

Slovak Republic: Selected Issues and Statistical Appendix

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INTERNATIONAL MONETARY FUND
SLOVAK REPUBLIC

Selected Issues and Statistical Appendix

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Approved by the European Department

January 27, 2005

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I. INTRODUCTION AND OVERVIEW

1. **This paper touches upon three key issues of the consultation.** The first chapter evaluates competitiveness in Slovakia and estimates the equilibrium real exchange rate path for the koruna. The second takes stock of Slovakia's growth performance over the past decade and assesses its growth potential over the medium term. The third reviews Slovakia's recent reforms to its tax and welfare systems.
2. **Chapter II estimates the equilibrium real exchange rate appreciation in Slovakia using cross-section and time-series methods.** The chapter finds that the koruna has been moving rapidly toward—and is now close to—its equilibrium level. It estimates that the equilibrium real exchange rate will continue to appreciate by close to 3 percent per year in line with the expected productivity growth differential with the euro area, but fiscal consolidation could mitigate this real appreciation. The latter finding underscores the important role of fiscal policy in moderating appreciation pressures and supporting monetary policy in reducing inflation—an important theme of the staff report (SM/05/32).
3. **Chapter III presents production function estimates of potential output for Slovakia that imply sustainable rates of growth of 4.5-5.0 percent over the next five years.** Underlying these estimates is the continued significant growth of total factor productivity (TFP). Maintaining such growth—which is needed for convergence to western European income levels—will require the technological enhancements that normally accompany foreign direct investment.
4. **As noted in the staff report, fiscal policy faces the challenging task of combining fiscal consolidation with other objectives, including an ambitious tax reform.** Chapter IV picks up on this theme, analyzing the interaction between tax and welfare reforms. The fiscal implications of the reforms are not yet fully clear, but the tax reform appears to have had a limited revenue cost and not to have compromised the government's longer-term fiscal objectives. Moreover, the tax and welfare reforms have reduced distortions in the economy and together have strengthened incentives to work and invest.

II. MAINTAINING COMPETITIVENESS UNDER EQUILIBRIUM REAL APPRECIATION: THE CASE OF SLOVAKIA¹

A. Introduction

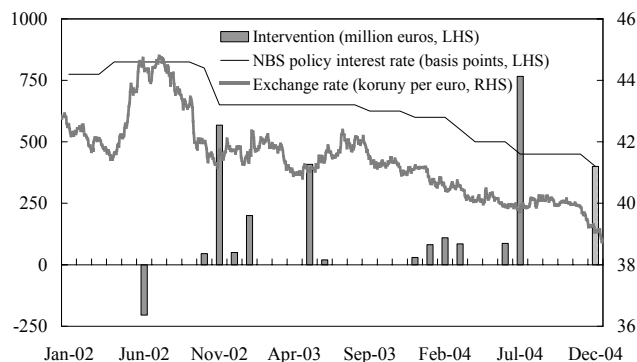
1. **Recent reforms have made the Slovak economy one of the most competitive in the world.** The World Bank recently classified Slovakia as the world's top reformer of its investment climate over the past 12 months, and among the top 20 most attractive countries in the world for doing business (World Bank, 2004). In addition, a competitiveness ranking conducted by the Swiss Institute for Management Development placed Slovakia first among Central and Eastern European countries (IMD, 2004). These achievements have been partly the result of recent far-reaching reforms, which have cut the time required to start a business, recover debt, and gain access to credit, and which have improved legal rights.

2. **Nevertheless, there are concerns, particularly among the Slovak authorities, that Slovakia's strong competitiveness may be eroded by excessively rapid exchange rate appreciation.** In recent years, the Slovak koruna has appreciated substantially in real terms, and in the last few months it has appreciated rapidly in nominal terms as well. This appreciation appears to have been driven by rapid productivity growth, which in turn has been driven by large inflows of foreign direct investment (FDI), especially into automobile manufacturing.

However, to the extent that real appreciation may be exceeding productivity growth in certain traditional manufacturing sectors, those sectors may be suffering a loss in competitiveness. Because of these concerns, the National Bank of Slovakia (NBS) repeatedly cut interest rates and intervened substantially in the foreign exchange market in 2004, in order to stem appreciation pressures (Figure 1).

3. **Given that nonmonetary factors determine the long-run equilibrium rate of real appreciation, there exists a trade-off between limiting nominal appreciation and achieving disinflation.** This trade-off is particularly important given that Slovakia plans to adopt the euro on January 1, 2009, at which time the country loses its exchange rate instrument. While excessive nominal appreciation would hurt competitiveness, resisting nominal appreciation in the presence of equilibrium real appreciation pressures would mean

Figure 1. Monetary Policy Developments



Sources: National Bank of Slovakia and IMF staff estimates.

¹ Prepared by Nienke Oomes.

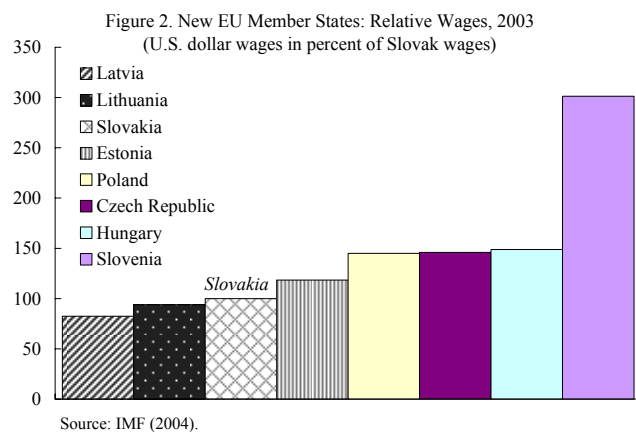
that real appreciation would appear in the form of inflation—implying that Slovakia could risk missing the Maastricht inflation criterion of 3 percent in 2007.

4. **This chapter evaluates competitiveness in Slovakia and estimates the equilibrium real exchange rate path for the koruna.** We have three main findings. First, we find evidence that Slovak wages are still relatively low compared to those in other new EU member states, even when adjusted for differences in productivity. Second, we find that, until recently, Slovak prices remained relatively low compared to what may have been expected given Slovakia's relative income and productivity level, implying real exchange rate undervaluation—but this undervaluation is expected to disappear in 2005. Third, we estimate that although the equilibrium exchange rate itself will continue to appreciate in line with productivity growth relative to the euro area, fiscal consolidation could mitigate this real appreciation. In the absence of fiscal consolidation, the estimated productivity-driven equilibrium rate of real appreciation during 2005–09 is close to 3 percent per year. However, if the share of government consumption in GDP declines in line with the authorities' medium-term fiscal objectives, the estimated equilibrium real appreciation rate is significantly lower. We thus conclude that fiscal policy can support monetary policy in limiting real appreciation, making it easier to contain both nominal appreciation and inflation.

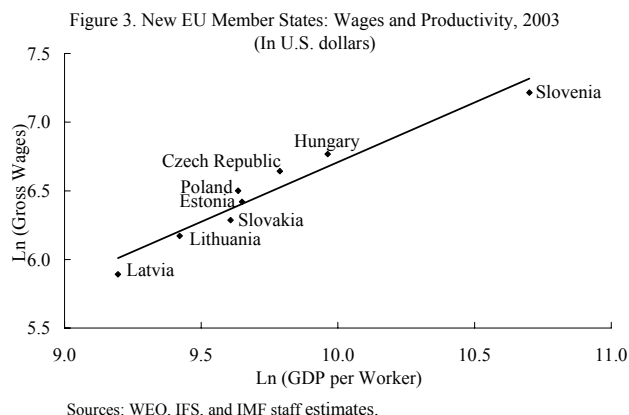
5. **The remainder of this chapter is organized as follows.** First, we look at various indicators of competitiveness, including wages, unit labor costs, and prices. Next, we estimate the equilibrium rate of real appreciation using both cross-section and time-series techniques. We conclude by summarizing the main findings.

B. Wages

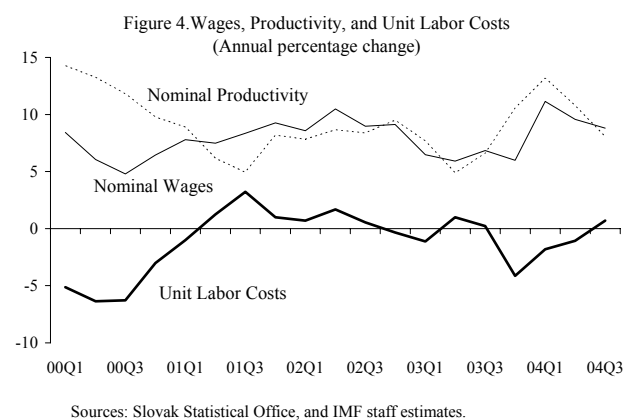
6. **Slovak wages are still relatively low compared to those in other new EU member states.** In 2003, wages in Latvia and Lithuania were slightly below those in Slovakia (83 and 94 percent of Slovak wages, respectively), but wages in each of the other new member states were significantly higher. Wages were as much as 50 percent higher in the neighboring Visegrad countries (Poland, the Czech Republic, and Hungary), which can be considered as Slovakia's main competitors for foreign direct investment. Wages in Slovenia, which is somewhat of an outlier, were as high as three times the Slovak level (Figure 2).



7. **While differences in wage levels can be largely explained by differences in productivity, Slovak wages are low even when adjusted for productivity.** As Figure 3 shows, differences in productivity, measured by GDP per worker, largely explain the differences in wage levels among new EU member states. This is not surprising, since competition in the labor market implies that workers will be paid approximately in accordance with their productivity. Nevertheless, the data point for Slovakia lies slightly below the estimated log linear relationship, suggesting that Slovak wages are low even given the level of labor productivity.

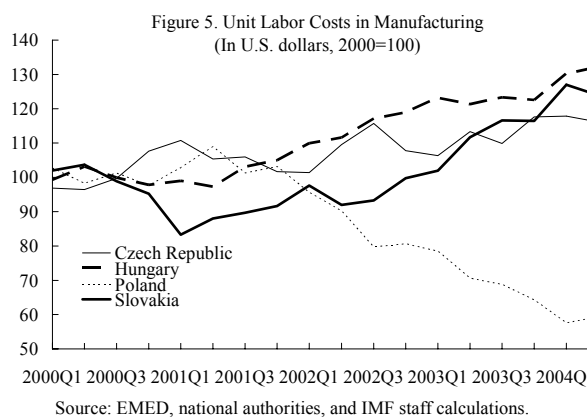


8. **Nevertheless, economywide wages in Slovakia have grown broadly in line with productivity, and economywide unit labor costs (ULC) even declined somewhat in 2004.** Unit labor costs (ULC) are defined as the real wage costs per unit of output, or equivalently, as the nominal wage costs per koruna worth of value added.² We prefer to use the second definition, which can be interpreted as an indicator of profitability. Nominal ULC growth, then, is equivalent to the differential between nominal wage growth and nominal productivity growth. As Figure 4 shows, nominal wages grew broadly in line with nominal productivity between end-2001 and mid-2003, implying that nominal ULC growth was close to zero, as one would expect. Between mid-2003 and mid-2004, however, nominal productivity growth exceeded nominal wage growth, implying that nominal ULC fell, and profitability increased.



² Strictly speaking, these definitions are not exactly equivalent, since they use different deflators. In the first case, ULC is defined as $(W/P)/(Y/L)$, where W denotes the nominal wage (in koruna), P denotes the CPI, Y denotes real GDP, and L denotes overall employment. Thus, wages are deflated by the CPI, and output is deflated by the GDP deflator. In the second case, however, ULC is defined as WL/PY , where PY denotes nominal GDP, i.e., wages are implicitly deflated by the GDP deflator.

9. **Slovak ULC in manufacturing have grown in line with ULC in the Czech Republic and Hungary since 2000.** To compare Slovak competitiveness with other Visegrad countries, it is useful to look at (U.S. dollar-deflated) ULC in manufacturing: the total labor costs of producing one unit of real manufacturing output. Since real manufacturing output data are indices rather than levels, we cannot compare real ULC levels across countries.



Nevertheless, we can compare the rates of ULC growth in manufacturing. Normalizing all ULC levels to 100 in the year 2000, Figure 5 shows that ULC growth in Slovakia was initially slower than in the Czech Republic and Hungary, implying that Slovak manufacturing became more competitive between 2000 and 2003, in terms of labor costs. Since 2003, however, ULC growth in Slovakia has exceeded that in the other Visegrad countries, i.e., Slovak manufacturing lost some competitiveness again. For the period 2000-04 as a whole, however, we can say that Slovakia, the Czech Republic, and Hungary, all have remained more or less equally competitive, but all lost some competitiveness to Poland.³

C. Prices

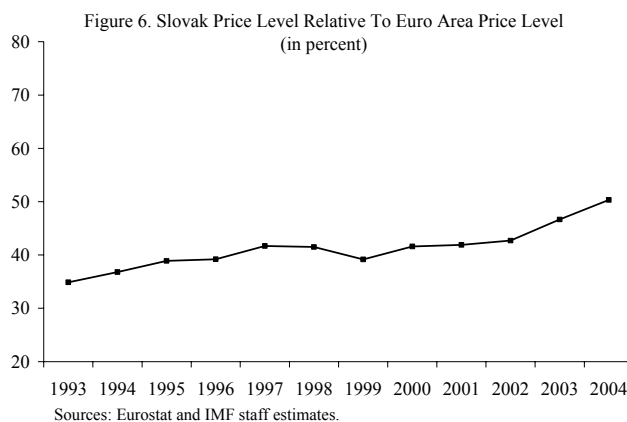
10. **In addition to having low wages, Slovakia has a relatively low price level.** As Figure 6 shows, Slovak prices are still well below the level that Purchasing Power Parity (PPP) with the euro area would imply.⁴ Under PPP, Slovak prices expressed in euros would equal euro area prices: $PE=P^*$, where P denotes the Slovak price level, E denotes the nominal exchange rate (euro per koruna), and P^* denotes the euro area price level. The relative price level, or the real exchange rate, is defined as PE/P^* , i.e. the real exchange rate equals unity under PPP. Although the relative price level has increased somewhat recently, reflecting real exchange rate appreciation, Slovak prices are still only half of euro area prices: about 47 percent in 2003 and around 50 percent in 2004.

³ The reasons for the decline in relative ULC in Poland include the significant nominal effective depreciation of the zloty since mid-2001, partly reflecting the depreciation of the U.S. dollar against the euro, as well as very sluggish overall growth, leading to low wage growth. See Murgasova (2004) for more details.

⁴ While PPP data exist for different levels of aggregation, we use PPP estimated for GDP as a whole. This is calculated by first aggregating relative product prices at the product group level, using geometric averages, and then aggregating PPPs for product groups, by using as weights the expenditures on these product groups. The prices used in the calculation are market prices, i.e. the prices effectively paid by consumers, including all indirect taxes.

11. Slovakia's low relative price level does not necessarily mean that its real exchange rate is undervalued, since the overall price level includes prices for nontradables.

Nontradables are goods or services that can only be provided locally and that cannot easily be transported or stored, such as haircuts or restaurant meals. The prices of such nontradables are unlikely to equalize across countries (i.e., the “law of one price” is unlikely to hold) because of transportation costs (e.g., it generally does not pay for western Europeans to travel to Slovakia just to get a haircut or a meal) or restrictions on labor mobility (e.g., Slovak hairdressers and cooks cannot easily get higher-paying jobs in most richer European countries). In addition, PPP typically does not hold for non-market services that are provided or subsidized by the government (such as education, health care, public housing, and utilities), the prices for which are often well below the level required to cover costs.



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12. The fact that the law of one price does not hold for nontradables implies that price levels are naturally lower in countries with lower income levels or lower productivity. The main reason why prices are lower in poorer countries is that poor countries are less productive in the production of tradables—a hypothesis first put forward by Balassa (1964) and Samuelson (1964).⁵ The Balassa-Samuelson hypothesis rests on the argument that lower productivity in the tradables sector implies lower wages in the tradables sector (assuming that wages depend on productivity), and therefore also implies lower wages in the nontradables sector (assuming that labor and capital are sufficiently mobile between sectors), which in turn implies lower prices of nontradables (assuming that there is sufficient competition between the producers of nontradables). In addition, lower wages imply lower effective demand, which keeps down the prices of nontradables. In theory, tradables prices are not affected by the Balassa-Samuelson effect, because they are determined by international supply and demand conditions.

13. Nevertheless, Slovakia's relative price level appears low even when taking into account its low relative income level. Figure 7 shows that there is indeed a positive correlation (loglinear relationship) between relative price levels and relative income levels, where the latter are measured by PPP GDP per capita relative to the euro area (which can

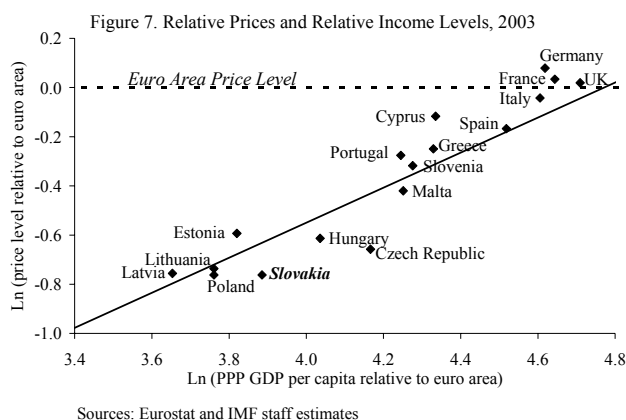
⁵ Technically, what matters for the Balassa-Samuelson hypothesis is not absolute productivity, but *relative productivity*: the difference between productivity in the tradables sector and productivity in the nontradables sector. We will expand on this distinction further below.

also be considered a proxy for the productivity differential).⁶ The data point for Slovakia is below the line, suggesting that Slovakia's relative price level in 2003 was low even given its relatively low level of income. While the same is true for Hungary and the Czech Republic, the relative price levels Latvia, Lithuania, and Poland are all close to where they would be expected to be, given their relative income levels.⁷

D. Equilibrium Real Appreciation — Cross-Section Estimates

14. **This section explores the relationship between real appreciation and productivity growth in more depth, so as to assess the equilibrium level and path for the Slovak real exchange rate.** While

Figure 7 is illustrative of the relationship between relative income growth (productivity growth) and relative price growth (real appreciation), it is based on only a small sample. In order to assess more rigorously whether and to what extent the Slovak real exchange rate has been undervalued, this section uses cross-section estimates of the relationship between real appreciation and relative income growth for a large sample of 120 countries. In the next section, these cross-section estimates are then complemented by time-series techniques to estimate how the equilibrium real appreciation rate depends on productivity growth and on government consumption.



15. **The Balassa-Samuelson hypothesis implies that the real exchange rate should appreciate in line with the “relative productivity differential”.** It is important to define the term “relative productivity differential” carefully (see text box).

Definitions

Productivity: $A = Y/L$ (output per worker)

Productivity growth: $a = y - l$

Productivity growth in the tradables sector: a^T

Productivity growth in the nontradables sector: a^{NT}

Relative productivity growth in Slovakia: $a^{NT} - a^T$

Relative productivity in the euro area: $a^{NT*} - a^{T*}$

Relative productivity differential: $(a^{NT} - a^T) - (a^{NT*} - a^{T*})$

Overall productivity differential: $a - a^*$

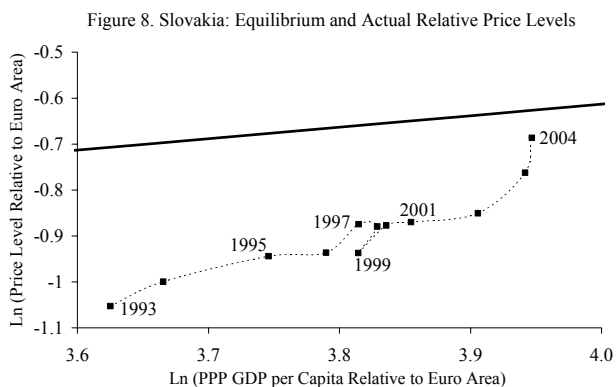
⁶ Following standard practice, we compare relative GDP per capita levels in PPP terms rather than at market exchange rates, since the latter approach would imply an implicit assumption that PPP holds, and that an appreciation of the nominal exchange rate is equivalent to an increase in relative income.

⁷ A similar conclusion is reached in a recent study by Burgess, Fabrizio, and Xiao (2004) on competitiveness and equilibrium real exchange rates in the Baltics.

If Slovakia experiences “relative productivity growth,” this means that productivity growth in the tradables sector exceeds productivity growth in its nontradables sector. In other words, prices of Slovak nontradables will tend to rise over time, while prices of Slovak tradables, in theory, would not (assuming they are determined by PPP), implying a rise in the overall Slovak price level. This does not necessarily imply real appreciation: if the euro area were to experience the same relative productivity growth, euro area prices would rise at the same rate as Slovak prices, and the inflation differential would be unaffected. However, if the euro area experiences less relative productivity growth than Slovakia (i.e., the relative productivity differential is growing), then Slovak prices will rise faster than euro area prices, and the real exchange rate appreciates.

16. **Empirical studies typically test the Balassa-Samuelson hypothesis by relating relative price levels or the real exchange rate to the overall productivity differential or the income differential.**⁸ The reason for this is that sectoral data on output and employment (for “tradables” and “nontradables” sectors) tend to be of mixed quality, and are difficult to compare and aggregate across countries. Most studies therefore use the overall productivity differential as a proxy for the relative productivity differential, which amounts to assuming that productivity growth in both the tradables and the nontradables sector are approximately a constant fraction of overall productivity growth.⁹ An alternative proxy that is commonly used is the income differential, i.e., the difference between GDP per capita in two countries.

17. **Based on cross-country estimates of the relationship between relative price levels and income differentials, we find that the Slovak real exchange rate has been converging to its equilibrium level.** The solid line in Figure 8 indicates the relationship between relative price levels (or the real exchange rate) and the income differential that was estimated by Coudert and Couharde (2002) for a sample of 120 nonadvanced economies in the year 2000.¹⁰ They found a coefficient of 0.25,



⁸ See, e.g., De Gregorio, Giovannini, and Wolf (1994), Kravis and Lipsey (1988), and Lee and others (2005).

⁹ That is, if productivity growth in the tradables sector is $a^T = \alpha a$, and productivity growth in the nontradables sector is $a^{NT} = \beta a$, then relative productivity grows at rate $a^T - a^{NT} = (\alpha - \beta)a$, which is proportional to overall productivity growth a .

¹⁰ This sample includes Slovakia as well as most other central and eastern European countries, except Bosnia-Herzegovina, Croatia, Macedonia, and Serbia-Montenegro, because
(continued)

meaning that, on average, every 1 percent increase in income per capita, relative to euro area income per capita, is associated with a real appreciation of 0.25 percent. This estimate of the equilibrium rate of real appreciation is close to findings from other studies.¹¹ The dashed line in Figure 8 indicates the actual development of Slovak relative prices and relative income, according to Eurostat data on relative prices and PPP GDP per capita in Slovakia (relative to the euro area). Assuming that the estimated equilibrium relationship (solid line) also holds for Slovakia, this suggests that the Slovak real exchange rate used to be well below equilibrium, but has recently been converging to its equilibrium level, and has done so by appreciating faster than the equilibrium rate of real appreciation.

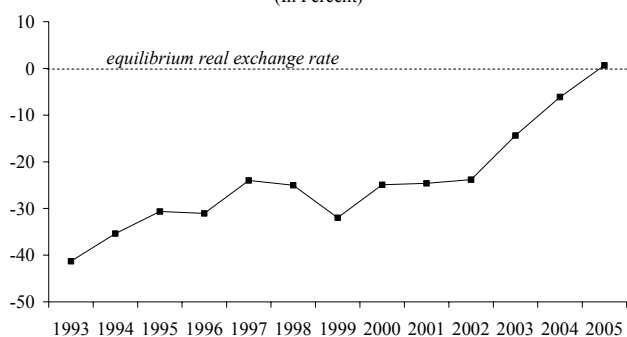
18. **Based on these estimates, the koruna may still have been slightly undervalued in 2004, but is expected to reach equilibrium in 2005.** Figure 9

plots the percentage difference between the actual and expected real exchange rate (i.e., the difference between the dashed and dotted lines in Figure 8), which can be interpreted as a measure of real exchange rate undervaluation. These estimates suggest that, in 1993, the

koruna was undervalued by more than 40

percent—an “initial undervaluation” that has been reported for many other transition countries.¹² While the distance to equilibrium almost halved in the next four years, it remained more or less constant between 1997 and 2002. It even temporarily increased in 1999, when the nominal exchange rate depreciated significantly, implying lower Slovak prices in euro terms. The amount of undervaluation started to decline substantially only in 2003, reflecting high rates of nominal appreciation and CPI inflation. On current trends, the remaining undervaluation is expected to disappear altogether in 2005.¹³

Figure 9. Slovakia: Estimated Real Exchange Rate Undervaluation (In Percent)



Sources: Coudert and Couharde (2002), Eurostat, and IMF staff estimates.

these countries had seriously distorted prices due to war. For more information on the sample, see Coudert and Couharde (2002, p. 17, footnote 5).

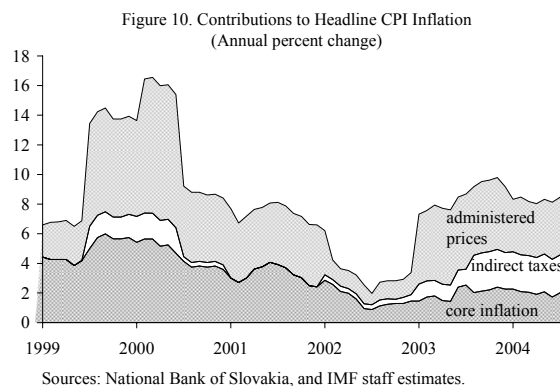
¹¹ See, e.g., Rogoff (1996) and Coudert (1999).

¹² E.g., Halpern and Wyplosz (1997) and Krajnyak and Zettelmeyer (1998).

¹³ The projections for 2005 are based on Eurostat/AMECO projections of PPP GDP per capita for both Slovakia and the euro area, and on IMF staff projections for inflation and nominal exchange rate appreciation. Depending on the exact nominal exchange rate assumption, the real exchange rate may be either slightly undervalued or slightly overvalued in 2005, but probably not more than by about 1 percent, according to these estimates.

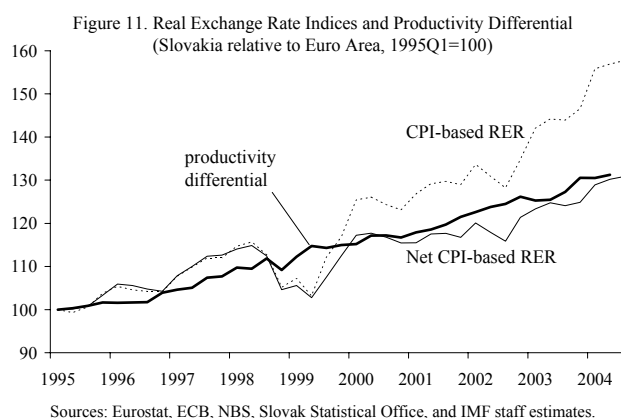
E. Equilibrium Real Appreciation — Time-Series Estimates

19. **The above estimates of equilibrium real appreciation are subject to a significant degree of uncertainty, in that they are based on a large cross-section of countries that may not necessarily be representative of Slovakia.** This section therefore conducts a different estimate of the equilibrium exchange rate, based on time-series data for Slovakia alone. We do this for three different real exchange deflators: the “net CPI” differential, ULC differential, and the PPI differential. Given the anticipated evolution of other real variables, we then project the rate of equilibrium real appreciation in the next five years.



20. **For the purpose of predicting the future equilibrium real appreciation path, it may be misleading to look at historical CPI-based real appreciation.** The reason is that, as we saw above, a significant part of CPI-based real appreciation has been due to a “catching-up effect” from initial undervaluation, as a result of which the observed rate of CPI-based real appreciation has exceeded the equilibrium rate. One form in which this catch-up has taken place is by rapid increases in administered prices and indirect taxes (Figure 10). Since these adjustments have almost been finalized, it would be misleading to project the equilibrium rate of real appreciation by looking at the historical relationship between CPI-based real appreciation and the productivity differential. As we will show below, to do so would lead to an overestimation of the equilibrium rate of real appreciation.

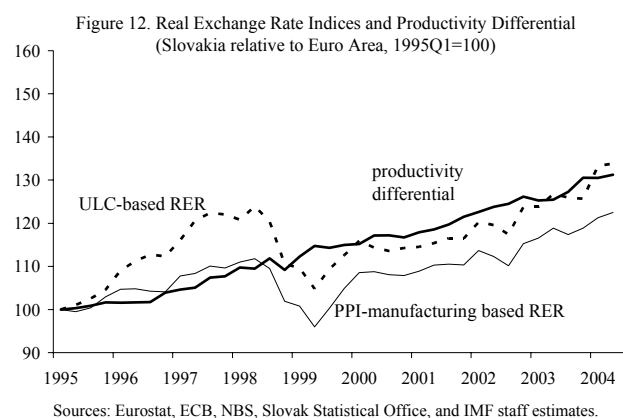
21. **When adjusted for increases in administered prices and indirect taxes, CPI-based real appreciation has grown in line with the productivity differential.** As Figure 11 shows, the usual CPI-based real exchange rate index (i.e., the nominal exchange rate deflated by the differential between Slovak headline CPI and euro area headline CPI) has grown much faster than the productivity differential, especially in recent years. However, when we deflate the nominal exchange rate by the Slovak



concept of “net inflation” (which excludes administered prices, indirect taxes, as well as food),¹⁴ real appreciation appears to have been largely in line with productivity differential growth. The only exception is the period mid-1998 through mid-1999, when the nominal exchange rate depreciated substantially, following the transition from a fixed to a managed floating exchange rate regime in October 1998.

22. Other measures of real appreciation have also grown in line with the productivity differential.¹⁵

The PPI-based and ULC-based measures deflate the nominal exchange rate by the PPI differential and the ULC differential, respectively, rather than by the CPI differential. We use the PPI for manufacturing goods, rather than for overall industry, so as to exclude producer prices for electricity, gas, and water supply, which have been subject to administered price adjustments as well. As Figure 12 shows, both the ULC-based and the PPI-manufacturing based real exchange rate indices have grown broadly in line with the productivity differential, just as the net CPI-based real exchange rate. Until 1998, the ULC-based measure grew faster than the productivity differential, reflecting high wage growth during the mid 1990s, but it grown very much in line with the productivity differential since then.



23. The fact that PPI-based real appreciation has been similar to CPI- and ULC-based real appreciation suggests that real appreciation in Slovakia cannot be explained exclusively by the Balassa-Samuelson effect. Theoretically, ULC-based appreciation can still be explained by the Balassa-Samuelson effect,¹⁶ but PPI-based appreciation cannot,

¹⁴ Instead of “net inflation,” we could have used “core inflation,” which excludes only administered prices. However, the Slovak concept of net inflation was more comparable with Eurostat’s MUICP (Monetary Union Index of Consumer Prices) measure of euro area “core” inflation, which excludes energy, food, alcohol, and tobacco. Slovak net inflation also excludes most energy prices, since most of these are administered (or were administered until very recently). In 2004, nonadministered energy prices (mainly gasoline) constituted only about 4 percent of the overall CPI basket.

¹⁵ The productivity differential is defined as the ratio of Slovak labor productivity to euro area labor productivity (where labor productivity is measured as GDP per worker).

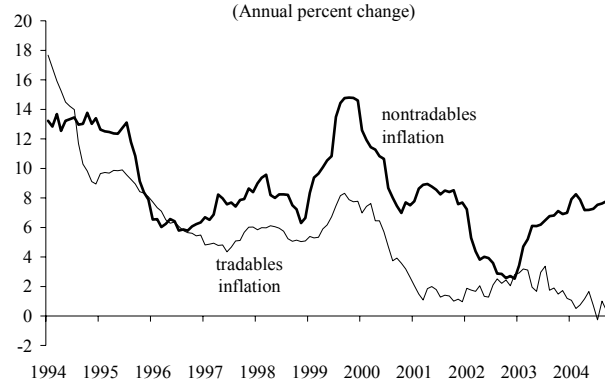
¹⁶ That is, if productivity growth in the tradables sector exceeds that in the nontradables sector, then the economywide wage increase resulting from productivity growth in the tradables sector would exceed economywide productivity growth.

since relative productivity growth in the tradables sector should not affect tradables prices. However, there are three main factors that could explain PPI-based real appreciation. First, the PPI is only an imperfect measure of tradable goods, and may have significant nontradable components (e.g., differentiated goods not subject to international competition). Second, productivity growth has been associated with an improvement in the quality of domestically produced tradable goods, which has increased their average price. Third, there has been an improvement in the marketing and reputation of tradable goods (including domestically produced foreign goods that used to be imported), which has also increased their value added and their price.¹⁷ The latter two factors have been strongly associated with foreign direct investment, which, in turn, has been associated with productivity growth. It is therefore not surprising that we find a strong relationship between productivity growth and PPI-based real appreciation.¹⁸

24. CPI-based real appreciation is thus explained partly by the Balassa-Samuelson effect, partly by administered prices, and partly by increases in the value added of tradables. Figure 13 shows that the prices of nontradables (market services) have generally increased faster than tradables prices, as predicted by the Balassa-Samuelson hypothesis. However, this does not necessarily imply that CPI-

based appreciation has been exclusively driven by nontradables prices, since tradables prices have generally grown in line with nontradables prices (except since 2003, when tradables prices declined in response to nominal koruna appreciation). As Table 1 shows, nontradables accounted for only approximately 15-20 percent of the overall CPI basket between 1993 and 2004, similar to the share of administered prices. The remaining two-thirds of the basket has been constituted by tradable goods and food. Similarly, more than two-thirds of net inflation has been constituted

Figure 13. Tradables and Nontradables Prices
(Annual percent change)



¹⁷ Strictly speaking, PPI inflation should not have been affected by the replacement of low-quality goods by high-quality goods, since it is a change in the composition of the basket. However, as Égert and Lommatzsch (2004) argue, it is likely that the PPI has not sufficiently been adjusted for these quality improvements, in which case these improvements show up as PPI inflation.

