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Albania: Selected Issues

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ALBANIA

Selected Issues

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Contents Page

I. Comparative Inflation Performance in Southeastern Europe and Albania[1]

In the last decade, inflation in Southeastern European (SEE) countries—Albania, Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, and Serbia—has been comparable to euro area inflation rather than what has prevailed in otherwise comparable emerging economies. The only exception is Serbia. This low inflation is only partly, and even so only weakly, explained by high initial price levels. On the other hand, the exchange rate regime is of paramount importance, including the inflation targeting (IT) regime pursued in Albania. The analysis also explores additional heterogeneity between SEE and other regions.

A. Introduction

1. The last decade has witnessed low and stable inflation in SEE.[2] The notable exception is Serbia, whose exclusion from the SEE group further increases the gap in inflation performance to other regions (Table 1).[3] Moreover, SEE inflation has also been much lower than in other central and eastern European countries (CEE),[4] with the difference clocking in at about 3 percentage points. Within-region inflation variation, as captured by standard deviations, is also smaller in SEE than in most other regions. (Table 2).

Table 1. Cross-Region Inflation Rate Comparison
(percent, 2001−07)

	Average of annual change of CPI		Annualized CPI change [ln(CPI_2007)-ln(CPI_2001)]/6	
SEE	5.17	(5.74)	4.54	(4.08)
SEE (excl. Serbia)	3.83	(4.78)	3.02	(1.86)
Other East and Central Europe	6.72	(5.77)	6.33	(4.36)
Sub-Sahara Africa	7.19	(6.67)	11.9	(32.16)
Asia	5.19	(3.67)	4.98	(2.41)
Middle East/North Africa/Central Asia	6.06	(5.86)	5.81	(3.94)
Latin America and Caribbean	7.51	(6.60)	7.23	(4.54)

Notes: (1) Standard deviations are in parenthesis.
(2) Observations with change of more than 40 percent are excluded in computing annual CPI change.

[1] Prepared by Hiro Yamada.

[2] In this paper, all inflation rates are constructed using consumer price index data reported in the World Economic Outlook (WEO).

[3] Kosovo is excluded due to the data limitations.

[4] Central and eastern European countries include Belarus, Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russian, Slovak Republic, Slovenia, and Ukraine.

Table 2. SEE Countries—Annual CPI Percentage Change

	2002	2003	2004	2005	2006	2007	Average (2002−07)
Albania	5.2	2.3	2.9	2.4	2.4	2.9	3.0
Bos. and Herz.	0.3	0.5	0.3	3.6	6.1	1.5	2.1
Croatia	1.7	1.8	2	3.3	3.2	2.9	2.5
Macedonia	2.2	1.2	-0.4	0.5	3.2	2.3	1.5
Montenegro	19.7	7.5	3.1	3.4	2.1	3.5	6.6
Serbia	19.5	11.7	10.1	17.3	12.7	6.5	13.0
Euro area	2.3	2.1	2.2	2.2	2.2	2.1	2.2

2. This paper explores possible explanations for this performance. In Section B, it finds that low inflation is unlikely to be due to already high initial price levels; indeed, price convergence—i.e., the relation between initial price (or income) *levels* and inflation *rates* thereafter—holds in the whole sample but much less so in the SEE region. Hence, what makes SEE different from other regions? The econometric analysis in Section C shows that the exchange and monetary policy regime matters, but that money growth does not affect inflation in SEE, while it does in all other regions (and Serbia). Section D looks into policy implications and concludes.

3. The analysis relies on a large cross country panel dataset, which includes about 120 emerging *and* developing countries. Due to the short history of the SEE countries after the breakup of Yugoslavia, (except for Albania), the paper focuses on the period between 2001 and 2007. All data, except the price level index, are taken from the World Economic Outlook (WEO) database; internationally comparable price level data are constructed from the Penn World Table 2001.[5] At most, 119 emerging and developing countries are included in the unbalanced sample.

B. Inflation Convergence Across Regions

Full sample results

4. There is a general empirical convergence in inflation, i.e., a negative relation between the initial price level and the inflation rate thereafter.[6] Following the literature, we estimate the following specification:

[5] Alternatively the World Bank's International Comparison Program, which uses the same price level definition as the Penn World Table 2001 could be used. We use the 2001 vintage because (1) it covers more countries and (2) the 2001 base year is a more suitable proxy of initial price level.

[6] For instance, see Chen, Choi and Devereux (2008).

$$\left[\ln(CPI_{i,2007}) - \ln(CPI_{i,2001})\right]/6 = \alpha_1 + \beta_1 * \Pr ice\_level_{i,2001} + \varepsilon_{1i} \quad (1)$$

where $CPI_{i,2007}$ is level of CPI of country i in year of 2007, while $CPI_{i,2001}$ is level of CPI of country i in year of 2001. Thus, the dependent variable is the average annual consumer price inflation over six years. $\Pr ice\_level_{i,2001}$ is the price level in 2001. This is the initial price level of country i.[7] If convergence holds, estimates of β_1 are negative.[8]

5. Using the initial income level instead of the initial price level as explanatory variable should yield similar results because of the positive correlation between the levels of GDP and prices (mainly due to the Balassa-Samuelson effect and also depicted in, figure 1 which shows a strong positive correlation). Thus, one can also estimate:

$$\left[\ln(CPI_{i,2007}) - \ln(CPI_{i,2001})\right]/6 = \alpha_2 + \beta_2 \ln(GDP_{i,2001}) + \varepsilon_{2i}, \quad (2)$$

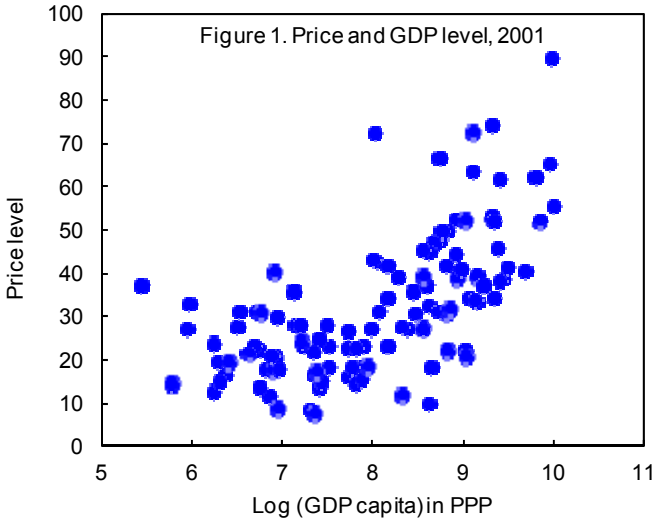
where $GDP_{i,2001}$ is PPP-evaluated GDP per capita of country i in year of 2001, which for the current analysis is interpreted as the initial income.[9] Again, convergence requires negative estimates of β_2.[10]

[7] A price level is defined as the ratio of PPP to the market exchange rate of the numeraire currency. The value of price level for the United States is set equal to 100. α_1 and β_1 are coefficients to be estimated and ε_{1i} is an error term.

