

## **Hungary: Selected Issues**

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HUNGARY

**Selected Issues**

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Approved by European 1 Department

April 16, 2003

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## I. EXTERNAL SECTOR ISSUES IN HUNGARY<sup>1</sup>

### A. Introduction

1. **While transition economies like Hungary can be expected to run sizable current account deficits, the associated large capital inflows can pose risks.** Hungary's potential for rapid productivity growth provides investment opportunities well in excess of domestic savings. But foreign investors can lose confidence in a country running a high current account deficit, possibly leading to financial turbulence; and a major correction of the real exchange rate might then be necessary. This leads to the issue of the size of current account deficits appropriate for Hungary.

2. **A number of methods seem relevant for assessing the size of current account deficits.** While the results from using these methods must be interpreted with considerable caution, not least because of the application to a transition economy, they provide benchmarks which may at least flag concerns about the current account and the level of the real exchange rate. These benchmarks include those developed from:

- a *simple growth accounting framework* to gauge the demand for foreign capital (and, thus, the required current account deficits) needed to achieve real convergence to EU income levels within a certain period;
- an empirical estimate of the current account position compatible with model-based predictions of *FDI inflows* (as implied by cross-country work that draws on the combined experience of a large set of countries) and a *stable ratio of external debt*;
- an application of recent panel estimates of the *determinants of the current account balances* to the case of Hungary;
- a calculation of the *underlying current account deficit* based on a simple trade-equation approach—that is, the current account deficit in the absence of cyclical output gaps and after taking into account the lagged effects of (recent) real exchange rate changes; and
- in the spirit of the IMF's CGER analysis, an estimate of the *change in the real exchange rate* that would bring the current account from its underlying level to that in line with the benchmarks of the current account under the simplified assumption that all the adjustment would take place through the real exchange rate.

3. **Before turning to these benchmarks, the paper looks at some traditional indicators of external competitiveness.** For context, it provides basic background on key macroeconomic developments, including the current account and its financing. Then, it turns

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<sup>1</sup> Prepared by Helge Berger.

to various measures of the real effective exchange rate, along with analysis of labor market considerations and actual export performance.

## B. Stylized Facts and Competitiveness Indicators

### Growth, Inflation, and BOP developments in perspective

4. **Hungary's real growth performance early in the transition process disappointed compared to other Central European countries (CEC).**<sup>2</sup> The initial transition shock in the early 1990s led to a relatively steep decline in Hungarian real GDP exceeding that of other CECs (dubbed the CEC4 countries in what follows). Real growth rarely exceeded that prevailing in the CEC4 or in the euro area (Figure 1).<sup>3</sup>

5. **But, based, in part, on strong FDI inflows and export success, Hungary excelled in the second half of the 1990s.** Real activity started expanding at a significantly higher rate after the mid-1990s. With real GDP growing at an estimated annual rate of about 4.4 percent between 1997 and 2002, Hungary stood out both vis-à-vis the other CEC countries (3.2 percent) and the euro area (2.3 percent). Among other factors, this growth spurt was due to the massive inflows of FDI in the wake of Hungary's liberalization and privatization efforts in the preceding years (Figure 2, panel D).<sup>4</sup> The vast majority of foreign investment was export-oriented, helping to increase net-exports (Figure 2, panel C) and, ultimately, real growth.

6. **Inflation, too, showed a distinct behavior.** While Hungary was spared the episodes of three-digit inflation haunting Poland in 1990 and Slovenia before 1994, inflation remained stubbornly high throughout most of the period, only falling to levels fairly close to the euro

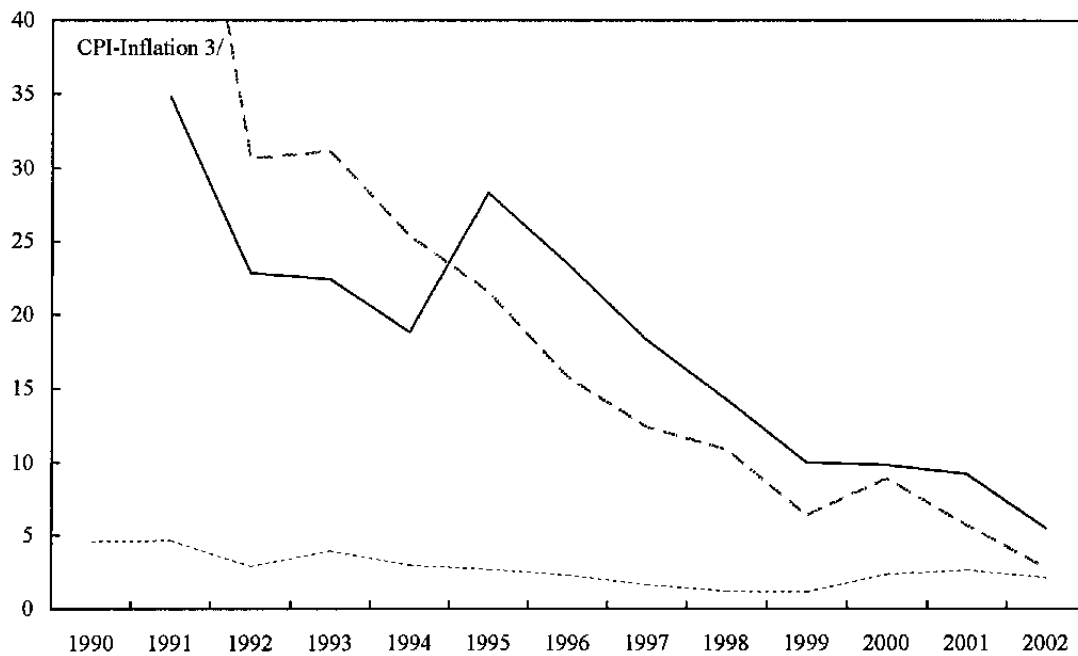
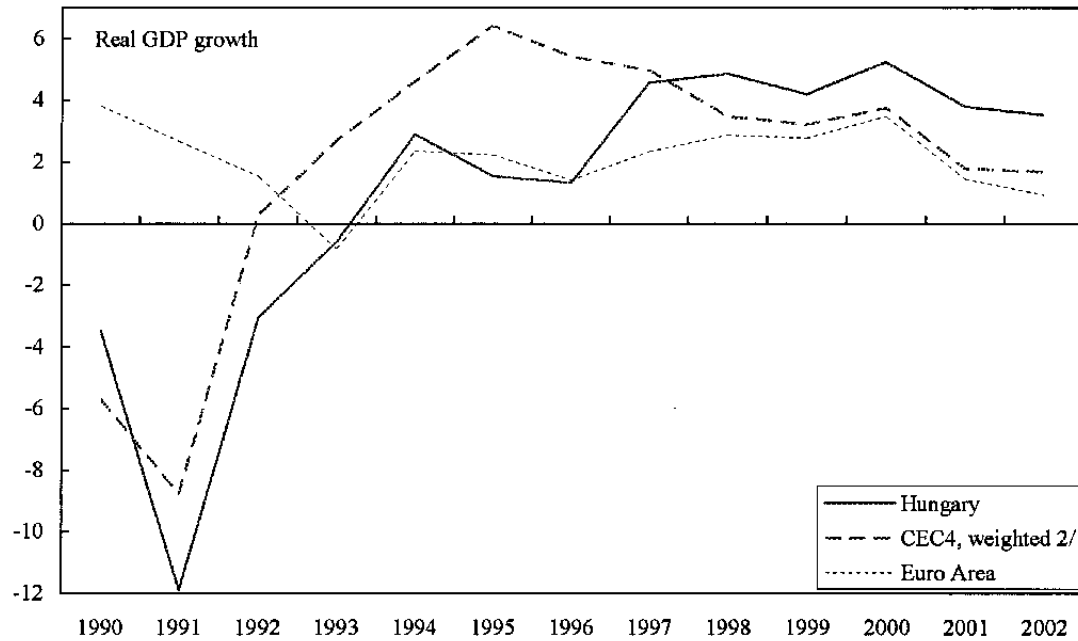
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<sup>2</sup> In addition to Hungary, the CECs are the Czech Republic, Poland, the Slovak Republic, and Slovenia.

<sup>3</sup> It should be noted that the averages displayed in Figures 1 and 2 mask important within-group heterogeneity. This pertains both to the euro area and the CEC4 category. (The data on inflation in Figure 2, which deliberately excludes three-digit observations for Slovenia before 1993, is a particular stark example.) As a rule, however, the stylized facts emerging on the *relative* pattern of Hungary's economic performance are well captured by the exercise.

<sup>4</sup> Note that while the general statements hold, the year-to-year pattern of FDI may well look different, with regard to the fall off in recent years, if the series were adjusted to exclude privatization (which, as mentioned above, mainly occurred early on) and include reinvested earnings (though data are unavailable).

Figure 1. Hungary, the CEC4, and the Euro Area: Real Growth and Inflation, 1990-2002 1/  
(Percent)



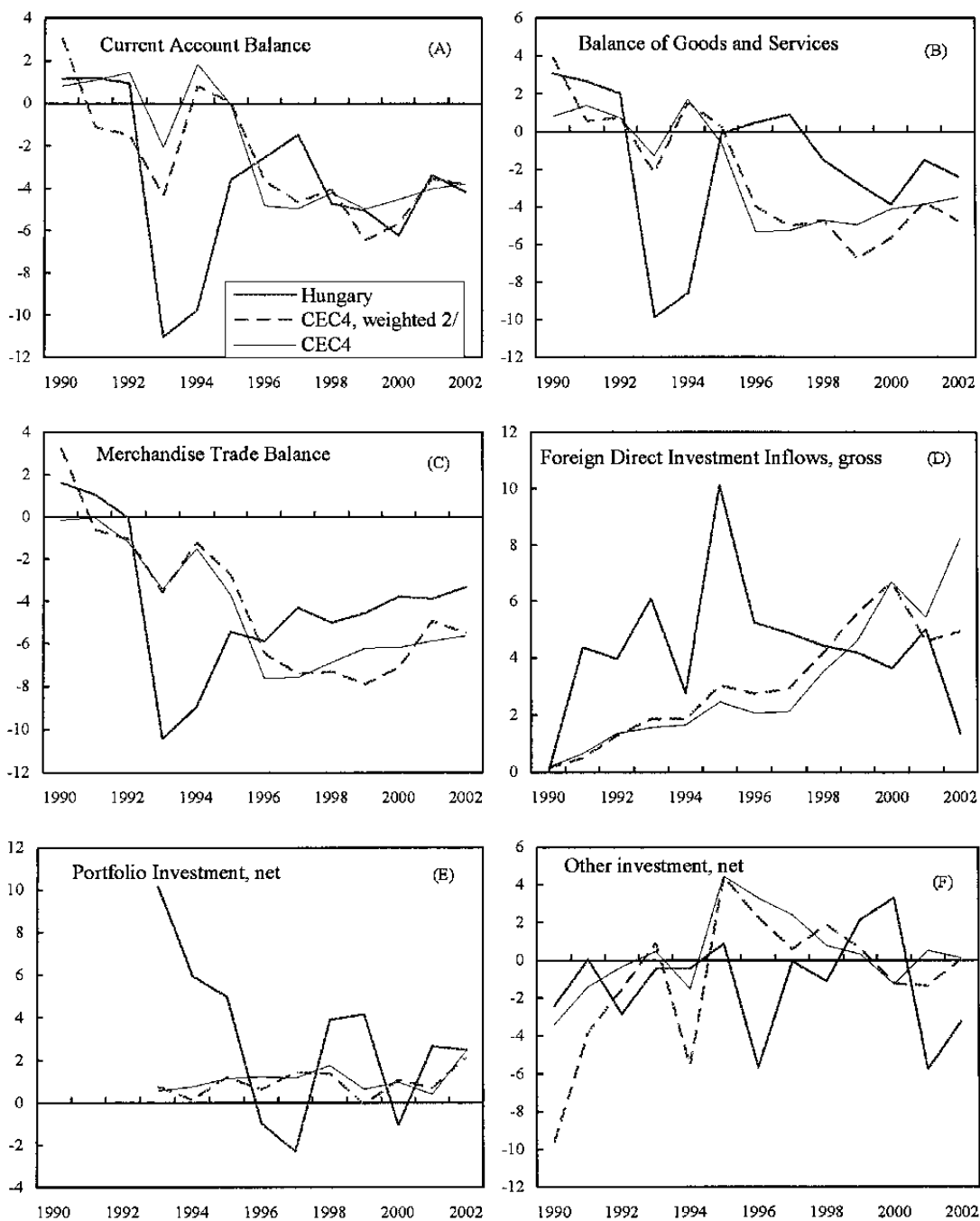
Sources: WEO; staff estimates.

1/ CEC4 inflation data starting in 1991. Data for 2002 preliminary.

2/ CEC4 data are (weighted) averages for the Czech Republic, the Slovak Republic, Slovenia, and Poland. The weights are based on 2001 GDP data, using market exchange rates. Countries in alphabetical order.

3/ CEC4 1990-93 excluding Slovenia. CEC4 inflation in 1991 (not shown) is about 61 percent.

Figure 2. Hungary and the CEC4: Selected BOP Data, 1990-2002 1/  
(Percent of GDP)



Sources: IFS, WEO, and staff estimates.

1/ The Hungarian current account data before 1994 is settlement-based. All 2002 data are preliminary.

2/ CEC4 data are (weighted) averages for the Czech Republic, the Slovak Republic, Slovenia, and Poland. The weights are based on 2001 GDP data, using market exchange rates. Countries in alphabetical order.

area average as late as 2002. CEC4 countries, on average, enjoyed significantly lower rates of inflation than Hungary.<sup>5</sup>

**7. But perhaps the most striking difference between Hungary and the CEC4 was the development of the balance-of-payments (Figure 2):**

- While the CEC4 showed broadly balanced current accounts throughout the first half of the 1990s, Hungary recorded deficit levels exceeding 10 percent of GDP toward the end of the period (Figure 2, Panel A).<sup>6</sup> Driven mostly by an improved balance in goods and services trade (Figure 2, Panel B), but partly reflecting fiscal consolidation, the current account deficit stabilized at more moderate levels between 1996 and 2001—broadly in line with developments in the CEC4 group.<sup>7</sup>
- In 2002, after a deficit of only about 3½ percent of GDP in 2001, the current account deficit widened again, reaching over 4 percent of GDP. Although reinvested earnings are not yet included in the official statistics for Hungary’s current account and BOP because the data are unavailable, their inclusion could perhaps add 2–3 percentage points of GDP to the current account deficit, possibly bringing the 2002 deficit to 6–7 percent of GDP.<sup>8</sup>
- Financing flows broadly followed the developments of the current account, reflecting both Hungary’s relative early privatization effort and its attractiveness as a destination for “green field investments” from abroad. The current account deficits of the first half of 1990s were mainly financed by large amounts of net portfolio

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<sup>5</sup> The average differential between CPI inflation in Hungary and the weighted CEC4 figure is 3.3 percentage points during 1990–2002.

<sup>6</sup> This is not the result of averaging: Hungary’s current account deficits were by far the largest within the CEC group between 1993 and 1995.

<sup>7</sup> The recent switch from settlement-based to custom-based data in Hungary complicates the comparison of current account data across time. Figure 2 reports revised data starting in 1995. For a detailed description of the changes, see the press release of February 25, 2003 and the note on methodological changes referenced therein, of the Magyar Nemzeti Bank (the National Bank or MNB).

<sup>8</sup> The authorities have announced their intention to include these earnings in 2004. Doing so would imply an outflow of income (increasing the current account deficit) accompanied by a simultaneous inflow in FDI (which improves the financial account balance).



investments and (as mentioned above) FDI inflows<sup>9</sup>—with the former peaking at about 10 percent of GDP in 1993 and the latter reaching similar heights in 1995—that were otherwise absent in the CEC area (Figure 2, Panel D and E).

- In more recent years, by comparison, with privatization receipts fading, FDI into Hungary seems to have lost some momentum, stabilizing at levels around of 4½ percent of GDP in the 1996–2001 period before dropping to just about 1½ percent of GDP in 2002.<sup>10</sup> At the same time, average FDI flows into the CEC4 group showed an upward trend, reaching an average close to 5 percent of GDP in 2002. Only part of this difference can be explained by the fact that, in contrast to the other CECs and most OECD countries for that matter (MNB 2002b), reinvested earnings are currently not taken into account when calculating FDI flows.

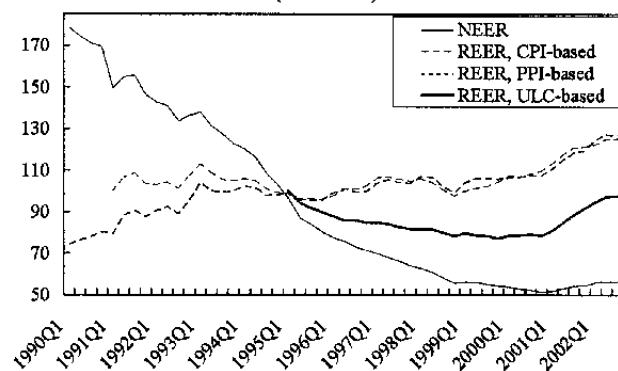
## Competitiveness Indicators

### *Developments in Nominal and Real Effective Exchange Rates (REER)*

8. **The notable appreciation of the nominal effective exchange rate starting in late 2000 marks a structural break in its behavior over the last decade (Figure 3).**<sup>11</sup>

9. **Part of the forint's newfound strength reflects a change in the monetary framework.** With the switch to a wider exchange rate band in May 2001 (to ±15 percent around a central parity against the euro), the MNB's room to appreciate the currency increased as it rejuvenated its disinflation efforts (Figure 1) and foreign capital continued to flow into Hungary (Figure 2).

Figure 3. Hungary: Effective Exchange Rate Measures, 1990-2002 1/ (1995 = 100)



Sources: MNB; staff calculations.

1/ Quarterly data. 2002 data preliminary or estimated.

