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The Tax Reform 2015-16 – Macroeconomic Effects up to 2019

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The 2015-16 tax reform foresees tax cuts of € 3.9 billion in 2016, increasing to € 5.2 billion p.a. from 2017 onwards. Provided that the planned measures to fund the tax relief (2016 € 3.6 billion, 2017 € 4.4 billion, from 2018 € 4.5 billion p.a.) are implemented in a timely and complete manner (scenario 1: "government" scenario), real disposable income of private households would increase by 1 percent (compared with a baseline scenario without tax reform; numbers are deviations from baseline in percent, cumulated up to 2019). As a consequence, private consumption will increase by 0.75 percent, real GDP will increase by ¼ percent and consumer prices by ½ percent. Under these assumptions the tax reform will not have lasting negative effects on the government balance. The chosen policy-mix would shift demand from public to private consumption and reduce the government-to-GDP ratio by 0.5 percentage points. Two alternative scenarios assume a delayed (scenario 2) or incomplete (scenario 3) implementation of cuts in public administration costs and subsidies, and measures to combat tax fraud. In these scenarios, disposable household income increases more and public consumption declines less than in scenario 1. This implies a slightly stronger increase in GDP (in comparison with scenario 1 up to +0.2 percentage points until 2019), but also a higher government deficit and public debt-to-GDP ratio (up to +1 percentage point in 2019).

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1.   Introduction

In March 2015, the federal government (*Federal Ministry of Finance,* 2015A) agreed on a tax reform, whose major elements shall take effect on 1 January 2016. If all measures are implemented as planned, they would imply gross revenue losses of € 3.9 billion or 1.1 percent of projected GDP in 2016, and of € 5.2 billion p.a. (around 1½ percent of GDP) as from 2017.

The federal government plans a series of measures to finance the reform. Increases in other taxes (2016: € 2.5 billion, as from 2017 € 3.3 to 3.4 billion p.a.) comprise originally two-thirds and eventually three-fourths of the amount to be financed by discretionary measures. In addition, government spending on public administration and subsidies shall be cut by € 1.1 billion (Table 1). Net of the financing tax increases, the government envisages a relief of the overall tax burden rising from € 1.4 billion in 2016 to nearly € 1.8 billion in 2019 (around ½ percent of GDP, respectively). Details of the reform are presented by *Schratzenstaller* (2015).

The following analysis sets out to estimate the macroeconomic effects of the tax reform 2015-16 using the WIFO macroeconomic model (*Baumgartner – Breuss – Kaniovski,* 2005; see Box "WIFO-Macromod"). The baseline scenario uses the WIFO medium-term projections until 2019 (*Baumgartner – Kaniovski – Pitlik,* 2015), updated on the basis of the WIFO short-term forecast of March 2015 (*Glocker,* 2015). Given the uncertainty surrounding the financing measures (lack of specification, potential

political resistance etc.; see e.g., *Budgetdienst,* 2015, *Fiscal Council,* 2015 or the current political debate), we develop three scenarios. Each scenario assumes full implementation of the planned tax relief. All three scenarios also include the increase in the reduced VAT rate for certain goods and services by 3 percentage points and the curtailing of tax exemptions. The scenarios differ with regard to the scope of implementation of the measures against tax fraud and of expenditure cuts. Since it is still uncertain how the actual measures may differ from the government proposal, the alternative scenarios make technical assumptions on the implementation path.

Table 1: Scenarios for the tax burden relief offered by the tax reform 2015-16 for the period 2016-2019

	2016	2017	2018	2019
	€ billion			
Tax relief	− 3.900	− 5.195	− 5.195	− 5.195
Tax scale reform wage and income tax (including changes of negative tax, transport tax credit, commuter supplement, child tax allowance)	− 3.875	− 4.980	− 4.980	− 4.980
Package for firms	− 0.025	− 0.215	− 0.215	− 0.215
Financing				
Scenario 1: complete and timely implementation of all measures	3.563	4.352	4.531	4.501
Tax increases	2.463	3.252	3.431	3.401
Fight against tax fraud	1.925	2.090	2.211	2.143
Various tax hikes	0.303	0.392	0.394	0.396
Cut in tax exemptions	0.235	0.770	0.826	0.862
Expenditure savings: cut in subsidies and administrative spending	1.100	1.100	1.100	1.100
Scenario 2: delayed implementation of financing measures	2.051	3.555	4.531	4.501
Tax increases	1.501	2.730	3.431	3.401
Fight against tax fraud	0.963	1.568	2.211	2.143
Various tax hikes	0.303	0.392	0.394	0.396
Cut in tax exemptions	0.235	0.770	0.826	0.862
Expenditure savings: cut in subsidies and administrative spending	0.550	0.825	1.100	1.100
Scenario 3: delayed and incomplete implementation of financing measures	1.294	2.757	3.703	3.690
Tax increases	1.019	2.207	2.878	2.865
Fight against tax fraud	0.481	1.045	1.658	1.607
Various tax hikes	0.303	0.392	0.394	0.396
Cut in tax exemptions	0.235	0.770	0.826	0.862
Expenditure savings: cut in subsidies and administrative spending	0.275	0.550	0.825	0.825

Source: Federal Ministry of Finance, measures according to draft Tax Reform Act 2015 circulated for consultation (consultation draft of 19 May 2015). Anti-Social-Security-Fraud Act (consultation draft of 6 May 2015) and Banking Act (consultation draft of 12 May 2015) as well as Ministerial Council draft of Tax Reform 2015-16 (of 17 March 2015); WIFO compilation.

- *Scenario 1* (government scenario) assumes the timely and complete implementation of the planned financing measures[1].

- *Scenario 2* assumes a delay in the implementation of the financing measures; only half of the planned action to combat tax fraud and the savings on the expenditure side will take effect in 2016, rising to a ratio of three-fourth in 2017 and to full extent only as from 2018.

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[1] A first version of this scenario of end-March 2015 using the Ministerial Council draft (*Federal Ministry of Finance,* 2015A) was the basis for the assumptions on conditions and developments in the real economy for the period 2015-19 underlying the Strategy Report (*Federal Ministry of Finance,* 2015B) and the Stability Programme (*Federal Ministry of Finance,* 2015C) submitted by the federal government. The "adjusted" government scenario presented here deviates from the former in several respects:

- In May 2015, the draft Acts on Anti-Fraud on social charges ("Sozialbetrugsgesetz", *Österreichisches Parlament,* 2015), on Banking ("Bankwesengesetz", *Federal Ministry of Finance,* 2015D) and on the tax reform ("Steuerreformgesetz", *Federal Ministry of Finance,* 2015E) were circulated for consultation. The budgetary effects of the tax reform 2015-16 presented here are somewhat different from those estimated in the Ministerial Council draft (*Federal Ministry of Finance,* 2015A): the consultation drafts include a smaller tax relief and higher revenues from anti-fraud measures.

- The WIFO-Macromod model links disposable income to private consumptions by equivalent household income groups, consistent with the WIFO microsimulation model (see also *Rocha-Akis,* 2015).

- The impact of the anti-fraud measures on disposable household income was modelled using detailed information from Statistics Austria on the estimated extent of the "grey economy".

- Revised calculations for the user cost of capital now lead to lower estimates for investment induced by the tax reform.

As a conseqence, private disposable income and private consumption increase less than in the simulation version of March 2015, which dampens the expansionary impulse on GDP.

- *Scenario 3* (delayed and incomplete implementation of the financing measures) assumes that only one-quarter of the action against tax fraud and of expenditure savings are implemented in the first year, half of the measures in 2017 and an implementation ratio of three-quarters as from 2018.

Apart from the revenue-increasing and expenditure-restraining measures, the federal government assumes that part of the tax cut will be self-financing. The positive incentive for economic activity triggered by the lower tax burden would

- raise disposable household income and hence private consumption. This would increase GDP and employment, while also giving rise to higher inflation.

