FRITZ BREUSS
ANDREA WEBER

MACROECONOMIC EFFECTS OF THE YEAR-2000 TAX REFORM

The year-2000 tax reform – together with the "family package" – will relieve the tax burden on private households and enterprises by ATS 32.5 billion by 2003. As regards the measures intended to make Austria more attractive as a business location, it will probably take a while before the propensity to invest actually increases. According to simulations based on the WIFO macro-model, the following cumulative effects (as compared to baseline) are to be expected by the year 2005: private consumption will increase by 1.8 percent in real terms, the volume of investments will grow by 0.6 percent. Considering the fact that higher domestic demand also results in higher imports, demand-driven growth of real GDP will amount to 0.4 percent. As a result, the labour market will be able to absorb another 9,300 employees. Price increases will be insignificant at 0.2 percent. The current-account and public deficits (net lending) will increase by 0.5 and 0.7 percent of GDP, respectively.

Using its macro-model, WIFO performed an estimate of the macroeconomic effects of the year-2000 tax reform – as it did already on the occasions of the 1989 and 1994 reforms. This model replicates the interdependencies between consumption, investments, wages, prices, the labour market, and external economic relations as well as the resulting self-financing degree (return of taxes due to induced incomes) and, thus, lends itself to an analysis of the dynamic medium-term effects of the tax reform.

Whereas earlier tax reforms took place at a time when Austria was not yet a member of the European Union, the year-2000 tax reform is subject to the constraints imposed by the Stability and Growth Pact. The loss of tax revenue resulting from the tax reform must not jeopardise compliance with the upper limits on the deficit ratio and the public debt ratio laid down in the Austrian Stability Programme and approved by Ecofin for the period until 2002.

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THE WIFO MACRO-MODEL

The WIFO macro-model provides the basis for WIFO's current cyclical and medium-term forecasts and can also be used for simulations of a wide variety of changes in the economic-policy framework (EU accession, opening-up of eastern Europe, EU Eastern enlargement, liberalisation of world trade through the Uruguay Round, tax reforms). Depending on the issue to be analysed, the model is adjusted accordingly. Although basically a Keynesian demand model, supply-side effects can also be considered in the equations. The model consists of behavioural equations for the demand components (consumption, investment, exports, imports), for wages and prices, and for employment. The public sector (accrual principle) is represented by a number of equations for the revenues derived from taxes and fiscal charges; some items of public expenditure are exogenous to the model as instruments of economic policy. With the corresponding definitional identities, the model forms a closed system conforming to the System of National Accounts.

The high level of aggregation of the model does not permit any statements to be made on the effects of the tax reform on individual sectors. Nor can the effects on the distribution of income between different income groups be directly established. These are estimated indirectly on the basis of the propensity to consume of different income groups, which is determined outside the model framework and considered for the purposes of analysing the aggregate consumption behaviour.

Tax reform measures with a strong impact on corporate behaviour (not applicable in the case of the year-2000 tax reform) may have different effects on investments. Such supply-side incentives and substitution processes (between labour and capital, if the tax burden on different factors of production is unequal) can only be taken into consideration by the model in an exogenous way through adjustments of the investment function.

Basically, the year-2000 tax reform consists of a reform of the tax-rate table and changes of transfer payments as part of the package of family-related measures (increase of child tax credit and family benefits). Both sets of reform measures will result in higher household disposable income and, hence, stimulate private consumption. Demand-stimulating effects of this nature are well represented in the WIFO macro-model. The measures intended to enhance the attractiveness of Austria as a business location, support equity capital formation and create employment may provide moderate incentives for increased investment in research and development and the creation of additional jobs. In modelling terms, however, these effects are too weak to trigger a significant change in investment behaviour.

Figure 1: Wage and income tax burden on incomes

As a percentage of income

WHY THE YEAR-2000 TAX REFORM?