<sup>9</sup> Hungary has tended to have higher outward FDI flows than the other CECs. Since outward FDI can be considered a positive development, Figure 2 (Panel D) reports gross rather than net FDI inflows to avoid an inappropriate downward bias in the picture.

<sup>10</sup> Net FDI flows in the case of Hungary amounted to less than 1 percent of GDP in 2002. The weighted average for the CEC4 was about 4¾ percent.

<sup>11</sup> An upward movement in Figure 3 implies a real appreciation.

10. **Real exchange rate appreciation preceded the nominal rise.** Reflecting mainly the positive inflation differential between Hungary and its trading partners, CPI- and PPI-based REER measures showed an upward trend as early as 1998 (Figure 3). The nominal appreciation of the forint only slightly amplified their upward momentum.<sup>12</sup>

11. **However, an increase in CPI- or PPI-based REER does not necessarily imply a loss in competitiveness.** Real convergence entails higher real growth rates, based, among other things, on high productivity growth in the tradables sector. As Balassa (1964) and Samuelson (1964) have shown, this might induce higher overall inflation: if productivity growth in non-tradables lags tradables but wages move along similar lines, the resulting price increase in non-tradables will increase overall inflation.

12. **While hard to evaluate, it would seem plausible that a significant part of the observed real appreciation in CPI- or PPI-based REER was due to equilibrium effects.** Estimates of the Balassa-Samuelson effect for different transition countries vary widely, suggesting that the resulting real appreciation could be anywhere in the range between 1 and 4 percent per annum (though more recent estimates, perhaps because of the advanced stage of structural reforms, tend to point to the lower end of the spectrum for Hungary).<sup>13</sup> This would imply that the effect could explain between 20 and 50 percent of the observed average annual real appreciation over the 1998–2002 period of about 5 percent.

13. **Mostly driven by wage increases, the REER based on unit labor costs (ULC)—arguably the most important determinant of international competitiveness<sup>14</sup>—followed a distinctly different pattern, however (Figure 3).<sup>15</sup>**

- The series declined throughout the second half of the 1990s, but the decline seems to have lost some momentum with the onset of disinflation.

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<sup>12</sup> Using a VAR approach, Dibooglu and Kutan (2000) find that Hungary's real exchange rate—as in many industrial countries—mainly reflects real shocks.

<sup>13</sup> In a recent assessment of the evidence for Hungary, the MNB concludes that the effect should be in the range between 1 and 2 percent (Kovács 2002). Égert (2002a/b) argues along similar lines. Other contributions to the debate include Halpern and Wyplosz (1997, 2001), Jakab and Kovács (1999), Pelkmans and others (2000), Rother (2000), Sinn and Reuter (2001), Corizelli and Jazbec (2001), De Broeck and Sløk (2001), and Backé and others (2002).

<sup>14</sup> Vocke (2001) finds ULC-based measures, while not without drawbacks, one of the most appropriate for use as a competitiveness measure for Hungary.

<sup>15</sup> ULC-based REER data from the MNB is only available starting in 1995. All data is quarterly.

- The significant wage increases of 2001 and 2002, set against a background of a slowdown in productivity growth, were a significant contributor to the steep appreciation in the ULC-based REER that stands out in Figure 3. While the upward movement of the ULC-based REER sets in at approximately the same time as the appreciation of the nominal effective exchange rate, the increase of the ULC-based REER rate is significantly stronger than that of the NEER.
- The increase in Hungarian unit labor costs relative to foreign unit labor costs explains about two-thirds and effective nominal appreciation the remaining one-third of the appreciation of the ULC-based REER during January 2001 to September 2002. During this period, the NEER appreciated by about 7.8 percent; Hungarian unit labor costs increased by about 19.4 percent, compared with an increase in foreign unit labor costs of just about 4.1 percent.

### *Labor market considerations*

14. **It is hard to blame the recent loss in competitiveness on labor market inflexibility.** While it is difficult to encapsulate the impact of the multitude of institutional and legal factors that define labor market flexibility into a single measure, most observers would probably agree that Hungary's labor market is among the least constrained in continental Europe.<sup>16</sup> For instance, standard measures of employment protection (thought as inhibiting job creation by many economists) show Hungary leading both the CEC5 and the EU in deregulation (Table 1). At the same time, the replacement ratio in unemployment insurance (often interpreted as an important determinant of employees' bargaining position in wage negotiations) exceeds both the EU and the CEC4 average.

Table 1. Hungary and Selected Countries: Labor Market Regulation Indicators, 2002

|                | Employment Protection (Index 1 (low)-6 (high)) |                      |                      |            | Unemployment Insurance Benefit- Replacement Ratio |
|----------------|--|----------------------|----------------------|------------|---|
|                | Regular Employment                             | Temporary Employment | Collective Dismissal | Average    |   |
| Czech Rep      | 2.8  | 0.5                  | 4.3                  | 2.1        | 50  |
| Poland         | 2.2  | 1.0                  | 3.9                  | 2.0        | 40  |
| Slovak Rep     | 2.6  | 1.4                  | 4.4                  | 2.4        | 60  |
| Slovenia       | 3.4  | 2.4                  | 4.8                  | 3.5        | 63  |
| CEC4 1/        | 2.8  | 1.3                  | 4.4                  | 2.5        | 53  |
| <b>Hungary</b> | <b>2.1</b>                                     | <b>0.6</b>           | <b>3.4</b>           | <b>1.7</b> | <b>64</b>   |
| EU             | 2.4  | 2.1                  | 3.2                  | 2.4        | 60  |

Sources: Riboud and others (2002); staff calculations.

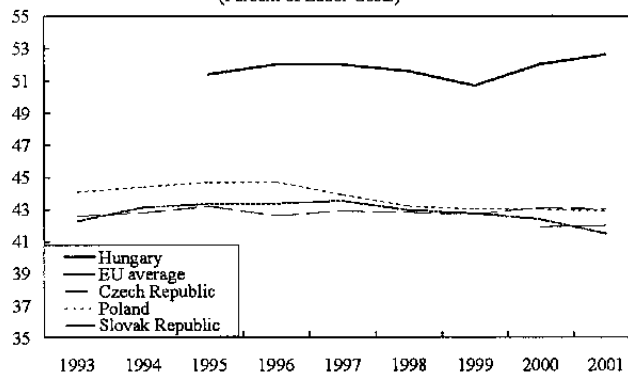
1/ Weighted average, using 2001 GDP data (at market exchange rates) as weights.

<sup>16</sup> See Riboud and others (2002).

15. **This positive assessment of labor market flexibility also finds support in assessments of overall Hungarian competitiveness.** For instance, the World Economic Forum's competitiveness rankings—taking into account both the macroeconomic framework and institutional quality at the micro level—consistently place Hungary ahead of most other transition and EU accession countries and among the top-30 countries overall.<sup>17</sup> Hungary is also ranked first among the CEC countries in the EIU Report on World Investment Prospects.

16. **But, in comparison with the EU average and some of the CEC4, Hungary's labor taxes stand out as extraordinarily high (Figure 4).** Income taxes plus employer's social security contributions sum up to well above 50 percent of labor costs in Hungary, and are—on average—about 10 percentage points above those in the EU or, for instance, Poland. In fact, among current EU members, only Belgium's labor taxes exceed the Hungarian tax level.

Figure 4: Hungary and Selected Countries: Tax Wedge on Labor, 1993-2001  
(Percent of Labor Costs)

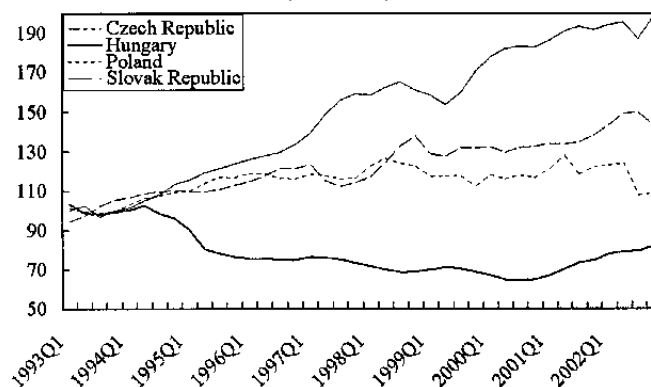


Sources: OECD; staff calculations.

### *Hungary's export performance*

17. **The picture emerging from the review of competitiveness indicators so far is mixed.** On the one hand, levels of ULC-based REER measures are still rather low, both along the time dimension and compared to trade partners and competitors, suggesting a high level of competitiveness (see Figure 5). The same can be said for the relative flexibility of Hungarian labor market institutions. On the other hand, the tax burden on labor seems to be high by international standards and both the recent appreciation of the forint and

Figure 5: Hungary and Selected CEC Countries: ULC-Based REER, 1993-2002 1/  
(1993 = 100)



Sources: IMF; staff calculations.

1/ Quarterly data. 2002 data preliminary or estimated.

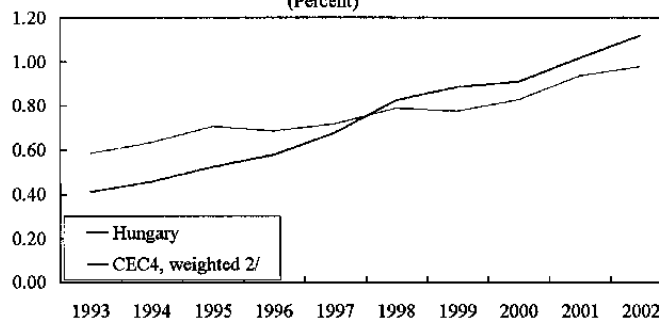
<sup>17</sup> As Vocke (2001) observes, between 1996 and 2000 Hungary's overall ranking improved more than any other country included the CEC. In the 2002/03 rankings, Slovenia is the only transition economy that consistently reaches (marginally) better rankings than Hungary.

the stark increase in labor costs suggest that Hungary has lost some of its competitive edge in recent years.

**18. Turning to actual export performance, it was strong vis-à-vis the EU through 2002.** The EU is Hungary's single most important export market, absorbing an estimated 75 percent of Hungary's goods and services exports in 2002.

During the 1990–2001 period, its share in overall EU imports more than tripled to more than 1 percent; and the available data for 2002 suggest a further increase to about 1.1 percent (Figure 6).

Figure 6. Hungary and CEC4: Share in EU Imports, 1993-2002 1/  
(Percent)



Sources: IMF; staff calculations.

1/ 2002 data is January-September.

2/ CEC4 data are (weighted) averages for the Czech Republic, the Slovak Republic, Slovenia, and Poland. The weights are based on 2001 GDP data, using market exchange rates.

**19. Over time, Hungary was more successful than the average CEC country in penetrating the EU market.**

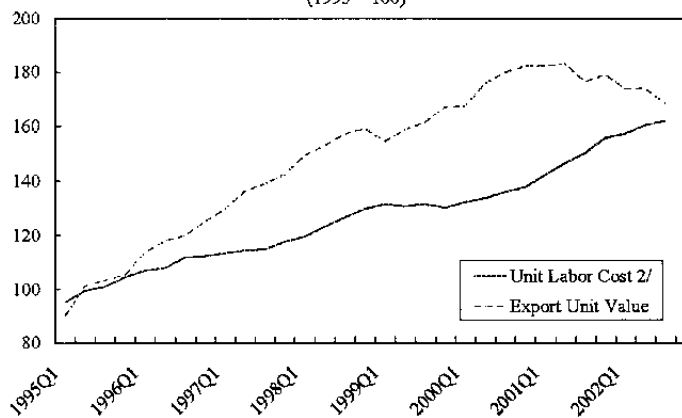
While the CEC4's average EU

import share exceeded that of Hungary in the early 1990s and continued to increase, it did so at a slower pace than for Hungary (Figure 6). By 1997, Hungary had surpassed the CEC4 average.<sup>18</sup> A comparison on a country-by-country basis leads to a somewhat less pronounced picture, but Hungary's dynamic export performance still was impressive.

**20. More recently, however, this success seems to have come at the price of diminishing profit margins in the export sector.**

While export prices outgrew unit labor costs in manufacturing during the late 1990s, recent developments suggest a reversal of these trends (Figure 7). In 2001, as highlighted by the MNB (2002a) Report on Financial Stability, export sector profits declined not only in absolute

Figure 7. Hungary: Profits in the Export Sector, 1995-2002 1/  
(1995 = 100)



Sources: IMF; staff calculations.

1/ Quarterly data. 2002 data preliminary.

2/ Manufacturing.

<sup>18</sup> The available data for 2002 points to a difference of about 1/15 percentage point in market share—not a trivial amount in economic terms: were the Hungarian market share to decline to the level of the CEC4 average, Hungarian exports would decrease by about 7.5 percent of GDP.

terms but also relative to other sectors. Having enjoyed above-average profit margins throughout the second half of the 1990s, lower foreign demand and the appreciation of the forint added pressure from the revenue side as wage growth increased labor costs.

21. **Will Hungary's success story continue?** Many factors contributed to Hungary's trade achievements during the last decade, including structural reforms, the inflow of export-oriented FDI, and, importantly, the gains in ULC-based competitiveness and the continued real depreciation of the effective exchange rate in the course of the 1990s. A corollary of the latter observation is that, conversely, the recent and significant dent into competitiveness, were it to expand, could pose problems for the export sector and the attractiveness of the country as a destination for FDI.

### C. Benchmarks for the Current Account

22. **This section looks at the size of the current account from several angles.** First, it assesses the compatibility of different levels of the current account deficit with economic growth under different conditions represented by a growth accounting framework. Second, it evaluates the current account from the standpoint of debt dynamics. Finally, the determinants of the current accounts of a large sample of countries based on historical experience are used to assess the current account deficit for Hungary.

#### **The current account and economic growth**

23. **Foreign savings channeled into domestic investment are an important factor behind real economic growth and income convergence.** As a rule, a transition economy converging to the much higher EU income levels can be expected to exhibit a significant demand for foreign savings. At the same time, the relative scarcity of capital and the higher productivity compared to more developed economies should ensure a sufficient supply of foreign capital, not least because political risks are low and EU accession ensures compatibility of regulations and laws.

24. **A simple growth model can help gauge Hungary's demand for foreign savings and the implied current account deficits.** Appendix I describes the theoretical underpinnings and data requirements of the exercise.<sup>19</sup> The model builds on a number of assumptions. For instance, the capital-output ratio is kept constant and the economy is treated as being in a unique steady state in each year for which the demand is calculated. While restrictive, these assumptions allow benchmark results to be established in circumstances in which it would certainly be difficult to estimate more involved models. Recognizing the uncertainties surrounding such exercises, sensitivity analysis to changes in the underlying assumptions is undertaken.

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<sup>19</sup> See Daseking (2001) for a similar exercise for Poland. Duffy and Papageorgiou (2000) provide a critical empirical assessment of the—analytically convenient—Cobb-Douglas framework that is used.

### *Total factor productivity*

25. **The rate of growth of total factor productivity (TFP) is determined on the basis of an empirical relationship that depends on the average year of schooling and the income gap vis-à-vis the United States.** The approach follows Doyle and others (2002), using estimates by Benhabib and Spiegel (1994).<sup>20</sup> For Hungary, this results in a predicted TFP growth rate of 2.35 percent—a result close to the assumptions made, for instance, by the OECD (2000) and Darvas and Simon (2000). Based on standard output elasticity assumptions (see Appendix I), this translates into a contribution to GDP growth of about 3.5 percent per annum.

### *Estimates of the capital stock and depreciation rate*

26. **Estimates of the capital stock—more art than science in the best of circumstances—are notoriously difficult in the case transition economies.** The very nature of transition from plan to market implied a dramatic re-evaluation of the existing capital stock, and researchers have made vastly different assumptions about the economic value of Hungary's inherited private and public assets after 1990. As a result, estimates of the current capital stock differ as well. For instance, Hviding (1998) estimates a capital-to-GDP ratio (private and public capital, including residential construction) for the year 1997 around 1.8, while Doyle and others (2002) use a ratio of above 2 for 1999. By comparison, the U.S. Bureau of Economic Analysis estimates the capital-to-GDP ratio in the United States at about 2.7 in 1997 and about 2.8 in 2000.<sup>21</sup>

27. **Some of the same difficulties pertain to the depreciation rate.** The presence of pre-transition capital could lead to an overstatement of the effective capital stock, suggesting depreciation rates higher than, for instance, the annual 7 percent estimated for the United States.<sup>22</sup> On the other hand, much of these capital goods will have been retired since 1990. In the absence of reliable estimates, a pragmatic approach is to assume a moderate depreciation rate of 7.5 percent as a baseline and provide alternative scenarios as a sensitive check.

28. **A simple back-of-the-envelope calculation places the capital-GDP ratio at around 2.4.** Darvas and Simon (2000), in one of the more authoritative studies on the

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<sup>20</sup> The estimated a relationship is  $\hat{A} = (7 \cdot GAP \cdot S + 14 \cdot GAP) / 1000$ , where  $\hat{A}$  represents TFP growth,  $S$  average school years, and  $GAP$  the Hungarian-U.S. income gap. For the current exercise,  $S$  is set at about 9.7 and  $GAP$  is estimated at 2.9 on a 2001 PPP basis. The former figure takes into account an anticipated increase in the longer term suggested by World Bank forecasts.

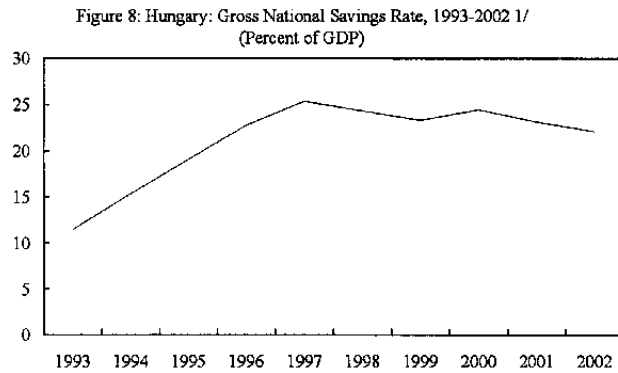
<sup>21</sup> Excluding consumer durables, which amount to about 0.3 percent of GDP.