¹⁸ The importance of quality and reputation improvements is discussed further in Égert and others (2003) and Égert and Lommatzsch (2004). The latter develop a theoretical model in which technological change generates PPI-based real appreciation. They also present evidence that significant PPI-based real appreciation has occurred in several other transition economies, notably, the Czech Republic, Poland, and Hungary.

by tradable goods. This implies that the abovementioned factors that have affected PPI-based real appreciation have also affected CPI-based real appreciation to an important extent.¹⁹

Table 1. Slovakia: Weights of CPI Components
(In percent)

	1993	1994 -96	1997	2000	2003	2004
Total CPI	100.0	100.0	100.0	100.0	100.0	100.0
Administered prices	14.0	13.8	17.8	20.8	20.7	19.9
Core inflation	86.0	86.2	82.2	79.3	79.3	80.5
Food	21.6	21.6	26.8	21.4	21.4	21.4
Net inflation	64.5	64.7	55.4	57.9	57.9	58.7
Tradables	49.7	49.7	40.2	39.5	39.5	39.6
Nontradables (market services)	14.8	15.0	15.2	18.4	18.5	19.1
Share of tradables in net inflation	77.1	76.8	72.6	68.2	68.0	67.5

Source: National Bank of Slovakia

25. **Real appreciation is also likely to be affected by the growth in government consumption.** The standard argument is that nontradables tend to constitute a large share of government spending, hence an increase in government consumption is likely to lead to a rise in the demand for nontradables. At the same time, one could argue that government spending will eventually have to be financed through higher taxes, which would lead to a decline in disposable income and therefore to a fall in the demand for nontradables. However, as Edwards (1989) has argued, the first effect is likely to dominate the second effect, and this is generally confirmed by empirical studies.²⁰

26. **Econometric estimates suggest that all measures of real appreciation in Slovakia have been cointegrated with productivity growth, as well as with the growth in government consumption.** Appendix I reports evidence of stable cointegration relationships between the real exchange rate (deflated by headline CPI, net CPI, ULC, and PPI), the

¹⁹ A similar argument is made by Égert (2002) and Égert and others (2003), who study the importance of the Balassa-Samuelson effect in Central and Eastern European economies. They find evidence that productivity growth in the tradables sector does generate nontradable inflation, but has only a limited effect on overall CPI inflation, because of the low weight of nontradables in the CPI. They also argue that the impact of the Balassa-Samuelson effect may increase as the weight of services in the CPI grows.

²⁰ In an important cross-country study, Froot and Rogoff (1991) found that the real exchange rate appreciates more in countries with a high growth rate of government consumption. Égert, Halpern and MacDonald (2004), Table 5, list ten more papers that find a positive effect of government consumption on the real exchange rate, while only two papers find a negative effect.

productivity differential, and government consumption (in percent of GDP). Table A1 shows that all variables are nonstationary,²¹ implying that one cannot estimate these relationships by OLS, and should search for a cointegration relationship instead. Table A2 provides evidence that, for all different measures of the real exchange rate, there indeed exists a unique cointegrating vector between the three variables. Finally, Table A3 provides detailed estimates of the cointegrating vectors, with the coefficient for the real exchange rate normalized to one.²²

27. The estimated cointegrating relationships confirm that, once adjusted for administered price growth, all measures of real appreciation have been proportional to productivity differential growth. As Table A3 in Appendix I shows, the best estimates—in terms of minimizing the information criteria—are generally obtained when four lags are included. This gives the following four equations:

$$\begin{aligned}
 \ln(\text{CPI-based RER}) &= 1.77 \ln(\text{productivity differential}) + 0.53 \ln(\text{government consumption}) \\
 &\quad (0.12) \qquad\qquad\qquad (0.21) \\
 \ln(\text{net CPI-based RER}) &= 0.93 \ln(\text{productivity differential}) + 0.45 \ln(\text{government consumption}) \\
 &\quad (0.08) \qquad\qquad\qquad (0.15) \\
 \ln(\text{ULC-based RER}) &= 1.10 \ln(\text{productivity differential}) + 1.40 \ln(\text{government consumption}) \\
 &\quad (0.17) \qquad\qquad\qquad (0.30) \\
 \ln(\text{PPI-based RER}) &= 1.04 \ln(\text{productivity differential}) + 1.18 \ln(\text{government consumption}) \\
 &\quad (0.10) \qquad\qquad\qquad (0.18)
 \end{aligned}$$

where the numbers in brackets indicate the standard errors. Not surprisingly, the estimated coefficient for the productivity differential is much higher for the (headline) CPI-based measure than for the other three measures, confirming that one would overestimate the equilibrium rate of real appreciation if no adjustments were made for administered prices and indirect taxes. In all other three cases, the estimated coefficient for the productivity

²¹ That is, the null hypothesis of a unit root in levels cannot generally be rejected (when sufficient lags are included), while the null hypothesis of a unit root in differences can be rejected (see Table 2).

²² Besides government consumption to GDP, we also tried correcting for several other variables, including trade openness, FDI inflows, and administered prices (to estimate potential second-round effects). However, this did not yield any meaningful results, since the variables turned out to be very highly correlated (by more than 90 percent) with each other as well as with the productivity differential, leading to multicollinearity problems. The only two variables that yielded a stable and robust cointegration relationship with the real exchange rate were the productivity differential and government consumption to GDP.

differential is not significantly different from unity, suggesting that, for every 1 percent increase in the productivity differential, the real exchange rate appreciates by 1 percent.²³

28. **The estimated elasticity of real appreciation with respect to government consumption depends on the real exchange rate deflator.** For the ULC-based and PPI-based measures, the elasticity with respect to government consumption is not significantly different from one. However, the elasticity is significantly smaller—approximately 0.5—for the CPI-based RER measures. This is somewhat surprising, because if government consumption is biased toward nontradables, one would expect the CPI-based RER to depend more strongly on government consumption than the other measures. A possible explanation for the strong effect on the ULC-based RER is that an important part of government consumption includes salaries of civil servants, which affect economywide unit labor costs. However, we do not have a good explanation for the strong effect on the PPI-based RER.

29. **In spite of the small number of observations, the estimates are robust to variations in the number of lags and in the sample period.** The residuals for the regressions with three or four lags are all well-behaved, and the coefficient estimates are never significantly different from one in any of the regressions. For the case of two lags, the null hypothesis of no heteroskedasticity is either rejected or barely accepted, hence these estimates are somewhat less reliable.²⁴ To further test the robustness of the estimates, we performed a recursive estimation of the coefficients by shrinking the sample by one observation at the time. The results, shown in Appendix II, confirm that the estimated coefficients are very stable over time, with the confidence interval narrowing slightly as the sample size increases.

30. **In terms of projections, our estimates suggest that productivity-driven equilibrium real appreciation may approach 3 percent per year on average during the next five years.** Table 2 presents projections on average output and employment growth for Slovakia and the euro area. These projections imply a growth in the productivity differential by 2.7 percent per year on average during 2005-09. Since administered prices and indirect taxes are not expected to play an important role anymore, we can assume that real

²³ For a panel of five accession countries, Égert and Lommatzsch (2004) also find that labor productivity is “the most stable determinant not only of the overall inflation-based real exchange rate but also of the real exchange rate measured in terms of tradable prices, proxied by PPI.” For Slovakia in particular, however, they cannot find a meaningful relationship for the PPI-based real exchange rate, and for CPI-based inflation, the only stable cointegration relationship they find for the period 1993-2002 is one including administered prices and government spending to GDP.

²⁴ This test amounts to a multivariate regression of all error variances and covariances on the original regressors and their squares (excluded unrestricted regressors, i.e., constant and dummies).

appreciation will be proportional to the growth in the productivity differential, as implied by our estimates. If government consumption were to remain constant in percent of GDP, productivity-driven equilibrium real appreciation would thus be close to 3 percent per year—an estimate that is very similar to that obtained by other studies.²⁵

Table 2. Projected Equilibrium Real Appreciation, 2005-2009
(Annual percent change)

Slovakia	
Real GDP	4.7
Employment	0.9
Productivity	3.8
Government Consumption / GDP	-1.9
Euro area	
Real GDP	2.1
Employment	1.0
Productivity	1.1
Equilibrium real appreciation estimates	
Productivity differential	2.7
Productivity differential plus government consumption (CPI-based RER)	1.7
Productivity differential plus government consumption (PPI-based and ULC-based RER)	0.7

Sources: World Economic Outlook, and IMF staff projections.

31. **The equilibrium rate of real appreciation will be substantially lower if government consumption declines as a share of GDP.** Table 2 includes projections for government consumption growth relative to GDP growth, based on the authorities' medium-term fiscal framework. The share of government consumption is projected to gradually decline, partly reflecting the fiscal adjustment needed to meet the Maastricht fiscal deficit criterion (3 percent of GDP) in 2007. This implies that the rate of equilibrium real appreciation could be reduced to 1.7 percent per year (using the 0.5 elasticity estimated for the CPI-based real exchange rate), or even to 0.7 percent per year (using the unit elasticity estimated for the PPI-based and ULC-based real exchange rates). Thus, if government consumption growth is constrained according to the authorities' medium-term objectives, the

²⁵ Toth and Chudik (2004) estimated the medium-term equilibrium real appreciation rate in Slovakia at 3.1 percent per year. Kovács (2002) estimated the Balassa-Samuelson effect for Slovakia at 1–2 percent, but noted that 3 percent “is possible in the future, in case of accelerated FDI inflow into the manufacturing sector.” Kovács and Simon (1998) and Rother (2000) also found a productivity-driven real appreciation of approximately 3 percent per year for Hungary and Slovenia, respectively.

average rate of equilibrium real appreciation during 2005-09 could be only about one-fourth of what it would be without fiscal consolidation.

F. Conclusion

32. **This chapter has evaluated the competitiveness of the Slovak economy, and has reached three main conclusions.** First, Slovak wages are somewhat lower than those in other new EU member states, even when adjusted for differences in productivity. Second, Slovak prices have been relatively low, given Slovakia's low relative income level, implying undervaluation of the real exchange rate—but this undervaluation could disappear in 2005. Third, the rate of equilibrium real appreciation is expected to be in line with productivity growth, but could be reduced with fiscal consolidation.

33. **We assessed the equilibrium level rate of real appreciation using both cross-section and time-series techniques.** Based on our cross-section estimates, we found that the Slovak real exchange rate is likely to have been undervalued in the past, but may reach equilibrium in 2005. Based on our time-series estimates, we found that the equilibrium real exchange rate appreciates by 1 percent for every 1 percent increase in the productivity differential with the euro area, while the elasticity with respect to government consumption depends on the real exchange rate deflator (CPI, PPI, or ULC). These estimates were robust to variations in the number of lags and in the sample period, and had relatively small standard errors.

34. **Our time-series estimates imply that the equilibrium real appreciation rate will be slightly below 3 percent per year on average in the next five years, assuming that government consumption does not grow as a share of GDP.** However, the equilibrium real appreciation rate could be significantly reduced if government consumption declines in percent of GDP, as planned. By helping to reduce real appreciation, fiscal policy can thus support monetary policy in achieving disinflation without losing competitiveness.

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SLOVAK REPUBLIC
UNIT ROOT TESTS, COINTEGRATION TESTS, AND COINTEGRATION ESTIMATES
Table A1. ADF Unit Root Tests

ADF tests for unit root in levels ^{1/} 1996Q1-2004Q2			ADF tests for unit root in differences ^{2/} 1996Q2-2004Q2		
ln (CPI-based RER)			Δln (CPI-based RER)		
lag	t-adf	beta	lag	t-adf	beta
3	-2.138	0.645	3	-3.768**	-0.224
2	-2.937	0.594	2	-3.815**	0.001
1	-2.579	0.685	1	-3.155*	0.266
0	-1.743	0.791	0	-4.058**	0.271
ln (net CPI-based RER)			Δln (net CPI-based RER)		
3	-0.607	0.956	3	-3.845**	-0.288
2	-0.900	0.935	2	-4.017**	-0.097
1	-0.961	0.933	1	-3.777**	0.132
0	-0.701	0.952	0	-4.758**	0.180
ln (ULC-based RER)			Δln (ULC-based RER)		
3	-2.029	0.740	3	-2.971*	-0.010
2	-2.047	0.758	2	-2.896	0.137
1	-1.839	0.792	1	-3.241*	0.186
0	-1.475	0.839	0	-4.700**	0.130
ln (PPI-based RER)			Δln (PPI-based RER)		
3	-1.752	0.748	3	-3.617*	-0.185
2	-2.415	0.699	2	-3.604*	0.029
1	-2.035	0.768	1	-3.078*	0.261
0	-1.457	0.838	0	-4.222**	0.218
ln (productivity differential)			Δln (productivity differential)		
3	-2.549	0.185	3	-3.461*	-1.141
2	-2.915	0.189	2	-4.677**	-1.066
1	-3.188	0.256	1	-5.355**	-0.671
0	-4.128*	0.249	0	-7.962**	-0.378
ln (government consumption)			Δln (government consumption)		
3	-3.412	-0.014	3	-5.355**	-1.223
2	-3.281	0.081	2	-5.991**	-0.944
1	-4.249*	-0.009	1	-9.707**	-0.891
0	-6.004**	-0.046	0	-14.41**	-0.497

1/ The regression includes a constant, a trend, and seasonal dummies. The critical values of the Augmented Dickey-Fuller (ADF) t-statistics are -3.55 for the 5-percent level and -4.25 for the 1-percent level. The null hypothesis is that of a unit root in levels, i.e., rejection of the null means that the variable is stationary in levels. The symbols * and ** denote significance at the 5-percent and 1-percent level, respectively.

2/ The regression includes a constant and seasonal dummies. The critical values of the ADF t-statistics are -2.95 for the 5-percent level and -3.64 for the 1-percent level. The null hypothesis is that of a unit root in differences, i.e., rejection of the null means that the variable is stationary in differences.

Table A2. Cointegration Tests^{1/2/}

CPI-based RER								
rank	λ_{trace}	prob	λ'_{trace}	prob	λ_{max}	prob	λ'_{max}	prob
$r=0$	45.90	[0.000]**	37.28	[0.000]**	29.21	[0.059]	23.73	[0.019]*
$r \leq 1$	8.61	[0.409]	8.43	[0.344]	5.48	[0.756]	5.37	[0.698]
$r \leq 2$	0.18	[0.672]	0.18	[0.672]	0.11	[0.736]	0.11	[0.736]
Net CPI-based RER								
rank	λ_{trace}	prob	λ'_{trace}	prob	λ_{max}	prob	λ'_{max}	prob
$r=0$	46.73	[0.000]**	40.51	[0.000]**	29.74	[0.051]	25.78	[0.008]**
$r \leq 1$	6.22	[0.674]	6.12	[0.604]	3.96	[0.900]	3.89	[0.863]
$r \leq 2$	0.10	[0.751]	0.10	[0.751]	0.06	[0.800]	0.06	[0.800]
ULC-based RER								
rank	λ_{trace}	prob	λ'_{trace}	prob	λ_{max}	prob	λ'_{max}	prob
$r=0$	33.27	[0.018]*	26.87	[0.005]**	21.17	[0.358]	17.10	[0.173]
$r \leq 1$	6.40	[0.653]	5.92	[0.629]	4.07	[0.892]	3.77	[0.875]
$r \leq 2$	0.48	[0.490]	0.48	[0.490]	0.30	[0.582]	0.30	[0.582]
PPI-based RER								
rank	λ_{trace}	prob	λ'_{trace}	prob	λ_{max}	prob	λ'_{max}	prob
$r=0$	52.89	[0.000]**	45.08	[0.000]**	34.23	[0.014]*	29.17	[0.002]**
$r \leq 1$	7.81	[0.493]	7.62	[0.427]	5.05	[0.801]	4.93	[0.750]
$r \leq 2$	0.19	[0.663]	0.19	[0.663]	0.12	[0.726]	0.12	[0.726]

^{1/} The tests are conducted for the period 1996Q2-2004Q2, and include four lags, a constant, three seasonal quarterly dummies, a dummy for the change in exchange rate regime (1998Q3-1999Q3), and a dummy for the summer 2002 depreciation (2002Q2-Q3), which was related to political concerns about the outcome of the September 2002 elections.

^{2/} The statistics λ_{trace} and λ_{max} are Johansen's trace eigenvalue and maximal eigenvalue statistics. The statistics λ'_{trace} and λ'_{max} incorporate a degrees-of-freedom correction. The null hypotheses are whether the cointegration rank r equals zero (no cointegration), is less than or equal to one (at most one cointegrating vector), or is less than or equal to two (at most two cointegrating vectors). The symbols * and ** denote significance at the 5-percent and 1-percent level, respectively.

**Table A3. Estimated Cointegration Equations 1/
(1996Q2-2004Q2)**

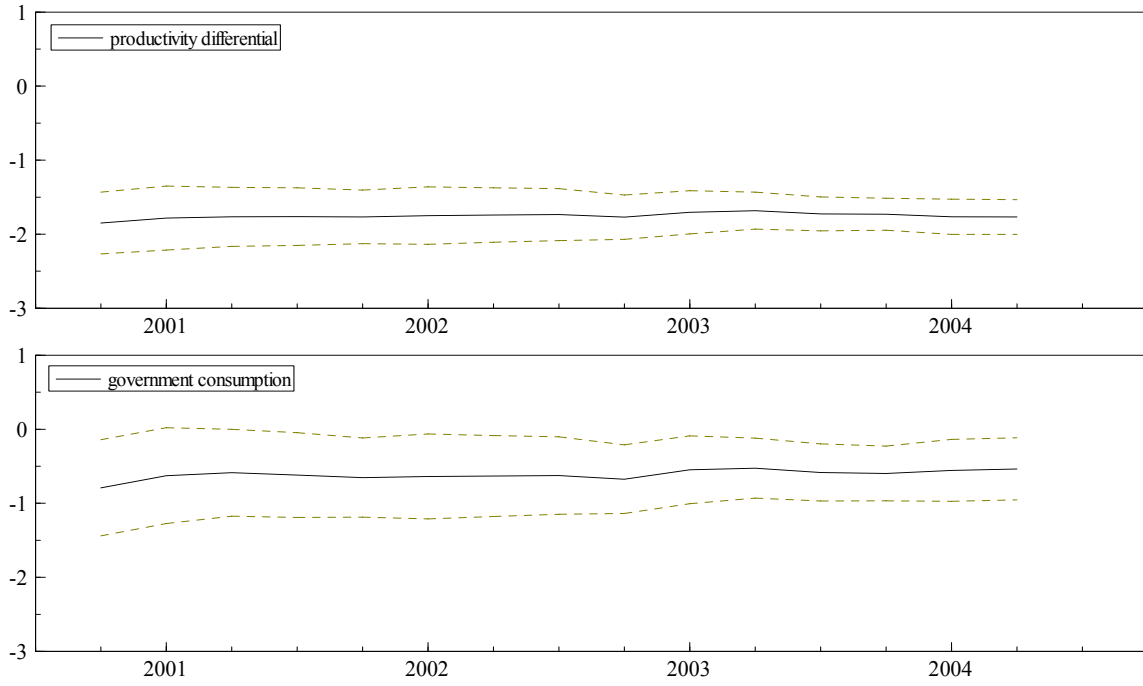
dependent variable	CPI-based RER			net CPI-based RER			ULC-based RER			PPI-based RER		
	4	3	2	4	3	2	4	3	2	4	3	2
number of lags												
ln (prod diff)	1.77	1.74	1.78	0.93	0.86	0.94	1.10	1.06	1.33	1.04	0.93	1.08
standard error	(0.12)	(0.11)	(0.12)	(0.08)	(0.09)	(0.10)	(0.17)	(0.20)	(0.25)	(0.10)	(0.10)	(0.13)
ln (govt cons)	0.53	0.50	0.51	0.45	0.29	0.43	1.40	1.35	1.92	1.18	0.89	1.20
standard error	(0.21)	(0.18)	(0.19)	(0.15)	(0.14)	(0.16)	(0.30)	(0.33)	(0.37)	(0.18)	(0.17)	(0.19)
vector normality	0.66	0.62	0.06	0.10	0.19	0.19	0.51	0.76	0.17	0.47	0.43	0.06
vector heteroskedasticity	0.95	0.79	0.03*	0.91	0.83	0.05	0.92	0.78	0.24	0.96	0.82	0.06
log likelihood	294	285	266	305	294	273	294	281	265	307	291	272
information criteria 2/												
AIC	-14.8	-14.8	-14.2	-15.5	-15.3	-14.6	-14.8	-14.5	-14.1	-15.6	-15.2	-14.5
HQ	-14.0	-14.2	-13.7	-14.7	-14.7	-14.1	-14.0	-13.9	-13.6	-14.8	-14.5	-14.1
SC	-12.5	-12.9	-12.7	-13.2	-13.5	-13.1	-12.5	-12.7	-12.6	-13.3	-13.3	-13.1

1/ All regressions include a constant, three seasonal quarterly dummies, a dummy for the change in exchange rate regime (1998Q3-1999Q3), and a dummy for the summer 2002 depreciation (2002Q2-Q3), which was related to political concerns about the outcome of the September 2002 elections. The symbols * and ** denote significance at the 5-percent and 1-percent level, respectively.

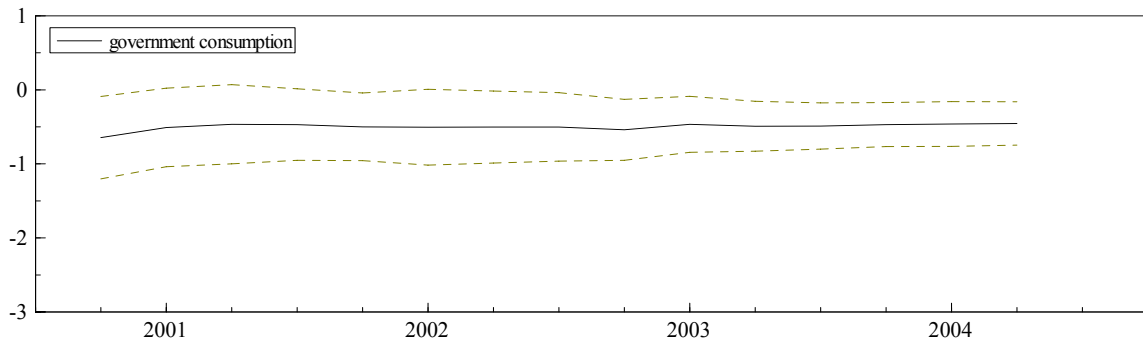
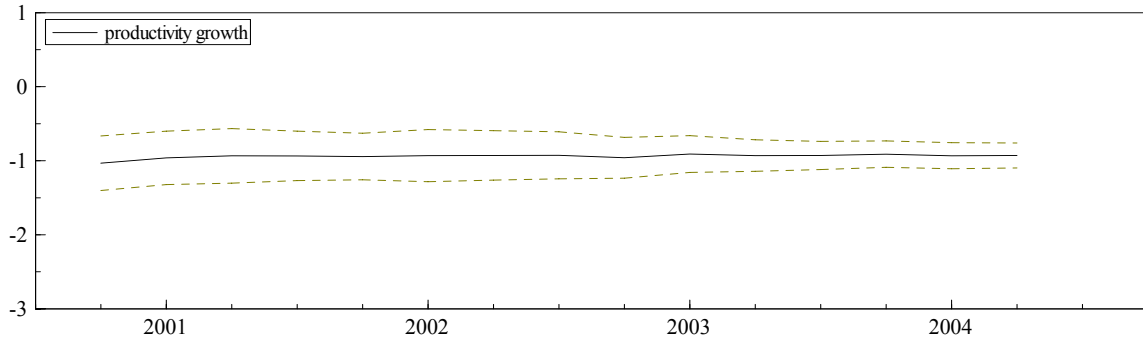
2/ The three information criteria reported are the Akaike information criterion (AIC), the Hannan-Quinn criterion (HQ), and the Schwartz criterion (SC). In all cases, the log-likelihood constant is included.

SLOVAK REPUBLIC
RECURSIVE ESTIMATES OF LONG-RUN REAL EXCHANGE RATE DETERMINANTS
(dotted lines represent 95-percent confidence intervals)

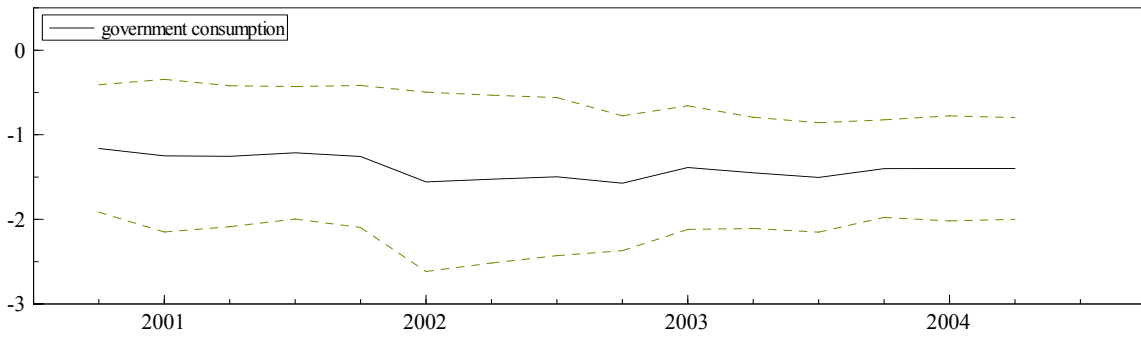
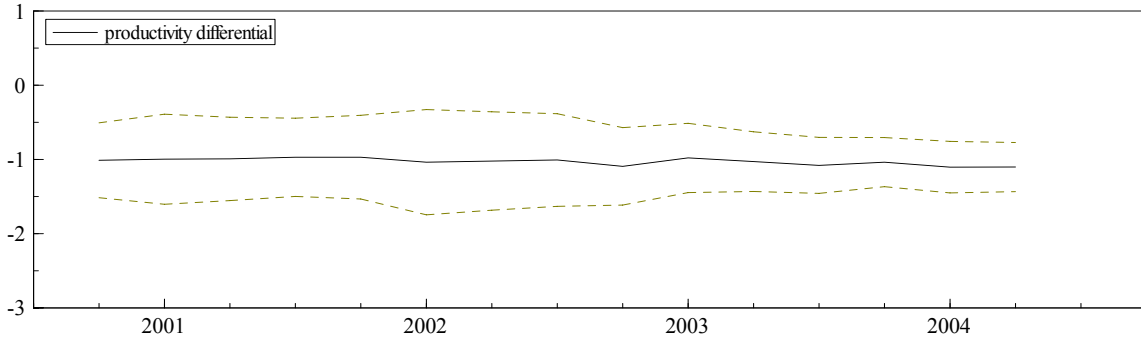
Dependent variable: CPI-based real appreciation



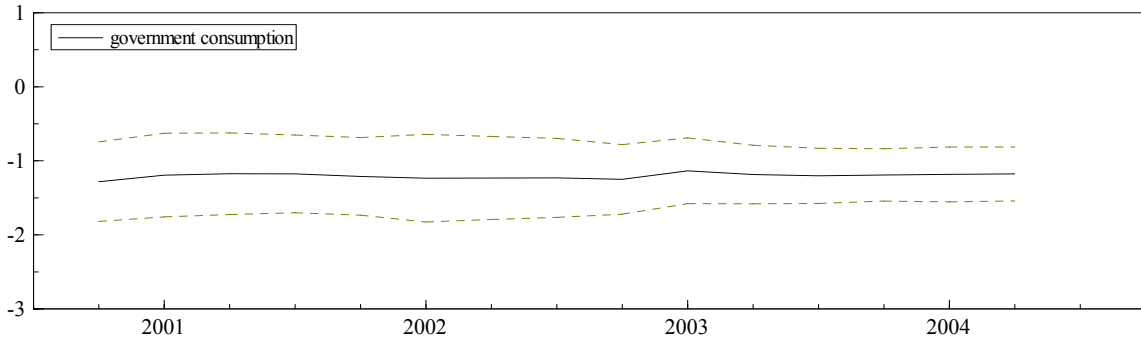
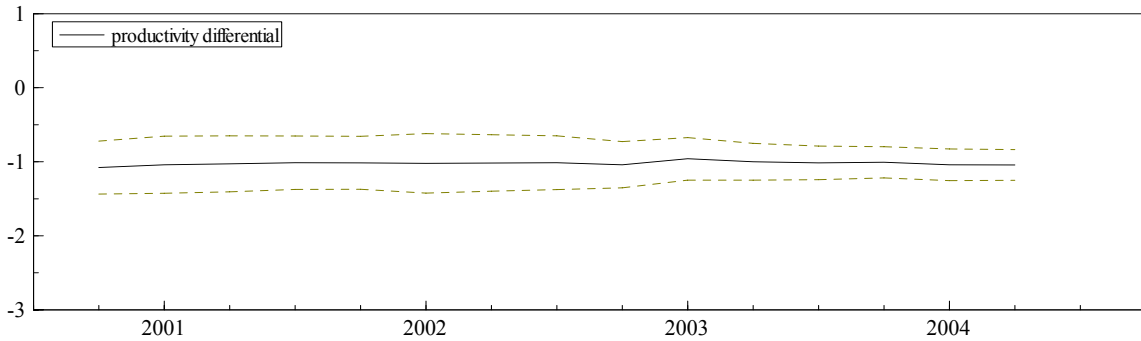
Dependent variable: Net CPI-based real appreciation



Dependent variable: ULC-based real appreciation



Dependent variable: PPI-based real appreciation

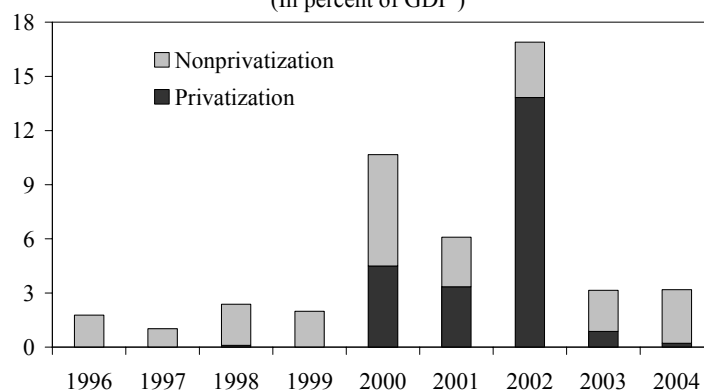


III. SLOVAKIA'S GROWTH POTENTIAL AND THE OUTPUT GAP²⁶

A. Introduction

1. **Slovakia's recent economic performance has been impressive.** Real GDP growth was strong over the past three years, reaching an estimated 5¼ percent in 2004, the highest rate since the mid-1990s. This performance reflected in no small measure the strong reform program adopted in 2002, which inspired market confidence and won the support of major international institutions and private market participants.²⁷ These reforms, together with the privatization and enterprise restructuring undertaken previously, helped turn Slovakia into one of the most attractive business environments in central and eastern Europe²⁸ and drew substantial foreign direct investment. Significant investments since 2000 (Figure 1) added to Slovakia's productive capacity and contributed to robust export-led growth.

Figure 1. Slovak Republic: Gross FDI Inflows
(In percent of GDP)



Sources: National Bank of Slovakia; IMF estimates (for 2004) and calculations.

2. **These developments raise the question of what is Slovakia's sustainable growth rate over the medium term.** Can the current pace of economic expansion be sustained, or even surpassed, over the next few years? Certainly, recent reforms to the labor market and business environment will continue to bear fruit for several years to come. Also, additional investments now in the pipeline are expected to support continued, if not stronger, economic

²⁶ Prepared by Nada Choueiri.

²⁷ Both the IMF and the World Bank supported the government's reforms, and the OECD praised Slovakia in 2004 as a top reformer in the region. For more details on the government's reform program, see the IMF staff reports for the 2003 and 2004 Article IV consultations (www.imf.org).

²⁸ This view was voiced by several institutions, including the World Bank (2004), the OECD (2004b), and the major rating agencies.

growth. This would definitely be desirable as vigorous growth is called for to raise Slovakia's per capita income (about 50 percent that of the euro area at present) to euro area levels.

3. **This chapter takes stock of Slovakia's growth performance over the past decade and assesses its potential over the medium term.** Section B reviews sectoral developments in the Slovak economy since the early 1990s to understand the sources of growth. Section C estimates potential output and assesses the current distance between that level and actual output—the output gap. Comparisons are then drawn with other estimates derived by the Slovak authorities, the OECD, and the European Commission. Section D concludes.

B. Slovakia's Growth in the Past Decade

4. **The services sector is predominant in Slovakia, but manufacturing is gaining in significance** (Figures 2-3 and Table 1). The services sector represents more than half of real GDP and until recently was the main driver of Slovakia's economic expansion. Indeed, services contributed about 2¾ percentage points to real GDP growth on average during 1993-2002 and captured the bulk of real capital formation in the country. Over the past two years, however, the manufacturing sector, led by the automobile industry, has gained in importance, contributing about 2 percentage points to GDP growth—more than services (Table 1). Also, foreign direct investments have mainly been concentrated in manufacturing since 2000—although a large share of these investments has also gone to the financial sector following its restructuring during 1999-2001 (Figure 3).