[8] This represents so-called "beta" price level convergence. As is well known, beta convergence does not always imply "sigma" convergence. The latter refers to a decline in cross-sectional dispersion over time. In practice, however, they are closely related (Chen, Choi and Devereux (2008)). In this paper, a meaningful discussion of sigma convergence is precluded by the short time period of the sample.

[9] For Montenegro, the start point (initial period) is 2003 because GDP per capita at PPP is not available before 2002. Price level data of 2001 are not available for Montenegro, and the country is excluded from the sample for specification (1).

[10] For robustness checks, we also used real GDP and nominal GDP (in US$) per capita. The qualitative results do not change.



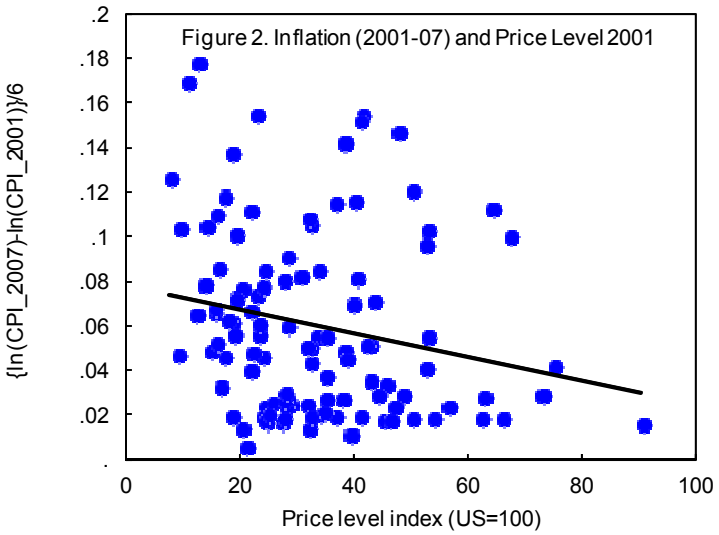
Source: Penn World Table

6. Similar qualitative convergence results are obtained, irrespective of the choice of the initial price or income level as a regressor. Table 3 shows the estimation results of specification (1) and (2). First, for the whole sample, the estimates for β_1 and β_2 are negative and statistically significant. Figures 2 and 3 plot the relationship between initial price and income levels and subsequent annual average inflation rates, respectively. The fitted lines for the whole sample results using (1) or (2) are also shown and depict a clear downward trend.

Table 3. Estimates of Beta

	Beta1 in (1) Estimate		R-squared	Beta2 in Estimate		R-squared
Whole sample	-0.0005	(2.32)	0.042	-0.008	(2.42)	0.047
SEE	0.0030	(1.33)	0.043	-0.001	(0.05)	0.001
SEE (excl. Serbia)	-0.0001	(0.01)	0.003	0.001	(0.10)	0.001
Other east and central Europe (ECEP)	-0.0025	(4.45)	0.637	-0.041	(3.48)	0.395
SEE+ECEP	-0.0019	(2.42)	0.304	-0.31	(3.33)	0.193
Sub-Sahara Africa	-0.0010	(2.45)	0.102	-0.014	(2.39)	0.076
Asia	-0.0011	(3.05)	0.278	-0.013	(3.41)	0.186
Middle East/North Africa/Central Asia	-0.0007	(2.36)	0.131	-0.015	(1.84)	0.181
Latin America and Caribbean	-0.0007	(2.19)	0.134	-0.029	(2.20)	0.156

Note: (1) t values are in parenthesis.



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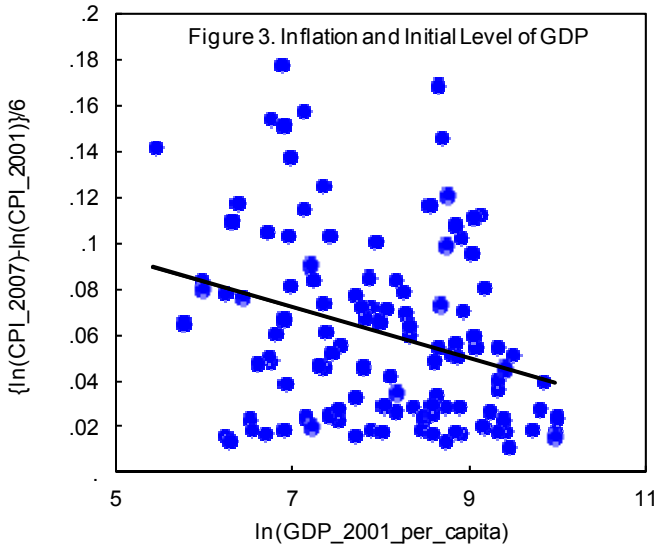


Source: Penn World Table

Is the SEE region an outlier?

7. The SEE region does not follow the inflation convergence process seen elsewhere in the world. After splitting the whole sample into regional sub samples, the SEE region stand alone in not displaying convergence; he estimates for β_1 and β_2 in table 3 that are negative and significant everywhere except in SEE.[11] This holds true regardless of the inclusion or

[11] However, the estimates of β_2 for Middle East/North Africa and Central Asia are significant at only 10 percent.

exclusion of Serbia. Moreover, in CEE, the models fit best, thus clearly setting SEE apart, at least for the relatively recent sample examined here.[12]

8. As price convergence is found to broadly hold in emerging and developing countries, a next step is to ask whether the initial price levels of SEE countries were at high side in the sample. The low inflation rates in SEE countries might then be due to their already-high initial price levels such that there might not be much need for subsequent convergence.

Is the lacking convergence in SEE due to high initial price levels?

