The public sector balance is estimated to have improved by roughly 22 b.kr. year-on-year in 2004, equivalent to just under 3% of GDP. The improvement is entirely the result of a turnaround in the Treasury outcome, since the local government balance appears to have worsened. To some extent the Treasury's improvement can be attributed to tighter expenditure control after a sharp expansion in 2003. However, part of the improvement was caused by faster growth in output and demand than had been assumed when the budget for 2004 was passed. The budget estimated GDP growth at 3.5%, but the national accounts now show a figure of 5.2%. It is interesting to examine the extent to which the improved Treasury outcome can be traced to higher levels of GDP growth and national expenditure.

Assessments of the cyclical impact on central government finances assume broadly smooth or inelastic growth in the production capacity of the economy, with real growth fluctuating in either direction around it. Production is therefore either more or less than production capacity. The difference between the two is known as the output gap (for an assessment of production capacity and the output gap, see Appendix 2). The cyclical impact on central government finances may be defined as the change in the balance of the Treasury or public sector as a whole which, other things being equal, may be attributed to changes in the output gap.

In the Central Bank's estimations of the cyclical impact on public sector finances, the working hypothesis has been that each 1% increase in the output gap increases public sector revenues by just over 2%.¹ The following analysis of the components of this rule examines two revenue items: personal income tax paid by individuals to central and local government, and consumption taxes, i.e. valueadded tax, import duties, commodity charges and the like.

Simulations indicate that when average wages rise by 1%, the total yield from municipal income tax will increase, other things being equal, by 1% and income tax paid to the Treasury by 2%.¹ A 1% increase in employment, on the other hand, increases municipal and central government income tax equally if wage distribution remains unchanged, by 1% like the tax base. The budget assumed a 5% rise in wages, 2% increase in employment and 31/2% growth in GDP. The tax-free personal allowance was raised by 21/2%. On the basis of these parameters, total income tax revenues could be expected to increase by 81/2% year-on-year and the central government's share by around 10%. The budget premisses seem to have been realised. Provisional figures indicate that the Treasury's personal income tax revenues increased by 12%, somewhat in excess of the calculated estimates. In cash terms the difference is more than 1 b.kr. However, household income would only have needed to grow by a further 11/2% on top of current forecasts in order to account for this discrepancy. It should also be borne in mind that few data on wage developments in 2004 are available yet.

Consumption taxes are statistically easier than the income tax, since they are flat-rate without increments or tax-free thresholds of any kind. The taxes under consideration here yielded 105 b.kr. in 2003, or 13.3% of GDP, and according to the budget estimates they should have yielded 5½% more in 2004 than the previous year. According to provisional cash basis figures, the year-on-year increase

Box 2

Budgetary effect of the boom

^{1.} In the chapter on public sector finances in *Monetary Bulletin* 2004/4, a factor of 1.1% was wrongly cited. That figure applies to revenues as a proportion of GDP, and naturally increases by less than revenues when GDP grows as well.



Deviation

Election year

Sources: National Economic Institue (abolished), Statistics Iceland and Central Bank of Iceland.





Deviation

was 13½%. Empirical evidence suggests that for every additional 1% that GDP rises, the proportion of consumption taxes to GDP rises by 0.13% on average. Part of the reported increase is explained by the tendency for consumption to grow faster than GDP during upswings. However, an analogous increase is seen if private consumption is used as a reference instead of GDP. The only explanation for such peaks is a change in consumption patterns, for example with more spending on motor vehicles, household appliances and other high-tariff goods, which apparently was the case during the upswings in 1987, 1998-2000 and last year.

According to budget assumptions for 2004, the output gap would narrow by half a percentage point year-on-year and nominal GDP would rise by $5\frac{1}{2}$ %. According to the present Central Bank macroeconomic forecast, the gap shrank by $2\frac{1}{2}$ percentage points and nominal GDP rose by 12%. Accordingly, consumption tax yields should have risen by around $14\frac{1}{2}$ %, raising an additional 10 billion krónur for the Treasury. The preliminary figure of $13\frac{1}{2}$ % comes surprisingly close, given the nature of the calculations.

Under the Central Bank working hypothesis mentioned at the outset, expenditures are assumed to follow GDP, i.e. public sector expenditures as a share of GDP are assumed to remain unchanged by the economic cycle. Although there are weak indications that public sector expenditures fall proportionally at the start of an upswing, this decrease appears to be reversed in the second year. As an exception to this assumption, account is taken of higher expenditures on unemployment benefits during downturns. The correlation between unemployment and the economic cycle is very clear, even though it has changed over time and the equilibrium rate of unemployment is now higher than before. Under the working hypothesis, a 1 percentagepoint downturn in the output gap is assumed to raise unemployment by 0.2% of the labour force. It has been estimated that this would cause unemployment benefits as a proportion of GDP to rise by 0.03%, but recent developments suggest that 0.04% might be a more accurate figure. On the basis of the Central Bank output gap forecast, unemployment should have been expected to decline with a corresponding reduction in expenditure on unemployment benefits amounting to roughly 1 b.kr. between the years. Instead, payments into the Unemployment Insurance Fund increased by around ½ b.kr. between years according to provisional data. In fact, this is consistent with other labour market data and recent international experience of a jobless recovery. In Iceland, an exceptionally high level of imported labour recently also makes the current upswing unusual.

The budget was passed with the ambitious target of improving the Treasury balance by 20 b.kr. – which was achieved. Higher output and demand than assumed in the budget must be expected to have generated an extra 10 b.kr. in Treasury revenues from indirect taxes, in addition to the fact that revenues from capital income tax and corporate income tax exceeded the budget estimates by 5-6 b.kr. Thus the budget targets were attained with the help of a large cyclical boost, leaving a smaller fiscal impulse than had been aimed for to counter overheating.

Sources: National Economic Institue (abolished), Statistics Iceland and Central Bank of Iceland.