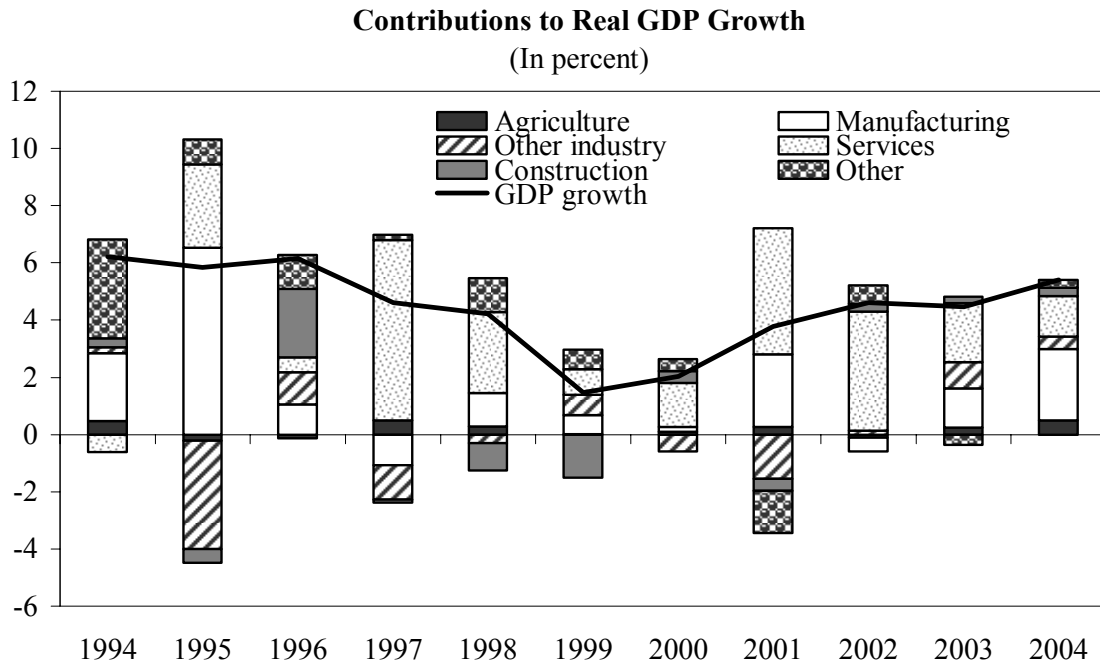
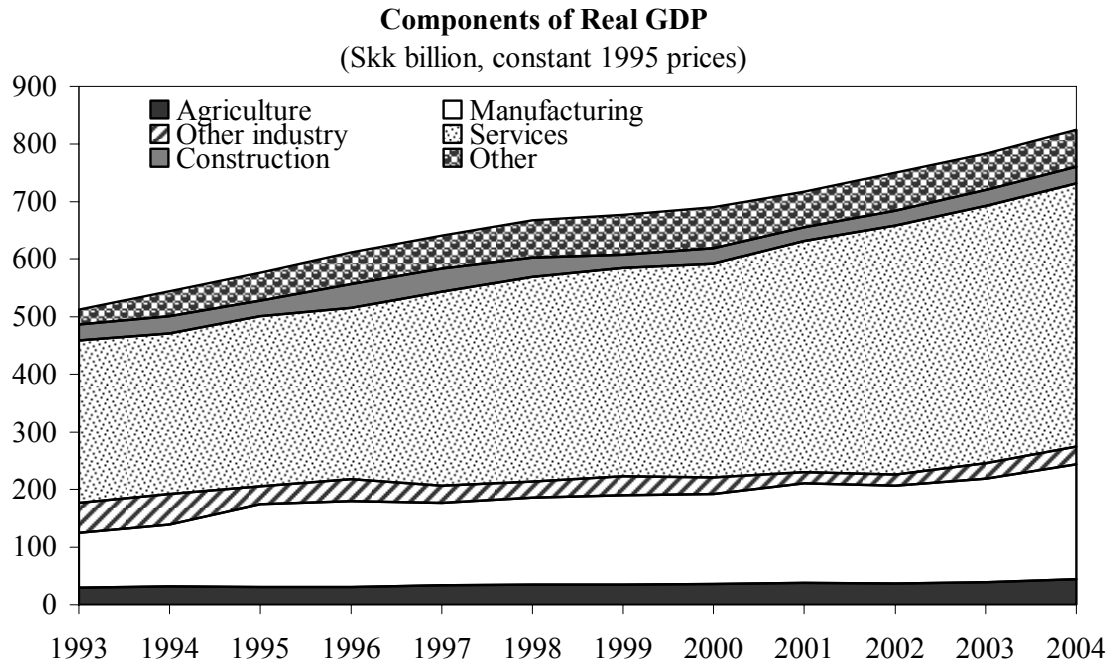
Table 1. Slovak Republic: Sectoral Composition of Real GDP

	Share in Real GDP (Percent)			Contribution to Real GDP Growth (Percentage points)		
	1993-99	2000-02	2003-04	1993-99	2000-02	2003-04
Agriculture	5.4	5.2	5.2	0.2	0.1	0.4
Industry	28.6	26.3	27.2	1.2	0.1	2.6
<i>Of which</i>						
Manufacturing	22.2	23.1	23.6	1.8	0.7	1.9
Construction	5.3	3.5	3.5	-0.1	0.1	0.3
Services	52.2	55.8	56.2	2.1	3.4	1.7

Sources: Data provided by the Slovak Republic's Statistical Office; IMF estimates (for 2004) and calculations.

5. **Services are largely provided by the private sector.** Since 2000, the share of public services—mainly education, health care, and public administration—has averaged about 15 percent of GDP; following privatization, the bulk of the remaining services were provided by the private sector. In 2004, in particular, private sector services increased by more than 2 percentage points of GDP, driven by the expansion of the financial sector, while education, health, and public administration activities dropped by about 4 percentage points of GDP (Figure 4).

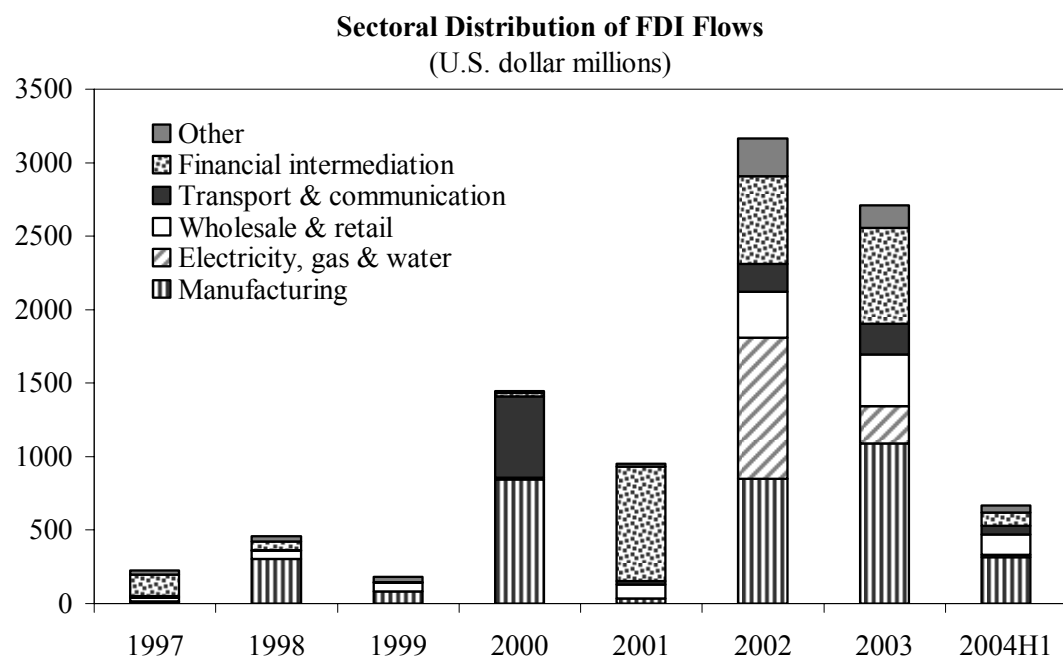
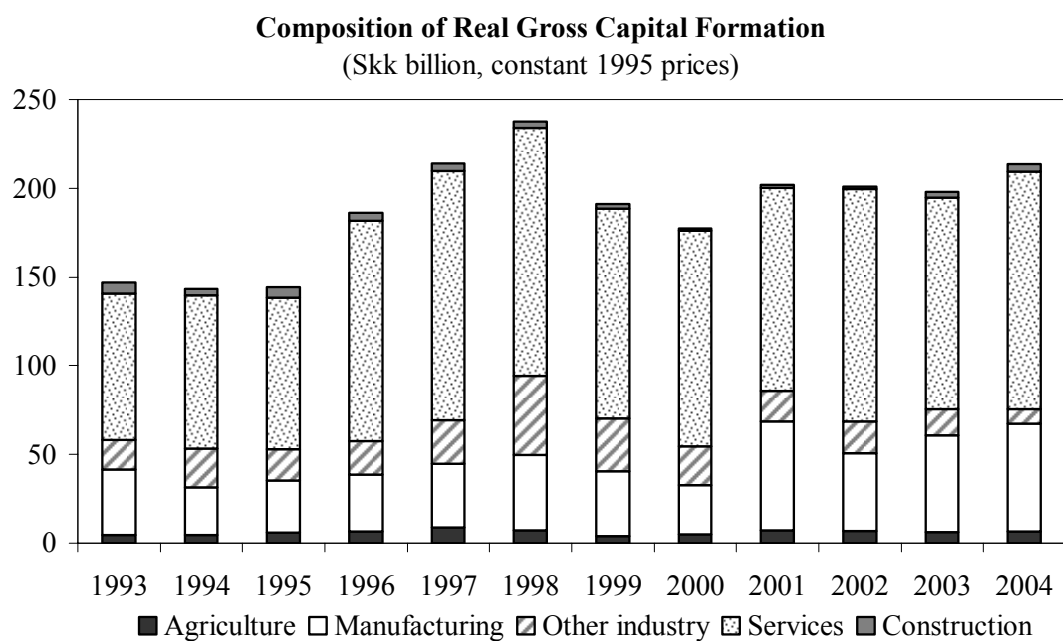
Figure 2. Slovak Republic: Real GDP by Branches, 1993-2004 1/



Sources: National Statistical Office of the Slovak Republic; IMF estimates (for 2004) and calculations.

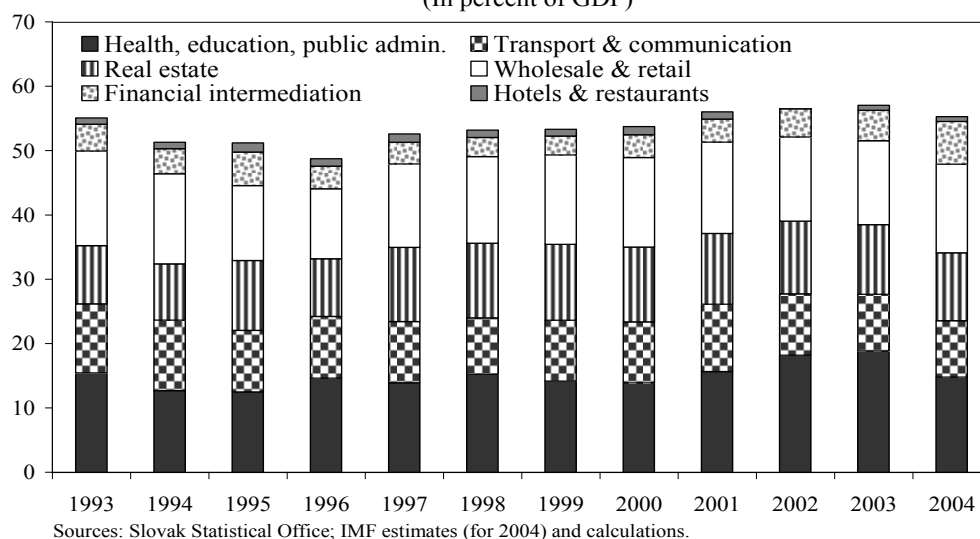
1/ The category "other" includes taxes and imputed banking services.

Figure 3. Slovak Republic: Investment by Sector, 1993-2004



Sources: National Statistical Office and National Bank of Slovakia; IMF estimates (for 2004) and calculations.

Figure 4. Slovak Republic: Decomposition of the Services Sector
(In percent of GDP)



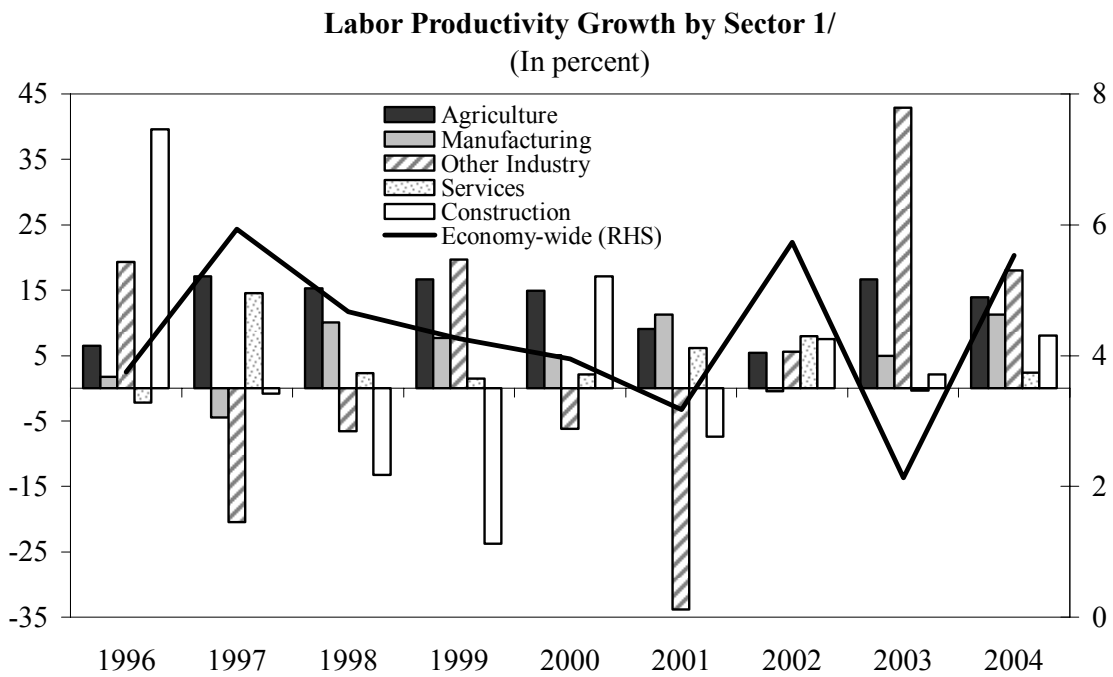
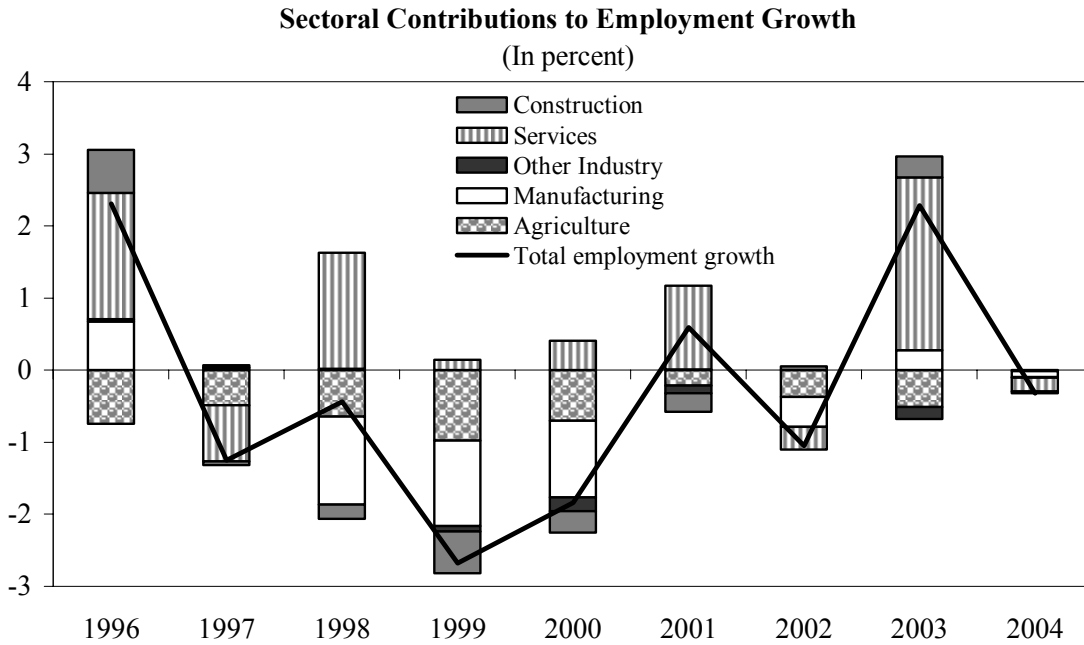
6. **Trends in employment and labor productivity have widely varied across economic sectors, implying different sources of growth for different sectors.** The expansion of services has primarily been driven by employment growth. Indeed, despite a decline in economywide employment throughout the second half of the 1990s, employment in the services sector has continued to rise (Figure 5). The growth in manufacturing since 2001, which has also contributed significantly to economywide growth, has not really been driven by employment in that sector, however: it has mostly been associated with capital accumulation and productivity growth (Figures 3 and 5).

7. **Economic restructuring has reduced the contribution of employment to growth.** During 1999-2000, a pickup in enterprise restructuring was associated with faster labor shedding—particularly in manufacturing and agriculture—which had started in 1997-98 (Figure 6). Therefore, throughout 1997-2000, real GDP growth was underpinned by increases in investment and productivity (Figures 3 and 6). Since 2000, continued strong productivity growth has remained key to sustaining GDP growth, except in 2003, when a strong rebound in employment also significantly contributed to real growth.

8. **Looking ahead, both greater labor utilization and further capital accumulation are expected to result in robust growth in the medium term.** Slovakia's high unemployment rate—17¾ percent—indicates a potential that, if exploited, would significantly raise economic growth.²⁹ Foreign investments in the pipeline will provide another source for higher growth in the medium term, as they imply further capital

²⁹ For details on policy measures that could increase the employment of Slovakia's labor force, see the IMF staff report for the 2004 Article IV consultation (www.imf.org).

Figure 5. Slovak Republic: Sectoral Employment, 1996-2004

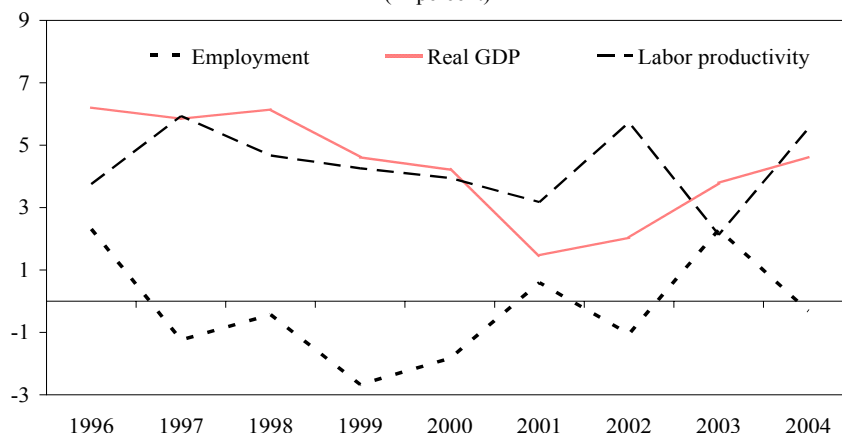


1/ Labor productivity is measured as GDP per worker for each sector.

Sources: National Statistics Office of the Slovak Republic; IMF estimates (for 2004) and calculations.

accumulation and brighter employment prospects (Table 2). The next section assesses Slovakia's medium-term growth potential by estimating potential output.

Figure 6. Slovak Republic: GDP, Labor, and Productivity Growth 1/
(In percent)



Sources: Slovak Statistics Office; IMF estimates (for 2004) and calculations.
1/ Labor productivity is measured as real GDP per worker.

Table 2. Slovak Republic: Recently Agreed FDI Projects

	Number of Projects	Total Sum to Be Invested (€ billion)	Number of Direct Jobs Expected to Be Created
2002	25	0.29	5,356
2003	23	1.12	6,830
2004	43	1.75	13,500

Source: ING Barings, Slovakia.

C. Potential Output and the Output Gap

9. **Potential output is a useful concept, but, being an unobserved variable, it is hard to measure.** Potential GDP gives a benchmark against which the performance of an economy can be assessed. This benchmark can be a helpful guide in elaborating macroeconomic projections. It also helps in evaluating inflationary pressures, as these are most likely to arise when an economy is operating close to potential. Finally, it provides a framework for assessing the fiscal stance from the Keynesian point of view that a fiscal expansion (contraction) is desirable when output is below (above) potential. However, there is no single best measure of potential GDP; this variable can be extracted from the data using several approaches, which can give different results. This section explores two approaches to estimating potential output: statistical methods and the production function approach. It then draws comparisons with other estimates by the Slovak authorities, the EC and the OECD.

Statistical methods

10. **Statistical methods provide a straightforward measure of potential output.**

These methods consider potential output as an equilibrium concept that can be extracted from actual output data. This equilibrium could follow an arithmetic trend—such as linear, polynomial, or exponential. Alternatively, potential output can be estimated through filtering techniques, the most popular of which is probably the Hodrick-Prescott (HP) filter. This filter smoothes the output series by minimizing the sum, over the sample period, of squared distances between actual and potential output at each point in time, subject to a restriction on the variation of potential output over time. The restriction parameter λ captures the variance of cyclical shocks to output relative to that of trend output shocks, and thereby controls the smoothness of the trend series: smaller values of λ indicate a smaller importance of cyclical shocks relative to shocks to the trend, and hence yield a smoother trend series.

11. **Statistical methods to measure potential output are attractive for their simplicity, but they carry significant shortcomings.**

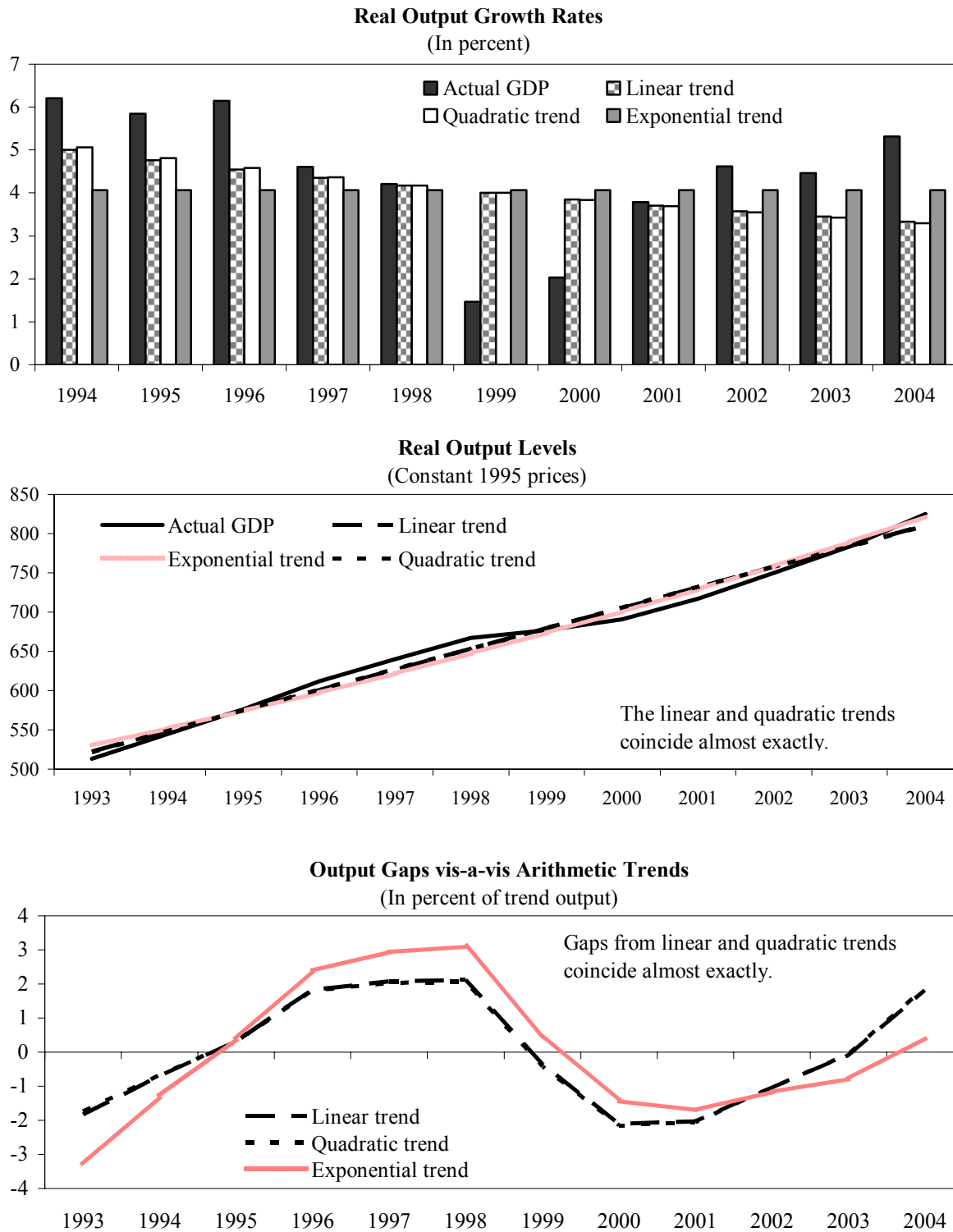
Only the output data are needed to derive potential output using these methods; hence, their simplicity. However, because they are not model based, statistical methods yield results that are not necessarily supported by an economic interpretation. Also, they ignore structural breaks in the data. Additional shortcomings are specific to the HP filter. First, considerable discretion governs the choice of the parameter λ —practitioners typically set λ equal to 100 for annual data and 1,600 for quarterly data, but λ should ideally be tailored to a country's business cycle pattern and structural developments. Second, the HP filter is susceptible to what is often referred to as the “end-point problem,” caused by the asymmetry inherent in the filter at the extreme points of a time series. Therefore, the results for the extreme points of the sample are biased—although the bias can be corrected by extending the data with projections before running the filter and dropping the results for the extreme points of the extended sample.

12. **Figure 7 shows Slovakia's potential output as measured by various arithmetic trends.** Linear, quadratic, and exponential trends were fitted to annual real GDP data for the period 1993-2004.³⁰ The results indicate that trend growth—no matter which statistical trend is used to measure it—averaged 4.1 percent over that decade, and that real GDP was growing above trend throughout the period except during 1999-2001. Thus the output gap, which measures the difference between actual and potential output, turned negative during 2000-03, indicating that actual output was below potential. This gap closed again in late 2003 and the level of GDP exceeded trend in 2004.

13. **Applying the HP filter to the data to derive trend output leads to similar results** (Figure 8). The HP filter was applied twice, once with λ equal to 100, as suggested by the

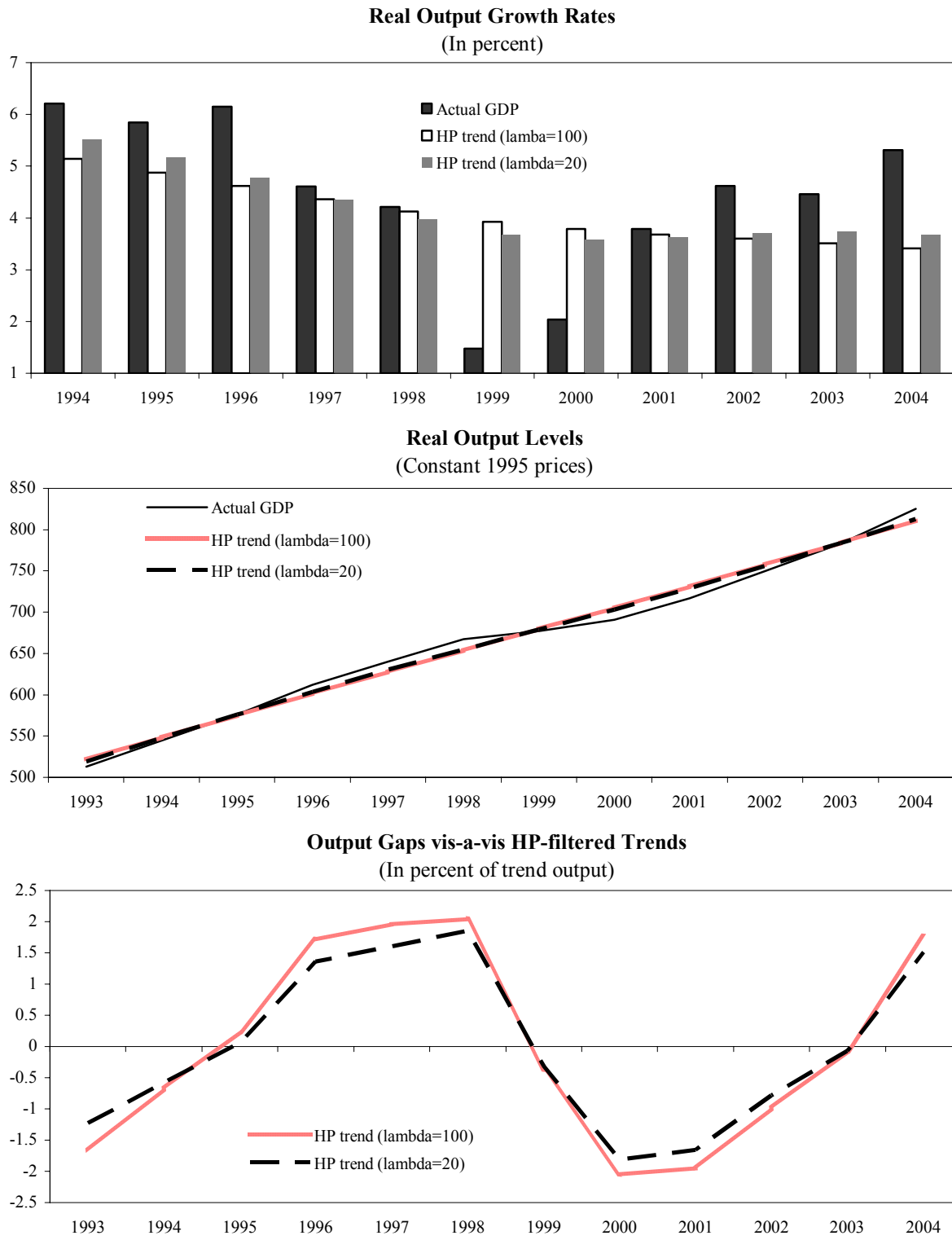
³⁰ Since actual data were only available for the first three quarters of 2004, the staff's estimate for the fourth quarter was used to derive annual GDP data for that year. The trends were also estimated for quarterly data and yielded similar results.

Figure 7. Slovak Republic: Real GDP and Arithmetic Trends, 1993-2004



Sources: Slovak Statistical Office data; and IMF estimates and calculations.

Figure 8. Slovak Republic: Real GDP and HP-Filtered Trends, 1993-2004



Sources: Slovak Statistical Office data; and IMF estimates and calculations.

literature, and a second time by setting λ equal to a smaller number, 20. The motivation for choosing a smaller value for λ was to explicitly reduce the importance of cyclical shocks in explaining output fluctuations, because the significant structural changes to the economy throughout the past decade probably played a greater role in output fluctuations in Slovakia than would be captured by setting a standard value for λ . The results obtained for potential output growth and the sign of the output gap correspond to those obtained from arithmetic trends. In both versions of the HP filter—as in the statistical trends depicted in Figure 7—actual output exceeded its potential level in two instances: during 1996-98 and in 2004. At all other times, the economy seems to have been operating below potential, with the negative output gap the largest in the year 2000, and a greater gap associated with a larger value of λ .

14. **The output gap patterns depicted in Figures 7-8 are broadly consistent with economic developments in Slovakia through 2002.** Indeed, the positive output gap in the mid-1990s can be associated with the strongly expansionary fiscal policy at the time. Real government consumption growth exceeded 8 percent per year on average during 1996-98, spurring strong domestic demand growth and a rise in the current account deficit close to 9 percent of GDP per year over the same period. Similarly, the negative output gap in 1999 can be associated with fiscal tightening in late 1998. The government's restrictive program included large price adjustments each year during 1999-2001, which squeezed households' real purchasing power. The program also incorporated significant government spending cuts, particularly in 1999-2000. Hence, a negative output gap emerged and widened progressively until end-2000, when it started to close as domestic demand picked up again—initially driven by government consumption but later also by private consumption.

15. **However, the output gap patterns are inconsistent with more recent economic developments.** The statistical methods suggest that the output gap was closed toward the third quarter of 2003, which is hard to reconcile with national accounts data that point to falling domestic demand throughout 2003. This result turns out to depend on the sample choice (ending in 2004). Implementing the statistical detrending methods on an enlarged sample—extended to 2009 with staff's medium-term GDP projections—yields a negative output gap in 2004, which only closes again around 2006 (Figure 9).

