October 2006
IMF Country Report No. 06/345

Former Yugoslav Republic of Macedonia: Selected Issues

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International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

FORMER YUGOSLAV REPUBLIC OF MACEDONIA

Selected Issues

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Approved by the European Department

July 14, 2006

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I. Export Performance and External Competitiveness in FYR Macedonia[1]

A. Introduction

1. **Sustaining faster growth and reducing unemployment in a small open economy like FYR Macedonia depends on improving export performance.** Improving export performance can also help preserve macroeconomic stability by closing the current account gap to avoid losing reserves and to contain the growth of external debt.

2. **Improving export performance requires enhancing competitiveness**. In the short run, competitiveness can be associated with the level of the real exchange rate that ensures both internal and external balance, known as the fundamental equilibrium exchange rate (FEER). In the long run, the real exchange rate is supposed to converge to its equilibrium level and competitiveness is more related to the productivity of the economy. The two concepts of competitiveness can be referred to as "price competitiveness" and "structural competitiveness."[2]

3. **This paper concludes that while the level of price competitiveness is broadly appropriate at present, FYR Macedonia faces important structural competitiveness problems.** The paper is organized as follows. Section B describes the trends in the current account balance and external vulnerabilities. Section C analyzes export performance. Section D uses different approaches to estimate the equilibrium real exchange rate, and so to assess competitiveness. Section E concludes.

B. Current Account Balance and External Vulnerabilities

4. **Large and persistent current account deficits in FYR Macedonia have pointed to a competitiveness problem, although recent improvements have eased these concerns**. From 1995-2004, the current account deficit averaged 6.3 percent of GDP (Figure 1). In the first half of this period, the average trade deficit was close to 13 percent of GDP. In the second half, the increase in private transfers fueled imports and the trade balance deteriorated to 19 percent of GDP. While exports increased by 4 percent of GDP during 2000-2004, imports increased by almost 10 percent of GDP. In 2005, the current account deficit fell

[1] Prepared by Eva Gutierrez.

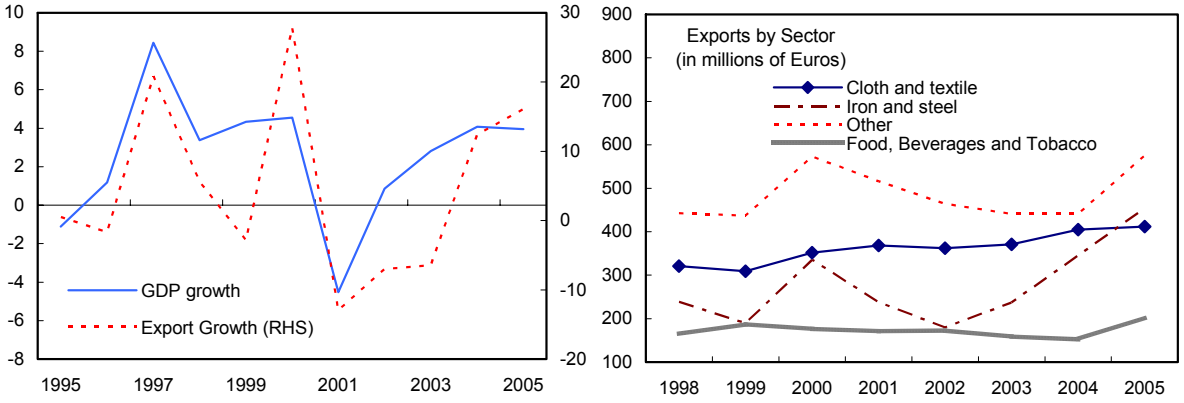
[2] Competitiveness is an elusive concept, with many definitions in the economics literature. One of the most straightforward, used by the World Economic Forum, equates competitiveness with the ability of a country to achieve sustained high rates of growth in GDP per capita. A similar but more detailed definition, supplied by the OECD, is that competitiveness is the degree to which a nation can, under free trade and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long-term.

sharply to 1.3 percent of GDP despite the 40 percent increase in private transfers and higher oil prices. The strong broad-based export growth and moderation in import growth in 2005 suggests an improvement in competitiveness.

5. **External vulnerabilities have increased during the last ten years due to the large current account deficits, although external debt levels remain manageable.** From 1995 to 2004, the sharp increase in external debt is explained by the large current account deficits and the need to accumulate reserves (Figure 1). The political crisis of 2001 dried up external financing and the large current account deficits caused a steady decline in the reserve coverage ratio. While capital inflows recovered from 2004 onwards, the decline in the coverage ratio was only reversed in 2005, due to the sizeable improvement in the current account deficit.

C. Export Performance

6. **The political crisis of 2001 worsened export performance and growth.** During 1995-2000, the average growth of exports (9.5 percent) raised the share of exports in GDP from 32 to 46 percent. However, the political crisis of 2001 resulted in a severe contraction in output and exports that lasted until 2004. Only in 2005 has the export share of GDP returned to its pre-crisis level.

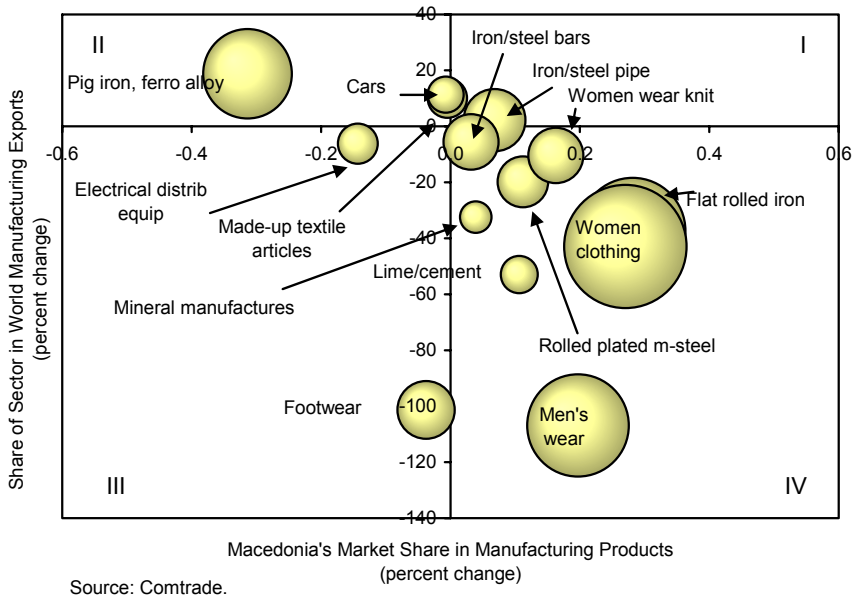


Source: Macedonia State Statistical Office.

7. **Exports of iron and steel and "other" exports are the main drivers of the recent improvement in export performance.** Macedonian exports are highly concentrated. Exports of iron and steel, textiles, and food beverages and tobacco account for about 60 percent of the total. During the 2001 crisis, exports fell in all sectors (except for textiles). The reopening of a large steel factory in 2004 and the removal of protectionist barriers in Serbia to imports of certain refined oil products in 2005 explain the recovery in the iron and steel sector and in "other" exports.

8. **Nevertheless, Macedonian exports have lost market share since 1995**. Unlike most other countries in the region, FYR Macedonia has lost market share in world imports since 1995, and especially in the US market (Figure 2). While there has been an improvement since 2004, export shares have yet to reach their 1995 levels.

9. **Detailed analysis of Macedonian manufacturing exports suggests that the loss of competitiveness is to a large extent due to patterns of specialization.** Using export data from the Comtrade database (3 digit sector level) we looked at the evolution of the market share of Macedonian exports in the 15 largest manufacturing sectors—accounting for 80 percent of Macedonian manufacturing exports in 2005—from 1995 to 2004. We compared this to the evolution of the share of these sectors in the total world manufacturing exports. The sectors in the bottom two quadrants are those whose share in total world exports of manufactures has declined. The sectors in the two right quadrants are those where Macedonia's export share has increased. The graph indicates that the share of Macedonian exports has increased in most of the main manufacturing sectors in which the economy is specialized. However, these are sectors with a declining share in world manufacturing trade, and this explains why FYR Macedonia's exports have also declined as a share of world exports.

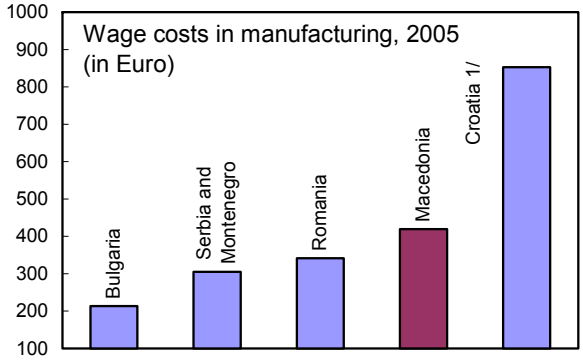


Source: Comtrade.

D. Assessing Competitiveness

Indicators of Wage and Cost Competitiveness

10. **Although data heterogeneity makes cross-country comparisons difficult, wages in FYR Macedonia appear higher than in other Balkan countries.** Wage costs in manufacturing are higher in Macedonia that in other countries in the region. While productivity differentials might explain to some extent cross-country variations in wages, wage costs in Macedonia are twice as high as in Bulgaria, and about 40 percent higher than in Serbia. Only Croatia has higher wage costs than Macedonia.



Sources: ILO; and World Bank.
1/ Data for Croatia is for 2004.

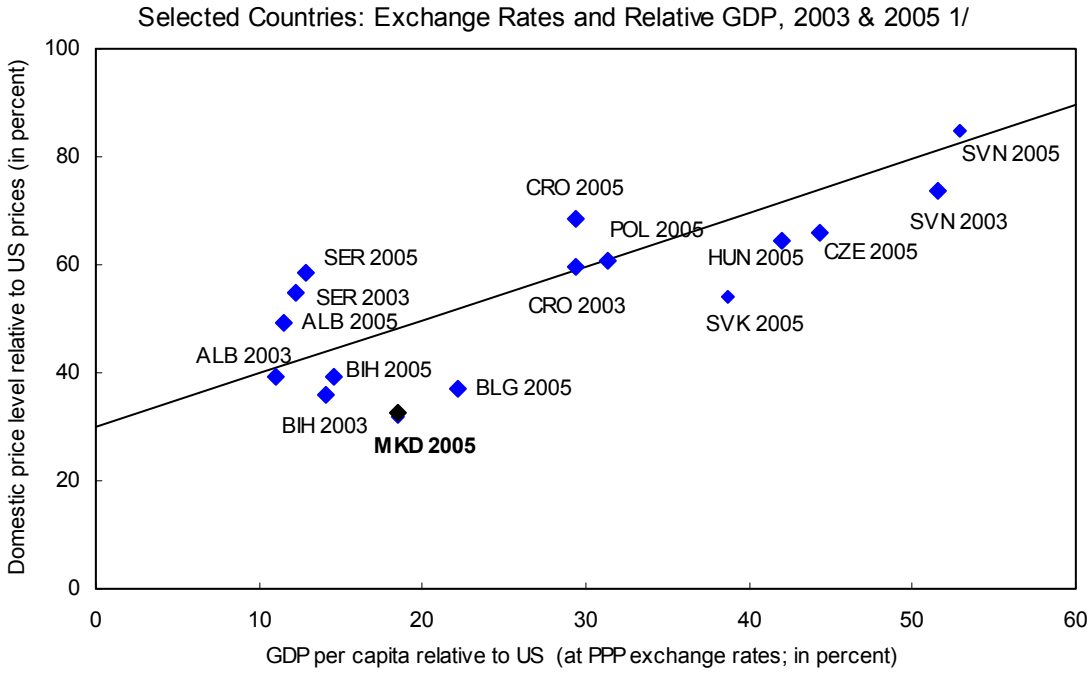
11. **In contrast, real exchange rate indicators show that price competitiveness has improved in the last decade.** Though the 1997 devaluation resulted in a sharp real depreciation, it did not noticeably affect the average current account deficit—in the absence of negative terms of trade shocks—or stop the decline in export shares (Figure 3). After the devaluation, the real exchange rate appreciated mostly due to the substantial depreciation of the Serbian denar. However, relative prices have since declined because—unlike most transition economies—sustained appreciation due to Balassa-Samuelson effects has not materialized, and the real exchange rate is again close to its post-devaluation levels.[3] The unit labor cost labor measure of the real exchange rate shows a considerable improvement due to the decline in relative unit costs in manufacturing, where productivity gains have outpaced wage increases.

Estimates of the Equilibrium Real Effective Exchange Rate (REER)

12. **Estimates of the equilibrium real exchange rate tend to be quite sensitive to the methodology used, and are particularly challenging in transition economies due to data limitations.** This paper tries to answer the question of whether the REER is in line with macroeconomic fundamentals through using three different methodologies: the PPP approach, the macroeconomic balance approach, and econometric techniques.

[3] Analysis from the NBRM suggests that productivity in the nontradable sector grew faster than in the tradable sector.

13. **The exchange rate in FYR Macedonia is undervalued with respect to its PPP level.** The exchange rate index calculated on a purchasing parity power basis—measured as the ratio of the domestic price level to international prices—is currently below what would be predicted given Macedonia's relative income.



Sources: IMF, World Economic Outlook; and staff calculations.
1/ Line derived from a regression of PPP exchange rates (domestic prices relative to US prices) and real GDP per capita, in PPP terms, for 179 countries, based on 2005 data.

14. **Estimates of the equilibrium real exchange rate using the macroeconomic balance approach suggest that, at present, the exchange rate is broadly appropriate.** This methodology involves: (i) estimating the underlying current account, which is the actual current account adjusted for existing output gaps (both domestic and foreign) and for effects of lagged real exchange rate movements, and (ii) comparing this underlying current account to the structural current account balance, derived from a model of equilibrium saving-investment balances.[4] In the case of FYR Macedonia the estimated underlying current account balance ranges between 0 and -3.1 percent, depending on the amount of officially recorded private transfers that are treated as true current account transactions. We estimate the structural current account balance to be around -2 percent of GDP, substituting the values for FYR Macedonia in the equation estimated by Chinn and Hito (2005). Using the export and import elasticities estimated by Isard et al. (2001), the real exchange rate would have to

[4] See Appendix I for details.

depreciate by at most 4 percent to bring the underlying current account in line with the structural current account. Since this is modest and within the margin of error, this suggests that the real exchange rate is broadly in line with fundamentals.

Estimation of the Underlying Current Account

Current account Balance (2005)	-1.3	-1.3
Adjustments	1.3	-1.7
Private Transfers	0.0	-3.0
Trade Response to Output Gaps	-1.8	-1.8
Trade Response to past REER depreciation	3.1	3.1
Underlying Current Account	0.0	-3.1

15. **Econometric estimates of structural determinants also suggest that the exchange rate is not out of line with fundamentals.** Taking the real interest parity condition as a starting point, we estimated the equilibrium real exchange rate in terms of structural fundamentals using a vector error correction framework.[5] In line with economic theory,

Estimation of the Determinants of the Equilibrium Real Exchange Rate

	1995q3-2005q4	1998q3-2005q4
Fiscal Expenditure	0.02 [-5.3]	0.01 [-4.6]
Relative productivity	2.74 [-9.3]	1.98 [-7.6]
Opennes	-0.01 [8.4]	0.00 [5.7]
Constant	3.68	4.02

T-statistics in brackets.

higher government consumption and productivity gains are assumed to appreciate the equilibrium real exchange rate while increased openness tends to depreciate it. Using Hodrick-Prescott filters of these fundamental determinants of the real effective exchange rate as proxies for their equilibrium values, we estimated the equilibrium real exchange rate for FYR Macedonia using different time periods because of data availability. The results of the different estimates were broadly similar. Increased openness, the decline in government consumption and, in particular, movements in relative productivity explain the trend decline in the real exchange rate. If relative productivity had remained at 1994 levels, the equilibrium

[5] See Appendix II for details.

REER would be now 15 percent higher than the current estimated value. Fiscal consolidation and the increase in openness have depreciated the equilibrium real effective exchange rate by 3 percent and 2.5 percent respectively. The 1997 devaluation created a real undervaluation, but the subsequent appreciation raised the REER back above its equilibrium value during 2000-2001. From 2002-2004 the REER is broadly in equilibrium, and it seems that by the end of 2005 the REER is slightly undervalued (Figure 4).

Structural competitiveness

16. **Survey based indicators reveal structural impediments to external competitiveness.** Macedonia's low rankings in the World Bank Business Environment database show difficulties in starting and closing a business, enforcing contracts, and hiring and firing workers relative to other countries in the region. In addition, the evolution of the ranking indicates that the structural reforms undertaken have still to improve competitiveness in a meaningful way. According to the World Economic Forum, Macedonia is among the less competitive countries in the region.

Selected Countries Rankings in the Business Environment Database (2005)

	Bulgaria	Romania	**Macedonia**	Bosnia	Albania	Croatia	Serbia
Overall (doing business)	**62**	**78**	**81**	**87**	**117**	**118**	**92**
Starting a Business	80	8	**114**	123	108	103	35
Dealing with Licenses	118	86	**64**	141	131	148	130
Hiring and Firing	90	149	**123**	95	127	109	61
Registering Property	62	114	**73**	132	66	99	103
Getting Credit	46	74	**53**	9	41	131	99
Protecting Investors	54	44	**30**	77	136	135	45
Paying Taxes	78	116	**58**	46	132	85	74
Trading Across Borders	45	72	**96**	122	100	109	123
Enforcing Contracts	79	65	**111**	72	113	43	110
Closing a Business	56	102	**109**	58	73	66	90

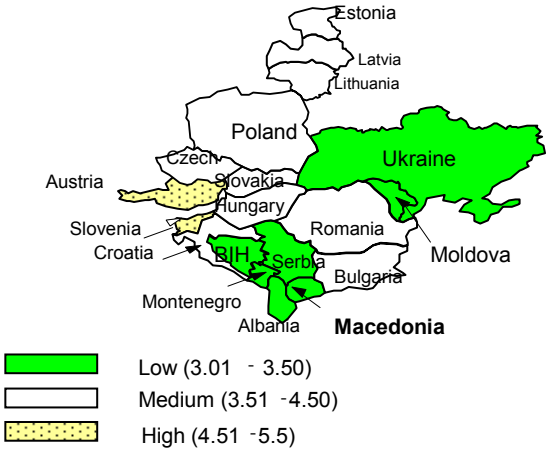
Source: World Bank.

Global Competitiveness Index

	Ranking in 2005	Ranking in 2003
Bulgaria	58	64
Croatia	62	53
Romania	67	75
Serbia	80	77
Macedonia	**85**	**81**
Bosnia	95	n.a.
Albania	100	n.a.

Source: WEF.

