# EXPORT PERFORMANCE AND EXTERNAL COMPETITIVENESS IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

## EVA GUTIERREZ
International Monetary Fund

**Abstract**
This paper reviews a broad set of indicators of competitiveness in the Macedonian economy and estimates the equilibrium real effective exchange rate (REER) using different methodologies. Although the REER is broadly in equilibrium at present, structural factors are found to hamper competitiveness. 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.

*Corresponding Address:* 700 19th St Washington DC 20431, USA
e-mail: egutierrez@imf.org.

## 1. Introduction

Sustaining faster growth and reducing unemployment in a small open economy like the former Yugoslav Republic of Macedonia depends on improving export perform-ance. 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.

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). Economic theory suggests that real exchange rate overvalu-ation with respect to its equilibrium level reduces the incentives and ability of pro-ducers to compete in foreign markets since a substantial portion of the production costs is paid in domestic currency, a hypothesis confirmed by empirical evidence. For example Fernández –Arias *et al*. (2004) find that an overvaluation of 10 percentage points is associated with a 6 percent decrease in total exports. 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 competitive-ness can be referred to as "price competitiveness" and "structural competitiveness."[1]

This paper concludes that while the level of price competitiveness is broadly appropriate, FYR Macedonia faces important structural competitiveness problems. The paper is organized as follows: Section II describes the trends in the current ac-count balance and external vulnerabilities; Section III analyzes export performance; Section IV uses different approaches to assess competitiveness, including estimating the equilibrium real exchange rate; Section V presents conclusions.

## 2. Current Account Balance and External Vulnerabilities

For more than a decade economic growth has been sluggish in FYR Macedonia (Ta-ble 1). Weak economic activity and high unemployment rates have kept inflation moderate in a context of mostly prudent fiscal policies.

In this environment, large and persistent current account deficits in FYR Mac-edonia have pointed to a competitiveness problem, although recent improvements have eased these concerns. During 1995–2004, the current account deficit averaged

---

1. Competitiveness is an elusive concept, with many definitions in the economic 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 that meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long-term.

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 2000–04, imports increased by almost 10 percent of GDP. In 2005, the current account deficit fell 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 suggest an improvement in competitiveness.

**Table 1.** Selected Economic Indicators. Period Averages

|  | 1995–99 | 2000–05 | 1995–2005 |
|---|---|---|---|
| Real GDP growth | 1.8 | 1.9 | 1.9 |
| Inflation (average) | 3.9 | 2.5 | 3.1 |
| Unemployment rate | 33.7 | 34.2 | 34.0 |
| Central Government balance (percent of GDP) | -1.3 | -3.5 | -2.5 |

*Source:* IMF, World Economic Outlook

As a result of the large current account deficits, external vulnerabilities have increased during the past ten years, although external debt levels remain manageable. During 1995–2004, 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.[2] While capital inflows recovered from 2004 onward, the decline in the coverage ratio was only reversed in 2005, due to the sizable improvement in the current account deficit.

## 3. Export Performance

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 (Figure 2). However, the political crisis of 2001 resulted in a severe contraction in output and exports that lasted until 2004. Only in 2005 did the export share of GDP return to its pre-crisis level.

    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

---

2. The reserve coverage ratio indicates how many months of imports of goods and services can be financed with existing reserves.

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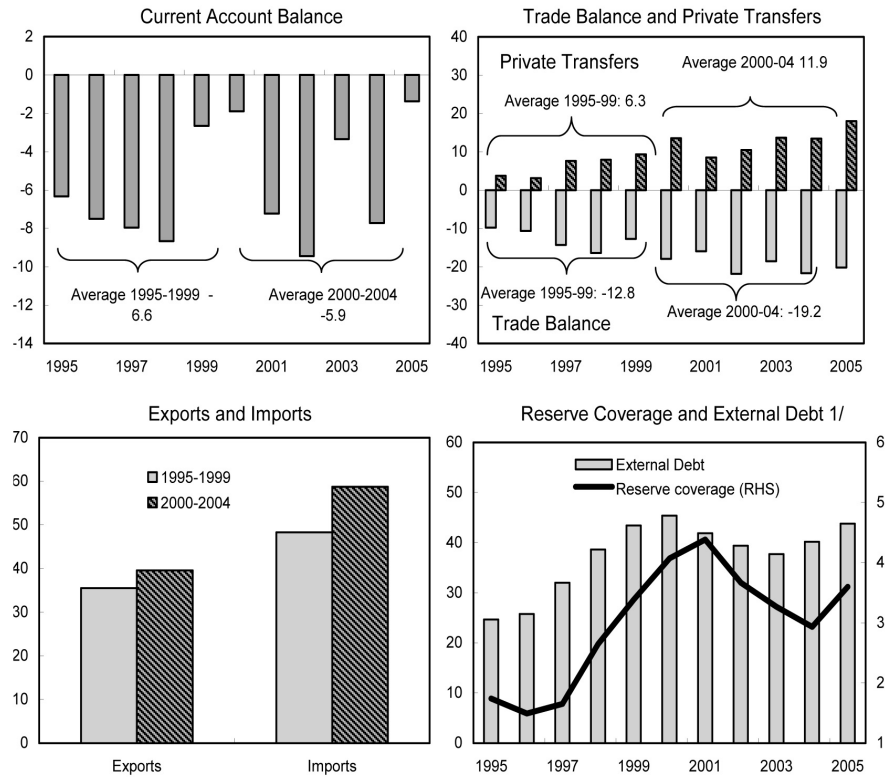