9. Overall, the average initial price level in SEE is on the high side, although not the highest (Latin America and Caribbean, Table 4). For SEE, the price level of each country and its overall ranking are also shown. All SEE countries, except Albania, are above median in terms of ranking and even Albanian initial prices are just below median. It is also noteworthy that the within-region variation of SEE is much smaller than that of other regions.[13]

Table 4. Cross-Region Price Level Comparison in 2001
(US=100)

	Penn World Table (2001)		
	Index		Ranking (117 countries)
SEE	38.51	(9.59)	
SEE (excl. Serbia)	35.63	(4.21)	
Albania	27.53		66
Bos. and Herz.	36.47		42
Croatia	46.67		20
Macedonia	31.86		55
Montenegro			
Serbia	50.04		16
Other east and central Europe	34.83	(14.12)	
Sub-Sahara Africa	27.55	(11.24)	
Asia	25.43	(12.48)	
Middle East/North Africa/Central Asia	28.13	(20.41)	
Latin America and Caribbean	46.01	(12.87)	

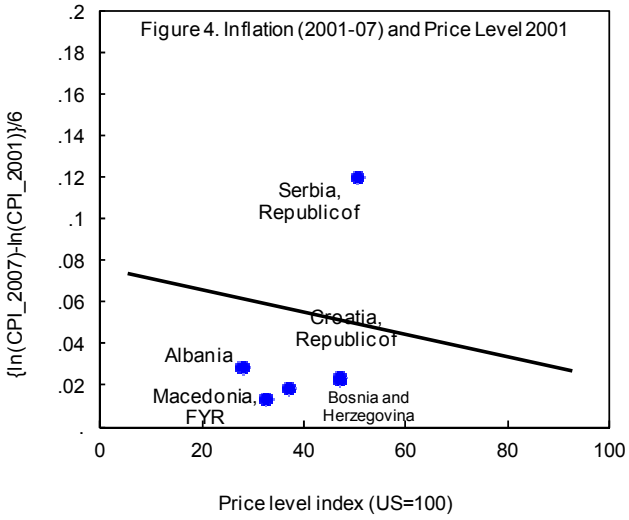
Note: (1)The price level for the United States is made equal to 100.
(2) Standard deviations are in parenthesis.

[12] Pooling the SEE and CEE regions, convergence is obtained in both (1) and (2). There may be reasons for choosing the wider sample given the small SEE sample and the short time period. However, the regression fit and degree of convergence are less.

[13] First, the standard deviation of the price index for SEE is 4.21 if Serbia is excluded and 9.59 if not, while that of all other regions is double digits. Second, even the price level of Albania, which is the lowest in SEE region, is as high as the average of Sub-Sahara Africa, Asia, and Middle east/north Africa/Central Asia.

10. The high initial price level of SEE may have contributed to low subsequent inflation, but cannot fully explain it. First, the experiences of Albania (low initial prices and low inflation) and Serbia (high initial prices and high inflation) point to the limits of this explanation. Moreover, SEE countries have lower inflation rates even after controlling for the initial levels of prices as evidenced in Figure 4, which plots the whole sample regression line for specification (1) on the same horizontal and vertical as in Figure 2. Clearly, the inflation rates of SEE are much lower than would be explained by only convergence. SEE is also the only region where this pattern holds; in all other regions, individual countries' observations are scattered both above and below the (whole sample) fitted line, e.g., in CEE (Figure 5).

11. The next section explores what factors other than initial price levels or the convergence process, may explain the better performance.



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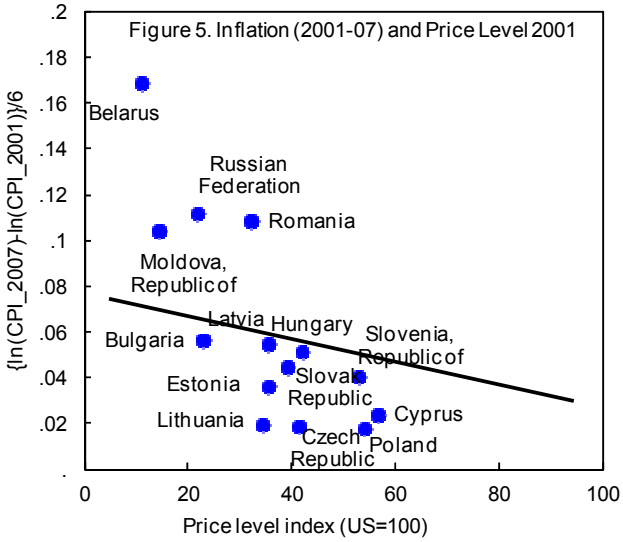

Source: Penn World Table

C. Determinants of Nonconvergence Inflation

Econometric specification, and estimation issues

12. The dependent variable, $\eta_{i,t}$, is each country's annual inflation constructed from the consumer price index. Following the relevant empirical literature on inflation, it is defined as "the depreciation rate in the real value of money" using

$$\eta_{i,t} = \frac{\pi_{i,t}}{1+\pi_{i,t}} \tag{3}$$

where $\pi_{i,t}$ is the CPI inflation rate of country i in year t.[14] Panel unit root test using Levin, Lin, and Chu (2002) reveals that this dependent variable follows a stationary process (t-value is -32.3 and Prob>t-value is 0.000).[15]

13. The number of explanatory variables is kept as small as possible to mitigate potential econometric issues emanating, inter alia, from complex interactions or model selection, concentrating on variables frequently used in the literature of inflation determinants. Explanatory variables are the following: (i) output gap (GDPGAP, in percent), measured as difference between log of actual real GDP and log of GDP from a country specific linear time trend; (ii) broad money growth (BMGROWTH, in percent); (iii) trade to GDP ratio (TRADEP, in percent) to measure the degree of openness; and (iv) the change in terms of trade (TOTGROWTH, in percent). Dummy variables for the exchange rate regime are also included; they are classified as fixed, intermediate, or flexible according to the 1999-vintage IMF classification[16]; further, countries with an inflation target regime are identified by Rose (2007) and more updated information.

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[14] Also in line with the literature, we exclude observations with annual inflation rates above 40 percent from the sample.

[15] The short time series of the sample does not permit individual unit root tests for each country .

[16] The 1999 classification, distinguished between various types of pegged regimes and classified exchange rate regimes based on countries' de facto policies (see IMF, 1999 for details). The classification is, in effect, a hybrid classification system that combines data on actual flexibility with information on the policy framework. There are eight categories: (1) exchange rate arrangement with no separate legal tender, (2) currency board arrangement, (3) other conventional pegged arrangement, (4) pegged exchange rates within horizontal bands, (5) crawling pegs, (6) crawling bands, (7) managed floating with no predetermined path for the exchange rate, and (8) independently floating. For the current exercise, these are reclassified into the three categories: (A) fixed regime ((1), (2), (3)), (B) intermediate regime ((4), (5), (6)), and (C) flexible regime ((7), (8)).

14. Importantly, two types of interaction terms are considered.

- One is the interaction between regional dummies and all four explanatory variables. These interaction terms, measure how each inflation determinant could have a regionally differently impact. As the dataset is a panel, this specification permits explaining the components of the fixed effects.

- The other interaction term is between year dummies and the initial price level. This is to capture the convergence process discussed in the previous section. By interacting these variables, it is implicitly assumed that the impacts of initial price levels may differ depending on how many years have passed since the initial price levels are measured (here, they are measured in 2001). This is a better specification than one just including initial price levels as regressors.[17]

15. A linear specification is implemented, specifically a feasible generalized least squares with panel corrected standard errors. In the estimation, the error process is assumed to be each-panel specific AR(1) and the estimated parameters are used to correct the standard errors. Due to the short panel, a dynamic panel approach is not pursued.

