FACING INTERNATIONAL TAX COMPETITION

This is a translated version of the original German-language chapter "Dem internationalen Steuerwettbewerb begegnen", which is the sole authoritative text. Please cite the original German-language chapter if any reference is made to this text.

SUMMARY

At the beginning of 2018, a wide-ranging tax reform became effective in the **United States**, the Tax Cuts and Jobs Act (TCJA). This reform significantly reduced the tax rates on personal and corporate income and reorganised the taxation of multinational companies. The TCJA is considered to be the most **comprehensive US tax reform** since 1986 and is likely to affect the US economy in a variety of ways. The reform is expected to exert a noticeable impact on US economic growth, which in turn should stimulate German economic growth.

Belgium, France and Italy – countries where corporate tax rates were previously higher than in Germany – have also reduced their tax rates or announced further tax cuts. With respect to statutory corporate tax rates, Germany is thus gradually returning to the top of the list of OECD countries. Statutory rates are just one part of the tax system, however. The tax base to which the tax rate is applied is just as significant. The related debate about '**smart tax competition**' focuses on the extent to which tax incentives can be deliberately deployed to encourage certain highly mobile activities. One way in which this competition manifests itself is **patent boxes**, in which income derived from intellectual property rights is taxed at a lower rate. Although tax incentives for research and development are likely to produce deadweight losses, Germany could consider rewarding the results of research and development using a patent box as an instrument in tax competition.

Digital business models are particularly mobile. The European Commission has proposed two directives to tax digital services. However, the proposed definition for a 'digital presence' or 'virtual permanent establishment' is inadequate. It would appear more sensible to wait for an internationally coordinated approach. The much-discussed tax on digital firms' revenues should be viewed highly critically given WTO rules. Such a tax would represent a unilateral tariff on non-European, i.e. primarily US, digital businesses.

The federal government could provide better **incentives for investment in Germany** by reforming the tax system. Abolishing the solidarity surcharge completely could compensate corporations for the recent rise in local business tax multipliers and relieve the burden on partnerships and the self-employed. The tax discrimination against equity-financed investments should be eliminated in order to encourage entrepreneurs to invest equity in (newly established) firms. The German Council of Economic Experts' proposed concept of an allowance for corporate equity could be a way of achieving this. However, the planned abolition of the flat-rate withholding tax on interest income and its incorporation into the income tax base will create new distortions and increase the system's complexity. The small rise in tax revenue that this would generate does not justify such a reversal of earlier reforms.

I. MOTIVATION

558. At the beginning of 2018 a **wide-ranging tax reform** became effective in the **United States,** the Tax Cuts and Jobs Act (TCJA). In addition to significantly reducing the tax rates applicable to personal incomes and corporate profits, this legislation substantially altered the way in which multinational enterprises are taxed. This is likely to make it more difficult for US companies to minimise their tax liabilities by shifting profits to tax havens and, consequently, they will be forced to pay more of their taxes in the United States. Moreover, the United Kingdom's exit from the European Union (EU) is likely to further **intensify international tax competition**. In addition, Belgium, France, Italy and Austria have recently either already cut their tax rates or announced plans to do so. This new round of tax competition will probably have a considerable impact on the tax revenues received by individual countries as well as affecting the investment activities undertaken by multinational corporations, which in turn is likely to have a significant impact on Germany.

559. The German federal government should mount a timely response to this changing competitive situation rather than simply adopting a wait-and-see approach to the emerging relative deterioration in Germany's tax competitiveness. It could lower the statutory tax rates by cutting corporation tax, whereas the municipality-specific tax multipliers of the equally important local business tax would be more difficult to lower across the board. The **total abolition of the solidarity surcharge** would more or less compensate corporations for the rise in statutory local business tax rates since 2008. ↘ ITEMS 590, 636 FF.