<sup>22</sup> Data for 1997—see Whelan (2000).

subject, establish a capital-to-GDP ratio *excluding* residential construction of about 1.7 in 1997.<sup>23</sup> Assuming that residential construction amounts to about 30 percent of the overall capital stock<sup>24</sup>, this translates into a ratio of about 2.3. Based on actual investment data and an assumed average annual depreciation rate of 7.5 percent, this ratio would have increased slightly to about 2.4 by the year 2002, the starting point of the simulation exercise below.

### *Prospects for domestic savings*

29. **The prospects for domestic savings are difficult to evaluate.** Hungary's saving rate (as measured in the national accounts) has been volatile, starting at values as low as 11.5 percent of GDP in the early 1990s, reaching 25 percent of GDP in 1997, and, more recently, returning to levels of about 21 percent (Figure 8).



Source: Staff calculations.  
1/ National accounts concept. Data for 2002 preliminary.

Moreover, international experience does not necessarily provide a clear indication of what to expect. While the average savings rate in OECD countries decreased significantly from about 25 percent in the mid-1960s to levels less than 20 percent in the 1990s, savings rates in Eastern Asian emerging markets doubled between the mid-1980s and the mid-1990s to reach levels of about 30 percent. Like for other transition countries, the question arises which direction Hungary might follow.<sup>25</sup>

30. **The savings rate is likely to increase modestly in the time ahead.** Planned fiscal consolidation could raise public savings, but part of this effect might be offset by a (Ricardian) reduction in private savings. Moreover, the Eastern Asian example of a strong positive relationship between growth and domestic savings might not necessarily apply to transition economies. A recent cross-country analysis of the determinants of savings in transition countries, including Hungary, even found a significant negative correlation between growth and domestic savings for the 1992–99 period<sup>26</sup>—perhaps due to the

<sup>23</sup> The OECD (2000) follows a similar approach.

<sup>24</sup> This assumption is broadly in line with the average share of residential construction in investment flows. The share of residential construction in the United States capital stock is about 40 percent.

<sup>25</sup> See Daseking (2001) for a related discussion for Poland.

<sup>26</sup> See Doyle and others (2002).



important role of foreign savings for the financing of investment. In what follows, it is assumed that national savings gradually converge to a level around 22.5 percent of GDP by the second half of the decade.

### *Labor supply*

31. **Employment growth is likely to turn negative in the long run.**<sup>27</sup> In addition, a gradual decrease in the unemployment rate, currently at 5.9 percent, to 5 percent by 2020 is assumed. This is consistent with employment growth averaging about 1 percent in the 2003–10 period, before falling by about 0.3 percent a year in the 2010s, and by about 1 percent over the long term, reflecting Hungary’s rapidly aging population.<sup>28</sup>

### *Simulation results for the current account*

32. **Given these assumptions, the growth model can be put to work to provide insights into the links between economic growth and the current account deficit.** Assuming that the economy retains a constant capital-GDP ratio and savings rate, the demand for foreign savings is determined by TFP growth, employment growth, and the depreciation rate on the capital stock (as in Appendix I). Table 2 depicts the implied current account deficit for alternative rates of capital depreciation between 6 and 9 percent.

33. **The main results can be summarized as follows:**

- *Real GDP* grows by about 4 percent over the medium term before gradually converging to its lower long-run level around 2.5 percent. This reflects the (constant) contribution of TFP to growth and the declining supply of labor.
- Assuming real per capita GDP growth of 2 percent in the current EU area, this would imply that Hungary’s GDP per capita would reach 90 percent of the EU average by 2040 and full *income convergence* in 2050.

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<sup>27</sup> The simulation below is based on figures provided by the authorities. The projections have been adjusted to reflect a somewhat more conservative view on the development of the participation rate in the medium term in line with World Bank estimates of Hungarian labor supply. The adjustment reduces the average employment growth by about 0.75 percentage points over the 2002–10 period compared to the original projection provided by the Ministry of Finance.

<sup>28</sup> Hungary’s aging problem is somewhat less severe than in other EU and transition economies, not least because of the relatively shorter life expectancy of the Hungarian population (see Wagner 2002).

Table 2. Hungary: Current Account Simulations with Constant Capital-GDP Ratios (Period-Average in Percent of GDP), 2003–50

| Rate of Capital Depreciation | Capital-GDP Ratio: 2.0 |         | Capital-GDP Ratio: 2.4<br>(Baseline) |         | Capital-GDP Ratio: 2.8 |         |
|------------------------------|------------------------|---------|--------------------------------------|---------|------------------------|---------|
|                              | 2003-10 1/             | 2011-50 | 2003-10 1/                           | 2011-50 | 2003-10 1/             | 2011-50 |
| 6.0                          | 0.1                    | 4.6     | -3.4                                 | 1.2     | -6.9                   | -2.1    |
| 6.5                          | -0.7                   | 3.7     | -4.4                                 | 0.1     | -8.1                   | -3.5    |
| 7.0                          | -1.6                   | 2.7     | -5.4                                 | -1.1    | -9.3                   | -4.9    |
| 7.5 (Baseline)               | -2.4                   | 1.7     | -6.5                                 | -2.3    | -10.5                  | -6.2    |
| 8.0                          | -3.3                   | 0.7     | -7.5                                 | -3.4    | -11.7                  | -7.6    |
| 8.5                          | -4.1                   | -0.2    | -8.5                                 | -4.6    | -12.9                  | -9.0    |
| 9.0                          | -5.0                   | -1.2    | -9.5                                 | -5.8    | -14.1                  | -10.3   |

1/ The period 2003–10 will be referred to as “medium term” in what follows.

- Under the baseline assumption of a 7.5 percent annual depreciation, *current account deficits* amount to about 6.5 percent of GDP in the medium run. Mostly because of the underlying assumptions on employment growth, the model predicts a downward trend in the deficit figure in the longer run.
- The current account deficit levels change with the underlying *depreciation rate*. A lower rate of capital depreciation of 6 percent would imply a current account deficit of about 3.4 percent of GDP in the medium run. In contrast, a higher depreciation rate of 9 percent would result in a significantly larger medium-term deficit of about 9.5 percent.
- Lowering the *capital-to-GDP ratio* from 2.4 to 2.0 or increasing it to 2.8 has a similar strong effect on the implied current account deficit. At a depreciation rate of 7.5 percent, the implied medium-term deficit could be as low as 2.4 percent of GDP or as high as 10.5 percent of GDP depending on whether the lower or the higher ratio is selected.<sup>29</sup>

<sup>29</sup> Conceptually, a change in the constant capital-GDP ratio underlying the simulation is equivalent to changing the depreciation rate. For instance, reducing the capital-GDP ratio from 2.4 to 2.05 produces a time path for the current account similar to that implied by the original ratio and a depreciation rate of 6 percent, and increasing the ratio to 2.75 yields a curve closely resembling the one with a depreciation rate of 9 percent. While this leaves the possibility of two “wrong” assumptions canceling each other out, there is also a chance for cumulating mistakes. Therefore, the error band around the results of the baseline scenario could be rather wide.

- Real growth and, thus, Hungary's demand for foreign savings also depend on the assumed contribution of *TFP*. For instance, raising projected *TFP* growth from the 2.35 to 2.5 would increase the average current account deficit during the simulation period by about ½ a percentage point. Similarly, a lower-than-expected *saving rate* would lead to larger forecasted current account deficits throughout the forecasting period.

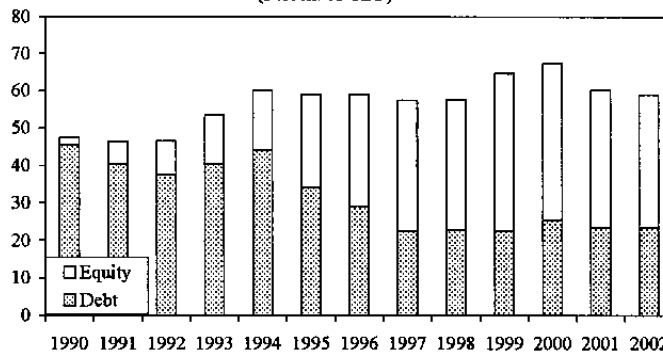
34. **A possible interpretation of these results is that Hungary's demand for foreign savings could be compatible with moderate current account deficits in the medium and long run.** Based on the baseline scenario, a plausible benchmark for current account deficits that would not unduly constrain growth would be in the general vicinity of 6.5 percent of GDP in the medium run.

#### FDI and net external debt

35. **This section assesses the level of the current account deficit from the perspective of debt dynamics. This requires an analysis of FDI, to shed light on the possible split between debt and non-debt financing.**

36. **High inflows of foreign equity, initially based on privatization and more recently on other forms of FDI, allowed a significant reduction of Hungary's net foreign debt levels, fostering sustainability.**<sup>30</sup> While net external liabilities remained fairly stable at around 60 percent of GDP after the mid-1990s (Figure 9), their composition changed, with equity substituting for debt-based financing. Arguably, this development contributed to reducing risks of financial distress in case of adverse external shocks, as equity is often less liquid in case of a loss of confidence. Moreover, the accumulation of FDI adds to the capital stock, tends to involve the transfer of know-how and human capital, thereby supporting growth and strengthening the overall health of the economy. Finally, a larger FDI stock may help reduce problems of asymmetric information

Figure 9: Hungary: Net External Liabilities, 1990-2002 1/  
(Percent of GDP)



Sources: MNB; IMF; staff calculations.

1/ 2002 preliminary.

<sup>30</sup> Hausmann and Fernández-Aria (2000) argue that other forms for capital inflows share many of the positive attributes of foreign equity inflows. Instead equity inflows might simply reflect higher risk and poorly functioning markets for domestic financing. This hardly pertains to the state of Hungary's credit and equity markets, however.

for foreign investors, providing incentives for further equity inflows.<sup>31</sup>

37. **With EU accession almost assured, Hungary's international financial standing improved further.** While most accession countries saw their overall sovereign rating for long-term foreign currency debt upgraded since 1998—including the recent increase related to the confirmation of accession<sup>32</sup>—Hungary's ascent was relatively swift (Table 3). In November 2002, Moody's graded Hungary similar to Greece, and only Slovenia enjoys a higher ranking.<sup>33</sup>

Table 3. Hungary and Selected Countries: Moody's Ranking, 1998 and 2002

| <i>Country</i> | <i>November 1998</i> | <i>Country</i> | <i>October 2002</i> | <i>Country</i> | <i>November 2002</i> | <i>Country</i> | <i>Improvement since 1998 2/</i> |
|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|----------------------------------|
| Slovenia       | A3                   | Slovenia       | A2                  | Slovenia       | Aa3                  | Slovenia       | 3                                |
| Czech Rep.     | Baa1                 | <b>Hungary</b> | <b>A3</b>           | <b>Hungary</b> | <b>A1</b>            | <b>Hungary</b> | 4                                |
| Estonia        | Baa1                 | Czech Rep.     | Baaa1               | Czech Rep.     | A1                   | Czech Rep.     | 3                                |
| <b>Hungary</b> | <b>Baa2</b>          | Estonia        | Baa1                | Estonia        | A1                   | Estonia        | 3                                |
| Latvia         | Baa2                 | Poland         | Baa1                | Poland         | A2                   | Poland         | 4                                |
| Poland         | Baa3                 | Latvia         | Baa2                | Latvia         | A2                   | Latvia         | 3                                |
| Lithuania      | Ba1 1/               | Slovak Rep.    | Baa3                | Slovak Rep.    | A3                   | Slovak Rep.    | 4                                |
| Slovak Rep.    | Ba1 1/               | Lithuania      | Ba1                 | Lithuania      | Baaa1                | Lithuania      | 3                                |

Sources: Moody's; staff calculations.

1/ Speculative Grade.

2/ Increase in rating ranks between November 1998 and November 2002.

38. **However, the reduction in the net foreign debt ratio to GDP slowed down in recent years and, without corrective action, could be reversed in the wake of debt policy changes and higher fiscal deficits.** The authorities have resumed foreign borrowing at a point when the general government deficit reached an estimated 9.5 percent of GDP (2002, on an ESA-95 basis). But, if the authorities' target is met, the deficit would fall to 4.5 percent this year, helping to reduce the possibility of unfavorable external debt dynamics.

<sup>31</sup> See Beaumont (1999) for a more elaborate discussion. Jakab and Kovács (2002) note that the transfer of know-how could also come through other sources, mitigating some of the sustainability issues potentially associated with the observed decline in FDI inflows.

<sup>32</sup> Moody's commented on its decision that the upgrades reflected its view that the process of economic and financial integration of these countries with the EU was virtually irreversible.

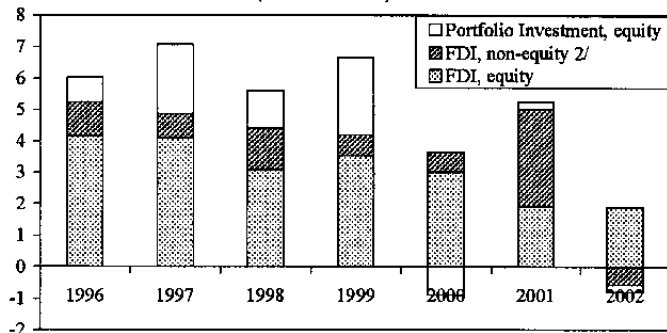
<sup>33</sup> Reacting to rising government deficits, Standard & Poor recently downgraded Hungary, however.

### *Hungarian FDI performance in perspective*

39. **A continued inflow of FDI could significantly extend the scope for current account deficits from a debt perspective.** As Figure 10 illustrates, since the mid-1990s, FDI equity investments in Hungary were, on average, significantly larger (and, in addition, somewhat more steady) than FDI non-equity and portfolio equity investments in Hungary.<sup>34</sup>

Moreover, for all but the most recent years, FDI non-equity investment flows, mostly intercompany loans of multinationals operating in Hungary, moved more or less in line with FDI equity investments. This suggests that at least part of the non-equity FDI inflows could be based on longer-term financial commitments akin to FDI equity inflows.

Figure 10: Hungary: FDI and Portfolio Equity Inflows, 1996-2002 1/  
(Percent of GDP)



Sources: MNB; IMF; staff calculations.

1/ 2002 preliminary.

2/ Mostly intercompany loans.

40. **The level of FDI inflows during the 1998–2001 period exceeded those into countries with similar financial ratings and income levels, but seems to lag behind the other CEC countries (Table 4).** However, as already mentioned, the Hungarian BOP statistics do not include reinvested foreign earnings. Assuming reinvested earnings amounted to about to 2–3 percent of GDP and including such figure in Table 4 would have placed Hungary ahead of the other CECs.

41. **A disadvantage of comparisons based on (ex post) outcomes is that they fail to control for differences in country-specific determinants of FDI.** For instance, countries might differ in demand for foreign savings, their capacity to absorb investments from abroad, and their attractiveness for such capital flows based on factors such as political stability.<sup>35</sup> A case in point is the high ranking Hungary receives based on the U.N. (2002) “FDI potential index” that, among other things, incorporates information on GDP per capita, infrastructure

<sup>34</sup> During 1996–2002, equity FDI investments averaged 3.1 percent of GDP, while average non-equity FDI was 1.0 percent and portfolio equity investment 0.8 percent of GDP. Note that the data underlying Figure 10 excludes reinvested earnings.

<sup>35</sup> See, among others, the recent analysis of FDI inflows by Garibaldi and others (2002) and Arvanitis (2002). Carlson and Hernández (2002) discuss the determinants of the structure of overall capital inflows.

and human capital, R&D expenditure, human capital, and country risk. Out of 141 countries, Hungary ranks at 41—right among the majority of accession countries.<sup>36</sup>

Table 4. Hungary and Selected Countries: Reported Average FDI Inflows, 1998–2001 1/

| <i>Percent of GDP</i>            |               |
|----------------------------------|---------------|
| CEC4                             | 5.1           |
| <b>Hungary</b>                   | <b>3.8</b> 2/ |
| Peer GDP per capita quartile     | 3.6           |
| Peer Moody's group (Aa1 to Baa2) | 3.1           |

Sources: IFS; Moody's Ranking (as of January 2003); staff calculations.

1/ The time horizon is chosen to match the econometric exercise below (see paragraph 42 and Appendix II).

2/ Excluding reinvested earnings.

42. **A more extensive empirical analysis of the historical experience of a large set of countries suggests that Hungary's potential to attract high levels of FDI inflows remains strong.** Appendix II describes a set of pooled regression models explaining average FDI inflows in percent of GDP in a sample of 96 countries over the 1998–2000 period. The models relate FDI to a number of demand- and supply-side arguments, including the above mentioned U.N. potential FDI indicator. As expected, the latter is found to have a positive impact on FDI inflows. Other findings include:

- *Stock of FDI*: A larger stock of past FDI investment increases current FDI inflows, but at decreasing speed. These points to decreasing-returns-to-scale, either based on decreasing real returns or the fact that foreign investors learn more about the qualities the destination country as they continue to invest.
- *Savings*: Higher domestic savings reduce the demand for FDI inflows.
- *Inflation*: Higher inflation rates deter foreign investors. The effect is somewhat stronger at moderate levels of inflation, that is, investors react more averse to an increase in inflation from, say, 5 to 15 percent than to an increase from 90 to 100 percent per year. A likely explanation is that investors believe they learn less about the stability of a possible FDI destination if the increase occurs at already very high levels of inflation.
- *Interest rate spread*: FDI inflows increase (after controlling for inflation) as domestic interest rates rise relative to LIBOR.

<sup>36</sup> The average rank of the CEC4 is 40.5.

43. **Based on the historical experience captured by the empirical model, a baseline forecast for FDI inflows including reinvested earnings of a minimum of 5 percent of GDP would not be unwarranted.** The point estimate is around 7.9 percent of GDP, with a sizable forecast standard error of about 2.9 percent of GDP. To err on the side of caution, the baseline has been set one standard error below the point estimate.