*Sources:* National Bank of the Republic of Macedonia (MBRM); and own estimates.
1/ External debt as percent of GDP. Reserve coverage in months of imports of goods and services.
Data for 2005 exclude the effects of Eurobond issurance.

**Figure 2.** Export Growth and Exports, 1995-2002
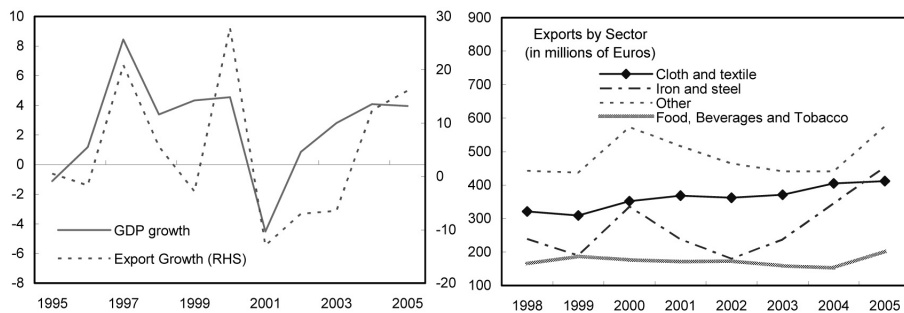


*Source:* Macedonia State Statistical Office

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.

Regarding export markets, 10 countries alone (mostly EU countries) received 80 percent of the goods exported by FYR of Macedonia. Geographically, exports are mostly destined to neighboring countries (Table 2).

**Table 2.** Exports by Destination, 2005

| Country | Percent of total exports |
|---|---|
| Serbia and Montenegro | 20.2 |
| Germany | 19.1 |
| Greece | 8.4 |
| USA | 8.1 |
| Italy | 6.8 |
| Bulgaria | 4.4 |
| Croatia | 4.1 |
| Netherlands | 3.4 |
| Slovenia | 3.3 |
| Switzerland | 2.6 |
| Total | 80.3 |
| *of which* EU countries | 48.0 |
| Balkan peninsula countries | 40.3 |

*Source:* NBRM

Nevertheless, unlike most other countries in the region, the FYR of Macedonia has lost market share in world imports since 1995, and especially in the US market (Figure 3). While there has been an improvement since 2004, export shares have yet to reach their 1995 levels.

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 –during 1995– 2004. We compared this with the evolution of the share of these sectors in world total manufacturing exports (Figure 4).