560. One further potential response to the intensified tax competition would be to implement measures affecting the business tax base. Regulation of **patent box regimes** could, for example, be introduced. This should, however, take account of the nexus approach adopted by the OECD's action plan on Base Erosion and Profit Shifting (BEPS), which focuses more on research carried out in the respective country. ↘ ITEMS 595 FF. Distortions in the German tax system – especially **the discriminatory treatment of equity financed investment** – could also be **eliminated**. ↘ ITEMS 640 FF.

II. THE TAX CUTS AND JOBS ACT AND ITS IMPACT

1. Key elements of the tax reform

561. In December 2017 the United States passed a **wide-ranging package of reforms** in the shape of the TCJA. This legislation is considered to be the most comprehensive US tax reform since 1986. It contains new regulations for individuals and businesses, especially for multinational corporations. ↘ CHART 75 The tax rates on personal income and corporate income have been significantly re-

Components of the US Tax Cuts and Jobs Act[1]

Estimated budget effects

% of GDP[2]

Individual tax reform   Business tax reform
International taxation   — Total

Cumulative budget effect for 2018–2027 by selected reform components

% of GDP[2]

Net effect of other measures
BEAT and GILTI[3]
Repatriation tax[4]
Limit on net operating loss deduction
Limit on net interest deductions
Individual mandate penalty[5]
Income tax[6]
Child tax credit
Business Income
Corporation tax rate
Participation exemption

◆ Total effect

1 – Estimates by the JCT on 18 December 2017 excluding macroeconomic feedback effects, in each case compared with a non-reform sce-nario. 2 – As a share of nominal GDP for 2017. 3 – Minimum tax on notional US value added by overseas subsidiaries and CFC tax on certain overseas income. 4 – One-time taxation of previously retained overseas profits. 5 – If health insurance cover is inadequate, no more penalties will be payable from 2019 onwards. This is likely to result in fewer policies and lower the cost of subsidies and allowances. 6 – Reform of the tax scale and the tax base.

Sources: BEA, JCT (2017a), own calculations

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duced. Although this arrangement is intended to apply only temporarily to indi-viduals and partnerships, it will apply permanently to corporations.

562. However, these reforms go **well beyond lower tax rates**. One major aspect is that corporate profits will in future be taxed more in line with the territorial principle, similar to Germany. The tax system will therefore no longer primarily be aimed at the profits earned by US firms worldwide but, instead, will focus on the profits generated by domestic and foreign companies in the United States. This will be supplemented by a one-off repatriation tax on the profits of overseas subsidiaries. ↘ ITEMS 571 FF.

563. The ability to **write off** the full cost of their investments **in the first year** is al-so likely to have an immediate impact. In addition, various rules are intended to make it more difficult for companies to shift profits to low-tax countries. The ac-tual implementation of some measures is still subject to uncertainty, which should be resolved by the end of this year. Moreover, various aspects of these re-forms might **contravene existing WTO rules or double taxation trea-ties**. ↘ BOX 16

Cutting tax rates and broadening the tax base

564. **Income tax** in the United States – as in Germany – is levied as part of a pro-gressive tax system. The new rules provide substantial relief for many taxpayers by adjusting the tax scale. Furthermore, the existing child tax credits have been doubled. In return for the tax cuts provided, personal tax exemptions and deduc-tions have been abolished. For example, the new legislation limits the deduc-tions available for state and local taxes, such as property and either income or sales taxes, medical expenses and interest on mortgage debt. The latter is now

tax deductible up to loan amounts of 750,000 US dollars, whereas the previous limit was 1 million US dollars. All major income tax cuts are time limited and expire in 2025.

565. This year the after-tax incomes of individuals are likely to rise by between 2.2 % and 2.3 % as a result of the changes to tax rates and the tax base (Tax Policy Center, 2017; Li and Pomerleau, 2018). The **tax cuts for higher incomes are larger in relative terms**. However, the changes to personal tax exemptions and deductions may make some individuals worse off. Taking account of family status, income sources and further personal characteristics, the Tax Policy Center (2017) estimates that the tax burden this year – when compared with the old rules – will increase for 5 % of taxpayers. Because the tax cuts are time limited, it is estimated that this proportion will rise to over 53 % in 2027, and it is highest in the middle income quintile. Moreover, the **impact of the tax cuts varies from one US state to another**, especially because the new legislation limits the deductions available for regional taxes (Sammartino et al., 2018).