Growth Competitive Index

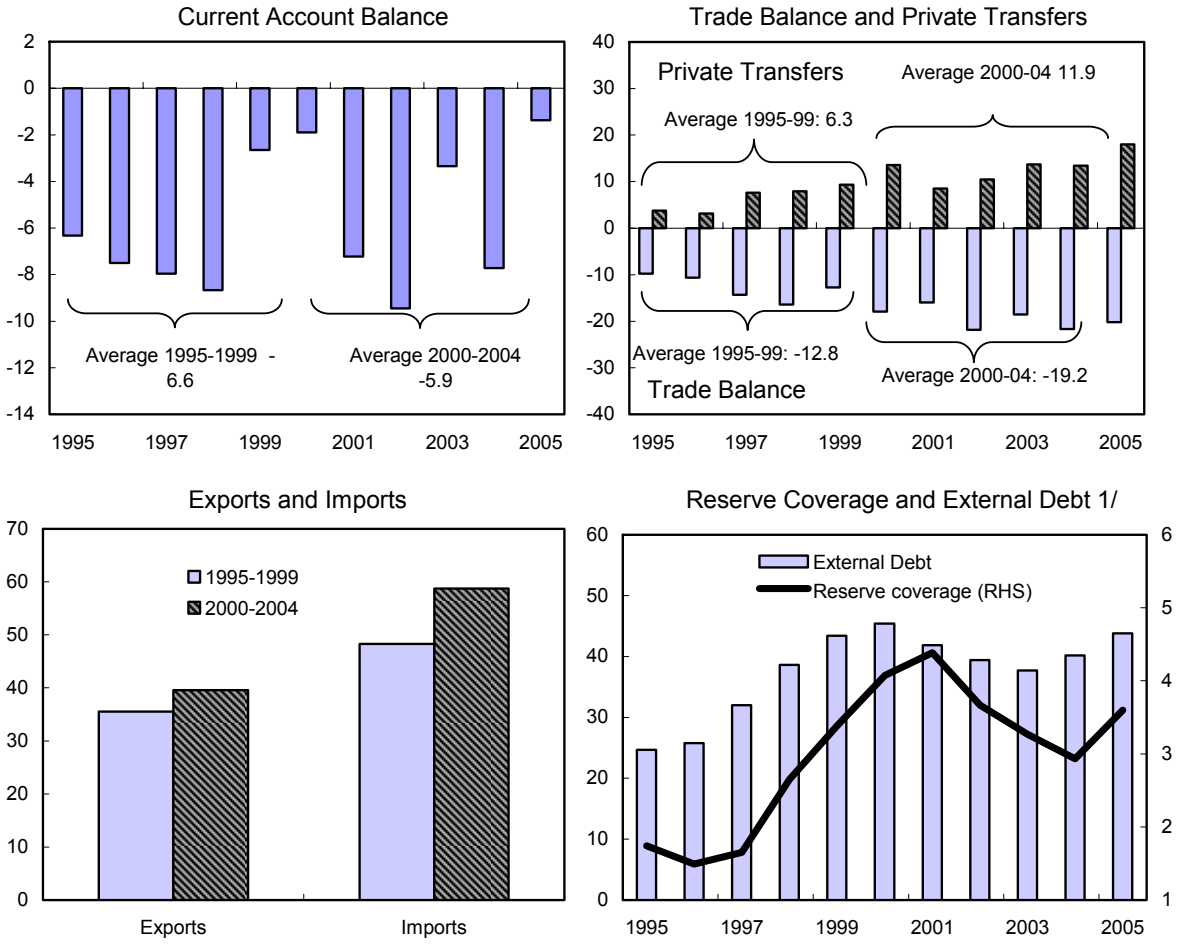


E. Conclusions and Policy Implications

17. **The analysis in this paper suggests that price competitiveness is broadly appropriate at present, but structural factors are major impediments to future improvements.** The real exchange rate has depreciated steadily and, compared to countries with similar incomes, the Macedonian price level is low. Although estimating the equilibrium real exchange rate is challenging, particularly for transition economies because of data constraints, staff estimates indicate that currently the exchange rate is broadly in line with macroeconomic fundamentals. In contrast, direct wage comparisons across countries suggest a cost competitiveness problem, though data heterogeneity makes comparisons difficult. Macedonian manufacturers have succeeded in maintaining or increasing their share in exports. However, specialization in sectors with low value added and a declining share in total global trade has resulted in a decline in total export share, pointing to a structural competitiveness problem.

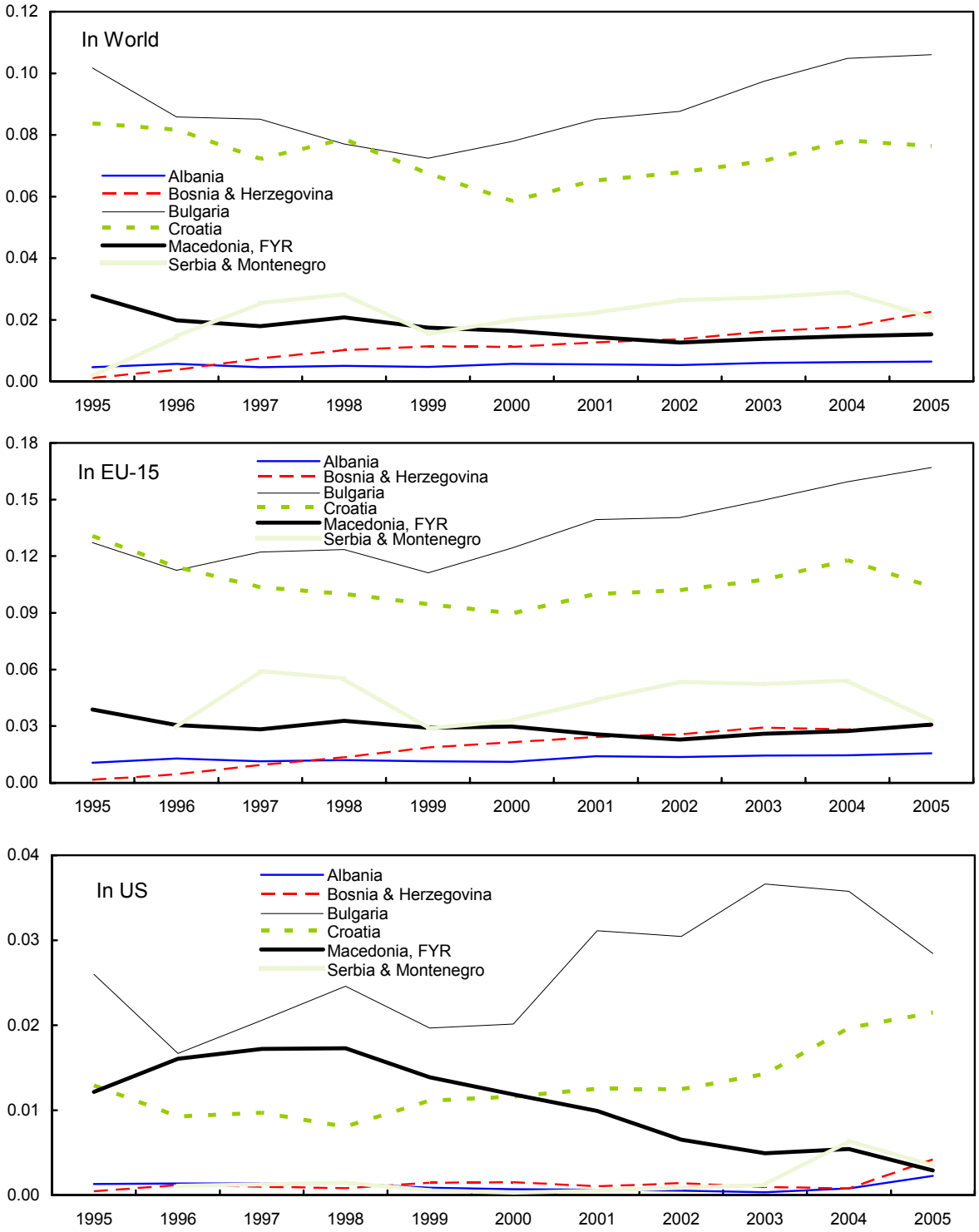
18. **While a more competitive exchange rate might improve short-term export performance, sustained improvements require enhanced productivity and resource reallocation to more dynamic sectors, which depends on reforms to improve the business environment**. Contrary to the experience in most transition economies, productivity in Macedonia has declined in the last decade vis-à-vis trading partners, although this trend has started to reverse, improving competitiveness. To sustain and increase market shares, specialization in sectors with higher value added and increasing world demand will be necessary. FDI and domestic private investment are key to achieving the necessary economic transformation, but boosting investment will depend on the successful implementation of structural reforms aimed at improving the business environment (discussed more fully in Chapter II of these Selected Issues).

Figure 1. Current Account and External Vulnerabilities
(As share of GDP)



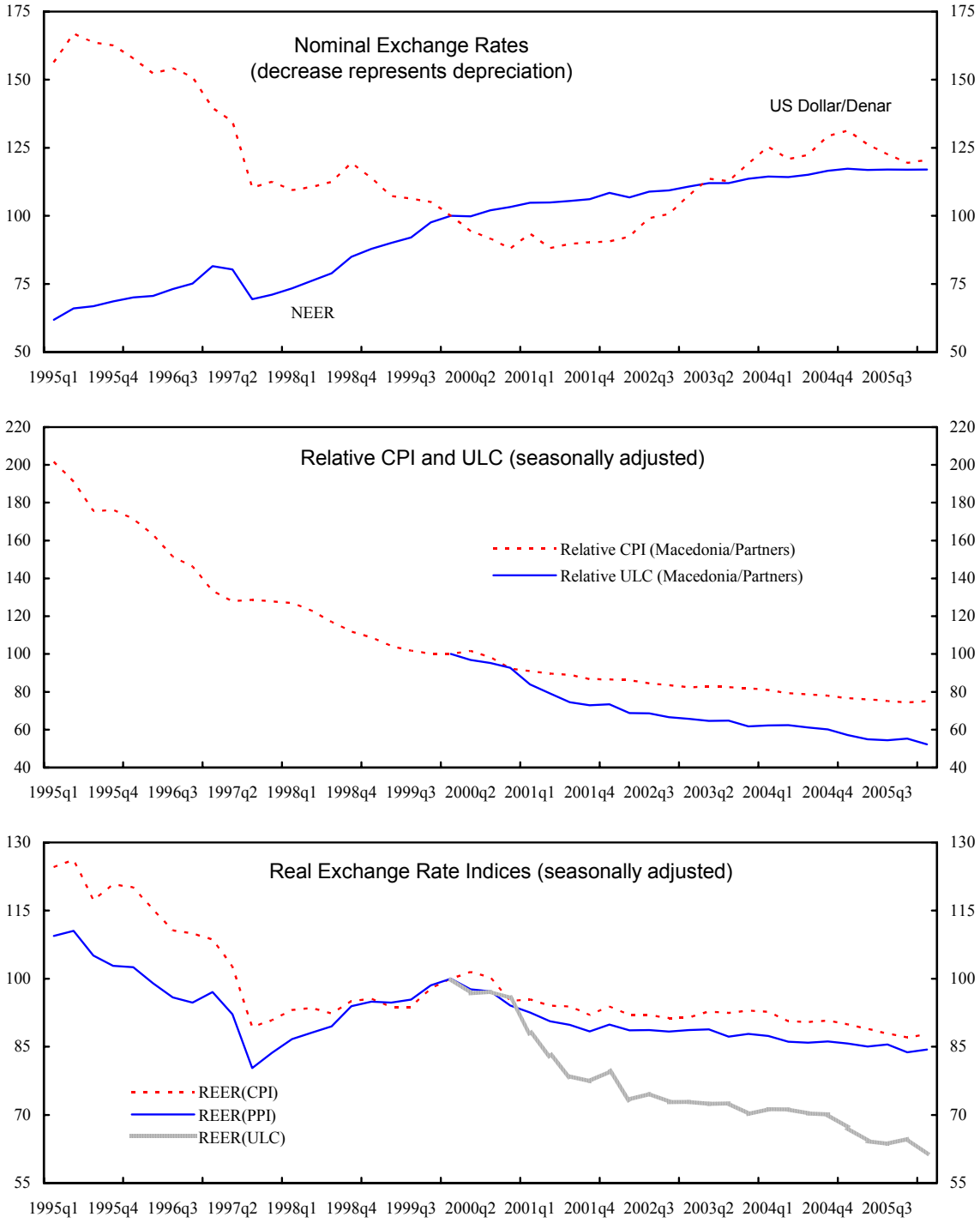
Sources: NBRM; and IMF staff estimates.
1/ External Debt as percent of GDP. Reserve coverage in Months of Imports of Goods and Services. Data for 2005 excludes the effects of the Eurobond issuance.

Figure 2. Export Market Shares (in percent)



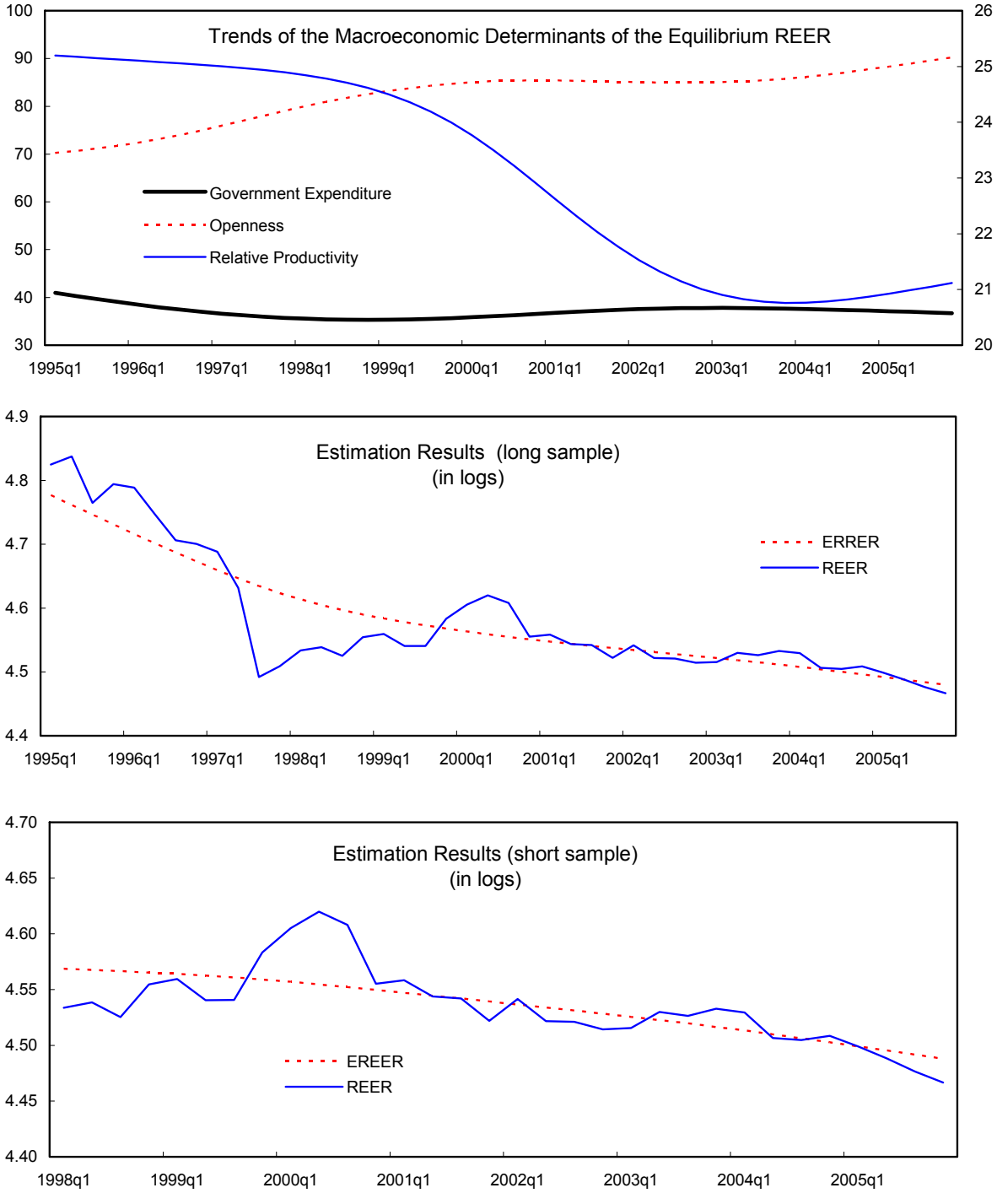
Source: Direction of Trade Statistics.

Figure 3. Exchange Rate Indicators, 1995-2006
(2000q1=100) 1/



Sources: Eurostat; IFS; and IMF staff calculations.
1/ Trade weights based on 1999-2001 data for exports and imports of goods. Partner countries comprise: Austria, Bulgaria, Croatia, France, Germany, Greece, Italy, Netherlands, Russia, Serbia and Montenegro, Slovenia, Switzerland, Turkey, United Kingdom, and United States.

Figure 4. Econometric Estimates of the Equilibrium REER



Source: IMF staff estimates.

Appendix I—Estimation of the Equilibrium Real Exchange Rate Using the Macroeconomic Balance Approach

This approach estimates the real effective exchange rate that simultaneously achieves internal and external balance. To this end, the fundamental equilibrium exchange rate is defined as the exchange rate that will equate the current account to the structural savings/investment balance in the medium term. The estimation process involves three main steps: (i) estimating the *underlying current account*, which is the actual current account adjusted for existing output gaps (both domestic and foreign) and for lagged effects of past real exchange rate movements; (ii) estimating the medium-term domestic savings and investment relation based on economic fundamentals (the *structural current account*), and (iii) calculating the exchange rate that would bring the underlying current account to the level of the structural current account.

The Underlying Current Account

We estimated the underlying current account using the methodology and equations estimated by Isard et al. (2001) for the volumes of non-oil exports and imports:

$$\Delta Q_X = 1.9\Delta A^f - 0.71*[0.3\Delta R + 0.35\Delta R_{-1} + 0.15\Delta R_{-2} + 0.1\Delta R_{-3} + 0.05\Delta R_{-4} + .005\Delta R_{-5}]$$
$$\Delta Q_M = 2.1\Delta A - 0.92*[0.3\Delta R + 0.35\Delta R_{-1} + 0.15\Delta R_{-2} + 0.1\Delta R_{-3} + 0.05\Delta R_{-4} + .005\Delta R_{-5}]$$

Where Q_x and Q_M denote the logarithms of export and import volumes, A and A^f denote the logarithms of domestic and foreign real absorption (a trade weighted average), R is the logarithm of the real effective exchange rate, and the Δ terms represent annual changes.

Using the equations above we estimate that the Macedonian underlying current account ranges between 0 percent and -3.1 percent, depending on the treatment of private transfers as current account or capital account transactions.[6] The exchange rate is assumed to remain at prevailing levels. WEO projections were used for the 6 year ahead values of real absorption for Macedonia and its trading partners.

[6] The assumption is that in 2005 (when the cash exchange component of the recorded private transfers grew dramatically) the part representing transfers from migrants grew in line with remittances: the remainder is assumed to be capital account.

The Structural Current Account

To estimate the structural current account we used the equation of Chinn and Hito (2005) for a panel of developing countries, excluding Africa. The average current account balance (over a 5 year period) is related to the government balance, the country's net foreign asset position, relative per capita income, demographics variables affecting the savings rate (relative to the mean across all countries), the degree of financial development (measured as credit to the private sector), volatility of the terms of trade, average GDP growth, the degree of openness (measured as gross external trade as a share of GDP), a dummy indicating whether the country is an oil exporter or not, and time dummies.

Estimation of the Structural Current Account

Macroeconomic Determinants	Coefficients	Standard Errors
Government budget balance (share of GDP)	0.22	[0.08]***
NFA as share of GDP	0.06	[0.08]***
Relative income	-0.01	[0.07]
Relative income squared	0.01	[0.11]
Relative dependency ratio (young)	-0.03	[0.014]**
Realtive dependency ratio (old)	-0.01	[0.012]
Financial deepening	-0.01	[0.007]
Terms of Trade volatitlity	-0.03	[0.03]
Average GDP growth	0.33	[0.23]
Trade openness	0.01	[0.01]
Dummy for Oil exporting countries	0.03	[0.01]***
Dummy 1980	0.01	[0.01]
Dummy 1985	0.00	[0.01]
Dummy 1990	0.03	[0.01]***
Dummy 1995	0.01	[0.01]
Dummy 2000	0.03	[0.01]***
Dummy 2003	0.05	[0.01]***
Constant	-0.03	[0.02]*

Source: Chinn and Hito (2005).