**Figure 3.** Export Market Shares (in percent)
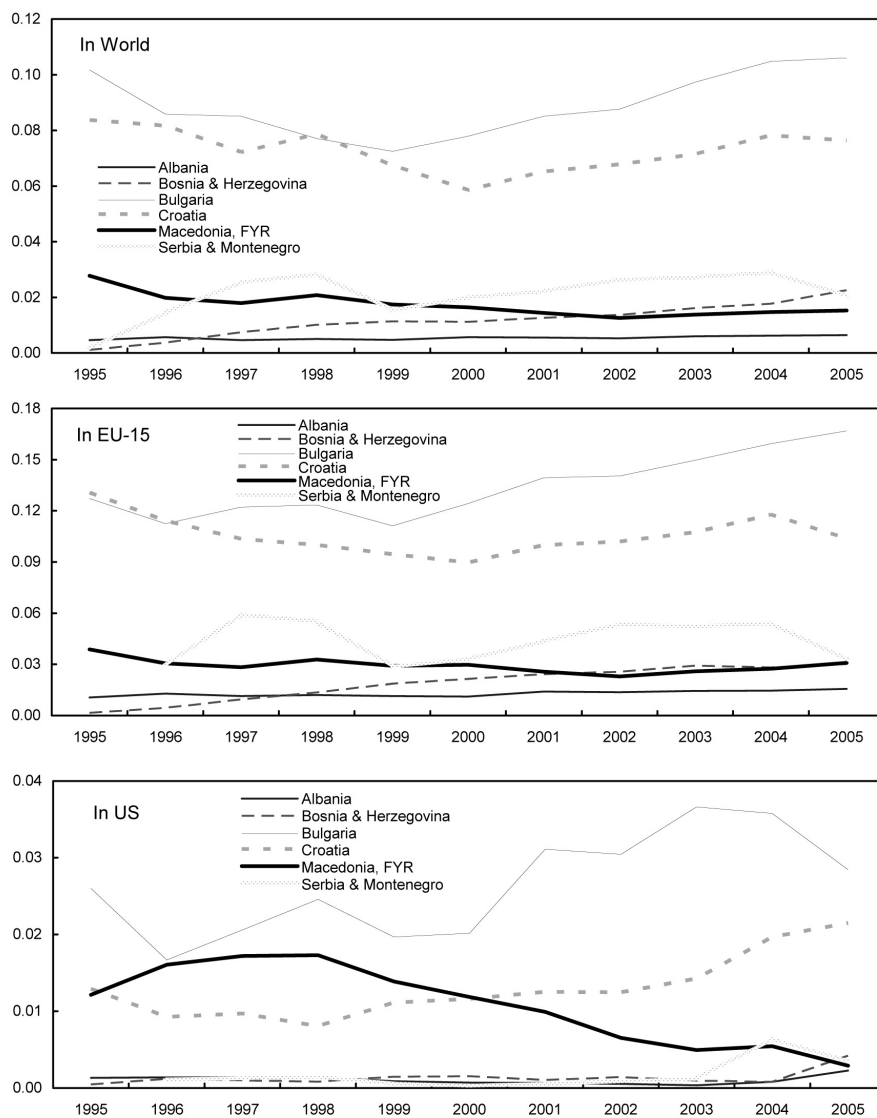


*Source:* Direction of Trade Statistics

**Figure 4.** Share of Manufacturing Exports
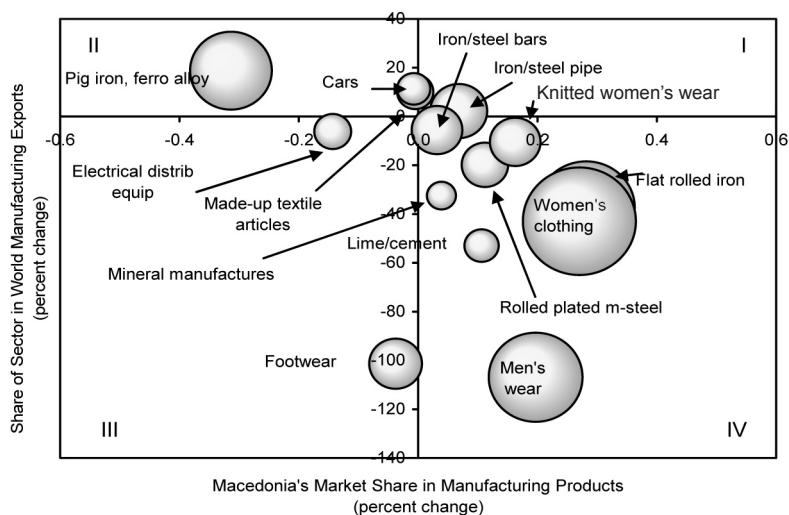


*Source:* Comtrade

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 FYR Macedonia's export share has increased. Figure 4 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.

## 4. Assessing Competitiveness

### A. Indicators of Wage and Cost Competitiveness

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 FYR Macedonia than in other countries in the region (Figure 5). 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 FYR Macedonia.

In contrast, real effective exchange rate (REER) 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 6).

**Figure 5.** Wage Costs in Manufacturing, 2005
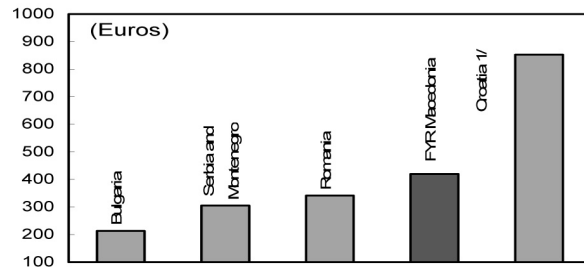


*Source:* ILO and World Bank. 1/ Data for Croatia is for 2004.