Reforms of the income tax-rate table become necessary when fast-growing incomes in an inflationary environment are increasingly subject to fiscal drag[1]. Such a development results in higher tax revenues, but also in a growing reluctance of economic operators to step up their lawful activities to support the growing marginal tax burden. The risk of an expanding illegal sector ("shadow economy") is getting more acute, which in turn implies a loss of revenues for the state. The most recent tax reforms in Austria took place at intervals of five to six years. Figure 1 shows a slight increase of the tax burden over time (income and wage tax as a percentage of income). Several times, this trend has been corrected through tax reforms (1989, 1994 and 2000). The current tax reform is the first reform of the tax-rate table in ten years.

The 1989 tax reform was adopted under the impression of the international change of emphasis from tax equity to increased efficiency through a reduction of income tax progression[2]. The focus of attention was on direct taxes. The wage and income tax-rates were lowered substantially (the top marginal tax-rate being reduced from 62 to 50 percent). Measured in terms of the average tax-rate, tax payers with an annual taxable income of ATS 700,000 benefited from the strongest tax-rate reduction; in terms of residual income elasticity, tax progression was reduced most effectively for the ATS 200,000 to ATS 500,000 income

[1] See also Lehner, G., "Overview on Measures of the Year-2000 Tax Reform", in this issue.

[2] For a comprehensive discussion, see *Breuss – Schebeck* (1988), p. 623.

range. The assessment base was broadened through the elimination of exceptions and the reduction of tax-free surcharges and bonuses. The reform of the tax-rate table alone accounted for ATS 44 billion in 1989 and was financed partly through the elimination of exceptional provisions. Corrected for these effects, the loss of income and wage tax revenues totalled approximately ATS 17 billion (or 10.1 percent of GDP) in 1989. At the same time, indirect taxes were adjusted to a certain extent. The general government deficit (including self-financing from income growth as a factor endogenous to the model) totalled ATS 7.7 billion in 1989 (0.5 percent of GDP; see *Breuss – Schebeck*, 1988, p. 632). Incentive effects of the reform of corporate taxation were considered in the model simulation through an exogenous increase of private sector investments by up to 1 percent from 1990 onwards. Overall, the WIFO macro-model demonstrated a positive effect on real GDP, which rose from 0.3 percent in 1989 to 0.5 percent in 1992 (*Breuss – Schebeck*, 1988, p. 631).

Some minor changes (taxation on beverages, excise tax on motor vehicles, family taxation, final taxation on interest income) were made between 1989 and 1994. In 1993, low-income earners benefited from the change of family taxation through the introduction of incremental child tax credits according to the number of children.

The second major step in the reform process was taken in 1994. Basically, the 1994 tax reform comprised four components:

- An increase of the standard tax credit favoured the lower income groups.
- The abolition of trade tax and net worth tax, including the inheritance tax equivalent, mainly concerned the self-employed.
- The broadening and increase of payroll tax (municipal tax) as well as the increase of the corporate income tax-rate (from 30 to 34 percent) to partly finance the reform resulted in a slow-down of real demand.
- Other measures were also taken to co-finance the reform (set of bank-related measures, increase of insurance tax, widening of the scope of final taxation on capital gains, reduction of the investment allowance from 20 to 15 percent, and a number of restrictions on provisioning).

Altogether, a tax revenue loss of ATS 17.4 billion (0.78 percent of GDP) was assumed for 1994. On the basis of its endogenous parameters, the model demonstrated an increase of the public deficit by ATS 16.4 billion (0.7 percent of GDP) for 1994. Again, incentive effects for enterprises were modelled through an exogenous increase of private-sector investments by 1 percent. Overall, the model showed a reform-driven growth stimulus for the Austrian economy which increased from 0.2 percent in 1994 to 0.5 percent in 1997 on a cumulative basis (see *Breuss – Schebeck – Wüger*, 1994, p. 52).