*Current account implications of a stable debt-GDP ratio*

44. **The current account deficit that would stabilize the ratio of net foreign debt to GDP is the sum of these potential FDI inflows and the level of debt-creating inflows that would stabilize the debt-GDP ratio.**<sup>37</sup> Details are provided in Appendix III.

45. **Given current debt levels, a plausible estimate of the debt-stabilizing current account deficit (including reinvested earnings) is around 6.5 percent to GDP in the baseline scenario (Table 5).**

- In the *baseline* scenario in Table 5, assuming real GDP growth of 4 percent and estimated FDI inflows of 5 percent of GDP, the current level of net foreign debt of 20–25 percent of GDP could be maintained with debt-creating capital inflows of 1.2–1.5 percent of GDP, implying current account deficits of 6.2–6.5 percent of GDP (see Panel A).
- Under the more optimistic assumptions of the *alternative* scenario, holding real GDP growth constant at 4 percent, but assuming higher nominal GDP growth in foreign currency terms and higher FDI inflows of 7.9 percent of GDP, this range increases to 9.4–9.8 percent of GDP (see Panel B).

In both cases, lowering the assumed real growth rate of GDP from 4 to 2 percent would imply a lower debt-stabilizing current account deficit by about ½ percentage point of GDP. Equivalently, if real GDP growth were not 4 but 6 percent, the implied current account deficit would increase by about ½ percentage point.

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<sup>37</sup> See Beaumont (1999) for an earlier analysis along similar lines.

Table 5. Hungary: Debt Stabilizing Current Account Deficits 1/

Panel A: Baseline

- FDI inflows: 5 percent of GDP
- Sum of changes in REER and foreign GDP deflator: 2.5 percent 2/

| Ratio of net external debt to GDP (percent) | Real GDP growth |     |     |     |     |
|---|-----------------|-----|-----|-----|-----|
|   | 2               | 3   | 4   | 5   | 6   |
| 0   | 5.0             | 5.0 | 5.0 | 5.0 | 5.0 |
| 5   | 5.2             | 5.3 | 5.3 | 5.3 | 5.4 |
| 10  | 5.4             | 5.5 | 5.6 | 5.7 | 5.8 |
| 15  | 5.6             | 5.8 | 5.9 | 6.0 | 6.2 |
| 20  | 5.9             | 6.0 | 6.2 | 6.4 | 6.6 |
| 25  | 6.1             | 6.3 | 6.5 | 6.7 | 7.0 |
| 30  | 6.3             | 6.5 | 6.8 | 7.1 | 7.4 |

Panel B: Alternative Scenario

- FDI inflows: 7.9 percent of GDP
- Sum of changes in REER and foreign GDP deflator: 4.0 percent 2/

| Ratio of net external debt to GDP (percent) | Real GDP growth |     |      |      |      |
|---|-----------------|-----|------|------|------|
|   | 2               | 3   | 4    | 5    | 6    |
| 0   | 7.9             | 7.9 | 7.9  | 7.9  | 7.9  |
| 5   | 8.2             | 8.2 | 8.3  | 8.3  | 8.4  |
| 10  | 8.5             | 8.6 | 8.6  | 8.7  | 8.8  |
| 15  | 8.7             | 8.9 | 9.0  | 9.1  | 9.3  |
| 20  | 9.0             | 9.2 | 9.4  | 9.6  | 9.7  |
| 25  | 9.3             | 9.5 | 9.8  | 10.0 | 10.2 |
| 30  | 9.5             | 9.8 | 10.0 | 10.3 | 10.6 |

Source: Staff calculations.

1/ The shaded rows indicate current account deficits broadly consistent with current levels of external debt.

2/ As discussed in Appendix III, the growth rate of nominal GDP in foreign currency terms can be decomposed in the sum of the change in the REER, the change foreign GDP deflator, and real GDP growth.

### The “Normal” current account balance

46. **An alternative approach to finding a benchmark for the current account balance is to exploit the historical experience of other countries.** The principle idea is to extract a measure of the “normal” or “equilibrium” current account balance that can be compared to actual current account balances (Isard and others 2001). While the approach might not fully take into account the particular characteristics of transition economies, it can nevertheless provide a rough idea of the orders of magnitude.



47. **Such a benchmark can be computed based on a panel study by Chinn and Prasad (2000).**<sup>38</sup> They investigate the relationship between the current account deficits in a large sample of developing countries (excluding transition economies) in the period 1971–95 and economic factors that might influence both their saving-investment balance and their access to international capital markets. The relevant explanatory variables include:

- *Fiscal balance*: The fiscal balance has the expected significant positive impact on the current account balance (in percent of GDP).
- *Financial deepening*: The ratio of M2 over GDP is positively related to current account balances, suggesting that financial deepening decreases the necessity to seek foreign financing.
- *Old-age and young-age dependency ratios*: Higher ratios decrease the current account balance, perhaps due to a decrease in the savings rate.
- *Openness*: Higher degrees of openness (measured as the sum of exports and imports over GDP), associated with an enhanced capacity to generate exports or vary import demand in line with possible debt-payment constraints, decrease current account balances.
- *Terms of trade volatility*: Larger swings in a country's terms of trade increase the current account balance.
- *Relative GDP per capita*: There is non-linear relationship between the relative per capita income (compared to the U.S. using PPP exchange rates) and the current account. While higher income at lower levels tends to imply more access to international markets and, thus, lower current account balances, this effect is reversed or reduced at higher income levels.

48. **This approach, using a general government deficit of 3 percent of GDP in line with the authorities' medium-term target, implies a "normal" current account balance (including reinvested earnings) of about 5.5 percent of GDP for Hungary.**<sup>39</sup>

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<sup>38</sup> See Isard and others (2001).

<sup>39</sup> The specific model used to calculate this result is not presented here, but is similar to the results reported in Chinn and Prasad (2000, Table A, column (2)). Estimates of the model were provided by the CGER group and are available on request.

#### D. An Application of the CGER Model to Hungary<sup>40</sup>

##### Short introduction to the model (and Its Caveats)

49. **At the core of the CGER approach to evaluating the level of the real exchange rate is a comparison of the underlying current account with a benchmark.** The underlying current account adjusts the actual balance by taking into account the effects of the business cycle and recent real exchange rate changes based on a simple partial equilibrium trade model (see below). The CGER approach compares this underlying current account balance with a benchmark for the level of the medium-term sustainable balance, labeled the saving-investment norm.

50. **Over the medium run, any deviation of the underlying current account balance from the saving-investment norm is assumed to be countered by a change in the real exchange rate.** For instance, an underlying current account deficit in excess of the norm, would imply a real depreciation and the size of the calculated depreciation would be an indicator of the degree of potential misalignment of the current real exchange rate. The mechanics of this exercise, that is, the mapping of exchange rate changes into changes in trade flows, is based on the same trade model and assumptions that are used to calculate the underlying current account balance.

51. **The partial-equilibrium approach, while helpful in gauging some of the more important forces that may influence the current account, has its limitations.** As Hinkle and Montiel (1999) point out, the underlying structure of the CGER approach, a simple two-goods production model of the Mundell-Fleming type, precludes, among other things, the analysis of terms-of-trade shocks when calculating the medium-term current account balance. Even more importantly, the recursive partial equilibrium nature of the approach ignores other equilibrating forces: given the gap between the actual and the underlying current account, the CGER approach estimates the required change in the real exchange rate but keeps key macroeconomic variables, such as domestic investment and private and public saving, constant.<sup>41</sup> The absence of self-correcting general-equilibrium forces *other* than the real exchange rate could potentially introduce an upward bias in the required change in the real exchange rate. That being said, the simplicity of the CGER approach does help to evaluate some of the more crucial trade-related determinants of the current account in a transparent fashion, avoiding the “black box” characterizing many general equilibrium approaches.

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<sup>40</sup> See Isard and Faruqee (1998) and Isard and others (2001) for a detailed discussion of the CGER approach. CGER is short for the IMF’s Coordinating Group on Exchange Rate Issues.

<sup>41</sup> In addition, the approach does not allow for an explicit feedback from the real exchange rate to the variables determining the benchmark current account.

52. **Moreover, temporary factors reflected in the actual current account could bias the result.** To the extent that the actual balance is influenced by negative one-off factors (which could, for instance, include high oil prices, negative shocks to tourism, or a temporary fiscal expansion) that would fade and thereby lead to smaller current account deficits without specific action being taken, there would also be an upward bias in the required change of the real exchange rate. The exercise below will provide some sensitivity checks along these lines.

53. **Finally, as in any “applied” economic model, the CGER approach involves making a number of critical assumptions.** However, there is, for example, hardly a consensus regarding the value of real trade elasticities in transition economies. As already mentioned, significant uncertainties also surround the choice of the proper current account benchmark. In what follows, different assumptions will be used to illustrate the sensitivity of the results with regard to these uncertainties.

#### **What saving-investment norm?**

54. **No single current account benchmark is without drawbacks.** Section C discussed a variety of benchmarks for current account balances for Hungary. The resulting baseline benchmarks range from about -5.5 percent of GDP to -6.5 percent of GDP, but a case could be made for somewhat higher values, for instance, if more optimistic assumptions on expected FDI flows were made.

55. **In what follows, a benchmark current account balance around 6.5 percent of GDP will be assumed as baseline.**

#### **Underlying current account**

56. **The underlying current account is the balance that would emerge if all economies were operating at potential output at prevailing real exchange rates.** The concept is used in the IMF’s CGER exercises for current account and exchange rate assessments in major industrial countries (see Isard and Faruqee 1998), but recently efforts have been made to extend the exercise to emerging markets and developing economies (Isard and others 2001).

#### ***Framework and assumptions***

57. **The concept is based on a standard partial equilibrium trade model, taking into account the real exchange rate and the state of the business cycle.** Export volume depends on the current and lagged values of the REER and the trade-weighted output gap abroad, while imports depend on the current and lagged values of the REER and the gap between domestic GDP and potential output. A detailed explanation of the empirical application of this concept can be found in Isard and Faruqee (1998)—Appendix IV provides some technical details.

**58. Applying the approach to Hungary's requires a number of technical assumptions:**

- *Real exchange rates:* While no single REER indicator is best fit to explain trade fluctuations in all countries (Marsh and Tokarick 1994), the analysis in Section B supports using the ULC-based REER in the case of Hungary. The model described in Appendix IV allows for impact lags of up to three years, broadly in line with the findings of a number of empirical studies (Ghei and Pritchett 1999).<sup>42</sup> Presuming wage moderation in line with government targets, solid productivity growth, and the absence of upward pressure on the nominal exchange rate vis-à-vis major trading partners, the working assumption here is that the ULC-based REER remains constant in 2003.
- *REER elasticities:* Estimated elasticities even for a given REER measure vary widely across countries.<sup>43</sup> In particular, trade flows in industrial countries are often found to react stronger to real exchange rate changes than exports and imports of developing countries, which, as a rule, face more volatile real exchange rate movements.<sup>44</sup> There are indications that price elasticities in transition economies were even lower in the past.<sup>45</sup> In light of these uncertainties, calculations of the underlying current account are performed across two different sets of elasticities.
- *Output gaps:* Staff estimates place the output gap in Hungary in 2003 at around -2 percent of potential output. Reflecting mostly lower potential growth, the (trade-weighted) output gap for Hungary's trade partners is assumed to be -1½ percent. Following the CGER approach, the elasticity of exports to a decrease in the foreign output gap is set at 1.14, the elasticity of imports to a decrease in the

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<sup>42</sup> See Senhadji (1997) for a different view. The modifications of the CGER model described by Isard and others (2001, Appendix II) assume that 80 percent of the impact of a REER shock takes place within the first three years.

<sup>43</sup> See Marsh and Tokarick (1994).

<sup>44</sup> For instance, Ghei and Pritchett (1999), based on an extensive survey of the existing literature, place the long-run price elasticity of imports at -0.9 for industrial and at -0.7 for developing countries. Reinhart (1995), too, finds that "traditional" factors have a significant impact on trade-flows.

<sup>45</sup> In the case of Hungary, using 1992-1999 data, Jakab and others (2000) find an elasticity of just -0.21 for ULC-based effective exchange rates. Beaumont (1999) estimates a trade-balance elasticity of 0.18 for the 1992-98 period. Vocke (2001) argues that these estimates could still be biased upwards due to the growing role of multinationals in Hungary's external trade during the 1990s.

domestic output gap at 1.26. The discussion below sheds some light on the relative importance of these assumptions.

- *Current account*: Staff projects a current account deficit (custom-based, but excluding reinvested earnings—see Section A) of about 4.8 percent in 2003. Some adjustments are made with regard to *reinvested earnings* and planned *fiscal consolidation* (described in the footnotes to Table 6 below, which reports the underlying current account using the CGER approach).

### Results

59. **Hungary's underlying current account deficit, including reinvested earnings, could be much higher than its actual level.** In column A, Table 6 reports estimates of the underlying current account balance under different assumptions on price elasticities. Changing from the lower elasticities of exports and imports in row (1) to the elasticities more characteristic of industrial countries in row (2) increases the underlying current account deficit.

Table 6. Hungary: Estimated Underlying Current Account Balance, 2003

| Price Elasticities <sup>2/</sup> |        |        | Scenarios                                  |  |
|----------------------------------|--------|--------|--|--|
|                                  | Export | Import | (A) Baseline                               | (B) Alternative                            |
|                                  |        |        | Current account:<br>-4.8 percent of GDP 1/ | Current account:<br>-2.0 percent of GDP 1/ |
| (1)                              | -0.53  | 0.69   | -11.3                                      | -8.5                                       |
| (2)                              | -0.71  | 0.92   | -12.9                                      | -10.1                                      |

Source: Staff calculations.

1/ Adjustment are made for (i) *reinvested earnings*, which increase the current account deficit by an assumed 2.5 percent of GDP, and (ii) the effects of meeting the government's *deficit target* of 4.5 percent of GDP in 2003 and 3 percent in 2004 by assuming a downward correction of the size of the current account deficit of about 1.5 percent of GDP.

2/ Elasticities (1) and (2) are compatible with the CGER assumptions for developing and industrial countries, respectively (Isard and others 2001).

60. **The results are mostly indicative of the stark real appreciation in recent years, with business cycle effects playing a comparatively minor role.** Closing the output gaps in the baseline scenario contributes less than 1 percentage point of GDP to the difference between the actual current account deficit and the underlying balance. Thus, the results would not change dramatically, if the adjustments for the business cycle were not made.

61. **As might be expected, rebasing the calculations in the alternative scenario alters the picture.** As a sensitivity check, column B in Table 6 presents results under the alternative

assumption that the starting point for the current account deficit is only 2 percent of GDP—less than half the size of the deficit in the baseline scenario. The alternative scenario could be interpreted as taking into account transitory factors (other than fiscal policy) that might increase the observed actual current account in the short run.<sup>46</sup> While relatively low, a figure of 2 percent is not outside historical limits.<sup>47</sup> However, even in the alternative scenario, the underlying current account deficit could still reach an uncomfortably large size.

### **Is the real exchange rate overvalued?**

62. **Calculating the real exchange rate adjustment, using the CGER methodology, that would close the gap between the underlying current account deficit and the benchmark, raises concerns about the level of the real exchange rate (Table 7).** In CGER terminology, significant deviations from equilibrium in excess of 15 percent, should be considered a *warning flag*, warranting serious consideration of a real misalignment (Isard and Faruqee 1998).

- In the baseline scenario in column A, the computed REER adjustment exceeds the 15 percent threshold. A decrease in import and export elasticities tends to increase the computed adjustment. As mentioned earlier, empirical studies have found trade volumes in transition economies to be even less sensitive to exchange rate changes than in trade in many developing countries.<sup>48</sup> However, a reasonable argument could also be made that the sensitivity of trade flows to real exchange rate changes increases over time as exchange rate volatility decreases.
- Under the alternative scenario, the computed adjustment in the REER is much smaller.
- Raising the benchmark for the size of the current account deficit to, say, 7.5 percent of GDP would change the result.<sup>49</sup> At one extreme, it would lower the calculated REER adjustment from 37 to 29 percent (column A, row 1); and from 9 percent to

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<sup>46</sup> As mentioned earlier, example for such factors would be a temporary decline in tourism revenues or a transitory increase in oil prices. The underlying current account would be biased upward, if the starting point of the exercise were not adjusted accordingly.

<sup>47</sup> The smallest current account deficit observed during the 1995–2002 period was 1.4 percent of GDP in 1997.

<sup>48</sup> See Section D.

<sup>49</sup> A benchmark in that vicinity would be in line with the views expressed in the MNB's Report on Financial Stability (MNB 2002a). The report considers a current account deficit of about 5 percent of GDP *excluding* reinvested earnings as sustainable—which translates roughly into a deficit of about 7.5 percent including reinvested earnings.

6 percent at the other (column B, row 2). The effect of lowering the benchmark to 5.5 percent of GDP would be of similar magnitude but in the opposite direction.

Table 7. Hungary: REER Adjustment Suggested by the CGER Model, 2003 1/

| <i>Price Elasticities</i> |               |   | <i>Scenarios</i>                                |                        |
|---------------------------|---------------|---|---|------------------------|
|                           |               |   | <i>(A) Baseline</i>                             | <i>(B) Alternative</i> |
| <i>Export</i>             | <i>Import</i> | <i>Current account:<br/>-4.8 percent of GDP</i> | <i>Current account:<br/>-2.0 percent of GDP</i> |                        |
| (1)                       | -0.53         | 0.69  | -37   | -16                    |
| (2)                       | -0.71         | 0.92  | -16   | -9                     |

Source: Staff calculations.

1/ Adjustments could reflect wages, productivity, and taxation, as well as the nominal exchange rate.

63. **These results suggest that greater wage restraint would have many advantages.** As previously discussed, wage increases explain roughly two-thirds of the steep acceleration of Hungary's ULC-based REER in the past two years, making wage moderation key to preventing further (or to reversing past) real appreciation. Other available policy options affecting the REER include reducing the labor tax burden falling on employers (while being careful to maintain fiscal consolidation) and measures to foster productivity growth. Moving resolutely along these lines would have the advantage of lessening the adjustment burden falling on the nominal exchange rate and limiting the likelihood of a disorderly short-run correction.