**Figure 6.** Exchange Rate Indicators, 1995-2006. (2000q1=100) 1/
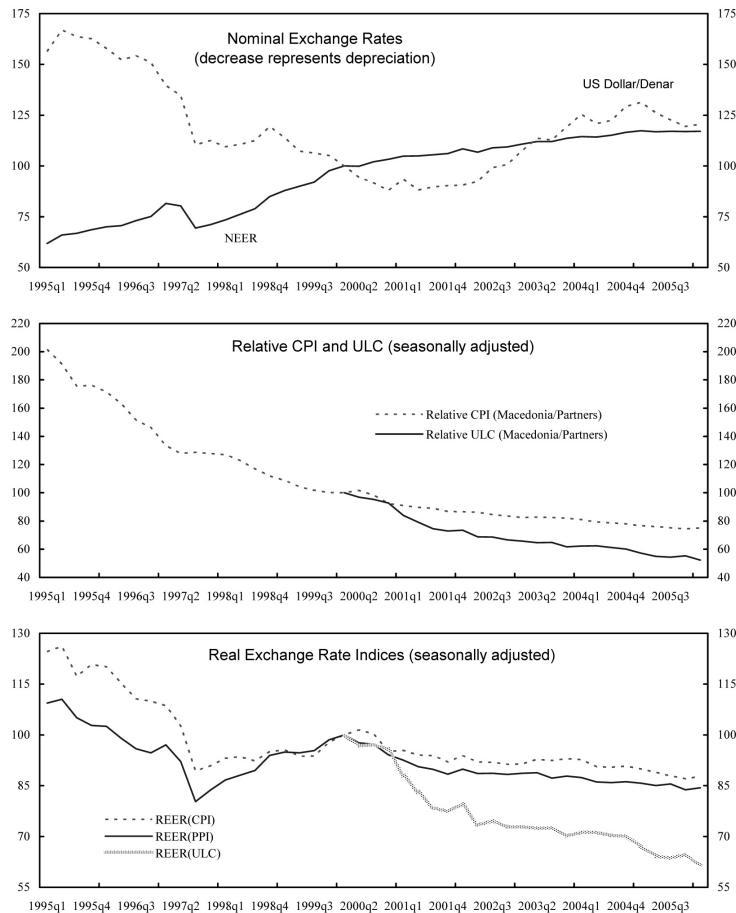


*Sources:* Eurostat; IMF *International Financial Statistics* (IFS), and own calculations.
1/ Trade weights based on 1999-2001 data for exports and imports of goods. Partner countries comprise: Austria, Bulgaria, Croatia, France, Germany, Greece, Italy, Netherlands, Russia, Serbia and Montenegro, Slovenia,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

After the devaluation, the real exchange rate appreciated mostly owing to the substantial depreciation of the Serbian dinar. 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 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.

## B. Estimates of the Equilibrium Real Effective Exchange Rate

Estimates of the equilibrium real effective exchange rate (EREER) 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 the use of three different methodologies: the purchasing power parity approach (PPP), the macroeconomic balance approach, and the behavioral equilibrium exchange rate (BEER) approach.

### Purchasing Power Parity Approach

This first approach indicates that the exchange rate in FYR Macedonia is undervalued with respect to its PPP level. The exchange rate index calculated on a PPP basis– measured as the ratio of the domestic price level to international prices– is below what would be predicted given FYR Macedonia's relative income (Figure 7).

**Figure 7.** Selected Countries: Exchange Rates and Relative GDP, 2003 & 2005 1/
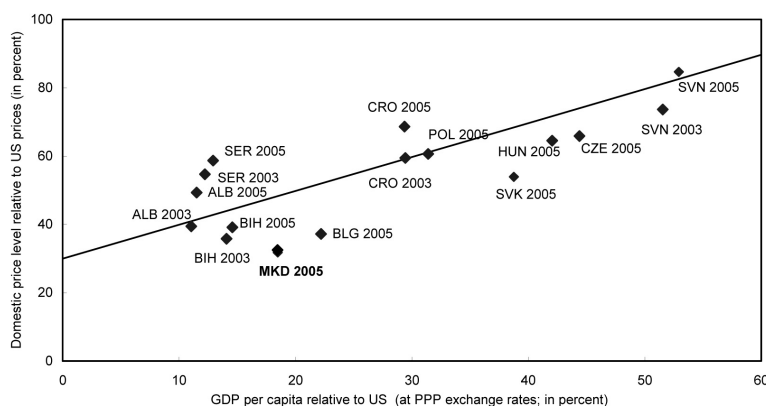


*Sources:* IMF, *World Economic Outlook (WEO);* and own calculations.
1/ Line derived from a regression of PPP exchange rates (domestic prices relative to US prices) and real GDP per capita, in PPP terms, for 179 countries, based on 2005 data.

---

3. For a discussion of Balassa-Samuelson effects in FYR Macedonia see Loko and Thuladhar (2005).

## Macroeconomic Balance Approach

This approach estimates the REER that simultaneously achieves internal and external balance. To this end, the fundamental equilibrium exchange rate (FEER) 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 (i.e. the FEER).

## The Underlying Current Account

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

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

$$\Delta Q_M = 2.1 \Delta A + 0.92 * [0.3 \Delta R + 0.35 \Delta R_{-1} + 0.15 \Delta R_{-2} + 0.1 \Delta R_{-3} + 0.05 \Delta R_{-4} + .005 \Delta R_{-5}] \quad (2)$$

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 $\Delta$ terms represent annual changes.