Estimation results

Full sample

16. Table 5 reports the estimation results. Specification (A) is the baseline, which includes the main economic variables as regressors.

17. We find money growth to be positively correlated with higher inflation rates, an intuitive result. On the other hand, neither the output gap nor the terms of trade change are statistically significant. Moreover, openness is positively correlated with inflation rates, contrasting some theory and empirical evidence (e.g., Romer, 1993), which predicts a negative relation.

[17] Yearly fixed effects and time trend, were also considered, but they are not significant and do not impact other estimated parameters either qualitatively or statistically. However, once the yearly fixed effects are interacted with the initial price level, most of them are statistically significant as we see below.

Table 5. Results of the Estimation on Determinants of CPI Inflation

	(A)	(B)	(C)	(D)
GDPGAP	-0.0015	-0.0001	-0.0004	-0.0004
	(0.45)	(0.33)	(1.07)	(1.00)
BMGROWTH	0.0007	0.0006	0.0005	0.0005
	(3.51)	(3.44)	(2.89)	(2.92)
TRADEP	0.0001	0.0001	0.0002	0.0001
	(1.96)	(1.77)	(3.37)	(3.24)
TOTGROWTH	0.0001	0.0001	0.0001	0.0001
	(0.61)	(0.64)	(0.73)	(0.75)
Exchange rate regime dummies				
Intermediate	0.0268	0.0272	0.0230	0.0249
	(4.06)	(4.05)	(3.01)	(3.32)
Flexible	0.0351	0.0347	0.0369	0.0362
	(5.18)	(5.30)	(5.01)	(5.15)
Inflation targeting	0.0029	0.0045	0.0052	0.0045
	(0.81)	(1.39)	(1.47)	(1.42)
Interaction: (year dummy) * (initial price level)				
2002		-0.0123		-0.0124
		(3.30)		(2.63)
2003		-0.0102		-0.0140
		(2.28)		(1.87)
2004		-0.0165		-0.0185
		(3.39)		(3.18)
2005		-0.0078		-0.0109
		(1.48)		(1.80)
2006		-0.0185		-0.0204
		(3.03)		(3.04)
2007		-0.0114		-0.0127
		(1.78)		(1.79)
Interaction terms				
(SEE dummy) * (GDP GAP)			0.0001	0.0001
			(0.37)	(0.43)
(SEE dummy) * (BMGROWTH)			-0.0003	-0.0005
			(1.47)	(1.78)
(SEE dummy) * (TRADEP)			-0.0001	-0.0003
			(1.76)	(1.90)
(SEE dummy) * (TOTGROWTH)			0.0004	0.0005
			(0.63)	(0.85)
(Serbia dummy) * (GDP GAP)			0.0002	0.0001
			(0.59)	(0.86)
(Serbia dummy) * (BMGROWTH)			0.0089	0.0086
			(1.87)	(1.89)
(Serbia dummy) * (TRADEP)			-0.0041	-0.0039
			(1.67)	(1.46)
(Serbia dummy) * (TOTGROWTH)			-0.0008	-0.0007
			(0.41)	(0.34)
(CEE dummy) * (GDP GAP)			0.0003	0.0002
			(1.49)	(1.64)
(CEE dummy) * (BMGROWTH)			0.0008	0.0006
			(2.32)	(1.91)
(CEE dummy) * (TRADEP)			-0.0003	-0.0003
			(2.31)	(2.57)
(CEE dummy) * (TOTGROWTH)			0.0004	0.0003
			(0.51)	(0.47)
Constant	0.0238	0.0286	0.0189	0.0241
	(4.20)	(4.99)	(3.29)	(3.94)
Obs	743	743	743	743
Wald chi-squared	72.95	86.77	147.35	121.73

Notes: (1) z-statistics are in parenthesis.
(2) For each independent variable, see the data section in the text.

18. The exchange rate regime makes an important difference. A fixed regime provides significantly lower inflation than an intermediate or flexible regime, while an IT regime provides similar levels of inflation as a fixed regime.[18] Note that this finding can shed some light on the SEE region's low inflation, as three (Bosnia and Herzegovina, Macedonia, and Montenegro) out of the six countries have a fixed regime, while Albania pursues inflation targeting (Table 6).

Table 6. Exchange Rate Regime—SEE Countries

	2001	2002	2003	2004	2005	2006	2007
SEE countries							
Albania	Flexible/IT	Flexible/IT	Flexible/IT	Flexible/IT	Flexible/IT	Flexible/IT	Flexible/IT
Bosnia and Herzegovina	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
Croatia	Flexible	Flexible	Flexible	Flexible	Flexible	Flexible	Flexible
Macedonia	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
Montenegro						Fixed	Fixed
Serbia			Flexible	Flexible	Flexible	Flexible	Flexible

Source: IMF and reclassification by the author.

Table 7. Annual National Currency/Euro Exchange Rate Percentage Change

							Annual Average	Correlation between local currency/SDR, and Euro/SDR
	2002	2003	2004	2005	2006	2007	2002-2007	(monthly data,2002-2007)
Albania	3.0	4.1	-7.3	-2.8	-1.1	0.7	-0.6	0.90
Bosnia and Herzegovina	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00
Croatia	-0.5	2.0	-1.1	-1.2	-1.1	0.3	-0.3	0.97
Macedonia	0.1	0.5	0.1	-0.1	-0.2	0.0	0.1	1.00
Montenegro					0.0	0.0	0.0	1.00
Serbia	1.9	7.0	11.4	14.5	1.1	-4.6	5.2	-0.37

19. Moreover, even for Croatia and Serbia, countries, which don't fall into the "fixed" or "IT" bucket, there is evidence of the importance of the exchange system for the inflation process:

[18] Here, it is implicitly assumed that there is no self-selection into a certain exchange rate regime. The literature using more sophisticated methods to deal with the self-selection mechanism broadly supports our qualitative results. See the results using linear econometric specifications (including instrumental variable methods) in Bleaney and Francisco (2007), Ghosh, Gulde, and Wolf (2002), Ghosh, Gulde, and Wolf (2003), Husain, Mody, and Rogoff (2005), International Monetary Fund (2009), Levy-Yeyati and Sturzenegger (2001), and more recent studies using propensity score matching in Lin and Ye (2009) and Yamada (2009).

- While Croatia is classified as a flexible regime, its actual exchange rate has been fairly stable (Table 7) and hardly distinguishable from the more fixed regimes. With the above results, low inflation rates are thus not that surprising. To formally check this, an interaction term between the dummy variable for flexible exchange regime and that for Croatia is introduced and the following hypothesis test conducted:

  $Flexible + Flexible * Croatia = 0$

  With a test statistics (chi-squared) of 1.65, the hypothesis cannot be rejected. In other words, for Croatia, the stated "flexible" regime does not necessarily yield higher inflation rates than fixed regime.