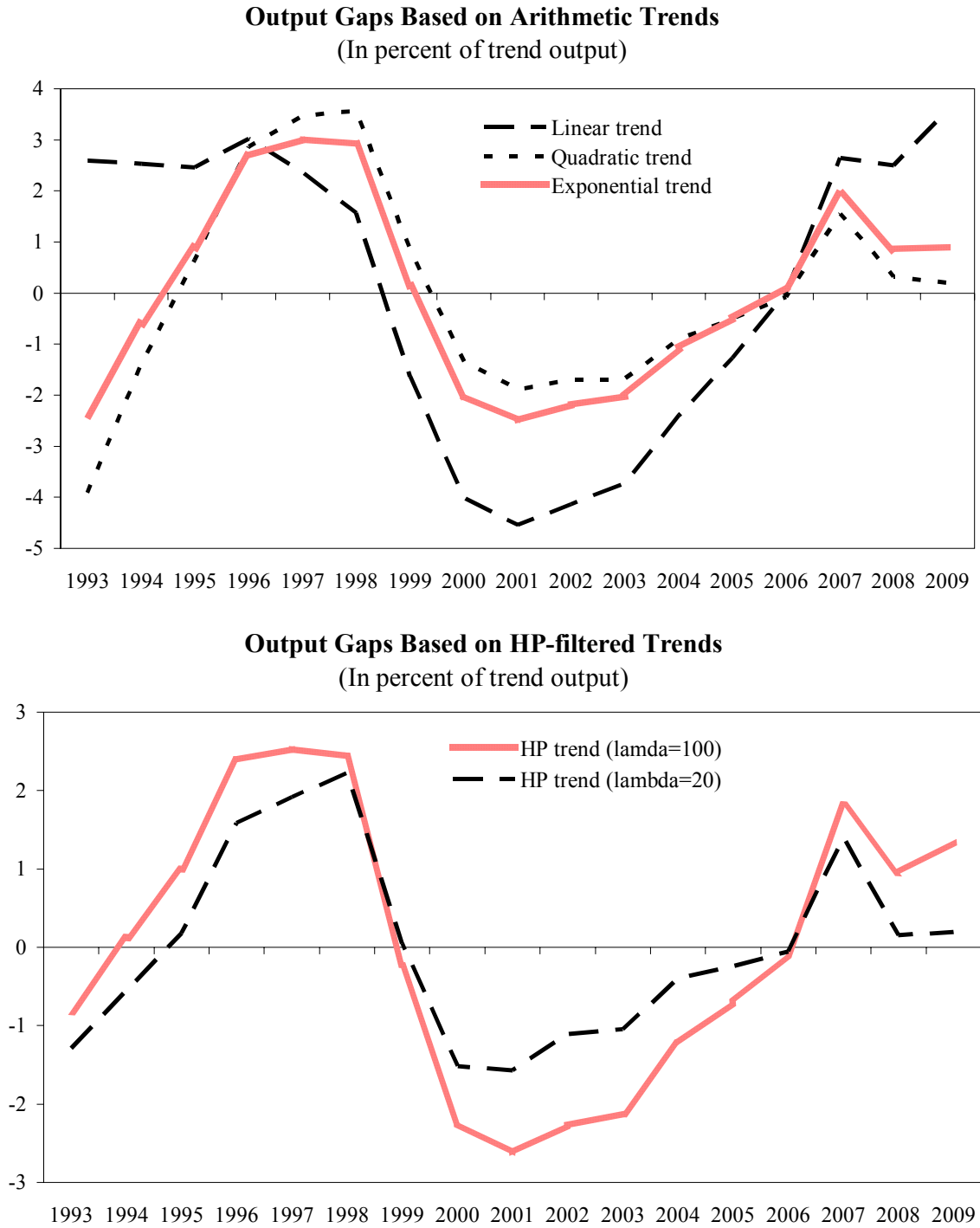
The production function approach

16. **The production function approach models potential output as a function of potential labor and capital inputs and potential factor productivity.** Potential output is assumed to evolve according to the following equation:

$$Y^* = A^* \times L^{*\alpha} \times K^{*(1-\alpha)}, \quad (1)$$

where L^* and K^* refer to potential (or full-employment) labor and capital inputs (as defined below), α is the labor elasticity of output, and A^* is potential total factor productivity (TFP). Assuming wages reflect the marginal product of labor, α is also equal to the labor share in

Figure 9. Slovak Republic: Output Gap Measures, 1993-2009



Sources: Slovak Statistical Office data; and IMF estimates and calculations.

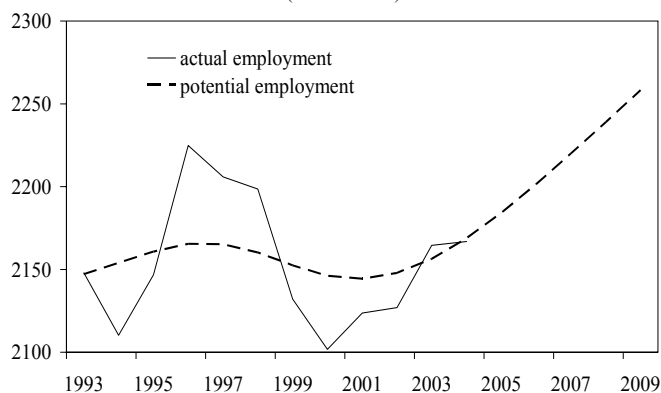
total output.³¹ Estimating potential output thus requires the identification of full-employment input levels, potential productivity, and the labor share. Although there is considerable uncertainty surrounding these variables, this approach has a significant advantage in that it relies on a simple model: it is based on an economic rationale and is straightforward to implement. The remainder of this section estimates a potential output series for 1993-2004 for Slovakia based on equation (1) and derives medium-term projections for the series by projecting the variables on the right-hand side of that equation.

Full-employment labor

17. **Full-employment labor is that part of the potential labor force that can be employed without triggering inflationary pressures.** However, both this share and the potential labor force itself are unobserved variables. For example, the potential labor force, in particular, can differ from the actual labor force when scarce labor demand during recessions discourages labor force participation. Rather than estimating these two hidden variables to calculate full-employment labor, this chapter uses the trend underlying the actual employment time series as a measure of full-employment labor. The advantage of this approach is that only one unobserved variable has to be estimated.

18. **Figure 10 shows full-employment labor estimated using the HP filter.** Potential labor declined during 1998-2001 because of enterprise restructuring. It picked up again during 2002-04 as the restructuring process started bearing fruit and foreign investment generated job creation. Over the medium term (2005-09), we project potential employment growth to accelerate slightly compared with the early 1990s, as depicted by the broken line in Figure 10, in view of the anticipated job creation associated with structural reforms and with both announced and other expected investment projects.

Figure 10. Slovak Republic: Employment Levels
(In thousands)



Sources: Slovak Statistical Office; and IMF estimates and calculations.

Labor share

19. **We calculate the labor share as the share of labor income in total value added, based on national accounts data.** Labor income is derived from two sources: wages and

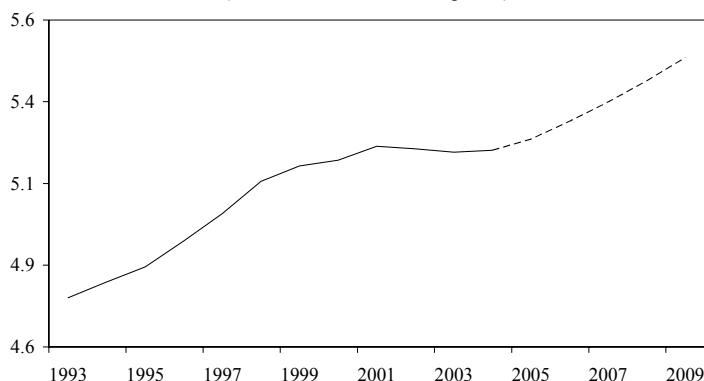
³¹ In other words, if W is the economywide wage level, then assuming $W=dY/dL$ implies that the labor share, WL/Y , is given by $WL/Y = (dY/Y)/(dL/L) = \alpha$.

salaries, and income of the self-employed.³² However, no separate data are available on the latter: it is included in gross mixed income, the balancing item in the generation of income accounts. Assuming that 30 percent of that balancing item is income accrued to labor, total labor share is therefore estimated at 0.55 for the period 1993-2004. This average share is assumed to remain constant over the medium term.

Full-employment capital

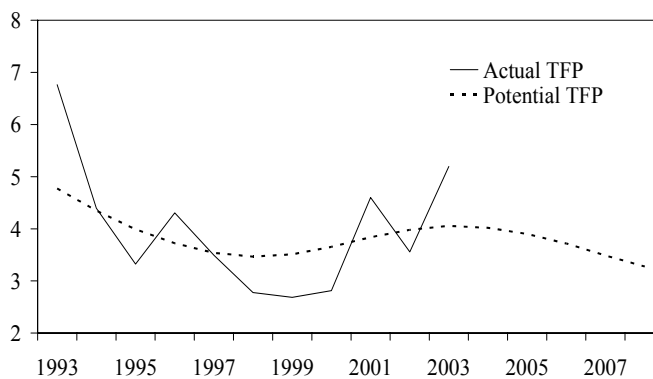
20. **We assume that full-employment capital is equal to actual capital.** There are no official data for Slovakia's capital stock, although the Statistical Office is calculating it for the years 1998 and 1999. We use preliminary 1998 capital stock data prepared by the Statistical Office,³³ plus national accounts data on fixed capital formation and capital consumption for 1993-2004, to calculate a capital stock time series for that period. To project that series in the medium term, we assume that capital will continue to depreciate at 4 percent (a rate comparable to the historical average rate of depreciation) while projected fixed investment³⁴ will add to capital. The capital stock data are then deflated with the investment price deflator to obtain a real capital stock series (Figure 11). The capital stock was rising fastest in the mid-to-late 1990s, following capital destruction in the early stages of the transition period. The size of anticipated investment

Figure 11. Slovak Republic: Capital Stock Estimate
(Sk trillion, constant 1995 prices)



Source: Slovak Statistical Office; and IMF estimates and calculations.

Figure 12. Slovak Republic: TFP Growth
(In percent)



Source: IMF estimates and calculations.

³² The share of labor income from wages and salaries alone in total value added is 0.48.

³³ Capital stock data for 1998 remain subject to considerable uncertainty, which affects the capital stock series and, hence, potential output estimates.

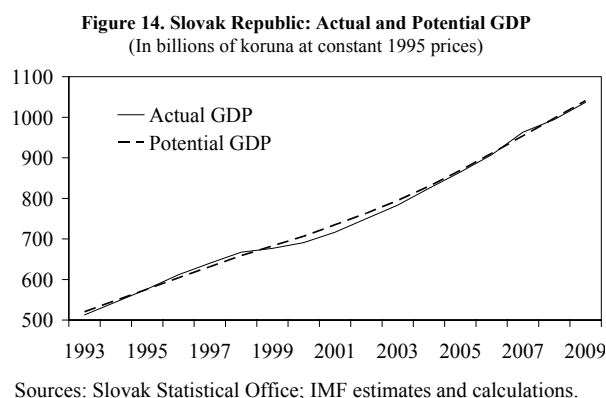
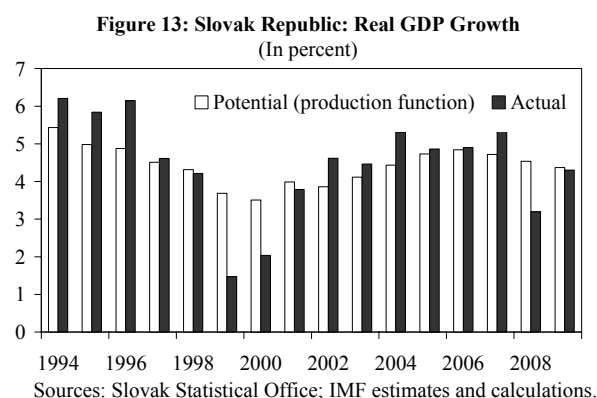
³⁴ Medium term projections for fixed investment are from the IMF staff report for the 2004 Article IV consultation (www.imf.org).

projects suggests that capital will again accumulate at strong rates over the medium term.

Potential TFP

21. **We estimate potential TFP from the data as follows.** We first calculate actual productivity growth by using in equation (1) actual employment and capital (estimated above) as inputs;³⁵ actual real GDP for output; and 0.55—the labor share estimated from the data—as α . We then detrend the resulting times series using the HP filter to obtain trend productivity growth (Figure 12). After having declined in the initial stages of the transition, productivity growth picked up in 2000. Trend productivity growth seems to have peaked in 2004 but is assumed to continue at robust rates in the medium term, sustained by technological progress, which is driven by foreign direct investments.

Potential output



22. **Using the series derived above for L^* , K^* , and A^* in equation (1) gives a time series of an estimate for potential output for the period 1993-2009.**³⁶ The results broadly agree with those obtained from the statistical approaches. Indeed, actual real GDP growth turns out to have exceeded potential growth for the entire sample period except during 1998-2001 (Figure 13), as suggested by the results obtained from statistical methods (Figures 7-8). Also, all results imply that the output gap was positive in the mid-1990s but turned negative in 1999 (Figures 7-8 and 14). Potential growth has averaged about 4 percent since 2001 but is expected to reach 4½ percent on average in the medium term.

³⁵ In the absence of reliable data on capacity utilization, it is assumed that the existing capital stock is always being fully used in actual production.

³⁶ An initial value is needed to scale the potential output series. We assume that the output gap closed during 1995, as suggested by the statistical detrending of actual output (Figures 7-8).

23. **Slovakia's estimated potential growth rate compares favorably with the euro area average, but faster employment and capital growth will be needed to reach the rate of that area's best performers** (Table 3). Denis, McMorrow, and Röger (2002) find that average potential growth in the euro area was 2½ percent during 2001-03 and should remain around that rate over the next few years. Potential growth ranges between 1¾ percent and 3¼ percent for all euro area countries, lower than Slovakia's, except for Ireland and Luxembourg. Slovakia's potential growth has been much lower than that of the latter two countries because of lower employment and capital growth. As these inputs have grown only modestly in the past, their growth is projected to remain modest in the medium term (Table 4). Structural efforts that boost employment and/or capital growth could improve Slovakia's performance, bringing its potential growth closer to the level of Luxembourg or Ireland.

Table 3. Slovak Republic and Euro Area: Potential Growth Comparisons
(Average for 2001-03, in percent)

	Slovakia	Euro Area	Ireland	Luxembourg
Potential growth	4.0	2.5	7.6	5.7
Contribution to growth				
Labor	0.1	0.8	2.2	1.4
Capital	0.2	0.7	1.7	1.9
TFP	3.7	0.9	3.6	2.3

Sources: Denis, McMorrow, and Röger (2002); and IMF estimates and calculations.

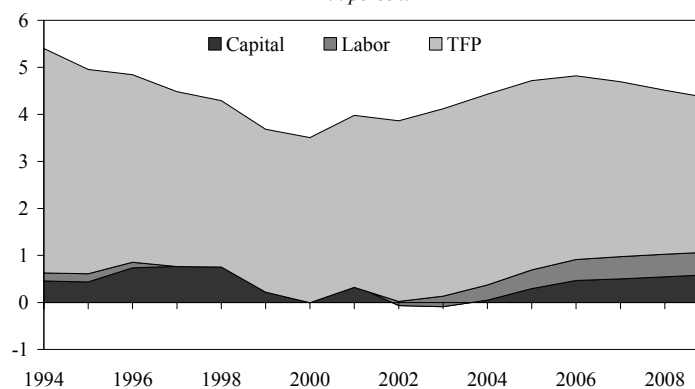
Table 4. Slovak Republic: Decomposition of growth, 1994-2009
(In percent)

	Actual		Potential	
	1994-2004	2005-06	2005-06	2007-09
GDP growth	4.4	4.9	4.8	4.5
Contribution to growth				
Labor	0.1	0.5	0.4	0.5
Capital	0.4	0.4	0.4	0.5
TFP	4.0	4.0	4.0	3.5

Sources: Slovak Republic's Statistical Office; and IMF estimates and calculations.

24. **TFP has been the main driver of potential growth** (Figure 15). Indeed, throughout the past decade, labor and capital growth can explain only about 10 percent of potential output growth, with the residual associated with TFP growth. The role of the latter declined during the 1990s, while that of capital accumulation

Figure 15. Slovak Republic: Contributions to Potential Output Growth
in percent



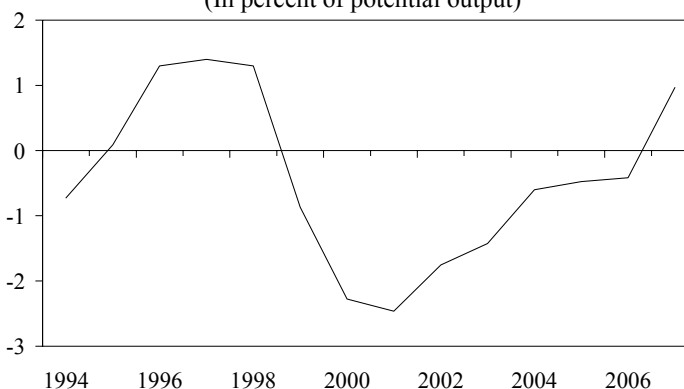
Source: IMF estimates and calculations

increased, contributing in 1998 almost 1 percentage point to potential output growth. The contribution of labor has remained negligible, although it should increase with the pickup in potential employment over the medium term.

25. **These estimates of potential output provide information on the current degree of slack in the economy.** Figure 16 plots the output gap associated with the production function estimate of potential output. A negative number indicates that actual GDP was below its potential level. The

output gap seems to have been negative and large in 1999-2000 but has been narrowing since then. In 2004, the gap was still negative but rapidly closing, reaching about ½ of a percentage point of potential GDP, compared with about 1½ percent in 2003. Indeed, large increases in administered prices and indirect taxes had contributed to a decline in consumption and, hence, a continued significant output gap in 2003; however, strong wage growth and direct tax cuts in 2004 supported an increase in private demand, which helped close a large part of that gap.

Figure 16. Slovak Republic: Output Gap
(In percent of potential output)



Source: IMF estimates and calculations.

26. **According to staff medium-term projections, the output gap is expected to close by 2007.** Actual GDP growth is likely to remain robust from 2005 on, supported by both domestic demand growth and strong exports. However, large investments—particularly in car manufacturing plants—will at the same time also contribute to a capacity expansion and hence to potential output growth. This potential is expected to remain unexploited until 2007, when significant additional labor is hired and production actually begins in the finished plants, thus boosting GDP growth and helping to close the gap.

A comparison of various output gap estimates

27. **This subsection compares the above production function estimates of the output gap with those derived by the Slovak authorities, the European Commission, and the OECD.** The Ministry of Finance of the Slovak Republic (MoF) and the National Bank of Slovakia (NBS) provided separate estimates of Slovakia's potential output and output gap to the 2004 Article IV consultation mission. The European Commission's estimates are published in the Autumn 2004 Economic Forecasts (European Commission, 2004). The OECD estimates are inferred from the 2004 Economic Survey of the Slovak Republic (OECD, 2004a) .

28. **The NBS and the MoF follow different methods to estimate potential output.** The NBS uses a multivariate Kalman filtering model with unobserved components that

jointly estimates potential output, and equilibrium interest and exchange rates. This approach combines statistical filtering techniques with macroeconomic modeling. The NBS adjusts potential output to reflect (i) a permanent shock in 2003 from Volkswagen’s opening of a new production line of Touareg vehicles and (ii) a temporary shock in 2004:Q1 from the leap-year effect—the latter estimated at 1 percent year on year in the first quarter (Gavura 2004). MoF estimates are based on a production function, similarly to IMF estimates (Ministry of Finance of the Slovak Republic, 2004); however, the two estimates differ, mainly because of different estimates of the capital stock and the labor elasticity of output.

29. The output gap estimates derived in this chapter fall between those of the NBS and the MoF (Figure 17). The three results are broadly comparable over the period 1994-99. From 2000 on, however, the results diverge in terms of magnitudes of the gap. For 2004, the output gap estimated by the MoF is only slightly negative, at minus 0.1 percent, while IMF estimates point to a negative gap of ½ percent; the NBS sees much larger slack in the economy, estimating a negative output gap of 1½ percent of potential output.³⁷ The three institutions also have differing near-term projections for the output gap: the NBS anticipates continued slack during 2005-07, while the MoF expects the economy to be operating close to potential; IMF gap estimates fall in between.

Figure 17. Slovak Republic: Comparison of Output Gaps
(In percent of potential output)

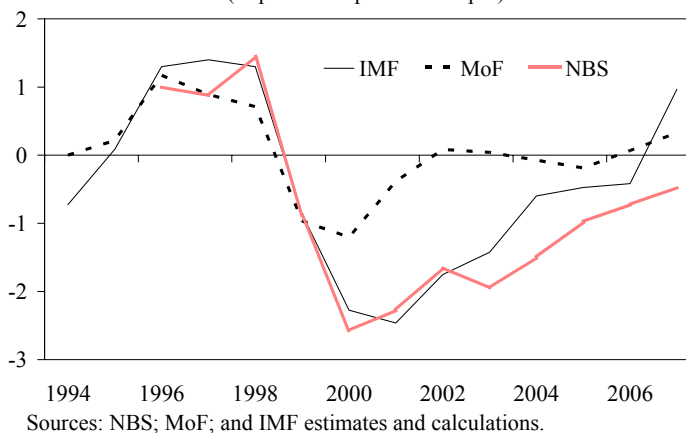


Table 5. Slovak Republic: Output Gap Estimates
(In percent of potential output)

	1996-2000 (average)	2001	2002	2003	2004	2005	2006
IMF	0.2	-2.5	-1.7	-1.4	-0.5	-0.4	-0.4
EC(a)	-5.1	-0.9	0.0	0.1	0.7	0.6	1.2
EC(b)	0.6	-1.7	-1.0	-0.9	-0.1	0.3	1.5

Notes: EC(a) refers to the European Commission’s estimates from a production function approach; EC(b) refers to the European Commission’s estimates from an HP filter approach.
Sources: IMF estimates; and European Commission (2004).

³⁷ The NBS calculations of the output gap will be published in a paper forthcoming in 2005.

30. **Potential output estimates by the OECD and the European Commission also give different messages regarding the degree of slack in the Slovak economy.** The OECD estimates are based on statistical filtering methods and the European Commission estimates on the production function approach. These estimates, like the IMF and NBS estimates, point to a progressively closing gap since 2000. However, they differ on the size of the gap over time. In particular, while the OECD estimates suggest a large negative gap for 2004, perhaps close to the one estimated by the NBS,³⁸ the European Commission's 2004 autumn forecasts point to a very small output gap, if at all negative, in 2004 (Table 5).

31. **Selected high-frequency indicators confirm that the output gap narrowed in 2004.** In periods where the output gap is closing, pressures are likely to arise in the form of inflation and wage increases, and strong demand—as captured by retail sales or economic sentiment, for example.³⁹ Figure 18 plots these variables for Slovakia. Inflation—measured excluding food, fuel, and administered prices—and the indicator of economic sentiment do not necessarily reflect a rise in underlying pressures in 2004 from 2003, although the economic sentiment indicator rose significantly during 2004. However, the remaining indicators give an opposite signal. Indeed, 2004 saw a strong increase in retail sales and real wages, which suggests that the output gap may have narrowed significantly.

D. Conclusion

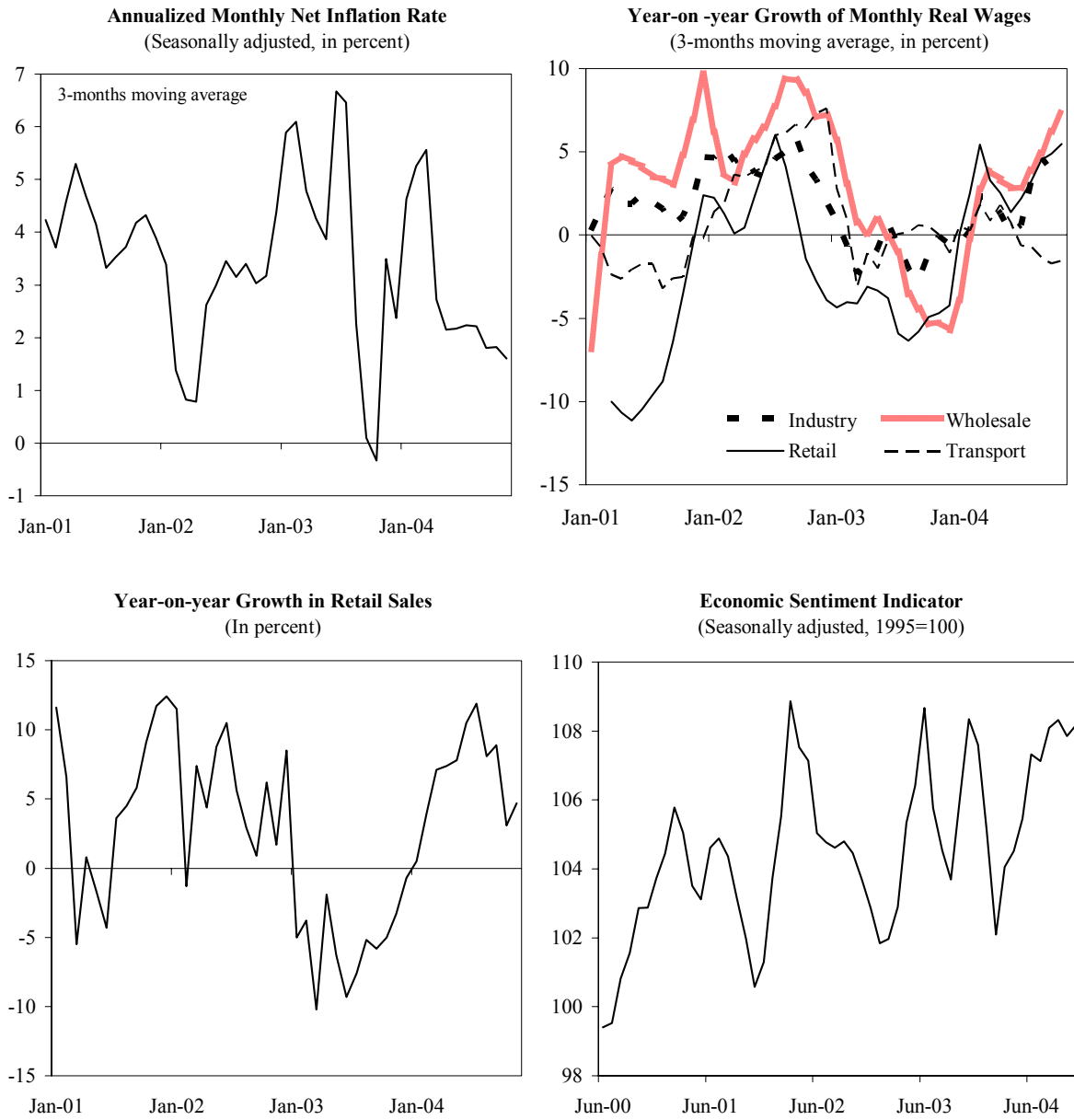
32. **Slovakia's growth potential over the medium term looks to be robust.** Potential investment projects are likely to raise capacity and increase employment opportunities and factor productivity. Based on the production function method, potential growth in Slovakia could average 4½ percent over the next few years. However, this growth rate may be underestimated because the effect of the important recent structural reforms on the economy's fundamentals and, hence, on growth are hard to quantify. Indeed, recent labor market and legislative reforms could boost productivity or factor input accumulation beyond the levels estimated in this chapter, and raise potential growth close to the levels estimated for Luxembourg or Ireland (5-6 percent).

33. **Various indicators suggest that the degree of slack has been diminishing.** Although different measures of potential output give different results for the output gap, they all show that this gap is narrowing in 2004-05. Developments in consumer demand and real wages are also consistent with a significant reduction of the output gap in 2004.

³⁸ See OECD (2004a), p. 27 for details. The Survey does not quote any numbers but includes a graph that points to an output gap of about -1½ percent of potential GDP in 2004.

³⁹ Data on capacity utilization would be desirable to assess the degree of slack in the economy, but the data available for Slovakia are not reliable.

Figure 18. Slovak Republic: High-Frequency Indicators, 2001-04



Source: Slovak Statistical Office; National Bank of Slovakia; and IMF calculations

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IV. SLOVAKIA'S TAX AND WELFARE REFORMS⁴⁰

A. Introduction

1. **This chapter reviews Slovakia's recent reforms to its tax and welfare systems.** These reforms are part of a wide-ranging agenda that also includes reforms to pensions, healthcare, the labor market, and the legal system, with further reforms planned in the education system.⁴¹ The focus on the tax and welfare reforms has two motivations. First, these reforms are important in their own right. Second, the potential for interaction between tax and welfare systems can have strong implications for incentives to work—especially important in a context of high unemployment, which remains one of Slovakia's most pressing economic and social problems.
2. **The flat-rate income tax has become a particular source of attention for regional policymakers.**⁴² Estonia introduced a flat-rate income tax in 1995, followed by several other countries from the former Soviet Union—notably including Russia, which introduced a 13 percent tax in 2001. More recently, Poland is considering introducing a flat-rate income tax, and the Romanian government elected in late 2004 moved swiftly to introduce a 16 percent flat tax effective from January 2005.
3. **The reforms have been undertaken in a context of needed medium-term fiscal consolidation.** The Slovak government plans to meet the Maastricht fiscal deficit criterion—3 percent of GDP—by 2007. The fiscal deficit has been around 3½ to 4 percent of GDP in both 2003 and 2004; and the task of reducing the deficit below 3 percent in the period ahead is being complicated by additional pressures from the costs associated with EU accession and the introduction of a second pillar to the pension system. In the context of the government's medium-term goals, the tax reform was designed as broadly revenue-neutral; and welfare reform had to be carried out within a tight expenditure envelope.
4. **The chapter is set out as follows.** Section B briefly outlines the tax and welfare reforms introduced in 2004. Section C examines the available evidence on the fiscal implications of the reforms. Section D looks at the efficiency implications of the reforms, in particular for incentives to work and invest. Section E notes some of the distributional implications of tax reform, and the available evidence on the effectiveness of the welfare system in its social protection role. Section F concludes.

⁴⁰ Prepared by David Moore. Parts of the chapter, notably on the composite marginal tax rate in Section D, and the distributional impact of indirect taxes in Section E, draw on unpublished work by John King.

⁴¹ See IMF staff report for the 2004 Article IV consultation (www.imf.org).

⁴² See for example Ivanova, Keen and Klemm (2005).

B. Brief Overview of the Reforms⁴³

5. **The goal of the 2004 tax reform was a competitive tax system.** According to the Ministry of Finance (2003a, 2003b), the reform aims to improve the efficiency, transparency, simplicity and fairness of the tax system, based on the following principles:

- Broad revenue neutrality, by shifting the tax burden from direct toward indirect taxes;
- Low standard tax rates, financed by eliminating special treatments and exemptions;
- Minimizing distortions in the economy from taxes used for “non-fiscal” goals; and
- Minimizing double taxation of income.

6. **The “19 percent” tax reform greatly simplifies the tax system.**

- The reformed personal income tax features a single rate of 19 percent and a high tax-free threshold (Figures 1–2). It replaces 21 different tax rates, including a five-band rate structure on wage income that ranged from 10 to 38 percent, and withholding tax rates on capital income ranging from 5 to 25 percent.
- The corporate income tax rate has also been reduced to 19 percent, and dividend taxation abolished.
- Most income tax exemptions have been cancelled, notably tax holidays for newly established firms; future investment incentives must comply with EU state aid rules.
- The single VAT rate of 19 percent replaces dual VAT rates of 14 and 20 percent.
- Excise taxes were increased and aligned with EU requirements.
- Several smaller taxes were abolished.
- A separate reform modestly reduced overall social contribution rates by 2.4 percentage points, and increased the ceilings for pension and unemployment insurance contributions.

In general, the tax reform conforms to core IMF recommendations on tax system design (Box 1).

7. **The goal of the welfare reform was to promote employment, by addressing benefit dependency and disincentives to work.** Social assistance benefits are paid to individuals and families with incomes below the national poverty line, the “subsistence minimum” (Section D). Benefits had been high relative to wages, contributing to a high benefit dependency rate: the OECD (2002) observed that for a family with two children, welfare payments could exceed the net average wage.

⁴³ Appendix I provides additional background information on the reforms.

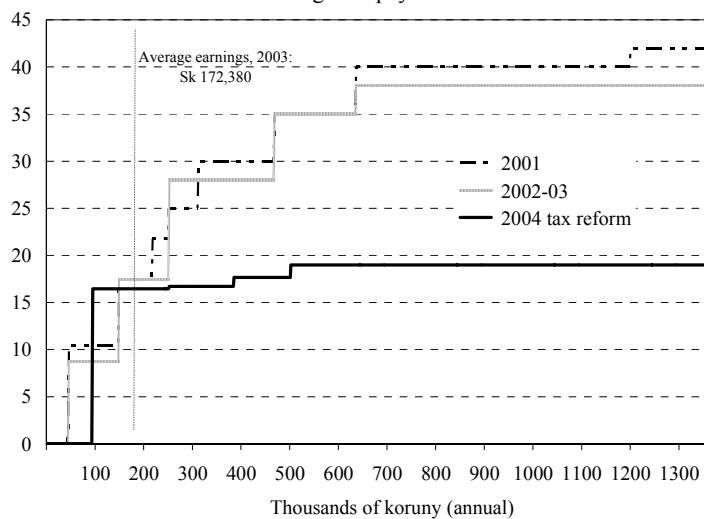
Box 1. IMF Recommendations on Tax System Design¹

“The IMF has provided input into the design of tax reforms in many transition and developing countries, and generally recommended that tax systems have the following characteristics:

- Heavy reliance on broadly-based sales taxes, such as VAT, preferably with a single rate and minimal exemptions, and excise taxes levied on petroleum products, alcohol, tobacco and a few items that are considered luxuries.
- No reliance on exports duties, which inhibit international competition, or on small nuisance taxes, administration of which is not effective.
- Import taxation at as low levels as possible, with a limited dispersion of rates to minimize effective rates of protection.
- An administratively simple form of personal income tax, with limited deductions, a moderate top marginal rate, an exemption limit large enough to exclude persons with modest incomes, and a substantial reliance on withholding.
- A corporate income tax levied at only one moderate-to-low rate aligned with the top personal income tax rate, with depreciation and other non-cash expenditure provisions uniform across sectors and minimal recourse to sector or activity-specific incentive schemes.”