566. The **corporation tax rate** has been permanently reduced from 35 % to 21 %. Because business taxes vary from state to state, the total average statutory tax rate for corporations in the United States has fallen from around 39 % to roughly 26 %. ↘ CHART 79 PAGE 300 This means that it is higher than the average profit tax rate in the EU but is now lower than the German rate.

Financing neutrality and investment incentives

567. These reforms also reduce the preferential tax treatment of debt- over equity-financed investment. Changes to the tax deductibility of net interest expense are designed to create incentives for a stronger use of equity finance. To this end, an **earnings-stripping rule (or 'interest barrier')** similar to the German rule (GCEE Annual Report 2015 items 782 ff.) has been introduced. The tax deductibility of net interest expense is now limited to 30 % of earnings before interest, tax, depreciation and amortisation (EBITDA). Any amounts exceeding this level are included in the interest carry forward. From 2022 onwards this rule for companies will be tightened further because the benchmark used will be earnings before interest and tax (EBIT), which is more narrowly defined.

568. Whereas the reforms have abolished some special business deductions and tax credits, **research and development** (R&D) continue to receive preferential tax treatment. From 2022 onwards, however, R&D spending will no longer be able to be deducted immediately but, instead, will have to be spread over several years. This period will be longer for R&D projects conducted abroad, which will increase the tax incentive to carry out research projects in the United States.

569. The ability to **write off** the full cost of most capital equipment **in the first year** is intended to give a further boost to investment. From 2023 onwards these write-offs will gradually be reduced by 20 percentage points per year until they are completely phased out on 31 December 2026. Consequently, most capital spending is likely to be undertaken in the first few years of these reforms.

International taxation

570. In order to discourage profit shifting abroad for tax reasons and create additional incentives to invest in the United States, the TCJA contains a number of measures concerning the taxation of multinational corporations. ↘ BOX 16 By introducing a system of exemptions for dividends, the United States is shifting from a worldwide tax regime to a **territorial system**. ↘ ITEMS 611 FF. Dividend payments that US parent companies receive from their overseas subsidiaries are now generally not taxed in the United States (Mintz, 2018).

↘ BOX 16

International taxation under the Tax Cuts and Jobs Act (TCJA)

The TCJA fundamentally alters the way in which multinational corporations are taxed. Above all, it **shifts** the US tax system more towards a **territorial tax regime**. It also systematically encourages investment in the United States and makes it more difficult to shift profits abroad.

Base Erosion and Anti-abuse Tax (BEAT)

This element of the reform introduces a **minimum tax** on the notional US value added by overseas subsidiaries. It is intended to prevent multinational corporations from using inappropriate transfer pricing to shift profits out of the United States. For this purpose a notional BEAT tax base is computed to which an effective BEAT reference tax rate is applied. This rate is generally 5 % for 2018 and 10 % from 2019 onwards, rising to 12.5 % from 2026 onwards (Beer et al., 2018). If the BEAT tax computed in this way exceeds the regular tax liability, the difference must be paid additionally. Because certain thresholds apply, not all multinational corporations are subject to this tax. Such thresholds apply, for example, to the level of annual revenue, the amount by which the computed BEAT tax must exceed the regular tax liability, and minimum requirements concerning the investments in companies within the group located outside the United States. Nonetheless, this creates an incentive to shift profits to the United States. Because this tax in its current form does not take account of any tax credit or the level of taxation in the foreign country concerned, the BEAT may result in **double taxation**. Its complex construction provides companies with new scope for tax planning (Becker and Englisch, 2018a). Moreover, certain aspects of this regulation might contravene WTO rules and violate the GATT's non-discrimination principle (Article XVII) (Avi-Yonah and Vallespinos, 2018).