### E. Concluding Remarks

64. **While the external competitiveness of the Hungarian economy has not been permanently impaired and the country is doing well from various vantage points, a significant dent has been put in competitiveness.** This is reflected in the recent appreciation of the ULC-based real effective exchange rate, about two-thirds of which stems from wages and other labor market developments, and one third from nominal exchange rate appreciation.

65. **Taking into account the lagged effects of the recent exchange rate appreciation, the current account deficit is a concern.** While it is extremely difficult to quantify the precise effect of the appreciation of the exchange—not only because of the uncertainty over the magnitudes of the relevant elasticities but also because of the difficulties in sorting out the complex factors that affect the behavior of exports and imports—the various exercises undertaken in the paper at least raise warning flags that the external current account in Hungary could be moving into unwelcome territory if offsetting measures were not taken.

66. **Notwithstanding the array of caveats and uncertainties associated with the various methods used in this paper, a current account deficit on the order of about**

**4½ percent of GDP would not seem especially problematic (on the basis of the official statistics that for now exclude reinvested earnings).** It would likely be consistent with sustainability, in the sense of avoiding unfavorable debt dynamics. This is consistent with the earlier Fund study by Beaumont (1999). Moreover, over time, a deficit of this size would probably not unduly restrain economic growth, an important consideration in relation to real convergence with current EU countries.

67. **This outcome for the current account implies the need for adjustment measures.** One element in the adjustment process—as suggested, however imprecisely, by the CGER exercise—would be through future adjustments in the real effective exchange rate. This does not only include possible changes in the nominal exchange rate, but, probably more importantly, the need for wage restraint. Fiscal consolidation is also key, not only directly as a contributor to external adjustment but also by unburdening monetary policy and thereby helping to avoid unwanted nominal exchange rate appreciation. Of course, actions to raise productivity would also help, and could possibly be prompted by the recent pressures on profit margins in the tradable goods sector.



### THE INVESTMENT RATIO IN A LONG-TERM GROWTH SCENARIO

Consider a simple economy where in any period  $t$  output or GDP ( $Y$ ) is produced based on a standard Cobb-Douglas function with labor ( $L$ ) and capital ( $K$ ) as inputs:

$$Y_t = A_t \cdot L_t^\alpha \cdot K_t^{1-\alpha}, \quad (1)$$

where  $\alpha$  and  $(1 - \alpha)$  are the elasticities of output with respect to employed labor and capital, respectively, and  $A$  captures total factor productivity (TFP). In the steady-state, the capital-output ratio is constant and, thus, GDP and the capital stock grow at the same rate. Therefore, the long-run rate of GDP growth can be written as

$$\hat{Y}_t = \frac{\hat{A}_t}{\alpha} + \hat{L}_t, \quad (2)$$

where the “ $\hat{\phantom{x}}$ ” marks the growth rates of GDP, *TFP*, and *employment*, respectively. To calibrate the output elasticity with regard to TFP, a widely used assumption for  $\alpha$  is 2/3, which is broadly in line with the wage share in GDP in many developed economies.

Per definition, the investment-to-GDP ratio in any period  $t$  is

$$\frac{I_t}{Y_t} = \frac{K_t}{Y_t} - (1 - \delta) \cdot \frac{K_{t-1}}{Y_t}, \quad (3)$$

with  $\delta$  representing the depreciation rate. After rewriting

$$\frac{I_t}{Y_t} = \frac{K}{Y} \frac{\delta + \hat{Y}}{1 + \hat{Y}}, \quad (4)$$

where again use has been made of the fact that the capital-GDP ratio is constant in the steady state, i.e., that  $K_t / Y_t = K_{t-1} / Y_{t-1} = K / Y$ . Thus, the investment ratio in period  $t$  depends on the *capital-GDP ratio*, the rate of GDP growth—defined in (2)—and the rate of *capital depreciation*.

### ESTIMATING HUNGARY'S FDI POTENTIAL

Table A1 presents the results from a set of pooled regression models explaining average FDI inflows in percent of GDP in a sample of 96 countries over the 1998–2000 period.<sup>50</sup> The most extensive model explains about 56 percent of the variation across countries and is reasonably robust with regard to other specifications.

Table A1: Explaining FDI in a Pooled Regression

| Dependent variable: <i>Average FDI in percent, 1998–2000</i> 1/ 2/         |                  |                  |                  |                  |
|--|------------------|------------------|------------------|------------------|
|  | (1)              | (2)              | (3)              | (4)              |
| Constant   | -1.95<br>(2.01)  | -0.46<br>(0.45)  | -1.27<br>(0.98)  | -1.56<br>(1.16)  |
| FDI potential (U.N.)   | 6.30<br>(2.50)   | 7.87<br>(2.88)   | 8.70<br>(2.92)   | 7.67<br>(2.72)   |
| FDI stock  | 0.39<br>(5.96)   | 0.37<br>(6.62)   | 0.39<br>(6.28)   | 0.38<br>(6.45)   |
| FDI stock, squared   | -0.004<br>(4.59) | -0.004<br>(4.52) | -0.004<br>(4.55) | -0.004<br>(4.87) |
| Saving   |                  | -0.08<br>(2.40)  | -0.07<br>(2.06)  | -0.10<br>(2.73)  |
| Inflation  |                  | -0.06<br>(2.38)  | -0.11<br>(2.55)  | -0.12<br>(2.59)  |
| Inflation, squared   |                  | 0.001<br>(4.14)  | 0.001<br>(3.69)  | 0.001<br>(3.56)  |
| Interest rate spread   |                  |                  | 0.04<br>(2.13)   | 0.05<br>(2.06)   |
| Openness   |                  |                  |                  | 0.02<br>(1.81)   |
| R <sup>2</sup> <sub>adj</sub>  | 0.42             | 0.54             | 0.54             | 0.56             |
| Log likelihood   | -276.68          | -262.40          | -234.22          | -231.11          |
| F-Statistic  | 27.51            | 22.46            | 16.72            | 16.12            |
| Number of observations   | 109              | 109              | 96               | 96               |
| Predicted FDI inflows (and standard error) for Hungary in percent of GDP : | 9.1<br>(3.3)     | 7.9<br>(2.9)     | 7.9<br>(3.0)     | 7.9<br>(2.9)     |

Sources: U.N.; IFS; World Bank; staff calculations.

1/ White Heteroskedasticity-Consistent Standard Errors and Covariance.

2/ Absolute t-Statistics in parenthesis.

<sup>50</sup> Sample selection was determined by data availability. Experiments with an extended data set including available data in 2001 yielded broadly similar results.

The result show that the FDI determinants summarized by the U.N. (2002) indicator of FDI potential and the stock of existing FDI are among the more important explanatory variables. The model represented by the column labeled (1), which excludes other arguments, already explains about 45 percent of the variation in the sample. In particular:

- *FDI is the larger the higher the U.N. indicator for investment potential.* The indicator summarizes, among other “classical” determinants of FDI, per capita GDP, infrastructure, and country risk (see Table A2 for details). All of them are commonly expected to influence both demand and supply of FDI across countries.
- *There is a positive but non-linear connection between the existing stock of FDI and current FDI flows.* While the presence of past FDI investment is positively correlated with current FDI, its marginal impact declines as the stock increases.<sup>51</sup> This result is compatible both with classical decreasing-returns-to-scale arguments and the concept of asymmetric information, i.e., the idea that foreign investors learn more about the qualities the destination country as they (continue to) invest more.

Additional variables seem to be robustly related to current FDI investment:

- *Savings:* Higher domestic savings reduce the demand for foreign savings and, thus, also FDI.
- *Inflation:* Higher inflation rates seem to deter foreign investors. While the impact is somewhat smaller at very high levels of inflation (most likely because the information content of another percentage increase at, say, 100 percent annual inflation, is limited), the net-impact of the squared and non-squared term is strictly negative across the sample.
- *Interest rate spread:* FDI flows are increasing in the difference between domestic interest rates and LIBOR, suggesting perhaps that the spread signals differences in the potential (real<sup>52</sup>) productivity of investments.
- *Openness,* a variable that could be expected to signal a country’s involvement in international trade and factor flows, is only marginally significant.<sup>53</sup>

As a robustness test, a number of other variables were introduced into the model. These include measures of capital controls and financial deepening and indicators of human capital,

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<sup>51</sup> The net-impact of the squared and non-squared stock variable is strictly positive across the sample.

<sup>52</sup> The regression controls for differences in inflation levels.

<sup>53</sup> In part, this is due to the fact that the U.N. measure of potential already takes into account export performance.

health, income distribution, and country size. None of these variables showed a robust correlation with FDI performance.

Table A2 Data Definition and Sources <sup>54</sup>

| <i>Variable</i>      | <i>Description</i>   | <i>AVG</i> | <i>STD</i> | <i>Source</i>                         |
|----------------------|--|------------|------------|---------------------------------------|
| FDI                  | Average FDI inflows 1998–2000 in percent of GDP.   | 4.27       | 4.25       | IFS, WEO, Garibaldi and others (2002) |
| FDI potential        | Index with scores between 0 and 1 indicating the potential for FDI inflows in the 1998–2000 period. The index incorporates information on: GDP per capita, real GDP growth and export performance, infrastructure, energy consumption, R&D expenditure, human capital, and country risk (including both commercial and political risks). | 0.34       | 0.15       | U.N. (2002)                           |
| FDI stock            | Proxied by the sum of FDI inflows 1991–97 in percent of GDP.   | 15.1       | 15.3       | IFS, WEO, Garibaldi and others (2002) |
| FDI stock, squared   | As above, but squared.   | 460.6      | 978.7      | As above                              |
| Saving               | Average gross national savings 1998–2000 in percent of GDP.  | 19.77      | 8.22       | IFS, WEO                              |
| Inflation            | Average rate of CPI inflation 1998–2000.   | 11.21      | 29.72      | WEO                                   |
| Inflation, squared   | As above, but squared.   | 1000.4     | 6150.1     | As above                              |
| Interest rate spread | Average spread between domestic lending rates and the London LIBOR (rate on U.S. Dollar denominated deposits traded between London banks) 1998–2000.   | 12.89      | 14.25      | IFS                                   |
| Openness             | Average ratio of the sum of exports and imports to GDP (in percent) 1998–2000.   | 84.62      | 47.25      | IFS, WEO                              |

The last row in Table A1 reports the predicted level of FDI in percent of GDP for Hungary for each model, that is, the level implied by the respective estimated vector of coefficients. These forecasts represent an estimate of Hungary's FDI potential based on the historical benchmark experience of all sample countries. The more complete models (2) to (4) predict FDI levels of about 7.9 percent of GDP, with a standard error of about 2.9.

Predicted inflows should be interpreted as including reinvested earnings. Since, as a rule, most country data within the sample includes reinvested earnings, the same applies to the model-based forecast of FDI inflows into Hungary. *Excluding* reinvested earnings Hungary's FDI potential could be about 5–6 percent of GDP.

<sup>54</sup> Average (AVG) and standard deviation (STD) based on model (4) in the main text; based on 96 observations.

### CURRENT ACCOUNT DEFICITS TO STABILIZE THE DEBT-GDP RATIO

The current account deficit ( $CAD^*$ ) that would stabilize the ratio of net foreign debt to GDP is the sum of these potential FDI inflows ( $FDI^*$ ) and the level of debt-creating inflows that would stabilize the debt-GDP ratio ( $DCI^*$ ). That is,

$$CAD^* = FDI^* + DCI^* \quad (1)$$

In discrete time, the condition for a constant ratio of net foreign debt ( $D$ ) to nominal GDP ( $Y_{nom}^F$ ) denominated in foreign currency is

$$\frac{D_t}{Y_{nom,t}^F} - \frac{D_{t-1}}{Y_{nom,t-1}^F} = 0, \quad (2)$$

with  $Y_{nom,t}^F = e_t / Y_{nom,t}$ , where  $e$  is the nominal exchange rate defined in terms of the currency composition of net foreign debt and  $Y_{nom}$  stands for nominal GDP in national currency terms. Equation (1) implies that debt-creating capital inflows in percent of GDP that keep the net-foreign-debt-to-GDP constant in period  $t$  are

$$DCI^* = \frac{D_t - D_{t-1}}{Y_{nom,t}^F} \Big|_{D_t/Y_t = D_{t-1}/Y_{t-1}} = \frac{D_{t-1}}{Y_{nom,t-1}^F} \frac{\hat{Y}_{nom,t}^F}{1 + \hat{Y}_{nom,t}^F}, \quad (3)$$

where  $Y_{nom,t}^F / Y_{nom,t-1}^F = \hat{Y}_{nom,t}^F$  is the growth rate of nominal GDP in foreign currency terms.

Assuming that PPP holds, the latter can be decomposed into

$$\hat{Y}_{nom,t}^F = \hat{Y} + \hat{e}_{real} + \pi^*, \quad (4)$$

with  $\hat{Y}$  denoting real GDP growth,  $\hat{e}_{real}$  the growth rate of the real exchange rate, and  $\pi^*$  the growth rate of the foreign GDP deflator in terms of the currency composition of foreign debt.

Assuming medium-term GDP growth rates of 4 percent, foreign inflation of 1–2 percent, and, for illustration, a real (equilibrium) appreciation of about 1–4 percent, a medium-term range of  $\hat{Y}$  would be 7–11 percent.

### UNDERLYING CURRENT ACCOUNT DEFICITS

Following Isard and Faruqee (1998), the trade-equation explaining the ratio of the current account balance to GDP,  $ca$ , is

$$ca_t = \alpha - [\beta_m \cdot m + \beta_x \cdot x] \cdot [0.6 \cdot e_{real,t} + 0.25 \cdot e_{real,t-1} + 0.15 \cdot e_{real,t-2}] + m \cdot \theta \cdot e_{real,t} - m \cdot \eta_m \cdot gap_t + m \cdot \eta_x \cdot gap_t^* \quad (1)$$

where  $\alpha$  is a constant,  $m$  and  $x$  are the ratio of exports and imports to GDP,  $gap$  and  $gap^*$  are the domestic and the (trade-weighted) foreign output gap, and  $e_{real,t}$  represents the average level of the real exchange rate in year  $t$ . The second term in equation (1) models the impact of present and lagged levels of the effective real exchange rate on exports and imports, with a 3-year lag structure similar to the one used in the IMF's Multimod model. The third term in (1) depicts the pass-through to import prices.

For  $\theta = 1$ , the assumed pass-through would be immediate and full (as in Isard and Faruqee 1998), while values  $0 < \theta < 1$  indicate a slower pass-through. Export prices are assumed to be independent of the exchange rate. The fourth and last term in (1) models the relation between the output gaps and  $ca$ . The terms  $\beta_m, \beta_x, \eta_m$ , and  $\eta_x$  are partial elasticities.

Based on equation (1), the underlying current account  $ca_u$  can be found by assuming closed output gaps and a constant exchange rate,  $e_{real}$ , thought to prevail at the time of analysis:

$$ca_{u,t} = \alpha - [\beta_m \cdot m + \beta_x \cdot x] \cdot e_{real} + m \cdot \theta \cdot e_{real} \quad (2)$$

Subtracting (1) from (2) and rearranging yields

$$ca_{u,t} = ca_t - [\beta_m \cdot m + \beta_x \cdot x] \cdot [(e_{real} - e_{real,t}) + 0.4 \cdot (e_{real,t} - e_{real,t-1}) + 0.15 \cdot (e_{real,t-1} - e_{real,t-2})] + m \cdot \theta \cdot (e_{real} - e_{real,t}) + m \cdot \eta_m \cdot gap_t - m \cdot \eta_x \cdot gap_t^* \quad (3)$$

In other words, the underlying current account can be calculated as the sum of the observed current account and a correction term, which depends on present and past changes of the real exchange rate and the domestic and foreign output gaps. Ceteris paribus, the sign of the correction term is more likely to be negative, if the real exchange rate follows a positive trend and domestic (but not foreign) output deviates significantly from potential.

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## II. FISCAL ADJUSTMENT STRATEGY IN HUNGARY<sup>1</sup>

### A. Introduction

1. **Over the next few years, Hungary faces the challenge of realizing significant fiscal adjustment while supporting continued economic growth.** The authorities are in the process of formulating their fiscal adjustment strategy. As set out in the government's Pre-Accession Economic Programme for 2002 (PEP-02),<sup>2</sup> the government aims to cut the general government deficit by 5 percentage points of GDP from 9½ to 4½ percent of GDP this year, and further, to Maastricht levels of 3.0 percent of GDP in 2004, and 2½ percent of GDP in 2005. As discussed in the staff report for the 2003 article IV consultation (SM/03/116), expenditure adjustment—including a streamlining of overall expenditures and improvements in expenditure efficiency—will have to play a central role in this strategy.

2. **The task that Hungary faces is not unique, and some of the European Union (EU) member countries carried out adjustments of similar size at some point during the last 15 years.** Driven by Maastricht fiscal criteria, virtually all EU member countries went through episodes of significant fiscal consolidation in the 1990s; some countries already underwent strong adjustment in the 1980s. As shown in Table 1, Sweden adjusted its overall budget balance by over 10 percentage points of GDP over a 4-year period, and Greece adjusted by almost 12 percentage points of GDP over an 8-year period. But even over shorter periods of time, countries carried out substantial adjustments: Denmark, for example, tightened its overall balance by over 3½ percentage points of GDP during a two-year period. Ireland, in particular, which adjusted its general government deficit from 8 percent of GDP to about 1½ percent of GDP during 1987–89 (not shown in Table 1, but discussed in Box 2), provides a useful example of a “contractionary expansion,” where fiscal retrenchment was accompanied by significant improvements in the country's macroeconomic performance. On average, for the periods and countries shown in Table 1, EU economies tightened their overall balances by 4.2 percent of GDP, with average annual adjustments of about 1 percent of GDP (Table 1).<sup>3</sup> The scale and speed of the adjustment required in Hungary fall within the range of

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<sup>1</sup> Prepared by Paulo Drummond, Eva Jenkner, and Gerd Schwartz.