In the wake of changes in family taxation in 1993, the tax reform of 1994, and the financial burden resulting from the net payments to the European Union since 1995 (approximately 0.5 percent of GDP per year), the central government deficit rose from 2.8 percent of GDP in 1992 to 4.8 percent in 1995, while the general government deficit grew from 2 to 5.1 percent of GDP. With participation in Monetary Union as of 1999 being conditional on compliance with the Maastricht criteria (deficit ratio not higher than 3 percent of GDP, debt ratio not more than 60 percent of GDP), Austria was under pressure to balance its budget. A consolidation programme was adopted, which brought the general government deficit down to 1.9 percent of GDP in 1997.

As can be seen from the development of the income and wage tax burden on incomes in percent (Figure 1), the tax burden increased strongly as a result of the 1996-97 consolidation programme. Hence, offsetting measures were urgently needed.

The Year-2000 Tax Reform Act comprises two components: a reform of the tax-rate table, and measures to increase the attractiveness of Austria as a business location. On the basis of the Constitutional Court ruling of 17 October 1997 on the fiscal consideration of children in income taxation, the revenue margin available for the tax reform was further narrowed through the additional transfer payments provided for in the "family package". In the model simulations, the entire reform package was analysed on the basis of the following three components:

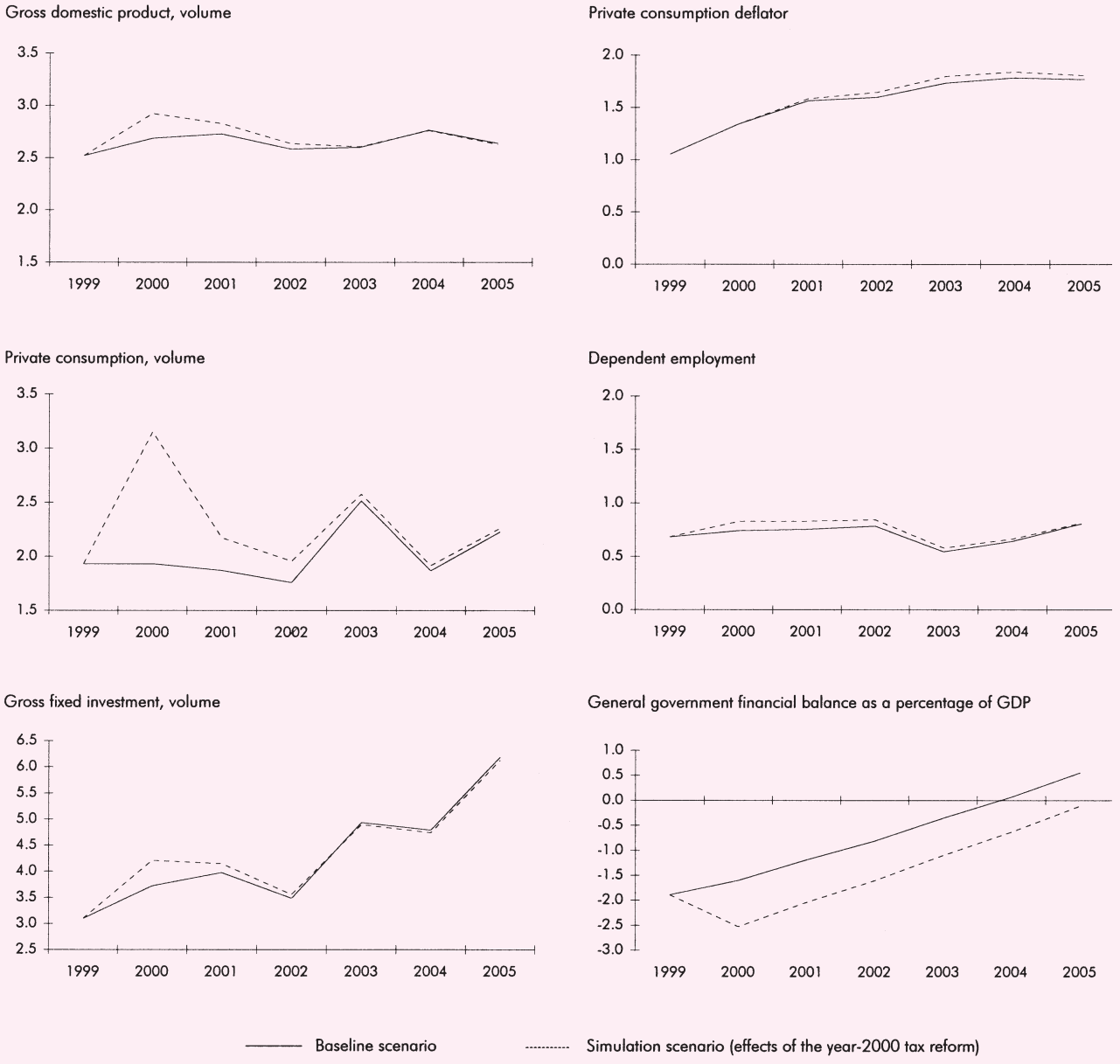
- wage and income tax reform,
- "family package"
- enhancement of the attractiveness of Austria as a business location and job creation.

