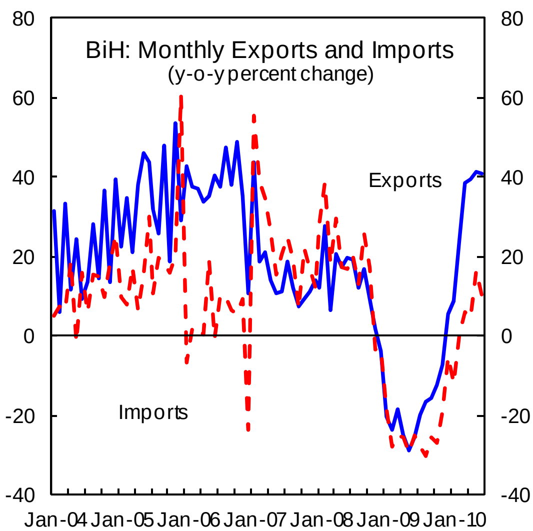
7. **The global crisis led to an unexpectedly large current account adjustment (6.4 percent of GDP in 2008–09), driven by a combination of retrenchment in domestic and foreign demands.** The trade balance was the main source of this adjustment, with a steep contraction of imports counterbalancing the drop in exports. Exports of goods fell by about 17 percent, due to lower foreign demand and decline in export prices. Imports of goods plummeted by 24 percent driven by low domestic demand and a decline in global prices. The export contraction was mostly due to price decline driven by deterioration in global demand for aluminum, metals and steel (accounting for more than a quarter of BiH exports). The decline in imports was evenly distributed between prices and volumes effects. While price developments are a combination of exogenous decline in world prices of oil and food during 2009, the drop in volumes is a consequence of deteriorating domestic demand.

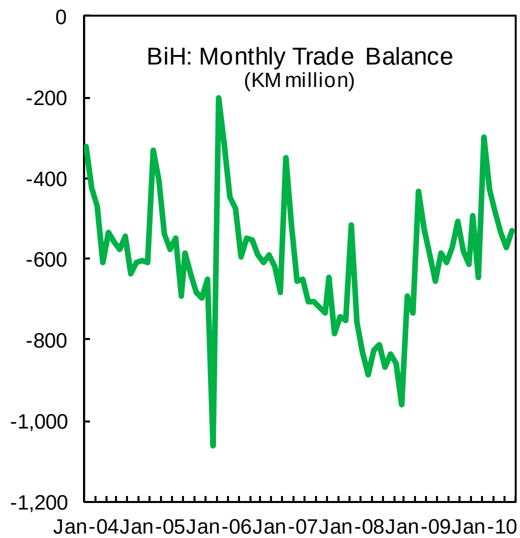
The breakdown of import and export value changes by prices and volume in KM 1/

	2009	2010	
	Jan-Dec	Jan–Mar	Jan–Jun
Change in exports of goods value	-17.9	24.4	32.7
Change in imports of goods value	-24.4	-1.3	4.8
Change in exports price	-15.9	7.3	18.7
Change in import price	-13.6	7.9	8.9
Change in terms of trade	-2.8	-0.5	9.1
Change in exports volume	-2.3	15.9	11.8
Change in imports volume	-12.5	-8.5	-3.7

1/ Export import prices percent change over year ago
Key components of exports price include metal,aluminium prices and component based export deflator for BiH for other exports (all WEO)
Key components of imports price include oil, gas, food prices and euro area export deflator for other imports(all WEO)

8. **The adjustment in the trade balance offset the decline in other elements of the current account, particularly the drop in private transfers.** The significant adjustment in the services balance is related to a cut back in trade activities (widespread decline in exports of all types of services notably in transportation, freight and communication). Current transfers have also declined, mostly due to a worsening of economic conditions in EU countries, where most of migrants and seasonal labor from BiH are located.





9. **The adjustment of the current account continued in the first half of 2010.** Weak domestic demand contributed to further decline in real imports (3.7 percent decline year-on-year) and some increase in nominal terms (4.8 percent), driven by recovery of prices in international markets. The improved outlook for BiH's key export commodity prices resulted in rapid recovery of key exporting industries (including metals, steel aluminum, and wood). Meanwhile, the decline continued in services, income and current transfers' balances, thus partially offsetting the positive developments in the merchandise trade.

10. **The crisis has significantly reduced capital inflows.** The financial and capital account surplus in 2009 declined to 6.3 percent of GDP from 13.4 percent in 2008**.** Preliminary outturn for 2009 suggests that FDI more than halved, dropping from 5.0 percent of GDP to 1.4 percent. Non-bank private sector external borrowing also slowed down and banks' foreign liabilities were slightly

Bosnia and Herzegovina: Potential Foreign Exchange Liquidity Drains and Liquidity Buffers
(In percent of GDP)

Indicator	Dec-07	Dec-08	Dec-09	Jun-10	Dec-10
Potential Liquidity Drains (A+B+C+D)	55.2	50.9	53.2	55.0	54.9
A. Cash, excluding cash in vaults	10.0	9.3	8.4	8.2	8.3
B. Deposits by residents (nongovernment)	41.7	38.9	42.4	44.1	44.3
B.1. Domestic currency	20.8	18.9	20.3	20.4	21.0
B.2. Foreign currency	20.9	20.1	22.1	23.7	23.2
C. Commercial banks' short-term foreign liabilities	3.5	2.7	2.4	2.7	2.4
D. Nonbank short-term external debt	0.0	0.0	0.0	0.0	0.0
Potential Liquidity Buffers (E+F)	46.2	38.1	39.4	40.5	42.1
E. Central bank and central government liquid external assets	29.9	25.6	27.0	26.7	29.2
F. Commercial banks' liquid foreign currency assets	16.2	12.5	12.4	13.8	12.9
Potential buffers' coverage of potential drains, percent:					
including banks' short-term liabilities to nonresidents (E+F)/(A+B+C+D)	83.6	74.9	74.1	73.5	76.6
excluding banks' short-term liabilities to nonresidents (E+F)/(A+B+D)	89.2	79.0	77.6	77.4	80.2
Memorandum item: central bank FX reserves/household deposits	130.2	121.4	110.2	98.6	101.0

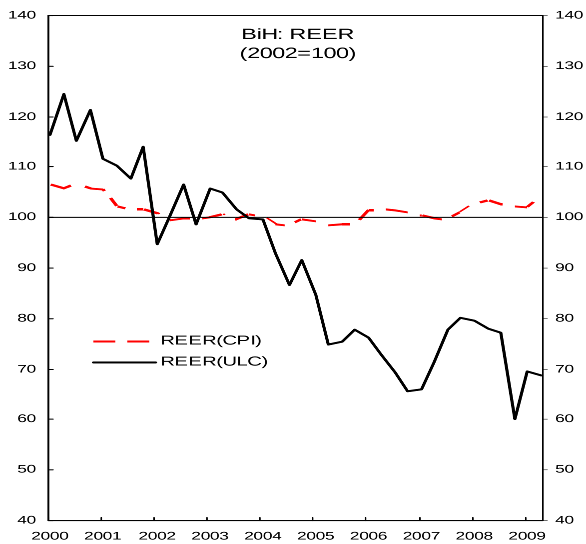
Sources: CBBH; and Fund staff calculations and estimates.

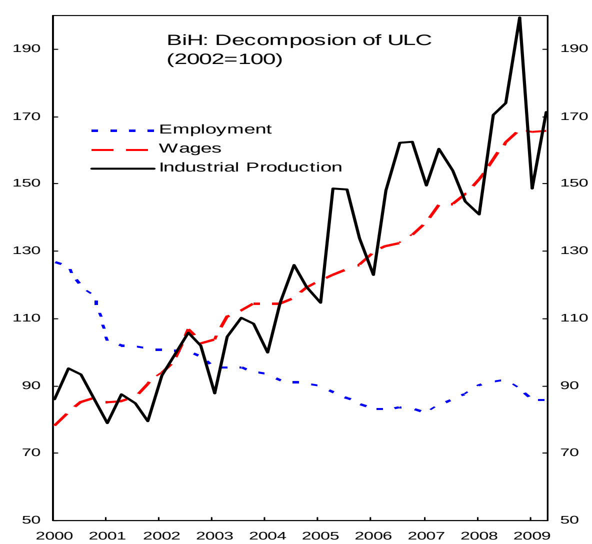
lower than suggested by the commitment of parent banks to maintain their overall exposure to BiH. Capital transfers and drawdown of loans by the public sector appeared to be somewhat lower mostly due to the limited implementation capacity in BiH and extended preparation processes among donors. As a result, gross international reserves declined to about 5.3 months of prospective imports of goods and services (111 percent of domestic currency outside banks) at the end-2009.