- On the other hand, Serbia's exchange rate was volatile as evidenced by the dinar-euro correlation of -0.37. We conduct a similar hypothesis test:

  $Flexible + Flexible * Serbia = 0$

  The test statistics (chi-squared) is 26.22, thus strongly rejecting the hypothesis, indicating the clear heterogeneity between the two "flexible" exchange rate regimes in SEE.

20. What about the convergence process discussed earlier? In specification (B), interaction terms between year dummies and the initial price levels are included. The coefficients of all these interaction terms are negative, implying price convergence. But their statistical significance depends on the specific years; and the magnitude of the coefficients suggests that impacts of initial price levels could be nonlinear depending on the time passed since the initial price levels were measured (although impacts are monotonically negative).

Comparing SEE with other regions

21. Most of these results are preserved in a richer specification that allows for regional heterogeneity (the last two columns of Table 5). The next step focuses on differences between SEE, Serbia, or CEE and other regions in the world. Table 8 depicts results of statistical tests using the estimation results of specification (D).

Table 8. Results of Hypothesis Tests Using Specification (D) in Table 5

	chi2 stats.	Prob>chi2
Each determinant significant for SEE, Serbia, and CEE?		
GDPGAP		
GDPGAP+SEE*GDPGAP=0	1.14	0.285
GDPGAP+Serbia*GDPGAP=0	1.01	0.315
GDPGAP+CEE*GDPGAP=0	1.45	0.228
BMGROWTH		
BMGROWTH+SEE*GMGROWTH=0	0.14	0.712
BMGROWTH+Serbia*GMGROWTH=0	3.92	0.046
BMGROWTH+CEE*GMGROWTH=0	14.24	0.000
TRADEP		
TRADEP+SEE*TRADEP=0	2.20	0.137
TRADEP+Serbia*TRADEP=0	1.92	0.166
TRADEP+CEE*TRADEP=0	2.38	0.123
TOTGROWTH		
TOTGROWTH+SEE*TOTGROWTH=0	0.97	0.325
TOTGROWTH+Serbia*TOTGROWTH=0	0.10	0.757
TOTGROWTH+CEE*TOTGROWTH=0	0.32	0.570
Difference between SEE (excluding Serbia), Serbia, and CEE?		
SEE vs Serbia		
SEE*GDPGAP=Serbia*GDPGAP	0.52	0.47
SEE*BMGROWTH=Serbia*BMGROWTH	3.51	0.061
SEE*TRADEP=Serbia*TRADEP	2.41	0.121
SEE*TOTGROWTH=Serbia*TOTGROWTH	0.30	0.582
SEE vs CEE		
SEE*GDPGAP=CEE*GDPGAP	2.12	0.145
SEE*BMGROWTH=CEE*BMGROWTH	8.62	0.003
SEE*TRADEP=CEE*TRADEP	1.46	0.227
SEE*TOTGROWTH=CEE*TOTGROWTH	0.04	0.848

22. The impact of money on inflation is very different in SEE. The interaction coefficient between the SEE dummy and BMGROWTH is negative in Table 7, although only marginally significant, and the hypothesis that the impact of BMGROWTH on inflation in SEE region is null cannot be rejected (the chi-squared statistics being 0.14). This is consistent, for example, with Cukierman's (1992) observation that a fixed exchange regime increases the private sector's willingness to hold the currency, leading to lower inflation for a given rate of monetary expansion. Note, however, that the same hypothesis is rejected for Serbia and in

CEE. Moreover, the effect of money growth in amplifying inflation is indeed higher in Serbia and CEE countries than in other regions in the world.[19]

23. Similarly, trade openness does not factor in Eastern European inflation. Although it is positively correlated with inflation rates in the whole sample, this is not the case in SEE, Serbia and CEE. The coefficient of the interaction between the SEE dummy and openness is negative and statistically significant. As a result, the impact of openness on inflation in SEE is not statistically different from zero (chi-squared statistics is 2.20). Similar to SEE, and different from all other regions, inflation is not related to openness in Serbia and CEE. The relevant coefficient of the interaction for Serbia or CEE is negative, and large enough to wipe out the positive relation between openness and inflation seen in other regions.

24. Finally, the output gap and terms of trade are not a significant determinant of inflation anywhere, though in CEE, there is some, though statistically not strong, evidence of cyclical inflation effects.

25. The systematic difference (in terms of econometrics) between SEE and CEE is fairly robust (using specification (D) in the last rows of Table 8). While heterogeneity within CEE could potentially contaminate the results, excluding more advanced low inflation countries (Czech Republic, Poland, Slovakia, or Slovenia) does not change the results. Neither does the exclusion of countries with a high inflation experience (e.g. Belarus, Moldova, and Romania).

D. Conclusion, Policy Implications, and Prospects for the Future

26. This paper explored the recent inflation performance of SEE countries. Inflation rates of SEE countries, with the notable exception of Serbia, have been comparable to those of Euro area. These low inflation rates are less due to high initial price or income levels but have much to do with the exchange rate regime. Further, broad money growth does not appear to affect inflation in SEE region (except Serbia). The paper also provides a partial answer why Serbia is an exception in SEE region: it appears to be the only country with "de-facto" flexible exchange rate in SEE and with a channel through money growth to inflation.

27. There are clear, though also limited, policy implications. First, it is important to have a credible exchange rate or monetary policy regime. Either a fixed regime or inflation targeting were found to be beneficial for low inflation. All SEE countries except Serbia have, at least de facto, adopted such regimes. However, the extent to which a switch to such a

[19] The coefficient of the interaction between the Serbia or CEE dummy and BMGROWTH is positive and significant. Note that the coefficient of BMGROWTH (without any interaction) is already positive and statistically significant. Thus, BMGROWTH has a larger impact on inflation rates in Serbia and the CEE region than in any other region.

system will actually result in lower inflation has not been assessed in this paper. Answering this question requires state-of-the-art controls for sample selection that have only recently been introduced in the relevant literature. Still, initial findings are positive if the switch is credible (Yamada, 2009), and the experience of Albania shows that the benefits of a flexible exchange rate can be combined with low inflation within the context of a credible policy framework.