According to estimates of the Ministry of Finance, the total medium-term volume of the year-2000 tax reform (loss of cash tax revenues until 2003) amounts to approximately ATS 32.5 billion. ATS 17 billion are accounted for by the loss of wage and income tax revenues, ATS 12 billion by transfer payments to families, and ATS 3.5 billion by measures taken to make Austria more attractive as a business location and to promote employment[3]. In the model – which represents the public sector on a basis of National

[3] For details see Lehner, G., "Overview on Measures of the Year-2000 Tax Reform", in this issue.

Figure 2: Results of simulations based on selected macroeconomic parameters

Percentage changes from previous year



Accounts (accrual principle) – the initial effect in the year 2000 was assumed to be ATS 30.1 billion, which corresponds to 1.07 percent of GDP. Thus, this tax reform is slightly more comprehensive – not in volume terms but in terms of percentage of GDP – than the 1989 (1.01 percent of GDP) and 1994 (0.78 percent of GDP) tax reforms. However, its structure differs from that of earlier reforms.

The model simulations use the medium-term WIFO forecast in its current adjusted version (*Schebeck – Weber*, 1998) as a base line.

EFFECTS OF THE WAGE AND INCOME TAX REFORM

A fundamental reform of the wage and income tax-rate table constitutes the core of the year-2000 tax reform. It provides for an increase of the standard tax credit and modified decremental regulations as well as changes of income brackets and marginal tax-rates. Calculations based on model rate schedules, which resulted in a direct loss of wage and income tax revenues in the year 2000 of ATS 17 billion, were used as an input to the WIFO macromodel. Owing to the continuous move of income earners

into higher tax brackets and fiscal drag, the cumulative tax loss by 2005 will total approximately ATS 12 billion. The new rate schedule broadens the base for tax exemption of low incomes. Complicated decremental regulations generally reinforce the progressive effect of the rate schedule. Lower income groups benefit more strongly from the tax reform – in relative terms – than higher income groups. Thus, the year-2000 tax reform results in a redistribution from higher to lower incomes.

This redistribution of income cannot be expected to result in an above-average stimulation of consumption. The propensity to consume is higher in the lower income groups, but little additional disposable income is derived from the tax savings. The major part of the tax savings is accounted for by higher income groups with a below-average propensity to consume.

The reform of the tax-rate table, however, is assumed to have a relatively strong influence on short-term consumer behaviour. The consumption function of the WIFO model has been specified in the form of an error correction. As a rule, short-term income changes (e.g., through cyclical influences) do not impact fully on private consumption; consumption patters are only gradually adjusted to the new equilibrium value. Not so in the case of the year-2000 tax reform, as consumers are already expecting a more than temporary growth of disposable income on the basis of the discussion in the media. Moreover, after a phase of budget consolidation and consumer restraint (in 1996-97 the household saving ratio dropped by about 2 percentage points from its 1995 level), there is considerable pent-up demand. Hence, the short-term propensity to consume in the first year of the reform is assumed to be at the upper limit.