<sup>2</sup> See Government of the Republic of Hungary, “Pre-Accession Economic Programme of Hungary—2002,” Budapest, August 2002.

<sup>3</sup> Structural (cyclically adjusted) primary balances also improved during these consolidation periods—by 5 percent on average—with an annual adjustment of 1 percent of GDP. Some countries achieved much stronger adjustments, including Sweden, Italy, and Greece.

these earlier adjustment experiences of other EU economies, assuming the 2003 deficit target is met.<sup>4</sup>

Table 1. Fiscal Consolidation in EU Member States

| Member country      | Consolidation period | Change in 1/          |                           |                            | Average consolidation per year 2/ |
|---------------------|----------------------|-----------------------|---------------------------|----------------------------|-----------------------------------|
|                     |                      | Actual budget balance | Structural budget balance | Structural primary balance |                                   |
| (In percent of GDP) |                      |                       |                           |                            |                                   |
| Belgium             | 1992-96              | -3.1                  | -5.6                      | -4.0                       | -0.8                              |
| Denmark             | 1996-97              | -3.7                  | -3.1                      | -2.2                       | -1.1                              |
| Germany             | 1992-97              | -0.3                  | -2.9                      | -4.4                       | -0.7                              |
| Greece              | 1990-97              | -11.9                 | -11.3                     | -13.7                      | -1.7                              |
| Spain               | 1992-97              | -1.3                  | -4.6                      | -5.8                       | -1.0                              |
| France              | 1995-97              | -2.6                  | -2.7                      | -2.8                       | -0.9                              |
| Ireland             | 1991-93              | 0.1                   | -3.6                      | -2.3                       | -0.8                              |
| Italy               | 1991-97              | -8.1                  | -9.8                      | -10.0                      | -1.4                              |
| Netherlands         | 1991-96              | -2.8                  | -4.8                      | -4.4                       | -0.7                              |
| Austria             | 1995-97              | -2.0                  | -2.7                      | -2.6                       | -0.9                              |
| Portugal            | 1994-96              | -2.9                  | -3.9                      | -2.5                       | -0.8                              |
| Finland             | 1993-97              | -4.5                  | -0.6                      | -3.5                       | -0.7                              |
| Sweden              | 1994-97              | -10.4                 | -7.5                      | -7.9                       | -2.0                              |
| United Kingdom      | 1994-97              | -5.9                  | -3.9                      | -4.3                       | -1.1                              |
| EU average 3/       |                      | -4.2                  | -4.8                      | -5.0                       | -1.0                              |

Source: European Commission.

1/ A negative sign denotes a reduction of the deficit.

2/ Based on the structural primary balance.

3/ Data for Luxembourg are not available.

3. **To facilitate the envisaged adjustment, the Hungarian government has plans to strengthen fiscal management in areas where the experience of EU countries is also highly relevant.** Notably, the government plans to introduce three-year rolling expenditure ceilings to serve as a basis for medium-term budget planning; and to move toward performance-based budgeting. As the experience of some EU countries (e.g., the Netherlands and the U.K.) shows, a well-designed medium-term fiscal framework with explicit expenditure ceilings can help to achieve several objectives simultaneously: it can reinforce government commitment to the targeted path of fiscal adjustment, thus helping to anchor expectations; it can enhance the feasibility of the government's fiscal objectives by providing a coherent

<sup>4</sup> As explained in SM/03/116, the fiscal adjustment in 2003 relies mostly on one-off factors (3¾ percentage points of GDP) and lower investment spending.

quantitative statement of the government's fiscal strategy; and, it can provide the government with a useful tool to respond to the challenges posed by European Union accession, including the need to abide by the EU's fiscal rules, such as the Stability and Growth Pact and the excess deficit procedure. Within the expenditure envelope, performance budgeting can help enhance the efficiency of outlays, as the experience within the EU (e.g., the U.K.) has shown.

4. **Against this background, this paper highlights some important considerations for the fiscal adjustment strategy in Hungary.** In Section B, the paper reviews the experience of other European economies in undertaking significant fiscal adjustment to draw lessons for achieving a fiscal consolidation that is durable and friendly to growth. In Section C, it discusses the recent government proposals in Hungary to strengthen fiscal management—the introduction of three-year rolling expenditure ceilings and performance-based budgeting—in light of current EU member countries' experiences. Section D presents concluding remarks.

## **B. Achieving Durable and Growth-Friendly Fiscal Consolidation**

### **Scale of adjustment**

5. **Returning to Table 1, fiscal consolidation varied widely across the EU countries, but the scale of adjustment had a number of common features:**

- **The narrowing of government deficits reflected structural changes.** Although the overall narrowing in some countries (Finland, Sweden, and the U.K.) was somewhat more cyclical than structural, for the majority of EU countries structural changes were the driving force, with a narrowing of the structural primary balance<sup>5</sup> of at least 4 percentage points of GDP over the consolidation period.
- **The scale of adjustment was related to the initial deficit position.** In Greece and Italy, the only countries with double digit deficits in the year before the start of fiscal consolidation, the magnitude of adjustment was extraordinary. The adjustment in their structural primary balances were 13.7 and 10 percentage points of GDP, respectively, over the consolidation period.
- **The speed of adjustment was proportional to the size of deficit reduction.** While countries adjusted their structural primary deficit by 1 percentage point of GDP per year on average, high deficit countries—Greece, Italy, and Sweden—pursued and achieved a much faster consolidation effort, of about 1.5 to 2 percent per year.

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<sup>5</sup> Defined as the cyclically adjusted primary balance.

## Composition of adjustment

6. **Fiscal adjustment was carried out through tax increases in some countries,<sup>6</sup> but the majority of EU economies undertook sizable cuts in government spending (Table 2).**

- **The U.K. and the Nordic countries consolidated their fiscal position primarily through cuts in government spending.** Expenditure reduction in these countries varied from about 2 percentage points of GDP in Denmark to 7–8 percent in Finland and Sweden (where expenditure cuts followed heavily expansionary policies in the period 1991–93). In all expenditure reducing countries, spending cuts were concentrated in current primary expenditure, with a large part of the cuts coming from reductions in transfers to households and in the government wage bill (see a more detailed discussion on the sectoral composition of spending cuts below).
- **A group of countries<sup>7</sup> opted to increase taxes in the first phase of their adjustment strategy, but switched strategy and implemented substantial expenditure cuts at the beginning of the second stage of EMU (1994).** The difficulty of pursuing consolidation through further tax increases and the need to put public spending firmly under control to meet the Maastricht budgetary criteria may have played an important role in the switch of government behavior.

7. **Spending reductions primarily focused on primary current spending.** In most countries, social security and welfare payments were the main categories of adjustment (Table 3). Other important areas were economic services provided by the government and social outlays, such as housing amenities and spending on education and health. Only in the U.K. was there a significant reduction in military spending. During all episodes but one, subsidies and current transfers were the categories that were cut back the most drastically. Central government wage bills also shrank, most notably in the U.K.

8. **To illustrate the kind of spending reforms that led to significant and sustained reductions in sectors that would seem relevant for Hungary, this section now turns to specific country examples.** It focuses on social security and welfare, government employment and wages, health, and education.

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<sup>6</sup> Belgium, Austria and Portugal. Ireland is included in the group of countries with revenue-based adjustment in the early 90s, but it implemented the bulk of its adjustment in the late 80s. See a separate discussion on the Irish adjustment path in Box 2.

<sup>7</sup> Germany, Greece, Spain, France, Italy, and the Netherlands.

Table 2. Composition of Fiscal Consolidation in EU Member Countries 1/

| Member country                      | Consolidation period | Change in structural revenue | Change in structural primary expenditure |                  |                             |   |
|-------------------------------------|----------------------|------------------------------|--|------------------|-----------------------------|---|
|                                     |                      |                              | Total                                    | Capital spending | Current primary expenditure | Of which: transfers to households and wages of government employees |
| (In percent of GDP)                 |                      |                              |  |                  |                             |   |
| <b>Revenue-based adjustment</b>     |                      |                              |  |                  |                             |   |
| Belgium                             | 1992-96              | 3.7                          | -0.2                                     | -0.3             | 0.1                         | 0.7   |
| Ireland                             | 1991-93              | 3.2                          | 1.0                                      | 0.1              | 0.9                         | -0.1  |
| Austria                             | 1995-97              | 3.5                          | 0.8                                      | -0.5             | 1.3                         | -1.0  |
| Portugal                            | 1994-96              | 1.9                          | -0.6                                     | -0.1             | -0.5                        | 0.9   |
| <b>Expenditure-based adjustment</b> |                      |                              |  |                  |                             |   |
| Denmark                             | 1996-97              | 0.1                          | -2.1                                     | -0.1             | -2.0                        | -1.7  |
| Finland                             | 1993-97              | -3.4                         | -6.8                                     | -0.7             | -6.1                        | -3.9  |
| Sweden                              | 1994-97              | -0.4                         | -8.2                                     | -0.2             | -8.0                        | -3.8  |
| United Kingdom                      | 1994-97              | 0.7                          | -3.7                                     | -1.0             | -2.7                        | -3.5  |
| <b>"Switching" strategy</b>         |                      |                              |  |                  |                             |   |
| Germany                             |                      |                              |  |                  |                             |   |
| 1st phase                           | 1992-93              | 3.1                          | 0.8                                      | 0.2              | 0.6                         | 1.8   |
| 2nd phase                           | 1994-97              | -0.6                         | -2.1                                     | -0.8             | -1.3                        | -0.7  |
| Greece                              |                      |                              |  |                  |                             |   |
| 1st phase                           | 1990-93              | 6.8                          | -0.7                                     | 0.3              | -1.0                        | -1.6  |
| 2nd phase                           | 1994-97              | 2.5                          | -3.4                                     | 0.0              | -3.4                        | 0.6   |
| Spain                               |                      |                              |  |                  |                             |   |
| 1st phase                           | 1992-93              | 4.6                          | 2.4                                      | -2.9             | 5.3                         | 1.7   |
| 2nd phase                           | 1994-97              | -2.0                         | -5.6                                     | 1.1              | -6.7                        | -2.6  |
| France                              |                      |                              |  |                  |                             |   |
| 1st phase                           | 1995-96              | 2.1                          | 0.2                                      | -0.1             | 0.3                         | 0.3   |
| 2nd phase                           | 1997                 | 0.2                          | -1.2                                     | -0.1             | -1.1                        | -0.2  |
| Italy                               |                      |                              |  |                  |                             |   |
| 1st phase                           | 1991-93              | 6.4                          | 0.7                                      | -0.6             | 1.3                         | 0.6   |
| 2nd phase                           | 1994-97              | -0.5                         | -4.7                                     | -0.5             | -4.2                        | -0.5  |
| Netherlands                         |                      |                              |  |                  |                             |   |
| 1st phase                           | 1991-93              | 4.9                          | 0.6                                      | -0.2             | 0.8                         | 0.5   |
| 2nd phase                           | 1994-96              | -4.6                         | -4.8                                     | 0.1              | -4.9                        | -3.3  |

Source: European Commission.

1/ A positive sign denotes an increase in the revenue and expenditure ratios.

Table 3. Expenditure-based Adjustment in the EU

(Changes in percent of GDP 1/)

|   | Ireland      |             | Denmark     |             | Finland      | Spain       | Sweden      | Netherlands | United Kingdom | Average     |
|---|--------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|----------------|-------------|
|   | 1988-89      | 1995-97     | 1984-85     | 1996-97     | 1994-97      | 1994-97     | 1994-97     | 1994-96     | 1994-97        |             |
| (By functional classification)          |              |             |             |             |              |             |             |             |                |             |
| <b>Total Expenditures 2/</b>            | <b>-11.4</b> | <b>-6.2</b> | <b>-5.2</b> | <b>-3.8</b> | <b>-10.9</b> | <b>-6.6</b> | <b>-8.5</b> | <b>-5.2</b> | <b>-5.9</b>    | <b>-7.2</b> |
| <i>Of which:</i>                        |              |             |             |             |              |             |             |             |                |             |
| Defense                                 | -0.1         | -0.2        | -0.5        | -0.1        | -0.2         | -0.3        | -0.4        | -0.4        | -0.9           | -0.3        |
| Education                               | -1.3         | -0.7        | -0.8        | 0.3         | -1.5         | -0.5        | -0.9        | -0.6        | -0.1           | -0.7        |
| Health                                  | -1.3         | -0.5        | 0.0         | -0.1        | -0.2         | -0.5        | 0.6         | -0.2        | -0.2           | -0.3        |
| Social security and welfare             | -2.5         | -2.1        | -1.7        | -2.5        | -8.0         | -2.6        | -5.8        | -2.2        | -2.3           | -3.4        |
| Housing and other amenities             | -1.6         | -0.3        | -0.6        | 0.0         | -0.3         | -0.1        | -1.9        | -1.1        | -0.3           | -0.7        |
| Economic Services                       | -2.9         | -0.3        | -0.8        | -0.1        | -1.9         | -1.6        | -3.7        | -0.1        | -0.9           | -1.4        |
| Interest payments                       | -1.1         | -1.8        | 1.3         | -0.8        | 0.9          | -0.3        | 1.0         | -0.5        | 0.4            | -0.2        |
| (By economic classification)            |              |             |             |             |              |             |             |             |                |             |
| <b>Current Expenditure</b>              | <b>-10.8</b> | <b>-5.7</b> | <b>-4.7</b> | <b>-3.5</b> | <b>-10.8</b> | <b>-5.5</b> | <b>-7.6</b> | <b>-4.5</b> | <b>-4.4</b>    | <b>-6.6</b> |
| <i>Of which:</i>                        |              |             |             |             |              |             |             |             |                |             |
| Expenditures on goods and services      | -1.8         | -1.3        | -1.1        | -0.2        | -1.1         | -1.8        | 0.0         | -0.2        | -1.2           | -0.9        |
| Wages and salaries                      | -1.0         | -1.1        | -0.8        | -0.2        | -1.0         | -1.1        | -0.3        | 0.0         | -2.0           | -0.7        |
| Other purchases of goods and services   | -0.8         | -0.2        | -0.3        | 0.0         | -0.1         | -0.6        | -0.6        | -0.2        | 1.0            | -0.4        |
| Interest payments                       | -1.1         | -1.8        | 1.3         | -0.8        | 0.9          | -0.3        | -0.6        | -0.5        | 0.4            | -0.4        |
| Subsidies and other transfers           | -7.9         | -2.7        | -4.8        | -2.5        | -10.6        | -3.4        | -8.6        | -3.8        | -3.6           | -5.5        |
| Subsidies                               | n.a.         | n.a.        | n.a.        | -0.1        | -6.0         | -0.4        | -3.4        | 0.5         | -0.3           | -1.9        |
| Transfers to other levels of government | n.a.         | n.a.        | -3.5        | -1.6        | -4.4         | -0.6        | -1.7        | -1.4        | -1.7           | -2.2        |
| <b>Capital Expenditure</b>              | <b>-0.6</b>  | <b>-0.4</b> | <b>-0.5</b> | <b>-0.3</b> | <b>-0.2</b>  | <b>-1.2</b> | <b>-0.8</b> | <b>-0.6</b> | <b>-1.5</b>    | <b>-0.6</b> |

Sources: *Government Finance Statistics*; and staff calculations.

1/ Calculated as the difference between the year after the adjustment and the year prior to the adjustment.

2/ Central government only.

## 9. Social security and welfare payments accounted for almost half of total expenditure adjustment in the selected episodes shown in Table 3.

- In **Denmark**, the government lowered social security and welfare payments by 1.7 percentage points of GDP by tightening eligibility criteria and the availability of unemployment benefits. Also, the costly early retirement system was reformed in 1995.
- Apart from reforming its pension system, **Sweden** improved the targeting of social benefits, abolishing the special child-care allowance in 1995, and lowering general child allowances and compensation in family insurance in 1995. Moreover, targeting of labor market support was enhanced, and the level of housing benefits was reduced (von Hagen, and others, 2001). As a result, social security and welfare payments went down by almost 6 percentage points of GDP between 1993 and 1998.
- In **Finland**, social security and welfare payments were cut most dramatically by 8 percentage points of GDP during the 1990s. Committed by its EU convergence program, the government introduced a major pension reform package in 1996, reducing the accrual factors for early-retired and disabled workers, extending the



period for calculating the pensionable wage from the last 4 to the last 10 years of employment, and changing the indexation formula to mainly follow CPI inflation. Also, access to unemployment benefits was tightened, in particular for the young, and these benefits were frozen in nominal terms between 1997 and 1999.

- Apart from active reform, automatic reductions in welfare payments as unemployment fell reduced expenditure during expansionary consolidations in **Ireland**. The work of automatic stabilizers helped during the first phase of fiscal consolidation in 1988–89, and in the third phase— towards EMU in the 1990s. While nominal social welfare benefits, including unemployment assistance and universal child benefits, were raised in 1995, the increase in unemployment benefits was kept below growth rates in average earnings to maintain incentives to work.

10. **During their most significant adjustment episodes, Ireland and the U.K. reduced government employment by 9 and 10 percent, respectively, thus achieving lasting reductions in the public sector wage bill (Table 4).**

- A decline in government employment, coupled with wage moderation, were important factors of **Ireland's** adjustment during 1988–89. In this period, public employment was cut by over 9 percent, or about 30,000 workers. This was achieved through a hiring freeze instituted in 1987, as well as early retirement and voluntary redundancy schemes (Alesina and Perotti, 1997). The government also provided retraining schemes for public sector workers. Special circumstances may have played a decisive role, however, as rising public debt left no alternative to the government. Strong economic growth rates during the adjustment helped absorb released employees into the private sector, with the result that unemployment decreased as did pressures on welfare payments. Political support for wage moderation across all sectors was built through a broad-ranging tax cut in 1987, with the unions agreeing to put a tight cap on previously generous public sector pay increases.
- In the **U.K.**, strict spending restraint was imposed after public sector borrowing requirements had risen sharply during the 1990–92 recession. In particular, the overall public sector wage bill was frozen after a peak in 1992. The real reduction in the wage bill was brought about by a large reduction in employment, while public sector wage settlements were roughly on par with private sector settlements. Apart from reducing the number of civil servants, a large part of the drop in public sector staffing involved a shift of workers to the private sector through privatization, contracting out, or changes in classification (for example, education workers were no longer classified as public

sector employees).<sup>8</sup> The government succeeded in achieving one-off overall savings as costs are generally lower in a competitive market for services (IFS, 1998). And privatization did not increase overall joblessness: unemployment declined from a peak of over 10 percent in 1993 to 6 percent in 1999 (OECD).