* significant at 10%; ** significant at 5%; *** significant at 1%

Substituting the values for FYR Macedonia into this equation, we estimate that the structural current account balance is about -2 percent of GDP.[7] The values for Macedonia were obtained from different sources. The government balance was calculated by staff adjusting for central bank recapitalization expenditures. The net foreign asset position was obtained from Lane and Milesi-Ferreti (2006). The rest of the variables were obtained from WEO, IFS, and the World Bank Population Statistics. The constant plus the time dummy for 2003 indicates that the structural current account balance for a developing country should be around 2 percent of GDP excluding the effect of macroeconomic determinants. For the case of Macedonia, the relatively large share of young and old population, and the net foreign asset position are the main factors explaining the estimated 2 percent structural current account deficit.

The Fundamental Equilibrium Exchange Rate

Given the elasticities to exchange rate movements in the equations for the volumes of exports and imports, to bring the underlying current account in line with the structural current account the real exchange rate would have to depreciate at most by 4 percent. Since this is within a +/- 10 percent range of the fundamental equilibrium exchange rate, the current real exchange rate is considered to be broadly in equilibrium.

[7] Similar results were obtained with an unpublished equation estimated by staff at the IMF Research Department.

Appendix II—Econometric Estimation of Structural Determinants of the Real Exchange Rate

Typically, empirical studies estimate the "equilibrium" values of different exchange rates by identifying their structural determinants using an exchange rate model. The framework adopted in this paper is similar to that proposed by MacDonald and Clark (1999). The starting point is the real interest rate parity condition, where the change in the real exchange rate (q) is equal to the real interest rate (r) differential plus a risk premium (ρ). This parity condition can be expressed as:

$$q_t = q^e{}_{t+k} + (r_t - r_t^*) + \rho_t .$$

The future expected real exchange rate can be interpreted as the long-run component of the real exchange rate, which encompasses the effect of the main underlying variables:

- A country with a relatively high net foreign assets to GDP ratio (NFA) has higher wealth, higher price of nontradables and thus a more appreciated domestic currency. In addition, higher NFA means that a country can sustain a worsening current account resulting from a loss in competitiveness of an overvalued real exchange rate (Lane and Milesi-Ferretti, 2000). Both effects imply that higher NFA is related to a more appreciated domestic currency.

- The relative price of traded to non-traded goods encompasses various effects on the real exchange rate. First, less developed economies tend to experience productivity improvements in the tradable sector as they converge toward more advanced economies (Balassa-Samuelson effect). As productivity increases, wages and prices of nontradable goods will tend to increase relative to those of trading partners; thus, the domestic currency will tend to appreciate in real terms. Second, a more open trade regime (i.e., less trade restrictions) will tend to lower the domestic price of tradable goods, and will lead to a real depreciation of the domestic currency. Third, a deterioration in the fiscal stance, resulting from an increase in government expenditure, will tend to raise the relative price of nontradables (i.e. an appreciation of the real exchange rate), as a large share of government expenditure is on nontradables.

- An improvement in the terms of trade tends to increase the country's wealth, its domestic demand, and nontradable prices, with a real appreciation of the domestic currency (wealth effect). On the other hand, higher nontradable prices may shift domestic demand toward imported goods (substitution effect), which tends to offset the wealth effect. As pointed out by MacDonald and Ricci (2003), empirical studies

have failed to establish a robust link between the terms of trade and the real exchange rate, probably because of the noise introduced in the measurement of country-specific import and export deflators. On the other hand, recent studies (see for example, Cashin, Cespedes and Sahay, 2002) have found a strong relation between the real exchange rate and the price of commodity exports, perhaps because of the more accurate measurement of commodity prices.

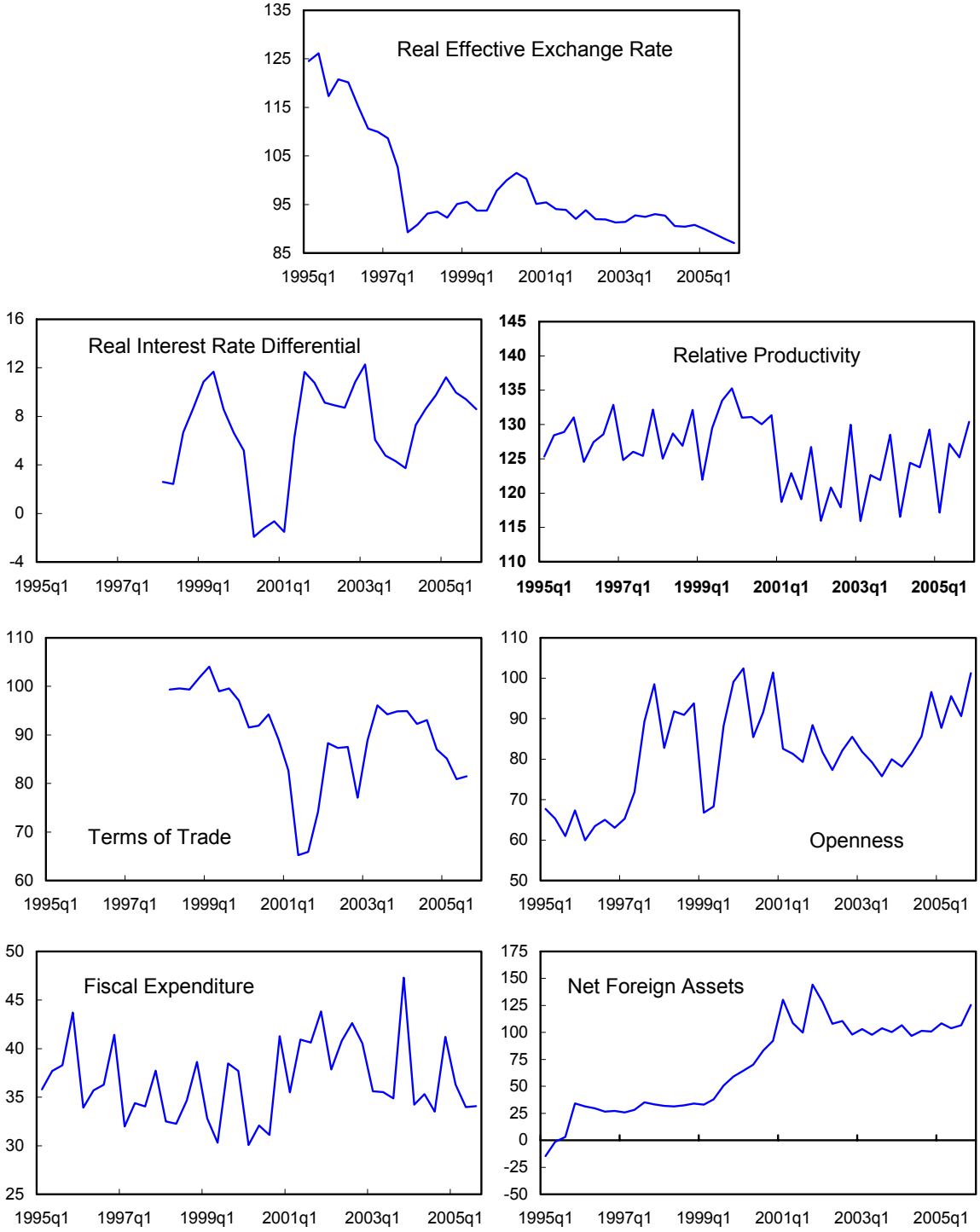
As suggested by MacDonald and Ricci (2003), real interest rate differentials capture three different effects—aggregate demand changes, productivity changes, and persistently tight monetary policy—leading to domestic currency appreciation. First, higher interest rates relative to other countries are associated with an increase in absorption, higher nontradable prices, and a real appreciation. Second, an increased productivity of capital would result in capital inflows and an appreciation of the domestic currency. Third, a tight monetary policy, in the presence of price rigidities, would lead to a domestic currency appreciation. There is no hard rule on whether to include the interest rate differential as part of the long-run component or, instead, as part of the short-run exchange rate dynamics. Both effects could be present.

Data description

Figure 1 shows the real effective exchange rate index for the period 1995:Q1-2005:Q4 and its long-run determinants.

Overall, the real exchange rate has depreciated over the period. From 1995-1997 there was a significant real depreciation culminating with the 1997 devaluation. Subsequently, the REER appreciates mostly due to the depreciation of the Serbian denar. Moderate inflation compared to trade partners explains the depreciation trend since end-2000. Over the same period, Macedonian real GDP per capita has declined relative to the main trading partners, a trend that started to reverse in the last 3 years due to increased GDP growth. The NFA of the domestic banking system has continuously increased as a share of GDP and the economy has become more open. The terms of trade has been quite volatile, as well as the real interest rate differential vis-a vis the EU. Unfortunately, these variables are only available since 1998. Due to this limitation and to abstract from the possible break introduced by the 1997 devaluation, the analysis was conducted for the full period, as well as for the period from 1998-2005.

Figure 5. Real Effective Exchange Rate and its Long-run Determinants, 1995-2005



Sources: MBRD; and IMF staff estimates.

Estimation

We used a vector error correction framework (VECM), employing the maximum likelihood estimator of Johansen to estimate a long-run (cointegration) relationship between the exchange rate and macroeconomic fundamentals. An important advantage over single-equation methods (such as the Engle-Granger method) is that it accounts for simultaneity and autocorrelation of the endogenous variables. The VECM also permits the inclusion of additional exogenous variables that may help explaining the short-run behavior of the real exchange rate.

$$\Delta Z_t = \delta + \Gamma Z_{t-1} + \sum_{i=1}^{p-1} \rho_i \Delta Z_{t-i} + \sum_{i=0}^{n} \gamma_i \Delta X_{t-i} + \varepsilon_t$$

The vector *Z* includes the real effective exchange rate as well as its macroeconomic determinants, while the vector X includes the exogenous variables. Γ is a (nxn) matrix of coefficients whose rank determines the number of cointegrating vectors. If Γ is of reduced rank *r* (with $r < n$), then Γ can be expressed as $\Gamma = \alpha\beta'$ where β is the matrix with *r* linearly independent cointegrating vectors, and α is a matrix with the speed of adjustment coefficients to the long-run equilibrium. The coefficients ρ and γ capture the short-run elasticities of the endogenous and exogenous variables, respectively.

The implementation of the VECM framework requires the series to be cointegrated. Therefore, our limited sample size warrants some caution in the interpretation of the econometric results. Prior to the cointegration analysis, the Augmented Dickey-Fuller test was applied to each time series, in each case failing to reject the null hypothesis of a unit-root, independent of the period considered (although marginally so in the case of the real interest rate differential). To analyze cointegration, the Johansen maximum likelihood method is applied to the set of endogenous variables, Z. The trace test and the maximum-eigenvalue test always found evidence of at least one cointegration relationship.

Different VEC specifications were estimated. We found that the TOT and the NFA were not significant determinants of the REER, and given the short data sample, we eliminated the variables to avoid losing degrees of freedom. The following table includes the estimation results of the preferred specification for the different samples.

	1995q3-2005q4	1998q3-2005q4
Cointegrating Vector		
FISC(-1)	0.02	0.01
	[-5.3]	[-4.6]
RGDPPC(-1)	2.74	1.98
	[-9.3]	[-7.6]
OPEN(-1)	-0.01	0.00
	[8.4]	[5.7]
C	3.68	4.02
Error Correction:		
α	-0.29	-0.41
	[-2.4]	[-2.4]
Short-run Dynamics		
D(REER(-1))	0.13	0.19
	[0.9]	[1.0]
D(REER(-2))		0.02
		[0.1]
D(FISC(-1))	0.00	0.00
	[-0.7]	[-1.1]
D(FISC(-2))		0.00
		[-1.5]
D(LRRGDPPC(-1))	-0.10	-0.53
	[-0.3]	[-1.3]
D(RRGDPPC(-2))		-0.45
		[-1.5]
D(OPEN(-1))	0.00	0.00
	[0.3]	[2.0]
D(OPEN(-2))		0.00
		[2.8]
Exogenous variables		
RIRR_EU		0.00
		[-0.4]

T-Statistics in brackets.

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II. Economic Growth in FYR Macedonia: Performance and Prospects[8]

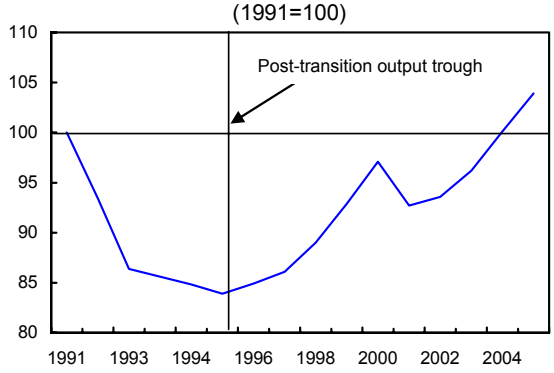
A. Introduction

1. **While macroeconomic stability has been a notable achievement for FYR Macedonia since transition, growth performance has been poor**. Successful macroeconomic policies are often considered key for generating sustained economic growth. However, this chapter argues they are only part of any successful growth take-off. The chapter begins by examining the historical growth performance in Southeastern Europe since transition before turning to medium-term growth prospects. Panel regressions of international experience then demonstrate an important role for macroeconomic stability *and* strong institutions in driving economic growth. While Macedonia has performed well in the former, institutional quality has fallen short. A determined reform effort could bring medium-term output growth in Macedonia to 5-6 percent per annum.

B. Historical Growth Performance: Sources of Growth

2. **Output growth in FYR Macedonia over the past decade has been disappointing (Figure 1)**. As was common in all transition countries, output declined following the onset of transition. The output trough was reached in 1995, since when FYR Macedonia has enjoyed positive output growth in every year except during the security crisis of 2001.[9] By 2005, output was only 4 percent above its 1991 level however (Table 1), and Macedonia's growth performance from trough to 2005 was the worst in the region. Output growth over this period averaged 2.2 percent per annum, and 2.9 percent excluding 2001.

Figure 1. FYR Macedonia: Real GDP 1991-2005
(1991=100)



Source: IMF World Economic Outlook.

Table 1. Percent change in real GDP

	1991-2005	trough-2005
Albania	105.5	121.5
Bulgaria	-5.0	42.6
Croatia	34.3	65.4
Moldova	-41.6	31.2
Romania	27.8	40.1
Slovenia	55.5	64.6
Macedonia, FYR	**3.9**	**22.4**

Source: IMF World Economic Outlook.

[8] Prepared by Christopher Marsh (PDR) while working in the European Department.

[9] Defined as the end of the transitional recession, the year before annual growth turns positive. The date of the output trough therefore differs for each country in the region.

3. **Growth accounting allows us to analyze the sources of output growth** through decomposition into that due to factor accumulation (physical and human capital and labor) and a residual attributed to 'total factor productivity' (TFP).[10] Measured TFP can reflect not only technological improvements, but political shocks, changes in policies and institutions as well as measurement error—it is therefore a measure of forces driving growth that we cannot measure. Utilizing the standard Cobb-Douglas technology, output (Y_t) is a function of the stock of physical capital (K_t), the stock of human capital (H_t) and labor employed (L_t) as well as TFP (A_t):

$$Y_t = A_t\left(K_t\right)^{\alpha}\left(H_t\right)^{\beta}\left(L_t\right)^{1-\alpha-\beta}$$

where $0 < \alpha + \beta < 1$. α and β represent the elasticity of output with respect to physical and human capital respectively, t is an index of time. Taking natural logs and differentiating with respect to time, we can express output growth ($g_{Y,t}$) as a linear function of the growth of factor inputs ($\alpha g_{K,t} + \beta g_{H,t} + \left(1-\alpha-\beta\right)g_{L,t}$) and TFP ($g_{A,t}$):

$$g_{Y,t} = \alpha g_{K,t} + \beta g_{H,t} + \left(1-\alpha-\beta\right)g_{L,t} + g_{A,t}.$$

Taking this framework to the data, once the contributions of capital and labor in output growth are accounted for, the remaining growth is attributed to the TFP 'residual'.

4. **The growth accounting exercise illustrates the sources of growth across countries** (Figure 2). For comparison, the exercise for each country is performed from the end of the respective transitional recession, and the average growth rate and contributions calculated over this period. Due to concerns about employment data in 1995, the exercise takes 1996 to be the post-transition output trough for Macedonia. Including estimates of human capital (not reported) in the analysis has a modest influence on the estimates of TFP, though without significantly altering the conclusions.[11] Based on this growth accounting exercise we can analyze the sources of growth in Macedonia and compare it to regional experience.

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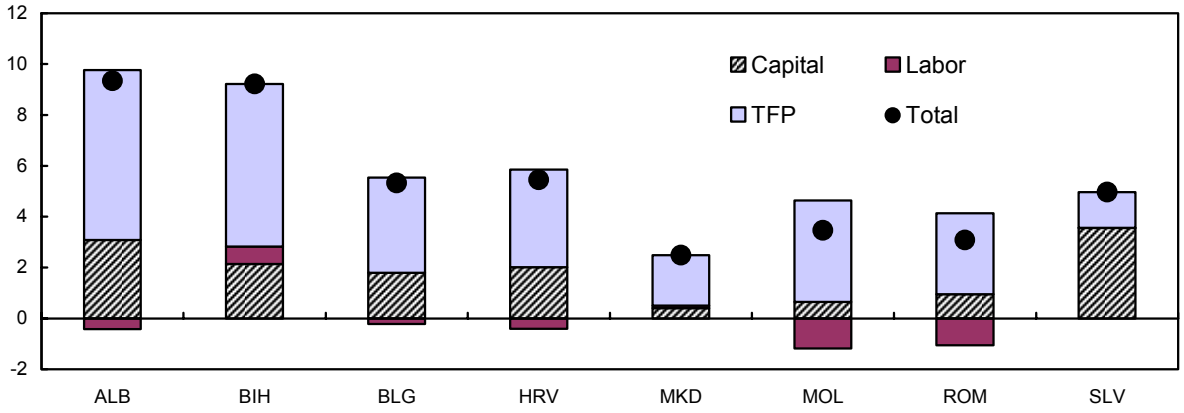
[10] As is well known, there are a number of complications which arise in performing growth accounting exercises, not least the need to estimate the initial capital stock and depreciation rates. Here we assume the capital stock at the output trough is twice the level of GDP, and a depreciation rate of 8 percent per annum, in line with Doyle et al. (2001). The scenarios are meant to be illustrative rather than definitive. Growth accounting issues are discussed at more length in Bosworth and Collins (2003).

[11] Estimates of human capital are weak however. Data for Bulgaria, Croatia, Romania, and Slovenia are available in Barro and Lee (2000). For the remaining countries, estimates based on neighboring country experience can be used, though caution is obviously required. The analysis is therefore not shown here.