The model simulation is based on changes of the average tax-rates in 24 income brackets. The model equation for wage and income tax comprises parameters which replicate the structure of the tax-rate table. These parameters characterise the relationships between the income brackets and the corresponding average tax-rates, with due consideration given to the standard tax credit. Given the higher standard tax credit, the average tax-rates are reduced for all income brackets. At the same time, however, the top marginal tax-rate remains unchanged. Together, the two phenomena result in an unproportionately strong increase of the average tax-rates in the middle income range and, thus, reinforce the progressive effect (elasticity of tax revenue). The parameters for the structure of the tax-rate table have therefore been adjusted accordingly.

In the model simulation, the isolated effect of the reform of the tax-rate table consists in an increase of household disposable income over the entire simulation period by 1.2 percent relative to base line. Private consumption therefore increases by 0.7 percent in real terms in the year 2000 and by 1.0 percent on a cumulative basis by 2005. The growth effect on real GDP would amount to 0.1 percent in 2000 and double by 2005. The general government financial balance would deteriorate by 0.5 percent of GDP at the beginning; by 2005, the shortfall against base line would narrow to 0.3 percent of GDP.

EFFECTS OF THE "FAMILY PACKAGE"

The "family package" amounting to a total of ATS 12 billion was already adopted in 1998 on the basis of a Constitutional Court ruling (*Lehner*, 1998). As a result, the burden on families was reduced by ATS 6 billion in 1999. As of the year 2000, families will benefit from a lowering of their tax burden by ATS 12 billion a year. This additional burden for the state results entirely from (social) transfer payments to families, which increase household disposable income and therefore ought to have a direct effect on consumption. As mentioned above, pent-up demand is assumed to exist after the phase of restrictive income development due to the consolidation measures of 1996-97.

Low income earners benefit more from the "family package" than from the wage and income tax reform. About 40 percent of all transfer payments go to earners of incomes in the lowest third. The combined impact of both measures on the propensity to consume will have a neutral effect on total consumption. Hence, the input of exogenous parameters into the model is not considered necessary in this case.

When looked at in isolation, private consumption already increased by 0.2 percent over base line under the impact of the "family package" in 1999 (real GDP only grew by 0.03 percent). It is only through the increase of transfer payments to ATS 12 billion as of the year 2000 that private consumption will grow first by 0.4 percent and on a cumulative basis by 0.8 percent by 2005 (both relative to base line). Real GDP will be 0.1 percent higher than base line in 2000 and 0.2 percent higher on a cumulative basis by 2005. The general government financial balance will shrink by 0.3 percent of GDP from 2000 onwards under the impact of the "family package".

EFFECTS OF MEASURES TO PROMOTE THE BUSINESS LOCATION AND EMPLOYMENT

Within the framework of the year-2000 tax reform, a number of special measures have been provided for to increase the attractiveness of Austria as a business location

and promote employment. The Federal Ministry of Finance estimates the related loss of revenue at approximately ATS 3.5 billion on a medium-term basis. Some of the measures taken will only make themselves felt with a certain time lag[4] and have hardly any effect on the economy as a whole in the model.

The only measure explicitly considered in the model is the increase of refundable input tax for farmers filing a lump-sum VAT return from 10 to 12 percent, which results in a loss of VAT revenue of approximately ATS 1.1 billion per year. As a rule, any change of the indirect tax burden immediately impacts on the domestic price level. In this specific case, the effect was excluded through the model design. The isolated effect of the loss of VAT revenue has a very minor impact on macroeconomic demand.

Unlike in the case of the 1989 and 1994 reforms, no additional incentive effects for investments were included as an exogenous input for the modelling of the year-2000 tax reform. The special measures are too insignificant in quantitative terms and too heterogeneous in nature for any measurable incentive effects to be derived. This applies, in particular, to direct employment effects. As a matter of fact, however, the reforms are turning Austria as a whole into a more attractive business location.