11. **Nevertheless, the analysis of potential liquidity drains and buffers indicate that the deteriorating trend for risks at the end of 2008 has somewhat abated**, and there is a steady recovery of potential buffers, bringing them closer to pre-crisis levels by end-2010.

C. Non-Model Analysis of BiH External Stability

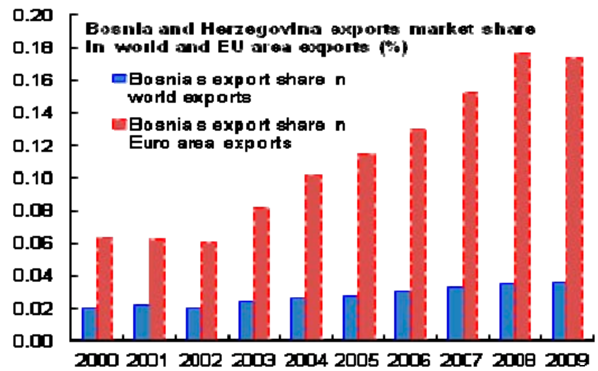
12. **Both REER-CPI and REER-ULC indicate that external competitiveness of BiH remains largely stable** with REER-ULC showing even some gain in cost competitiveness, likely driven by decline in employment and simultaneous increase in output and wages.

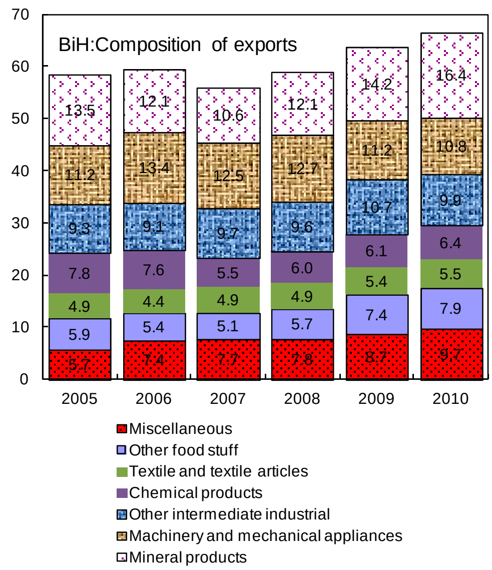




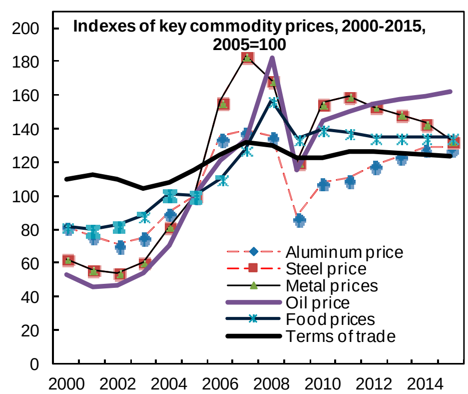
13. **Developments in bilateral real exchange rate vis-à-vis its trading partners/neighbors were broadly stable in the pre-crisis period**. More recently, BiH's real exchange rate appreciated somewhat compared to Serbia (on account of the nominal depreciation of the Serbian currency), while the REER in relation to Croatia and EU member partners remained broadly stable.

14. **Analysis of the BiH export market share in the world and Euro area regional markets demonstrate that BiH's export competitiveness has improved rapidly during 2003–08.** Export growth has been strong, and both real export growth and market share gained especially over 2003–07. While the market share in world exports stabilized, the BiH lost some of its markets in the EU area, due to the impact of the global recession on the Euro area.





15. **Developments in market share are further explained by the composition of exports in BiH.** While there were some positive trends in pre-crisis period with a few capital and technology intensive industries, exports remained tilted towards raw-materials and unprocessed products that are not technology and labor-input intensive. As a result, BiH exports remain very much dependent on fluctuations in international commodity markets. The decline in exports is mainly driven by the contraction of global demand for iron, steel and aluminum. The positive trends in the first half of 2010 partly explained by recovery in a few export components is yet to appear in export composition (including, mineral products driven by launch of production of refined oil products in Republika Srpska, aluminum and metals).



16. **Further improvement in exports composition and increase in capital and technology intensive industries might require fundamental changes in the labor market and business enabling environment.** As discussed in the recent WB enterprise survey, the shortage of skills in export-related industries is significant and may constrain future economic growth. WB firm-level evidence also proves that shortage of skilled workers is becoming a serious impediment to growth of BH exporting companies (See also Chapter I of this paper

for a detailed analysis of labor market rigidities).[2]

17. **BiH chronically lags behind its peers in cross country competitiveness analyses**, indicating the need for structural reforms to foster private sector led growth in BiH. The country has further lost standing in the Global Competitiveness Report (GCR) 2010/2011, ranking 102nd out of 139 evaluated countries. Moreover, the special publication of GCR on information and technology ranks BiH 110th, compared to Croatia 51st, FYR Macedonia 73rd and Serbia 84th.

The Global Competitiveness Index (GCI) 2010-2011 rankings and 2009-2010 comparisons

Country/Economy	GCI 2010 Rank	GCI 2010 Score	GCI 2009 Rank	Change 2009 2010
Switzerland	1	5.63	1	0
Sweden	2	5.56	4	2
Singapore	3	5.48	3	0
United States	4	5.43	2	-2
Germany	5	5.39	7	2
Japan	6	5.37	8	2
Finland	7	5.37	6	-1
Netherlands	8	5.33	10	2
Denmark	9	5.32	5	-4
Canada	10	5.30	9	-1
Slovenia	45	4.42	37	-8
Montenegro	49	4.36	62	13
Serbia	96	3.84	93	-3
Bosnia and Herzegovina	102	3.70	109	7
Benin	103	3.69	103	0
Senegal	104	3.67	92	-12
Ecuador	105	3.65	105	0
Kenya	106	3.65	98	-8
Guyana	110	3.62	104	-6
Chad	139	2.73	131	-8

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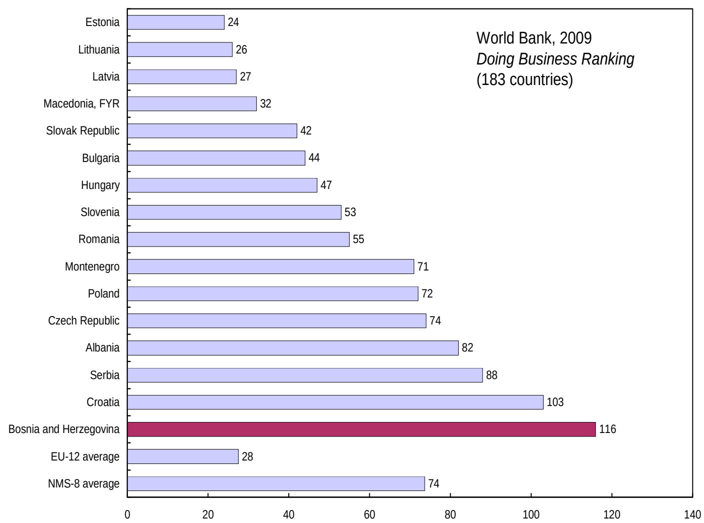
18. **BiH was also downgraded in the six dimensional ranking of the World Bank governance indicators.** It now ranks in 44th percentile on rule of law, 46th percentile on control of corruption, and 35th percentile on government effectiveness[3]. These results are in line with the ranking of World Bank Doing Business Report 2010, where a cross-country ranking of business environment indicators shows BiH's sub-par performance relative to neighboring countries (116 out of 183 countries).

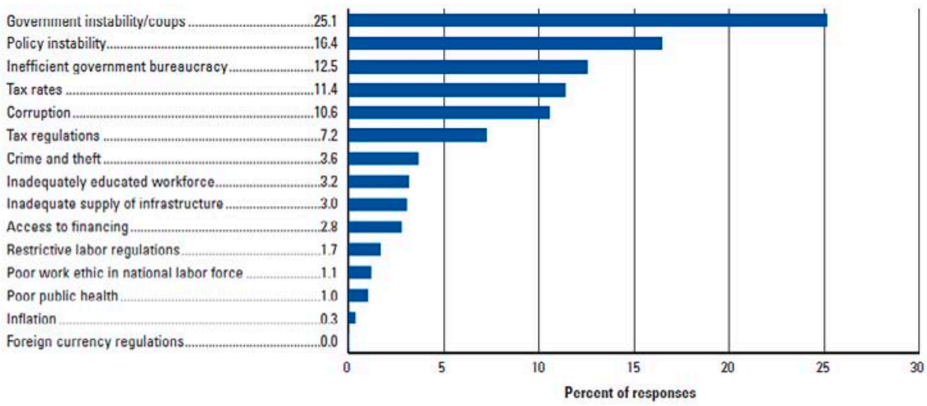


19. **These rankings are broadly consistent with the findings of IMF staff survey of private sector representatives and survey results of the World Economic Forum Competitiveness report.** Two companies that were unaffected by the crisis and even managed to expand their

[2] Based on results from 2009 *Enterprise Survey*, World Bank. One third of managers of exporting firms in Bosnia indicated skills as a problem for doing business in 2009

3 Percentile ranks indicate the percentage of countries worldwide that rate below the selected country. Higher values indicate better governance ratings

business were part of international supply chains, in furniture and machinery production industries. Their success was driven by updates in technology and investment in human capital, milder interference with local bureaucracy due to being a part of supply chain, easy access to short-term working capital through intra-firm financing. Both IMF and World Economic Forum Competitiveness report surveys revealed that key impediments for companies to access foreign markets include: (i) political instability; (ii) complicated and “expensive” bureaucracy; (iii) lack of clear vision for economic development; (iv) corruption and weak legislative framework; and (v) poor quality control (i.e., local certification and standardization). Substantial opportunities lie in enhanced productivity via bigger investment in R&D and human capital.