- lead to higher government revenues from taxes on (nominal) wages and profits, from indirect taxes and social contributions.

WIFO-Macromod

The WIFO macroeconomic model "Macromod" represents the Austrian economy and the linkages between its major aggregates on the basis of annual data. The model is used for the regular WIFO medium-term projections and for simulations of the macroeconomic effects of economic policy measures (*Baumgartner – Breuss – Kaniovski,* 2005). The model has been used i.a., to assess the effects of fiscal policy for the period 2000-2002 (*Breuss - Kaniovski – Lehner,* 2003), of the tax reform 2004-05 (*Breuss – Kaniovski – Schratzenstaller,* 2004) or of the stabilisation measures to mitigate the impact of the financial market crisis on the real economy (*Breuss – Kaniovski – Schratzenstaller,* 2009).

The model maps the dynamics of aggregate demand and allows for short- and medium-term imbalances on markets for goods and services and labour. It is supplemented by supply-side elements for the determination of trend output and the output gap, both derived from a production function approach following the method developed by the European Commission. In order to analyse the macroeconomic effects of, say, tax policy measures over time, the model reproduces the major links between the domestic and the external sector, the public sector, the labour market and the wage-price system. The market for goods and services and the labour market are linked with the government sector via taxes and government expenditure. The structure of the model and the observation period are given by ESA 2010. The data cover the period from 1995 to 2014.

In its basic setting, the model consists of 54 behavioural equations and 124 identities as well as of 50 exogenous variables driving the dynamics of the model. For a small, highly open economy such as Austria, this exogenous "block" mainly includes international variables (GDP, prices, exchange rates for the 5 major trade zones; commodity prices, interest rates). The assumptions for the international block are based upon the WIFO medium-term forecast for the world economy that itself is established by means of the OEF global model (*Schiman,* 2015).

Because of the relatively short time series, the behavioural equations of Macromod are estimated as single equations, most of them using an error correction approach. This time-series-analysis approach postulates a quantifiable and stable long-term connection between two or more variables, while tolerating short-term deviations, e.g., in the context of the business cycle.

The analysis of the effects of a tax reform requires a detailed mapping of the public sector. Macromod distinguishes between government revenue and expenditure. The revenue side is divided into three broad categories, along the lines of ESA 2010: production and import revenues (indirect taxes, i.e., VAT and others), taxes on income and wealth (direct taxes: wage and assessed income tax, corporate tax and others), and social contributions (towards unemployment insurance and other social charges).

Government revenues are explained endogenously: either is the evolution of the tax base shown explicitly and the impact of changes can be assessed separately from those in the tax rates, or tax revenues are estimated in relation to macroeconomic aggregates. Hence, wage tax revenue is explained by the wage bill, VAT revenue by the development of nominal private consumption, and corporate tax revenue by net corporate earnings. Tax-elasticities are mostly estimated by means of error correction models.

Government expenditure explained endogenously include public sector wages per capita and unemployment benefits. The trend in government wages is in the long run determined by that in the private sector. Other government expenditures, like social benefits in cash or in kind and other current transfers, are set exogenously.

The dynamics of public debt is explained by the evolution of the budget balance and assumptions on the stock-flow adjustment. Current debt service payments are determined by the implicit interest rate on the stock of debt and the interest rate structure for newly incurred debt. The estimation uses information provided by the Federal Financing Agency and the Fiscal Council (Reports on Public Finance).

The expansionary effect of the tax cut would be reduced by the financing measures:

- The abolition of tax exemptions and the increase in certain direct taxes would weigh on disposable income and private consumption.

- Public consumption will decline as a result of the planned expenditure cuts.

- Price increases (hikes of consumption taxes and pass-through of the higher taxes implied by the combat against tax fraud to consumer prices) will squeeze purchasing power and hence private consumption.

- Higher inflation may exert upward pressure on nominal wages, pushing up relative unit labour cost and weighing on export growth.

The net effect of the tax cuts offered by the reform and the financing tax increases will be exonerating (see chapter 3.1). Potential additional government revenues deriving from self-financing effects will be estimated by means of the WIFO-Macromod model and compared with those assumed by the federal government.

The income-consumption block by terciles in the WIFO-Macromod

The tax relief offered by the reform mainly operates via disposable income of private households. Since different income groups not only benefit from the tax reform to a different degree, but also differ in their propensity to consume, the income-consumption block of WIFO-Macromod has been expanded for the purpose of the simulations presented below.

On the basis of equalised income data according to EU-SILC and the consumption structure revealed by the consumption surveys of 1994-95, 1999-2000, 2004-05, 2009-10, disposable income and private consumption in the definitions of ESA 2010 for the years from 1995 to 2014 were split into three groups, with own consumption functions and definitions of disposable income for each of them.

Since only four consumption surveys are available for our reference period and EU-SILC data only as from 2004, an econometric estimation of the three consumption functions by terciles was not feasible. On the basis of aggregate ESA data, the parameters estimated for the overall consumption function were used in order to calibrate consumption functions by terciles. The short-term income elasticity[1] estimated for the overall consumption function is 0.5, the long-term elasticity is 1, and the speed of adjustment at which deviations from the long-term function are corrected, is 0.2. A long-term elasticity of 1 is assumed for each income tercile. For the consumption function of households in the middle income tercile, the parameters were assumed to be the same as for the overall consumption function.

Households in the three income tiers differ with respect to their short-term income elasticity and their adjustment dynamics. In the short term, households in the bottom-third spend about 80 percent of an additional income in the first year (elasticity 0.8). Moreover, the speed of adjustment towards the long-run income elasticity is highest for low-income households (Table 2). For households in the upper-third of income, the short-run income elasticity and the speed of adjustment have been assumed lower than for the two income groups below. The parameters for the bottom and the top tercile have been selected such that the weighted sum of the three tercile-consumption-profiles is equal to that of the estimated aggregate consumption function. Figure 1 shows the time profiles of consumption expenditure by tercile for a permanent increase in real disposable income by 1 percent, respectively.

The tax relief is converted from the individual to the household level (see *Rocha-Akis*, 2015). The split into low, middle and high household incomes shall first, capture the change in the distribution of income, and second, chart more precisely the differential propensity to consume by household income and its implications for total consumption (Table 3).

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[1] The income elasticity of private consumption with regard to disposable income expresses the percentage change of consumer spending associated with a change in income by 1 percent.

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2.   Tax reform measures and their implementation in the Macromod model

The relief through the tax reform 2015-16 stimulates private consumption and saving via an increase in disposable income. Tax cuts and financing tax increases affect different income groups differently (see *Rocha-Akis,* 2015)[2]. The model analysis has been confined to three broad income groups. The model block of private disposable income-private consumption was split into three income levels ("terciles"). For each of them an equation for disposable income and a consumption function has

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[2] Out of the total relief due of the tax reform of € 5.2 billion once fully implemented, only € 100 million do not directly affect private disposable income through the cut in wage and assessed income tax.

been calibrated (see Box "The income-consumption block by terciles in the WIFO-Macromod").

The measures described below mainly refer to the Ministerial Council draft of the tax reform (*Federal Ministry of Finance,* 2015A) of 17 March 2015. To the extent that the plans were elaborated in the drafts circulated for consultation ("Begutachtungsentwürfe", *Federal Ministry of Finance,* 2015D, 2015E, *Österreichisches Parlament,* 2015) submitted since mid-May, the latter replace the earlier versions (for further detail see *Schratzenstaller* 2015).

Table 2: Impact of the tax reform on private consumption by terciles

	1st tercile	2nd tercile	3rd tercile	Total
Disposable household income, net[1]				
2013, percentage shares	16.6	31.2	52.2	100
Consumption expenditure[2]				
2009-10, percentage shares	23.8	32.4	43.8	100
Average propensity to consume	1.16	0.98	0.82	0.90
Consumption functions				
Short-term marginal propensity to consume	0.8	0.5	0.4	0.5
Error correction term				
Long-term marginal propensity to consume	1	1	1	1
Adjustment parameter	0.25	0.20	0.18	0.20
Consumption effect				
After 2 years	0.85	0.60	0.49	
After 5 years	0.94	0.79	0.72	
After 10 years	0.98	0.93	0.90	
After 15 years	1.00	0.98	0.96	

Source: Statistics Austria, WIFO calculations. – [1] EU-SILC, by equivalent groups. – [2] Consumption survey, by equivalent incomes.