Appendix Table 1. List of Countries in the Sample

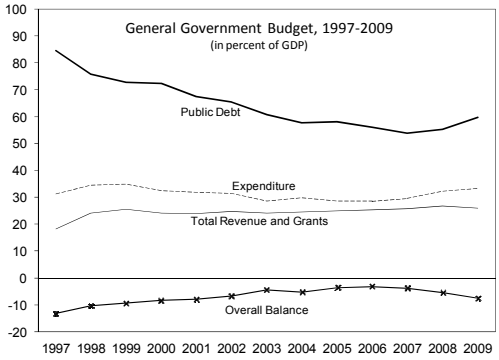
Albania	Eritrea	Morocco
Algeria	Estonia, Republic of	Mozambique, Republic of
Antigua and Barbuda	Ethiopia	Nepal
Argentina	Fiji	Nicaragua
Armenia, Republic of	Gabon	Niger
Azerbaijan, Republic of	Gambia, The	Nigeria
Bahrain	Georgia	Pakistan
Bangladesh	Ghana	Panama
Belarus, Republic of	Guatemala	Papua New Guinea
Belize	Guinea	Paraguay
Benin	Guinea-Bissau	Peru
Bolivia	Guyana	Philippines
Bosnia and Herzegovina	Haiti	Poland, Republic of
Botswana	Honduras	Romania
Brazil	Hungary	Russian Federation
Bulgaria	India	Rwanda
Burkina Faso	Indonesia	Senegal
Burundi	Israel	Serbia, Republic of
Cambodia	Jamaica	Sierra Leone
Cameroon	Jordan	Slovak Republic
Cape Verde	Kazakhstan, Republic of	Slovenia, Republic of
Central African Republic	Kenya	South Africa
Chad	Korea, Republic of	Sri Lanka
Chile	Kyrgyz Republic	Suriname
China, People's Republic of	Lao People's Democratic Republic	Swaziland, Kingdom of
Colombia	Latvia, Republic of	Tajikistan, Republic of
Congo, Democratic Republic of the	Lesotho	Tanzania
Congo, Republic of	Liberia	Thailand
Costa Rica	Lithuania, Republic of	Togo
Côte d'Ivoire	Macedonia, former Yugoslav Republic of	Trinidad and Tobago
Croatia, Republic of	Madagascar	Tunisia
Cyprus	Malawi	Turkey
Czech Republic	Malaysia	Turkmenistan
Djibouti	Maldives	Uganda
Dominica	Mali	Ukraine
Dominican Republic	Mauritania	Uruguay
Ecuador	Mauritius	Uzbekistan, Republic of
Egypt, Arab Republic of	Mexico	Venezuela
El Salvador	Moldova, Republic of	Vietnam
Equatorial Guinea	Montenegro	Zambia
		Zimbabwe

II. Fiscal Rules for Sustainable Public Finances In Albania[20]

Two fiscal rules—a debt rule and an expenditure rule with a debt brake—are discussed in the context of Albania's current economic outlook. Although both rules would contribute towards enhancing fiscal sustainability, the expenditure rule directly allows for the full play of automatic stabilizers and keeps the size of government in check. Instead, the debt rule holds a closer link between the operational target and the sustainability objective.

A. Introduction

28. **The recent rise in overall deficits and public debt contrasts with a decade long track record of public debt consolidation in Albania.** Spending on the large Durres-Kukes road project consumed 3.5 percent of GDP in 2008 and 2009, pushing up government spending well above its long run trend. Moreover, the global economic downturn has put additional pressure on the 2009 budget through lower revenue collection. Looking ahead, the debt ratio is projected to remain rather high, given ambitious spending plans. This would reverse ten years of persistent public debt decline, making Albania vulnerable to adverse shocks.



29. **Reducing the debt ratio is a desirable policy objective, all the more as Albania starts to access international capital markets to finance its deficits.** In 2010 the authorities seek to place a debut Eurobond of €400 million, and reliance on international non-concessional finance is expected to increase in the future. The affordability of this strategy will depend on a credible reversal of the current debt trend. Not only is public debt on the rise, it is also large when compared to other countries in the region and the average in emerging market economies[21]. Although an optimal debt ratio is hard to determine, the indicative target of 50 percent of GDP—embraced the government's program and more in line with other emerging markets—seems appropriate. Achieving such a target will require further strengthening of public finances, which could be operationalized by including a fiscal rule in the existing budget law.

30. **Adopting a fiscal rule would help sustain a declining debt path, lock-in attained consolidation gains and therefore anchor market expectations of fiscal discipline.** Under

[20] Prepared by Joana Pereira, based on Jonas (2010).

[21] See IMF (2003) and Jonas (2010) for deeper discussions on, respectively, the appropriate debt limits in emerging markets and Albania.

subsequent Fund-supported programs—from which Albania graduated in January 2009—standard program conditionality (ceilings on government net domestic borrowing and on nonconcessional external borrowing) have served as Albania's fiscal anchor. After graduation, alternative anchors can be provided by a transparent and credible rule, which will nonetheless require political commitment to sound fiscal policy.[22] An increasing number of advanced and emerging market economies have implemented some form of fiscal rule, to mitigate the well-known shortcomings of discretionary fiscal policy.

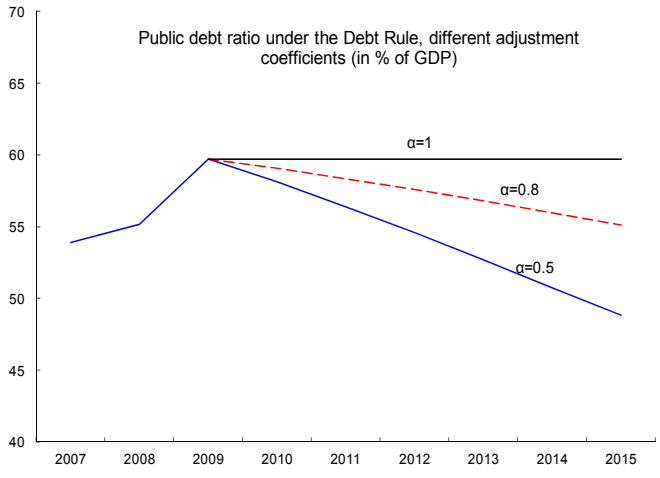
31. **This paper discusses two possible numerical rules that could be introduced to attain fiscal sustainability: a debt rule and an expenditure rule with a debt brake.** Albania's specific circumstances motivate the choice of these two rules in particular and the overall discussion of this section. First, given the relatively high public debt ratio, any proposed rule has to ensure its sustained reduction. Second, since potential output estimates are unreliable, using fiscal rules based on cyclically adjusted fiscal indicators would be problematic. Finally, the rule should be fairly simple and transparent to allow government accountability while still providing a degree of flexibility in the face of economic shocks.