OVERALL EFFECTS

Altogether (reform of the tax-rate table, "family package" and other measures), the year-2000 tax reform may generate additional real GDP growth of 0.2 percent in the year 2000 – mainly through the stimulation of private consumption (+1.2 percent in 2000, +1.8 percent on a cumulative basis by 2005). On a medium-term basis (by 2005), the cumulative growth effect would increase to 0.4 percent (Table 1). The previous tax reforms of 1989 and 1994 – with somewhat narrower revenue margins available – generated slightly stronger medium-term growth stimuli (up to 0.5 percent of GDP). However, these growth effects resulted primarily from the exogenous "incentive effects" for private investment, which are not to be expected in the case of the current tax reform. The price effects of the year-2000 tax reform are negligible. Hence, there are hardly any effects on real exports, while imports will increase under the impact of rising domestic demand.

Table 1: Macroeconomic effects of the year-2000 tax reform

		2000	2001	2002	2003	2004	2005
		Cumulative deviations from baseline scenario[1]					
Expenditure on the GDP, volume							
Private consumption	in percent	+ 1.2	+ 1.5	+ 1.7	+ 1.8	+ 1.8	+ 1.8
Public consumption	in percent	– 0.0	– 0.0	– 0.0	– 0.1	– 0.1	– 0.1
Gross fixed investment	in percent	+ 0.5	+ 0.6	+ 0.7	+ 0.7	+ 0.6	+ 0.6
Exports, goods and services	in percent	+ 0.0	– 0.0	– 0.0	– 0.1	– 0.1	– 0.1
Imports, goods and services	in percent	+ 0.9	+ 1.1	+ 1.1	+ 1.1	+ 1.0	+ 1.0
Gross domestic product	in percent	+ 0.2	+ 0.3	+ 0.4	+ 0.4	+ 0.4	+ 0.4
Prices, incomes, current balance							
GDP deflator	in percent	+ 0.1	+ 0.2	+ 0.2	+ 0.3	+ 0.4	+ 0.4
Private consumption deflator	in percent	± 0.0	+ 0.0	+ 0.1	+ 0.1	+ 0.2	+ 0.2
Household disposable income	in percent	+ 2.1	+ 2.1	+ 2.2	+ 2.2	+ 2.2	+ 2.2
Wage ratio	percentage points	– 0.2	– 0.2	– 0.2	– 0.2	– 0.2	– 0.2
Current balance	billion ATS	–12.0	–14.8	–16.6	– 17.1	– 17.5	– 18.2
As a percentage of GDP	percentage points	– 0.4	– 0.5	– 0.5	– 0.5	– 0.5	– 0.5
Labour market							
Dependent employment	in percent	+ 0.1	+ 0.2	+ 0.2	+ 0.3	+ 0.3	+ 0.3
	in 1,000	+ 2.8	+ 5.1	+ 7.1	+ 8.3	+ 9.0	+ 9.3
Registered unemployed	in 1,000	– 0.9	– 1.4	– 2.0	– 2.4	– 2.3	– 3.0
Unemployment rate	percentage points	– 0.0	– 0.1	– 0.1	– 0.1	– 0.1	– 0.1
General government							
Current receipts	billion ATS	–14.3	–11.5	– 8.7	– 6.3	– 3.9	– 1.8
Interest payments	billion ATS	+ 0.3	+ 2.0	+ 3.6	+ 5.2	+ 6.7	+ 8.2
Current disbursements	billion ATS	+12.3	+14.1	+16.1	+ 18.0	+ 20.0	+ 21.8
Financial balance	billion ATS	–26.6	–25.7	–24.8	– 24.3	– 24.0	– 23.7
As a percentage of GDP	percentage points	– 0.9	– 0.9	– 0.8	– 0.7	– 0.7	– 0.7
General government debt	billion ATS	–32.1	–57.8	–82.6	–106.9	–130.9	–154.5
As a percentage of GDP	percentage points	– 0.9	– 1.6	– 2.3	– 2.9	– 3.4	– 3.9

[1] Baseline scenario: adapted version of medium-term WIFO forecast (year-2000 tax reform excluded).