Figure 1: Consumption functions by terciles
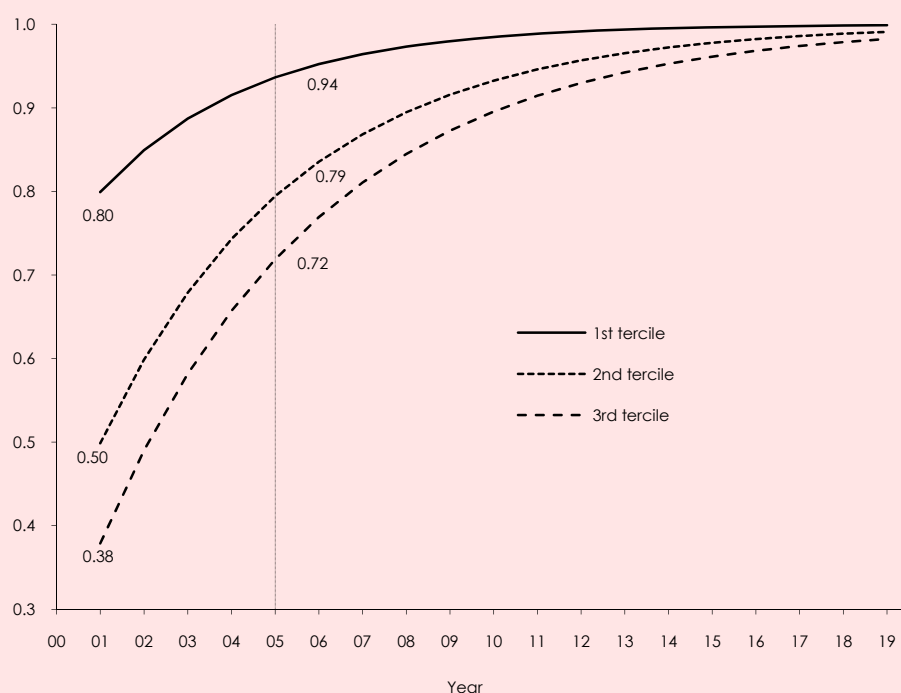
Source: WIFO calculations.

2.1 Tax relief

2.1.1 Reform of the wage and income tax scale and other tax relief

The key element of the tax reform 2015-16 is an adjustment of the tax scale that, once fully effective, will lead to a shortfall in wage and income tax revenues of al-

most € 4.4 billion per year (of which wage tax around € 4 billion, assessed income tax € 400 million). This relief is distributed across the three income groups (terciles) according to key B of Table 3. Since the bottom tercile of household income mainly includes low-wage earners who pay no wage or income tax, the impact is lowest in this group and only accounts for 9 percent of the total tax relief. In absolute terms, the main beneficiaries are households in the upper tercile with around 60 percent of the total relief volume (Table 3, distribution key B).

Table 3: Distribution key of measures according to the WIFO microsimulation model

	Distribution key	1st tercile	2nd tercile	3rd tercile	Total
Income shares					
Before tax reform		16.6	31.2	52.2	100
After tax reform	A	16.5	31.2	52.3	100
Tax relief					
Reform of tax scale	B	9.1	31	59.9	100
Higher negative tax for employees	C	46.3	35.2	18.5	100
Higher child tax allowance	D	20.6	42.7	36.7	100
Introduction of negative tax for self-employed[1]	E	50	40	10	100
Counter-financing					
Increase in contribution ceiling[2]	F	0	5	95	100
Various other direct tax increases and restriction of exemptions[3]	G	11	28	61	100

Source: WIFO microsimulation model, *Rocha-Akis* (2015). – [1] Self-employed and farmers, assumption in analogy to negative tax for persons liable to wage tax. – [2] Derived from information in *Rocha-Akis* (2015), footnote 17. – [3] This distribution key is obtained by the weighted earnings of active persons according to EU-SILC 2013: wages and salaries, income from entrepreneurship and wealth.

The negative tax will be raised for dependent employees and newly introduced for retired wage-taxpayers whose taxable earnings are below the basic tax allowance of € 11,000, but who are nevertheless liable to social contributions. This is represented by a wage-tax revenue shortfall of € 370 million. A measure that will mainly benefit households in the bottom income tercile, at a proportion of 46 percent of the total (distribution key C). The doubling of the child tax allowance generates foregone revenues of € 100 million (wage tax € 90 million, assessed income tax € 10 million; Table 3, key D).

Since the negative tax, the commuter supplement and the child tax allowance can be claimed only with the employee tax assessment or the income tax declaration in the subsequent calendar year (at the earliest), these measures will generate an relief in cash for private households (and the respective revenue shortfalls) only as from 2017. To grant relief for the lowest incomes (for which there is no tax due and hence there is no benefit from the reform of the tax scale) already in 2016, a negative tax for dependent employees will be doubled from € 110 to € 220 already in 2015, i.e., part of the increase originally planned for 2016 is carried forward into 2015. These measures are reflected by direct tax revenues foregone to the amount of € 175 million for 2016 (as from 2017: € 630 million p.a.).

2.1.2 Firm package

In addition to the moderation of the income tax scale, entrepreneurial incomes shall receive a tax relief of € 215 million (once fully implemented) via a "firm package".

Farmers and self-employed of low income are henceforth entitled to negative tax that will be applied in the same way as for dependent employees: 50 percent of social security contributions may be reimbursed up to a ceiling of € 110 per year; the contribution revenue shortfall will be funded through income tax revenues. This is taken into account via a deduction from income tax revenues to the tune of € 60 million as from 2017. The distribution key among the household terciles has been assumed broadly in line with that for dependent employees (Table 3, key E).

Financing agencies for medium-sized enterprises are granted tax benefits totalling € 50 million (income tax € 10 million, corporate tax € 40 million). The increase in the research premium from 10 percent to 12 percent shall provide an aggregate tax benefit of € 80 million (income tax € 20 million, corporate tax € 60 million). The tax

privilege for employee stakeholders shall be raised from currently € 1,460 to € 3,000 per year, implying wage tax revenue losses of around € 25 million per year.

2.2   Financing measures

2.2.1   Tax increases for high incomes and higher real estate acquisition tax

The extraordinary increase in the social security contribution ceiling is included in the model as an increase in contribution revenues by € 90 million. This measure concerns almost exclusively the upper income tercile (Table 3, key F).

The model translates the increase in the capital gains tax on dividends from 25 percent to 27.5 percent into higher tax revenues of € 150 million, the increase in the real estate gains tax via the hike in the tax rate from 25 percent to 30 percent and the abolition of the inflation rebate for certain real estate transactions into revenue gains of € 115 million.

The reform of the real estate acquisition tax shall yield € 41 million in revenue up to 2019. Carry-forward effects have been assumed for 2015: two-thirds the additional revenue anticipated by the government for 2016 are allocated to 2015 (reduced by the lower tax rate and the partly lower tax base), and one-third to 2016.

The additional revenue from capital gains tax, real estate gains tax and real estate acquisition tax is allocated to the household income terciles in line with the distribution of earnings (wages and salaries, profits and income from assets) according to EU-SILC 2013 (Table 3, key G).

2.2.2   Increase in reduced VAT rate and abolition of tax exemptions

Additional revenues from the restriction of exemptions in income tax and VAT shall rise from € 235 million in 2016 to around € 860 million in 2019.