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country/economy and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

D. Model-Based Analysis of External Stability Analysis

20. **Model-based analyses of external stability focus on identifying deviations of the current account balance and the real effective exchange rate from their equilibrium values**. In practice, arriving at a model that could produce well-specified equilibrium values for both the current account balance and the exchange rate has proven to be a difficult task. There is a vast literature on the subject; however economists agree that each of the suggested methodologies has certain advantages and disadvantages, often resulting in different estimates.

21. **The concept of external stability is particularly difficult to benchmark for economies like Bosnia and Herzegovina.** This is in part due to the difficulty of pinning down the notion of equilibrium in relatively short historical time series for a country that has operated under market socialism in the past and experienced the devastating effect of the 1992–95 war. In addition, data quality continues to be an issue, introducing further uncertainties to statistical inference. In these circumstances, the judgments about the exchange rate assessments, i.e., estimates of whether or not a country’s exchange rate is over-or under-valued or broadly in line with macroeconomic fundamentals, becomes an important part of analysis and conclusions.

22. **In this section we employ a number of methodologies and approaches, including by IMF's Consultative Group of Exchange Rate Issues (CGER)[4]** . We start by discussing the results of three different concepts of equilibrium-the macroeconomic balance approach (MB), the external sustainability approach (ES) and the (reduced form) equilibrium real exchange rate approach (ERER). We also discuss the notion of purchasing power parity in the context of competitiveness. We provide relevant estimates for BiH by adopting the coefficients from different studies and applying them to data for BiH and its trading partners.

BiH: Macroeconomic Balance Approach

	Fundamentals			Coefficients			Variable * Coefficient		
	BiH	Trading partners	Variable used in	CGER		ALM	CGER		ALM
				Pooled	Fixed		Pooled	Fixed	
	1	2	3=1-2	5	6	7	8	9	10
Fiscal balance % of GDP	-0.59	-2.55	1.96	0.190	0.320	-0.119	0.373	0.628	0.070
Old Age Dependency % of Population	19.54	25.99	-6.45	-0.140	-0.230	-0.292	0.903	1.483	-5.706
Young Age Dependency % of Population	22.19	22.72	-0.54	...	...	-0.018	...	...	-0.399
Population Growth	0.29	0.15	0.13	-1.220	-0.460	...	-0.160	-0.060	...
Lagged current account	-11.02				....	-0.028			0.309
NFA % of GDP	25.00		25.00	0.020	...	-0.028	0.500	...	-0.700
Oil Balance (% of GDP)	-6.21		-6.21	0.230	0.310	...	-1.427	-1.924	...
Real GDP PC growth	4.20	3.15	1.05	-0.210	-0.270	0.004	-0.220	-0.283	0.017
Relative Income	18.30		18.30	0.020	...		0.366	...	...
Relative Income Sq	0.00		0.00		...			...	...
Constant									
Log GDP per capita 1/	852.02					-0.008			-6.901
Trade/GDP	91.63					-0.014			-1.283
Financial integration effect 2/								...	
Financial integration/GDP	25.77					-0.430			-11.080
Log GDP per capita* Financial integration/GDP	219.54					0.045			9.879
Constant	100.00					0.137			13.700
BiH CA Norm							0.33	-0.16	-2.095
Total Grants, percent of GDP							2	2	2
CA norm including grants							-1.67	-2.16	-4.09
Medium term projection CA							-5.0	-5.0	-5.0
GAP(+ would indicate REER overvaluation, -undervaluation)							3.34	2.85	0.91
REER overvaluation (+) based on CA elasticity to REER assumptions							18.08	15.42	4.91

23. **The preliminary analysis of macroeconomic balance approach suggests that the current account deficit slightly exceeds the sustainable level**. Equilibrium current account

[4] In mid 90s, the IMF Consultative Group on Exchange Rate issues (CGER) (IMF economists internal working group) has been conducting exchange rate assessments for a number of countries from a multilateral perspective. Initially for the G-7 economies, further expanded to 27 advanced and 27 emerging market economies

estimates are between 0.33 percent surplus to 0.16 percent of GDP deficit[5]. However, we adjust the current account norm estimates by the level of fiscal foreign grants, which allow for higher level of sustainable current account deficit. The adjustment yields estimates of the sustainable current account deficit from 1.7 to 2.2 percent of GDP compared to underlying current account deficit proxied by the medium term projection of 5 percent of GDP. However, taking into account financial integration factor and potential EU convergence (based on Abiad, Leigh and Mody (AML) (2007) we arrive at equilibrium current account deficit of 4.0 percent of GDP, implying a gap from current account medium-term projection of about 1.0 percent of GDP.

24. **Under the baseline scenario of BiH-specific parameters, the external sustainability approach suggests that the equilibrium current account deficit stabilizing the net foreign liability position at around 8 percent of GDP** (average of the previous 5 years) is about 4.4 percent of GDP, implying 0.6 percent gap towards its medium-term estimate and 2.4 percent in GDP gap compared to the outcome of 2009. The alternative scenarios, i.e., higher interest rates, lower NFA and lower real growth, suggest need for higher adjustment in current account.

Parameters	Value
Net Foreign Assets/GDP (2003-2008 average)	-8%
Grants / GDP average in medium-term	2%
Real Growth	5%
Real Interest Rate	3%

25. **The Equilibrium Real Exchange Rate approach evaluates the relationship between the real exchange rate and a set of fundamentals.** Given data-related issues, the estimates provided in the paper are based on the CGER methodology, which estimates a panel regression of CPI or ULC-based REER on a number of fundamentals, including (NFA), productivity differential, and commodity terms of trade, government consumption, trade restriction index, and price controls.[6] For

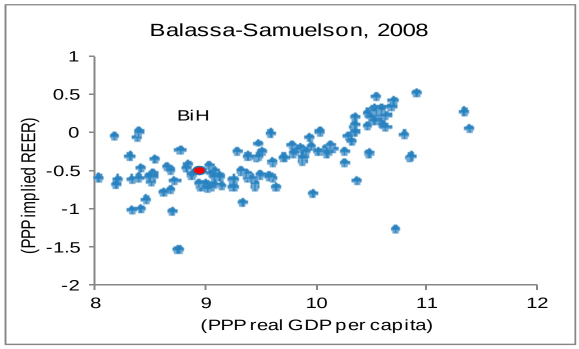
Variables	Coefficient	
NFA	0.04	0.04
Productivity differential	0.19	0.12
CEE countries		1.3
Commodity TOT	0.55	0.39
Government consumption	2.91	2.65
Trade restriction index	0.12	0.14
Price controls	-0.04	-0.02

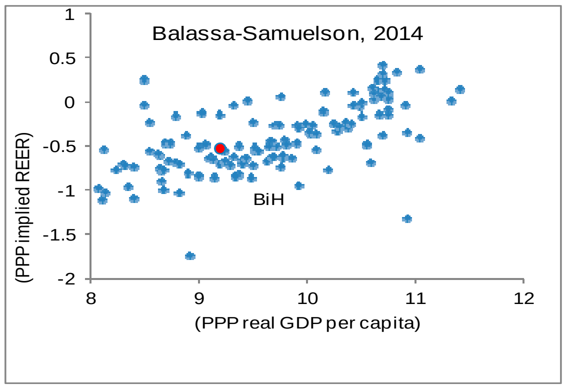
[5] We do not discuss the fixed effects results, given that the CGER estimates do not have a fixed effect for Bosnia, which eliminates any advantage that this method has.