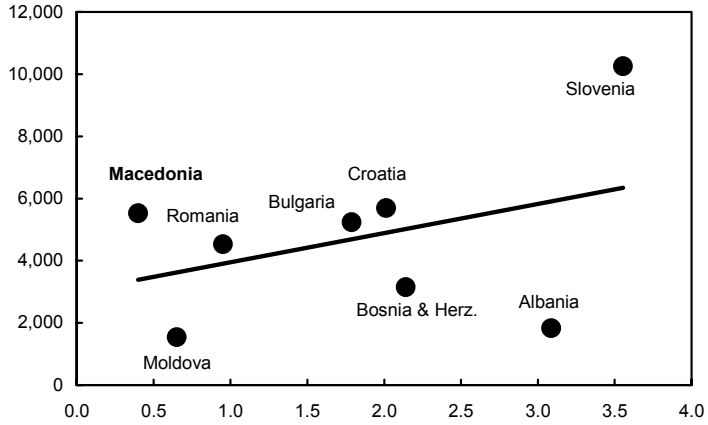
Figure 2. Southeastern Europe: Average output growth and sources (post transitional recession)



Sources: IMF World Economic Outlook; and IMF staff estimates.

5. **Physical capital accumulation has been the lowest in the region.** Considering FYR Macedonia's level of development, the contribution of capital accumulation to growth has been very poor over the last decade (Figure 3), adding only 0.4 percentage points to growth compared with an average of 1.6 percent for its closest peers.[12] In recent years, at less than 20 percent, Macedonia has accumulated less private capital as a share of output than any other country in the region (Figure 4). Possible reasons for this relatively poor performance might be uncertain property rights, high real interest rates and institutional shortcomings. Increased private investment will be an important boost to medium-term growth in Macedonia.

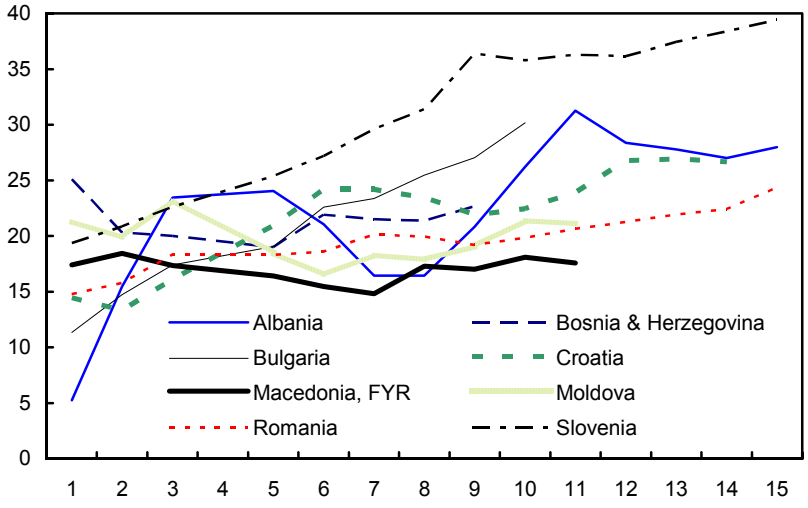
Figure 3. Southeastern Europe: Initial GDP per capita
(PPP-based US dollars) and capital's contribution to growth



Sources: WEO; and IMF staff estimates.

[12] Defined as those with similar initial GDP per capita: Bulgaria, Croatia and Romania. The analysis is based on real gross fixed capital formation.

Figure 4. Investment to GDP Ratios in Southeastern Europe
(constant price ratios (percent) in years from output trough)



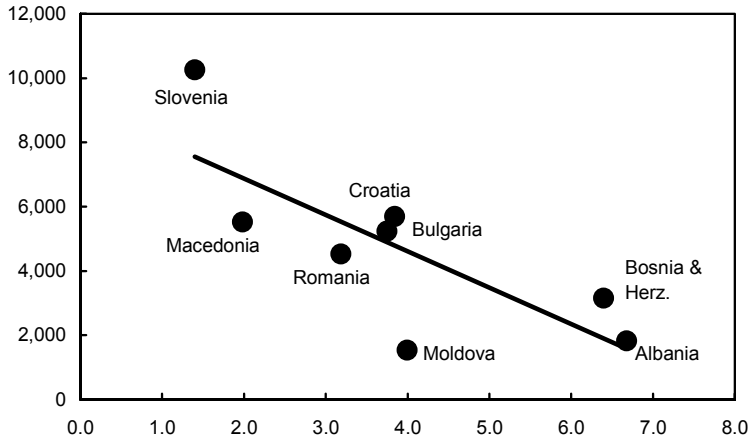
Sources: WEO; and IMF staff estimates.

6. **While regional experience varies, employment has also contributed only a small amount to economic growth in FYR Macedonia (Figure 2)**. The contribution of employment growth will vary according to initial conditions and institutional features of each economy. However, given the high unemployment rate in FYR Macedonia, there was clearly potential for more employment and therefore output growth. As outlined in the chapter on unemployment in these Selected Issues, institutional weaknesses in the labor market have hindered employment creation. In turn, low growth has not been conducive to employment growth. Once this trap of low growth and high unemployment is broken—through labor market reform as part of the overall strengthening of institutions (see below)—there is scope for increased labor input to facilitate medium term economic growth. In turn, greater economic growth should feed back onto higher employment. Improvements in human capital, though not a central focus here, would also facilitate medium term growth.

7. **The ratio of TFP to output growth in Macedonia is comparable with regional post-transition experience.** Between 1996 and 2000 TFP contributed an estimated 84 percent of Macedonia's output growth, and 80 percent of the growth in the decade 1996 to 2005—comparable with Albania, Bosnia and Herzegovina, Bulgaria, and Croatia.[13] Only Moldova and Romania achieved a significantly larger contribution of TFP to growth, though during a period of declining employment and productivity gains (Figure 2).

[13] As emphasized by the World Bank (2003), TFP was a robust driver of growth in FYR Macedonia during the recovery period from the mid-1990s.

Figure 5. Southeastern Europe: Initial GDP per capita
(PPP-based US dollars) against average TFP growth



Sources: WEO; and IMF staff estimates.

8. **However, average TFP growth in Macedonia is below regional experience since the end of the transitional recession** (Figure 5). Intuitively, following transition lower initial productivity levels might be associated with a greater contribution to growth by TFP—with greater potential for productivity catch up. Countries in Southeastern Europe indeed demonstrate an inverse relation between average TFP growth and initial real GDP per capita—a proxy for initial productivity. This downward sloping relation in Figure 5—running from Slovenia, the richer of the economies, on the left down to Albania, one of the poorer economies, on the right—reveals Macedonia to be an outlier.[14] Although only half as rich as Slovenia once growth began, Macedonia has experienced only slightly more robust productivity growth over the period. TFP, which contributed about 4 percent to the growth of close peers Croatia and Bulgaria, contributed only 2 percent on average in Macedonia.

9. **The dynamics of growth shows TFP to be more important at the beginning of the recovery period following the transformational recession**. Typically, countries in SEE experienced a larger increase in TFP at the beginning of their recovery (Figure 6), the main exception being Bosnia and Herzegovina where the contribution of TFP has been fairly uniform.[15] The idea that TFP would contribute more to output growth initially is consistent with the idea that there is more catch-up potential at the beginning of transition—especially as unproductive labor is laid off, realizing productivity gains. The dynamics of TFP growth in Macedonia is broadly in line with peer experience, though the security crisis in 2001 was a clear setback. The more mature economies in the region, especially those of Bulgaria, Croatia

[14] It is worth noting the possible importance of data problems here. If data is weaker for poorer countries, then this could result in larger TFP growth just because of under-reporting of capital accumulation in the official statistics. Large grey economies also make interpretation difficult.

[15] Data shortcomings might be important here however.

and Slovenia, demonstrate more significant factor accumulation in later years once TFP begins to slow.[16] This further suggests that, to sustain growth, there will be a more important role for factor accumulation in Macedonia in the future.

10. **Investment decisions and TFP might be linked.** Although the neoclassical approach exploited here takes TFP to be 'exogenous,' the possibility that investment brings experience and organization skills, or simply learning-by-doing, that in turn raise the productivity of inputs should not be overlooked. This is an important theme in the endogenous growth literature, and suggests we should not always consider the analysis of investment and TFP in isolation—private investment choices and individual decisions feedback onto productivity and output.

11. **Overall, considering regional experience, there are a number of striking features of FYR Macedonia's growth performance over the past decade**:

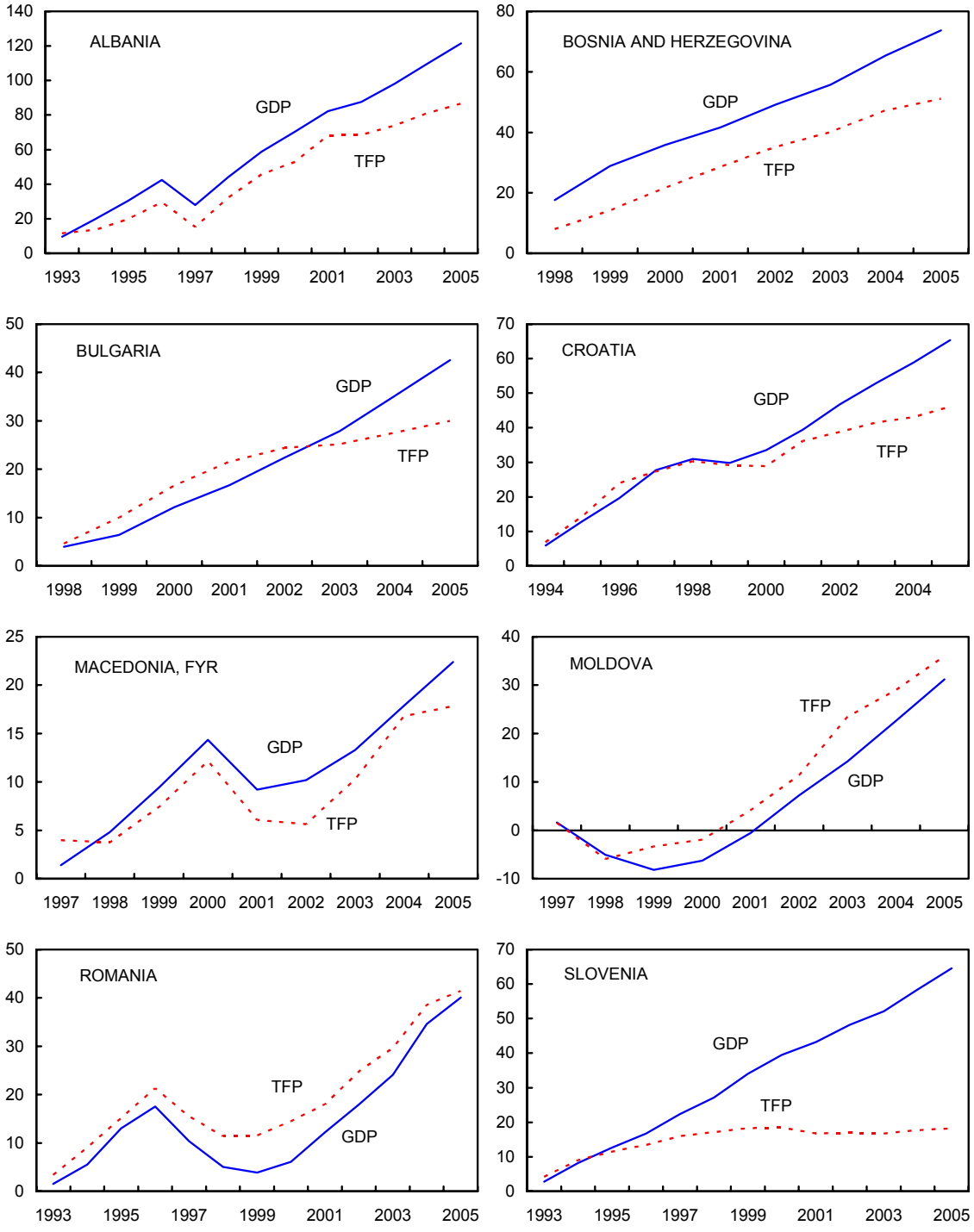
- **Private sector capital accumulation has been the lowest in the region.** Looking ahead, there is clearly a more important role for private investment given both the poor historical performance and its future role as demonstrated by the experience of the more mature transition countries in the region.

- **Employment growth has not been an important source of economic growth.** Given the large numbers of unemployed in Macedonia, raising employment will be an important source of growth in the medium term.

- **Total factor productivity growth has been poor.** Though risking repetition, it is worth remarking again the most important feature of the growth performance in Macedonia is how out of line it has been with regional experience. Of the drivers of growth performance in the region, total factor productivity is key (Figure 2). With such an important role, any effort to improve Macedonia's growth performance will necessarily rely on TFP gains.

[16] The difference between cumulative GDP and TFP growth in Figure 4 shows the contribution of factor accumulation growth. For a number of countries this is initially negative—associated with a reduction in employment and associated productivity gains. Later, factor accumulation becomes important.

Figure 6. Cumulative Output and TFP Growth in Southeastern Europe, 1993-2005



Sources: WEO; and IMF staff estimates.

C. Growth Prospects

12. **This section considers FYR Macedonia's long run growth potential.** Using data on a cross-section of countries, various specifications of a panel of observations across countries are used to identify factors correlated with long-run growth performance. Substituting variables for FYR Macedonia provides an estimate of likely growth performance looking ahead and those areas where reform will have most impact.

13. **The panel of countries uses data from 1981 to 2004, divided into 3 equal sub periods, to identify factors key in determining average annual economic growth.** The basic panel regression takes the following form:

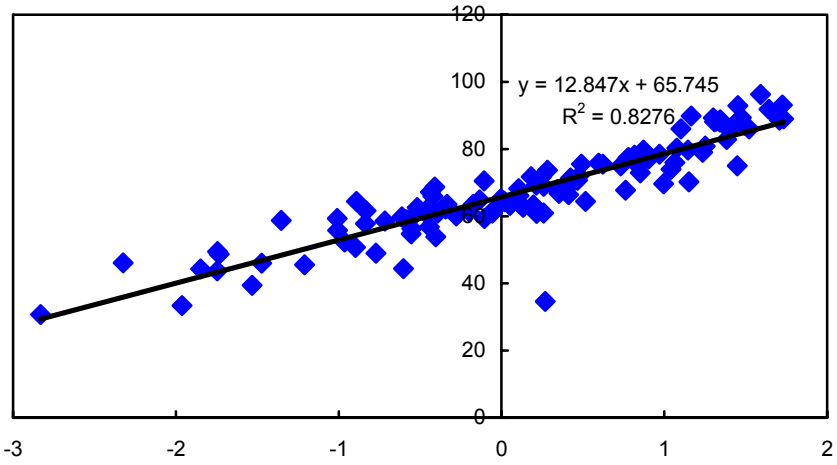
$$g_{i,t} = \alpha + \beta y_{i,t-1} + \gamma NEO_{i,t} + \delta INST_{i,t} + \chi MACRO_{i,t}$$

Where $g_{i,t}$ is average per capita real economic growth in country i during period t, $y_{i,t-1}$ is the initial output per capita, $NEO_{i,t}$ is a vector of variables implied by the standard neoclassical growth model (capital accumulation, population growth), $INST_{i,t}$ is a vector of institutional factors perhaps influencing economic growth (discussed below) and $MACRO_{i,t}$ is a vector of macroeconomic indicators (inflation, fiscal policy, financial intermediation). α, β, γ, δ and χ are parameters determined by the regression. We are particularly interested in the relative influence of δ and χ which determine the role of institutions and macroeconomic policy choices on long run growth respectively.

14. **To project growth in FYR Macedonia, estimates of institutional quality are developed.** Choice of independent variables in the regression analysis should facilitate projections of long-run growth, which requires all right hand side variables to be available for FYR Macedonia today. Unfortunately, there is no measure of institutional quality for a sufficiently broad range of countries and long enough period of time also available for FYR Macedonia. However, using the relationship between the International Country Risk Guide (ICRG) index, a popular proxy for institutional quality in regressions, and the World Bank Governance Indicators for FYR Macedonia, we can back out an estimate of the influence of current institutional quality in FYR Macedonia on long run growth performance (Figure 7). We can then consider how improving institutions might raise long term growth.

15. **There is a close relation between the ICRG index and World Bank Governance Indicators.** The ICRG provides country risk ratings based on five elements reflecting security of property and contract rights. The index is based on the quality of bureaucracy, corruption in government, the rule of law, expropriation risk and the repudiation of contracts by government. The ICRG index rates countries between 0 and 100, the larger the score the better. The World Bank Governance Indicators are based on similar measures of institutional and governance quality (see below) and follow roughly a normal distribution between -2.5 and +2.5, the more positive the score the better.

Figure 7. Scatter of World Bank Governance Indicator and ICRG



Sources: World Bank; and International Country Risk Guide.

16. **The panel regression analysis, which due to lack of data does not include FYR Macedonia as an observation, demonstrates a vital role for institutional quality in driving economic growth.** A number of specifications were considered, and a variety of independent variables used. Variables were included if statistically significant, and dropped otherwise. To illustrate the relative influence of macroeconomic policy and institutions on economic growth two regressions were settled upon, shown in Table 2.[17] Both regressions are OLS.[18] Other independent variables emphasized in the large literature on the determinants of growth could also be included.[19] In omitting these we do not deny the important of other factors, rather to focus on other drivers of growth. The regression results are reported in Table 2 along with the implied long run growth rate for FYR Macedonia. All variables are of the expected sign and are significant at the 5 percent level. The addition of the ICRG index in the second regression alters the predicted growth outcome for FYR Macedonia. The results are shown in Table 2, and can be summarized as:

[17] Human capital was included in some specifications, and was found to be statistically significant except when the ICRG index was included in the specification. It was therefore dropped from the final analysis.

[18] There is a possible endogeneity problem here, especially associated with the measure of institutional quality. Using an instrument to capture institutions on the right hand side though, as in Zalduendo and Batista (2004), does not significantly change the results here.

[19] Such as geography and human capital. Alternatively, more complicated specifications could have been employed, capturing, for example, possible non-linearities associated with inflation etc. (see Zalduendo and Batista (2004)).

- **Growth is higher the lower is the initial GDP per capita.** This is consistent with conditional convergence where economies grow faster the lower the initial GDP per capita as a process of catching up with the leaders.

- Consistent with the predictions of the neoclassical growth model, **greater capital accumulation or lower population growth raise economic growth.** The influence of increasing investment is non-linear here, so increasing investment has a diminishing effect. However, the regressions suggest that raising capital accumulation from 22 to 25 percent of GDP, is perhaps associated with increased growth of close to 0.7 percentage points.

- **Government deficits and inflation are associated with reduced economic growth, financial sector development with greater economic growth**. The size of their influence on economic growth is small however: (i) reducing the central government deficit by one percentage point raises economic growth by less than 0.1 percentage points; (ii) reducing inflation has a minute influence on economic growth; (iii) raising the level of financial intermediation by 10 percent of GDP (the broad money ratio from 0.5 to 0.6 say) will increase economic growth by slightly more than 0.1 percentage points.

- **Institutional quality is a strong predictor of economic growth.** The ICRG index ranges from 0 to 100. A country increasing its institutional quality from 40 to 50 as measured by this index might expect long term growth to be higher by up to 0.8 percentage points.[20]

[20] Other papers use the ICRG index with alternative estimated equations, reporting a different coefficient—suggesting the figure here should be thought of as an upper bound. Results in Zalduendo and Batista (2004), who correct for possible endogeneity, suggest that an equivalent improvement in institutional quality would raise growth by 0.3 percentage points, while Indonesia's Selected Issues from 2005 instead report a 0.5 percentage point influence on growth.