The increase in the reduced VAT rate on certain goods and services from 10 percent to 13 percent shall yield € 175 million in additional revenue in 2016 (for hotel services, the adjustment will take effect only at the end of the next winter season, i.e., as from May 2016), as from 2017 € 220 million per year.

Revenues rising from € 60 million (2016) to € 640 million in 2019 are expected from the reduction or abolition of certain exemptions in income and corporate tax (wholesale special expenses, real estate depreciation allowances, education tax allowance and premium, taxation of company cars).

2.2.3   Restraint on subsidies and public administration expenditure

The federal government (together with the Länder and municipalities) plans to cut expenditure on public administration and subsidies by € 1.1 billion, starting from 2016. These measures are modeled as follows: spending on subsidies is reduced by € 200 million p.a., for material inputs by € 300 million p.a., for other transfers by € 300 million p.a., and for personnel cost by € 300 million p.a.

2.2.4   Fight against tax fraud

The measures designed to combat tax evasion and social security fraud shall yield additional revenues of around € 1,900 million (2016) to € 2,140 million (2019).

According to the expectations of the federal government, the introduction of cash registers "to be equipped with security devices against fraudulent manipulation" and the obligation to issue and accept receipts, as well as the fight against mineral oil tax fraud and VAT evasion in mail order trading shall all strengthen the collection of indirect taxes. The better recording of sales by the cash registers shall also generate higher direct tax revenues. Altogether, additional revenues of € 1,000 million are expected for 2016, rising to € 1,500 million p.a. by 2019. The fight against fraud with regard to social charges and benefits shall yield € 225 million in 2016, rising to € 239 million by 2019.

Incomes up to now earned in the "grey" economy would thereby be reduced by the income tax and VAT due, with a dampening effect on private consumption. To the extent that the former suppliers of "grey" goods and services succeed in shifting the new tax burden towards the consumers, the implicit price increase will reduce

private purchasing power and likewise weigh on consumption. The model incorporates as first-round effect a reduction of disposable income by the amount of the additional VAT and income tax revenue (minus the assumed feedback from the price increase). The price effect of the higher VAT and income tax revenue is treated like an equivalent fictitious VAT increase.

Repressing the "grey" economy should only have a minor (negative) impact on official data on GDP and income, given that Statistics Austria has already in the past estimated a mark-up for such hidden activities. The major consequence will be a reduction of this mark-up to the extent that such activities move to the officially-recorded transactions. Insofar as the formerly hidden activities are now discontinued in the face of the new tax burden, GDP would be reduced accordingly. The mark-up by Statistics Austria for hidden activities to the distribution side of the National Accounts is for the bigger part recorded as operational earnings (income of self-employed), and only to a small extent as "tips" raising wage incomes. Both components add to income of private households. The anti-fraud action mainly leads to a shift from the "grey" to the official economy and from private gross household incomes to production taxes. The (isolated) overall impact of the fight against fraud on GDP is likely to be (slightly) negative, on account of the inherent price increases and the shortfall of certain economic activities.

The relaxation of bank secrecy for financial authorities shall help identify tax evasion in the corporate sector. For 2016, additional revenues of € 700 million are expected, declining to € 400 million p.a. by 2019. No adverse effects on private consumption are assumed from the relaxation of bank secrecy and the fight against mineral oil tax evasion, i.e., the implicit increase in tax revenue is taken to reduce private saving.

3. Simulations of the tax reform with the WIFO macro-model

While government revenue is endogenous in the model, government expenditure is largely exogenous (see Box "WIFO-Macromod"). The WIFO medium-term forecast until 2019 (*Baumgartner – Kaniovski – Pitlik,* 2015), *updated* in the light of the WIFO short-term forecast of March 2015 (*Glocker,* 2015), serves as *baseline scenario without tax reform*.

For the simulation of the three scenarios on the implementation of the tax reform (scenario 1 – complete and timely implementation of all measures, scenario 2 – delayed implementation of the financing measures, scenario 3 – delayed and incomplete implementation of the financing measures), the measures presented in section 2 were introduced exogenously as permanent changes, and the model was then solved in iterative steps until convergence towards a new stable solution was achieved. The impact on the macroeconomic aggregates derived from the solution of the model is shown by the respective deviations from the baseline scenario.

For *scenario 1* (government scenario), three simulations have been performed: first, only the exonerating measures; second, only the financing tax hikes; and third, a combination of both in order to obtain the overall effect of the tax reform. Since the three scenarios differ only with regard to the financing burden, while the scope of relief is identical, only the financing measures and the overall effects have been simulated for scenarios 2 and 3.

The results of the alternative scenarios are presented in Tables 8 and 9 for the years from 2016 to 2019 as deviations from the baseline scenario without tax reform in percentage change.

3.1 Simulation results

The principal reaction channels in the WIFO-Macromod model are hereunder presented for the "government scenario", separately for the tax relief measures, the financing tax increases and for the overall effects.

The Budget Office (*Budgetdienst,* 2015, p. 12) of the Austrian Parliament and the *Fiscal Council* (2015) highlight the still highly unspecified measures to combat tax fraud

as well as the cuts to be applied to subsidies and administrative cost. The present simulations take this criticism into account by assuming in the alternative scenarios a lower exonerating contribution from these measures than the government. While the effects have the same sign in both scenarios, they differ in magnitude. The lower savings on the expenditure side and the weaker restraint on disposable household income reduce the short-term demand-dampening effects.

The estimations of scenarios 2 and 3 are not to suggest that one can do without financing the tax cuts. They shall, on the contrary, show the risks attached to their implementation and the associated macroeconomic effects.

Table 4: Effects of the tax reform 2015-16 – impact of tax cuts in scenario 1

		2015	2016	2017	2018	2019
			Cumulated deviations			
Demand, volume						
Consumption expenditure						
Private households[1]	percent	± 0.0	+ 0.9	+ 1.3	+ 1.5	+ 1.6
Government	percent	± 0.0	+ 0.1	+ 0.2	+ 0.2	+ 0.2
Gross fixed investment	percent	± 0.0	+ 0.6	+ 0.8	+ 0.9	+ 1.0
Private machinery and equipment	percent	± 0.0	+ 0.9	+ 1.0	+ 1.3	+ 1.5
Private construction	percent	± 0.0	+ 0.6	+ 0.7	+ 0.7	+ 0.8
Exports	percent	± 0.0	± 0.0	+ 0.0	+ 0.0	– 0.0
Imports	percent	± 0.0	+ 0.4	+ 0.6	+ 0.7	+ 0.7
Net exports, as a percentage of GDP	percentage points	± 0.0	– 0.2	– 0.3	– 0.4	– 0.4
Gross Domestic Product (GDP)	*percent*	*± 0.0*	*+ 0.4*	*+ 0.6*	*+ 0.7*	*+ 0.7*
Nominal	*percent*	*± 0.0*	*+ 0.6*	*+ 0.9*	*+ 1.1*	*+ 1.2*
Inflation (not cumulated)						
GDP deflator	percentage points	± 0.0	+ 0.1	+ 0.2	+ 0.1	+ 0.0
Consumer prices	percentage points	± 0.0	+ 0.1	+ 0.1	– 0.0	– 0.0
Labour market						
Labour supply	percent	± 0.0	+ 0.0	+ 0.1	+ 0.1	+ 0.1
Dependent employment[2]	percent	± 0.0	+ 0.1	+ 0.2	+ 0.3	+ 0.3
	1,000 persons	± 0.0	+ 5.0	+ 9.4	+ 11.1	+ 11.8
Unemployment rate[3,4]	percentage points	± 0.0	– 0.1	– 0.2	– 0.2	– 0.2
Unemployed[3]	1,000 persons	± 0.0	– 3.8	– 7.0	– 8.4	– 8.8
Labour productivity	percent	± 0.0	+ 0.3	+ 0.4	+ 0.4	+ 0.4
Unit labour cost	percent	± 0.0	– 0.1	– 0.0	+ 0.1	+ 0.2
Income, saving						
Wages and salaries, gross[5]	percent	± 0.0	+ 0.3	+ 0.6	+ 0.8	+ 1.0
Real wages per capita (dependent employees)[2]						
Gross	percent	± 0.0	+ 0.1	+ 0.2	+ 0.4	+ 0.5
Net	percent	– 0.0	+ 3.0	+ 3.8	+ 3.9	+ 3.9
Private disposable income, net						
Nominal	percent	± 0.0	+ 2.2	+ 2.8	+ 2.9	+ 2.8
Real	percent	± 0.0	+ 1.9	+ 2.4	+ 2.4	+ 2.3
Saving ratio[6]	percentage points	± 0.0	+ 1.0	+ 1.0	+ 0.8	+ 0.6
General government household						
Current revenue, as a percentage of GDP	percentage points	± 0.0	– 1.2	– 1.5	– 1.4	– 1.4
Current expenditure, as a percentage of GDP	percentage points	± 0.0	– 0.3	– 0.4	– 0.4	– 0.4
Government balance	€ million	± 0.0	– 3,284.6	– 4,109.7	– 3,880.5	– 3,677.8
As a percentage of GDP	percentage points	± 0.0	– 0.9	– 1.1	– 1.0	– 1.0
Tax relief, total	*€ million*	–	*– 3,900.0*	*– 5,195.0*	*– 5,195.0*	*– 5,195.0*
As a percentage of GDP	percentage points	–	– 1.1	– 1.5	– 1.4	– 1.4
Degree of self-financing as a percentage of tax relief	percentage points	–	+ 15.8	+ 20.9	+ 25.3	+ 29.2