[6] Some interpretation of the economic substance behind the implied variables and their coefficients is provided here. A country with smaller NFA (or larger debt) needs larger CA surplus (or more depreciated real exchange rate) to service its debt. Productivity differential is included to account for the Balassa-Samuelson effect. Through real income or wealth effects, higher commodity terms of trade lead to an appreciation of the RER. Higher government consumption is likely to appreciate the RER as such consumption generally falls more on nontradables than tradables. Trade restriction is included as it may lead to higher domestic prices and more appreciated real exchange rates. Finally, a lower number of administered price categories are expected to be associated with a more appreciated real exchange rate in transition economies as prices rise towards market levels

Central and Eastern European (CEE) countries, the regression specifications allow for a stronger Balassa-Samuelson effect, compared to the global sample. The paper uses regression coefficients for both with and without CEE. Depending on using CPI-based or ULC-based REER the estimates fluctuate between 4.4 percent undervaluation to 8.8 percent overvaluation.

26. **The purchasing power parity (PPP) approach relies on the concept** that, over time, a country's nominal exchange rate will tend to approach its PPP-determined level. This takes place as a country's per capita income moving toward more developed country's per capita income. However, the convergence in emerging economies is not a smooth process and may imply many impediments that keep convergence process slow. The most common factor is the Balassa-Samuelson effect. The PPP GDP per capita is generally used as a proxy for the relative productivity differential. Real exchange rate undervaluation (overvaluation) is observed if the country's price level is too low (high) compared with the price level implied by its relative income level. The undervaluation of 8.2 percent under Balassa-Samuelson is consistent with the hypothesis that the real exchange rate should appreciate in line with relative productivity differential.





27. **Based on the above equilibrium current account norms, the estimated REER misalignment ranges** from undervaluation of 4.2 (implying CPI REER) under the equilibrium REER approach to about 18 percent overvaluation under the macroeconomic-balance approach. The undervaluation based on Balassa-Samuelson implies that the convergence to developed partners is underway**.** These analyses do not suggest a strong evidence for real exchange rate overvaluation that could result in future external instability. The estimates are also subject to large uncertainties reflecting the large variations in macro-fundamental variables across the countries and over time and limits of the specifications imposed across a set of countries used for the development of

BiH: External Stability Analysis

	Current account norm	REER mis-alignment [1]
Medium-term current account projection -5.0		
Balassa - Samuelson	…	-8.2
External Sustainabilty Approach	-4.4	3.0
CGER Macroeconomic Balance Approach		
Pooled	-1.7	18.1
ALM [2]	-4.1	4.9
Equilibrium REER Approach		
CPI-based REER	…	-4.2
Unit labor cost-based REER	…	8.8

[1] Undervaluation (-) and overvaluation (+).
[2] Based on Abiad, Leigh and Mody (2007).

CGER analysis.

28. **These findings differ from the analysis under the 2008 article IV consultations**, when the range of equilibrium current account deficit varied between 7.5–13.5 percent of GDP. The likely explanation is in the shifts of macroeconomic fundamentals resulting from the global crisis in BiH and partner countries. The consequent adjustment resulted in relative narrowing of the estimated range of the equilibrium current account deficit to 1.7– 4.4 percent of GDP.

E. Conclusions

29. The analysis in this chapter suggests that there is no case for significant overvaluation of the real exchange rate. Threats to external stability in the pre-crisis period—associated with a current account deficit that reached unsustainable levels—have now been reduced substantially; and while foreign non-debt creating flows have declined, they remain sufficient to support external stability. Risks related to foreign bank liabilities rollovers remain benign. Nevertheless, it is important to note that preserving external sector stability requires short- and medium-term policy measures aimed at removing bottlenecks and factors potentially risking external sustainability. These measures include but not limited to maintaining fiscal discipline, enhancing external competitiveness through addressing long-standing labor market rigidities, further improvement of productivity and removing impediments to entrepreneurship and good governance.

F. Appendix

30. **The first two methods, the Macro-Balance and the External Sustainability approaches**, are close to Williamson's (1994) concept of Fundamental Equilibrium Exchange Rates, which is defined "…as the real exchange rate that allows for the simultaneous attainment of the internal and external balances, i.e., when output is set to its potential level and when the current account is financed through long-term capital flows….and as an exchange rate that is expected to be indefinitely sustainable on the basis of existing policies". It should therefore be real effective exchange rate that is *e*xpected to generate a current account surplus or deficit that matches the country's underlying capital flow over the business cycle, of course assuming that the country is pursuing internal and external balance. According to Edwards (1991), "…internal equilibrium means that the non-tradable goods market clears in the current period and is expected to be in equilibrium in future periods. External equilibrium means that the current account balances (current and future) are compatible with long-run sustainable capital flows". The basic idea then is in estimating the required exchange rate adjustment to close the gap between the so-called underlying current account, i.e., adjusted for the economic cycle, and the "current account norm", which represents an equilibrium value over a medium term horizon.

31. **Macro-economic balance approach (MB)**-calculates the difference between the medium term projection of current account balance at current exchange rate and an estimation of current account norm. In the MB, first the current account norm[7] is derived from panel regressions, attempting to establish an equilibrium relationship between the current account and a set of credible fundamentals across the time and cross-country dimensions. The standard CGER methodology (Lee and others, 2008) is based on a pooled OLS regression using the data from 54 industrialized and emerging markets between 1973 and 2004. Secondly, it estimates an underlying current account balance, i.e., current account balance that would materialize at a zero output gap for domestic and partner countries. Finally, a real exchange rate adjustment that would close the gap between the estimated current account norm and the underlying current account balance is calculated. The estimate is computed by implying elasticity of the current account to the real exchange rate calculated as export elasticity*(export/GDP)-(import elasticity-1)*(import to GDP)[8].

32. **External sustainability approach (ES)-estimates the differences between the actual current account balance and the one that will stabilize countries International Investment (IIP) or net foreign assets position at some sustainable benchmark level**. This is built on the idea of intertemporal budget constraint for the economy as a whole. The MB and the ES approaches belong to the same group of models and differentiate themselves only from the way the current account norm is defined. Unlike MB, in the ES approach, the current account norm is defined as the current account balance that is required to stabilize the net external indebtedness of a country. It is assumed that changes in net international investment or net foreign assets of economy (Bt) are assumed to be due either to net financial flows (net purchases of foreign assets minus net foreign purchases of domestic assets) or to changes in the valuation of outstanding foreign assets and liabilities: $B_t - B_{t-1} = CA + E_t$ −where CA_t is the current account balance and E_t includes factors that represent the difference between the current account balance and net financial flows (including capital grants and/or errors and omissions). By expressing all variables in GDP, the current account that stabilizes IIP at any given leve

$$ca^s = \frac{g+\pi}{(1+g)(1+\pi)} b^s - e,$$

[7] Current account norms are equilibrium estimates arising based on a theoretical macroeconomic model. There is a large literature, including theoretical and empirical that discusses the l factors that can influence the dynamics of the current account including: demographics, government fiscal policy, closing the GDP gap, as well as various institutional characteristics that may influence the country's ability to borrow abroad. An important aspect is that the current account - through an accounting identity, is linked to the difference between domestic saving and investment. This identity highlights the intertemporal nature of the current account and the role of consumption smoothing (see Sachs, 1981, and Obstfeld and Rogoff, 1994). The rationale of this approach is that a current account deficit does not necessarily imply an imbalance: it can make sense, for a country that is growing, to borrow against future income. Therefore, the current account norm may be non-zero.

[8] For purposes of current analysis CGER elasticities are applied, i.e., -0.71 for exports and 0.92 for imports.

where g and π are growth rate of real GDP and inflation, respectively.

Likewise, the level of trade balance of goods and services consistent with IIP or NFA stabilizing level is $tb = -\frac{(r-g)}{1+g}b - grant,$

The suggested adjustment for grants implies similar logic used in estimation of macroeconomic-balance approach.

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III. Cyclical Developments And Fiscal Policy Design[1]

A. Introduction

1. **Fiscal policy in Bosnia and Herzegovina (BiH) has been pro-cyclical prior to the 2009 recession, contributing to the build-up of internal and external imbalances.** The expansionary fiscal stance during booms has created expenditure dependency and depleted resources that could be used to smooth incomes during downturns. This chapter attempts to enrich the debate on the desirable fiscal stance in BiH by introducing some measures of cyclically adjusted fiscal balance (CAB). A variant of the CAB should anchor fiscal policy decisions going forward to allow counter-cyclical policy conduct and provide a clear signal to the public about the government's actual fiscal "effort".

B. Background

2. **Indicators of fiscal performance are used regularly to assess government objectives and fiscal policy outcomes.** The overall and the primary balances are generally used as measures of sustainability given their close link to borrowing requirements and indicators of debt burden. Various additional indicators of adjusted balance, such as domestic balance or augmented balance, serve different aims including to inform the view on the fiscal impulse, i.e., the impact of fiscal policy on the economy. In natural resource rich countries, structural balance indicators strip the overall balance from resource revenue (or adjusted it for the variation of commodity prices) to assess the underlying fiscal stance and address intergeneration equity concerns.