Table 2: Estimating Medium-Term Growth in Macedonia 1/

Dependent variable:		Real per capita growth	
		(1)	(2)
Log initial GDP per capita	β	-0.40 *	-0.83 *
Log capital accumulation	γ_0	4.59 *	5.38 *
Log population growth	γ_1	-4.65 *	-4.76 *
Government balance	δ_0	7.98 *	7.20 *
Inflation	δ_1	-0.0002 **	-0.0001 **
Broad money share in GDP	δ_2	1.37 **	1.37 **
Institutions	χ	...	0.08 **
Adjusted R^2		0.38	0.42
Possible Macedonia growth (in percent)		3 to 4	3 to 6

Sources: IFS; WEO; International Country Risk Guide; and Penn World Tables.
1/ Based on growth experience of 67 countries, and 8 year periods for 1981-2004.
The symbols ** and * denote significance at 1 and 5 percent levels respectively.

17. **With institutional reform efforts, greater financial intermediation and continued macroeconomic stability, economic growth in FYR Macedonia could increase to between 5 and 6 percent.** Based on the estimated growth equation, substituting in reasonable values of variables for FYR Macedonia gives a range of possible outcomes for potential growth. Currently, macroeconomic stability has brought low inflation and a controlled government deficit. However, since these have a significant but small influence on economic growth, these are not by themselves guarantees of a satisfactory growth performance:[21]

- **The equation's growth predictions are in line with recent performance**. Starting with initial GDP per capita of 6000 US dollars; a ratio of capital accumulation to GDP of 0.22; population growth of 0.5 percent; government balance of -0.6 as a percent of GDP; inflation of 2 percent; ratio of broad money to GDP of 0.5; and institutional quality indicator measured about 50 gives a growth rate of about 3 percent.

[21] There are also important nonlinearities overlooked here—that increasing inflation or deficits have greater than proportional effects on growth etc. Furthermore, we do not consider the possible influence of fiscal crises on output and growth.

- **Macroeconomic policy can raise growth further**. Raising capital accumulation by 3 percentage points is associated with increased real growth of about 0.7 percentage points. Continued broad money expansion from a ratio to GDP of 0.5 to 0.75 would be consistent with an increase in real growth of 0.3 percentage points. The growth regression would then suggest annual GDP growth for FYR Macedonia of close to 4 percent.

- **Improving institutional quality can have a more significant impact.** Raising institutional performance closer to the experience of neighboring countries (say, from 50 to 70) might be associated with an increase in growth to the 5-6 percent range.

D. Institutional Quality in FYR Macedonia

18. **Institutional indicators routinely rate Macedonia poorly against peers and internationally.** There are many different measures of institutional quality and corruption. The ICRG index used in the regressions above is a common indicator of institutional development, though it is unavailable for Macedonia. There are a number of others however: for example, World Bank Governance Indicators, the Corruption Perceptions Index (prepared by Transparency International) and UNDP Early Warning Indicators. A review of these indicators reveals the following:

- **The Governance Indicators prepared by the World Bank give FYR Macedonia low ratings on most indicators**. Further, these indicators have changed little since 1996 (Figure 8). In regional perspective, FYR Macedonia routinely measures poorly against its peers (Figure 9) and where many neighbors have improved their institutional performance, FYR Macedonia has been slow in implementing reform.

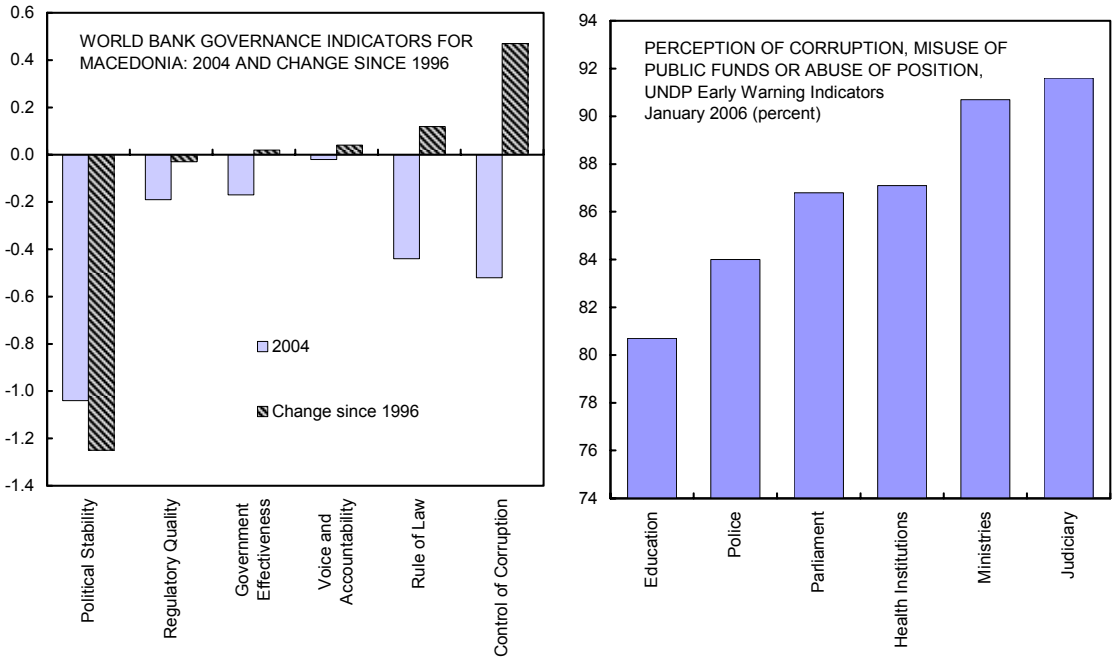
- **According to the Corruption Perceptions Index,[22] Macedonia is ranked 103rd of 159 countries surveyed by Transparency International** (Table 3)—joint with Gambia, Swaziland and Yemen. In the region, only Albania scored worse, ranked 126th; Bulgaria scores highest, ranked 55th.

- **Macedonians also distrust local institutions.** While other indicators reflect partially or completely external perceptions of Macedonia, the UNDP Early Warning Index, which interviews residents on their attitudes to a number of social issues, provides a

[22] The Corruption Perceptions Index is a poll produced by Transparency International reflecting the perceptions of resident and non-resident business people and country analysts drawing on around 18 surveys conducted by 12 independent institutions.

ranking of domestic institutions by service users. Local institutions are not trusted (Figure 8), with over 90 percent of respondents indicating they consider corruption, misuse of public funds or abuse of power to be common amongst the judiciary and in ministries.

Figure 8. FYR Macedonia: Institutional Quality Indicators



Sources: UNDP; and World Bank.

19. **These indicators reveal areas that need institutional improvement:**

- **Distrust of the judiciary by the population is suggestive of poor property rights**, and will act as a disincentive to invest. Continued judicial reform, which has been ongoing for some time, would help improve confidence while reducing the backlog of outstanding court cases.

- **More transparency in public office and in government action would raise confidence in key institutions**; naming and shaming those attempting bribes in government procurement and sales of government property would show less tolerance of corrupt behavior, setting an example to others.

- **Clarifying property rights through the completion of the cadastre is crucial** as a means to provide collateral, improve confidence, and raise investment.

- **Ensuring a fair punishment for those successfully prosecuted on charges of corruption would act as a deterrent.** Several recent high-profile cases, where those

jailed for corruption were able to substitute a prison sentence with a fine, are examples where the legal structure and governance could be improved.

Table 3: 2005 Corruption Perceptions Index
Score and Ranking for Southeastern Europe

	Global Ranking 1/	Index
Bulgaria	55	4.0
Croatia	70	3.4
Romania	85	3.0
Bosnia and Herzegovina	88	2.9
Moldova	88	2.9
Serbia and Montenegro	97	2.8
FYR Macedonia 2/	103	2.7
Albania	126	2.4

Source: Transparency International.

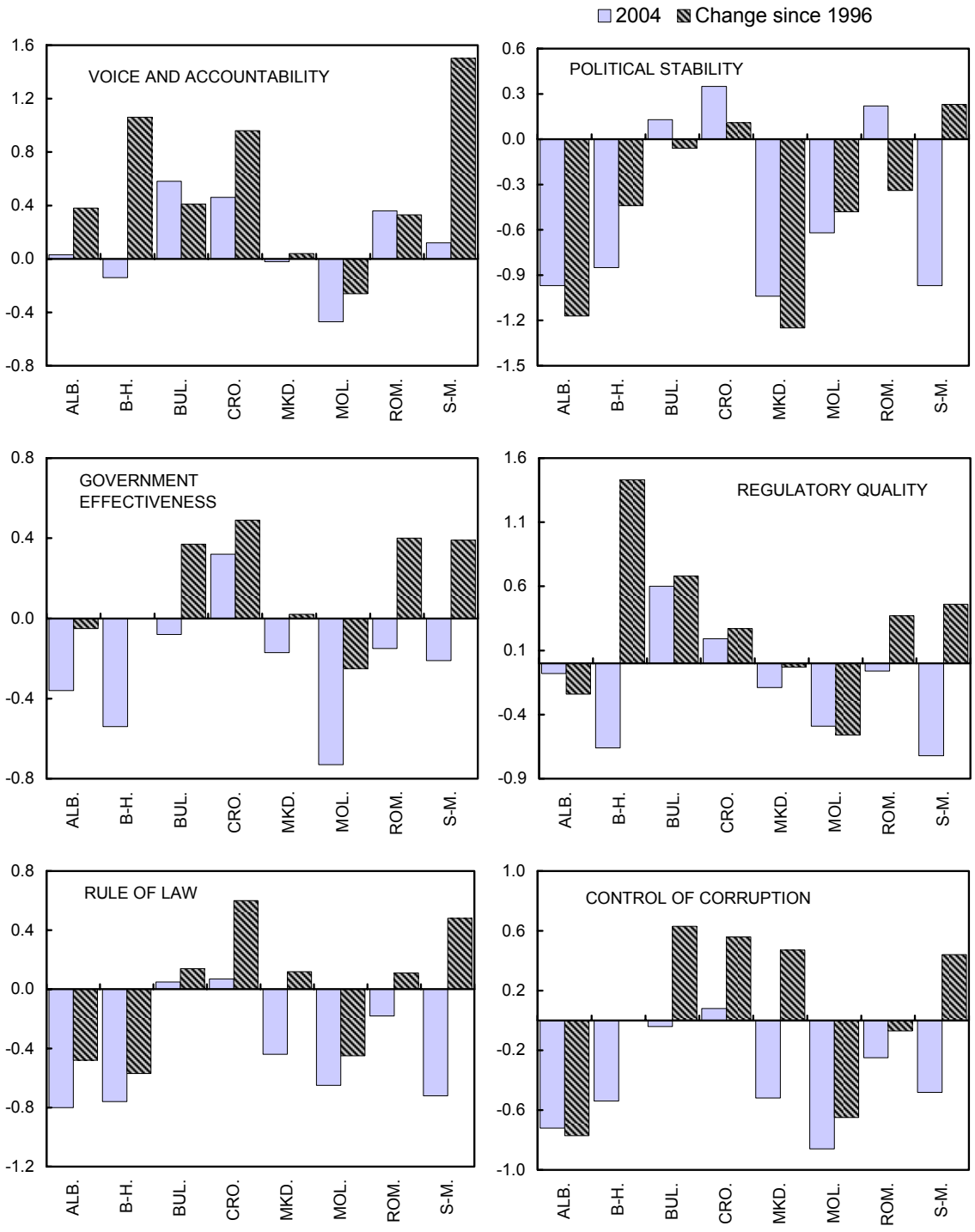
1/ Out of 159 countries.

2/ Ranked joint with Gambia, Swaziland and Yemen.

E. Conclusion

20. **A review of Macedonia's growth experience and prospects reveals areas of weakness, though offers room for optimism too.** Historical perspective and regional context casts light on the low growth performance. In particular, investment has lagged that of the region and will be crucial in sustaining a growth take-off. TFP has also been poor—itself perhaps a symptom of poor investment. Encouraging investment (local private and FDI) and productivity improvements will require confidence in the rule of law and the institutional setting. Meanwhile, growth regressions reveal the crucial role of institutional quality as a predictor of higher per capita growth. Macroeconomic stability raises economic growth, but this influence is minor compared to a backdrop of institutional strength. Indicators of institutional quality leave much scope for improvement in Macedonia. Growth regressions indicate how sustained reform—required in any case in preparation for possible EU accession—might help raise growth to between 5 and 6 percent.

Figure 9. Institutional Indicators in South-Eastern Europe: 1996 and 2004



Source: World Bank Governance Indicators, 2004 and change since 1996.

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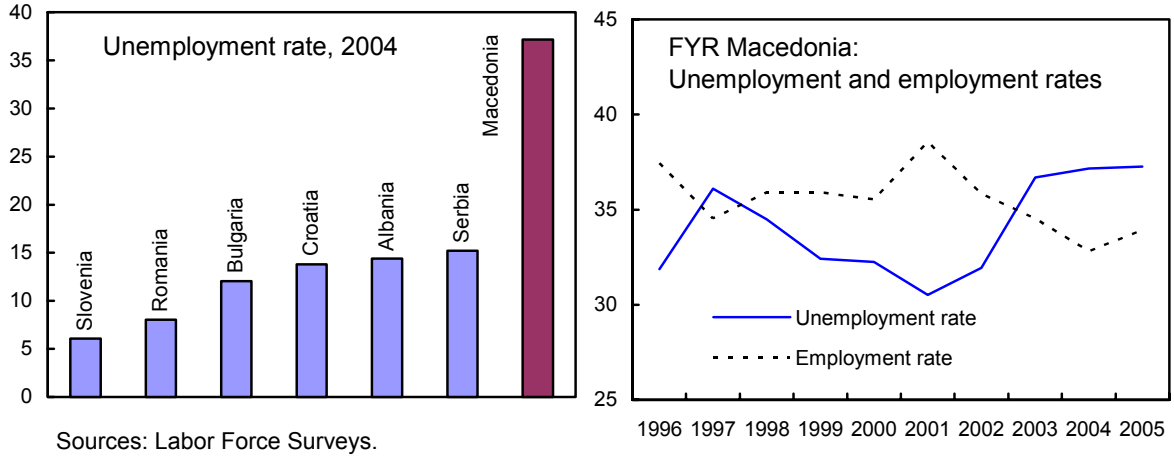
III. Unemployment in FYR Macedonia[23]

A. Introduction

1. **The official unemployment rate in FYR Macedonia is very high at around 37 percent in 2005—by far the highest in the region.** Unemployment has been a problem in FYR Macedonia for a long time. Its unemployment rate was the highest among the former Yugoslav republics—close to 20 percent—and the situation was further aggravated during the transition process, during which unemployment has fluctuated at around 35 percent. Although employment finally started to pickup in 2005, the unemployment rate has remained stable due to an increase in labor force participation.



Sources: Labor Force Surveys.

2. **This paper will examine the reasons for FYR Macedonia's high unemployment by comparing it with other countries in the region.** After a short description of the specifies of unemployment in FYR Macedonia, the paper discusses possible measurement problems that contribute to the high official unemployment rate. Using alternative sources of data, the unemployment rate fluctuates between 15 and 51 percent with the most reliable estimate around 25 percent. The paper then analyzes reasons for high unemployment and concludes with some reform proposals. These include increasing incentives for formal sector employment, changes in labor and tax legislation, and reform of the education system. However, in view of the still significant hidden unemployment and large share of long-term unemployed, reducing unemployment will be a long–run challenge.

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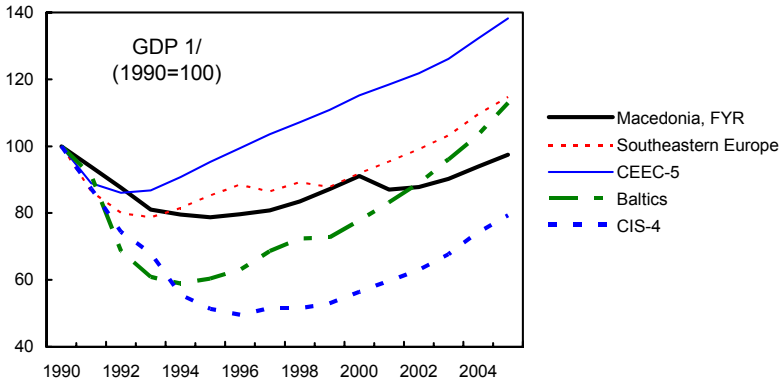
[23] Prepared by Christine Dieterich. I would like to thank Cristina Cheptea, Research Assistant at the IMF, and Ajria Causovska, State Statistics Office of the Republic of Macedonia, for their assistance with the data collection. The paper also benefited from comments from Mark Griffiths, Alexander Pivovarsky and Nikica Mojoska.

B. Labor Market Developments since Independence

3. **Compared with other countries in the region, FYR Macedonia's performance has been rather weak.** The CEEC 5 countries were able to limit the GDP decline early on and nevertheless show a strong growth performance. While GDP growth in the Baltic countries declined sharply during the early phase of transition, the recovery has been more pronounced than in FYR Macedonia. The economic recovery in Southeastern European countries was also stronger than in FYR Macedonia which reached its pre-transition GDP level only in 2005.



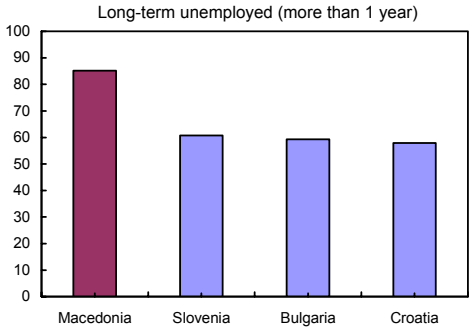
Sources: WEO; and IFS.
1/ CIS-4 refers to: Belarus, Moldova, Russia and Ukraine.
Baltics: Estonia, Lithuania, Latvia.
CEEC-5: Czech Republic, Hungary, Poland, Slovak Republic, Slovenia.
Southeastern European Countries: Albania, Bulgaria, Croatia, Macedonia, Romania, Serbia&Montenegro.

4. **The disappointing performance at the macro level is reflected in a sclerotic labor market structure, indicating a severe insider-outsider problem.** While flow data between employment and unemployment is not widely available, a comparison with other transition economies reveals very low flows from unemployment to employment in FYR Macedonia, resulting in very high long-term unemployment rates. On the positive side, labor market mobility increased in 2005, but this was mainly caused by the inflow of non-active workers into employment while long-term unemployment continued to increase. Another indicator of the sclerotic structure of the labor market is the high youth unemployment rate (about 65 percent of the labor force aged 15 to 24).

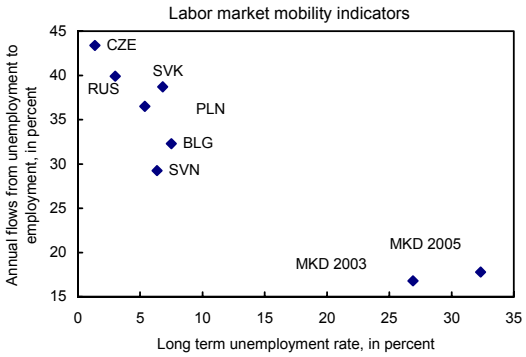
5. **Gender, ethnic, and education indicators paint the following picture:**

- **The average unemployment rate is higher for women (around 38 percent) than for men (around 35 percent) which is in line with most European countries**. The gender gap is largest for low skilled labor.

- **FYR Macedonia's participation rate is low compared to other countries in the region**. However, this mainly reflects ethnic factors, in particular, the low participation rate among ethnic Albanian women. Once corrected for this, FYR Macedonia's participation rate is quite high for the region.