Table 4. Employment Adjustment in the EU 1/

|   | Ireland |         | Denmark | Finland | Spain   | Sweden  | Netherlands | United Kingdom |
|---|---------|---------|---------|---------|---------|---------|-------------|----------------|
|   | 1988-89 | 1995-97 | 1996-97 | 1994-97 | 1994-97 | 1994-97 | 1994-96     | 1994-97        |
| Change in government employment<br>(in percent) 2/              | -9.3    | 3.3     | 5.0     | 2.1     | 13.0    | -6.9    | -1.3        | -9.7           |
| Change in government wage consumption<br>(in percent of GDP) 2/ | -1.6    | -2.2    | 0.0     | -1.5    | -1.2    | -2.2    | -0.9        | -3.6           |

Source: OECD.

1/ Calculated as the difference between the year after the adjustment and the year prior to the adjustment.

2/ Refers to general government.

11. **The Irish experience of 1988–89 involved a successful reduction in health outlays: in two years, public health spending was reduced by 1.3 percentage points of GDP.** Prior to reform, per-capita spending on health in Ireland was above the OECD average, reflecting the generous public provision of many services free of charge. Lack of a hard budget constraint had pushed costs up, and Ireland had more hospital beds per head than the U.K. or Denmark, despite lower average income levels and a younger population. To reign in spending in 1987, many older and smaller hospitals were closed, employment was reduced, mainly through phasing out fixed-term contracts, and selected user fees were introduced on hospital stays and outpatient visits (OECD, 1988).<sup>9</sup>

12. **In Sweden, as part of important changes in the scale and composition of public spending, education expenditure was cut by 1 percentage point of GDP.** Retrenchment was inevitable after a deep budgetary crisis in the early 1990s, with public expenditure peaking at 67 percent of GDP in 1993. Reforms in the education sector focused on the organization and funding of schools. Earmarked grants to local authorities were replaced with block grants, to be complemented by local tax revenue, devolving all responsibility except for a centrally determined curriculum to the local level. Parents were given the right to choose freely amongst public and independent schools, the latter being funded by municipalities and barred

<sup>8</sup> These changes may have led to an understatement of wage spending in the budget. For example, “purchases” of health care services, which are classified as expenditures on goods and services, in large part cover wage costs.

<sup>9</sup> Health spending as a percentage of GDP recovered slightly during the 1990s, but per capita spending remains below the European average.

from charging tuition fees. Funding in turn depended on the number of students, with a few municipalities implementing explicit voucher systems. Despite a rapid increase in the number of independent schools, only 3 percent of students were enrolled outside the public school system in 2000. The new system seems to have succeeded in promoting better organization and resource efficiency, while quality standards do not seem to have suffered, as evidenced by recent PISA (Program for International Student Assessment) test results (Roseveare, 2002). Nonetheless, in comparison to other European economies, overall spending levels remain high (OECD, 1998).

### **Common features of successful adjustments**

13. **Recent research on the quality of fiscal adjustments helps confirm that certain budgetary categories, particularly on the spending side, are key to bringing about a lasting and successful consolidation** (Alesina and Perotti, 1995, 1997; Buti and Sapir, 1998; Buti and others, 1997; Perotti and others, 1998). Moreover, von Hagen and others, (2001) researched the contributions of various budget items to successful budget consolidations among 65 consolidation episodes in a sample of 20 OECD countries spanning the years 1960–98.<sup>10</sup> The main findings, summarized in Table 5, show that countries achieved successful consolidations by:

- **relying on restraining government spending, instead of raising revenues.** The average successful fiscal consolidations in the sample amounted to a deficit reduction of 2.37 percentage points of potential GDP, and expenditure cuts contributed over half of the adjustment in successful consolidations, compared to just over 10 percent in unsuccessful ones. Thus, the composition of adjustment seems to matter importantly.<sup>11</sup>
- **putting more emphasis on cutting current spending, instead of investment outlays.** On average, cuts in current expenditures accounted for almost 60 percent of

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<sup>10</sup> Von Hagen and others, (2001) define fiscal consolidations as episodes in which either the cyclically-adjusted government balance increased (i.e., a smaller deficit or a larger surplus) by at least 1.25 percent of cyclically-adjusted GDP in two consecutive years, or the change in the cyclically-adjusted budget balance exceeded 1.5 of cyclically adjusted GDP in one year and was positive but less than 1.25 percent in the preceding year and in the subsequent year. A consolidation effort is deemed successful if, two years after the initial adjustment, the government budget balance stands at no less than 75 percent of the balance in the first year of the consolidation episode.

<sup>11</sup> This finding is consistent with Purfield (2003), who reviews episodes of fiscal consolidation in 25 transition countries during 1992–2000 and finds evidence that policies which focused on expenditure reduction were more successful in addressing fiscal imbalances than those which relied on revenue increases.

the average spending reduction in successful consolidations, which was significantly higher than current expenditure cuts in unsuccessful consolidations (under 30 percent of the average spending reduction). Thus, the composition of the expenditure cuts matters.

- **tackling forcefully spending items such as transfers, subsidies, and the government wage bill.** Cuts in subsidies and transfers contributed 50 percent, on average, to the reduction in current spending during successful consolidations, but less than 30 percent in unsuccessful ones. In the same vein, reductions in the government wage bill contributed, on average, over 35 percent to the reduction in current government spending during successful consolidations, while there was no significant fall in relation to GDP during unsuccessful ones.

Table 5. Contribution of Various Budget Items to Fiscal Consolidation in OECD Countries

| Budget item (relative to potential output) | All consolidations | Successful consolidations | Unsuccessful consolidations | Difference |
|--|--------------------|---------------------------|-----------------------------|------------|
| Structural surplus                         | 2.29 (23.61)       | 2.37 (18.30)              | 2.17 (14.96)                | 0.20       |
| Total expenditures                         | -0.84 (-5.00)      | -1.23 (-5.57)             | -0.26 (-1.18)               | -0.97***   |
| Total revenues                             | 1.45 (10.24)       | 1.13 (6.24)               | 1.91 (9.83)                 | 0.78***    |
| Current expenditures                       | -0.45 (-3.69)      | -0.70 (-4.58)             | -0.07 (-0.41)               | -0.63**    |
| Capital expenditures                       | -0.39 (-3.88)      | -0.53 (-3.34)             | -0.18 (-2.56)               | -0.35*     |
| Subsidies, transfers                       | -0.22 (-2.70)      | -0.35 (-3.31)             | -0.02 (-0.17)               | -0.33**    |
| Social transfers                           | -0.07 (-1.34)      | -0.09 (-1.42)             | -0.03 (-0.38)               | -0.06      |
| Government consumption                     | -0.23 (-3.91)      | -0.35 (-4.70)             | -0.05 (-0.61)               | -0.30**    |
| Spending on goods and services             | -0.11 (-3.96)      | -0.10 (-3.02)             | -0.12 (-3.52)               | 0.02       |
| Wage expenditures                          | -0.12 (-2.65)      | -0.25 (-4.93)             | 0.06 (0.85)                 | -0.31***   |
| Tax revenues                               | 1.38 (10.71)       | 1.10 (6.71)               | 1.79 (9.86)                 | -0.69**    |
| Nontax revenues                            | 0.07 (1.16)        | 0.03 (0.38)               | 0.12 (1.86)*                | -0.09      |

Source: von Hagen et al. (2001).

Note: Numbers in parentheses are t-ratios. \*\*\*, \*\*, and \* indicate that the difference between the two averages is statistically significant at a level less than one percent, between one and five percent, and between five and ten percent, respectively.

14. **Reducing current spending not only contributed to the durability of fiscal adjustment, but also helped to improve economic performance.** As suggested by the literature on fiscal adjustment, tax cuts on labor income combined with sustained spending restraint on the public wage bill and government transfers may well encourage economic growth over the medium term (Box 1).<sup>12</sup> But for this to happen, it is crucial that the spending reduction is sustainable and does not lead to an undue suppression of growth-enhancing public outlays. Thus, while durable adjustments in the public sector wage bill and transfers are more likely to be conducive to sustained growth—particularly, if associated with lasting changes in entitlements—cuts in investment spending could have the opposite effect.

<sup>12</sup> For example, see von Hagen (2001), Alesina (1998), Alesina and Perotti (1995a and b).

Moreover, supply-side effects must be present. These can arise because the shift in fiscal behavior signals a permanent change in policy. For example, interest rates can fall as expectations about the sustainability of government fiscal policies improve, lowering costs for businesses. At the same time, a smaller, more efficient government, and lower or less-distortionary taxes can invigorate productive private sector activity. For the EU economies, though other factors were at play, GDP growth was 1.5 percent on average in the period 1992–97 when the episodes of fiscal consolidation took place, but accelerated to 2.7 percent in the post-consolidation period of 1997–99.

**15. While empirical evidence supporting expansionary fiscal contractions is not definite, there is a consensus that, at a minimum, some conditions considerably reduce the drag on output from a fiscal contraction.**<sup>13</sup> The strongest empirical support for expansionary contractions comes from case studies, such as Belgium, Denmark, and Ireland in the mid-to late-1980s and Italy in the mid-1990s. The positive experiences of these countries suggest that contractions are most likely to be expansionary when involving fiscal reforms that permanently eliminate wasteful spending or transfers. By contrast, fiscal consolidations based on tax hikes or temporary expedients to cut spending, such as wage freezes, have generally not achieved such positive outcomes. The experience of Ireland, while helped by other factors contributing to fast growth, including Ireland’s position as “gateway to Europe,” remains an important example of an expansionary fiscal contraction (Box 2).

**16. In practice, implementing a successful fiscal consolidation requires overcoming political obstacles that often constrain choices.** In some cases, such as in Ireland, for example, consensus-building was the key to success, whereas decentralized decision-making has tended to slow or block the reform process in other instances. Some advocate gradualism to build momentum for reform, whereas others prescribe “shock therapy.” Across-the-board cuts— in theory expected to be politically easier to implement— have unraveled in practice due to their time-inconsistency.<sup>14</sup> Tax reform, often considered a natural compliment of fiscal consolidation, could undermine the very adjustment process if revenue drops too sharply. However, it has also been used successfully as a bargaining chip for expenditure reductions (Ireland, Germany). Finally, improved targeting of benefits protects the poorest segments of society from adverse consequences of reform – but may not persuade the middle class to give up their share of the pie. Institutions are important, but are no guarantee against fiscal profligacy. Perotti (1998) tries to develop an optimal consolidation strategy for policy-makers, but acknowledges that it is difficult to come up with universally applicable prescriptions.

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<sup>13</sup> Hemming and others (2002).

<sup>14</sup> As vocal and politically influential groups can be expected to resist expenditure cuts ex post, across-the-board cuts may not be credible ex ante.

### Box 1. Fiscal Adjustment and Growth

When assessing the relationship between fiscal policy and economic growth, it is useful to distinguish short-term from longer-term considerations (see Alesina and Perotti (1997), and Alesina and others (1999) for a comprehensive discussion).

**A short-term perspective**, in line with the traditional (Keynesian) approach, associates contractionary fiscal policy with lower output, brought about by a reduction in aggregate demand in a world with sticky prices and wages. With a propensity to consume of less than unity, cuts in public spending, by lowering demand directly, have a larger impact than higher taxes that affect demand via their impact on disposable income. Also, the effect of either measure is smaller in an open economy, as imports absorb a larger part of the impact on aggregate demand. Moreover, with high capital mobility and a flexible exchange rate, the effect of fiscal policy can be weaker, when the resulting depreciation (in the case of a fiscal tightening) stimulates net exports. This short-term link between fiscal policy and output is not unqualified, however, as other effects also come into play, some of which (such as wealth effects from a reduction in the expected future tax burden) are working in the opposite direction.

**Over time**, the effect of fiscal consolidation on economic growth is increasingly influenced by the way it is achieved—that is, by the composition of revenue and expenditure measures. In general, an adjustment that relies on tax increases, particularly on labor income, is more likely to have a lasting contractionary effect through its negative impact on employment. An expenditure-driven adjustment, on the other hand, can be expansionary over the medium term, depending on which categories of spending are reduced. While durable adjustments in the public sector wage bill and transfers are more likely to be conducive to sustained growth—particularly, if associated with lasting changes in entitlements—cuts in investment spending can have the opposite effect. However, as suggested in Feldman and Watson (2002), not all public investment is growth-enhancing, and some may be “crowding-out” rather than “crowding-in” private sector activity. In the same vein, positive externalities can also be associated with current spending, for example, in the area of education.

While **empirical evidence** regarding the effects of fiscal consolidation is mixed (see Alesina and others (1998), several authors do find evidence of an association between fiscal contractions and somewhat higher economic growth, even in the short term. This is particularly the case in countries characterized by large governments and high levels of government debt, where non-Keynesian effects are likely to be particularly important, and where fiscal contraction results from reductions in government spending. Not surprisingly, supply side effects can be dominant when taxes are highly distortional or expenditure cuts are made on relatively inefficient government spending.

Note that the ratio of expenditure to GDP has been rising in Hungary in recent years. Whereas total expenditure (including net lending) had declined from about 53 percent of GDP in 1993 to 46 percent of GDP in 2000, it increased to 54 percent of GDP in 2002. This would suggest that there is ample room for adjustment.

## **Box 2. The Irish Experience<sup>1</sup>**

**Ireland's public finances improved dramatically in two phases: in the years well before and just prior to euro adoption in 1999 (Table 6).** The early consolidation occurred from 1987 through 1989 when the general government deficit was reduced from about 8 percent of GDP to about 1½ percent, with the primary balance moving sharply into surplus; and the later consolidation period was from 1996 to 1999, when the general government balance shifted from a deficit of about 2½ percent of GDP to a surplus of almost 4 percent of GDP.<sup>2</sup>

**The improvement in the early phase of adjustment reflected sharp cuts in public expenditures, not just in terms of GDP but also in real terms.** With the revenue to GDP ratio declining by almost 3 percentage points during 1987–89, deficit reduction was achieved by sharply constraining government spending, which declined by slightly more than 9 percentage points of GDP. Sizable declines were recorded in all spending categories in real terms. The public sector wage bill was brought down through reductions in the number of employees, while improvements in benefit targeting and a decline in unemployment contributed to current transfers falling by 4 percentage points of GDP. Spending on goods and services and capital outlays was also contained.

**In the more recent consolidation phase, though growing in real terms, public spending continued to decline relative to GDP, helped by a strong economic performance.** During 1996–99, tax receipts declined by about 2 percentage points of GDP, but this was outweighed by an 8 percentage points of GDP decline in current expenditures. The composition of the adjustment was similar to the one recorded in 1987–89, with a further sharp decline relative to GDP in the public sector wage bill and current transfers. But differently from the early phase of adjustment, the remarkable GDP growth during this period and its impact on revenues provided room for public spending to grow in real terms, slightly over 6 percent on average during 1996–99. Real growth in public investment outlays averaged more than 15 percent during the period and there were also sizable real increases in most components of current outlays (including current transfers, notwithstanding the steep decline in unemployment during this period).

**The expenditure-based consolidation was associated with significant improvement in Ireland's economic performance.** Average real GDP growth accelerated from under 5 percent in the first phase of adjustment to close to 10 percent in the second phase. This favorable economic performance allowed the government to achieve multiple fiscal objectives, including a reduction in the tax burden, while reducing the deficit and the public debt ratios through expenditure restraint. A favorable external economic environment helped offset any adverse short-term effects on demand of fiscal consolidation (Bradley and Whelan, 1997; and Honohan, 1999), and some analysts have interpreted the Irish experience as evidence of an expansionary fiscal contraction (McAleese, 1989).

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<sup>1</sup> Based on Hagemann and Koliadina (2000). The fiscal adjustment in Ireland was preceded by a large fiscal expansion in 1975–85, accompanied by a large increase in public debt (see Honohan, 1999).

<sup>2</sup> This excludes one-off costs associated with the settlement of pension liabilities in 1999.

Table 6. Ireland: Phases of Fiscal Consolidation

|  | 1987-89 | 1990-95 | 1996 -99 |
|--|---------|---------|----------|
| (Changes during subperiods; in percent of GDP) |         |         |          |
| Revenues                                       | -2.8    | -0.7    | -1.9     |
| Tax (including social security)                | -2.0    | -0.3    | -1.8     |
| Total expenditures 1/                          | -9.2    | 0.2     | -8.2     |
| <i>Of which:</i>                               |         |         |          |
| Current expenditures                           | -7.9    | -0.7    | -7.9     |
| Interest                                       | -1.4    | -2.3    | -2.5     |
| Goods and services                             | -0.8    | 0.7     | -0.3     |
| Compensation of employees                      | -1.5    | 0.1     | -1.8     |
| Transfers                                      | -4.2    | 0.9     | -3.4     |
| Capital outlays, net                           | -1.3    | 0.9     | -0.3     |
| Capital outlays, gross                         | -0.8    | 0.6     | 0.7      |
| Primary spending 2/                            | -7.9    | 2.5     | -5.7     |
| Primary current spending 2/                    | -6.5    | 1.6     | -5.4     |
| Overall balance                                | 6.4     | -0.9    | 6.3      |
| Primary balance                                | 5.2     | -2.3    | 3.8      |
| Memorandum items:                              |         |         |          |
| Average real GDP growth                        | 4.7     | 5.1     | 9.8      |
| Debt-GDP ratio (end-period)                    | 97.4    | 83.6    | 50.3     |

Source: Hagemann and Koliadina (2000).

1/ Excluding pre-funding for future pensions and one-off factors in 1999.

2/ Total expenditures less gross interest outlays.