   Using the equations above we estimate that the Macedonian underlying current account ranges between 0 and -3.1 percent of GDP, depending on the treatment of private transfers as current account or capital account transactions (Table 3).[4] The exchange rate is assumed to remain at prevailing levels. *World Economic Outlook* (WEO) projections were used for the six-year ahead values of real absorption for FYR Macedonia and its trading partners.

_____

4. 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 re- mittances: the remainder is assumed to be capital account.

**Table 3.** 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 |

**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 five year period) is related to the government balance, the country's net foreign asset position, relative per capita income, demographic 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 (Table 4).

Substituting the values for FYR Macedonia into this equation, we estimate that the structural current account balance is about -2 percent of GDP.[5] The values for FYR Macedonia were obtained from different sources. The government balance was calculated 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 FYR 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.

_____

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

**Table 4.** 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]** |
| Relative dependency ratio (old) | -0.01 | [0.012] |
| Financial deepening | -0.01 | [0.007] |
| Terms of Trade volatility | -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%

**The Fundamental Equilibrium Exchange Rate**

Given the elasticities to exchange rate movements in the equations for the volumes of exports and imports estimated by Isard *et al*., (2001), 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 modest and within the margin of error, this suggests that the real exchange rate is broadly in line with fundamentals.

**Behavioral Equilibrium Exchange Rate Approach**

This approach estimates the EREER by identifying 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 condition, where the change in the real exchange rate ($q$) is equal to the real interest rate ($r$) differential plus a risk premium ($\rho$). This parity condition can be expressed as:

$$q_t = q^e{}_{t+k} + (r_t - r_t^*) + \rho_t \tag{3}$$

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 ratio of net foreign assets to GDP (NFA) has higher wealth, a 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 a 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. 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 (Balassa-Samuelson effect). Second, a more open trade regime (i.e., fewer 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), since 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 nontradables prices, with a real appreciation of the domestic currency (wealth effect). On the other hand, higher nontradables 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.

Figure 8 shows the CPI based REER index for the period 1995: Q1 - 2005: Q4 and its long-run determinants. Overall, the real exchange rate has depreciated over the period. During 1995–97 there was a significant real depreciation culminating with the 1997 devaluation. Subsequently, the REER appreciates, mostly due to the depreciation of the Serbian dinar. Moderate inflation compared with 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 past three 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 have been quite volatile, as well as the real interest rate differential vis-à-vis the EU. Unfortunately, these variables are available only 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 1998–2005.

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 this approach accounts for simultaneity and autocorrelation of the endogenous variables. The VECM also permits the inclusion of additional exogenous variables that may help explain the short-run behavior of the real exchange rate.

$$\Delta Z_t = \delta + \Gamma Z_{t-1} + \sum_{i=1}^{p-1} \rho_i \Delta Z_{t-i} + \sum_{i=0}^{n} \gamma_i \Delta X_{t-i} + \varepsilon_t \qquad (4)$$

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

**Figure 8.** Real Effective Exchange Rate and Its Long Run Determinants, 1995-2005
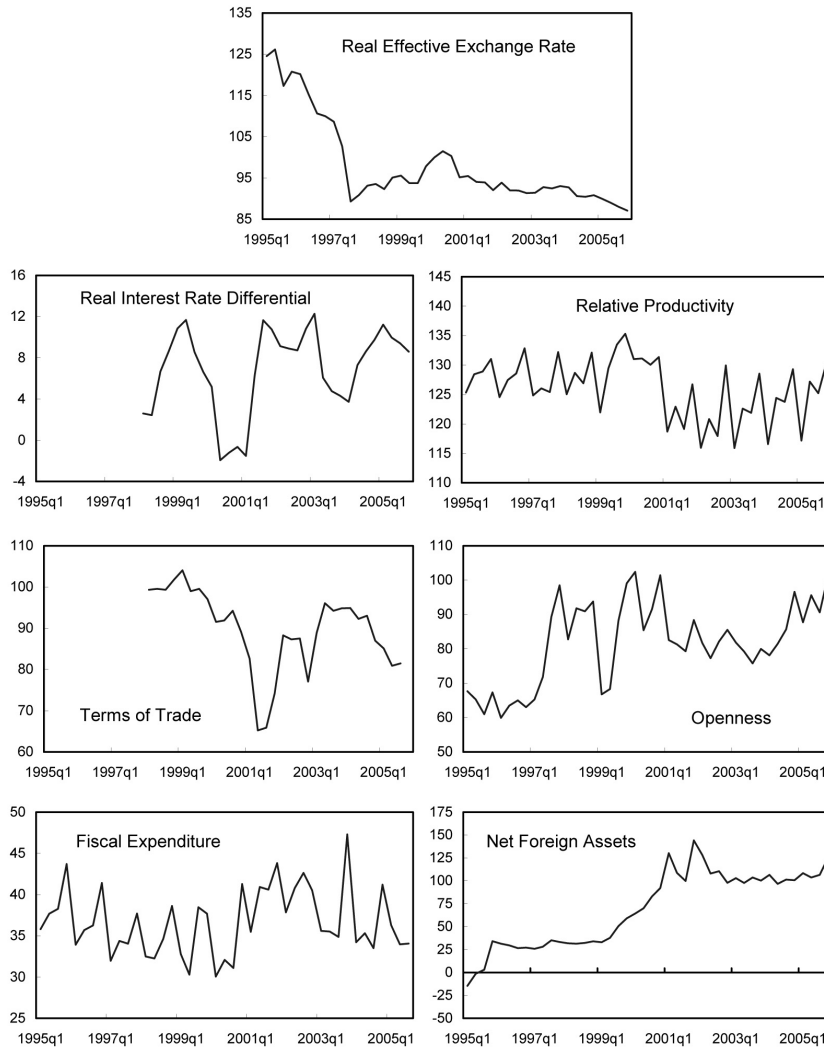