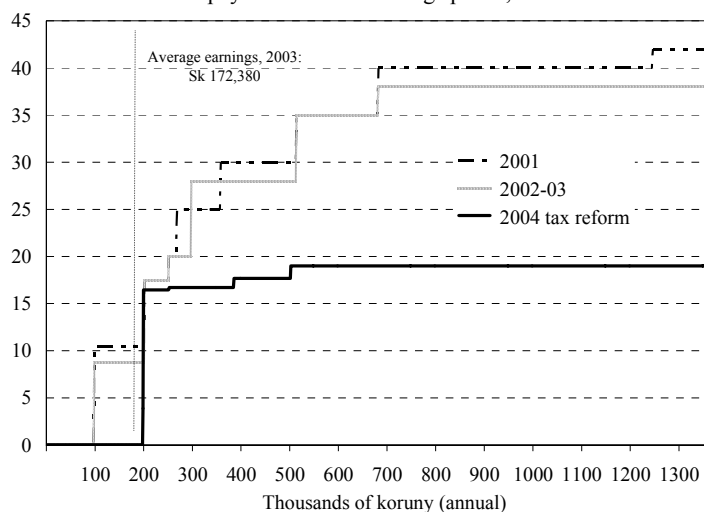
¹ Reprinted from Stepanyan (2003).

Figure 1. Effective Marginal Income Tax Rate
Single taxpayer



Sources: Ministry of Finance and IMF staff calculations. For 2004, the multiple marginal effective tax rates reflect the income tax deductibility of social contributions, which are subject to different ceilings by type.

Figure 2. Effective Marginal Income Tax Rate
Married taxpayer with non-working spouse, 2 children



Sources: Ministry of Finance and IMF staff calculations. For 2004, the multiple marginal effective tax rates reflect the income tax deductibility of social contributions, which are subject to different ceilings by type.

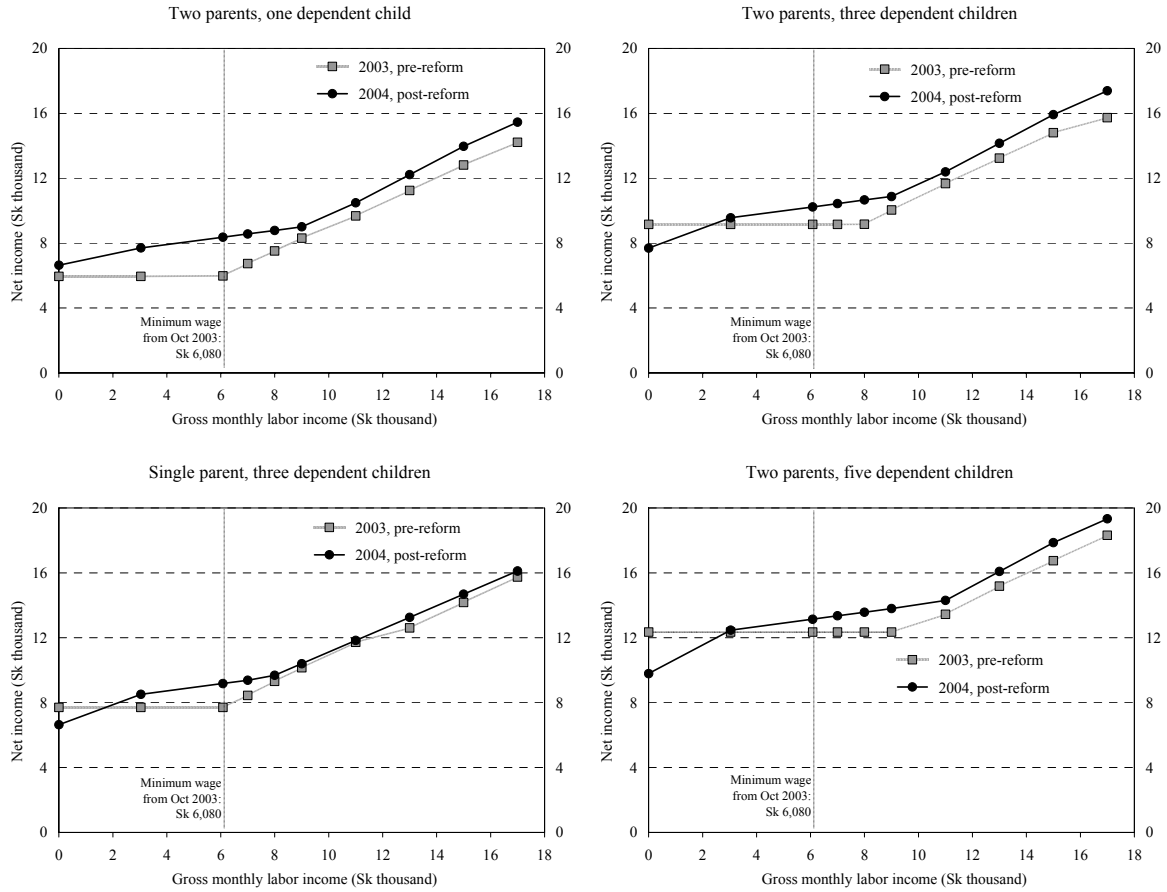
8. **The reform introduces an “activation program” by restructuring the benefit formula to depend on work effort.** The reform significantly reduced the basic benefit, but introduced an “activation allowance” for which recipients are required to demonstrate effort to improve their situation, for example participation in community volunteer work or retraining programs.

9. **Social assistance benefits are now reduced less abruptly if the recipient earns labor income.** The previous social assistance scheme was a simple top-up of income to the benefit level; any additional earnings resulted in a correspondingly lower benefit. In the new scheme, several types of income are deemed exempt income in the calculation of the social assistance benefit, including 25 percent of individual income from dependent services.

10. **The welfare reform has had different implications for different-size families.** Figure 3 presents Ministry of Labor (2004) estimates of the impact of the reform for different-sized families, assuming participation in activation programs, and taking account of the tax-welfare interactions from earning labor income.⁴⁴ Assuming participation in activation programs, smaller families can maintain benefit levels near the pre-reform levels, even increasing their household income if they earn the minimum wage. However, for families with 4 or more children, benefit reductions are greater.

⁴⁴ These calculations do not include unemployment benefits, which are not available to the long-term unemployed. The graphs are in nominal koruny; average CPI inflation in 2004 was 7.5 percent.

Figure 3. Labor Income and Net Income



Source: From calculations in Ministry of Labor, Social Affairs and Family (2004).

C. Fiscal Impact of the Reforms: Preliminary Results

Tax reform

11. **Preliminary data for 2004 point to a modest overall impact on revenue following the tax reform.** The available cash-basis data show significantly better than budgeted collections of most taxes, notably income taxes (Table 1), albeit implying a small reduction in taxes as a share of GDP. However, because of delays in collections of indirect taxes following EU accession, the pending accrual-basis data will be critical to a more conclusive assessment.

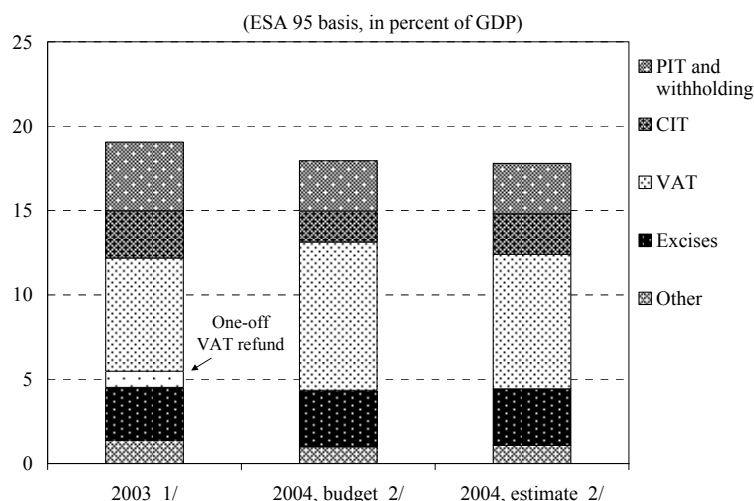
12. **Tax revenues fell modestly as a share of GDP in 2004.** With

economic growth better than budgeted, tax revenues in 2004 are estimated to have declined by only 0.3 percent of GDP from 2003. The decline is 1.3 percent of GDP taking into account 1 percent of GDP in one-off VAT refunds paid in 2003 following a change in the VAT law in 2002 (Figure 4).

	Budget <i>Sk billion</i>	Outcome <i>Sk billion</i>	Margin over 2004 budget <i>% of GDP</i>
Taxes on income	52.0	60.5	0.7
Taxes on employment income	14.8	21.6	0.5
Self-employment tax	3.8	3.7	0.0
Corporate income tax	22.0	29.6	0.6
Withholding income tax	11.4	5.7	-0.4
Taxes on goods and services	138.6	143.0	0.3
Value-added tax	97.7	99.6	0.1
Excise duties	40.9	43.4	0.2
Other taxes	4.6	6.0	0.1
Total	195.2	209.5	1.1

Sources: Ministry of Finance; and IMF staff estimate of nominal GDP.

Figure 4. Slovak Republic: Tax Structure



Sources: Ministry of Finance and IMF staff estimates.

1/ The 2003 total is adjusted to include about 1 percent of GDP in one-off VAT refunds paid in 2003 following a change in the VAT law in 2002.

2/ The 2004 calculations are based on different projections of nominal GDP: Sk 1,293 billion (budget) versus Sk 1,328 billion (estimate).

13. **Income tax losses due to the reform seem broadly in line with expectations, after accounting for cyclical developments.** As a share of GDP, income taxes have evolved largely as expected by the Ministry of Finance and by the IMF at the time of the 2003 Article IV consultation (Table 2):

- PIT collections (wage tax and self-employment tax) were significantly better than projected, reflecting higher-than-projected growth in economy-wide wages in 2004.
- CIT collections were also slightly stronger than projected.
- On the other hand, collections of withholding taxes on capital income (including the tax on dividends) were significantly less than projected. Some of these taxes may have been diverted to CIT collections: there is anecdotal evidence that firms may now be reporting as profits, income previously taxed at a lower rate as capital income. Moreover, companies may have retained earnings in 2004 rather than paying out dividends, to avoid the final year of dividend tax.

	MoF <i>Projected impact</i>	IMF <i>Projected impact</i>	Change from 2003 outcome <i>Estimate</i>
Taxes on income	-1.5	-1.8	-1.5
Taxes on employment income	-0.9	-1.2	-0.7
Self-employment tax	-0.2	-0.2	0.0
Corporate income tax	-0.6	-0.5	-0.4
Withholding income tax 1/	0.2	0.2	-0.3
Taxes on goods and services	1.9	1.8	1.5
Value-added tax	1.4	1.3	1.3 2/
Excise duties	0.5	0.5	0.2 3/
Other taxes	-0.1	-0.1	-0.3
Taxes on property	0.0	0.0	-0.1
Road tax	0.0	0.0	0.0
Customs duties	0.0	0.0	-0.2 4/
Total	0.3	0.0	-0.3

Sources: Based on Staff Reports for the 2003 & 2004 Article IV consultations.

1/ Projections assumed revenue impact in 2005 from abolition of dividend taxation.

2/ This estimate is subject to offsetting distortions. 2003 collections were lower by 1 percentage point of GDP, owing to one-off refunds paid following a change in the VAT law in 2002. 2004 collections may be lower owing to EU accession.

3/ The increase in excises was brought forward to August 2003. Also subject to lower collections in 2004 following EU accession.

4/ Following EU accession, customs duties became EU rather than national revenue.

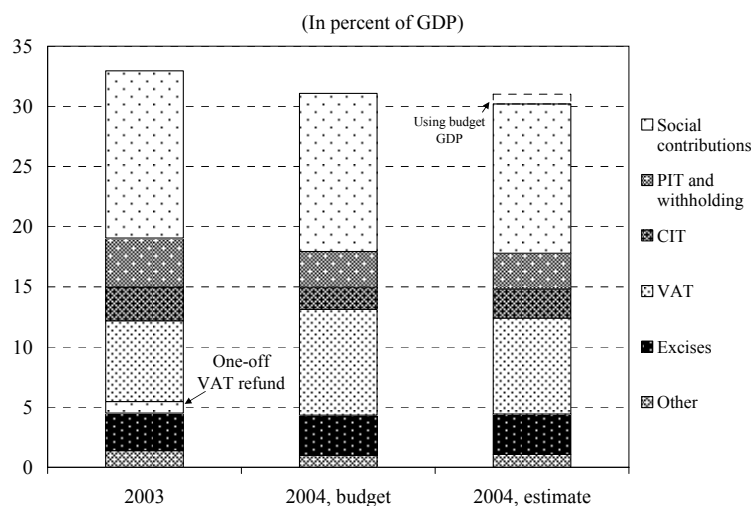
14. **Indirect tax collections are estimated to have increased by less than previously projected, reflecting several additional factors that are difficult to disentangle from the tax reform.** As section B noted, the reform intended to offset lower income tax collections

with higher indirect tax collections, thus achieving broad revenue neutrality. Preliminary estimates from the Ministry of Finance indeed show higher indirect tax collections in 2004 (Table 2), despite the increase in excise tax rates having been brought forward to August 2003. Collections of indirect taxes have been affected by factors other than the tax reform, especially tax administration changes required upon EU accession. The shift in tax collection responsibilities from customs offices to tax offices⁴⁵ resulted in delays in collections from mid-2004, and possibly efficiency losses. Also, the lowering of the VAT registration threshold required administering many extra small taxpayers.

Social contributions

15. **Social contributions fell by more than expected following the reduction in rates.** The 2004 budget implied a 0.8 percent of GDP reduction in social contributions from 2003.⁴⁶ However, collections are estimated to have fallen short of budget by a further 0.3 percent of GDP, with the shortfall mainly in collections by the Social Insurance Agency. Revenue losses from lower social contributions are slightly greater than losses from the reform of state budget taxes (Figure 5).

Figure 5. Slovak Republic: Tax Structure



Welfare reforms

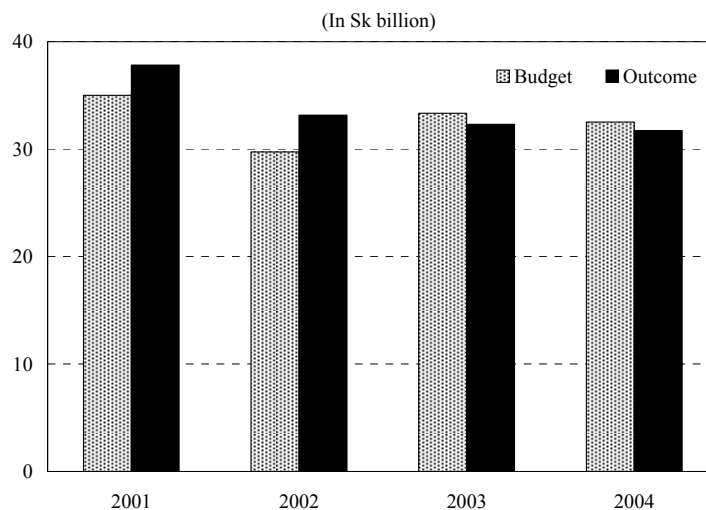
16. **The welfare reforms have improved control of welfare spending.** In 2001 and 2002, spending on state benefits and social assistance ran over budget by about

⁴⁵ Applicable for EU-source imports. Because of this shift, the accrual-basis estimates for VAT and excises are much more uncertain than those for income taxes.

⁴⁶ Based on budgeted GDP. Based on actual GDP, the reduction would be 1 percentage point of GDP.

0.3-0.4 percent of GDP annually (Figure 6), reflecting benefit abuse as well as underbudgeting. The 2003 measures were successful in curbing benefit abuse, bringing welfare spending down by 0.3 percentage points of GDP and even achieving savings of 0.1 percent of GDP compared to budget. Following the 2004 reform, welfare spending is projected to have fallen by another 0.3 percentage points of GDP, and again to have been contained below the budget ceiling.

Figure 6. State Benefits and Social Assistance



Source: Ministry of Finance and IMF staff estimates.

D. Efficiency and Incentives

17. **In efficiency terms, the reforms provide several gains.** The tax reforms reduce distortions in the economy and the simpler tax system should allow for significant improvements in tax administration. Regarding incentives to work, the tax reform may result in only marginal improvements in incentives to work and to hire—labor taxes have fallen only modestly for many taxpayers; and the tax burden has been shifted towards labor, away from capital—though the welfare reform should significantly improve work incentives for lower income earners.

Benefits from tax simplification

18. **The reform reduces distortions in the tax base.** Though the impact is hard to measure, the reduction in tax exemptions is an obvious gain to the economy. First, resource allocation is generally more efficient if based on market rather than tax signals. Second, it implies higher revenue for a given tax rate, which allows taxes to be set at lower rates. Third, it promotes transparency; many of the tax exemptions were in fact tax expenditures, implying a diversion of public resources to these sectors without the budgetary scrutiny that would accompany other expenditures.

19. **The reformed tax system is much simpler and easier to administer.** The system is simpler for taxpayers, who no longer face different tax rates for different types of income or commodity. Moreover, the Ministry of Finance (2003b) notes that business surveys had identified the complexity and frequent changes in the tax law as one of the main barriers to business. The reform is also promising for tax administration and compliance. Taxpayers no longer need to report different types of income, or account separately for standard-rate and reduced-rate commodities; the tax authorities no longer have to enforce the distinctions; and resulting litigation (on both sides) should fall.

20. **The single-rate VAT should be particularly helpful in addressing long-standing problems with refunds.** Given the wide range of commodities subject to the lower rate, it had been possible in some sectors, for example construction, to claim refunds on inputs at the higher VAT rate, and sell output taxed at the lower rate. Outright fraud also contributed to refund problems. Indeed, in 2002, VAT refunds had exceeded domestic VAT collections.⁴⁷

21. **The single rate for personal and corporate income tax reduces, though does not eliminate, opportunities for tax arbitrage.** The multiple rates of withholding tax, as well as different rates for wage-income and profit tax had offered considerable scope for tax arbitrage. For example, under the previous system, owners of large businesses could deduct interest expenses at a rate of more than 30 percent, while maintaining interest assets in the household that were subject to withholding tax of only 5 or 15 percent. This is no longer possible. However, with employment (including self-employment) income subject to payroll taxes, there are incentives for self-employed persons to convert employment income into capital income.

Incentives to work

Tax reform and the composite tax rate

22. **High marginal tax rates are widely recognized as dampening incentives to work.** Disney (2000) notes that research has focused on the impact of marginal tax rates on labor supply at the upper and lower ends of the income distribution. For upper income earners, the issue is also participation in the tax system: this group may be more likely to receive non-monetary forms of remuneration and have greater access to sophisticated tax avoidance schemes. The “Laffer curve” theory suggests that cutting tax rates on these taxpayers can actually increase total tax revenue.⁴⁸ For lower income earners, the relevant decision may be

⁴⁷ Comparable data are not available for 2003, owing to the one-off VAT refunds paid that year.

⁴⁸ Disney (2000) reports that studies on this effect suggest that taxable income tends to respond positively to tax cuts, but not so strongly as to generate Laffer effects. Moffitt and Wilhelm (1998) find, using data for the United States, no responsiveness of the hours of

(continued)

not only how much labor to supply in terms of hours worked, but whether to participate in the labor market at all. For this group, the welfare system also critically affects labor supply decisions (see below).

23. **Evidence is mixed on whether the *structure* of labor taxes significantly affects unemployment.** Nickell (1997) argues that the relevant tax rate for the labor market is the sum of the payroll, personal income tax and consumption tax rates; and that payroll taxes will be shifted onto workers assuming capital is mobile internationally. Consumption taxes including the VAT may be regarded as labor taxes in the long run, since neither a tax on consumption nor a tax on labor income directly affects the return that can be achieved on savings. Nickell cites several studies that find no long-run effect on unemployment from lowering payroll taxes and increasing consumption taxes—though the overall tax burden might matter. However, Daveri and Tabellini (2000) argue that payroll taxes drive a wedge between employment income versus benefit or underground-economy income; in contrast, consumption taxes affect these income sources equally. Using data for continental Europe, Daveri and Tabellini find that a 14 percent increase in labor tax rates can be associated with a 4 percentage point increase in the unemployment rate; but no statistically significant link between consumption taxes and unemployment. Nickell (2004) has countered that the Daveri-Tabellini results are biased upward because they do not control for other labor market institutions.

24. **The analysis below considers labor taxes as a composite of income, payroll and consumption taxes.** The measure used here includes both employee and employer payroll taxes, thus taking into account the “tax wedge”, i.e. the gap between the cost of labor to an employer, and the net benefit to an employee. From the employer’s labor demand perspective, gross wages and payroll tax costs are equivalent. From the worker’s labor supply perspective, the relevant variable is income net of all taxes, including consumption taxes, which—like income taxes—reduce the benefit to the employee from additional hours worked. Thus, the composite marginal tax rate of labor taxation is measured here as:

$$C = 100 \times [1 - (1-t)(1-c)/(1+v)(1+p)]$$

where, t is the marginal income tax rate on wages;

c is the rate of employee social insurance contribution, in percent of gross wages;

v is the marginal (tax-exclusive) rate of indirect taxation on net wages;⁴⁹

p is the rate of employer social insurance contribution, in percent of gross wages.

work of high-income men to the 1996 tax reduction, which reduced marginal tax rates for the affluent more than for other taxpayers.

⁴⁹ Because the indirect tax burden appears not to vary widely across household income (see Section E), the calculations below use the average rate of indirect taxation for simplicity.

25. **The Slovak reform changes the tax structure, but reduces labor taxes only modestly for many taxpayers.** At very low levels of income, the marginal tax rate is above zero because of indirect taxes; the initial increases reflect the minimum thresholds for social contributions. The highest marginal tax rates are at middle-income levels:

- Under the previous system, the composite marginal tax rate increased with income, up to Sk 32,000 monthly before leveling off. Further increases in the income tax scale were offset by the fall in social contributions to zero, because social contributions are not payable on income above the maximum assessment base, then Sk 32,000.
- Following the reform, the composite tax rate falls sharply after income reaches the maximum assessment bases for social contributions.

26. **Composite marginal tax rates have moved in different directions for single and married taxpayers.** Figures 7 and 8 show the change in the composite marginal tax rate for two cases: a single taxpayer, and a taxpayer with a non-working spouse and two dependent children. In both cases, the largest cuts in the composite marginal tax rate appear above monthly incomes of Sk 32,000—a little over twice the average wage (Sk 14,365 in 2003).

- For single taxpayers, composite marginal tax rates increased on gross monthly incomes between Sk 8,000 and Sk 13,000 in 2004: modest income tax relief at low income tax levels was more than offset by increases in both employee social contributions and indirect taxes.
- In contrast, for married taxpayers with a non-working spouse and dependents, the reform implies cuts in composite marginal tax rates (except for high-income ranges affected by the increase in the maximum assessment bases for social contributions) because of the large tax-free threshold from including the non-working spouse.

Note that for a married taxpayer, the tax reduction would imply stronger incentives to work for *one* of the couple. However, the exemption for the non-working spouse is as generous as for a working spouse; thus the spouse faces a high marginal tax rate upon entering the workforce, since income tax would be payable on the first koruna of the spouse's earnings.

Figure 7. Composite Marginal Tax Rate
Single taxpayer

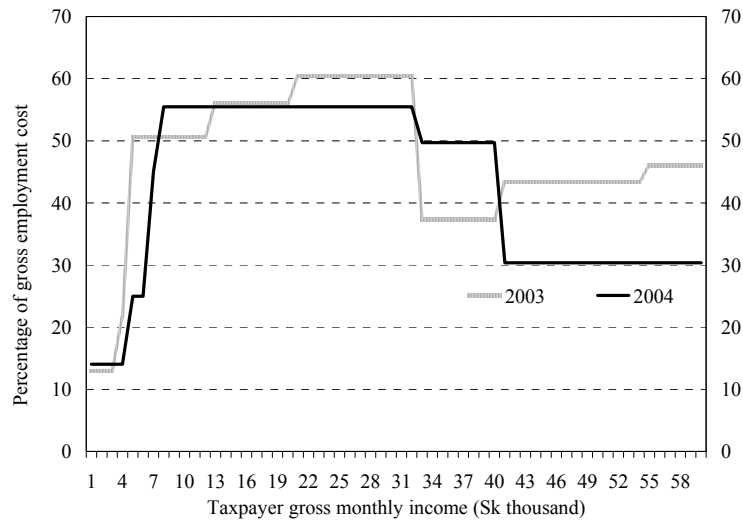
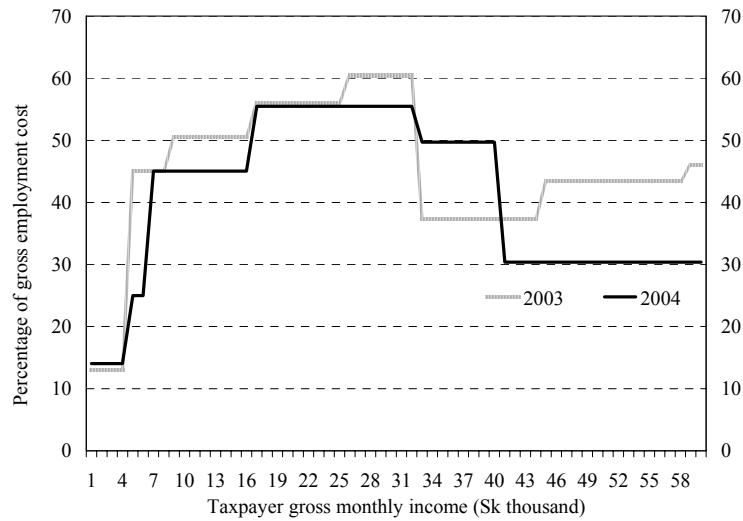


Figure 8. Composite Marginal Tax Rate
Married taxpayer, non-working spouse and two children



27. **Social contribution rates—and thus, the tax wedge—remain high by regional standards.** Table 3 shows that overall payroll tax rates remain the highest of the Visegrad⁵⁰ countries, and well above the average in western Europe. Consequently, these payroll taxes contribute to a still-high tax wedge, whether or not consumption taxes are included in the wedge. Figure 9 shows the tax wedge pre- and post-reform, for four different points on the

⁵⁰ Czech Republic, Hungary, Poland and Slovakia.

wage distribution for a single taxpayer, using the OECD “Taxing Wages” measure⁵¹ which excludes consumption taxes. At each point, Slovakia’s tax wedge remains above the OECD average. The World Bank (2001) suggests that high payroll taxes may have a bias against unskilled labor, since for higher-skill workers it is easier to provide both wage and non-wage compensation. Moreover, the Daveri-Tabellini (2000) results suggest that capital-labor substitution—and the attendant increase in unemployment—can be significant in the presence of high tax wedges.

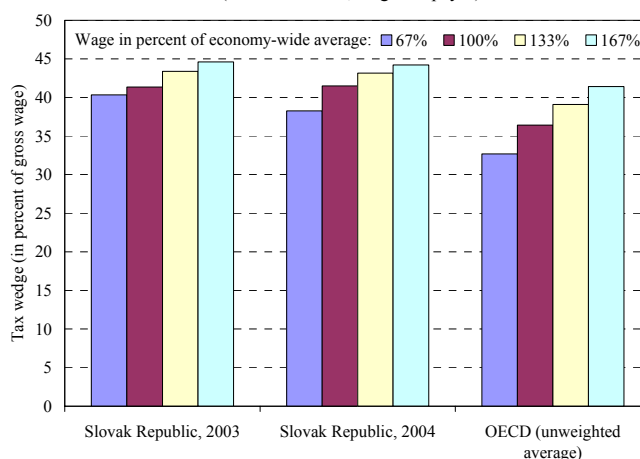
Table 3. Social Contribution Rates
Selected European Countries, percent of Gross Labor Income 1/

	Employee	Employer	Total
Slovak Republic (2003)	12.8	38.2	51.0
(2004)	13.4	35.2	48.6
Czech Republic	12.5	35.0	47.5
Hungary	12.5	32.0	44.5
Poland	25.0	20.4	45.4
EU-15 average 2/	12.5	24.1	36.6

Sources: Ministry of Finance (2004); and OECD statistics.

1/ Unless otherwise indicated, data refer to 2003 and are based on the average production wage.
2/ Unweighted; excludes Denmark.

Figure 9. Tax Wedges and Earnings
(OECD measure, single taxpayer)



Source: OECD and IMF staff calculations.

⁵¹ The sum of central and subnational income taxes and employee and employer social contributions, measured in percent of gross wage plus employer social contributions.

Welfare reform and the marginal effective tax rate

28. **Low income earners face marginal effective tax rates arising not only from the tax system, but also from the benefit system.** The composite tax rate above has implications for the labor supply response of middle- and high-income earners; but for lower-income earners, work incentives may be just as strongly influenced by the benefits system. The *marginal effective tax rate* (METR) is the rate at which an individual loses net income—whether through higher income taxes or withdrawal of benefits—as gross non-welfare income increases.⁵²

More formally, following Disney (2000):

$$\text{METR} = 1 - [w(1-t_w-c) - b(1-t_b)]/w(1-t_w-c)$$

where, *b* is the level of benefit; *w* is the gross wage; *t* is the income tax rate; and *c* is the employee payroll tax rate.

29. **High METRs create strong disincentives to work, resulting in two types of “trap”.**⁵³ The *unemployment trap* arises when benefits are so high relative to the potential wage that an individual chooses not to participate in the labor force. The *poverty trap* arises when an individual is unable to increase their disposable income by increasing their work effort. The Slovak benefit reforms aimed to address these traps.

30. **Interactions between the Slovak tax and welfare systems are mainly through payroll taxes and income tax credits.** The linkage via income tax is limited. Before the 2004 reforms, social assistance benefits—like other social income such as pensions—were exempt from income taxation. Following the reforms, social income is legally taxable, but in practice the tax liability is zero in most cases because of the high tax-free thresholds for both individuals and families. However, part of child support is now delivered through the income tax system (up to Sk 4,800 annually per child when at least one parent is employed). Although income tax thresholds are relatively high, social contributions are payable from very low levels of income. This means that they *contribute* to the marginal effective tax rate, though for welfare recipients, they do not *add* to the rate; withdrawal of benefits as labor income increases is on the basis of income after tax.

31. **Even with limited tax-benefit interactions, Slovakia’s welfare system generated prohibitively high METRs.** The former “top-up” system of income assistance—with benefits withdrawn one-for-one when a recipient earned non-welfare income—implied an

⁵² See for example OECD (1997) and Disney (2000)

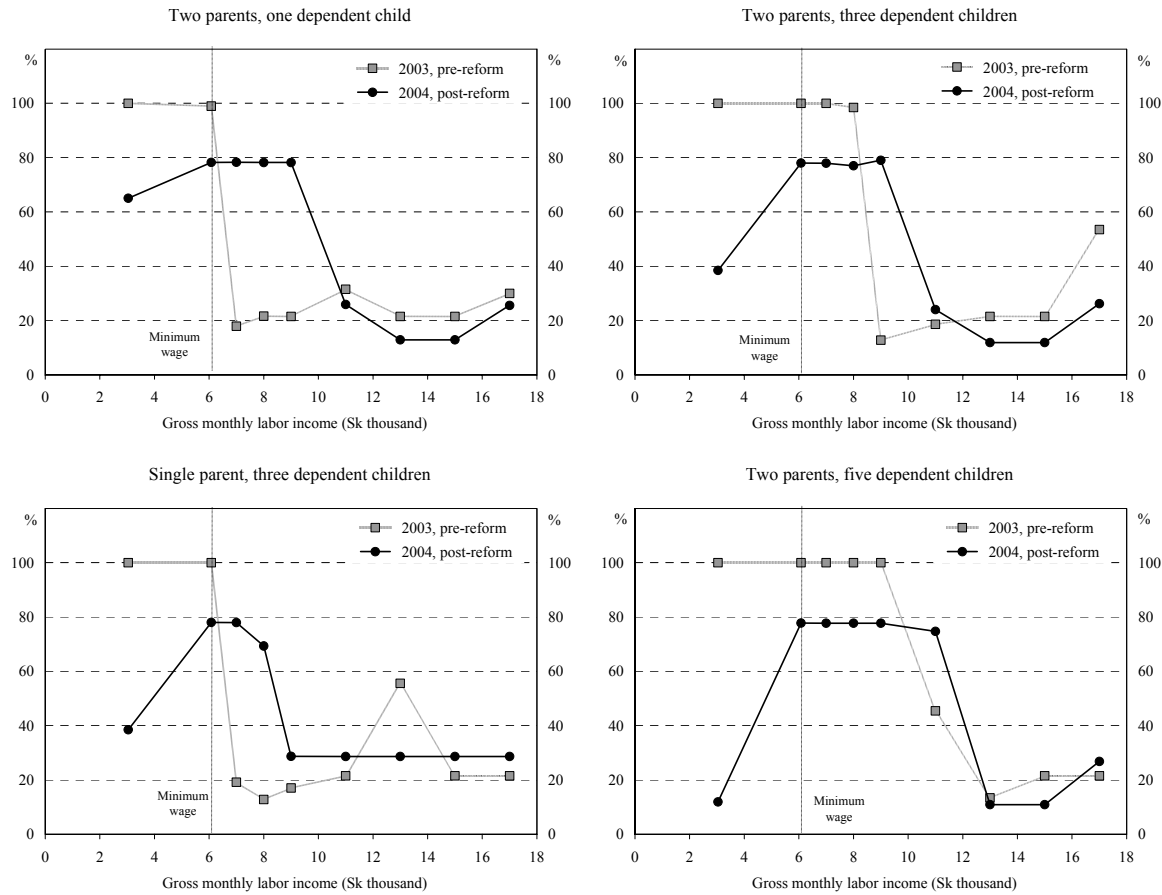
⁵³ OECD (1997), Carone and Salomäki (2001).