B. Debt Rule

32. **Under a Debt Rule, the government sets a target/limit to the total stock of debt as a percentage of projected GDP.** Starting from the current debt levels in Albania, and assuming 50 percent to be the target, the rule would simply require that, over time, the rate of increase in the nominal value of public debt is less than the rate of increase in nominal GDP:

$$(\Delta D/D) = \alpha\,(\Delta Y/Y), \quad 0 < \alpha < 1\,,$$

where D is nominal public debt measured in *lek*, Y nominal GDP and α is a coefficient determining the ambitiousness (speed) of debt decline. If α would be equal to 1, the debt ratio would not change. If α would be equal to zero, the stock of nominal debt would not change.



33. **The operational target for this rule is either the primary balance or the overall balance, for given expectations on the exchange rate and evolution of the debt service.**

[22] See IMF (2009) for the recent overview of experience with fiscal rules. Although evidence suggests that fiscal rules improve fiscal outcomes, they cannot substitute for a lack of commitment to fiscal discipline.

To understand how the rule would work in practice, note that the evolution of public debt is given by:

$$D_{t+1} = [(1 + \varepsilon)(1 + r_f)\, DF_t] + (1 + r_d)DD_t - PB_{t+1} ,$$

where ε measures expected currency depreciation and r_f, r_d are foreign and domestic interest rates. DF_t, and DD_t stand for the initial value (in *lek*) of, respectively, foreign and domestic debt stocks and PB_{t+1} represents primary balance run during the period starting in t and ending in $t+1$. Thus, D_{t+1} is the end of period *lek* value of the total debt stock. Given the desired convergence pace (α^*) and projected increase in nominal GDP ($\Delta Y^p / Y^p$), the government would target an increase in debt equal to

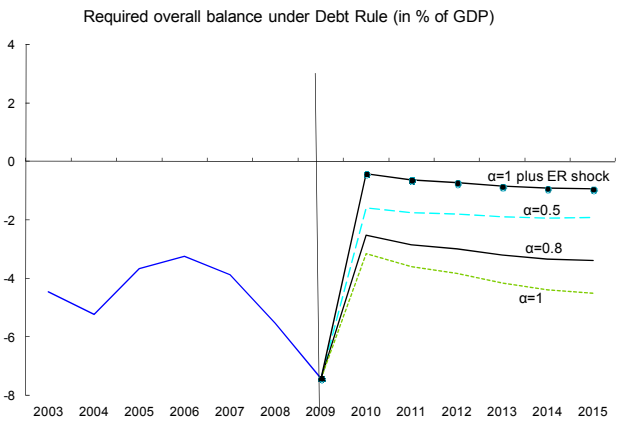
$$(\Delta D_{t+1})^* = \alpha^* (\Delta Y^p / Y^p)^* \cdot D_t$$

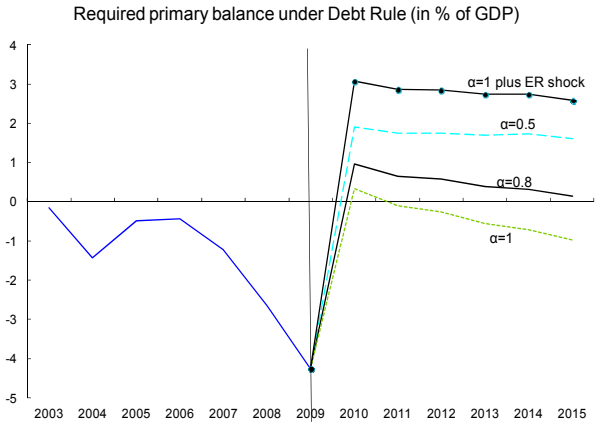
implicitly budgeting the primary and overall balances[23]:

$$PB^*_{t+1} = -[\alpha^* (\Delta Y^p / Y^p)^* \cdot D_t] + [\varepsilon DF_t + r_f \cdot DF_t + \varepsilon \cdot r_f \cdot DF_t] + [r_d \cdot DD_t] ,$$

$$OB^*_{t+1} = -[\alpha^* (\Delta Y^p / Y^p)^* \cdot D_t] + \varepsilon DF_t .$$

The lower is α, the smaller would be the targeted increase in nominal debt relative to the increase in nominal GDP, the stronger would be the required primary balance, and the faster would be – other things being equal - the reduction of the debt ratio. Using staff's medium term macro projections, the necessary balances for different α's are computed and plotted bellow (for α=1 we show also the necessary fiscal balance if the *lek* depreciates by 5 percent – in the figure labeled "ER shock"):





[23] Instead of defining a debt rule with a constant α, one may instead define a deficit (or primary deficit) rule that yields roughly the same pace of convergence (if ε and the interest rates are not too volatile). α would in that case vary year to year, if only slightly.

34. **For the rule to be effective, GDP projections need to be on the conservative side.** A systematic overestimation of nominal GDP would produce a slower decline in the debt ratio, and *vice versa*. The concern is not a projection mistake related to cyclical fluctuations in nominal GDP, but rather a mistake related to longer-term growth potential. To avoid a perception that nominal GDP projections would be biased as a result of political consideration, an independent projection could be used to determine ΔY^p.

35. **The debt rule can be modified to allow more cyclical flexibility, as long as credibility is not undermined.** When a negative output gap is expected, the authorities may wish to temporarily reduce the adjustment pace and run higher primary deficits (and vice versa). Modifying the debt rule to allow for this kind of discretion is theoretically beneficial for macroeconomic stabilization. However, the discretionary feature could in the end turn the rule less transparent, if only because reliable output gap projections are arguably hard to obtain and agree upon.

C. Expenditure Rule with Debt Brake

36. **Another option for Albania would be an expenditure rule, with a correction mechanism to guide against slippages on the revenue side: a debt brake.** The correction mechanism is considered to be an important safeguard of the expenditure rule, because on its own, such a rule may not suffice to ensure low deficits and a declining debt ratio. There are several options on how to set the targeted expenditure growth. The rule could aim to maintain a chosen ratio of expenditure to GDP or target a rate of real expenditure growth (γ) that is consistent with fiscal sustainability. The operational target is, by construction, public expenditure growth:

$$(\Delta G/G)^* = (\Delta Y^p / Y^p) \qquad \text{or} \qquad (\Delta G/G)^* = (\gamma + \pi^e) = \mu,$$

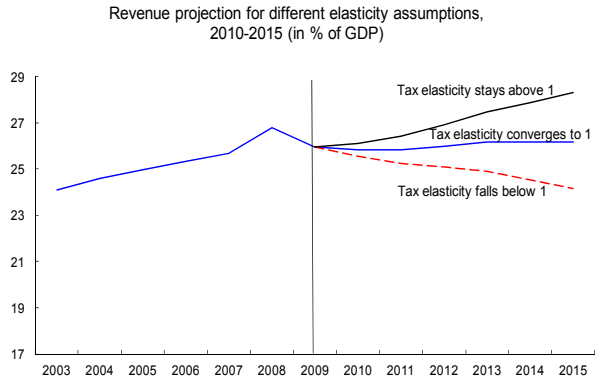
where G denotes nominal expenditures and π^e is the expected inflation rate.