3. **The fiscal policy stance is affected by discretionary policy actions and by the economic cycle, which is outside of policy makers' control.** The evolution in the general government balance is affected by cyclical fluctuations in the economy. In practice, almost all countries take some advantage of the strong cycle to improve their observed fiscal balances. On account of strong revenue performance, usually some fiscal consolidation takes place. At the same time, however, overheating concerns in the private sector call for tighter policies to offset strong demand and create a cushion to support the economy in the event of a downturn. In downturns revenues decline automatically while some expenditures increase (i.e., unemployment benefits). A large part of public expenditure is not sensitive to the cycle, including wages, pensions, other current and capital spending.

4. **Balances adjusted for cyclical movements in the economy are used to assess the government's underlying fiscal stance net of cyclical effects on revenues and expenditures.** In seeking to assess the orientation of fiscal policy, it is therefore desirable to adjust the evolution in public finances for the effects of cyclical fluctuations. In doing so it is

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[1] Prepared by Izabela Karpowicz (FAD).

possible to understand if fiscal policies supports or counteracts the operation of automatic stabilizers. The CAB is obtained by deducting these cyclical components from the observed balance.

5. **This paper studies the fiscal stance in BiH over the past several years by disentangling the effects of cyclical movements on the fiscal balance.** Three methods are used for constructing the CAB: (i) a standard approach, based on the output gap; (ii) a "disaggregated" balance approach, based on the cyclical position of individual taxes; and (iii) a modified approach that takes into consideration the effect of large external imbalances on revenue collections (IMF, 2007). The fiscal stance in BiH is then examined in light of the results from the CAB and the information on discretionary measures while keeping in mind the shortcomings of indicators. Final considerations are made to incorporate the CAB into medium-term planning in support of counter-cyclicality along with other possible improvements in costing of reforms and policy coordination.

C. Derivation of the CAB for BiH

6. The economy's position in the cycle is assessed by means of the "output gap" defined as the difference between observed GDP and its potential level. In periods of demand shortfall the output gap is negative; in periods of excess demand, the gap is positive.

The standard (aggregated) approach

7. The standard approach to estimating the CAB isolates the fiscal stance by stripping out the automatic effects of the output gap (YGAP) on the balance (B) using the relationship:

$$(CAB/YP)_t = (B/Y)_t - \alpha YGAP_t, \text{ where} \qquad (1)$$

B and CAB are the levels of the actual and cyclically adjusted balance, respectively; Y is the actual and YP the potential GDP; and $YGAP_t = (Y_t - YP_t)/YP_t$. The coefficient α measures the automatic effect of a 1 percentage point change in the output gap on the actual fiscal balance in percent of GDP.

8. Following a standard OECD approach, we estimate the automatic response of the budget to the output gap at about 0.45, close to the level of the revenue-GDP ratio. For simplicity, we assume that only the revenue side of the budget exhibits automatic responsiveness, although automatic stabilizers on the expenditure side could also be significant reflecting changes in the size of unemployment benefits that track the cycle.[2]

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[2] While an approximation, these elasticities are close to those estimated for OECD countries. In particular, the OECD (Girouard and André, 2005) elasticities computed for specific tax categories yield an aggregate revenue elasticity close to 1.

The "disaggregated" approach

9. The output gap could be a poor tool for constructing the CAB if revenues and expenditures depend on developments in the tax bases, which in turn move differently from the output gap. In particular, private consumption, employment and wages, as well as profits may be in a different cyclical phase than GDP and/or the magnitudes of their fluctuations may be different (Cajner, 2005).

10. The disaggregated approach addresses these composition effects on the CAB. This approach relies on calculating the cyclical position of the macroeconomic bases as in the output gap estimation applying the HP filter on the bases extended to 2015. Fiscal elasticities that measure the automatic response of individual revenue categories to macroeconomic fluctuations are borrowed from the OECD average 1 for the personal income tax (PIT) and corporate income tax (CIT), 0.9 for indirect revenues, 0.7 for social security contributions (SSC), and multiplied with the corresponding gaps and with the actual values of revenue categories.

$$CAB = \sum_i (REV_i * BGAP_i * \alpha\_REV_i GAP_i), \text{ where} \tag{1}$$

BGAP is the gap in the revenue bases and α is the elasticity of the revenue category to the respective base.

The "modified" approach

11. **In countries with large and unsustainable current account deficits paralleled by booms in absorption, the output gap may not be a good proxy for capturing the automatic effects of changes in the economy on the budget.** The reason is that an unsustainable increase in consumption and investment, more often than not financed by remittances and/or external borrowing, can be offset by an increase in imports, leaving gross domestic product at its potential level. Changes in revenue bases, that generally tend to move in parallel with changes in output, may be more pronounced in such endeavors. A simple OLS regression suggests that tax collection have risen in recent years in line with the manifestation of external imbalances.[3] A modified CAB could be used that takes into account large external imbalances in evaluating the fiscal stance.

12. The modified CAB separates the automatic effects on indirect tax collections using estimates of the size of the external imbalance (defined as the unsustainable excess/shortfall of actual spending over potential output), while calculating the automatic effects on other

[3] During severe crises, problems with tax compliance (Brondolo, 2009) may weaken revenues beyond what suggested by historical trends and collection efforts. Similarly, long-run revenue elasticities do not hold well during output contractions and expansions (Sancak and others, 2010).

revenue collections using estimates of the output gap. The absorption gap estimates are derived based on the analysis of external stability in chapter II of this paper. Following the approach in IMF (2007), the CAB is constructed assuming that indirect taxes respond automatically only to the absorption gap while other revenues respond only to the output gap:

$$(CAB/YP)_t = (B/Y)_t - \beta{*}YGAP_t - \mu{*}AGAP_t, \text{ where} \qquad (2)$$

AGAP is the absorption gap, β is the share of indirect revenue in total taxes and μ is the share of direct revenue in total taxes, and β= μ=0.23 since about half of the revenue (excluding grants) consists of indirect taxes and the other half of direct taxes. Non-tax revenue is assumed to be non sensitive to the cycle.

13. **Some consideration associated to the construction of CAB:**

- Measurement errors in computing potential GDP may complicate the interpretation of results, in particular when potential GDP is used to present fiscal ratios (Chalk, 2002). Estimates of potential output are subject to uncertainty inasmuch as the framework does not account for the forces driving the business cycle that vary over time.

- The assumption of constant elasticity has the potential to introduce distortions in the estimates of automatic stabilizers in case of changes in the composition of revenue. For example, Sancak and others (2010) show that long-run revenue elasticities do not hold well during output contractions and expansions. During recessions tax revenue collapses more sharply than what would be expected based on the decline in the tax base contributing to over-estimate revenue. Moreover, discretionary changes affecting tax rates and bases, such as the ones BiH underwent during 2006–09 (see Box 1), may affect long-run elasticities (IMF, 2005).

- The CAB does not represent the “true” measure of fiscal effort if there are other forces affecting fiscal outcome unrelated to the cycle but beyond government’s control and uncorrelated with the cycle. For instance, commodity prices and interest rates depend largely on world markets, while foreign grants and loans may be affected by the economic situation abroad (Kanda, 2010).[4]

- A key issue in the interpretation of the CAB is the choice of scaling variable—nominal GDP or potential GDP. While results differ modestly under general

[4] Adjustment for interest rate changes is not deemed necessary for BiH given that borrowing is largely long-term and with fixed interest rates.

conditions, care is needed in computing and interpreting these indicators, especially in "less general" cases (Fedelino and others, 2009).

D. An Assessment of Fiscal Policy Based on CAB

14. **According to the standard CABs, fiscal policy in BIH has been highly pro-cyclical over the past few years (Tables 1 and 2).** The discretionary stance has significantly contributed to the deterioration in the surplus in 2007–08.[5] While part of the higher deficit in 2009 was due to the operation of the automatic stabilizers, discretionary loosening also occurred. However, a number of reasons could be behind such result including, as we have seen, a different cyclical position of the revenue bases with respect to the actual GDP and large external imbalances not captured by the potential GDP. In fact, during 2007 and 2008, private consumption (i.e., indirect revenue base) has been above potential, while the base for the PIT and the SSC, derived from wages and employment in the economy, was above potential in 2008 and 2009 because of large increases in wages that occurred between 2007 and 2008.

Table 1. BiH: Measure of Cyclically Adjusted Balance, 2005-09
(Percent of GDP)

	2005	2006	2007	2008	2009
Overall balance	0.9	1.8	0.0	-3.6	-5.7
CAB, standard	1.4	1.9	-0.3	-4.2	-4.8
CAB, disaggregated	1.4	2.7	-0.3	-3.9	-4.8
CAB, modified	-1.5	1.0	-1.8	-6.5	-5.4
Output gap	-1.3	-0.3	0.7	1.2	-1.9
Absorption gap	11.8	3.7	7.5	11.8	0.8

Sources: Fund staff estimates.