METR of 100 percent (actual METRs were even higher taking into account transportation and other costs).

32. **The welfare reforms have reduced METRs for most welfare recipients.** The authorities had aimed to reduce METRs of around 100 percent to around 75 percent, by allowing welfare recipients to keep 25 percent of non-welfare income (Ministry of Labor, 2004). Indeed, the household examples from Section B confirm that METRs of 100 percent for welfare recipients with no other income or earning minimum wage have indeed been reduced. Figure 10 shows the corresponding METRs that these households face before and after the reform.

33. **The METR reduction helps address especially strong work disincentives for parents with large families.** As noted in OECD (1997), METRs cause greatest disincentives not only when they are high, but when they apply over extensive income ranges. The bottom right panel of Figure 10 shows that for a family with five children, the METR had been 100 percent even at monthly incomes approaching double the minimum wage, a wider income range than for smaller families.

Figure 10. Marginal Effective Tax Rates



Source: calculations based on labor income and net income scenarios from Figure 3.

Welfare reform and other effects on work incentives

34. **The introduction of the activation program is also a critical measure to improve work incentives.** The activation allowance now accounts for a significant share of the benefit, approaching 50 percent in some instances, creating an obvious incentive for the effort to qualify. Experience with activation policies in other countries have generally been successful. The OECD (2003) reports that activation strategies have boosted employment and reduced benefit dependency in several countries, even those (such as Sweden) with relatively generous benefits. However, the OECD stresses the importance of labor demand in this success, warning that it may be difficult to achieve a large employment impact where there are very few job openings.

35. **The restructured child allowances also should improve work incentives, though at the cost of some efficiency in targeting.** In contrast to the former system, means-testing is not applied either to the Sk 500 monthly flat, universal allowance, or to the Sk 400 monthly tax bonus—which is conditional on at least one parent being employed. Carone and Salomäki (2001) note that a frequent side-effect of in-work benefits is that they are phased out as income rises, potentially increasing marginal effective tax rates; this is not a problem in the new Slovak system, which does not phase out the restructured child allowances.

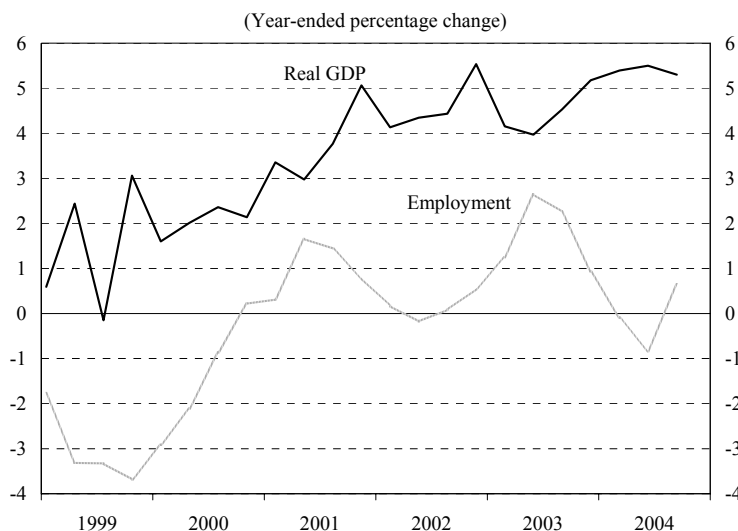
Recent employment developments

36. **There is little evidence of an employment response so far.** Economy-wide employment growth stagnated in 2004, despite strong economic growth (Figure 11). Ministry of Labor officials note that weak employment growth partly reflects significant public sector layoffs during 2004, including in public enterprises. Looking forward, staff projects employment to recover⁵⁴ but the projection remains subject to two key risks. First, the shift in the tax burden could contribute to entrenching the recent bias of economic growth towards capital-intensive activity. Second, and relatedly, the reforms should contribute strongly to labor supply, but labor demand remains weak, especially in many of the high-unemployment areas.⁵⁵

⁵⁴ See accompanying chapter, “Slovakia’s Growth Potential and the Output Gap”.

⁵⁵ The IMF staff report for the 2004 Article IV consultation (www.imf.org) discusses the structural measures envisaged by the authorities to help reduce unemployment.

Figure 11. Economic Growth and Employment, 1999-2004



Source: Statistical Office of the Slovak Republic.

Tax reform and investment

37. **The tax burden on capital has been reduced significantly.** The new CIT rate of 19 percent compares to a rate of 40 percent in 1999. Moreover, the abolition of dividend taxation implies that investment income is now taxed only once.

38. **The CIT rate is now low by EU standards, prompting claims of tax competition.** Figure 12 shows that the CIT rate, which had been above the EU average, is now slightly below both the EU average and the average of the new member states. One sign that the Slovak reforms are indeed attractive to foreign investors is the reaction of neighboring countries: Goliaš (2004) notes that Austria, which had intended to reduce its CIT rate from 34 to 31 percent, instead announced a reduction to 25 percent from 2005; and that Hungary reduced its CIT rate from 19.6 to 17.7 percent.

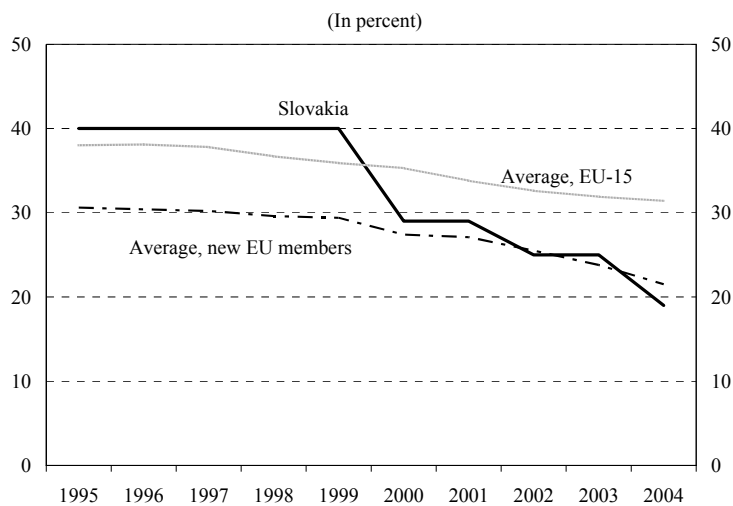
39. **But CIT collections remain comparable to EU averages.** Slovak CIT revenue as a share of GDP is estimated at 2.4 percent of GDP in 2004, in line with the latest observations⁵⁶ for CIT revenues in both the EU-15 and EU-25 (each also 2.4 percent).

40. **Besides the low CIT rate, the liberalized treatment of loss carryforwards assists businesses.** Losses can now be deducted from taxable income over the following five years, and annual write-off installments are no longer required to be equal. The previous treatment of losses had detracted significantly from the competitiveness of the CIT law. Private accountants in Slovakia informed a 2003 Fiscal Affairs Department mission that their clients were more concerned about their inability to write off legitimate losses, than whether the CIT

⁵⁶ For 2002; see European Commission (2004).

rate was 15 or 25 percent. Including the inability to write off advertising expenses, some clients faced effective tax rates of 35 percent or more (in some cases reaching 80 percent), despite the then statutory CIT rate of 25 percent. The new CIT law remedies this problem.

Figure 12. Corporate Income Tax Rates, 1995-2004



Source: Statutory tax rates in European Commission (2004).

E. Distributional Implications

41. This section explores some of the distributional implications of the reforms. Two questions are particularly relevant: first, what are the distributional effects of the reformed tax system: is the tax system progressive, neutral or regressive? Second, is the social safety net still effective, and does the reformed welfare system adequately protect the most vulnerable members of society?

The tax system

42. Excluding social contributions, the tax system remains progressive overall, though less so than previously. However, the distributional implications of the tax system vary depending on the degree to which social contributions are regarded as taxes.

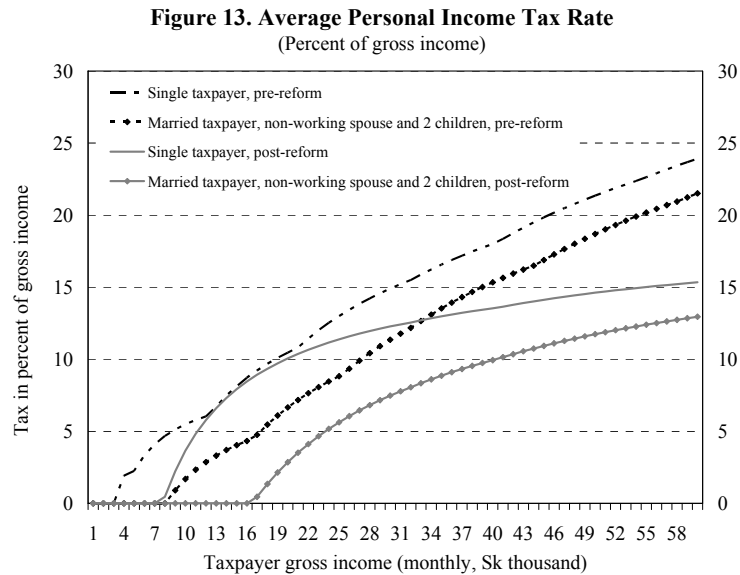
Income taxes

43. **Assessing the progressivity of an income tax is relatively straightforward.** In general, an income tax is *progressive* if the *average* tax rate increases as income increases (see for example, Norregaard, 1995).

44. **The reformed personal income tax remains progressive, though the reform reduces the degree of progressivity.** Figure 13 shows that, following the tax reform, the average income tax rate rises with income over the whole income distribution, though less steeply than before the reform. This is because the tax-free threshold, or the personal

exemption, is significant. The average effective tax rate rises much more slowly for a married taxpayer, with a non-working spouse—because this taxpayer qualifies for a double exemption—and the taxpayer also receives a further tax deduction for each child.

45. **Other things equal, the simplification of income tax would contribute to horizontal equity.** The cancellation of different tax rates for different income types, and of most income tax exemptions, greatly reduces the number of taxpayers who have an equal ability to pay nevertheless being subject to different tax burdens.



Indirect taxes

46. **Under the previous two-rate VAT in Slovakia, the lower VAT rate provided relatively little benefit to poorer households.** Figure 14 shows the estimated VAT burden as a percentage of net household income, using data from the Statistical Office's Microcensus survey. Pre-reform, the burden was very similar across decile groups of household net income, in part reflecting the wide range of non-necessity goods and services (including construction, for example) that were taxed at the lower rate. Even at the single rate, the estimated burden is around 14-15 percent for most income groups, though slightly lower for the highest income decile.

47. **Excise taxes appear to have limited distributional effects.** Figure 15 suggests that the excise tax burden is broadly proportional across household income. The tax on motor fuels is mildly progressively distributed, offsetting tobacco excises, which appear mildly regressively distributed.

Figure 14. VAT Burden and the Income Distribution

(In percent of household income, by decile groups of household net income)

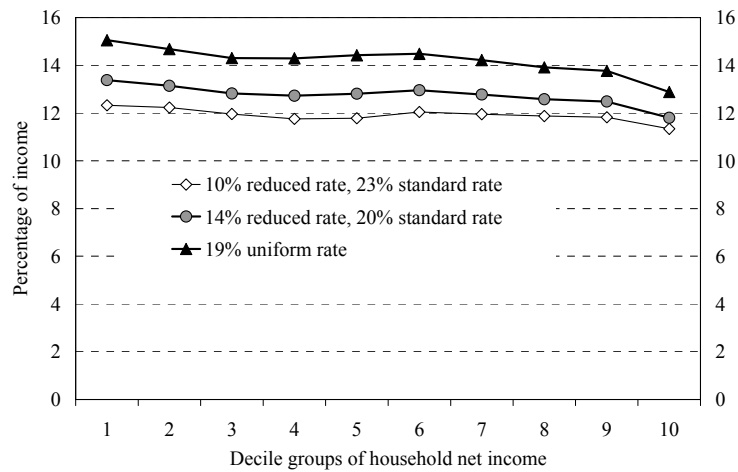
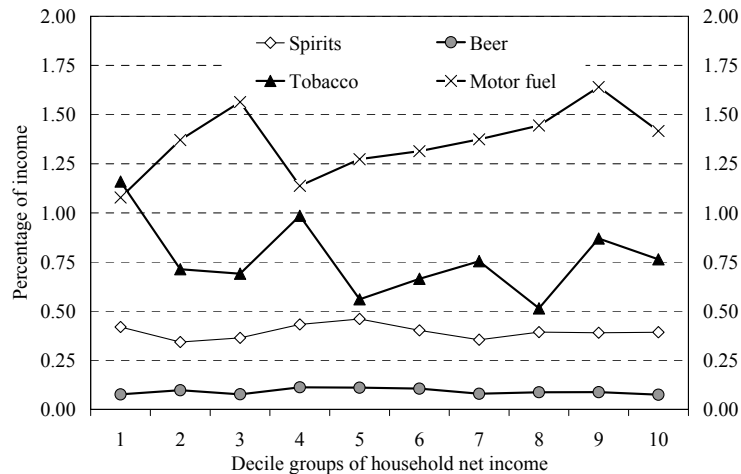


Figure 15. Excise Tax Burden and the Income Distribution

(In percent of household income, by decile groups of household net income)



Source: Based on household net income data from Microcensus.

Social contributions and the average composite tax rate

48. **Treating social contributions as part of the tax system introduces a regressive component.** Social contributions closely resemble taxes, in that both are mandatory charges on income paid to general government agencies.⁵⁷ Social contributions are payable up to a “maximum assessment base” for each type of contribution, implying that the marginal social contribution rate falls to zero for income above these maximums. Thus, for high income earners the average effective social contribution rate payable must fall as income rises.

⁵⁷ Except for pension contributions to the second pillar effective from 2005, which will be outside general government.

49. **At one extreme, including social contributions would imply that the overall tax system becomes regressive for the highest income earners.** Figure 16 shows the *average* composite tax rate, based on the Section D measure including employee but not employer contributions. Prior to the reform, the average composite tax rate rose with income, reflecting the flattening in the marginal rate for incomes above Sk 32,000 per month. Following the reform, the decline in the composite marginal rate for incomes above Sk 40,000 per month, or nearly 3 times the average wage, implies that the overall tax burden turns regressive in the high-income range.

50. **A small proportion of taxpayers are in this high-income range beyond the social contribution ceiling—perhaps around 1 percent—though this estimate should be treated cautiously.** Data from 2003 tax returns show that some 25,000 taxpayers filed income tax returns for the tax bracket above Sk 396,000 (Sk 33,000 monthly), of whom some 14,000 filed returns for the bracket above Sk 564,000 (Sk 47,000 monthly: above all social contribution ceilings even after the 2004 increases). However, these data do not include the many wage earners whose tax liabilities are satisfied by withholding and therefore do not file tax returns. To get a sense of the proportion of taxpayers in this range, the nearest comparator is total employment from the labor force survey (2.2 million in 2003). On this basis, 0.6 percent of taxpayers have monthly incomes above Sk 47,000, well above the ceilings for all types of social contributions.

Figure 16. Average Composite Tax Rate
(Percent of gross employee income)

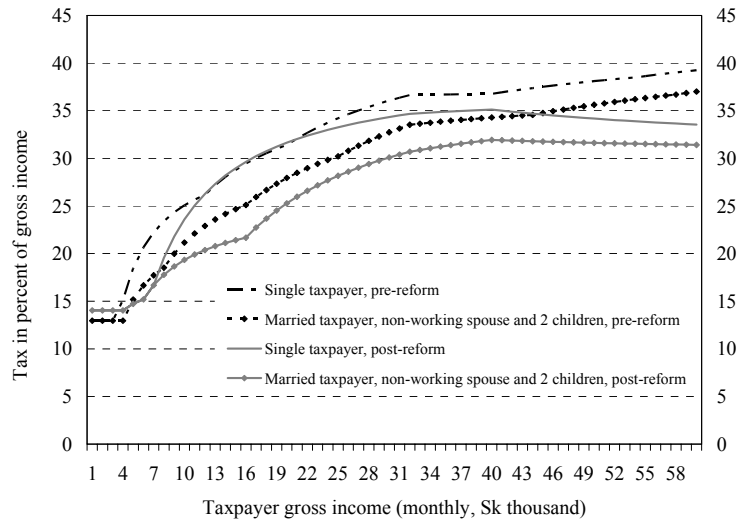
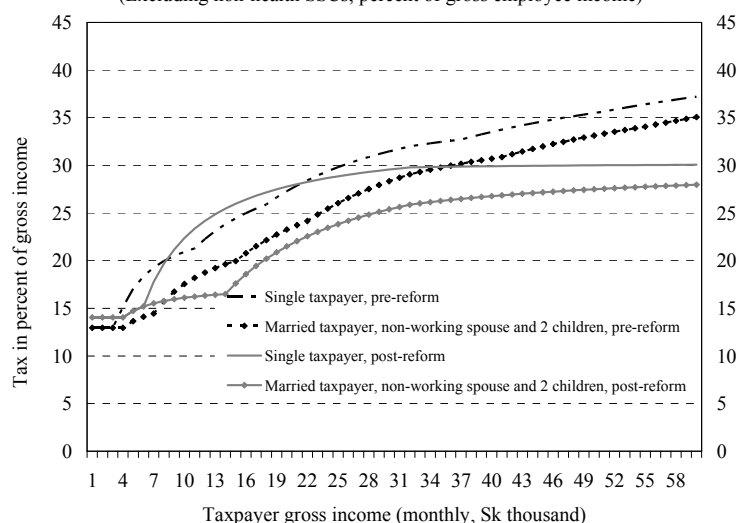


Figure 17. Average Composite Tax Rate
(Excluding non-health SSCs; percent of gross employee income)



51. **But distributional assessments including all social contributions could be biased if the corresponding benefits are not taken into account.** Although payroll taxes may be very similar to income taxes in terms of the effects on behavior (and this is the treatment in the literature on tax wedges), it is not obvious that the distributional effects of income and payroll taxes are similar as well. A ceiling on benefits may correspond to a ceiling on contributions, and also needs to be taken into consideration. For example, Slovak public pension benefits have been traditionally very redistributive (IMF, 2002), and even with the strengthening of the benefit-contribution link under the new system, will remain subject to a ceiling. On the other hand, health contributions need not be matched to a particular set of benefits for an individual. Many countries finance public health expenditures through general taxation, rather than health insurance contributions. Figure 17 shows the average composite tax rate including health contributions, but excluding other social contributions. Including only this narrow subset of social contributions implies that the overall tax burden becomes proportional at higher income ranges, and that the system remains mildly progressive overall.

Social protection

52. Section D argued that the welfare reforms have corrected strong disincentives to work, but an important question remains whether the reformed safety net continues to provide adequate support. This chapter can provide only partial answers on this question. The Ministry of Labor (2003b) notes that current national statistical sources do not fully meet Eurostat requirements for monitoring poverty and social exclusion and is developing new statistical instruments in line with Eurostat recommendations.

53. **Previous studies found the pre-reform social assistance system to be effective at mitigating poverty.** The World Bank (2001) Living Standards study found that the social transfer system alleviated poverty significantly. The study estimated on the basis of the 1996 Microcensus that canceling social transfers except for pensions would imply a poverty rate of

19 percent of all individuals, compared to an actual rate of 10 percent. For households whose main income earner is unemployed, canceling non-pension social transfers would imply nearly a poverty rate of 80 percent, compared to an actual poverty rate of 45 percent. Poverty risks may have since deteriorated: the Ministry of Labor (2004) estimates a risk-of-poverty rate of 28 percent before social transfers, and 21 percent after all social transfers.⁵⁸

54. **However, benefit dependency has contributed to the marginalization of some Roma communities, which are among the poorest in Slovakia.** Roma are estimated to account for up to 10 percent of the Slovak population. Though some Roma are well integrated, others live in isolated settlements, in some cases with unemployment rates around 90 percent. The OECD (2002) estimates that Roma account for up to a fifth of overall unemployment in Slovakia. Thus, this group may be particularly strongly affected by the welfare reforms, especially since many have large families: implying both that they were particularly subject to poverty traps before the reforms, and that they face some of the largest benefit cuts as a result of the reforms. The Ministry of Labor (2003b) noted that the most recent hard data—from 1997—showed as many as 80 percent of Roma were dependent on social assistance benefits. The UNDP (2003) study of Roma in five central and eastern European countries found Roma unemployment rates around 70 percent in Slovakia, the highest of the five countries. The study found that these unemployment rates reflected not only weak labor market conditions, but also the “strong work disincentives that are built into the Slovak Republic’s social welfare system”.

55. **For several years, welfare benefits have been below the “subsistence minimum”.** The subsistence minimum is a measure below which a household is considered to be in material need. The measure depends on family size, increasing by a flat amount per dependent child, and is uniform nationwide. It is indexed each July (Table 5.1). Although recent studies, including the OECD (2002), have noted the generosity of the social assistance scheme compared to average wages, social assistance benefits have been below the subsistence minimum since 2001 (Ministry of Labor, 2004).

Table 4. The Subsistence Minimum

	July 2003	July 2004
One adult	Sk 4,210	Sk 4,580
plus second adult	Sk 2,940	Sk 3,200
plus dependent child	Sk 1,910	Sk 2,080
Example:	Sk 4,210	Sk 4,580
2 adults, 4 children	Sk 2,940	Sk 3,200
	<u>4 × Sk 1,910</u>	<u>4 × Sk 2,080</u>
	Sk 14,790	Sk 16,100

Source: Ministry of Labor, Social Affairs and Family.

⁵⁸ In light of the data problems, this estimate should be treated with some caution. It is quite different from the estimate reported the previous year in the Ministry of Labor (2003b): a risk-of-poverty rate of 19 percent before social transfers, and 5 percent after all social transfers (compared to 40 percent and 15 percent respectively for the EU-15).

56. **The gap between the subsistence minimum and social assistance benefits has increased following the reforms, especially for families that do not participate in activation programs.** The examples shown in Figure 3 assume one parent is employed and the other participates in activation programs; in these cases, the real benefit is unchanged at zero labor income only for the one-child family, and reduced for the other families. If neither parent is employed, the child tax bonus is not payable; and benefits are significantly lower without participation in activation programs. For families with 5 children, Ministry of Labor staff estimate typical benefit reductions of around 10-20 percent if parents participate in activation programs; if the parents do not participate, the benefit reductions—and the gap with the subsistence minimum—can exceed 50 percent.

57. **But the existence of a gap between the legal subsistence minimum and social assistance benefits is not clear evidence that benefits are necessarily inadequate.** As noted, the subsistence minimum is uniform nationwide; but wages and living costs are generally higher in western Slovakia, and lower in eastern Slovak regions where poverty is highest. Also, some of the gap between the benefit and the subsistence minimum may be filled by in-kind benefits, in particular for poor children who may receive free school meals. In cases where the child allowance is not paid to parents, for example due to child neglect or the child's failure to attend school, the municipality determines the most appropriate way to provide the child with the benefit.

F. Conclusions

58. **With the tax and welfare reforms so recent, the conclusions to be drawn are a mixture of firm and tentative.** Perhaps the clearest conclusion is that the tax reform has gained widespread attention from investors and policymakers alike, with several other countries looking to implement their own variants of the Slovak reform.

59. **The fiscal implications of the reforms are not yet fully clear, but the initial evidence is encouraging.** The tax reforms appear to have had a limited revenue cost, but more importantly, do not appear to have compromised the government's objectives of fiscal consolidation and reducing the fiscal deficit to Maastricht levels by 2007. But a clearer picture will emerge when more complete data for 2004 become available.

60. **The tax and welfare reforms have reduced distortions in the economy and together have strengthened incentives to work and invest.** The elimination of most exemptions contributes to better resource allocation, and makes the tax system easier to administer—as does the single-rate VAT, which will help address long-standing problems with excessive VAT refunds. The tax reforms themselves may have only limited effects on work incentives, in view of the modest change in labor taxation for many taxpayers. But work incentives have been strengthened by the welfare reforms, through both the activation programs and lower marginal effective tax rates on incomes of welfare recipients.

61. **The tax system is less progressive than previously; whether it remains absolutely progressive depends on the assessment of social contributions.** The flat-rate personal

income tax includes large tax-free thresholds, ensuring the tax is progressive rather than proportional. Household spending data suggest that the single-rate VAT, and the higher excises, may have had only limited distributional effects. But the reform of social contributions was on a different track to the reform of state budget taxes, and social contributions—which are payable only up to a ceiling—remain a regressive component in the tax system. It is not obvious, though, whether social contributions should be treated simply as taxes, or whether they should be considered as being linked to future benefits.

62. Welfare reform has faced a difficult trade-off between addressing benefit dependency, and risking deteriorating poverty. With ample evidence that the previous welfare system had promoted benefit dependency, reforms to curb dependency and encourage work effort were arguably necessary conditions for long-term reductions in poverty and unemployment. However, the short-run costs of the reforms may have been high for some of the poorest Slovak families, especially large families—particularly in regions where job opportunities have not been available to absorb newly willing labor supply.

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SLOVAK REPUBLIC—BACKGROUND INFORMATION ON THE REFORMS

Tax reform

Reform of state budget taxes

- 1. The single-rate personal income tax replaces multiple tax rates according to level and type of income.** According to the Ministry of Finance (2003b), the single 19 percent PIT rate replaces 21 different tax rates, including a five-band rate structure on labor income that ranged from 10 to 38 percent, and withholding tax rates on capital income ranging from 5 to 25 percent. The reform also simplifies the definition of taxable income; Goliaš (2004) notes that the previous tax system included 443 classifications of income.
- 2. The tax-free threshold is now much higher.** The reformed PIT includes a basic tax allowance (tax-free threshold) per taxpayer of Sk 80,832⁵⁹ annually (previously Sk 38,760), plus a further Sk 80,832 spousal allowance (previously Sk 12,000). The reform also includes an annual tax credit of Sk 4,800 per child, which is part of the new child support system. (Figures 1 and 2 show the effective marginal income tax rate faced by an individual and a two-parent/two-children household before and after the reform.)
- 3. The corporate income tax has been lowered, and dividend tax abolished.** The 19 percent CIT rate is down from 25 percent in 2003, and compares to 40 percent in 1999. With the aim of taxing income only once, the reform also ends withholding tax on dividends, though taxes remained payable on dividends subsequently paid out of profits earned before 2004.
- 4. Most income tax exemptions have been cancelled.** Investment incentives have been scaled back: the reform cancels legislation providing for tax holidays (of up to 10 years) for newly established firms.⁶⁰ Tax base reductions for certain sectors, such as agriculture and forestry, have been cancelled. The tax exemption on income from the sale of securities, held for three years or more, has also been cancelled.
- 5. Other CIT changes reduce the tax burden on businesses.** The reform shortens the depreciation period on some groups of tangible assets, notably property and buildings, from 30 to 20 years. Loss carry-forward rules have been relaxed: losses can now be deducted from taxable income over the following five years, and annual write-off installments are no longer required to be equal. Also, limits on the tax deductibility of advertising and of vehicle depreciation have been cancelled.

⁵⁹ The law sets the threshold at “19.2 times the monthly minimum subsistence” (equivalent to 1.6 times the poverty-line income), implying automatic indexation.

⁶⁰ However, the government may still individually grant investment incentives, in compliance with the EU law on state aid.

6. **The VAT rate has been unified at 19 percent, and harmonized with EU law.** The previous dual VAT rates had recently been brought closer, from a main rate of 23 percent and reduced rate of 10 percent in 2002, to 20 percent and 14 percent respectively in 2003. The reduced rate had applied to a wide range of items, including food, electricity and thermal energy, heating oil, coal, pharmaceutical products, aids for disabled persons. The EU's Sixth Directive on VAT permits a reduced rate only on a narrower range of distributionally sensitive items, and so the introduction of the single VAT rate brings Slovakia into compliance. Slovakia has reduced its annual turnover threshold for VAT registration from Sk 3 million (equivalent to just over € 70,000) to Sk 1.5 million (just over € 35,000), but has a permanent derogation from the Sixth Directive requirement of only € 5,000.

7. **Excise taxes are also being increased to harmonize with EU requirements.** The excise increases were implemented already in August 2003, being brought forward to address an expected revenue shortfall in 2003. Taxes on motor fuels were increased from Sk 12.4/L to Sk 15.5/L; taxes on beer increased from Sk 30/°Plato/hL to Sk 50/°Plato/hL; and taxes on tobacco products were also increased significantly, for cigarettes from Sk 0.95 per cigarette to Sk 1.40.⁶¹ Further increases in tobacco excises will be necessary to fully harmonize with EU requirements; Slovakia has agreed to phase in these increases by 2007.

8. **Some other smaller taxes were abolished.** Inheritance and gift taxes, which together raised Sk 0.2 billion in 2003, were abolished from 2004. The real estate transfer tax, which raised Sk 2.4 billion in 2003, was cut from 6 percent to 3 percent effective January 2004, and abolished from 2005.

9. **Further changes to the tax system from 2005 reflect the decentralization process, which aims to give municipalities a more predictable revenue stream and to strengthen their revenue-raising powers:**

- PIT is now subject to revenue-sharing. A recently approved package of decentralization laws provides that from 2005, 70.3 percent of PIT will go to municipalities, 23.5 percent to the eight regional self-governments ("VUCs"), and 6.2 percent to the central government. The shared PIT replaces a direct discretionary transfer from the state budget.
- The decentralization laws define 12 local taxes and one local fee, which municipalities are free to set themselves; central-government ceilings no longer apply to these taxes. The most important of these taxes are road tax, and real estate (ownership) tax.

⁶¹ Upon EU accession, this specific excise was converted to an equivalent excise with both specific and ad valorem components.

Social contributions

10. **Contribution rates were reduced modestly in 2004.** Changes to social contributions were implemented separately from the reform of state budget taxes. Effective 2004, overall payroll taxes fell by 2.4 percentage points, with a small rise in employee contributions—0.6 percentage points, for pension contributions—being offset by a 3 percentage point cut in employer contributions for sickness and unemployment insurance (Table A1).

11. **Ceilings on contributions have also been reformed.** Through 2003, each type of contribution was subject to a monthly “maximum assessment base” of Sk 32,000; that is, there was a ceiling on contributions equivalent to slightly more than twice the economy-wide average wage. In 2004, health insurance contributions remained subject to the Sk 32,000 maximum, but for most other social contributions, including pensions, the ceiling was raised to 3 times the average wage. Following the recent passage of health reform, the maximum assessment base for health insurance contributions will rise to Sk 43,095 from January 2005.

	2003				2004				
	Employer	Employee	Total	Ceiling 1/	Employer	Employee	Total	Ceiling	
								Jan-04	Jul-04
Pension insurance	21.6	6.4	28.0	32,000	19.0	7.0	26.0	40,533	43,095
Old-age 2/	-	-	-	-	16.0	4.0	20.0	40,533	43,095
Disability	-	-	-	-	3.0	3.0	6.0	40,533	43,095
Unemployment insuran	2.75	1.0	3.8	32,000 3/	1.0	1.0	2.0	40,533	43,095
Sickness insurance	3.4	1.4	4.8	32,000	1.4	1.4	2.8	20,267	21,548
Health insurance	10.0	4.0	14.0	32,000	10.0	4.0	14.0	32,000	32,000 4/
Accident insurance	0.2	0	0.2	32,000	0.8	0	0.8	20,267	21,548
Guaranteed fund	0.25	0	0.25	32,000	0.25	0	0.25	20,267	21,548
Reserve fund 1/	-	-	-	-	2.75	0	2.75	40,533	43,095
Total	38.2	12.8	51.0		35.2	13.4	48.6		

Sources: Ministry of Finance (2004); and Social Insurance Agency.

1/ "Maximum assessment base", in koruny per month.
 2/ From 2005, employer contributions will be rebalanced; the old-age contribution rate will fall to 14 percent, and the reserve fund contribution rate will increase to 4.75 percent.
 3/ For self-employed persons, the maximum assessment base was Sk 24,000.
 4/ Increased to Sk 43,095 effective January 2005.

Welfare reform

12. **In 2003, initial reforms included a benefit ceiling and administrative measures to curb abuse of benefits.** The government introduced a ceiling on monthly benefits per family of Sk 10,500; this was binding only for large families (6 or more dependent children). Administrative measures included stricter enforcement of eligibility requirements, including requiring recipients to appear in person to collect benefits.

13. **The centerpiece of the 2004 reform was the introduction of an “activation program” by restructuring the benefit formula to depend on work effort.** The basic benefit was significantly reduced; for example, the basic monthly benefit of an individual was reduced in January 2004 from Sk 2,900 to Sk 1,450 (Table A2). On the other hand, the reform introduced an “activation allowance”—initially Sk 1,000, raised in April 2004 to Sk 1,500—for which recipients are required to demonstrate effort to improve their situation, for example participation in community volunteer work or retraining programs. Unlike unemployment insurance (see below), the activation allowance is payable indefinitely. For individuals deemed unable to participate in activation programs, an equivalent “protective allowance” is paid instead.

14. **Participation in activation programs increased steadily through 2004.** Most activation programs are organized by municipalities. Following shortages in early 2004, the Ministry of Labor has worked with municipalities to increase the number of available activation positions. Municipalities and NGOs are not required to pay wages to activated persons; they receive Sk 400 monthly for each activated person. The Ministry of Labor reports just over 100,000 individuals participated in activation programs by October 2004, compared with 56,000 in April. As at October, over 90,000 beneficiaries were participating in community-based services organized by municipalities; just under 4,000 were undertaking further education or retraining.