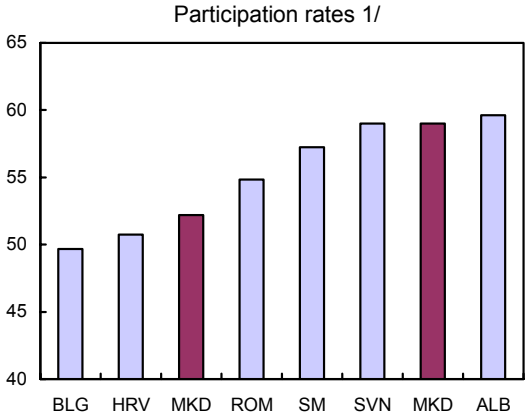


Source: Labor Force Surveys.



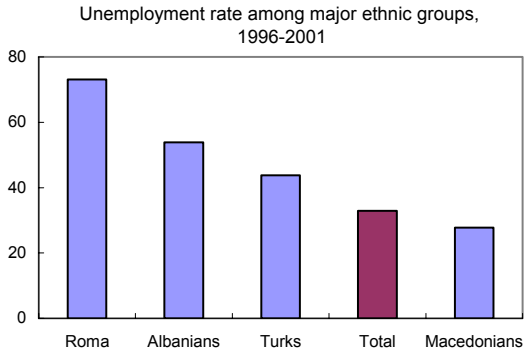
- **Based on 2001 data—the last LFS submission that included data by ethnicity—unemployment rates differ significantly among ethnicities**. Anecdotal evidence suggests that ethnic factors also create barriers to regional mobility. However, the analysis of regional patterns of unemployment is constrained by the lack of regional data in the LFS.

- **The higher the education level, the lower the unemployment rate and the higher the participation rate**. Low skilled workers seem to rely more on grey economy employment which is in line with employment pattern in other transition economies (Rutkowski (2005)).

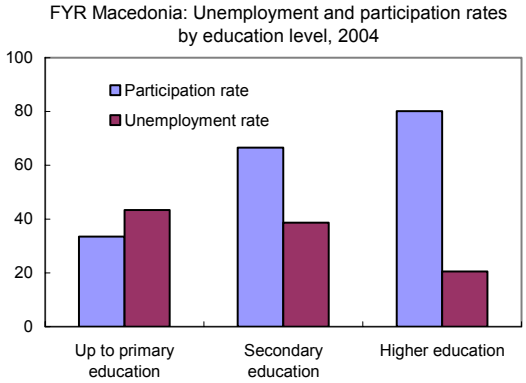


Sources: Labor Force Surveys.
1/ Defined as the labor force divided by working age population.
2/ Corrected for the low participation among minority women.

- **Despite high unemployment, there is still significant hidden unemployment within firms as reflected in high wage arrears (around 15 percent of total wages), which has been relatively stable over the last years**.



Sources: Labor Force Surveys.

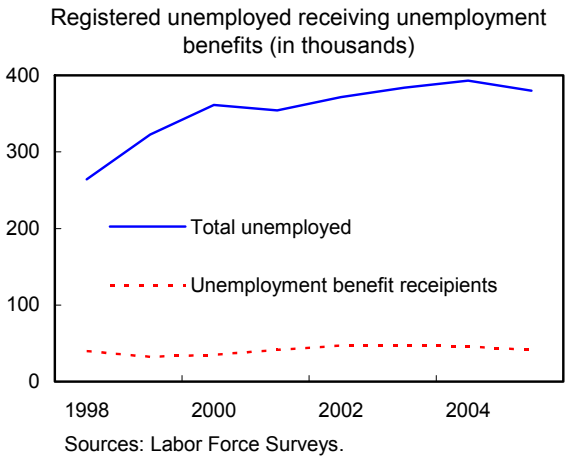


C. Is Unemployment Really 37 Percent?

6. **The analysis of different sources of employment data suggests that unemployment is probably less than 37 percent, but still high**. Three different data sources were analyzed to determine a more accurate estimate of unemployment:

- **Official Labor Force Survey (LFS) and Employment Fund (EF) data:** The LFS is the source of the official unemployment rate of 37 percent. Registered unemployment as recorded by the EF is even higher at 51 percent, inflated by grey economy workers registering as unemployed to obtain free health insurance.

- **LFS and EF data corrected for grey economy activities:** Estimates regarding the size of the grey economy fluctuate between 30 and 45 percent of formal GDP. Applying a grey economy estimate of Schneider (2005), which is around 37 percent for FYR Macedonia, the LFS and EF unemployment rates would drop to 15 and 34 percent (assuming that the level of unemployment is reduced by 37 percent of formal employment to include grey economy activity). The truth is probably somewhere in between as some grey economy workers registered with the EF already provide information about their employment status in the LFS. Another way of approaching the problem is to assume that all unemployed registered with the EF who only receive health insurance, but not unemployment insurance benefit, are actually employed in the grey economy. As most of the unemployed receive only health insurance, this would give an unemployment rate of around 15 percent. However, this approach neglects the fact that some people, in particular, youth unemployed, do not qualify for unemployment insurance as they have no contribution history.



Sources: Labor Force Surveys.

FYR Macedonia: Unemployment Rate

	LFS	EF
Unemployment rate according to official data	37	51
Official data corrected for grey economy employment	15	33
EF data excluding recipients of health insurance only	...	15

Sources: SSO; Employment Fund; and IMF staff estimates.

- **Household consumer survey (HCS):** Participants of the HCS provide information on their sources of income, including the number of household members receiving wages. This data can be used to extrapolate the unemployment rate. However, data on some variables relevant for compiling employment are missing, in particular, the number of unpaid family workers. In the LFS, around 10 percent of the total employed are unpaid family workers. Applying this ratio to the number of employed according to the HCS data results in an unemployment rate of around 24 percent.

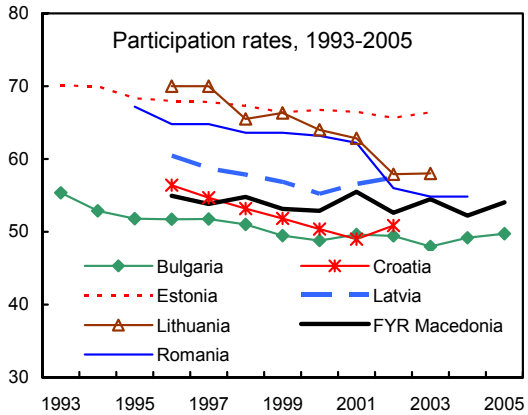
7. **With estimates ranging between 15 and 51 percent it is difficult to assess the true unemployment rate**. Probably the HCS is the most reliable source as it is least affected by the institutional incentive to register as unemployed to receive health benefits. Also, data collection at the household level might be less biased than the LFS, where respondents may fear that the government could use the individual information to track fraudulent unemployment registration of grey economy workers.

D. Why is Unemployment So High in FYR Macedonia?

Growth related factors

8. **FYR Macedonia's low growth has limited the creation of new jobs to offset job losses in state owned companies.** Reasons for the poor growth performance include political shocks like the closure of the Greek border, trade restrictions from the UN embargo on Serbia, and the Kosovo crisis which created an unfavorable business climate. But FYR Macedonia also entered the transition process with an economy that was dependent on a few, traditional sectors, in particular, agriculture, steel, and textiles. Similar to the trend in the CIS (Verme (2004)), such poor starting conditions made the transition process more difficult. Finally, institutional weaknesses hampered investment and growth (see Chapter II).

9. **Poor growth might partly explain the stability of FYR Macedonia's participation rate compared to other transition countries which have suffered sharp employment losses.** FYR Macedonia's participation rates have been remarkably stable at around 57 percent. In contrast, in many countries that underwent strong employment loss, participation rates have shown a downward trend. Consequently, the increase in unemployment was not as pronounced as the loss in employment. Why is the participation rate so resilient in FYR Macedonia? Possibly low GDP growth did not allow for the luxury of retiring from the work force. Another explanation could

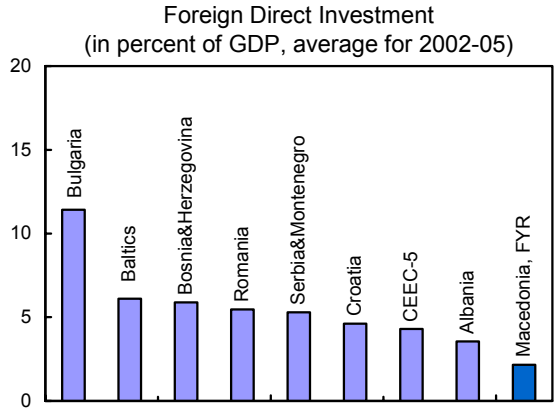


Sources: Labor Force Surveys.

be that free health insurance created an incentive to register as part of the work force.

Corporate structure

10. **Low foreign investment, partly caused by insider privatizations, has also limited job creation.** Management and employee buyouts dominated the privatization process, limiting foreign direct investment which is low compared to other countries in the region. Empirical evidence from other transition economies suggests that privatization to workers is detrimental for a company's performance while privatization to investment funds and foreign investors has the most positive effect (Djankov, Murrell, 2002). Also, employment creation is highest in newly created companies that are foreign owned. These results were confirmed for FYR Macedonia by Zalduendo (2003) who found that the deficiencies of management and employee buyouts caused declining productivity and low profits. As employee buyouts followed the social ownership ideology that a company's main purpose is employment, they also explain the high level of hidden unemployment as reflected in wage arrears.



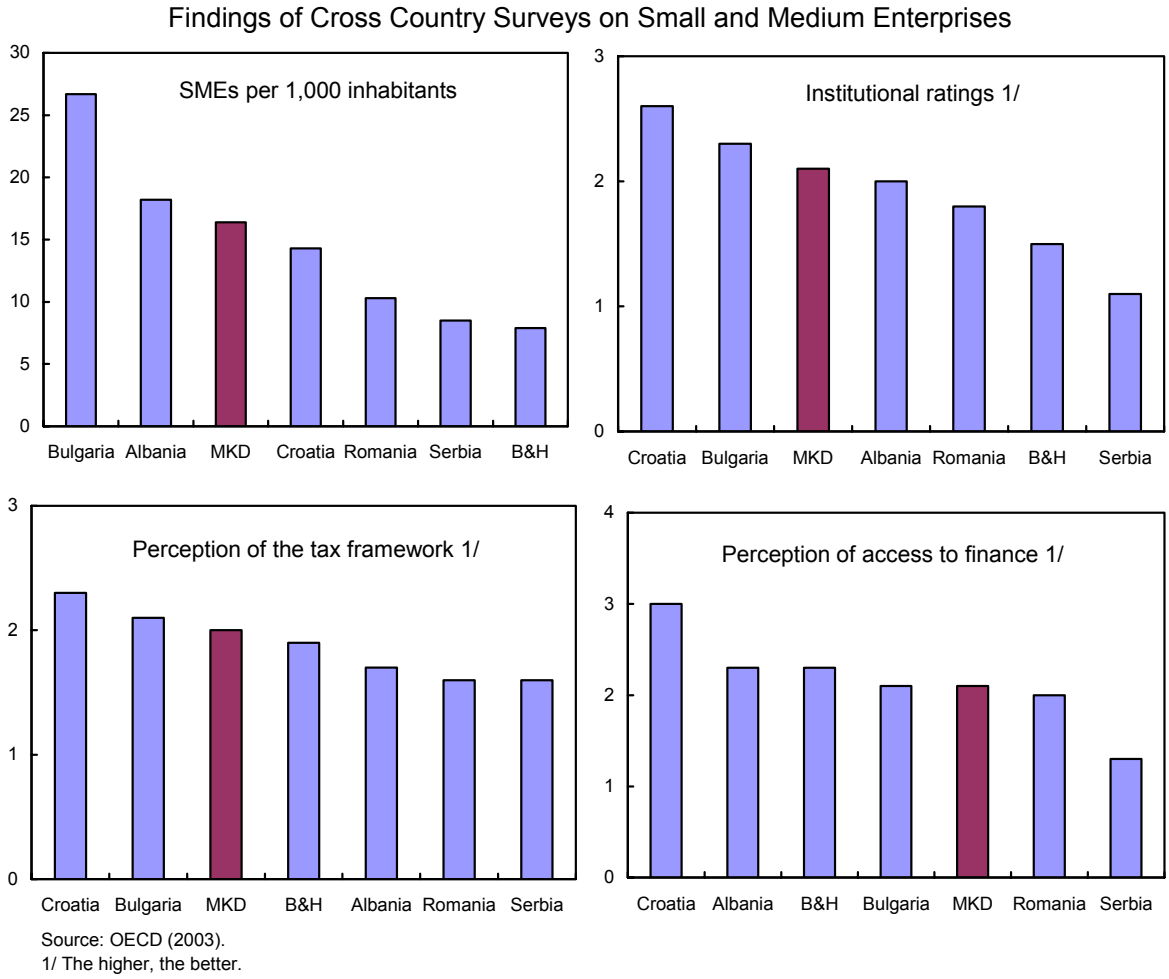
Source: WEO.
1/ CEEC-5: Czech Republic, Hungary, Poland, Slovak Republic and Slovenia.

11. **Small and medium size companies (SME) which have a strong dynamic in employment creation face difficult conditions.** Besides foreign owned companies, newly created SMEs show the strongest dynamic in creating employment (World Bank (2003)). The number of SMEs per capita in FYR Macedonia is in the middle range of other countries in the region, but they face difficulties in doing business, in particular, due to limited access to financing.

12. **FYR Macedonia's large grey economy reduces the efficiency of the labor market.** With the grey economy estimated at around one third to almost one half of the formal sector, wage costs depend on how easily a business can hide its activities. The loss of tax revenues from informal activities causes low quality public services, susceptibility for bribes due to low public wages, and pressure to increase the tax burden on the formal sector—a vicious circle.

13. **Looking at the causes of the large informal sector, the poor judiciary seems to be the major problem.** A judicial system providing reliable enforcement of contracts is considered the most important incentive for formal sector activity (Dabla-Norris (2005)).

UNDP surveys on the public perception of state institutions indicates that the judicial sector is the least trusted institution in FYR Macedonia. While the government prepared for a comprehensive judicial reform by changing the constitution and numerous laws in 2005, implementation has only just started. The state's weak enforcement and inspection activities are another reason for the large grey economy.



Source: OECD (2003).
1/ The higher, the better.

Labor market

14. **Labor market regulations were liberalized in 2005 and are broadly in line with other countries in the region.** As fixed-term employment has proven to be an important source of job creation in transition economies (Rutkowski (2005)), the 2005 labor market reform eased restrictions in this area. The reform also streamlined complicated layoff procedures which were often challenged in courts, causing long delays and unpredictable outcomes. While the labor market reform eased conditions for part-time employment, this is still discriminated against by a minimum social contribution which is based on the average full–time monthly sectoral wage. Consequently, this high social contribution wedge drives

most part-time employment to the informal sector. (While cross-country data on part-time employment is limited, FYR Macedonia's share of official part-time employment seems low at around 5 percent compared to 9 percent in Croatia.) The government is committed to reducing these onerous minimum contributions over time, but the administrative conditions for doing so are not expected to be in place before end-2007.

Cross Country Comparison of Labor Market Indicators 1/

	Difficulty of Hiring Index	Rigidity of Hours Index	Difficulty of Firing Index	Rigidity of Employ-ment	Hiring cost (in percent of wage)	Firing costs (in weeks of wages)
Average Baltics	44	60	50	51	28	28
Average CEEC 5	27	60	34	40	30	27
Average SEEC	59	63	36	53	29	49
Macedonia, prior to refor	61	60	40	54	33	41
Macedonia, post-reform	61	...	40	...	33	22

Source: World Bank Doing Business Database.

1/ The higher the indicator, the more rigid the provision.

15. **While past reforms reduced unemployment benefits and access to early retirement, free health care for the registered unemployed discourages formal sector employment.** Unemployment benefits are in line with other countries in the region except that their duration is somewhat longer than average. After the entitlement for unemployment benefits expires, the unemployment fund pays for health insurance. Alternatively, people with very low incomes can apply for social allowances which also include health insurance.

Cross Country Comparison of Unemployment Insurance Characteristics

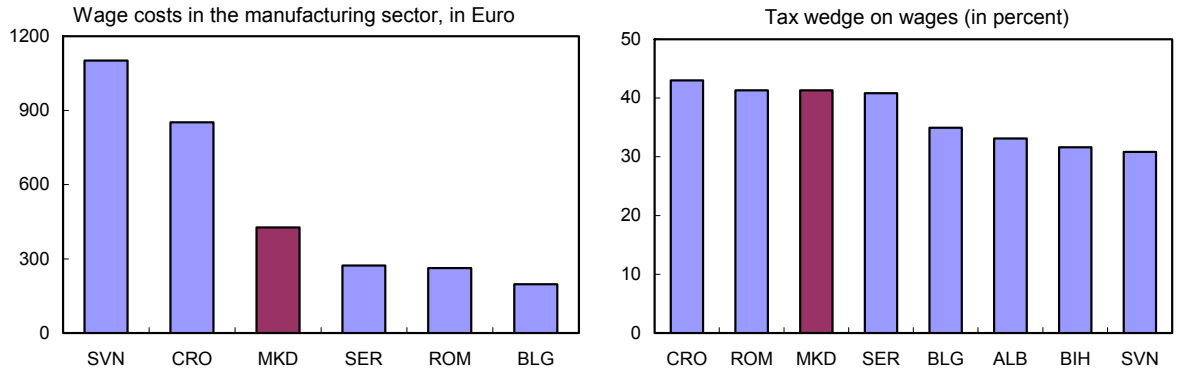
Characteristics	Bulgaria	Croatia	Czech Rep.	Estonia	Hungary	Macedonia	Poland	Russia	Ukraine
Duration of payment	6-12 months	78-312 days	6 months	6 months	3-12 months	3-14 months	12 months	12-24 months	180-360 days
Average benefits in percent of average wage	29	32	30	39	28	37	36	42 (of subsistence level)	22.7

Source: Mojsoska-Blazevski (2006).

16. **Past active labor market policies spending focused on measures with little long-term impact on employment.** Spending for "Branko's Law", a lump-sum wage subsidy of around 70 euros per month paid over 24 months, was equivalent to more than ½ percent of

GDP. While no evaluation is available for "Branko's Law", such programs suffered in other countries from deadweight and substitution effects. Once the legal obligation for employment expired, workers were often laid-off again. In contrast, job counseling services can have a positive impact on employment as can training services, if properly targeted. As the Employment Fund's financial and administrative capacities are already stretched with the administration of health benefits, very little job counseling and training services are provided. Recently, the government has started a public works program in coordination with UNDP but it has received little interest among the unemployed. While public works programs have proven inefficient in bringing back the unemployed into the labor market, they are considered a useful tool in providing minimum income to the long-term unemployed. Also, they could serve as a screening instrument to limit access to unemployment and health insurance (Martin, Grubb (2001)) .

17. **In view of the high unemployment rate, it is surprising that wage costs in FYR Macedonia are elevated compared to other countries in the region.** Except for Slovenia and Croatia which have higher productivity levels, FYR Macedonia's wage costs (defined as gross wages plus employers' social contribution) are the highest in the region (for an analysis of competitiveness see Chapter I). As cross-country wage data for this region are constrained by methodological problems in the LFS, these results have to be interpreted cautiously. However, the high wage costs might be explained by the relatively high tax wedge and the strong position of trade unions in the formal sector. In contrast, the representation of employers' interests suffered in the past from a weak employer's association with mandatory membership. While the rules for the representation of employers' and employees' rights have been liberalized in the 2005 labor market reform, the implementation will take time.