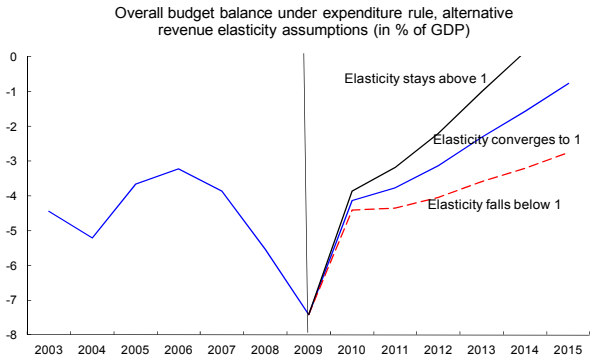
However, since the overall budget balance depends on revenue performance, the final debt dynamics is not directly controlled by the operational target. Slippages on the revenue side (or increased tax expenditures) could weaken the fiscal stance even if expenditure limits are strictly observed. One solution to this weakness, used in countries with the expenditure rule, is to reinforce it with a mechanism that would require corrective measures if revenue collection weakens for other than cyclical reasons. The proposed rule will then trigger lower expenditure growth (and, if necessary, tax increases) if debt levels stay persistently above the target. In that event, the adjustment mechanism would be similar to a debt rule.

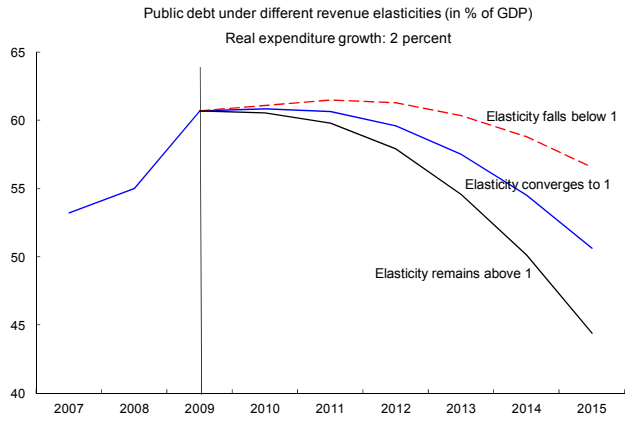
37. **How would the fiscal balance and debt evolve under the proposed expenditure rule?** Debt dynamics will not only depend on unforeseeable cycles but also on the average tax elasticity. Up until 2008, the later exceeded 1 with a significant margin, reflecting, *inter alia*, the positive impact of improvements in revenue administration on tax collection. In 2009, however, it suddenly dropped to ½. Looking into the coming years, we consider three

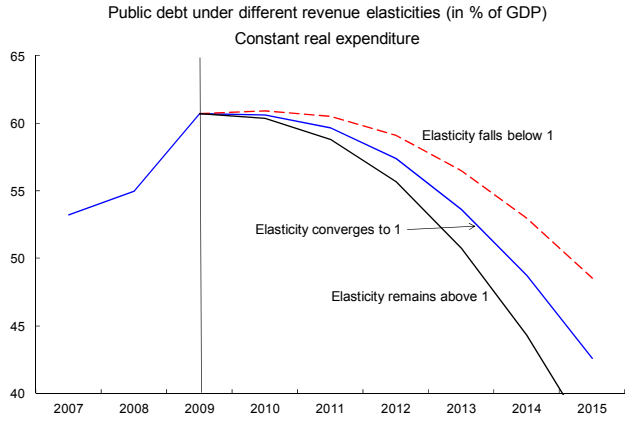
possible scenarios: (i) tax elasticity gradually converges to 1; (ii) tax elasticity recoups above 1, albeit to lower than historical levels; and (iii) tax elasticity remains below to 1, even if recovering somewhat. The following figures illustrate the resulting revenue paths under each case and the implications for projected deficits and debt. Real expenditure growth rates of two and zero percent are considered, after netting out the Durres-Kukes road cost. These are for illustrative purposes and are significantly lower than the expenditure growth rates projected in Table 2 of the Staff Report, which in turn are based on the most recent medium-term fiscal update.[24]

If the elasticity of tax revenue remains above 1 in the medium run, 2 percent real expenditure growth is consistent with a relatively quick convergence to the 50 percent debt target. However, in case the tax elasticity were to remain below one, such a path would protract high levels of public debt. Note that 2 percent is lower than real GDP growth and therefore the expenditure share is anyway declining.









[24] Revenue projections in Table 2 correspond to scenario (i).

38. **The expenditure rule provides a significant degree of fiscal policy flexibility in response to cyclical output fluctuations, while keeping the size of the government in check.** It allows the full operation of automatic stabilizers on the revenue side, meaning that at the outturn debt would fluctuate around the simulated paths. Given Albania's still limited social safety net, revenue automatic stabilizers are more important than expenditure automatic stabilizers. In addition, the rule would allow expenditure growth to remain unaffected by cyclical output fluctuations. Because automatic stabilizers on the expenditure side are rather small, this should not produce significant further cyclical swings of fiscal balance, beyond that resulting from cyclical fluctuations of revenue. Finally, it is bound to prevent excessive public spending, which would eventually force up distortionary tax rates.

39. **However, in Albania's circumstances, there is a good case for trading off some of this flexibility for heightened credibility.** Until a significant reduction in the high level of public debt is achieved, it would be beneficial to introduce a debt-brake mechanism into an expenditure-based fiscal rule. This would help anchor expectations on continued fiscal consolidation, while still permitting substantial play of automatic stabilizers.

D. Conclusion

40. As Albania starts acessing international capital markets to finance part of government borrowing needs, it is ever more important to implment a robust fiscal policy framework that would strengthen fiscal discipline and fiscal credibility. A numerical fiscal rule could play a helpful role in achieving these objectives.

41. One option would be to introduce a debt rule, where the rate of public debt growth would be set as a fraction of nominal GDP growth. Such a rule entails a strong link between the policy objective and operational target. Under some circunstances, it also allows for the stabilization of economic cycles. Alternatively, an expenditure rule could be considered, that would impose a limit on the nominal or real growth of total expenditure. Given the weak link between the operational target and fiscal sustainability in this rule, it is necessary to complement it with a correction mechanism that would trigger lower spending growth or tax increases in case the targeted reduction of the debt ratio fails to materialize due to protracted weakness in revenue collection or shocks that would permanently worsen the debt ratio.

42. The choice for one or the other rule depends ultimately on the government's preference for a higher or lower size of the public sector, growth prospects, long run elasticity of tax revenue and the forecasting capacity. Regardless, a necessary condition for the success of either option is a strong political commitment to restore the sustainability of public finances as first priority.

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