*Sources:* NBRM and own estimates

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 VECM specifications were estimated. We found that the terms of trade (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. Table 5 includes the estimation results of the preferred specification for the different samples.

In line with economic theory, higher government consumption and productivity gains are assumed to appreciate the equilibrium real exchange rate, while increased openness tends to depreciate it (negative sign indicates that an increase in the value of the corresponding variable tends to appreciate the currency). Using Hodrick-Prescott filters of these fundamental determinants of the REER as proxies for their equilibrium values, we estimated the equilibrium real exchange rate for FYR Macedonia for the different samples. 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 REER would now be 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 results indicate that the 1997 devaluation created a real undervaluation, but the subsequent appreciation raised the REER back above its equilibrium value during 2000–01. During 2002–04 the REER is broadly in equilibrium, and it seems that by the end of 2005 the REER is slightly undervalued (Figure 9).

## C. Structural Competitiveness

While the estimation suggests that price competitiveness is broadly appropriate, survey-based indicators reveal structural impediments to external competitiveness. FYR 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, discouraging foreign and domestic investment (Table 6).

According to the World Economic Forum, FRY Macedonia's competitiveness ranking is slightly worse than the average ranking of the countries in the region (Table 7). While basic requirements are better than average, thanks to the degree of macroeconomic stability achieved, market efficiency and technological readiness indicators are worse than average. Basic requirements help countries in their factor-driven development stage, in which countries specialize in natural resources and labor in-

**Table 5.** REER VECM Estimates

|                      | 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.*

**Figure 9.** Econometric Estimates of the Equilibrium REER
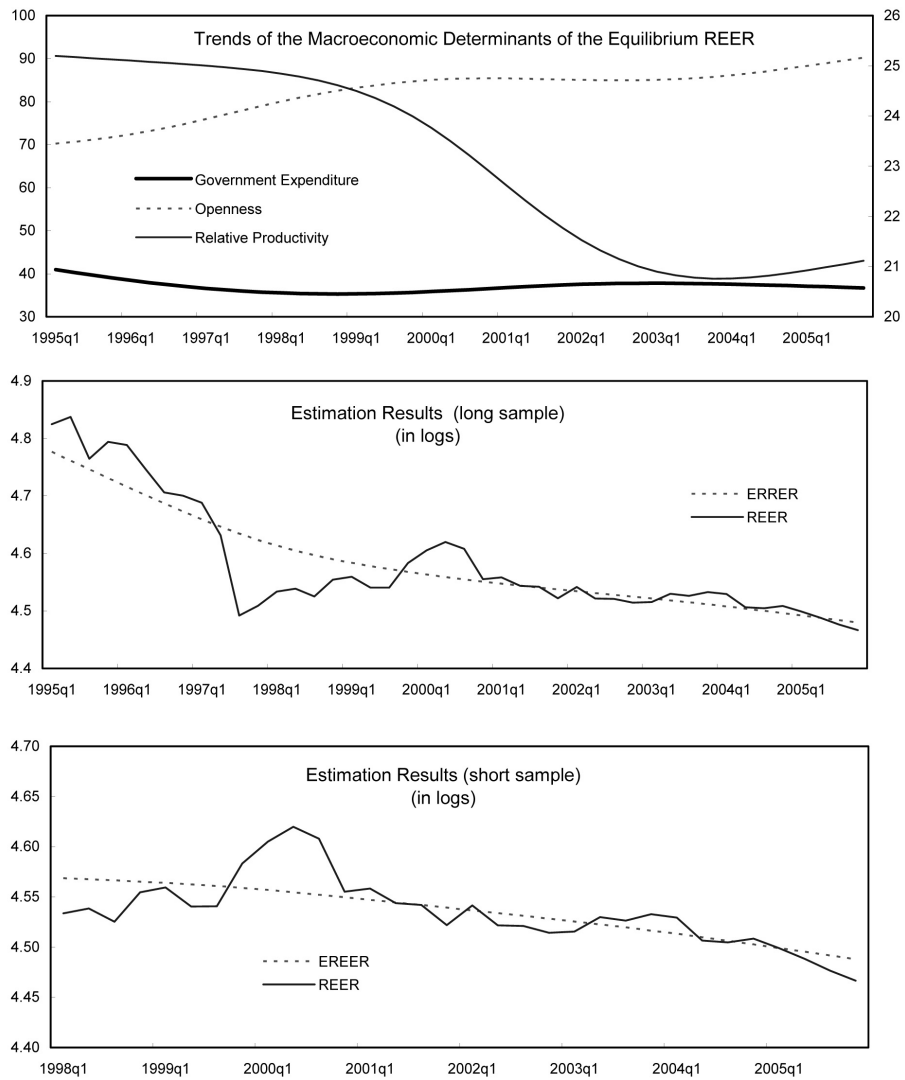
tensive industries. In this stage of development "competitiveness hinges mainly in on a stable macroeconomic framework, well-functioning public and private institutions, appropriate infrastructure, and a healthy, literate workforce" (WEF (2006)). But in order to move up in the quality-ladder and increase efficiency countries need to move into the efficiency-driven and innovation driven stages of development. Shortcomings in these areas, as well as in the business environment, have discouraged foreign direct investment in FYR Macedonia (table 8), a main channel for the adoption of technological progress.