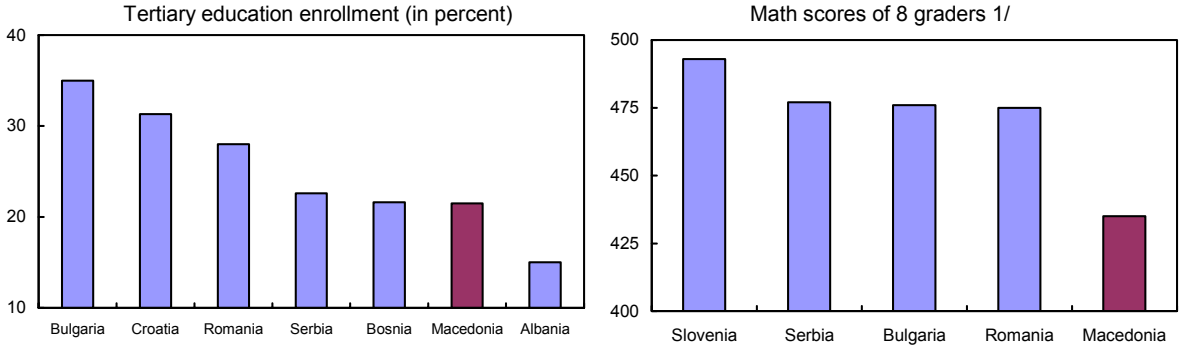


Sources: Labor Force Surveys, ILO, and OECD.

Education system

18. **Compared to other countries in the region, FYR Macedonia's education system is very weak.** Although employment opportunities increase significantly with higher education, enrollment ratios for higher education are lower than in most comparator

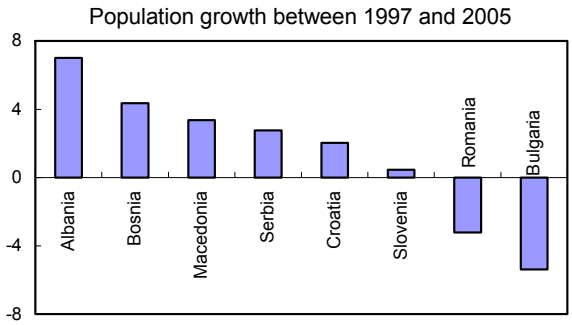
countries. The quality of education is also poor as reflected in test scores which are below other countries of similar income levels. Some test scores also show a deteriorating trend since the late-1990s when FYR Macedonia started participating in international testing. There also seems to be a problem with secondary education which does not provide the skills needed by the labor market (Mojsoska-Blazevski (2006)).



Sources: National Center for Education Statistics (TIMSS); and World Bank.
1/ The international average score is 466.

Demographic factors

19. **Strong population growth contributed to the increase in unemployment.** Despite significant emigration, FYR Macedonia's population is growing at a faster pace than most countries in the region, adding pressure to the labor market. Between 1996 and 2005, the increase in the population slightly exceeded labor force growth. In absolute terms, the increase in the labor force is roughly equal to the increase in the number of unemployed. However, as migration data is very poor, these results need to be interpreted with some caution.



Sources: Labor Force Surveys; and Census.

FYR Macedonia: Labor market developments, 1996-2005

	Change between 1996 and 2005	
	in thousands	in percent
Working age population	172	12
Labor force	80	10
Employed	8	1
Unemployed	72	29

E. What Can Be Done to Reduce Unemployment?

20. **Any long-term solution for FYR Macedonia's unemployment problem is conditional on enhancing growth.** Only a permanent turnaround in growth will create conditions for long-term employment sufficient enough to absorb the growing work force

and reduce unemployment. However, in view of the structure of unemployment—mainly long-term and unskilled—the natural unemployment rate will remain high over the medium-term. Also, it might take quite some time until GDP growth will translate into tangible employment growth in view of the still significant hidden unemployment. This is underscored by recent developments where after several years of relatively satisfactory GDP growth, unemployment finally began to decline in 2005.

21. **The government should create incentives for formal sector activities**. Strengthening conditions for formal sector employment will enhance the efficiency of the labor market and create room for reducing taxes and improving public services. They will also particularly benefit employment creating foreign investors who, as outsiders, usually depend more on the conditions in the formal economy. In particular, the following measures should be considered:

- **Implementation of the judicial reform is crucial for bringing economic activity back into the formal sector.** Building efficient judicial institutions will require the reallocation of staff and resources.

- **A reduction in the tax wedge could be financed by an increase in the VAT rate.** As the VAT rate is somewhat lower than in other countries of the region, higher VAT revenues could be used to reduce the tax burden on wages. The macroeconomic incidence of taxing consumption and taxing wages is identical, but as the VAT is collected indirectly, it has a higher probability of also covering at least part of the value added of grey economy sales.

- **The planned merger of PIT and social contributions by 2008 will reduce the administrative burden for the formal sector.** As the simplification of social contribution and PIT collection will free resources for enforcement and audit, this measure will provide funding for lowering the tax wedge. It is also a precondition for abolishing the minimum social contribution which currently drives part-time employment into informality.

- **The government should strengthen audit and inspection activities, including the labor inspectorate.** As businesses expressed concerns that inspection and audit often suffer from corruption, the government should take measures to strengthen governance in these institutions so that grey economy companies can no longer bribe inspectors.

- **Measures to reduce red-tape should be accelerated.** The government has already made efforts in reducing red-tape, including the one stop shop for company registration. However, progress in abolishing the large number of licenses has been

slow and should be accelerated. As SMEs suffer the most from red-tape and the corruption associated with it, they will benefit particularly from this measure.

22. **Subsidies and tax investment incentives are not efficient tools for attracting foreign direct investment.** The importance of foreign investment for growth and employment should not stop the government from moving ahead with plans to abolish investment schemes which erode the corporate income tax base and create room for tax evasion. Current practices of providing subsidized land to foreign investors are non-transparent and come with large fiscal costs, but play only a minor role in attracting investment.

Survey among business executives on considerations when investing abroad

Infrastructure	10
Trained workers	9
Regulatory environment	9
Accessibility by air	7
Financial incentives	5

Source: McKinsey, 2002

23. **In order to create conditions that facilitate the transmission of GDP growth into employment growth, the government should consider institutional changes in the labor market in the following areas:**

- **Health insurance provision to the unemployed should be delinked from registration status.** The government has several reform options. For example, the current insurance based system could be replaced with a basic health care system for all citizens which would be financed by tax revenues. This would reduce the tax wedge, free the resources at the Employment Fund for job intermediation, and ensure basic health services for all citizens. Alternatively, if the government wants to keep the insurance based system, free health insurance should no longer be granted automatically for all unemployed, but limited to low-income households after unemployment benefits expire.

- **Public works programs should be used for screening unemployed from grey economy workers.** They could also be used as a screening instrument for eligibility to unemployment benefits.

- **Unemployment insurance benefits could be reduced.** There is fairly general support in the literature that benefits matter for finding a job—exit rates from unemployment benefits tend to increase as workers approach the time when benefits are due to expire. However, there is little evidence over the magnitude of the impact (Fredriksson, Homlund, 2003). In view of the uncertainties about the incidence, the small number of unemployment benefit recipients, and the consistency with the level of unemployment benefits in the region, a moderate cut in the duration of unemployment benefits should be considered. Alternatively, the government could consider the gradual reduction of benefits over the duration of unemployment. This

reform should be supplemented by a reform of social allowances so that the unemployed below a certain income level receive basic benefits.

24. **The government should develop a comprehensive strategy for enhancing education.** For a small, land locked country like FYR Macedonia with few natural resources, a well trained labor force is a major asset in attracting investment and increasing per capita income over the long-term. The government should therefore give priority to enhancing the quality of the school system and providing incentives for training. The on-going Public Expenditure Review of the World Bank will be an opportunity to identify weaknesses in the education system and to develop a reform strategy.

F. Conclusion

25. **Many different factors are responsible for FYR Macedonia's high unemployment rate.** Policies to reduce unemployment will therefore need to be broad based, including pro-growth oriented policies, incentives for formal economy activities, and measures to enhance the institutional framework in the labor market. A good start has been made with the moderate recovery of growth rates since 2004, the reform of the labor market, and measures to free resources for well–targeted active labor market policy. Areas that have not been in the center of the government's attention include the reform of the education system, high wage costs, and the coordination of unemployment benefits with the social system.

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IV. Financial Intermediation in FYR Macedonia[24]

A. Introduction

Summary of Conclusions and Policy Recommendations

1. **There is considerable evidence that low levels of financial intermediation are an obstacle to economic growth.[25]** Financial intermediation is an essential part of private sector development. Low and inefficient financial intermediation can adversely affect savings and investment behavior, and thus hinder economic activity. Given FYR Macedonia's weak growth experience, it is important to examine the state of financial intermediation and the factors that may be negatively affecting bank behavior.

2. **In terms of financial deepening, FYR Macedonia does not compare favorably with other countries in the region.** Regional comparisons of financial intermediation indicators—ratios of broad money, private sector credit and bank capital to GDP—among other central and eastern-European countries (CEEC) demonstrate that the degree of monetization and credit provision in FYR Macedonia remain below the CEEC average (Figure 1).

3. **Although declining, spreads between lending and deposit rates remain relatively high, reflecting this weak state of financial intermediation**. FYR Macedonia's ex-ante lending-deposit interest rate spread, albeit converging in line with the CEEC average, remains around 2 percentage points above OECD levels, which is somewhat surprising given its recent history of low inflation and macroeconomic stability. Advertised retail lending rates have also been high, averaging about 20 percent over the last decade.

4. **This chapter examines the main factors behind this low level of intermediation and relatively wide interest rate spreads.[26]** To this end, after discussing some of the system's key financial, institutional and legal framework characteristics, an accounting decomposition of interest rate spreads is undertaken for the system as a whole as well as for various sub-sets of banks. Finally to better gauge differences among banks, panel regressions of individual bank lending rates, spreads, and credit growth are estimated.

5. **A number of preliminary conclusions can be drawn from the results of this study:**

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[24] Prepared by Kevin Ross and Alessandro Giustiniani.

[25] See Levine (2004).

[26] Since non-bank institutions comprise less than ten percent of the financial sector, this chapter focuses on financial intermediation of the banking system.

- **Persistent weakness in banks' balance sheets, the legal environment, credit discipline and, most importantly, the implementation of the legal framework provide the basic rationale for the low level of financial intermediation.**

- **Improvements in banking sector competition and efficiency—even as foreign banks have entered the market—appear to be very slow in the making**. High operating costs, and the heavy, albeit falling, burden of inherited non-performing loans (NPLs) continue to prop up interest rates and spreads.

- **Other factors that tend to increase bank costs and could therefore cause an increase in spreads—e.g., corporate taxes, reserve requirements on banking deposits, and deposit insurance—do not appear to have substantially retarded financial intermediation.**

- **As banks have grown in size and gained some economies of scale, they have tended to lower interest rates and spreads.**

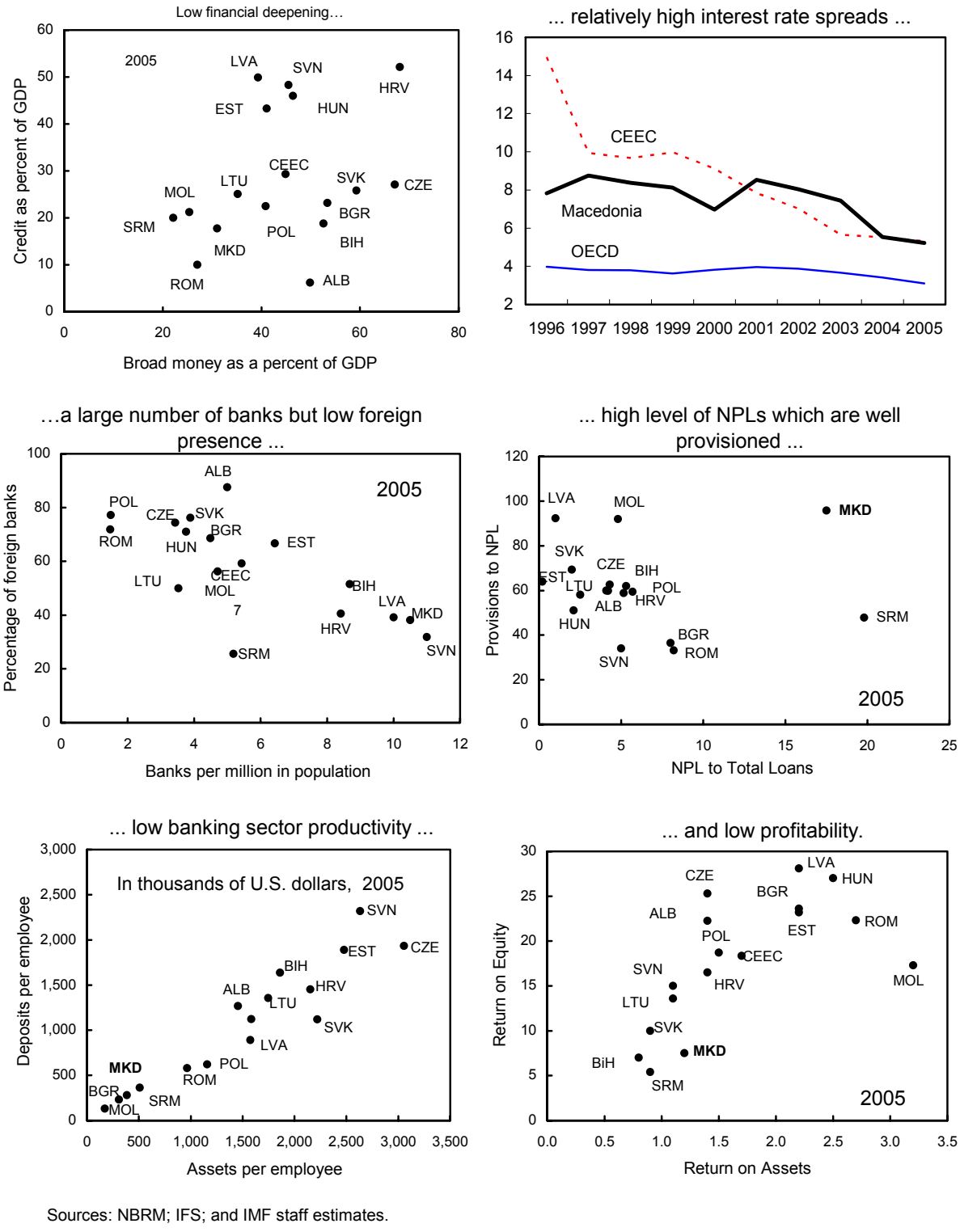
- **Although banks appear to be, on average, well capitalized and liquid, this does not seem to have affected lending rates.**

6. **These conclusions provide support for policy recommendations that could improve financial intermediation.** Macedonian banks seem to operate in an environment with significant economies of scale, although with limited competition they tend to experience high operating costs. Competition policy that allows banks to grow and rationalize their overhead costs, for example through mergers and acquisitions and/or foreign entry, is likely to help reduce lending rates and spreads. This policy, however, should at the same time avoid any abuse of dominant positions, since banks with larger market share seem to be able to charge higher lending rates and spreads. The significant explanatory power of NPLs indicates the need for enhancing credit information sharing, banks' risk management policies, and prudential supervision.

B. A Few Stylized Facts of the Banking System

7. **Despite the sizeable number of banks, the Macedonian banking sector is highly concentrated with a limited degree of market competition.** With 20 banks and 14 saving houses, Macedonia has one of the highest numbers of credit institutions in relation to population in the region. However, market structure indicators, such as the Herfindahl-

Figure 1. Banking Sector Comparisons



Sources: NBRM; IFS; and IMF staff estimates.

Hirschman Index (HHI)[27] and the share of total bank assets held by the five largest institutions, suggest that the banking market in FYR Macedonia is somewhat more concentrated than in other countries in the region (Table 1). Calculations of the Panzar-Rosse H-statistics suggest a relatively low level of competition.[28]

8. **Foreign bank presence, compared to other Eastern European countries, is limited and mostly not made up of first-tier banks.** Around 48 percent of total assets are controlled by foreign majority owned banks. The foreign banks are from neighboring countries─e.g., Bulgaria, Greece, Turkey, and Slovenia─and, in some cases, appear to service

Table 1. Banking Market Concentration Indexes in Selected Countries, 2001-05

	Share of the 5 largest credit institutions In total assets				Herfindahl-Hirschman Index			
	2001	2002	2003	2004	2001	2002	2003	2004
Czech Republic	68.4	65.7	65.8	64.0	1,263	1,199	1,187	1,103
Estonia	98.9	99.1	99.2	98.6	4,067	4,028	3,943	3,887
Latvia	63.4	65.3	63.1	62.4	1,053	1,144	1,054	1,021
Lithuania	87.6	83.9	81.0	78.9	2,503	2,240	2,071	1,854
Hungary	56.4	54.5	52.1	52.7	892	856	783	795
Macedonia, FYR	**72.1**	**73.6**	**76.1**	**76.3**	**1,735**	**1,666**	**1,756**	**1,689**
Poland	54.7	53.4	52.3	50.2	821	792	753	692
Slovenia	67.6	68.4	66.4	64.1	1,582	1,602	1,496	1,425
Slovakia	66.1	66.4	67.5	66.5	1,205	1,252	1,191	1,154
Average CEEC	70.4	69.6	68.4	67.2	1,673	1,639	1,560	1,491
Memorandum items:								
Euro area	39.1	39.4	40.5	40.5	544	553	581	600
EU 25	37.8	38.3	39.8	40.2	506	521	549	569

Sources: ECB, "EU Banking Structures," October 2005; NBRM; and Fund staff estimates.

[27] The HHI is the sum of squares of the market shares (s_i) of all firms in a sector ($HHI = \Sigma_i s_i^2$, i = 1, . . ., N). It takes into account the relative size and distribution of firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. When HHI assumes a value above 1,800, the market is highly concentrated.

[28] The test, based on a reduced-form equation of revenue at the bank level, estimates the sum of elasticities of banks' revenue with respect to input price changes, which is defined as the H-statistic. Under conditions of monopoly, the H-statistic assumes negative values whereas in case of perfect competition it is equal to 1. Values of the H-statistic ranging between 0 and 1 indicate that the market is characterized by conditions of monopolistic competition. The results for FYR Macedonia were not fully conclusive given stability problems in the model specification, but tended to be negative and significantly different from zero.

mainly their nationals' business interests. So far the country has been unable to attract top-notch banks, likely due more to the overall political and economic environment than to the state of the banking system. As a consequence, the transfer of know-how, innovations, governance and other international best practices (risk management, etc.) from abroad remains slow. Recently, however, there are signs that a number of foreign banks are interested in purchasing existing banks—who have also signaled their willingness to be sold. Interest in merger activity, which was relatively strong in 2000-01, may be picking up again in 2006.

9. **While the situation is improving, banks' intermediation activity is hindered by the legacy of a substantial amount of non-performing loans as well as the large share of other non-earning assets.** Regional comparisons indicate that the Macedonian banking system is burdened by an above–average stock of NPLs and corresponding provisions. As of end-2005, banks' NPLs amounted to around 18 percent of total loans and some 97 percent of them were provisioned (well above the regional average). This relatively high level of provisioning partially reflects difficulties in the enforceability of foreclosures as well as the relatively low likelihood of collateral collection.[29] As a matter of fact, on average, foreclosed assets amount to 20 percent of banks' own resources, and in the case of 5 banks are well above 50 percent. In 2005, the share of non-earning assets (foreclosed and fixed assets) ranged between 1.5 and almost 50 percent of banks' total assets, with an average close to 8 percent.