15. **Social assistance benefits are now reduced less abruptly if the recipient earns labor income.** The previous social assistance scheme was a simple top-up of income to the benefit level; any additional earnings resulted in a correspondingly lower benefit. In the new scheme, several types of income are deemed exempt income in the calculation of the social assistance benefit, including 25 percent of individual income from dependent services.

16. **The reform also changes the structure of supplementary child support.** In addition to the basic social assistance benefit, the previous system included means-tested child bonuses (starting at Sk 270 per child, rising to Sk 890, depending on household income and the age of the child). The new system replaces these with a flat Sk 500 child bonus—conditional on the child being enrolled in school⁶²—plus a Sk 400 tax credit. The Sk 500 child bonus is universal. In contrast, the tax credit is payable only to households in which at least one parent is employed, though it is refunded if the overall tax liability is negative (for example, a parent employed on minimum wage).

⁶² If the child is not enrolled in school, the bonus is paid to the relevant municipality, which is then required to decide on the best way to use it to benefit the child, for example through in-kind transfers.

Table A2. The Monthly Social Assistance Benefit

Previous system: to December 2003		New system	
		Jan 2004	Current 2/
Income top-off, material need for "subjective reasons" 1/			
Individual	Sk 1,450	Sk 1,450	Sk 1,530
Income top-off, material need for "objective reasons" 1/			
Individual	Sk 2,900	Sk 2,160	Sk 2,450
Dependent minor child	Sk 1,000	Sk 3,160	Sk 3,640
Non-dependent child	Sk 1,600		
Maximum per family	Sk 10,500	Sk 2,530	Sk 2,660
		Sk 3,210	Sk 3,630
		Sk 4,210	Sk 4,850
		Sk 350	Sk 350
		Sk 1,000	Sk 1,500
		Sk 780	Sk 780
		Sk 1,330	Sk 1,330
		Sk 50	Sk 50

Based on information provided by the Ministry of Labor, Social Affairs and Family.

1/ The previous system distinguished between material need for "objective" and "subjective" reasons. "Objective" reasons included involuntary unemployment and inability to find work despite search efforts. "Subjective" reasons included an individual voluntarily leaving a job or refusing a job offer. Material need was usually deemed to be for "subjective" reasons for households in the system for more than 24 months.

2/ The activation allowance was increased in April 2004. Basic benefits were indexed in September 2004.

3/ Paid only to a single person or couple without children.

Other benefit reforms

17. **Although this chapter focuses on the reforms to the tax and welfare systems, unemployment benefits and the pension system also have implications for work incentives.** The major labor market concern in Slovakia is long-term unemployment, which accounts for roughly two-thirds of the total unemployment rate of nearly 18 percent. Slovak unemployment insurance benefits are payable only in the short-term and have played a much more limited role than the welfare system in sustaining unemployment. The World Bank (2001) found that those receiving unemployment benefits tend to spend longer unemployed compared to those not receiving unemployment benefits, but look for work more actively than non-recipients, and find private-sector jobs more often. Nonetheless, recent reforms to unemployment benefits and to the pension system should also contribute to stronger incentives to work.

Unemployment insurance

18. **Eligibility periods have been cut and the benefit more closely linked to past contributions.** An unemployed person is eligible for benefits for up to six months, compared to nine months until end-2003. The beneficiary must have contributed for 24 of the previous 36 months to be eligible. The replacement rate is 50 percent of past gross income; previously, this had been 55 percent for the first six months, falling to 45 percent for the last three months. Benefits remain subject to a ceiling, now being raised: the ceiling had been around half the economy-wide average wage, and was raised to 60 percent of the average wage in 2004. The ceiling will increase further in 2005 and 2006.

Sickness benefits

19. **Responsibilities have been shifted from the public to the private sector.** From 2004, the responsibility for paying the first ten days of sickness benefits has been shifted from the public sector (via the Social Insurance Agency) to individual employers. This measure has not only lowered costs to the public sector (though offset by a reduction in the sickness insurance contribution rate), but also gives employers much stronger incentives to verify that sickness claims are genuine.

Pension benefits

20. **The pension reform approved in 2003 reforms the existing public pension system, and introduces a mandatory, privately funded pillar.**⁶³ The reform of the public pay-as-you-go system provides for a gradual increase in retirement ages to 62 years for both men and women, from 60 (men) and 57 or less (women); and a closer link between future benefits and contributions. The first increase in retirement ages was effective from January 2004. The new privately funded (second) pillar starts operations in 2005.

⁶³ For a detailed overview of the pension reform, see Ministry of Labor (2003a).

Table A1. Slovak Republic: Gross Domestic Product at Current Prices, 1999-2003

	1999	2000	2001	2002	2003
(In billions of koruny)					
Domestic demand	880.9	957.0	1092.3	1176.7	1219.1
Consumption	648.2	712.8	789.3	854.4	917.7
Private	473.0	519.6	577.5	624.5	667.5
Public, including NPISH 1/	175.2	193.2	211.8	229.8	250.2
Public	167.4	184.8	203.4	220.8	239.6
Nonprofit institutions serving households	7.8	8.4	8.4	9.0	10.6
Investment	232.7	244.1	303.0	322.4	301.4
Fixed investment	249.8	242.3	291.0	303.5	308.4
Change in stocks	-17.1	1.9	12.0	18.9	-7.0
Nongovernment	206.3	214.8	271.3	283.6	271.9
Government	26.4	29.3	31.7	38.8	29.5
Net exports of goods and nonfactor services	-36.7	-22.9	-82.4	-78.1	-17.9
Exports of goods and nonfactor services	518.1	661.5	741.0	788.2	933.2
Imports of goods and nonfactor services	554.8	684.4	823.5	866.3	951.1
Statistical discrepancy	0.0	0.0	0.0	0.0	0.0
Gross domestic product at market prices	844.1	934.1	1009.8	1098.7	1201.2
(In percent of GDP)					
Domestic demand	104.4	102.5	108.2	107.1	101.5
Consumption	76.8	76.3	78.2	77.8	76.4
Private	56.0	55.6	57.2	56.8	55.6
Nonprofit institutions serving households	0.9	0.9	0.8	0.8	0.9
Public	19.8	19.8	20.1	20.1	19.9
Investment	27.6	26.1	30.0	29.3	25.1
Fixed investment	29.6	25.9	28.8	27.6	25.7
Change in stocks	-2.0	0.2	1.2	1.7	-0.6
Nongovernment	24.4	23.0	26.9	25.8	22.6
Government	3.1	3.1	3.1	3.5	2.5
Net exports of goods and nonfactor services	-4.4	-2.5	-8.2	-7.1	-1.5
Exports of goods and nonfactor services	61.4	70.8	73.4	71.7	77.7
Imports of goods and nonfactor services	65.7	73.3	81.5	78.9	79.2
Statistical discrepancy	0.0	0.0	0.0	0.0	0.0

Sources: Slovak Statistical Office; and IMF staff estimates.

1/ Nonprofit institutions serving households.

Table A2. Slovak Republic: Gross Domestic Product at Constant Prices, 1999-2003

	1999	2000	2001	2002	2003
(In billions of koruny, 1995 prices)					
Domestic demand	692.0	692.7	744.3	778.3	762.7
Consumption	513.4	512.4	536.5	565.0	566.7
Private	369.7	366.5	384.4	405.6	402.4
Public, including NPISH 1/	143.7	145.9	152.1	159.4	164.3
Investment	178.6	180.4	207.8	213.3	196.0
Fixed investment	191.1	177.3	201.9	200.8	197.8
Change in stocks	-12.5	3.1	5.9	12.5	-1.8
Nongovernment	170.9	155.9	180.0	175.1	178.9
Government	20.2	21.4	22.0	25.7	18.9
Net exports of goods and nonfactor services	-15.1	-2.0	-27.5	-28.3	20.7
Exports of goods and nonfactor services	463.1	526.4	559.3	590.5	723.4
Imports of goods and nonfactor services	478.1	528.5	586.8	618.8	702.7
Statistical discrepancy	0.0	0.0	0.0	0.0	0.0
Gross domestic product at market prices	676.9	690.7	716.8	749.9	783.4
(Annual percentage change)					
Domestic demand	-6.3	0.1	7.4	4.6	-2.0
Consumption	0.2	-0.2	4.7	5.3	0.3
Private	2.7	-0.9	4.9	5.5	-0.8
Public	-5.7	1.6	4.2	4.8	3.0
Investment	-21.0	1.0	15.2	2.6	-8.1
Fixed investment	-19.6	-7.2	13.9	-0.6	-1.5
Change in stocks	...	...	...	...	...
Exports of goods and nonfactor services	5.0	13.7	6.3	5.6	22.5
Imports of goods and nonfactor services	-6.7	10.5	11.0	5.5	13.6
GDP at market prices	1.5	2.0	3.8	4.6	4.5

Sources: Slovak Statistical Office; and IMF staff estimates.

1/ Nonprofit institutions serving households.

Table A3. Slovak Republic: Gross Domestic Product by Sectors at Current Prices, 1999-2003

	1999	2000	2001	2002	2003
(In billions of koruny)					
Gross domestic product	844.1	934.1	1009.8	1098.7	1201.2
Agriculture	35.4	38.9	44.9	44.6	43.8
Industry	220.8	237.9	254.6	260.2	296.3
Mining and quarrying	6.5	7.3	6.9	6.8	6.1
Manufacturing, <i>of which</i> :	181.1	195.0	223.9	220.1	233.4
Food	31.8	34.8	25.8	27.6	27.6
Chemicals and plastics	30.7	33.1	37.2	33.1	31.9
Metal products	26.5	27.7	41.9	36.2	42.4
Machinery and vehicles	44.3	47.0	56.3	62.8	70.4
Electricity, water, and gas	33.3	35.7	23.8	33.3	56.8
Construction	41.8	45.3	46.9	53.1	59.2
Services	461.7	516.2	576.7	649.2	710.6
Transportation & Communication	82.1	91.1	111.2	109.3	114.2
Wholesale and retail trade 1/	121.5	135.0	141.8	154.7	154.4
Other services	258.1	290.1	323.6	385.2	442.0
Other 2/	84.3	95.8	86.7	89.3	86.0
(In percent of GDP)					
Agriculture	4.2	4.2	4.5	4.1	3.6
Industry	26.2	25.5	25.2	23.7	24.7
Mining and quarrying	0.8	0.8	0.7	0.6	0.5
Manufacturing, <i>of which</i> :	21.5	20.9	22.2	20.0	19.4
Food	3.8	3.7	2.6	2.5	2.3
Chemicals and plastics	3.6	3.5	3.7	3.0	2.7
Metal products	3.1	3.0	4.1	3.3	3.5
Machinery and vehicles	5.2	5.0	5.6	5.7	5.9
Electricity, water, and gas	3.9	3.8	2.4	3.0	4.7
Construction	5.0	4.8	4.6	4.8	4.9
Services	54.7	55.3	57.1	59.1	59.2
Transportation & Communication	9.7	9.8	11.0	9.9	9.5
Wholesale and retail trade 1/	14.4	14.5	14.0	14.1	12.9
Other services	30.6	31.1	32.0	35.1	36.8
Other 2/	10.0	10.3	8.6	8.1	7.2

Sources: Slovak Statistical Office; and IMF staff estimates.

1/ Also includes repairs of motor vehicles and personal goods, hotels, and restaurants.

2/ Imputed banking services charges, indirect taxes, and own supplies.

Table A4. Slovak Republic: Gross Domestic Product by Sectors at Constant Prices, 1999-2003

	1999	2000	2001	2002	2003
(In billions of koruny, 1995 prices)					
Gross domestic product	676.9	690.7	716.8	749.9	783.4
Agriculture	35.6	36.3	38.0	37.4	39.1
Industry	187.9	185.0	192.0	191.4	209.6
Mining and quarrying	7.1	6.1	5.8	5.1	4.3
Manufacturing, <i>of which</i> :	154.4	155.6	173.2	171.2	182.5
Food	16.7	16.6	11.5	11.5	10.8
Chemicals and plastics	24.8	25.0	26.1	25.1	24.4
Metal products	26.8	26.9	34.3	27.1	34.0
Machinery and vehicles	43.0	43.2	48.2	52.3	56.2
Electricity, water, and gas	26.3	23.4	12.9	15.1	22.7
Construction	23.6	26.5	23.6	25.8	27.5
Services	360.9	371.2	401.6	432.7	446.6
Transportation & Communication	64.0	65.4	74.9	71.6	68.9
Wholesale and retail trade 1/	100.9	104.5	109.9	107.2	105.7
Other services	196.0	201.2	216.9	253.8	272.0
Other 2/	68.9	71.8	61.6	61.2	57.1
(In percent of GDP)					
Agriculture	5.3	5.2	5.3	5.0	5.0
Industry	27.8	26.8	26.8	25.5	26.8
Mining and quarrying	1.1	0.9	0.8	0.7	0.6
Manufacturing, <i>of which</i> :	22.8	22.5	24.2	22.8	23.3
Food	2.5	2.4	1.6	1.5	1.4
Chemicals and plastics	3.7	3.6	3.6	3.3	3.1
Metal products	4.0	3.9	4.8	3.6	4.3
Machinery and vehicles	6.3	6.3	6.7	7.0	7.2
Electricity, water, and gas	3.9	3.4	1.8	2.0	2.9
Construction	3.5	3.8	3.3	3.4	3.5
Services	53.3	53.7	56.0	57.7	57.0
Transportation & Communication	9.5	9.5	10.4	9.6	8.8
Wholesale and retail trade 1/	14.9	15.1	15.3	14.3	13.5
Other services	29.0	29.1	30.3	33.8	34.7
Other 2/	10.2	10.4	8.6	8.2	7.3

Sources: Slovak Statistical Office; and IMF staff estimates.

1/ Also includes repairs of motor vehicles and personal goods, hotels, and restaurants.

2/ Imputed banking services charges, indirect taxes, and own supplies.

Table A5. Slovak Republic: Gross Fixed Capital Formation by Sector, 1999-2003

	1999	2000	2001	2002	2003
	(In billions of koruny)				
Gross fixed capital formation	252.9	242.3	291.0	303.5	308.4
Agriculture	5.2	6.9	10.1	10.4	9.9
Industry	86.8	67.6	113.6	93.6	108.0
Manufacturing	47.7	37.7	88.7	66.4	85.0
Mining and quarrying	0.6	2.3	3.0	1.6	1.3
Electricity, water, and gas	38.5	27.6	21.9	25.5	21.6
Construction	3.3	1.7	2.4	1.9	4.8
Market services	138.8	145.9	139.5	166.4	157.2
Financial intermediation	25.0	31.7	38.8	44.1	41.7
Real estate	49.9	54.5	40.5	45.0	47.1
Wholesale	31.8	19.4	18.7	17.7	28.3
Hotels and restaurants	1.6	2.2	-0.2	2.0	2.5
Transport and communications	30.5	38.2	41.6	57.7	37.5
Nonmarket services	18.8	20.1	25.5	31.2	28.6
Public administration and defense	11.4	12.4	11.6	13.4	18.8
Education	1.9	2.2	4.3	4.9	2.0
Health and social work	2.5	2.5	4.7	5.4	3.1
Other social services	3.0	3.0	4.8	7.4	4.7

Source: Statistical Office of the Slovak Republic.

Table A6. Slovak Republic: Employment by Sector, 1999-2003

	1999	2000	2001	2002	2003
(In thousands)					
Total economy 1/	1,988.0	2,101.7	2,123.7	2,127.0	2164.55
Enterprises with 20 and more employees	1,388.0	1,344.4	1,321.5	1,293.7	n.a.
Agriculture	111.0	139.8	130.6	131.4	125.3
Industry	460.0	548.9	554.4	555.4	558.4
Mining and quarrying	17.0	15.6	13.8	12.2	11.1
Manufacturing	395.0	485.8	494.1	496.4	502.3
Electricity, water, and gas	48.0	47.4	46.5	46.8	45.1
Construction	70.0	125.8	122.9	124.9	129.8
Services	319.0	351.1	407.6	405.3	315.8
Financial services and insurance	35.0	37.1	38.3	39.8	43.6
Real estate	65.0	90.8	104.3	103.3	108.7
Trade and repairs	83.0	76.8	76.9	83.2	n.a.
Hotels and restaurants	12.0	12.0	53.8	49.7	44.2
Transport and communications	124.0	134.5	134.3	129.4	119.4
State administration	428.0	554.5	557.3	533.0	548.4
Administration	81.0	158.3	157.8	149.7	159.7
Education	180.0	161.6	168.9	162.8	158.9
Health	117.0	147.9	143.6	141.5	152.9
Other social services	50.0	86.6	87.0	79.1	77.0
Enterprises with up to 19 employees	155.0	180.1	208.5	205.2	n.a.
Private entrepreneurs	445.0	452.5	476.2	510.0	n.a.
(In percent of total employment)					
Total economy	100.0	100.0	100.0	100.0	100.0
Enterprises with 20 and more employees	69.8	64.0	62.2	60.8	n.a.
Agriculture	5.6	6.6	6.1	6.2	5.8
Industry	23.1	26.1	26.1	26.1	25.8
Mining and quarrying	0.9	0.7	0.6	0.6	0.5
Manufacturing	19.9	23.1	23.3	23.3	23.2
Electricity, water, and gas	2.4	2.3	2.2	2.2	2.1
Construction	3.5	6.0	5.8	5.9	6.0
Services	16.0	16.7	19.2	19.1	14.6
Financial services and insurance	1.8	1.8	1.8	1.9	2.0
Real estate	3.3	4.3	4.9	4.9	5.0
Trade and repairs	4.2	3.7	3.6	3.9	n.a.
Hotels and restaurants	0.6	0.6	2.5	2.3	2.0
Transport and communications	6.2	6.4	6.3	6.1	5.5
State administration	21.5	26.4	26.2	25.1	25.3
Administration	4.1	7.5	7.4	7.0	7.4
Education	9.1	7.7	8.0	7.7	7.3
Health	5.9	7.0	6.8	6.7	7.1
Other social services	2.5	4.1	4.1	3.7	3.6
Enterprises with up to 19 employees	7.8	8.6	9.8	9.6	n.a.
Private entrepreneurs	22.4	21.5	22.4	24.0	n.a.

Sources: Statistical Office of the Slovak Republic; and IMF staff estimates.

1/ Average number of employed, including persons employed by entrepreneurs and entrepreneurs themselves, excluding women on maternity leave, apprentices, and armed forces.

Table A7. Slovak Republic: Average Monthly Wages, 1999-2003

	1999	2000	2001	2002	2003
	(In koruny)				
Total economy 1/	10,728	11,430	12,365	13,511	14,365
Enterprises with more than 20 employees	10,945	11,864	12,931	14,214	15,261
Agriculture	8,541	9,354	10,070	10,789	11,398
Industry	11,349	12,718	14,013	15,105	16,258
Mining and quarrying	12,008	13,438	14,428	15,681	16,300
Manufacturing	10,940	12,291	13,524	14,567	15,675
Electricity, water, and gas	14,515	16,055	18,008	19,378	21,155
Construction	10,854	12,037	13,266	14,031	14,806
Services					
Financial services and insurance	20,169	22,565	24,852	27,634	15,507
Real estate	12,933	13,897	15,324	16,853	12,347
Trade and repairs	12,150	13,439	14,294	14,988	16,550
Hotels and restaurants	9,087	9,928	10,481	11,493	30,191
Transport and communications	12,184	13,216	14,515	15,589	18,125
State administration					
Administration	13,005	13,727	14,623	16,466	17,508
Education	8,459	9,048	9,479	10,965	12,017
Health	8,693	8,902	9,914	11,495	11,961
Other social services	9,853	8,812	9,445	10,950	12,034
Enterprises up to 19 employees	12,070	11,580	12,035	13,049	13,145
Private entrepreneurs 2/	8,970	9,328	10,120	10,964	11,895
Memorandum item:					
Minimum wage 3/	3,600	4,400	4,920	5,570	6,080

Sources: Statistical Office of the Slovak Republic.

1/ The payout associated with profit sharing and rewards for standby services are not included in the average monthly wage.

2/ Estimate.

3 / Since 2000, as of 1 October of the reference year.

Table A8. Slovak Republic: Unemployment and Vacancies, 1999-2003

	1999	2000	2001	2002	2003
(In thousands, end of period)					
Population	5,399	5,403	5,379	5,379	5,380
Labor force 1/	2,662	2,695	2,696	2,704	2,654
Employment	1,952	1,995	2,002	2,004	2,006
Unemployment	511	482	502	472	413
Receiving benefits	145	92	94	90	94
Receiving social allowances	273	291	297	275	236
Vacancies	5.7	6.0	10.1	17.2	15.5
(In percent)					
Participation rate	49.3	49.9	50.1	50.3	49.3
Unemployment rate	19.2	17.9	18.6	17.5	15.6
Vacancy rate	0.2	0.2	0.4	0.6	0.8

Sources: Statistical Office of the Slovak Republic; and National Labor Office.

1/ From 2003 without persons on parental leave.

Table A9. Slovak Republic: Profits and Losses of Enterprises, 1999-2003 1/

	Profits				Losses				Net						
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Total economy	128.3	101.8	143.7	150.9	166.6	-79.0	-44.5	-32.4	-61.2	-65.1	49.3	57.3	111.3	90	101.5
Total economy, without financial services	75.2	79.4	124.4	127.4	147.4	-52.6	-30.9	-26.0	-32.2	-30.4	22.6	48.5	98.4	95.5	117.0
Agriculture	1.8	1.8	2.5	2.2	1.5	-3.8	-2.3	-1.9	-1.8	-4.1	-2.0	-0.5	0.6	0.4	-2.6
Industry	44.6	46.6	70.7	79.1	101.1	-23.9	-13.8	-14.5	-13.8	-14.5	20.7	32.8	56.2	65.3	86.6
Mining and quarrying	0.9	1.6	1.8	0.9	1.5	-0.4	-0.2	-0.2	-0.3	-0.3	0.5	1.4	1.6	0.6	1.2
Manufacturing	26.2	35.5	50.6	48.8	61.6	-21.2	-13.3	-10.3	-12.8	-13.2	5.0	22.2	40.3	36.0	48.4
Electricity, water, and gas	17.5	9.5	18.3	29.4	38.0	-2.3	-0.3	-4.0	-0.7	-1.0	15.2	9.2	14.3	28.7	37.0
Construction	3.1	2.8	4.1	5.7	5.2	-2.4	-1.6	-1.5	-0.8	-0.7	0.7	1.2	2.6	4.9	4.5
Services	78.8	50.6	66.4	63.9	58.8	-48.9	-26.8	-14.5	-44.8	-45.8	29.9	23.8	51.9	19.4	13.0
Services, without financial services	25.7	28.2	47.1	40.4	39.6	-22.5	-13.2	-8.1	-15.8	-11.1	3.2	15.0	39.0	24.9	28.5
Trade and repairs	12.4	15.9	13.6	16.4	16.0	-10.9	-3.5	-3.8	-3.5	-4.5	1.5	12.4	9.8	12.9	11.5
Hotels and restaurants	0.6	0.5	0.5	0.5	0.5	-0.4	-0.2	-0.1	-0.2	-0.2	0.2	0.3	0.4	0.3	0.3
Transport and communications	6.2	5.7	25.3	11.9	13.3	-7.5	-6.6	-1.5	-10.3	-4.3	-1.3	-0.9	23.8	1.9	9.0
Financial services 2/	53.1	22.4	19.3	23.5	19.2	-26.4	-13.6	-6.4	-29.0	-34.7	26.7	8.8	12.9	-5.5	-15.5
Real estate	5.0	4.8	6.0	10.0	7.6	-2.7	-2.2	-1.7	-1.1	-1.5	2.3	2.6	4.3	8.9	6.1
Other services	1.5	1.3	1.7	1.6	2.2	-1.0	-0.7	-1.0	-0.7	-0.6	0.5	0.6	0.7	0.9	1.6

Source: Statistical Office of the Slovak Republic.

1/ Enterprises with 20 or more employees including subsidized public organizations.

2/ Data for financial intermediaries refer to all enterprises (including NBS), irrespective of the number of employees.

Table A10. Slovak Republic: Number of Enterprises, 1999-2003 1/

	1999	2000	2001	2002	2003
Total economy	58,333	60,920	62,867	59,486	64,420
Agriculture	3,419	3,461	3,497	3,429	3,541
Industry	8,876	9,249	9,334	8,986	9,475
Mining and quarrying	99	96	97	101	106
Manufacturing	8,639	9,005	9,057	8,691	9,158
Electricity, water, and gas	138	148	180	194	211
Services	46,038	48,210	50,036	47,071	51,404
Financial services and insurance	546	563	555	592	573
Real estate	10,206	10,943	11,939	12,353	13,946
Trade and repairs	25,392	26,322	27,032	23,457	25,292
Hotels and restaurants	1,462	1,564	1,689	1,757	1,972
Transport and communications	1,864	2,044	2,135	2,208	2,365
Other	6,658	6,774	6,686	6,704	7,256
Private enterprises	57,137	59,786	62,038	58,719	63,689
Public enterprises	1,196	1,134	829	767	731
	(In percent of total)				
Private enterprises	97.9	98.1	98.7	98.7	98.9
Public enterprises	2.1	1.9	1.3	1.3	1.1

Source: Statistical Office of the Slovak Republic.

1/ Profit-oriented organizations, included subsidized ones, for which revenues exceed 50 percent of costs reported; end of year data.

Table A11. Slovak Republic: GDP Deflator, 1999-2003

	1999	2000	2001	2002	2003
	(1995 = 100)				
Domestic demand	127.3	138.1	146.8	151.2	159.8
Consumption	126.3	139.1	147.1	151.2	161.9
Private	127.9	141.8	150.2	154.0	165.9
Public	121.9	132.4	139.3	144.2	152.3
Investment	130.3	135.4	145.8	151.2	153.8
Fixed investment	130.7	136.7	144.1	151.2	155.9
Change in stocks	...	...	...	...	...
Net exports of goods and nonfactor services	...	...	...	...	...
Exports of goods and nonfactor services	111.9	125.7	132.5	133.5	129.0
Imports of goods and nonfactor services	116.0	129.5	140.3	140.0	135.4
Gross domestic product at market prices	124.7	135.2	140.9	146.5	153.3
	(Annual percentage change)				
Domestic demand	8.7	8.5	6.2	3.0	5.7
Consumption	8.0	10.2	5.7	2.8	7.1
Private	8.6	10.8	6.0	2.5	7.7
Public	6.2	8.6	5.2	3.5	5.7
Investment	10.9	3.9	7.7	3.7	1.7
Fixed investment	10.2	4.5	5.5	4.9	3.1
Change in stocks	...	...	...	...	...
Net exports of goods and nonfactor services	...	...	...	...	...
Exports of goods and nonfactor services	5.7	12.3	5.4	0.8	-3.4
Imports of goods and nonfactor services	8.1	11.6	8.4	-0.2	-3.3
Gross domestic product at market prices	6.5	8.5	4.2	4.0	4.7

Source: Statistical Office of the Slovak Republic; and IMF staff estimates.

Table A12. Slovak Republic: Consumer Price Index, 1999-2003

	1999	2000	2001	2002	2003
	December 2000 = 100				
Total	87.8	98.3	105.3	108.8	118.1
Food and non-alcoholic beverages	92.6	97.5	103.3	104.7	108.3
Alcoholic beverages and tobacco	90.0	98.6	102.6	112.8	126.5
Clothing and footwear	95.8	98.8	101.1	104.3	107.0
Housing and utilities	73.8	97.8	111.6	115.7	135.8
Furniture and household equipment	96.8	100.8	99.8	100.4	101.1
Health	90.1	99.2	102.3	107.0	114.9
Transport	86.2	99.6	103.2	101.8	111.3
Recreation	92.0	98.3	101.5	103.3	107.0
Education	90.1	97.2	101.7	104.4	110.6
Hotels and restaurants	90.8	97.9	107.0	111.6	120.3
Other	91.3	99.0	104.9	111.8	125.1
	Inflation rate, percent				
Total	-24.5	12.0	7.1	3.3	8.6
Food and non-alcoholic beverages	-18.4	5.2	5.9	1.4	3.4
Alcoholic beverages and tobacco	-24.3	9.6	3.3	10.0	11.0
Clothing and footwear	-20.1	3.1	2.4	3.1	2.6
Housing and utilities	-36.9	32.5	17.2	3.7	4.7
Furniture and household equipment	-15.4	4.1	-1.0	0.5	0.7
Health	-28.2	10.2	3.1	4.6	7.4
Transport	-22.8	15.6	3.2	-1.3	-1.3
Recreation	-25.8	6.9	4.8	1.7	1.7
Education	-11.4	7.9	4.6	2.6	2.6
Hotels and restaurants	-21.6	7.7	7.7	4.3	4.3
Other	-23.7	8.4	6.9	6.6	6.6

Source: Statistical Office of the Slovak Republic.

Table A13. Slovak Republic: Producer Prices and Energy Prices, 1999-2003

	1999	2000	2001	2002	2003
(1995 = 100)					
Agriculture	109.0	116.9	126.0	125.1	119.1
Plant products	106.0	113.6	126.2	124.7	124.3
Animal products	110.4	118.2	126.0	125.2	117.1
(December 1995 = 100) 1/					
Industry	114.5	125.7	134.0	137.0	149.2
Mining and quarrying	108.2	121.0	131.3	141.0	146.5
Manufacturing	113.8	124.1	129.7	130.7	135.3
Electricity, gas, and water	118.5	134.1	156.3	166.8	196.6
(Average of 1995 = 100)					
Construction					
Works	147.3	160.5	171.4	180.1	189.6
Materials	121.6	128.9	137.7	142.1	147.1
(Annual percentage change)					
Agriculture	-1.8	7.2	7.8	-0.7	-6.0
Industry	3.8	9.8	6.6	2.2	8.9
Construction works	11.0	9.0	6.8	5.1	5.2
(In koruna per unit)					
Petroleum products					
Gasoline, 91 octane (liter)	25.4	33.1	31.4	29.9	31.3
Gasoline, 95 octane (liter)	26.1	33.5	31.7	30.0	31.4
Diesel (liter)	24.4	32.0	30.6	28.1	29.9
Electricity (MWh)					
Households	...	...	...	...	...
Enterprises	...	...	...	...	...
Natural gas (1000 m3)					
Households	...	...	...	...	...
Enterprises	...	...	...	...	...
Central Heating					
Households	200.0 2/	350.0	420.0	450.0	480.0
Enterprises	...	...	...	...	...

Source: Statistical Office of the Slovak Republic.

1/ Data were calculated with excise duties.

2/ The price was raised from Sk 200 to Sk 290 per unit on July 1.

Table A14. Slovak Republic: Fiscal Operations of General Government, 2002-03

(Accrual basis: ESA 95 methodology)

	In millions of koruny		In percent of GDP	
	2002	2003	2002	2003
Total revenue	420,191	436,244	38.2	36.3
Tax revenue	208,816	217,486	19.0	18.1
Personal income tax	37,403	39,835	3.4	3.3
Wage tax	32,161	35,858	2.9	3.0
Self-employment tax	5,242	3,977	0.5	0.3
Corporate profit tax	29,357	33,632	2.7	2.8
Withholding tax on capital income	9,343	9,143	0.9	0.8
VAT	83,375	80,654	7.6	6.7
Excises	34,063	37,589	3.1	3.1
Import duties, property tax and other	15,275	16,633	1.4	1.4
Social contributions	158,101	166,752	14.4	13.9
Grants and transfers	2,579	157	0.2	0.0
Other revenue	50,695 1/	51,849	4.6 1/	4.3
Of which, interest	6,731	8,585	0.6	0.7
Total expenditure	482,865	476,660	44.0	39.7
Of which, primary expenditure	442,047	446,150	40.2	37.1
Current expenditure	421,096	439,570	38.3	36.6
Gross wages	82,772	88,933	7.5	7.4
Wages	61,428	65,957	5.6	5.5
Employer social security contributions	21,344	22,976	1.9	1.9
Goods and services	52,936	64,116	4.8	5.3
Subsidies and transfers	244,570	256,011	22.3	21.3
Agricultural subsidies	8,310	8,753	0.8	0.7
Transport subsidies	3,908	8,779	0.4	0.7
Health insurance companies	53,813	57,041	4.9	4.7
Sickness benefits	8,630	8,696	0.8	0.7
Old-age and disability pensions	84,303	89,025	7.7	7.4
Active labor market policies	3,483	2,808	0.3	0.2
Unemployment benefits	4,613	3,106	0.4	0.3
State benefits and social assistance	33,161	32,306	3.0	2.7
Social security contributions on behalf of certain groups	24,456	26,299	2.2	2.2
Other subsidies and transfers	19,893	19,198	1.8	1.6
Interest	40,818	30,510	3.7	2.5
Capital spending	61,768	37,090	5.6	3.1
Capital assets	34,963	29,507	3.2	2.5
Capital transfers	26,805	7,583	2.4	0.6
Net lending/borrowing (+/-), ESA 95 basis	-62,674	-40,416	-5.7	-3.4
Public debt, ESA 95 basis	475,387	511,770	43.3	42.6

Sources: Ministry of Finance; and IMF staff estimates.

1/ Includes Sk 3 billion from the sale of two mobile phone licenses.