Source: WIFO calculations. – [1] Including private non-profit organisations. – [2] According to National Accounts (jobs). – [3] According to labour market service. – [4] As a percentage of dependent active population. – [5] Excluding employers' contributions. – [6] As a percentage of disposable income.

3.1.1 Scenario 1 – "government scenario"

Lowering of the tax burden

The planned volume of relief of € 5.2 billion (1½ percent of projected nominal GDP) to be offered by the tax reform 2015-16 is mainly brought about by a cut in direct taxes on households (€ 5.1 billion). Nominal disposable household incomes will thereby be raised (+2.8 percent from the baseline scenario in 2019, net real wages per capita +3.9 percent), boosting real private consumption by 1.6 percent. The saving ratio will go up by 0.6 percentage points in the medium term.

The lowering of the corporate tax burden (financing of medium-sized enterprises, research premium) reduces the user cost of capital and thus provides some incentive for gross fixed investment. Table 4 summarises the results of this simulation.

Table 5: Impact of the tax reform 2015-16 on income and consumption by household terciles in scenario 1

		2015	2016	2017	2018	2019
				Cumulated deviations		
Tax relief						
Real disposable household income, net	percent	± 0.0	+ 1.9	+ 2.4	+ 2.4	+ 2.3
Bottom tercile	percent	± 0.0	+ 1.1	+ 1.8	+ 1.7	+ 1.7
Middle tercile	percent	± 0.0	+ 2.0	+ 2.6	+ 2.5	+ 2.4
Upper tercile	percent	± 0.0	+ 2.2	+ 2.6	+ 2.5	+ 2.5
Consumer spending of households, volume	percent	± 0.0	+ 0.9	+ 1.3	+ 1.5	+ 1.6
Bottom tercile	percent	± 0.0	+ 0.8	+ 1.4	+ 1.5	+ 1.5
Middle tercile	percent	± 0.0	+ 1.0	+ 1.4	+ 1.6	+ 1.8
Upper tercile	percent	± 0.0	+ 0.8	+ 1.2	+ 1.4	+ 1.6
Saving ratio[1]	percentage points	± 0.0	+ 1.0	+ 1.0	+ 0.8	+ 0.6
Bottom tercile	percentage points	± 0.0	+ 0.4	+ 0.5	+ 0.4	+ 0.3
Middle tercile	percentage points	± 0.0	+ 0.9	+ 1.0	+ 0.7	+ 0.5
Upper tercile	percentage points	± 0.0	+ 1.1	+ 1.1	+ 0.8	+ 0.7
Financing measures						
Real disposable household income, net	percent	− 0.0	− 1.1	− 1.3	− 1.4	− 1.4
Bottom tercile	percent	− 0.0	− 1.0	− 1.1	− 1.1	− 1.2
Middle tercile	percent	− 0.0	− 1.1	− 1.3	− 1.4	− 1.4
Upper tercile	percent	− 0.0	− 1.2	− 1.4	− 1.5	− 1.6
Consumer spending of households, volume	percent	− 0.0	− 0.6	− 0.7	− 0.8	− 0.9
Bottom tercile	percent	− 0.0	− 0.8	− 0.9	− 1.0	− 1.0
Middle tercile	percent	− 0.0	− 0.5	− 0.7	− 0.9	− 1.0
Upper tercile	percent	− 0.0	− 0.5	− 0.6	− 0.7	− 0.9
Saving ratio[1]	percentage points	− 0.0	− 0.6	− 0.6	− 0.6	− 0.5
Bottom tercile	percentage points	− 0.0	− 0.3	− 0.3	− 0.3	− 0.2
Middle tercile	percentage points	− 0.0	− 0.5	− 0.5	− 0.4	− 0.4
Upper tercile	percentage points	− 0.0	− 0.6	− 0.6	− 0.7	− 0.6
Overall impact						
Real disposable household income, net	percent	− 0.0	+ 0.9	+ 1.2	+ 1.1	+ 1.0
Bottom tercile	percent	− 0.0	+ 0.2	+ 0.8	+ 0.7	+ 0.6
Middle tercile	percent	− 0.0	+ 1.0	+ 1.3	+ 1.2	+ 1.1
Upper tercile	percent	− 0.0	+ 1.1	+ 1.2	+ 1.1	+ 1.0
Consumer spending of households, volume	percent	− 0.0	+ 0.4	+ 0.6	+ 0.7	+ 0.7
Bottom tercile	percent	− 0.0	+ 0.2	+ 0.6	+ 0.6	+ 0.6
Middle tercile	percent	− 0.0	+ 0.5	+ 0.7	+ 0.8	+ 0.8
Upper tercile	percent	− 0.0	+ 0.4	+ 0.6	+ 0.6	+ 0.7
Saving ratio[1]	percentage points	− 0.0	+ 0.5	+ 0.5	+ 0.3	+ 0.2
Bottom tercile	percentage points	− 0.0	+ 0.1	+ 0.2	+ 0.2	+ 0.1
Middle tercile	percentage points	− 0.0	+ 0.5	+ 0.5	+ 0.4	+ 0.2
Upper tercile	percentage points	− 0.0	+ 0.5	+ 0.5	+ 0.3	+ 0.2

Source: WIFO calculations. – [1] As a percentage of disposable income.

The additional demand for consumer goods (and, to a lesser extent, the direct impulse on demand for investment goods) will in the second and third round be amplified by multiplier and accelerator effects. The demand impulse will slightly push up consumer prices (+0.2 percent) and imports (+0.7 percent), leading to a weaker external contribution to growth (−0.4 percentage points). Overall, the lower tax burden raises real GDP by 0.7 percent and employment by 0.3 percent in the medium term (+11,800 employment contracts). The unemployment rate edges down by 0.2 percentage points.

The tax revenue shortfall from the reform of the wage and income tax scale weakens the general government balance by a maximum of 1.1 percent of GDP in 2017. In the following years, the drag on the budget balance eases somewhat to 1.0 percent of GDP in 2019.

The exonerating effect on real disposable income after four years is lower by ¾ percentage points in the bottom income tercile than in the middle or upper tercile (Table 5). This is explained by the distribution key for the exonerating effects that differs from the distribution of income among the three groups of households (Table 3, key A), notably the modification of the tax scale (key B). Due to the higher marginal rate of consumption and the shorter adjustment period in the bottom ter-

cile of households (Table 2, Figure 1), the difference for consumption spending only amounts to 0.1 to 0.3 percentage points.