As a result of this imbalanced development of external trade relations, the deficit on current account will deteriorate by approximately 0.5 percent of GDP against base line over the entire forecasting period.

At present, the economic-policy debate focuses on two main issues:

- To what extent will the tax reform have an effect on employment?
- Will the limits imposed by the Stability and Growth Pact be exceeded on account of the tax reform?

The effects of the reform package on investments (+0.5 percent) are less substantial than those on private consumption; on a medium-term basis, they will provide jobs for another 9,300 persons seeking employment. According to the model simulations, the unemployment rate will drop by about 0.1 percentage point by 2005.

Financing the year-2000 tax reform constitutes a major challenge to fiscal policy. From the point of view of pure modelling, all the reform measures taken together result in an increase of the general government deficit over base line by 0.9 percent of GDP in the year 2000, which will

[4] Increase of research allowance and apprentice ship allowance by ATS 500 million each on a medium-term basis, extended deductibility of further training expenditure, special support to young entrepreneurs, measures to facilitate the transfer of enterprises, introduction of a premium on private provision for old age, tax relief for bio-fuels, notional interest on equity capital, abolition of the stock-exchange turnover tax, and introduction of a tax on speculative capital gains (as of 1 October 2000 at the earliest).

drop to 0.7 percent of GDP by 2005. The self-financing effects (additional tax revenues through increased economic activity) – compared with an initial revenue loss of ATS 30 billion – amount to no more than ATS 4 billion.

Austria submitted its Stability Programme to the European Council and the Commission within the framework of the Stability and Growth Pact in December 1998; in view of the goal of balancing the public budget on a medium-term basis, the programme provides for a reduction of the general government deficit from 2 percent of GDP in 1999 to 1.7 percent in 2000, 1.5 percent in 2001, and 1.4 percent in 2002.

According to the model simulation, the general government deficit as a result of the tax reform amounts to 2.5 percent in the year 2000, 2.0 percent in 2001 and 1.6 percent in 2002. The short-term WIFO forecast of June 1999 also assumes a deficit of 2.5 percent for the year 2000 (including the overall effects of the tax reform). In its spring forecast for Austria, the *European Commission* (1999) expects a general government deficit of 1.9 percent in 2000 (after 2 percent in 1999). The deficit of 2.5 percent of GDP in 2000 is in conflict with the commitments assumed by Austria under its Stability Programme (deficit of 1.7 percent of GDP). Hence, a very stringent policy of spending cuts will be required in the years to come to meet the objectives of the Stability Programme.

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Macroeconomic Effects of the Year-2000 Tax Reform – Summary

The year-2000 tax reform – together with the package of family-related measures – will result in a medium-term reduction of the tax burden on private households and enterprises by ATS 32.5 billion. ATS 17 billion are accounted for by the reform of the wage and income tax-rate table, ATS 12 billion by transfer payments to families ("family package"), and ATS 3.5 billion by other measures taken to increase the attractiveness of Austria as a business location and to create employment. Relative to the gross domestic product, this tax reform is more comprehensive than the previous ones implemented in 1989 and 1994. The main emphasis of the reform is on easing the tax burden on private consumption. Consumer demand will increase (as compared to baseline) by a cumulative 1.8 percent in real terms by 2005. With direct incentives for investors being extremely modest, investments are expected to grow by no more than 0.6 percent on a medium-term basis. Higher domestic demand, which also results in higher imports, will generate a cumulative growth of real GDP of 0.4 percent by 2005. Hence, the labour market can absorb another 9,300 employees. Price increases will be insignificant at 0.2 percent. The current-account and public sector deficits (net lending) will increase by 0.5 and 0.7 percent of GDP, respectively.