Finally, high financing costs have also discouraged domestic investment. High real interest continues to limit private credit growth, despite low financial intermediation due to the lack of competition and high level of non-performing loans (IMF, 2006).

**Table 6.** Selected Countries Rankings in the Business Environment Database (2005)

| | Bulgaria | Romania | FYR 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

**Table 7.** Selected Global Competitiveness Index ratings and its Components

| | Croatia | Romania | Bulgaria | FYR Macedonia | Serbia & Montenegro | Bosnia | Albania |
|---|---|---|---|---|---|---|---|
| **Overall Index (2006)** | 51 | 67 | 72 | *80* | 87 | 89 | 98 |
| ***Basic Requirements*** | 55 | 63 | 62 | *70* | 99 | 78 | 92 |
| Institutions | 66 | 87 | 109 | **103** | 97 | 106 | 108 |
| Infrastructure | 51 | 77 | 65 | **82** | 90 | 96 | 121 |
| Macroeconomy | 73 | 97 | 35 | **30** | 106 | 45 | 83 |
| Health and primary education | 67 | 69 | 39 | **54** | 97 | 38 | 34 |
| ***Efficiency enhancers*** | 52 | 64 | 70 | *80* | 72 | 93 | 99 |
| Higher education and training | 44 | 50 | 62 | **66** | 61 | 86 | 92 |
| Market Efficiency | 68 | 76 | 90 | **91** | 97 | 93 | 109 |
| Technological readiness | 47 | 49 | 68 | **91** | 63 | 108 | 104 |
| ***Innovation Factors*** | 50 | 63 | 85 | *87* | 83 | 99 | 121 |
| Business sophistication | 61 | 73 | 84 | **88** | 94 | 92 | 115 |
| Innovation Factors | 45 | 68 | 87 | **86** | 71 | 104 | 125 |

*Source:* World Economic Forum

**Table 8.** Selected Global Competitiveness Index ratings and its Components

| | Cumulative inward FDI (at end-2004) | | |
| --- | --- | --- | --- |
| | in millions US$ | in per capita US$ | in percent of GDP |
| Macedonia | 1,175 | 570 | 24.8 |
| Albania | 1,514 | 475 | 20.2 |
| Bosnia and Herzegovina | 1,660 | 433 | 20.1 |
| Bulgaria | 7,569 | 973 | 31.7 |
| Croatia | 12,989 | 2,882 | 39.1 |
| Romania | 18,009 | 824 | 25.2 |
| Serbia and Montenegro | 3,947 | 484 | 16.4 |
| Average | 6,695 | 949 | 25.4 |

*Sources:* UNCTAD

**Figure 10.** Financial Intermediation, Credit Growth and Interest Rates in Selected Countries
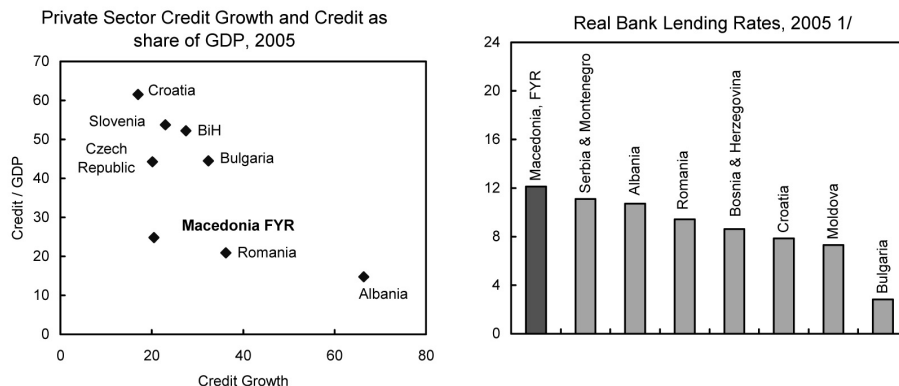