Increase in the tax burden

In order to finance the tax reform 2015-16, new taxes or tax increases to the amount of € 3.6 billion will be introduced in 2016, rising to € 4.5 billion (around 1.2 percent of GDP) in 2019 (Table 6).

Table 6: Effects of the tax reform 2015-16 - impact of financing measures in scenario 1

		2015	2016	2017	2018	2019
			Cumulated deviations			
Demand, volume						
Consumption expenditure						
Private households[1]	percent	– 0.0	– 0.6	– 0.7	– 0.8	– 0.9
Government	percent	– 0.0	– 1.2	– 1.2	– 1.1	– 1.1
Gross fixed investment	percent	– 0.0	– 0.3	– 0.3	– 0.3	– 0.3
Private machinery and equipment	percent	– 0.0	– 0.3	– 0.4	– 0.5	– 0.6
Private construction	percent	– 0.0	– 0.2	– 0.3	– 0.0	+ 0.0
Exports	percent	± 0.0	– 0.0	– 0.1	– 0.1	– 0.1
Imports	percent	– 0.0	– 0.3	– 0.4	– 0.4	– 0.4
Net exports, as a percentage of GDP	percentage points	+ 0.0	+ 0.2	+ 0.2	+ 0.2	+ 0.2
Gross Domestic Product (GDP)	*percent*	*– 0.0*	*– 0.5*	*– 0.5*	*– 0.6*	*– 0.6*
Nominal	*percent*	*– 0.0*	*– 0.3*	*– 0.3*	*– 0.3*	*– 0.4*
Inflation (not cumulated)						
GDP deflator	percentage points	– 0.0	+ 0.2	+ 0.1	– 0.0	– 0.0
Consumer prices	percentage points	– 0.0	+ 0.3	+ 0.1	+ 0.1	+ 0.0
Labour market						
Labour supply	percent	– 0.0	– 0.0	– 0.0	– 0.0	– 0.0
Dependent employment[2]	percent	– 0.0	– 0.1	– 0.2	– 0.2	– 0.2
	1,000 persons	– 0.0	– 4.1	– 6.3	– 7.2	– 7.8
Unemployment rate[3,4]	percentage points	+ 0.0	+ 0.1	+ 0.1	+ 0.1	+ 0.2
Unemployed[3]	1,000 persons	+ 0.0	+ 3.0	+ 4.7	+ 5.4	+ 5.9
Labour productivity	percent	– 0.0	– 0.4	– 0.4	– 0.4	– 0.4
Unit labour cost	percent	+ 0.0	+ 0.3	+ 0.4	+ 0.4	+ 0.4
Income, saving						
Wages and salaries, gross[5]	percent	– 0.0	– 0.1	– 0.1	– 0.2	– 0.2
Real wages per capita (dependent employees)[2]						
Gross	percent	– 0.0	– 0.3	– 0.4	– 0.5	– 0.6
Net	percent	– 0.0	– 0.4	– 0.6	– 0.8	– 0.9
Private disposable income, net						
Nominal	percent	– 0.0	– 0.8	– 1.0	– 1.1	– 1.2
Real	percent	– 0.0	– 1.1	– 1.3	– 1.4	– 1.4
Saving ratio[6]	percentage points	– 0.0	– 0.5	– 0.5	– 0.5	– 0.5
General government household						
Current revenue, as a percentage of GDP	percentage points	+ 0.0	+ 0.8	+ 1.0	+ 1.0	+ 0.9
Current expenditure, as a percentage of GDP	percentage points	+ 0.0	– 0.2	– 0.2	– 0.2	– 0.2
Government balance	€ million	+14.2	+3,430.3	+3,926.0	+4,156.1	+4,117.1
As a percentage of GDP	percentage points	+ 0.0	+ 1.0	+ 1.1	+ 1.1	+ 1.1
Financing, total	*€ million*	–	*+3,563.0*	*+4,352.0*	*+4,531.0*	*+4,501.0*
As a percentage of GDP	percentage points	–	+ 1.0	+ 1.2	+ 1.2	+ 1.2
Degree of self-financing as a percentage of financing volume	percentage points	–	– 3.7	– 9.8	– 8.3	– 8.5

Source: WIFO calculations. – [1] Including private non-profit organisations. – [2] According to National Accounts (jobs). – [3] According to labour market service. – [4] As a percentage of dependent active population. – [5] Excluding employers' contributions. – [6] As a percentage of disposable income.

The bulk of the measures are tax hikes (2016: € 2.5 billion, 2019: € 3.4 billion). In 2019, the extra revenues from direct taxes and social contributions (which directly reduce disposable income) as well as from indirect taxes amount to € 1.4 billion, respectively. In addition, the restraint on public spending on personnel (cuts to administrative expenditure by € 300 million) reduces disposable household income. The fight against tax fraud also squeezes income formerly earned in the "grey" economy. Direct and indirect taxes as well as social contributions will have to be paid on hitherto undeclared earnings, thereby reducing disposable income. Moreover, the newly paid taxes will (in part) be passed through to consumer prices, constraining private

purchasing power and demand. The pass-through to prices will mitigate the squeeze of disposable income of the former "grey" suppliers of goods and services.

The cuts in spending on public administration and subsidies by some € 1.1 billion will reduce public consumption in the short term, by 1.2 percent in 2016. The cut in personnel expenditure at the same time reduces to the same amount private disposable income. The cut in subsidies and the increase in the reduced VAT rate for certain goods and services also push up prices in the short term.

Overall, the new burden on private households (including second-round effects) will reduce nominal disposable income by 1¼ percent vis-à-vis the baseline scenario in 2019 (net real wages per capita –0.9 percent). The increase in consumption taxes, the partial pass-through of the higher tax burden from anti-fraud measures and the cuts of subsidies will raise headline inflation by 0.5 percentage points. Real disposable income in 2019 is 1.4 percent, private consumption by 0.9 percent lower than in the baseline scenario. With the decline in private and public consumption, imports also will drop by 0.4 percent.

The drag from the financing measures will reduce domestic output and real GDP by 0.6 percent. On the labour market, the number of employment contracts is almost 8,000 lower in 2019 than in the baseline scenario without the tax reform. The tax hikes and the expenditure cuts improve the general government balance by 1.1 percent of GDP.

The bulk of the financing measures affecting disposable income, i.e., the fight against undeclared work and cuts in public personnel spending, and the second-round effects of public expenditure restraint are weighted by the average household income shares by the terciles after the tax reform (distribution key A in Table 3) and are thus assumed to be distribution-neutral. Since only the increases in the social security contribution ceiling and in direct taxes due to the abolition of tax exemptions (distribution keys F and G) have a stronger impact on the middle and upper income terciles, the income effect by terciles (Table 5) is more equal than that of the tax cuts. Because of the different marginal propensity to consume across household groups, private consumption drops most significantly in relative terms in the bottom tercile.

Overall impact of the government scenario

The balance of tax cuts (2019: € 5.2 billion, of which 98 percent directly boosting private household disposable income) and financing measures (€ 4.5 billion) yields a net *relief of the tax burden* of € 337 million in 2016, rising to € 694 million in 2019, provided that all measures are implemented as foreseen in the government plan. The cumulative increase in real disposable income until 2019 is 1.0 percent, that of private consumption 0.7 percent. The assumed expenditure restraint in the public sector leads to a decline in public consumption by around 0.9 percent. The increase in private domestic demand will lead to higher imports. Higher private consumption, the increase in indirect taxes, cuts of subsidies and the fight against tax fraud (economically equivalent to a tax increase) will raise the consumer price level, which in turn may restrain private purchasing power and real consumption growth. Moreover, relative prices vis-à-vis the trading partners will go up and dampen exports. The external contribution to GDP growth edges down by 0.1 percentage point for 2019.