Table 2. CABs and the Fiscal Stance, 2006-09
(Differences, in percent)

	2006	2007	2008	2009
Standard				
Overall balance	0.9	-1.8	-3.7	-2.0
Discretionary stance	0.5	-2.2	-3.9	-0.6
Automatic stabilizers	0.4	0.4	0.2	-1.4
Disaggregated				
Overall balance	0.9	-1.8	-3.7	-2.0
Discretionary stance	1.3	-3.0	-3.6	-0.9
Automatic stabilizers	-0.4	1.2	0.0	-1.1
Modified				
Overall balance	0.9	-1.8	-3.7	-2.0
Discretionary stance	2.6	-2.8	-4.7	1.1
Automatic stabilizers	-1.6	1.1	1.1	-3.1

Sources: Fund staff estimates.

15. **A number of discretionary measures have taken place both on the revenue as well as on the expenditure side over the last few years (see Box 1).** Recently, there have been increases of excises to align tax rates with EU levels, but discretionary revenue gains were partly offset by declining customs collections owing to EU accession. Direct taxes were lowered and exemptions re-defined. Tax administration has also improved and, contrary to the experience in many countries, collection does not seem to have suffered during the recent crisis. On the expenditure side, progressive increases in wages and social benefits have occurred since 2006 in a pro-cyclical fashion, dampening the effect of the automatic

[5] The discretionary fiscal stance is calculated as the difference in the CABs across years. The effect of automatic stabilizers is calculated as the difference between the change in the overall balance and the discretionary fiscal stance.

stabilizers. Unemployment benefits, which generally act as a counter-cyclical force on the expenditure side, have increased during good times with the rights awarded to demobilized soldiers in the Federation in 2006.

Box 1. Discretionary Revenue Measures, 2006–09

ITA

- 2006 Introduction of VAT at a flat rate of 17 percent.
- 2008 Association Agreement with EU (lowered import tariffs on EU goods)
- 2009 Increase in the road fee (+0.10 KM/l), excises on coffee and progressive increase in excises on tobacco
- 2009 Exemption of IPA funds from VAT

Federation

- PIT
  - 2008 rate lowered from 30 percent to 10 percent and a number of exemptions redefined;
  - 2009 unification at the Federation level with elimination of cantonal taxes;
- SSC
  - 2006 introduced new law;
  - 2009 lowered contributions from wages (employees) from 32 percent to 31percent and on wages (employers) from 11,5 percent to 10,5 percent;

RS

- PIT
  - 2007 new law changed the tax base, introduced exemptions, and progressive rates;
  - 2009 shift in the calculation of tax base (net to gross wage) and lower (single) rate (8 percent) and redefined exemptions
- CIT
  - 2007 new law eliminating exemption on reinvestments;
- SSC
  - 2009 shift in the calculation of tax base (net to gross wage) and lower rate (from 42percent to 30.6 percent)

16. **The CAB based on the disaggregated approach shows a similar picture compared to the standard approach.** Taking into account the effect of the cyclical position of the individual revenues bases and the individual elasticities, the disaggregated CAB also indicates a worsening fiscal stance. The contribution of automatic stabilizers in 2009 this time is weaker that in the standard CAB. Out of the 2 percent deterioration in the overall balance in 2009, 1.1 percent was due to a decline in revenues, while 0.9 percent was due to discretionary expansion (Table 2).

17. **The modified CAB approach yields divergent results only in 2009.** Because of a more pronounced absorption boom in 2008 revenues were also above potential in that year. Thus, the cyclically adjusted deficit was higher, suggesting a stronger discretionary

deterioration (Table 1). As the current account swung closer to its sustainable level sharply in 2009, the cyclical contraction of revenues dominated the movement in the overall balance. Accordingly, the deterioration in the overall balance in 2009 was largely caused by the effect of automatic stabilizers stemming from the absorption bust, while the fiscal stance posted a discretionary contraction of 1.1 percent (Table 2).

E. Incorporating Cyclical Developments into Medium-Term Planning

18. **Cyclical developments should be incorporated into medium-term planning and annual budgets should be aligned to medium-term budget frameworks.** CABs are essential tools for designing and assessing counter-cyclical policies. Moreover, CABs have the potential for enhancing credibility of medium-term frameworks by separating discretionary policy actions from automatic stabilizers. While anchoring fiscal policy on an indicator corrected for the cycle seems premature at this stage, the CAB should be made integral part of budget documents and discussions involving discretionary measures. By doing so, the authorities could demonstrate the direct effect of policies on the underlying fiscal stance. In addition to providing a signal to markets on policy intentions, thereby affecting the price and availability of lending, inclusion of CAB could help provide support for domestic reforms.

19. **The medium-term fiscal policy objective should be aimed at lowering the size of the government and improving spending efficiency.** In support of greater inclusion of the informal economy, export competitiveness and currency board sustainability the overall weight of the public sector on the economy should be lowered. The role of the CAB is to provide guidance as to the pace and direction of adjustment that would allow counter-cyclical policy conduct. In that respect, building up savings in good times will be necessary for sustaining lower balances during crises.

20. Some considerations for the successful implementation of counter-cyclical policy include, but are not confined to:

- **Coordination of sub-national governments' policies.** It is possible that fiscal objectives of central governments are diluted by actions at other levels of government. Here intra-governmental transfers should play a role in supporting counter-cyclicality by avoiding excessive contraction of sub-national spending during downturns or, conversely, contraction of central government spending to offset the action of at sub-national level.

- **Internalizing expected reform costs.** The adjustment path, i.e., the medium-term CAB target, has to internalize the cost of contingent liabilities that are likely to materialize in the future either in result of expected reforms (i.e., severance payments related to public sector downsizing, effects of changes in social security contributions, clearance of public enterprise debts) or because of expected increases in non-discretionary expenditure (i.e., pension outlays due to unfavorable demographic trends).

- **Budget flexibility.** Unless they take into consideration the cyclical position of the economy, fiscal rules and budget rigidities tend to create obstacles to counter-cyclical policy conduct. Revenue earmarking and indexation of expenditures, typically wages and social benefits, tend to limit flexibility and obstruct counter-cyclicality. These policies should be periodically re-thought and the benefit they create by eliminating uncertainty and strengthening credibility should be weighed against the advantage of greater budgetary flexibility.

- **Financing availability and debt sustainability.** Counter-cyclical policy may encounter obstacles when savings are not sufficient to maintain or increase the level of spending during downturns, external financing is not available or is too costly, or debt sustainability is at stake. By enhancing transparency and fiscal policy credibility, the use of CABs can "sooth" the markets during periods of crises and contain borrowing costs, while savings built in good times should provide a cushion in crises. (IMF, 2009)

- **Capacity building.** Capacity for analyzing cyclically adjusted indicators has to be accompanied by a good understanding of the cyclical position of the economy. Moreover, capacity for costing of reforms needs to be strengthened.

21. **The Fiscal Council (FC) has the task of coordinating fiscal policies among the various level of government with a view to ensuring macro-economic stability and fiscal sustainability.** In the exercise of its duties the Fiscal council adopts the Global Framework of Fiscal Balance and Policies in BiH each May which includes medium-term fiscal targets, macroeconomic projections, the distribution of indirect revenue for the coming year, and upper borrowing limits. The FC relies on the Advisory Group, responsible for the preparation and proposal of decisions and other legal acts adopted by the FC. The FC could be put in charge of monitoring fiscal policy conduct.

22. **The functions of the FC Advisory Group could be redefined to include ex-post assessment of fiscal policy performance by observing movements in the CAB.** The Group could be in charge of elaborating and publishing macroeconomic projections as input into the Budgets, and assessing the governments' policies against the pre-determined fiscal anchor. The assessment should be done in light of cyclical developments in revenues and expenditures. The Advisory Group could draft a monitoring report annually or semi-annually. To enhance transparency and government accountability the report should be available to the public and could be published on the government's web site.

F. Conclusions

23. **The backdrop of global economic downturn has raised challenges for evaluating the countries' fiscal stance.** Deficits have swelled in countries that have experienced revenue shortfalls, and adopted anti-crisis measures, as well as in countries that have maintained regular spending patterns. In such an environment, judgment of fiscal stance has to be modified to take into account developments that are outside of immediate control of authorities. The judgment has to acknowledge the desirability of the manner in which well-designed automatic stabilizers operate to smooth out the effect of cyclical movements on economic subjects.

24. **Fiscal policy in BiH has been highly pro-cyclical in the recent past.** Over 2007–08, the deterioration in the fiscal stance was actually faster than what is suggested by the traditional balance indicators and only partially related to cyclical factors. Although with somewhat different magnitude, all the three CABs show discretionary expansions in 2007 and 2008. In good times fiscal expansion was based on public wage and war-related entitlement benefits increases. In addition to creating spending expectations for the future, such policies did not allow building savings and, consequently, in 2009, some counter-cyclicality could only be achieved through further external borrowing. However, due to the inadequate composition, geared towards current spending, discretionary expenditure during the crisis year in the Federation did not support economic recovery.