Table A15. Slovak Republic: Fiscal Operations of General Government, 1999-2002 1/

(Cash basis: 1986 GFS methodology)

	In billions of koruny				In percent of GDP			
	1999	2000	2001	2002	1999	2000	2001	2002
Total revenue	318.3	330.7	334.2	365.8	37.7	35.4	33.1	33.3
Tax revenue	259.0	287.8	285.8	320.8	30.7	30.8	28.3	29.2
Personal income tax	46.1	41.3	44.2	46.5	5.5	4.4	4.4	4.2
Wage income	31.6	27.3	30.0	31.9	3.7	2.9	3.0	2.9
Entrepreneurial income	4.6	4.5	4.6	5.2	0.6	0.5	0.5	0.5
Capital income	9.8	9.5	9.5	9.3	1.2	1.0	0.9	0.9
Corporate profit tax	23.0	26.4	21.7	29.8	2.7	2.8	2.2	2.7
Social security contributions	85.7	99.6	105.5	115.1	10.2	10.7	10.4	10.5
VAT	58.9	70.6	73.6	82.2	7.0	7.6	7.3	7.5
Excises	25.2	28.5	28.4	32.0	3.0	3.0	2.8	2.9
Import duties and surcharge	12.5	13.2	3.9	4.0	1.5	1.4	0.4	0.4
Property taxes	4.9	5.2	5.3	5.9	0.6	0.6	0.5	0.5
Road tax	1.8	2.1	2.2	2.3	0.2	0.2	0.2	0.2
Other taxes	0.9	1.0	1.1	3.0	0.1	0.1	0.1	0.3
Nontax revenue	59.0	42.6	48.1	44.6	7.0	4.6	4.8	4.1
Profit transfer from NBS	28.4 2/	4.0	5.0	0.0	3.4 2/	0.4	0.5	0.0
Interest	3.2	4.1	3.9	6.7	0.4	0.4	0.4	0.6
Other entrepreneurial and property income	3.2	4.6	7.2	2.5	0.4	0.5	0.7	0.2
Other nontax revenue	24.1	29.9	32.0	35.4 3/	2.9	3.2	3.2	3.2 3/
Grants	0.3	0.3	0.3	0.4	0.0	0.0	0.0	0.0
Total expenditure	322.6	374.9	389.6	434.3	38.2	40.1	38.6	39.5
Of which, primary expenditure	296.2	348.8	358.0	395.1	35.1	37.3	35.4	36.0
Current expenditure	290.3	323.6	335.3	376.9	34.4	34.6	33.2	34.3
Wages	53.6	56.3	58.9	64.7	6.4	6.0	5.8	5.9
Goods and services	38.5	43.4	51.3	52.6	4.6	4.6	5.1	4.8
Subsidies	18.6	34.2	20.0	17.2	2.2	3.7	2.0	1.6
Transfers	153.2	163.6	173.4	203.2	18.2	17.5	17.2	18.5
Health insurance companies	41.1	44.1	46.9	53.8	4.9	4.7	4.6	4.9
Social Insurance Agency	71.4	77.5	82.3	88.7	8.5	8.3	8.1	8.1
State benefits and social assistance	28.8	30.2	31.1	33.2	3.4	3.2	3.1	3.0
Other	11.9	11.8	13.1	27.5 6/	1.4	1.3	1.3	2.5 6/
Interest	26.4	26.1	31.6 4/	39.3 7/	3.1	2.8	3.1 4/	3.6 7/
Capital spending	32.3	51.4	54.3	57.4	3.8	5.5	5.4	5.2
Capital assets	26.4	29.3	31.7	38.3	3.1	3.1	3.1	3.5
Capital transfers	5.9	22.1	22.7 5/	19.1	0.7	2.4	2.2 5/	1.7
Of which, called guarantees	4.2	15.6	8.0	4.6	0.5	1.7	0.8	0.4
Net lending, excluding privatization receipts	27.2	25.3	11.2	-16.7 8/	3.2	2.7	1.1	-1.5 8/
Of which, lending for bank restructuring	23.5	18.5	8.0	2.3	2.8	2.0	0.8	0.2
Overall balance, excluding privatization receipts	-31.5	-69.6	-66.6	-51.8	-3.7	-7.4	-6.6	-4.7
Memorandum items:								
Privatization receipts	2.3	40.4	36.1	161.0 9/	0.3	4.3	3.6	14.7 9/
Net lending/borrowing (+/-), ESA 95 basis	-59.4	-115.0	-60.6	-62.7	-7.0	-12.3	-6.0	-5.7
General government debt, ESA 95 basis	398.3	465.9	492.2	475.4	47.2	49.9	48.7	43.3

Sources: Ministry of Finance; and Fund staff estimates.

1/ Includes Slovak Consolidation Agency from 2002.

2/ Includes Sk 23.5 billion in extraordinary profit transfer from the National Bank of Slovakia.

3/ Includes Sk 3 billion from the sale of two mobile phone licenses.

4/ Includes Sk 7.5 billion in interest on National Property Fund bonds.

5/ Includes Sk 4.7 billion in debt-reducing expenditures under the 2001-02 Staff-Monitored Program.

6/ Includes Sk 7.4 billion in debt-reducing expenditures under the 2001-02 Staff-Monitored Program.

Table A16. Slovak Republic: Central Government Financial Assets, 1999–2003

(In millions of koruny, end of period)

	1999	2000	2001	2002	2003
Bank accounts	1,508.2	5,108.1	5,406.5	86,749.3	84,620.9
Counterpart deposits on foreign loans	269.1	583.4	2,616.2	3,010.4	435.0
EFSAL from the IBRD	0.0	0.0	2,591.0	0.0	0.0
Borrowing from G-24	88.8	0.0	0.0	0.0	0.0
"Civil"	72.2	552.2	24.4	2,834.7	435.0
"Special"	108.1	31.2	0.9	175.7	0.0
Other bank accounts	1,239.1	4,524.7	2,790.3	83,738.9	84,185.9
Claims on foreign countries, excluding CSOB	56,143.2	62,513.4	60,003.6	38,078.0	34,616.5
Civil: nonconvertible	15,945.6	17,667.0	17,488.7	3,259.1	2,198.7
Civil: convertible	7,313.4	8,042.4	10,002.9	7,622.6	9,725.3
Special: nonconvertible	103.3	105.9	108.5	111.1	113.7
Special: convertible	27,529.9	31,353.6	32,403.5	27,085.2	22,478.8
Claims on foreign countries: CSOB	52,082.8	43,458.4	43,841.6	16,066.5	3,839.2
Nonconvertible	36,837.5	41,964.3	43,170.2	15,319.8	3,097.0
Convertible	173.4	317.9	671.4	746.7	742.2
Participations in international banks	2,966.5	3,423.8	3,641.1	3,482.7	3,040.7
IBEC	365.1	378.3	367.7	358.7	353.9
IIB	441.6	457.6	444.7	433.9	428.1
EBRD	741.6	866.3	929.3	848.4	788.2
World Bank institutions	1,409.3	1,635.8	1,872.7	1,806.9	1,436.2
Development Bank of the Board of Europe	0.0	0.0	26.7	34.8	34.3
Deposits with domestic companies	24,423.8	20,762.0	113,741.5	97,990.8	16,729.2
Receivables from returnable assistance	5,788.9	6,499.1	6,957.7	5,544.6	...
Receivables from state guarantees	17,520.1	30,155.4	36,701.5	37,915.0	33,198.8
Issued treasury bills, treasury bonds (repurchased)	7,338.7	4,321.2	4,778.8	5,224.5	0.0
Securities held by the state	0.0	0.7	0.7	0.7	0.6
Receivables: Mochovce	2,239.6	1,212.4	0.0	0.0	0.0
Receivables towards enterprises from deblocations	2,840.6	2,717.7	4,289.0	1,579.0	329.0
Other receivables	9,795.4	19,246.8	19,088.3	13,016.8	4,100.0
Total assets	182,647.8	199,419.0	298,450.3	305,647.9	180,474.9
(as a percentage of GDP)	21.6	21.3	29.6	27.8	15.0

Source: Ministry of Finance.

Table A17. Slovak Republic: Central Government Financial Liabilities, 1999–2003
(In millions of koruny, end of period)

	1999	2000	2001	2002	2003
Credit from commercial banks	1,084.2	722.8	361.4	0.0	0.0
Investment Bank/KTUK Dolinska	1,084.2	722.8	361.4	0.0	0.0
Liabilities towards enterprises resulting from participation on state-provided credits	...	...	503.4	284.0	174.0
Balance of payments support loans	12,180.0	11,553.3	12,387.4	9,650.7	10,471.7
SAL/IBRD	4,437.9	4,265.0	3,635.0	2,402.2	1,481.4
ERL/IBRD	3,240.3	3,317.0	3,118.7	2,351.8	1,728.3
JEXIM BANK	4,501.8	3,971.3	3,068.1	2,355.5	1,768.9
EFSAL/IBRD	...	...	2,565.6	2,503.3	5,350.9
Liabilities related to CSOB	5,714.3	5,637.0	185.0	182.4	166.9
Convertible currencies	35.1	30.0	0.0	0.0	0.0
Nonconvertible currencies	5,679.2	5,607.6	185.0	182.4	166.9
Treasury bills outside NBS	16,127.0	18,429.0	39,375.0	39,508.0	53,027.2
Issued state bonds	151,341.6	181,677.8	310,997.2	334,950.5	375,694.5
Rehabilitation bonds	16.5	11.4	23.9	32.8	23.3
Bills of exchange; IBRD participation	230.0	230.2	230.2	230.2	0.0
Bonds to finance 1993 deficit	6,040.0	0.0	0.0	0.0	0.0
Bonds to finance 1994 deficit	6,640.0	0.0	0.0	0.0	0.0
Bonds to finance 1998 principal repayments	15,360.0	0.0	0.0	0.0	0.0
Bonds to finance 1999 principal repayments	61,229.0	25,049.0	8,770.0	0.0	0.0
Bonds to finance 2000 principal repayments	...	69,470.0	53,920.0	44,660.0	27,818.1
Bonds to finance 2001 principal repayments	...	...	168,890.0	128,530.0	117,843.3
Bonds to finance 2002 principal repayments	...	...	...	60,915.0	34,816.8
Bonds to finance 2003 principal repayments	...	...	...	...	100,425.8
Bonds for roads	...	...	...	25,517.6	20,914.6
State bonds abroad	61,826.1	86,917.2	79,163.1	75,064.9	73,852.6
Other foreign loans	5,792.3	4,581.2	2,018.1	1,632.3	1,669.2
Mochovce	2,239.6	1,212.4	0.0	0.0	0.0
Matra Communication	2,861.4	2,618.0	2,018.1	1,632.3	1,278.2
Other	691.3	750.8	0.0	0.0	391.0
Other liabilities	85.0	1,644.6	1,207.3	1,943.5	0.0
Total liabilities	192,324.5	224,246.3	367,034.8	388,151.4	441,203.5
(In percent of GDP)	22.8	24.0	36.3	35.3	36.7
<i>Of which :</i>					
Domestic	105,497.3	114,604.0	272,186.2	275,589.4	335,406.5
Foreign	86,827.2	109,642.3	94,848.6	112,562.0	105,797.0
Memorandum items:					
Debt with up to 1 year maturity	50,987.2	33,979.0	70,635.0	67,386.0	68,585.0
Debt with more than 1 year maturity	141,337.3	190,267.3	296,399.8	320,765.4	372,618.5
Stock of central government guarantees	142,236.0	147,955.8	154,566.3	137,830.0	122,232.0
Net assets	-9,676.7	-24,827.3	-69,087.8	-82,787.5	-260,554.6
(In percent of GDP)	-1.1	-2.7	-6.8	-7.5	-21.7

Source: Ministry of Finance.

Table A18. Slovak Republic: Fiscal Operations of the State Budget, 1999-2004

(In millions of koruny, cash basis)

	1999	2000	2001	2002	2003	2004 Prelim.
Total revenue	215,613	207,949	203,519	211,344	229,655	240,418
Tax revenue	160,436	173,826	165,129	188,844	200,150	209,481
Personal income tax	30,389	25,399	27,735	29,827	31,892	25,253
Corporate profit tax	22,019	25,124	20,268	27,908	29,060	29,621
Withholding tax on capital income	9,844	9,455	9,535	9,338	9,143	5,675
VAT	58,944	70,577	73,567	82,241	83,795	99,572
Excises	25,164	28,452	28,402	32,001	38,047	43,405
Import duties and surcharge	12,534	13,181	3,923	3,996	4,064	1,889
Property taxes and other	1,542	1,638	1,699	3,533	4,149	4,066
Nontax revenue	43,658 2/	21,816	25,972	20,841 3/	17,312	21,115
Of which, interest	580	2,037	1,711	1,992	1,781	2,166
Grants and transfers	11,519	12,307	12,418	1,658	12,192	9,822
Of which, intragovernmental 1/	11,272	12,106	12,246	...	...	...
Total expenditure	204,386	228,147	238,795	265,838	276,603	311,398
Of which, primary	181,971	205,561	218,295	230,335	246,309	284,836
Current expenditure	183,350	202,736	211,618	235,661	247,490	26,562
Gross wages	51,459	54,440	57,388	50,662 4/	40,561	...
Goods and services	26,833	31,453	35,702	33,706 4/	34,525	...
Subsidies	15,348	25,467	15,612	11,964	17,128	...
Transfers	67,295	68,790	82,416	103,825 4/	124,984	...
Intragovernmental	21,563	22,116	28,004	32,372 4/	68,596	...
State benefits and social assistance	28,795	30,240	31,134	33,161	32,345	...
Interest	22,415	22,586	20,500	35,503	30,293	26,562
Of which, bank restructuring	...	...	...	12,289	...	...
Capital expenditure	21,036	25,411	27,177	30,177	29,112	...
Of which, intragovernmental transfers	3,670	4,265	4,508	7,680	7,706	...
Unallocated	...	...	...	3,783	4,568	...
Financial balance	11,227	-20,198	-35,276	-58,277	-51,516	-70,980
Net lending	29,466	7,450	7,037	-6,635 5/	4,457	-692
of which: lending for bank restructuring	23,500	8,488	8,048	2,276	...	...
Net lending, excluding bank restructuring	5,966	-1,038	-1,011	-8,911	...	...
Overall balance, excluding bank restructuring	...	-19,160	-34,265	-37,077	...	...
Overall balance	-18,239	-27,648	-42,313	-51,642	-55,973	-70,288
In percent of GDP	-2.2	-3.0	-4.2	-5.1	-4.7	-5.3

Sources: Ministry of Finance; and staff estimates and projections.

1/ Largely from the Road Fund, until end-2001. Nine state funds were abolished at end-2001, including the Road Fund.

2/ Includes Sk 23.5 billion in extraordinary profit transfer from the National Bank of Slovakia.

3/ Includes Sk 3 billion from the sale of two mobile phone licenses (Sk 1.5 billion each).

4/ Not comparable with 2001 because of decentralization. Transfers include Sk 20 billion in decentralization subsidy for devolved expenditures on wages and goods and services.

5/ Includes Sk 6.1 billion from transfer of extraordinary repayment of Russian debt. Total of Sk 13.5 billion received in State Financial Assets (Sk 7.4 billion not transferred).

Table A19. Slovak Republic: Fiscal Operations of the Social Security Funds, 1999-2003 1/

	In millions of koruny					In percent of GDP				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Health Fund										
Revenue	40,985	45,284	48,785	57,083	58,574	4.9	4.8	4.8	5.2	4.9
Contributions	40,610	43,479	48,270	56,677	57,930	4.8	4.7	4.8	5.2	4.8
Other	375	1,805	515	406	643	0.0	0.2	0.1	0.0	0.1
Expenditure	42,896	45,822	48,438	55,582	60,953	5.1	4.9	4.8	5.1	5.1
Balance	-1,911	-538	347	1,501	-2,380	-0.2	-0.1	0.0	0.1	-0.2
Sickness Fund										
Revenue	10,640	15,184	14,710	15,090	15,959	1.3	1.6	1.5	1.4	1.3
Contributions	10,001	10,362	11,970	12,845	13,691	1.2	1.1	1.2	1.2	1.1
Other	638	4,822	2,740	2,245	2,268	0.1	0.5	0.3	0.2	0.2
Expenditure	10,567	10,148	10,060	10,218	10,940	1.3	1.1	1.0	0.9	0.9
Balance	73	5,036	4,649	4,872	5,018	0.0	0.5	0.5	0.4	0.4
Pension Fund										
Revenue	57,184	63,066	70,031	76,831	82,487	6.8	6.8	6.9	7.0	6.9
Contributions	56,546	58,244	67,291	74,586	80,219	6.7	6.2	6.7	6.8	6.7
Other	638	4,822	2,740	2,245	2,268	0.1	0.5	0.3	0.2	0.2
Expenditure	62,940	69,317	74,560	81,149	87,151	7.5	7.4	7.4	7.4	7.3
Balance	-5,757	-6,252	-4,529	-4,318	-4,663	-0.7	-0.7	-0.4	-0.4	-0.4
Employment Fund										
Revenue	8,593	10,661	11,970	11,992	11,595	1.0	1.1	1.2	1.1	1.0
Contributions	7,937	8,660	9,393	10,416	10,586	0.9	0.9	0.9	1.0	0.9
Other	656	2,001	2,577	1,576	1,009	0.1	0.2	0.3	0.1	0.1
Expenditure	8,853	9,060	8,555	10,518	9,920	1.0	1.0	0.8	1.0	0.8
of which: contributions 2/	1,953	1,770	1,339	1,457	1,371	0.2	0.2	0.1	0.1	0.1
Balance	-260	1,601	3,415	1,474	1,675	0.0	0.2	0.3	0.1	0.1
Total										
Revenue	115,448	132,425	144,156	159,540	167,244	13.7	14.2	14.3	14.6	13.9
Contributions	113,141	118,975	135,584	153,067	161,055	13.4	12.7	13.4	14.0	13.4
Other	2,307	13,450	8,572	6,472	6,189	0.3	1.4	0.8	0.6	0.5
Expenditures	123,303	132,577	140,274	156,010	167,593	14.6	14.2	13.9	14.2	14.0
Balance	-7,855	-152	3,882	3,530	-349	-0.9	0.0	0.4	0.3	0.0

Source: Data provided by the Public Expenditure Department at the Slovak Ministry of Finance; and staff estimates and projections.

1/ The social security funds include health insurance companies, sickness fund of the Social Insurance Agency, pension fund of the Social Insurance Agency, and the National Labor Office. The National Labor Office was closed at end-2003 and its responsibilities split between the state budget and the Social Insurance Agency.

2/ Contributions made by the National Labor Office to the health, sickness and pension funds on behalf of unemployed persons.

Table A20. Slovak Republic: Monetary Survey, 1999-2004

	1999	2000				2001				2002				2003				2004
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Net foreign assets	46.5	93.2	92.0	98.7	103	233.8	228.5	231.8	209.6	193.2	189.5							
Net domestic assets	480.2	514.7	587.9	565.3	574.7	448.9	474.4	476.7	489.1	527.7	553.1							
Domestic credit	575.5	610.2	691.6	687.5	706.9	580.7	603.4	613.5	628.3	653.2	694.0							
Net credit to government	165.2	199.8	345.4	368.2	374.7	259.1	265.6	275.9	281	290.9	309.6							
Net credit to Property Fund	1.2	0.1	10.4	6.2	9.8	-8.4	-3.1	-11.1	-7.1	-6.1	-3.1							
Credit to enterprises and households	409.1	410.3	335.8	313.1	322.4	330	340.9	348.7	354.4	368.4	387.5							
In domestic currency	356.9	359.8	282.3	258.4	267.9	276.9	286.6	291.5	295.4	303.6	318.9							
In foreign currency	52.2	50.5	53.5	54.7	54.5	53.1	54.3	57.2	59	64.8	68.6							
Other items, net	-95.3	-95.5	-103.7	-122.2	-132.2	-131.8	-129	-136.8	-139.2	-125.5	-140.9							
Broad Money	526.7	607.9	679.9	664.0	677.7	682.7	702.9	708.5	698.7	720.9	742.6							
Koruna M2	450.6	513.6	574.8	563.0	565	570.9	596.2	609.3	606.5	625.4	650.5							
Foreign currency deposits	76.1	94.3	105.1	101	112.7	111.8	106.7	99.2	92.2	95.5	92.1							
Memorandum items:																		
Broad money	11.4	15.4	11.8	8.3	9.2	6.5	3.4	6.7	3.1	5.6	5.6							
Koruna M2	11.5	14.0	11.9	8.6	7.9	5.8	3.7	8.2	7.3	9.5	9.1							
Net foreign assets	6.9	100.4	-1.3	24.9	16.0	202.1	148.4	134.9	103.5	-17.4	-17.1							
Net domestic assets	11.9	7.2	14.2	5.8	8.0	-20.4	-19.3	-15.7	-14.9	17.6	16.6							
Domestic credit	8.6	6.0	13.3	8.9	11.6	-12.9	-12.8	-10.8	-11.1	12.5	15.0							
Credit to enterprises and households	4.5	0.3	-18.2	-1.7	0.3	-0.3	1.5	11.4	9.9	11.6	13.7							
Credit to enterprises and households (adjusted for bank restructuring) 1/	...	4.5	5.3	6.9	7.0	7.7	8.1	7.8	9.9	11.6	13.7							

Sources: National Bank of Slovakia; and IMF staff estimates.

1/ Adjusted for commercial bank bankruptcies and restructuring costs of selected banks in 2001-02.

Table A21. Slovak Republic: Monetary Base, 1999–2004
(In billions of koruny; end of period)

	1999			2000			2001			2002			2003			2004		
	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	
Net foreign assets	118.4	177.8	190.1	201.5	194.7	320.6	350.8	360.8	363.5	358.2	364.4	369.6	391.7	425.3				
Foreign assets	144.6	193.2	203.0	225.8	214.9	339.8	368.2	376.9	372.5	370.4	399.9	402.8	406.0	429.5				
Foreign liabilities	26.2	15.4	12.9	24.3	20.2	19.2	17.4	16.1	9.0	12.2	35.5	33.2	14.3	4.2				
Net credit to government	-18.7	-12.1	-13.3	-11.1	-18.2	-23.9	-31.7	-13.0	-27.9	-22.9	-28.0	-31.6	-23.4	-2.7				
Credit to banks and open market operations	-4.9	-55.7	-68.0	-73.1	-53.0	-120.5	-143.9	-178.9	-165.3	-171.1	-176.0	-196.3	-215.6	-265.0				
<i>Of which:</i>																		
Government securities	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Other items net	22.3	3.6	4.9	-1.9	-7.2	-61.5	-59.6	-55.1	-55.1	-49.6	-46.1	-32.0	-45.4	-40.2				
<i>Of which:</i> Earmarked government account																		
for financing pension reform	...	...	...	...	...	-62.6	-63.7	-64.8	-65.9	-66.7	-66.7	-68.3	-69.1	-69.6			
Reserve money	117.1	113.6	113.7	115.4	116.4	114.6	115.6	113.8	115.1	114.5	114.4	109.7	107.3	117.4				
Currency in circulation	67.8	76.3	91.5	88.8	88.4	89.6	94.2	95.8	96.0	98.3	102.9	99.7	102.4	105.6				
Reserves	49.3	37.3	22.2	26.6	28.0	25.0	21.4	18.0	19.1	16.2	11.5	10.0	4.9	11.8				
Required	38.5	38.7	32.3	26.8	26.6	28.2	27.7	21.4	21.2	22.1	21.9	16.0	16.2	16.8				
Excess	10.8	-1.4	-10.1	-0.2	1.4	-3.2	-6.4	-3.4	-2.0	-5.9	-10.5	-6.0	-11.3	-5.0				
Memorandum item:																		
Official reserves in U.S.\$ million	3425	4077	4189	4763	4781	7908	9195	9758	10488	10272	12149	12214	12362	13218				

Source: National Bank of Slovakia.

Table A22. Slovak Republic: Selected Interest Rates, 1999–04
(Period average, in percent per annum)

	1999	2000	2001			2002			2003					
			Mar.	Jun.	Dec.	Mar.	Jun.	Dec.	Mar.	Jun.	Dec.			
Deposits														
Total	10.4	6.9	5.1	4.8	4.9	4.8	3.5	3.3	3.2	3.2	3.2	3.2	3.2	3.0
Sight deposits	3.8	3.4	2.5	2.3	2.3	2.1	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5
Term deposits	12.7	8.1	6.1	5.8	5.9	5.9	4.4	4.6	4.5	4.5	4.5	4.5	4.5	4.3
Seven days	13.9	7.0	6.2	5.6	6.9	6.1	4.0	4.4	4.4	4.4	4.4	4.4	4.4	4.2
One month	14.7	6.7	5.8	5.9	6.0	6.2	4.5	4.7	4.7	4.7	4.7	4.7	4.8	4.6
One year	12.4	9.3	6.5	6.1	6.0	6.0	4.1	5.2	4.8	4.8	4.8	4.8	4.2	3.8
New credits														
Total	16.3	11.8	10.0	9.0	9.6	9.5	7.8	7.6	7.6	7.6	7.6	7.6	7.5	7.2
Short term	17.5	11.8	9.2	9.0	9.6	9.4	7.5	7.5	7.5	7.5	7.5	7.5	7.4	7.2
Medium term	13.4	11.0	10.2	9.9	9.5	9.9	9.5	9.0	9.2	9.2	9.2	9.2	8.9	8.6
Long term	13.1	10.0	9.5	8.5	9.3	9.3	8.4	7.2	6.9	6.9	6.9	6.9	7.1	7.0

Source: National Bank of Slovakia.

Table A23. Slovak Republic: Balance of Payments, 1999–2003
(In millions of U.S. dollars)

	1999	2000	2001	2002	2003
Trade balance	-988	-904	-2,135	-2,131	-641
Exports, f.o.b.	10,277	11,872	12,631	14,365	21,838
Imports, f.o.b.	-11,265	-12,777	-14,766	-16,497	-22,479
Services balance	218	439	480	456	237
Receipts	2,063	2,247	2,490	2,786	3,286
Payments	-1,845	-1,807	-2,010	-2,330	-3,050
Income balance	-301	-353	-313	-456	-120
Current transfers	196	118	212	193	245
Current account	-979	-701	-1,756	-1,939	-280
Capital transfers	160	92	78	107	101
Foreign investment, net	1,379	2,915	920	4,517	-25
Direct investment	756	2,096	1,137	3,963	580
Portfolio investment	623	819	-217	554	-605
Medium and long-term credits	301	-588	-114	27	-347
Credits extended, net	16	-159	-14	274	193
Credits received, net	285	-429	-100	-247	-540
Disbursements	1,511	1,254	1,482	1,082	2,182
Repayments	-1,226	-1,683	-1,582	-1,329	-2,722
Short-term capital, net	84	-908	835	524	2,009
Capital account	1,924	1,511	1,719	5,175	1,738
Errors and omissions	-390	-31	180	409	35
Overall balance	555	779	143	3,645	1,493
Financing	-555	-779	-143	-3,645	-1,493
Gross reserves (increase, -)	-502	-652	-143	-3,645	-2,954
Use of Fund credit, net	-53	-127	0	0	0

Sources: National Bank of Slovakia; and IMF staff estimates.

Table A24. Slovak Republic: Shares of Partners in Exports, 1999–2003

(In percent of total)

	1999	2000	2001	2002	2003
Exports f.o.b.	100	100	100	100	100
Developed countries	63.0	62.8	63.2	64.8	68.1
Of which:					
European Union 1/	59.4	59.0	59.9	60.6	60.7
Austria	8.0	8.4	8.1	7.7	7.4
France	4.8	4.6	3.9	4.2	3.5
Germany	27.7	26.8	27.1	26.0	30.9
Italy	8.8	9.2	8.8	10.7	7.5
United Kingdom	1.8	1.9	2.4	2.3	2.2
EFTA 2/	1.9	2.1	1.8	1.6	1.4
Other developed countries 3/	1.7	1.6	1.5	2.6	6.0
Of which:					
Japan	0.1	0.1	0.1	1.0	0.4
United States	1.4	1.4	1.3	1.4	5.3
Developing countries	4.6	4.7	4.5	4.1	4.4
Of which:					
China	0.1	0.1	0.1	0.3	0.6
India	0.3	0.4	0.3	0.2	0.1
Economies in transition 4/	32.1	32.4	32.2	31.0	27.5
CEFTA countries 5/	29.8	30.2	30.0	28.9	25.3
Of which:					
Czech Republic	18.1	17.4	16.6	15.2	12.9
Hungary	4.5	4.9	5.4	5.5	4.9
Poland	5.4	5.9	5.8	5.3	4.8
BRO countries 6/	2.3	2.1	2.2	2.1	2.2
Of which:					
Russia	1.0	0.9	1.0	1.0	1.2
Ukraine	1.3	1.2	1.2	1.1	1.0
Others and nonspecified	0.3	0.1	0.1	0.1	0.1

Sources: Data provided by the Slovak authorities; and IMF staff estimates.

1/ EU-15 for all years.

2/ The European Free Trade Association (EFTA) consists of Iceland, Liechtenstein, Norway, and Switzerland.

3/ OECD members as of end-1993 (i.e., excludes CEFTA members).

4/ All formerly centrally planned economies.

5/ The Central European Free Trade Association (CEFTA) includes the Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, and Slovenia. However, trade with Romania is not included here.

6/ Former Soviet Union countries.

Table A25. Slovak Republic: Shares of Partners in Imports, 1999–2003
(In percent of total)

	1999	2000	2001	2002	2003
Imports, f.o.b.	100	100	100	100	100
Developed countries	57.6	54.2	54.9	55.9	56.5
European Union 1/	51.7	48.9	49.8	50.3	51.2
Austria	4.8	3.9	4.1	4.2	4.4
France	3.9	3.3	3.9	4.4	4.2
Germany	26.1	25.1	24.7	22.6	25.4
Italy	7.1	6.2	6.4	6.9	6.2
United Kingdom	2.2	2.4	2.5	2.5	2.5
EFTA 2/	1.5	1.4	1.5	1.5	1.3
Other developed countries 3/	4.4	3.9	3.7	4.1	4.0
<i>Of which :</i>					
Japan	1.6	1.7	1.6	1.9	1.9
United States	2.6	2.1	1.9	2.1	1.9
Developing countries	5.7	5.7	6.4	7.2	8.2
<i>Of which :</i>					
China	1.3	1.4	1.6	2.1	2.5
India	0.2	0.2	0.2	0.2	0.2
Economies in transition 4/	36.6	40.0	38.6	36.8	35.2
CEFTA countries 5/	23.4	21.5	22.6	23.2	23.5
<i>Of which :</i>					
Czech Republic	16.7	14.7	15.1	15.2	14.3
Hungary	2.3	2.1	2.6	2.7	3.4
Poland	2.8	3.1	3.2	3.2	3.5
BRO countries 6/	13.2	18.5	16.1	13.7	11.7
<i>Of which :</i>					
Russia	12.0	17.0	14.8	12.5	10.7
Ukraine	1.3	1.5	1.3	1.1	1.0
Others and nonspecified	0.1	0.1	0.1	0.1	0.1

Sources: Data provided by the Slovak authorities; and IMF staff estimates.

1/ EU-15 for all years.

2/ The European Free Trade Association (EFTA) consists of Iceland, Liechtenstein, Norway, and Switzerland.

3/ OECD members as of end-1993 (i.e., excludes CEFTA members).

4/ All formerly centrally planned economies.

5/ The Central European Free Trade Association (CEFTA) includes the Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, and Slovenia. However, trade with Romania is not included here.

6/ Former Soviet Union countries.

Table A26. Slovak Republic: Commodity Composition of Trade,
S.I.T.C. Classification, 1999–2003 1/

(In percent of total)

S.I.T.C. Category	Description	1999	2000	2001	2002	2003
Exports, f.o.b.						
0	Food and live animals	3.0	2.5	2.7	2.8	2.5
1	Beverages and tobacco	0.5	0.4	0.4	0.4	0.4
2	Crude materials	3.8	3.2	3.3	3.0	2.5
3	Fuels and related products	4.7	7.0	6.6	6.0	5.2
4	Animal and vegetable oils, and fats	0.1	0.1	0.1	0.1	0.1
5	Chemicals and related products	7.9	7.9	7.3	6.9	5.2
6	Intermediate manufactured products	27.5	26.8	27.4	26.7	23.6
7	Machinery and transport equipment	39.4	39.5	38.5	39.6	47.6
8	Miscellaneous manufactured articles	12.9	12.4	13.5	14.3	13.0
9	Other	0.1	0.0	0.1	0.0	0.0
Imports, f.o.b.						
0	Food and live animals	5.2	4.5	4.6	4.3	3.7
1	Beverages and tobacco	1.1	0.8	0.8	0.8	0.7
2	Crude materials	3.8	3.9	3.7	3.6	3.3
3	Fuels and related products	12.9	17.5	15.2	13.4	12.1
4	Animal and vegetable oils, and fats	0.2	0.2	0.3	0.2	0.2
5	Chemicals and related products	11.3	11.0	10.3	10.7	9.8
6	Intermediate manufactured products	18.3	17.6	18.5	19.1	19.0
7	Machinery and transport equipment	37.8	35.7	37.6	38.2	41.2
8	Miscellaneous manufactured articles	9.5	8.7	9.0	9.7	10.2
9	Other	0.0	0.0	0.0	0.0	0.0

Source: Data provided by the Slovak authorities.

1/ Data are on customs basis and exclude "private" imports.

Table A27. Slovak Republic: External Debt in Convertible Currencies, 1999–2003

(In millions of U.S. dollars; end of period)

	1999	2000	2001	2002	2003
Debt in convertible currencies	10,498	10,804	11,043	13,107	18,090
Medium and long term	7,792	8,389	7,969	8,871	10,308
By debtors:					
National Bank	588	324	266	435	180
Commercial banks	345	317	95	165	324
Government	2,205	3,060	3,185	3,306	4,167
Enterprises	4,653	4,689	4,423	4,966	5,637
Short term	2,706	2,415	3,073	4,237	7,782
National Bank	0	0	0	0	901
Government	6	0	4	0	14
Other	2,700	2,415	3,069	4,237	6,867
Commercial banks	335	367	780	1,290	2,739
Enterprises and others	2,365	2,048	2,289	2,947	4,128

Sources: Data provided by the Slovak authorities; and IMF staff estimates.