10. **The burden of this legacy together with low banking sector productivity and high operational costs have worked to limit banks' profitability.** FYR Macedonia's indicators of banking sector productivity, such as the amount of deposits and assets per employee, are below the regional average. This tends to suggest that very little consolidation, cost rationalization, and technological progress have taken place in the system to improve productivity.[30] As a result, profitability ratios—measured by the return on assets and the return on equity—while improving in recent years, are still below regional averages.

11. **Relatively low financial deepening also reflects limited loan making opportunities, the attractiveness of central bank bills, and surplus liquidity.** Burdened with high NPLs, banks have been cautious in expanding their lending activity taking also into account the lack of good investment opportunities. In addition, several small banks are "pocket banks" of enterprise groups or individuals, which use them for treasury operations,

[29] According to NBRM regulations, banks can write off loans only after they have exhausted all collection efforts or on the basis of a formal court order. Since the process is very lengthy, the stock of NPLs and associated provisions tends to be inflated.

[30] Between 2000 and 2005, while the number of banks declined from 23 to 20, employment increased by more than 20 percent.

as sources of cheap liquidity, and equity investment. As a result, the aggregate banking system has been in a position of structural liquidity surplus since 2001. Under the current pegged exchange rate regime, this structural liquidity surplus must be continually removed through the issuance of central bank bills to the banks at relatively high interest rates. In terms of commercial bank asset portfolios, these central bank bills assets compete directly with loan placements to consumers and enterprises.

C. The Institutional and Legal Framework

12. **Financial intermediation has been hampered by a weak institutional and legal framework.** Table 2 presents a number of financial sector reform and transparency indices which provide a flavor of the level of financial sector development and credit environment. In general, this scorecard suggests there are a number of framework deficiencies that have deleterious effects on financial intermediation, causing higher bank lending rates and

Table 2. Transition Country Financial Sector Reform Index

	Banking sector reform 1/	Non-bank financial institutions 1/	Secured transactions law 2/	Quality of insolvency regime 3/	Implementation gap 4/	Transparency (score) 5/	Transparency (rank) 5/
Albania	2.7	1.7	Advanced	High	-28	2.4	126
Bosnia Herzegovina	2.7	1.7	Inefficient	High	-22	2.9	88
Bulgaria	3.7	2.3	Advanced	High	-35	4.0	55
Croatia	4.0	2.7	Inefficient	High	-27	3.4	70
Czech Republic	4.0	3.7	Inefficient	Medium	-20	4.3	47
Estonia	4.0	3.3	Inefficient	Medium	-10	6.4	27
Hungary	4.0	4.0	Advanced	Low	3	5.0	40
Latvia	3.7	3.0	Advanced	Low	-19	4.2	51
Lithuania	3.7	3.0	Advanced	Very Low	2	4.8	44
Macedonia	**2.7**	**2.0**	**Some defects**	**Medium**	**-21**	**2.7**	**103**
Moldova	2.7	2.0	Some defects	High	-22	2.9	88
Poland	3.7	3.7	Some defects	Medium	-2	3.4	70
Romania	3.0	2.0	Advanced	High	-17	3.0	85
Serbia Montenegro	2.7	2.0	Some defects	High	-13	2.8	97
Slovak Republic	3.7	2.7	Advanced	Medium	-37	4.3	47
Slovenia	3.3	2.7	Inefficient	Low	12	6.1	31
Average CEEC	3.4	2.7	Some defects	Medium	-16	4.0	64

Sources: EBRD Transition Report, 2005; and Transparency International, 2005.

1/ Scores range from a high of 4 (movement toward BIS standards), to a low of 1(little progress beyond establishment of a 2-tier system).
2/ Based on EBRD's 10 core principles of secured transactions. Scores are advanced, some defects, inefficient, malfunctioning.
3/ Scores range from very high, high, medium, low, to very low.
4/ Difference between insolvency legislation effectiveness and extensiveness scores. A larger negative value indicates capacity to implement has lagged behind quality of legislation.
5/ Score relates to perceptions of the degree of corruption as seen by business people and country analysts and ranges between 10 (highly clean) and 0 (highly corrupt). The survey encompasses 159 countries.

spreads. For example, FYR Macedonia scores below average in bank and non-bank sector reform, indicating significant deficiencies in meeting BIS standards in bank lending and supervision, and IOSCO standards in securities laws and regulations.

13. **The reform scorecard also reports some defects in Macedonia's current legislation governing immovable assets.** Collateral laws and the practices relating to secured transactions directly affect the willingness of institutions to provide credit and the terms of the loan. The EBRD survey on secured transactions indicates that while considerable reform efforts have been undertaken, the system falls short of the requirements of a modern market for secured credit.[31] In particular, survey results indicate that while a secured creditor could recover a sizeable amount of any debt, the time for successful enforcement and the lack of simplicity in the legal recovery process are major drawbacks. The weakness of courts, corruption, unreliability of the enforcement process, as well as the complexity and cost of the registration process are also considered to be limitations. Amendments to the collateral law in early 2005 appear to have made some improvement in the enforcement of collateral, though anecdotal evidence from banks suggests still more work needs to be done.

14. **While a new Bankruptcy Law should improve the quality of the country's insolvency regime, implementation of the law must be strengthened in order to improve financial intermediation.** An effective insolvency regime helps to enhance the credit culture—i.e., improving credit discipline and encouraging the payment of obligations as they come due—and hence to promote financial intermediation. From the 2004 survey, the insolvency legislation in Macedonia appears to be in only average compliance with OECD best practices. However, a new Bankruptcy Law, which passed in late-2005, contains a number of improvements. For example, strict timelines were imposed, jurisdictions between trustees, creditors and judges were defined, trustee training and accreditation strengthened, and procedural safeguards imposed. Nevertheless, FYR Macedonia seems to lack the means or the capacity to implement insolvency legislation. The implementation gap—the difference between the EBRD's Legal Indicator Survey on insolvency legislation and their assessment of implementation of the law—remains high.

D. Interest Rate Spread Decompositions

15. **The various cost and non-interest income factors determining interest rate spreads can be assessed through accounting decompositions.** Using data from the balance

[31] See "Enforcing Secured Transactions in Central and Eastern Europe: An Empirical Study", EBRD 2004.

sheet and income statement, the interest rate spread can be decomposed into the following components:[32]

$$i_L - i_D \equiv rr + p + oc + prov + tax + d - nii + e\,.$$

where i_L equals the average effective interest rate charged on loans, i_D equals the average effective interest rate charged on deposits, rr equals the cost of holding required reserves, and e is a residual reflecting errors that arise from combining flow and stock data. The other factors—profit margin (p), overhead costs (oc), provisions (prov), taxes (tax), deposit insurance costs (d) and non-interest income (nii)—are all calculated relative to deposits. The identity indicates that spreads will increase as bank costs—from reserve requirements, operations, provisions, taxes and deposit insurance—and profits increase, and fall with higher amounts of non-interest income.

16. **The quality of data can, however, affect the analysis.** Interest rate spreads can be calculated ex-ante from published bank offer rates for loans and deposits, or ex-post in effective terms from income and balance sheet data. As mentioned above, this study uses effective interest rate data. In many instances it is difficult to discern the true level of interest bearing assets and liabilities to use in the calculation of the effective lending and deposit interest rates. In addition, data are compiled on an accrual basis. In many periods, individual banks recorded negative interest revenues in order to reflect the fact that interest revenue accrued in the past would not be realized since loans turned non-performing. These timing inconsistencies coupled with the recapitalization of a major bank in 2001 can cause large residuals to fall out of the decompositions. These data difficulties also highlight the need to improve accounting practices—for example, moving to IFRS—in line with IMF and World Bank recommendations.[33]

17. **The accounting decomposition of interest rate spreads was calculated for the total banking system and for various subsets of banks—e.g., the three largest banks versus the rest of the system and majority foreign owned versus domestic banks—in 2001-05 (Table 3)**. The calculations lead to the following observations:

- **Interest rate spreads have declined for the 3 largest banks as well as for the majority foreign owned banks**. Smaller and domestically owned banks have actually seen increases in effective spreads.

[32] See the Appendix for a detailed derivation.

[33] A full economy-wide use of IFRS should increase the transparency of financial accounts and enhance bank lending activities.

Table 3. Macedonia: Interest Rate Spread Decompositions

	All banks			3 largest banks			Rest of banking system			Foreign banks			Domestic banks		
	2001	2003	2005	2001	2003	2005	2001	2003	2005	2001	2003	2005	2001	2003	2005
Interest margin	7.99	6.02	6.03	9.81	5.73	5.58	2.67	5.59	6.88	11.07	4.44	5.78	5.45	7.33	6.40
Reserve requirements	1.64	1.17	1.02	1.74	1.09	0.96	1.52	1.34	1.13	1.84	0.93	1.00	1.54	1.39	1.05
Deposit insurance	0.28	0.44	0.36	0.21	0.46	0.38	0.19	0.10	0.29	0.19	0.38	0.30	0.23	0.49	0.41
Operational costs	7.84	6.66	5.89	5.45	5.42	4.62	8.89	2.59	9.20	5.61	6.39	6.07	7.19	6.89	5.70
Provisions	3.99	3.22	2.42	3.45	2.12	2.72	3.67	1.63	1.64	3.84	2.31	2.67	3.20	4.02	2.16
Profit	-0.86	0.62	1.69	-1.96	0.91	1.29	2.02	-0.07	2.74	-2.96	0.51	1.41	1.20	0.71	1.99
Taxes	0.16	0.11	0.25	0.05	0.04	0.15	0.40	0.08	0.51	0.07	0.09	0.17	0.22	0.13	0.32
Non-interest income	6.24	7.11	5.62	5.61	5.68	5.05	9.32	2.84	7.12	5.81	6.18	5.05	7.46	7.94	6.23
Residual	1.18	0.90	0.03	6.48	1.37	0.50	-4.69	2.77	-1.50	8.29	-0.01	-0.80	-0.66	1.63	0.99
Memorandum item:															
RoA	-0.59	0.43	1.21	-1.53	0.71	1.01	1.05	-0.05	1.60	-2.10	0.35	1.00	0.80	0.49	1.43

Source: Author's calculations from income statement and balance sheet data of the Macedonian banking system.

- **Across all groups of banks, operational costs have been the main driver of interest rate spreads**. For the banking system as a whole, overhead costs account for almost the whole spread with the other factors virtually netting out (for example, in 2005 they added about 5.9 percentage points to a spread of 6.0 percent). Compared with the rest of the system, the 3 largest banks appear to have made the greatest headway in reducing these costs over time. Surprisingly, there is little difference in the impact of operational costs on spreads between foreign and domestically owned banks.

- **Similarly, provisions have had a substantial impact on banks' spreads, adding between 2 to 3 percentage points, given the high level of NPLs**.

- **The remaining factors—profit margins, taxes, deposit insurance, and reserve requirements—have added relatively little to interest rate spreads**. Interestingly, smaller and domestically owned banks seem to have been able to enjoy higher profit margins, perhaps in part, owing to limited competition.

- **Sizable amounts of non-interest income, especially associated with extraordinary transactions, have helped to reduce interest rate spreads by about 6 to 8 percentage points**. Smaller and domestically owned banks tended to rely more heavily on this type of income.

E. Panel Regressions on Spreads, Lending Rates and Credit Growth

18. **Panel regressions using individual bank data can provide additional insights on the variability of spreads, lending rates, and credit growth.** While the spread decomposition presented a simple accounting relationship, regression analysis can shed some light on banks' behavior in setting lending rates, spreads and in supplying credit to the economy. In particular, regression analysis allows one to estimate and test if high liquidity and capital adequacy ratios, which characterize Macedonian banks, have had an effect on these dependent variables. This type of analysis was not possible using a simple accounting decomposition of spreads.

19. **A standard regression specification—including both bank specific and more general non-bank economic control variables—was used in the analysis.** For comparison purposes, this specification is very similar to Čihák's (2004) analysis of Croatian interest rates and Demirgüç-Kunt and Huizinga's (1999) cross country study on interest margins. In the panel regressions, lending rates, spreads and credit growth are a function of the bank specific factors as well as general macroeconomic factors. The first group of explanatory variables encompasses: (i) log of banks' total assets and market share (individual bank assets

over total system assets) to check whether bank size matters;[34] (ii) non-performing loans over total loans as a proxy of default risk; (iii) liquid bank assets over total assets as an inverse measure of liquidity risk; (iv) capital adequacy ratio, which summarizes banks' financial soundness; and (v) an ownership dummy variable to test whether the behavior of foreign and domestically owned banks differ. The explanatory variables characterizing the environment are money market interest rates, which capture the monetary policy stance, and industrial production, as a proxy of domestic economic activity. The regressions were undertaken on a panel data set of quarterly observations for 20 Macedonian banks covering the period 1997Q4 to 2005Q4.[35]

20. **The results of the panel regressions indicate that the specified models explain most of the bank-by-bank variability** (Table 4)**.** The R-squared statistics indicate that approximately 70 to 90 percent of individual bank variability in lending rates, interest spreads, and credit growth can be explained by the bank specific and macroeconomic factors. All three equations include autoregressive errors, suggesting substantial lags in the relationships. A detailed look at the coefficient estimates suggest the following:

- **Larger banks generally have lower interest rate spreads and lending rates than smaller banks, reflecting economies of scale**. For example, if a bank's balance sheet doubles, the estimate suggests that the lending rate declines by more than 2 percentage points and the spread narrows by about 1.5 percentage points.[36]

- **On the other hand, there is some evidence that as banks increase their market share, bank spreads and lending rates increase**. Spreads and lending rates are estimated to increase by about 0.2 to 0.3 of a percentage point for every percentage point increase in market share.

- **Banking spreads and lending rates are higher as the non-performing loan ratio increases**. Higher NPLs coupled with higher provisioning and monitoring costs increases the costs of banks and this is reflected in the spreads—by about ¼ of a percentage point for every percentage point increase in NPL ratios.

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[34] While market size (defined by total assets) and market share (defined as individual bank assets over total system assets) have a high group covariance, there are a number of banks that made substantial shifts in market share while not experiencing a marked change in asset size. Including both variables allows one to test if these expanding market shares—controlled for bank size—gave banks the power to raise spreads and lending rates.

[35] The estimation is based on a feasible generalized least squares specification which corrects for cross section heteroskedasticity. The standard errors are based upon variances and covariances that are robust to general heteroskedasticity.

[36] The figure is obtained as 0.69 times the coefficient in Table 4, since $\log(2x) = \log 2 + \log x \approx 0.69 + \log x$.

- **Foreign ownership does not appear to have a statistically significant impact on the spreads, lending rates or the provision of private sector credit.** These results contradict the usual findings in the literature regarding foreign bank presence in transition countries. For example, Bonin, Hasan and Wachtel (2005) among many others, have found that majority foreign owned banks tend to be more efficient and have a positive effect on competition, which should lower interest rates and increase credit growth over time.[37]

- **Liquidity and capital adequacy ratios also do not have a statistically significant impact** on spreads, lending rates or the provision of private sector credit. This may reflect the fact that the high levels of banks' liquidity and solvency are the result of the limited role of banks in intermediation, rather than strong profitability or fresh injections of capital.

- **As expected, private sector credit growth negatively responds to increases in lending rates**. Private sector credit growth drops by close to ¾ of a percentage point for every percentage point increase in lending rates. Credit growth is also lower for larger banks (though the result is not statistically significant) and banks with higher stocks of NPLs.

- **Changes in spreads, lending rates and credit growth do depend upon macroeconomic conditions in the economy**. The significant coefficient assumed by the money market rate implies that the transmission mechanism of monetary policy is effective. Similarly, the positive impact of industrial activity on lending rates and spread is consistent with the normal working of demand for and supply of loanable funds.

[37] Čihák (2004) also found that foreign banks in Croatia generally have lower interest rate spreads than domestic banks.

Table 4. Macedonia: Lending Rates, Spreads, and Credit Growth Regressions 1/
(Estimated coefficients and standard errors)

Dependent Variable	Lending Rate	Lending Rate - Deposit Rate	Private Sector Credit Growth
Bank Specific Factors			
Lending Rate	-	-	-0.68*
			(0.26)
Deposit Rate	0.33*	-	-
	(0.13)		
Log (Total Assets)	-3.22*	-2.03***	-10.45
	(1.17)	(1.17)	(8.02)
Market Share	0.30**	0.20***	0.78
	(0.12)	(0.12)	(0.86)
NPLs in Total Loans	0.21*	0.22*	-1.28*
	(0.02)	(0.02)	(0.16)
Liquidity Ratio	0.03	0.07	-0.04
	(0.32)	(0.35)	(0.64)
Capital Adequacy	0.03	-0.24	-0.24
	(0.33)	(0.33)	(0.27)
Foreign Bank	-0.47	-0.14	6.74
	(0.91)	(0.91)	(5.85)
Macroeconomic Factors			
Money Market Interest Rate	0.17*	0.13**	-0.82***
	(0.06)	(0.06)	(0.43)
Industrial Production	0.02*	0.02*	-0.07
	(0.01)	(0.01)	(0.06)
AR(1)	0.79*	0.78*	0.75*
	(0.02)	(0.03)	(0.03)
Constant	53.54*	33.88***	21.75***
	(17.81)	(17.63)	(12.20)
R-square weighted	0.89	0.80	0.68
R-square unweighted	0.53	0.49	0.74
No. of observations	572	571	477

Source: Author's calculations from NBRM data.
1/ Estimated using feasible GLS specification assuming presence of cross-section heteroskedasticity.
* Significant at 1 percent level
** Significant at 5 percent level
*** Significant at 10 percent level.

Appendix[38]

The consolidated income statement of commercial banks defines profit before taxes (P) as interest income (II) plus non-interest income (NII), minus interest expense (IP), operating cost (OC), provisions for loan losses (Prov), taxes (Tax) and deposit insurance (DI). This identity can be rearranged and expressed as the interest margin, which is the difference between interest income and interest expense:

$$II - IP \equiv OC + Prov + P + Tax + DI - NII$$

Dividing this expression by average deposits (D) as a scaling factor, and using average loans (L) and assets (A), the following expression results:

$$\frac{II}{L} * \frac{L}{D} - \frac{IP}{D} \equiv \frac{OC}{D} + \frac{Prov}{D} + \frac{P}{A} * \frac{A}{D} + \frac{Tax}{D} + \frac{DI}{D} - \frac{NII}{D}.$$

Since $\frac{L}{D} \equiv 1 -$ required reserves ratio (rr), and interest incomes and expenses are average lending rate (i_L) and deposit rate (i_D) times the volume of loans and deposits, respectively, the resulting equation for the interest rate spread is:

$$i_L - i_D \equiv rr * i_L + RoA * \frac{A}{D} + \frac{OC}{D} + \frac{Prov}{D} + \frac{Tax}{D} + \frac{DI}{D} - \frac{NII}{D} + e$$

where

Return on assets (RoA) $= \frac{P}{A}$,

i_L = average interest charged on loans,

i_D = average interest charged on deposits, and

e = a residual reflecting items not taken into account, errors that arise from combining flow and stock data, as well as the simplifying assumption that loanable funds consists of deposits net of required reserves.

The equation indicates that spreads will increase as bank costs—from reserve requirements, operations, taxes and deposit insurance—and profits increase, and fall with higher amounts of non-interest income.

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[38] The derivation in this appendix is based directly on IMF (2004).

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