Global Intangible Low-Taxed Income (GILTI)

This arrangement introduces **controlled foreign corporation (CFC) tax rules** for certain foreign income, which impose US taxation on the subsidiary-generated income that is earned from intellectual property (IP) and exceeds the specified market return of 10 % on depreciable assets. For companies that have no depreciable assets the entire profit is recognised as GILTI. Half of this profit (62.5 % from 2026 onwards) is subject to regular taxation at 21 %. The effective tax rate thus amounts to 10.5 % from 2018 to 2025 and then roughly 13 % from 2026 onwards. 80 % of the tax already paid overseas can be credited (Beer et al., 2018). If the effective income tax rate paid overseas amounts to at least 90 % of the US tax, an exemption from the CFC rules applies. Germany exceeds this 90 % threshold as a result of its local business tax. However, tax havens and countries with patent box regimes tend to be affected by these rules. Yet, their exact impact is unclear owing to the computation methods used, which are based on global aggregates (Becker and Englisch, 2018a).

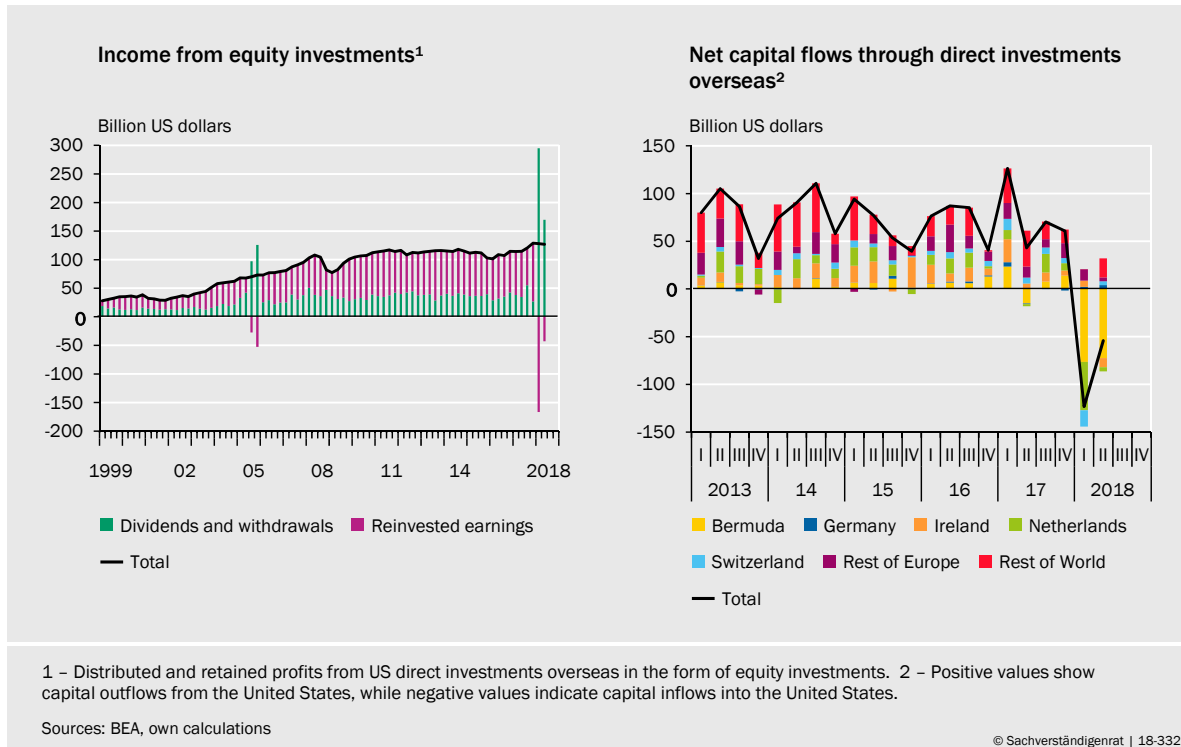**Foreign-Derived Intangible Income (FDII)**