25. **Going forward, fiscal policy should focus on lowering the size of the government in support of debt sustainability, private sector development and the currency board stability.** Medium-term objectives should be achieved to the extent possible by countervailing the cycle. Fiscal policy should allow the automatic stabilizers to operate by using, when necessary, well-timed, temporary, and targeted fiscal stimulus.

26. **The fiscal response should also internalize the cost of reforms and of contingent liabilities stemming from non-discretionary expenditures.** Although infrastructure needs would justify greater structural deficits, projections for rising health and pension spending due to unfavorable demographic trends would call for building up savings ahead of increased demand on entitlements. In view of these challenges the capacity to cost reforms should be strengthened and cyclical developments should be made part of medium-term planning.

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IV. The Case for Pension Systems Reform[1]

A. Introduction

1. **The public pension system in Bosnia and Herzegovina (BiH) consists of two entity-administered pension funds: one in the Federation, the other in Republika Srpska (RS).** Despite substantial past reforms, the two systems now face increasing financial pressures—some stemming from adverse demographic trends, some from the design of the pension system themselves (Box 1), and others from a general fiscal deterioration. Expenditure on public pensions has been one of the fastest-growing components of public expenditure in the two entities. In the Federation, this spending rose from 7.7 percent of GDP in 2005 to 10.0 percent of GDP in 2009; and in the RS, from 7.8 percent of GDP to 9 percent of GDP over the same period. Any credible strategy to put public finances on a sustainable path needs to feature a reform of the public pensions in both entities.

2. **The breadth of the issues facing the pension systems in BiH makes it impossible to address them in a single analytical note.** That is why this paper is selective in scope, highlighting some of the aspects that deserve priority attention. It provides a brief overview of the two systems and quantifies the implications of the recent trends in the system dependency ratios. Given the acute fiscal pressures in the Federation, the focus in the second part is on the public pension system here, specifically on its fastest growing segment—privileged pensions.

B. Background

3. **The two pension systems are conceived as pay-as-you-go schemes, with current workers' contributions from wages and salaries funding the pension payments.** The main parameters of the system are summarized in Table 1. There are three main types of pensions: old-age, disability and survivor pension. The system is complicated by the presence of privileged pensions for selected groups of beneficiaries, most of them war-veteran related. These benefits are governed by specific rules and are mainly funded from the Entity central governments' budget resources (budgets make transfers to pension funds for that purpose). Recently, the ability of Entity budgets to provide the matching funds for payment of privileged pensions has been undermined by weak control over recurrent spending in the Federation, a rapid expansion of overall spending in the RS, and by the drop in revenue as a result of the economic downturn.

4. **There is growing realization among policymakers and the general public that changes need to be made to put the system of pension insurance on a sound footing.** Proposals include (a) supplementing the existing public pension systems with voluntary

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private pension schemes; (b) introducing parametric changes to the existing public pension schemes (raising the retirement age; raising the length of required contributory service); and (c) reforming the system of privileged pensions.

Table 1. Bosnia and Herzegovina: Public Pension System in Numbers

	Federation	Republika Srpska
System parameters		
Retirement age	- 65 years of age and 20 years of insurance periods (paid in contributions); - 40 years of insurance periods, regardless of age; - early retirement 60 years of age and 35 years of insurance periods for men and 55 years of age and 30 years of insurance periods for women (sunset clause expires on 31 December 2015).	- 65 years of age and (i) 20 years of insurance periods, or (ii) 25 years of pensionable periods; - 40 years of insurance periods (paid in contributions), regardless of age; - 55 years of age and 30 years of pensionable periods, if 15 years of service are deemed as hardship posts.
Effective Retirement Age	57.3 (average age for old age pension in 2008).	60.3 (average age for old age pension in 2008).
Accrual rate	2,25 for the first 20 years and than 1.5 annually; maximum 75.	2,25 for the first 20 years and than 1.5 annually.
Pensionable base	25 consecutive years with highest wage in 2009, 27 in 2010; moving towards all years of service.	All years of service.
Indexation post-retirement	Limited by availability of funds.	Monthly and annually (based on net average salary). Both are limited by availability of funds.
Eligibility for disability pension	Minimum of one third of insurance during the work span, or work injury regardless of insurance period.	- Work injury resulting in permanent work disability regardless of the insurance period; - Work injury resulting in limited work disability for insures over 55 years of age.
Level of disability pension	Maximum 75% of pension base for a disability caused by a work injury;	Set up as a percentage of pensionable base subject to pensionable periods, with the floor of at least 50 percent of pensionable base for 20 years of pensionable period.
Eligibility for survivor's pension	For children under age 15 and until age 25 if studying, widows above age 45 and widowers age 60.	Widows above age 45 and widowers age 55, for children under age 15 and until age 26 if studying, children without parents, parents of fallen soldiers regardless on age or income levels.
Level of survivor's pension	70% of pension for single person, 80% for two persons, 90% for three persons, and 100% for four and more family members.	Percentage of deceased insuree's pension subject to a number of family members.
Contribution rates	33.33 % (on net wage); 23% (of gross wage).	17% (of gross wage).
Demographics [1]		
Number of contributors	426,936	294,647
Number of beneficiaries	350,248	213,575
Old age	157,822	99,941
Disability	77,930	39,486
Survivors	114,496	74,148

[1] data for 2009.

Source: FBIH and RS Pension Funds; RS Pension Fund Reform Strategy.

Box 1. Public Pension Systems—Selected Features

Some features of the pension system tend to exacerbate the financial pressures on the pension funds. Accrual rates are structured in a way that encourages short contribution careers: the rates are higher for the first twenty years than for the next twenty years, and after 40 years retirement is triggered. Disability pension provisions are more generous that those for old-age pension. That, together with rather broad eligibility standards—including inability to perform one's last job, rather than simply any job—creates an incentive for workers to retire under the disability conditions. The law limiting the pension payments to the amount collected notwithstanding, pensions have been effectively indexed to wage growth. This indexation is overly generous and contrasts with practice of most other countries, where pensions are indexed to inflation, or to a combination of wage growth and inflation.

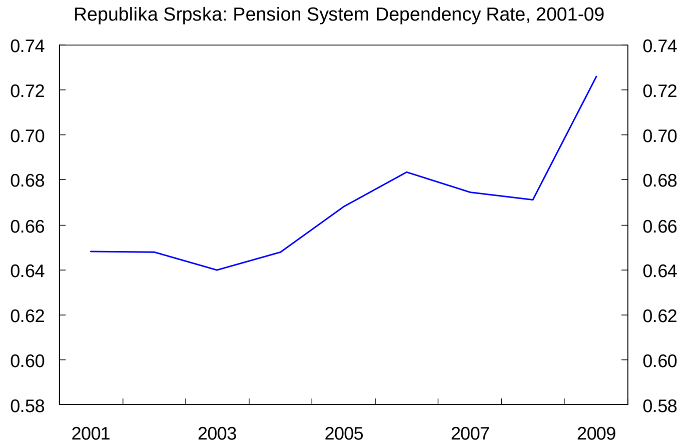
One conspicuous feature of the two pension systems are their high *system* dependency ratios relative to the *population* dependency ratios. The system dependency ratios—the number of beneficiaries divided by the number of contributors—are 0.73 in the RS and 0.75 in the Federation. This is well in excess of the demographic dependency rates—population of 65 years and older divided by population between 15 and 64. These are 0.3 in the RS; and 0.2 in the Federation. The number of beneficiaries is high because of, among other things, high numbers of disability and survivor pensions. This can be in great part attributed to the war. In the Federation, the proliferation of privileged pensions has been behind the increase in the number of pensioners in recent years. In contrast, the number of contributors are low—only 41 percent of the population aged between 15 and 64 pay contributions in the RS and only 32 percent in the Federation. Again, some of this is the result of the war: the high number of the war-disabled directly lowers the number of contributors. In addition, the high degree of informalization of the economy keeps large numbers of economically active population outside the system.

C. Dependency ratios: adverse trends

5. **The case for a pension reform is clear from the fiscal perspective.** The main pressure comes from the unfavorable system dependency ratios—simply put, there are too few paying contributors for the number of pensioners. The reason is not merely demographic (Box 1). Effective solutions need to consider a fundamental overhaul of the system in a way that tips the incentives toward increased formal sector employment and raises contribution payment compliance. At the same time, retirement criteria need to be tightened and the calculation of pensions tied more closely to the number of years of the contributory history to discourage early retirement.