### C. Strengthening Fiscal Management

17. **Not only the composition of adjustment matters: the institutional framework for fiscal policy implementation also helps sustain fiscal consolidation efforts, especially through binding fiscal rules.** Maastricht deficit and debt criteria in the run-up to European Monetary Union served as a constraint on policy-makers, but many OECD countries have also opted for individual fiscal rules, such as expenditure ceilings or balanced budget rules. Fiscal adjustment across OECD countries in the 1990s was generally accompanied by institutional reform, enshrining fiscal responsibility principles in fiscal policy frameworks, and thus enforcing fiscal restraint (Box 3). In theory, four specific approaches have been suggested to



address deficit bias (Hemming and Kell, 2001): increasing accountability through enhanced transparency; fiscal rules; “traditional” institutional reform, such as strengthening the powers of the Ministry of Finance; and “radical” institutional reform, such as creating an independent fiscal authority. This discussion will focus on the two concrete proposals being considered by the Hungarian government: the adoption of a binding fiscal rule—rolling medium-term expenditure ceilings—and enhanced fiscal transparency through introducing performance budgeting.

### **Medium-term expenditure ceilings<sup>15</sup>**

18. **To help deal with fiscal tensions lying ahead, the Hungarian government’s proposal to introduce three-year rolling fiscal frameworks with expenditure ceilings would serve as a basis for medium-term budget planning.** Under current plans, these would be established for major budgetary chapters, with leeway for ministries to allocate spending within these chapters. In line with rules governing the disbursement of EU cohesion and structural funds, the framework would include explicitly the government’s medium-term goals and commitments in areas related to the absorption of EU funds. The rolling framework would be updated annually and extended to include one additional year of projections.

19. **Explicit and binding medium-term expenditure ceilings can facilitate achieving needed expenditure restraint.** By “tying their own hands,” the authorities can help avoid fiscal flexibility and suboptimal discretionary policies, thus gaining credibility. Ceilings can reduce the scope for political haggling with at least two desirable implications: (i) policy becomes more reliable, facilitating efficient planning at all levels; and (ii) medium-term objectives are more likely to be achieved, which in turn strengthens confidence. This added credibility may allow the government to bring forward benefits such as tapping into cheaper borrowing costs on capital markets. Moreover, the announcement of expenditure ceilings, coupled with a high degree of transparency to support monitoring of fiscal performance, can itself reinforce the political will needed to address potential deviations, therefore helping to lock-in the benefits of the fiscal strategy.

20. **But firm commitments should be limited to areas where implementation is realistic.** Because the commitment underlying the adoption of ceilings eliminates flexibility, it can either result in inferior policies in the face of unexpected developments or—if political pressures become too strong—a failure to maintain the commitment, undermining its credibility and essential purpose. For this reason, in certain areas, more flexible commitments in the form of policy targets can be suitable substitutes, in particular if large uncertainties necessitate greater flexibility.

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<sup>15</sup> Based on Feldman and Watson (2002).

### **Box 3. Institutional Arrangements to Improve Fiscal Management**

**The last decade has seen a search for more comprehensive institutional arrangements to improve fiscal management and fiscal policy outcomes.** This has included arrangements like internal stability pacts (ISPs) and fiscal responsibility laws (FRLs).

**Comprehensive institutional devices for strengthening fiscal sustainability are Fiscal Responsibility Laws.** Following the initial example of New Zealand, FRLs have recently been adopted in several countries, e.g., the U.K., and can be an important element in promoting better fiscal policies.<sup>1,2</sup> There are four main general aspects that characterize FRLs:

- Numerical targets (or limits) on fiscal indicators, e.g., rules such as requirements for overall balance or current balance, or limits on the overall deficit, primary expenditure, change in debt stocks, or public sector wage bill.
- Fiscal transparency requirements, e.g., requirements for comprehensive timely, frequent, and detailed reporting on budget execution; a well-defined medium-term macroeconomic budget framework, including the underlying macroeconomic assumptions, all of which are essential for showing the current budget in the context of a sustainable perspective; and information of tax expenditures, and potential fiscal risks as part of the annual budget exercise. A special annual report on compliance with the law may also form part of the FRL.
- A small number of escape clauses to be invoked in a discretionary manner in the event of unforeseen exogenous shocks; e.g., national catastrophes or periods of negative economic growth.
- Enforcement mechanisms (usually through the audit office or the legislature) to enhance compliance, along with a system of sanctions and penalties for violations of the FRL.

To be successful, the implementation of FRLs needs to go hand-in-hand with strengthening macroeconomic and macro-fiscal analysis; institutional and managerial capacities of the municipalities; strengthening the judicial system and other fiscal control institutions; and sound financial management systems at all levels of government.

**Alternatively, the strengthening of fiscal institutions of several European countries has been guided by ISPs.**<sup>3</sup> ISPs are commonly implemented through a multi-year plan to achieve a targeted fiscal balance under given rules. Key elements of ISPs are: an agreement on the overall general government balance; a formula for vertical deficit-sharing between the different tiers of government; explicit or implicit limits on borrowing, monitoring and reporting requirements; and corrective actions or economic sanctions if targets are missed. ISPs are usually less comprehensive than FRLs, but similar to FRLs. They help define fiscal policy coordination mechanisms between all levels of government, and set common goals and rules for fiscal policy over a medium-term horizon. In general, ISPs are usually more outcome-oriented and less process-oriented than FRLs—however, the differences are not always clear cut. In general, limited and sometimes inadequate enforcement mechanisms have hampered the success of ISPs. A more formal way to address this shortcoming has been adopted by Spain through a new Budgetary Stability Law<sup>4</sup>, which establishes a rules-based medium-term fiscal framework for all levels of government.

<sup>1</sup> See <http://www.imf.org/external/np/fad/trans/manual/sec02b.htm> for an overview on FRLs.

<sup>2</sup> For an overview, see the U.K.'s "Code for Fiscal Stability," available at <http://www.hm-treasury.gov.uk/mediastore/otherfiles/263.pdf>. Also, see Kell, (2001).

<sup>3</sup> Examples of countries with ISPs are Austria, Belgium, Italy, and Spain.

<sup>4</sup> Also see IMF Country Report, No. 02/53, available at <http://www.imf.org/external/pubs/ft/scr/2002/cr0253.pdf>

21. **Expenditure ceilings per se have no bearing on the quality of fiscal adjustment.** It may even undermine the latter if ceilings were to be met by means of unsustainable policies, such as by delaying investment projects, which would then compromise long-term growth or unduly squeezing spending on operations and maintenance or on vital social spending. This reinforces the need for adopting ceilings in the context of a well-designed medium-term framework, that includes subceilings for key areas in which expenditure consolidation is essential.

22. **Many OECD countries have found expenditure ceilings—in the context of medium-term fiscal frameworks (MTFs)—a useful tool to coordinate and sustain their reform efforts.** About half of OECD countries apply some version of an MTF, including Australia, Austria, Canada, Denmark, Finland, Germany, the Netherlands, Sweden, and the U.K. In most cases, the primary motivation for adopting an MTF was to more reliably achieve medium-term fiscal objectives. In many cases, the underlying goal was a fiscal consolidation too large to be achieved in a single budget, but the government wished to credibly signal its intentions, to strengthen confidence and investment. As discussed below, in a number of countries, policy commitment is typically expressed in terms of expenditure ceilings. This permits the operation of automatic stabilizers in both directions on the revenue side, while securing the consolidation effort on the spending side.

- In 1997, **Sweden** introduced medium-term nominal expenditure ceilings for each central government expenditure, excluding interest payments, with a small safety margin. While the ceilings introduced by the Riksdag are only a guiding decision, and not legally binding, they are regarded as an extremely strong budgetary commitment on part of the sitting government. In practice, they have served to promote greater confidence in economic policy-making, and the overall government balance has evolved from a deficit of just below 2 percent of GDP in 1997 to a surplus of almost 5 percent of GDP in 2001.
- In **the Netherlands**, the government introduced a new budgetary policy in 1994, including medium-term ceilings on government expenditure and a strict separation of spending and revenue decisions. Individual spending limits apply to central government spending, social security outlays, and health care, with a certain degree of flexibility for allocations within the overall resource envelope, and a small margin of safety. Some areas, such as an infrastructure investment fund, are excluded from the framework. In practice, the fiscal framework has been credited with helping to achieve a remarkable adjustment in the government balance, turning the budget balance around from a deficit of over 4 percent of GDP in 1995 to a surplus of over 2 percent of GDP in 2000. Recent proposals to improve the system aim to address its pro-cyclical tendency by reducing the safety margin, allowing full play of automatic stabilizers on the revenue side, and excluding some cyclically sensitive items, such as unemployment benefits, from the expenditure rule.

- **Finland** has set ceilings on total central government expenditures for four years ahead since 1991, designed to avoid any increase in real terms. This helped underpin a strong fiscal consolidation through the 1990s, but has met with less success more recently.
- In 1997, **the U.K.** introduced a medium-term expenditure control system with Parliamentary submission of three-year plans covering a substantial set of general government expenditures.<sup>16</sup> This multiyear expenditure framework is set in cash, to be revised only if inflation were to vary substantially from forecast (U.K. Treasury (1998)).

23. **Key lessons for the design of expenditure ceilings in the context of rolling medium-term fiscal frameworks can be drawn from country experiences across the OECD<sup>17</sup>:**

- First, it would be important to secure **formal status** of ceilings and medium-term frameworks within the annual budget process, in contrast to simple medium-term projections. This can be achieved by submitting these ceilings to parliament for approval at the time of the budget, and by including a statement of policy objectives in this submission. This would help catalyze agreements on reform measures to achieve them. Moreover, firm political commitments, by increasing the stake of meeting the ceilings, would help ensure that they are realistic and credible. Nonetheless, preservation of fiscal objectives may call for subsequent adjustments in the rolling framework, such as the timing of tax cuts or of certain spending items, if warranted and well explained in the context of policy objectives.
- Focusing primarily on a **time horizon** of three years in addition to the budget year is most common. However, to assess better the implications of individual spending programs and tax measures, it may be useful to extend the projection period (for example, to five years). Of course, the feasible duration for political commitments may be shorter, giving projections in outer years a more informative role. Moreover, the medium-term framework should be complemented by longer-term projections for demographically sensitive revenue and expenditure items (such as pensions) to indicate potential reform needs early on.
- The underlying macroeconomic **projections** should be realistic, possibly erring on the side of caution rather than optimism, to provide a safety margin, particularly when fiscal adjustment is vital. A conservative approach, which errs on the side of fiscal

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<sup>16</sup> The main excluded items were social security benefits, local government expenditures financed by its own revenues, and interest payments.

<sup>17</sup> Based on Feldman and Watson (2002).

overperformance, is also justified, when the political cost and credibility loss—or, for that matter, the economic consequences—are larger in the case of underperformance. Moreover, the fiscal measures to correct underperformance, namely, additional expenditure cuts or tax increases, are clearly more difficult to implement than the tax reductions or higher spending, which could be considered in the case of overperformance.

- Both the **policy statement** regarding the fiscal objectives and the underlying assumptions should be transparent. This includes clear indications about the circumstances that would justify deviations from individual targets. Transparency in this context is essential to distinguish policy commitments from projections and avoid a loss of credibility in the case of simple projection errors. Again, a higher level of uncertainty, which raises the likelihood and magnitude of projection errors, gives this feature more importance.
- **Coverage** should ideally extend to all levels of general government and cover the bulk of primary current spending that is targeted for adjustment over the medium term. However, commitments, in terms of spending ceilings, may have to be limited to central government expenditures, depending on the degree of autonomy of local governments. Also, cyclical spending components may be excluded, to permit expenditure stabilizers to operate in both directions and avoid slippage in noncyclical outlays in times of economic upturns. Similarly, particularly uncertain and volatile spending items could be excluded from the ceilings to avoid having to compensate for their unexpected movements by ad hoc adjustments in other expenditures. The risk, however, is that excluded expenditures may undermine the medium-term objectives. A possible alternative may be to combine tight subceilings for a subset of expenditures with some upper bound for overall spending. Ideally, the subceilings would help catalyze agreement on reform measures to achieve them.
- Approaches to **inflation** differ greatly. Real planning provides greater resource certainty, as inflation shocks are accommodated. The use of specific deflators for different spending categories, however, is problematic as it discourages desired adjustments to relative price changes.

### **Performance budgeting**

24. **To enhance the efficiency of public spending through greater public surveillance of fiscal activities, the Hungarian government plans to move toward performance-based budgeting.** As performance budgeting directly links policy targets to performance indicators for line ministries, such a move will require, inter alia, the specification and quantification of the expected results of spending programs. The resulting improved transparency in turn permits greater public scrutiny of fiscal activities, which theoretically translates into a cost on policy-makers that deviate from a committed path of fiscal responsibility. Such accountability

is indispensable in enforcing political commitments, like fiscal rules, and is believed to promote more efficient public service delivery in general.

25. **Emphasis on fiscal transparency has been at the heart of public expenditure management reforms undertaken in many OECD countries during the 1990s**, potentially contributing to the sustainability of the recent wave of expenditure-led fiscal consolidations (Brumby and Cangiano, 2001). In order to facilitate monitoring and accountability of line ministries for their performance, many OECD countries have been incorporating results information into their management and budgeting systems. About half of the countries carry out some form of audit of performance information (OECD, 2002a). In the EU, the Netherlands and the U.K. have been at the forefront of efforts to include performance targets into core budget documents for many years.

26. **Performance budgeting helps to establish a direct link between resource allocation and policy objectives, and changes traditional budget management in three important ways.**<sup>18</sup> First, spending agencies would be given greater flexibility to reallocate funds as they deem necessary in order to achieve stipulated goals. A few countries are extending flexibility to budget periods, allowing a carry-over of unused funds to a new fiscal year, and pre-spending a portion of next year's budget, albeit with tougher controls of the latter. Second, greater outcome orientation has required commensurate certainty with regard to availability of funds over the medium-term, leading to a wider adoption of medium-term budget planning. Third, spending agencies would be held more directly accountable for results, as central budget and external review agencies shift their focus from control of inputs, to outputs and outcomes.<sup>19</sup> In some countries (the U.K. and New Zealand), this has even led to the introduction of formal contractual arrangements between ministers and agencies, with a significant change in the role of the central budget office (Diamond, 2003).

27. **As a result, moving from traditional budgeting to performance budgeting can be problematic, and fraught with practical implementation issues.** Above all, defining outcomes and establishing "cascading" targets from high level objectives to targets for regular staff is a complex task. Complete coverage from policy to staff level requires complicated planning and reporting systems: the costs of operating such comprehensive management systems, and potentially creating a new layer of bureaucracy, have to be weighed against the merits of complete accountability and coherence. Moreover, the measurement of outcomes is often difficult. Due to the problems with effective evaluation and auditing of results-based

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<sup>18</sup> See Diamond (2003) for a more elaborate discussion.

<sup>19</sup> The difference between outputs and outcomes is often a source of confusion. Outputs are defined as the goods and services provided by the government. Outcomes are the policy impacts on the community as a result of government outputs. For example, an output could be the number of patients treated, whereas the outcome would be good public health.

budgeting, many countries include performance targets into budgets for information purposes only, without tying them directly to financial appropriations. Finally, the objective of performance budgeting—enhanced transparency and, as a result, improved public service delivery—will only be achieved if the public or legislators take an active interest in the information provided. Initial experience has been disappointing in this regard (OECD, 2002b).

**28. The experience of the U.K. helps shed light on the practical challenges of implementing performance budgeting.** Under the U.K. system—involving Departmental Expenditure Limits (DELs) and Public Service Agreements (PSAs) between spending agencies and the government—spending departments are given an incentive to improve performance in return for certainty about funding over a medium-term horizon, and end-of-year splurges are avoided by allowing for a carry-over of unused funds.<sup>20</sup> Overall, the National Audit Office (NAO) has assessed the practice positively, highlighting that the increased focus on outcomes has enhanced effectiveness in departments' work practices. However, development and design of the targets has improved over the years, and some important lessons can be drawn:

- The number of targets should be limited, targets should be results-focused, and include “floor targets” in some cases to ensure minimum achievements in individual areas. The early targets in the U.K. in 1998 generally did not meet the government’s SMART (specific, measurable, achievable, relevant and timed) requirement, were too numerous and too focused on inputs, as opposed to outputs and outcomes (Van den Noord, 2002).
- Departments should use a consistent approach to performance measurement across all areas of responsibility, and the quality of performance measurement should be enhanced continuously. Experience has shown that departments tend to focus on quantifiable targets at the expense of hardly measurable policy goals, and poorly formulated targets have in some cases produced perverse incentives.

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<sup>20</sup> Specifically, biennial spending reviews set out three-year plans for discretionary expenditure by departments, or Departmental Expenditure Limits (DELs). Departments have to bid for funds and have to enter so-called Public Service Agreements (PSAs), which hold them accountable for achieving targets set out in the contract. Technical notes set out in detail how each target will be measured, specifying data sources, the baseline, and any potential ambiguities. Progress against targets is presented quarterly to the Cabinet committee, and published annually. Resources in the following budget round are allocated in light of past performance.

- Financial and non-financial incentives should be employed to encourage strong performance and compliance by staff. In the past, some had felt that they were not given the adequate incentives to comply with targets.

#### **D. Concluding Remarks**

29. **The fiscal adjustment carried out by other European economies would seem to provide relevant lessons for Hungary's own effort in the years ahead.** While political strategies have depended on individual country circumstances, successful and growth-enhancing fiscal adjustments have shared a few common characteristics. Overall, durable and growth-friendly consolidation episodes have involved reductions in current spending, particularly on government wages and welfare transfers.

30. **The government proposals to strengthen fiscal management are welcome and may benefit from the experience of more advanced economies in these areas.** Fiscal frameworks, including medium-term expenditure ceilings, have helped many OECD countries coordinate and sustain their reform efforts. While the experience of performance budgeting is less straightforward, enhancing transparency and accountability holds the potential for bringing about an increase in spending efficiency that would help Hungary meet its fiscal targets.



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