The tax reform 2015-16 (including the financing measures) shifts the composition of aggregate demand from the public towards the private sector, while the implicit stimulus to real GDP (2019 +0.2 percent) and employment (+0.1 percent) is altogether muted. The consumer price level in 2019 is projected to be ½ percent higher than in the baseline scenario without tax reform.

Thanks to the financing measures and the inflation-induced tax revenue gains, the effect on the budget balance (as a percentage of GDP) is neutral in the short term, compared with the baseline scenario, and slightly positive after four years. The degree of self-financing of the tax reform may prove consistent with the respective government expectations, owing to a large extent to the inflationary impact.

Table 7: Effects of the tax reform 2015-16 – overall impact in scenario 1

		2015	2016	2017	2018	2019
				Cumulated deviations		
Demand, volume						
Consumption expenditure						
Private households[1]	percent	− 0.0	+ 0.4	+ 0.6	+ 0.7	+ 0.7
Government	percent	− 0.0	− 1.1	− 1.0	− 1.0	− 0.9
Gross fixed investment	percent	− 0.0	+ 0.4	+ 0.5	+ 0.7	+ 0.7
Private machinery and equipment	percent	− 0.0	+ 0.6	+ 0.6	+ 0.9	+ 0.9
Private construction	percent	− 0.0	+ 0.4	+ 0.4	+ 0.8	+ 0.8
Exports	percent	± 0.0	− 0.0	− 0.0	− 0.0	− 0.1
Imports	percent	− 0.0	+ 0.1	+ 0.2	+ 0.2	+ 0.2
Net exports, as a percentage of GDP	percentage points	+ 0.0	− 0.1	− 0.1	− 0.1	− 0.1
Gross Domestic Product (GDP)	*percent*	− 0.0	+ 0.0	+ 0.1	+ 0.2	+ 0.2
Nominal	*percent*	− 0.0	+ 0.3	+ 0.5	+ 0.7	+ 0.7
Inflation (not cumulated)						
GDP deflator	percentage points	− 0.0	+ 0.3	+ 0.2	+ 0.0	+ 0.0
Consumer prices	percentage points	− 0.0	+ 0.3	+ 0.2	− 0.0	− 0.0
Labour market						
Labour supply	percent	− 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0
Dependent employment[2]	percent	− 0.0	+ 0.0	+ 0.1	+ 0.1	+ 0.1
	1,000 persons	− 0.0	+ 1.0	+ 2.8	+ 4.0	+ 4.2
Unemployment rate[3,4]	percentage points	+ 0.0	− 0.0	− 0.1	− 0.1	− 0.1
Unemployed[3]	1,000 persons	+ 0.0	− 0.8	− 2.1	− 3.0	− 3.2
Labour productivity	percent	− 0.0	− 0.0	+ 0.0	+ 0.1	+ 0.1
Unit labour cost	percent	+ 0.0	+ 0.1	+ 0.3	+ 0.3	+ 0.4
Income, saving						
Wages and salaries, gross[5]	percent	− 0.0	+ 0.1	+ 0.4	+ 0.5	+ 0.6
Real wages per capita (dependent employees)[2]						
Gross	percent	− 0.0	− 0.2	− 0.1	+ 0.0	+ 0.1
Net	percent	− 0.0	+ 2.6	+ 3.2	+ 3.1	+ 3.1
Private disposable income, net						
Nominal	percent	− 0.0	+ 1.3	+ 1.8	+ 1.6	+ 1.5
Real	percent	− 0.0	+ 0.9	+ 1.2	+ 1.1	+ 1.0
Saving ratio[6]	percentage points	− 0.0	+ 0.5	+ 0.5	+ 0.3	+ 0.2
General government household						
Current revenue, as a percentage of GDP	percentage points	+ 0.0	− 0.4	− 0.6	− 0.5	− 0.5
Current expenditure, as a percentage of GDP	percentage points	+ 0.0	− 0.5	− 0.5	− 0.6	− 0.6
Government balance	€ million	+14.2	+ 115.8	− 193.5	+ 210.6	+ 393.4
As a percentage of GDP	percentage points	+ 0.0	+ 0.0	− 0.0	+ 0.1	+ 0.1
Net tax relief, total	*€ million*	−	− 337.0	− 843.0	− 664.0	− 694.0
As a percentage of GDP	percentage points	−	− 0.1	− 0.2	− 0.2	− 0.2
Degree of self-financing as a percentage of net tax relief volume	percentage points	−	+ 134.3	+ 77.0	+ 131.7	+ 156.7

Source: WIFO calculations. – [1] Including private non-profit organisations. – [2] According to National Accounts (jobs). – [3] According to labour market service. – [4] As a percentage of dependent active population. – [5] Excluding employers' contributions. – [6] As a percentage of disposable income.

3.1.2 Scenario 2 – delayed implementation of the financing measures

Scenario 2 assumes that the planned measures to combat tax fraud and the restraint on expenditure will have been implemented only to one-half in 2016, to 75 percent in 2017 and to full extent only by 2018 (Table 8). In this case, real GDP would be higher in the first two years than in scenario 1 (2017 +0.3 percent). Due to the implementation lag, the inflation-enhancing effect is spread out over several years. The gain in GDP growth comes at the expense of a weaker budget balance. By 2019, when all measures will have been fully implemented, the budget balance will have improved and the gain in GDP will have abated towards the magnitude in scenario 1. Nevertheless, due to the originally higher budget deficit, the public debt ratio in 2019 is higher than in scenario 1.

Table 8: Effects of the tax reform 2015-16 – overall impact in scenario 2: delayed implementation of financing measures

		2015	2016	2017	2018	2019
				Cumulated deviations		
Demand, volume						
Consumption expenditure						
Private households[1]	percent	− 0.0	+ 0.6	+ 0.8	+ 0.7	+ 0.7
Government	percent	− 0.0	− 0.5	− 0.7	− 0.9	− 0.9
Gross fixed investment	percent	− 0.0	+ 0.6	+ 0.8	+ 0.9	+ 0.7
Private machinery and equipment	percent	− 0.0	+ 0.9	+ 0.9	+ 1.0	+ 0.9
Private construction	percent	− 0.0	+ 0.6	+ 0.8	+ 1.1	+ 0.9
Exports	percent	± 0.0	− 0.0	− 0.0	− 0.0	− 0.1
Imports	percent	− 0.0	+ 0.3	+ 0.4	+ 0.2	+ 0.2
Net exports, as a percentage of GDP	percentage points	+ 0.0	− 0.2	− 0.2	− 0.2	− 0.1
Gross Domestic Product (GDP)	*percent*	− 0.0	+ 0.2	+ 0.3	+ 0.3	+ 0.2
Nominal	*percent*	− 0.0	+ 0.4	+ 0.6	+ 0.7	+ 0.8
Inflation (not cumulated)						
GDP deflator	percentage points	− 0.0	+ 0.2	+ 0.2	+ 0.1	+ 0.1
Consumer prices	percentage points	− 0.0	+ 0.1	+ 0.2	+ 0.1	+ 0.1
Labour market						
Labour supply	percent	− 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0
Dependent employment[2]	percent	− 0.0	+ 0.1	+ 0.1	+ 0.1	+ 0.1
	1,000 persons	− 0.0	+ 3.0	+ 5.2	+ 5.7	+ 5.4
Unemployment rate[3,4]	percentage points	+ 0.0	− 0.1	− 0.1	− 0.1	− 0.1
Unemployed[3]	1,000 persons	+ 0.0	− 2.2	− 3.9	− 4.3	− 4.1
Labour productivity	percent	− 0.0	+ 0.1	+ 0.1	+ 0.1	+ 0.1
Unit labour cost	percent	+ 0.0	− 0.0	+ 0.1	+ 0.3	+ 0.5
Income, saving						
Wages and salaries, gross[5]	percent	− 0.0	+ 0.2	+ 0.4	+ 0.6	+ 0.7
Real wages per capita (dependent employees)[2]						
Gross	percent	− 0.0	− 0.0	− 0.0	+ 0.0	+ 0.1
Net	percent	− 0.0	+ 2.8	+ 3.3	+ 3.1	+ 3.0
Private disposable income, net						
Nominal	percent	− 0.0	+ 1.6	+ 1.9	+ 1.7	+ 1.6
Real	percent	− 0.0	+ 1.4	+ 1.4	+ 1.0	+ 0.9
Saving ratio[6]	percentage points	− 0.0	+ 0.7	+ 0.5	+ 0.3	+ 0.2
General government household						
Current revenue, as a percentage of GDP	percentage points	+ 0.0	− 0.7	− 0.7	− 0.5	− 0.5
Current expenditure, as a percentage of GDP	percentage points	+ 0.0	− 0.4	− 0.5	− 0.6	− 0.6
Government balance	€ million	+14.2	− 1,348.3	− 832.4	+ 283.4	+ 431.3
As a percentage of GDP	percentage points	+ 0.0	− 0.4	− 0.2	+ 0.1	+ 0.1
Net tax relief, total	*€ million*	−	− 1,849.5	− 1,640.5	− 664.0	− 694.0
As a percentage of GDP	percentage points	−	− 0.5	− 0.5	− 0.2	− 0.2
Degree of self-financing as a percentage of net tax relief volume	percentage points	−	+ 27.1	+ 49.3	+ 142.7	+ 162.1