*Sources:* National authorities. 1/ Uses 2005 inflation rates as a proxy for expected inflation

## 5. Conclusions and Policy Implications

The analysis in this paper suggests that price competitiveness is broadly appropriate, but structural factors are major impediments to future improvements in export performance. The real exchange rate has depreciated steadily and, compared with countries with similar incomes, the Macedonian price level is low. Although estimating

the equilibrium real exchange rate is challenging, particularly for transition econo-mies because of data constraints, our 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 suc-ceeded in maintaining or increasing their share in exports. However, specialization in sectors with low added value and a declining share in total global trade has resulted in a decline in total export share, pointing to a structural competitiveness problem.

While a more competitive exchange rate might improve short-term export per-formance, sustained improvements require enhanced productivity and resource re-allocation to more dynamic sectors. Contrary to the experience in most transition economies, productivity in FYR Macedonia has declined in the past decade vis-à-vis trading partners, although this trend has started to reverse, improving competitive-ness. To sustain and increase market shares, specialization in sectors with higher added value and increasing world demand will be necessary. Foreign direct invest-ment and domestic private investment are key to achieving the necessary economic transformation, but boosting investment will depend on the successful implementa-tion of structural reforms aimed at improving the business environment and techno-logical infrastructure as well as increasing financial intermediation.

## References

Burgess, R., Fabrizio S., and Xaio, Y., 2004, *The Baltics. Competitiveness on the Eve of EU Acces-sion*, Washington: International Monetary Fund.

Cashin, P., Cespedes, L., and Sahay, R., 2002, Keynes, Cocoa, and Copper: In Search of Commod-ity Currencies*,* IMF Working Paper 02/223.

Clark, P., and MacDonald, R., 1999, Exchange Rates and Economic Fundamentals: A Methodolog-ical Comparison of Beers and Feers, in J. Stein and R. MacDonald (eds.) *Equilibrium Exchange Rates,* Boston: Kluwer, 285-322.

Chinn, M. and Hito, I., 2005, Current Account Balances, Financial Development, and Institutions: Assaying the World's Savings Glut," NBER Working Paper 11761.

Fernández-Arias, E., Panizza U. and Stein, E. 2004, Trade Agreements, Exchange Rate Disagree-ments, in A. Volbert, J. Mélitz and G. Von Furstenberg (eds.) *Monetary Unions and Hard Pegs* , Oxford: University Press, 135-151.

Cheung, Y., Chinn, M., García Pascual, A. 2002, Empirical Exchange Rate Models of the Nineties: Are Any Fit to Survive?, NBER Working Paper 9393.

Garcia Pascual, A., 2003, Assessing the Equilibrium Real Effective Exchange Rate: The Case of Bolivia, mimeo, International Monetary Fund.

International Monetary Fund, 2006 " Financial intermediation in FYR Macedonia" in *Selected Issues for the 2006 Article IV Consultation with FYR Macedonia*, Washington: International Monetary Fund, 56-67.

Isard, P., Faruqee, H., Kincaid, R., and Fetherston, M., 2001, Methodology for Current Account and Exchange Rate Assessments, IMF Occasional Paper 209.

Lane, P., and Milesi-Ferretti, G. ,2000, The Transfer Problem Revisited: Net Foreign Assets and Real Exchange Rates, IMF Working Paper 00/12.

Lane, P., and Milesi-Ferretti, G.m 2006, The External Wealth of Nations Mark II: Revised and Extended estimations of Net Foreign Assets and Liabilities 1970-2004, IMF Working Paper 06/69.

Loko, B. and Tuladhar, A., 2005, Labor Productivity and Real Exchange Rate: The Balassa-Samuelson Disconnect in the Former Yugoslav Republic of Macedonia,  IMF Working Paper 05/113.

MacDonald, R., and Ricci, L. 2003, Estimation of the Equilibrium Exchange Rate for South Africa, IMF Working Paper 03/44.

MacDonald, R., and Stein, J.m1999, *Equilibrium Exchange Rates*, Boston: Kluwer Academics.

Pavia, C., 2001, Competitiveness and the Equilibrium Exchange Rate in Costa Rica, IMF Working Paper 01/23.

World Economic Forum, 2006, *Global Competitiveness Report,* Palgrave Macmillan.