6. **Simply raising contribution rates to deal with financial pressures is not a viable long-term option.** At their current high levels, the contribution rates provide disincentives to

formal employment. Their increase would only aggravate the adverse trends in the system dependency ratios. Across-the-board cuts in pensions, which represent, on average, about 30 percent of the average wage in the Federation and less than that in the RS, might not be politically or socially acceptable. As a result, the entity governments would likely be faced with demands to top up the pension fund resources from general government budgetary funds.



7. **Continuation of the recent adverse trends in the system dependency rates threatens the financial integrity of the pension systems.** In the last two years, the system dependency rate worsened by more than 10 percent in the Federation and about 8 percent in the RS. Another 10 percent deterioration, relative to 2009, would require a matching increase in budget transfers to the Entity pension funds to fill the emerging gaps. This is shown in Table 2. The analytical background is summarized in Box 2.

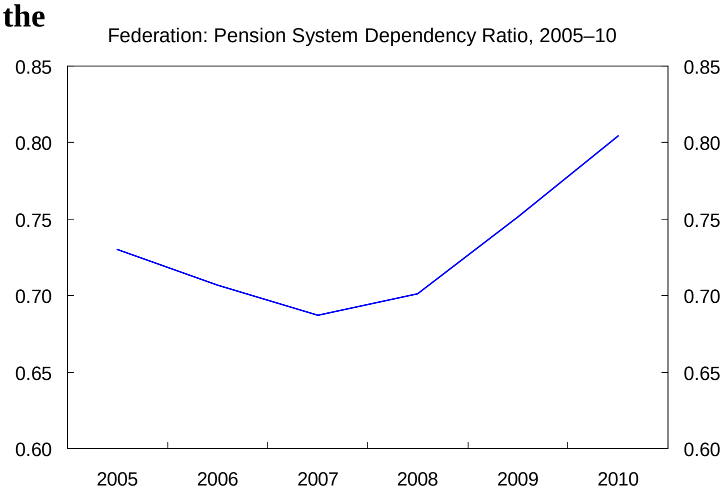


Table 2. Bosnia and Herzegovina: Budget Impact of an Increase in System Dependency Ratio

Federation: 10% Increase in System Dependency Ratio

	2009	+10%
System dependency ratio	0.75	0.83
Replacement rate (average pension/average gross wage) [1]	0.34	0.34
Contribution rate	0.23	0.23
Required transfers from budget, millions of KM	151	276
Percent of Entity GDP	1.0	1.8

[1] Gross wage is a calculated average wage of the contributors.

Republika Srpska: 10% Increase in System Dependency Ratio

	2009	+10%
System dependency ratio	0.73	0.80
Replacement rate (average pension/average gross wage)	0.28	0.28
Contribution rate	0.17	0.17
Required transfers from budget, millions of KM	145	368
Percent of Entity GDP	1.8	4.4

Box 2. Pension System and Fiscal Sustainability—Conceptual Framework

Background

BiH's public pension insurance is administered through a system of pension funds at the entity level. It is based on the pay-as-you-go (PAYG) principle, with current workers' contributions funding current obligations toward current pensioners.

PAYG systems need to ensure an ongoing balance between the amount contributions and benefits. Demographic changes, including an aging population, and increases in life expectancy, require changes to contribution rate or the system benefits. For BiH, the effect of youth worker emigration, which raises the demographic dependency ratio, is expected to place additional strain on the system's fiscal sustainability.

Framework

In a PAYG system, current period benefits are financed from current revenues, typically via a payroll tax. For revenues to equal expenditure, the payroll tax rate (α) has to equal the pension bill divided by the wage bill, or to the ratio of pensioners (M) to active contributors (N) times the replacement rate (β), where the replacement rate is defined as the ratio of the average pension to the average wage. Thus we can write

$$\alpha = \beta \cdot \frac{M}{N} \qquad (1)$$

Allowing the possibility of budget transfers, (1) becomes

$$\alpha = \beta \cdot \frac{M}{N} \cdot (1-\tau) \qquad (2)$$

where τ is the ratio of budgetary transfers to pension expenditures ($\tau > 0$ implies transfers from the budget to the pension fund; $\tau < 0$ implies a transfer of the pension fund surplus to the budget). More generally, the ratio M/N can be expressed as a function of the demographic dependency ratio (M*/N*), where M* is the number of people 65 years and older and N* is the number of people between 15 and 64 years of age:

$$\alpha = \beta \cdot \gamma \cdot \frac{M^*}{N^*} \cdot (1-\tau) \qquad (3)$$

where γ is termed as the pension system coverage ratio, with its value depending on the maturity of the system, retirement policies, labor force participation rates and other labor market conditions.

D. Federation's Privileged Pensions: a Trojan Horse?

8. **The system of privileged pensions consists of a set of government decrees initially introduced to facilitate the reform of the BiH military (Table 3).** It provided early retirement options for large numbers of military personnel that would otherwise have been rendered obsolete as a result of the reform. The benefits were subsequently extended to army volunteers, war veterans and families of fallen soldiers. As of April 2010, these decrees covered about 21,500 beneficiaries. While these pensions are administered by the Federation Pension and Disability Insurance Fund (PIO), for great part they are funded from general government revenues. The annual provision is included in the central government's budget under transfers to other levels of government (i.e., the PIO).

9. **In January 2009, an amendment of Article 94 of the PIO Law, recognized the existing provisions for double-counting of years of service for members of BiH Army, the Croatian Defense Council and police forces during the 1992–95 war as budget liabilities.** By end-2009 about 78,000 veterans used this provision creating a new obligation of the central government budget toward the pension fund in an annual amount of KM 71 million. With this amount included, total annual obligations of the central government budget toward the PIO reached KM 190 million in 2009 (1.2 percent of GDP). During Jan–March 2010 the number of veterans increased to 80,000 thousand raising the annual obligation to KM 77 million (0.5 percent of GDP).

10. **The risks of the privileged pension component to the contributory scheme are several.** They include the rapid increase in the number of beneficiaries (i.e., the number of war veterans using double-counting of years of service could go up for as many as soldiers during the 1992–95 war) and the relatively high average pension entitlement. It is true that the payment obligations related to the privileged pension beneficiaries are expected to be funded from general government revenues. However, as the central budget finds itself strapped for funds, the temptation to squeeze the conventional pensions in order accommodate the financial demands of privileged pensions will only increase.[2]

11. **Reform of the privileged pension component thus needs to be a priority within the overall pension reform strategy.** The intermediate steps could be taken now to gain better control over this spending category: strictly enforcing the existing eligibility criteria, tightening the eligibility criteria; partly aligning the average privileged pension with the public pension system's average. Today, the average privileged pension is 1.43 times higher than the system average: equalizing it with the system average would reduce the privileged

[2] This is what occurred in 2009. While the central government's current obligations toward the PIO amounted to KM 181 million, the government transferred only half of that amount, prompting the PIO to run down its reserve fund to meet these obligations toward ultimate beneficiaries.

pension spending by 30 percent. Any reduction in the level of privileged pensions would need to be done selectively, rather than across the board. This is because of great disparity in individual pensions—many beneficiaries receive pensions that are below KM 300.

Federation: Privileged Pensions, 2005–09

	2005	2006	2007	2008	2009
Total payments, millions of KM	28	30	43	116	122
Number of beneficiaries, thousands	4.53	4.62	8.37	16.54	20.62
Average pension, monthly, KM	521	535	432	584	493
(Percent of total system, for respective categories)					
Total payments	3.4	3.1	3.8	8.0	8.0
Number of beneficiaries	1.3	1.5	2.6	4.9	5.9
Average privileged pension relative to system's average	237	225	152	172	143

Sources: PIO; and IMF staff calculations.

E. Conclusions

12. **The two entity pension funds, administered on a pay-as-you-go principle, have been under increasing financial pressures**—mainly from demographic trends, but also from deterioration of the general fiscal situation and the design of the pension systems themselves. Expenditure on public pensions has been one of the fastest-growing components of public expenditure in the two entities. One symptom of the weakness of the system are the high and rising system dependency ratios—too few paying contributors relative to the number of pensioners. In the Federation, the system of privileged pensions (with early retirement benefits for selected groups of beneficiaries) poses risks to the contributory pension system. The quadrupling in the number of beneficiaries in the last three years and the corresponding increase in budget cofinancing requirements have strained the Entity budget and resulted in a run-up of arrears in payment obligations of the budget toward the PIO.

13. **Putting the public pension systems on a sound footing should encompass a number of complementary steps:** tackling disincentives to formal sector employment and taking measures to raise contribution payment compliance; introducing further parametric changes, including an increase in the retirement age and in the length of required contributory service; and, reforming the system of privileged pensions. The Entities have taken the first steps. The Federation government adopted a pension reform strategy in June. However, the strategy needs to be fleshed out in greater detail and put to public debate before Parliament considers it and before it can serve as a blueprint for reform implementation. The RS Parliament has adopted the RS pension strategy and the government is ready to begin implementation immediately after the October election.