Source: WIFO calculations. – [1] Including private non-profit organisations. – [2] According to National Accounts (jobs). – [3] According to labour market service. – [4] As a percentage of dependent active population. – [5] Excluding employers' contributions. – [6] As a percentage of disposable income.

3.1.3 Scenario 3 – delayed and only partial implementation of financing measures

Scenario 3 assumes not only a delay in the introduction of the financing measures, but also their incomplete implementation of anti-fraud measures and cuts in government spending. In this scenario only one-fourth of these measures would take effect in 2016, half of them would be in force by 2017 and 75 percent as from 2018. With the degree of financing being lower, the net relief of private households will be higher, with a lasting expansionary effect on GDP of 0.4 percent and on employment (Table 9). The budget balance weakens markedly, especially in the first two years. Although the fiscal gap narrows again thereafter, the inherent increase in public debt remains, the debt ratio in 2019 being 1 percentage point higher than in scenario 1.

Table 9: Effects of the tax reform 2015-16 – overall impact in scenario 3: delayed and incomplete implementation of financing measures

		2015		2016		2017		2018		2019	
						Cumulated deviations					
Demand, volume											
Consumption expenditure											
Private households[1]	percent	–	0.0	+	0.7	+	1.0	+	0.9	+	0.9
Government	percent	–	0.0	–	0.2	–	0.4	–	0.6	–	0.6
Gross fixed investment	percent	–	0.0	+	0.7	+	1.0	+	1.1	+	1.0
Private machinery and equipment	percent	–	0.0	+	1.0	+	1.1	+	1.2	+	1.1
Private construction	percent	–	0.0	+	0.6	+	1.1	+	1.4	+	1.3
Exports	percent	±	0.0	–	0.0	+	0.0	–	0.0	–	0.0
Imports	percent	–	0.0	+	0.4	+	0.5	+	0.4	+	0.3
Net exports, as a percentage of GDP	percentage points	+	0.0	–	0.2	–	0.3	–	0.2	–	0.2
Gross Domestic Product (GDP)	*percent*	–	0.0	+	0.3	+	0.4	+	0.4	+	0.4
Nominal	*percent*	–	0.0	+	0.4	+	0.7	+	0.9	+	1.0
Inflation (not cumulated)											
GDP deflator	percentage points	–	0.0	+	0.1	+	0.2	+	0.2	+	0.1
Consumer prices	percentage points	–	0.0	+	0.1	+	0.2	+	0.1	+	0.1
Labour market											
Labour supply	percent	–	0.0	+	0.0	+	0.0	+	0.0	+	0.0
Dependent employment[2]	percent	–	0.0	+	0.1	+	0.2	+	0.2	+	0.2
	1,000 persons	–	0.0	+	4.0	+	7.0	+	8.0	+	8.1
Unemployment rate[3,4]	percentage points	+	0.0	–	0.1	–	0.1	–	0.2	–	0.2
Unemployed[3]	1,000 persons	+	0.0	–	3.0	–	5.2	–	6.0	–	6.1
Labour productivity	percent	–	0.0	+	0.2	+	0.2	+	0.2	+	0.2
Unit labour cost	percent	+	0.0	–	0.1	+	0.0	+	0.3	+	0.4
Income, saving											
Wages and salaries, gross[5]	percent	–	0.0	+	0.2	+	0.5	+	0.7	+	0.8
Real wages per capita (dependent employees)[2]											
Gross	percent	–	0.0	+	0.1	+	0.1	+	0.1	+	0.1
Net	percent	–	0.0	+	2.9	+	3.5	+	3.3	+	3.2
Private disposable income, net											
Nominal	percent	–	0.0	+	1.8	+	2.1	+	1.9	+	1.9
Real	percent	–	0.0	+	1.6	+	1.7	+	1.3	+	1.2
Saving ratio[6]	percentage points	–	0.0	+	0.8	+	0.6	+	0.3	+	0.2
General government household											
Current revenue, as a percentage of GDP	percentage points	+	0.0	–	0.9	–	0.9	–	0.7	–	0.6
Current expenditure, as a percentage of GDP	percentage points	+	0.0	–	0.3	–	0.5	–	0.6	–	0.6
Government balance	€ million	+	14.2	–2,080.5		–1,535.3		–	434.4	–	242.3
As a percentage of GDP	percentage points	+	0.0	–	0.6	–	0.4	–	0.1	–	0.1
Net tax relief, total	*€ million*	–		–2,605.8		–2,438.0		–1,491.8		–1,504.8	
As a percentage of GDP	percentage points	–		–	0.8	–	0.7	–	0.4	–	0.4
Degree of self-financing as a percentage of net tax relief volume	percentage points	–		+	20.2	+	37.0	+	70.9	+	83.9

Source: WIFO calculations. – [1] Including private non-profit organisations. – [2] According to National Accounts (employment contracts). – [3] According to labour market service. – [4] As a percentage of dependent active population. – [5] Excluding employers' contributions. – [6] As a percentage of disposable income.

4. Summary

The model simulations of the macroeconomic effects of the tax reform 2015-16 presented here account for the uncertainty of financing the revenue losses implied by the tax cuts. This is accomplished by estimating alternative scenarios based on the assumption of a delayed and only partial implementation of the measures against tax fraud and the cuts of administrative expenditure and subsidies (scenarios 2 and 3).

The "government scenario" (scenario 1) is based on the assumption of all tax relief and financing measures being implemented as planned. The tax reform reduces the tax wedge and raises household disposable income, thereby shifting aggregate demand towards private consumption. Together, the increase in the indirect tax burden due to higher private consumption, the increase in the reduced VAT rate, the fight against tax fraud and the cut in subsidies will raise consumer prices by ½ percent in 2019. Real GDP will be boosted by almost ¼ percent in the medium

term. The impact on the general government balance is neutral, while the tax burden as percent of GDP decreases by ½ percentage point in the medium term.

In the event of the tax cuts being financed with a delay (scenario 2) or only partically (scenario 3), household disposable income would increase more and public consumption decline less than implied by scenario 1. This would lead to stronger growth of GDP in the short and medium run (in 2019 up to +0.2 percentage points against scenario 1), but also to higher government deficit and debt ratios (up to +1 percentage point until 2019).

A lasting reduction of the tax wedge may, in the longer run, provide incentives for higher labour force participation, thereby boosting potential growth, employment and trend output. Success in fighting tax evasion and fraud would broaden the tax base and facilitate the financing of public goods and services. This may create scope for cutting non-wage labour cost or for reinforcing public investment in infrastructure, yielding in both cases positive effects on long-term growth and job creation.

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