This legislation introduces a **lower effective tax rate** that offers preferential treatment to US corporations' **foreign-derived intangible income** (FDII). Determining FDII requires a three-step process. The first step is to assume a normal rate of return of 10 % in order to calculate the notional income de-

rived from certain tangible business assets ('Qualified Business Asset Investment'). The difference between notional and actual income is then deemed to be generated by intangible assets. The final step is to use the export share of total income to calculate and add intangible income as a proportion of income from the sale of goods and services overseas. The sum of these amounts is the FDII, 62.5 % of which (roughly 78 % from 2026 onwards) is subject to regular taxation. The effective tax rate is therefore not 21 % but approximately 13 % for the period 2018 to 2025 (and around 16.4 % from 2026 onwards). FDII includes income from the sale, lease or licensing of assets and of services rendered for non-US individuals. This arrangement applies to two or more enterprises with the same owner only if the asset is forwarded to a third party. This could bring the arrangement into conflict with the recommendations of the BEPS initiative (Action 5). It might also contravene the **ban on export subsidies under the GATT** (WTO SCM Agreement Article 1.1 in conjunction with Article 3) (Avi-Yonah and Vallespinos, 2018). This might be the case because the lower tax rate applies solely to US companies and could also potentially be applied to exports of previously imported but subsequently unmodified goods. It might also reduce the incentive to create tangible assets in the United States because this automatically reduces the proportion of FDII to which the lower tax rate applies (Chalk et al., 2018).

571. The Joint Committee on Taxation (JCT) estimates that US companies held undistributed foreign profits of around 2.6 trillion US dollars abroad in 2015, which have accumulated since 1986 and have not been taxed (Barthold, 2016). These retained earnings are now being subjected to a **one-off tax**. To this end, these profits are calculated as far back as 1986 and tax already paid is credited to only a limited extent. Irrespective of how they are actually distributed and repatriated, all profits are subjected to a one-off tax of 8 % on illiquid assets and 15.5 % on liquid assets, although the tax liability can be spread over a period of up to eight years.

572. This removes the incentive to hold reinvested profits abroad to avoid taxation. Instead, they can now be transferred as tax-free dividends or withdrawals to the parent company in the United States. ↘ CHART 76 LEFT It is unclear whether companies will subsequently invest these repatriated profits domestically. Back in 2004 the Homeland Investment Act created a temporary opportunity to repatriate overseas profits. At that time this legislation did not persuade the companies concerned to increase their investment, employment or research in the United States – they merely **paid higher dividends to their shareholders** (Dharmapala et al., 2011). However, the shareholders could use these dividend payments to invest in other ways in the United States.

573. The first half of this year saw unusually strong **capital outflows from certain low-tax countries to the United States**. ↘ CHART 76 RIGHT This could be interpreted as a reaction to the tax reform. One noticeable aspect here is the extent to which these outflows are concentrated on the Netherlands and Bermuda. These are mainly likely to have been liquid funds held there by holding companies. Although investment in property, plant and equipment is less mobile, the greater relative appeal of the United States could mean that European countries – especially high-tax jurisdictions such as Germany – could in the long term suffer **declining net direct investment** (Heinemann et al., 2018).

US direct investments overseas and repatriated profits

Income from equity investments[1]

Billion US dollars

■ Dividends and withdrawals   ■ Reinvested earnings
— Total

Net capital flows through direct investments overseas[2]

Billion US dollars

■ Bermuda   ■ Germany   ■ Ireland   ■ Netherlands
■ Switzerland   ■ Rest of Europe   ■ Rest of World
— Total

1 – Distributed and retained profits from US direct investments overseas in the form of equity investments. 2 – Positive values show capital outflows from the United States, while negative values indicate capital inflows into the United States.

Sources: BEA, own calculations

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574. These reactions by companies and investors impact on other countries' tax revenues. Beer et al. (2018) analyse the spillover effects that the different tax rates have on **revenues from the taxation of multinational corporations**. These effects are determined by other governments' tax policy responses. Losses incurred as a result of profit shifting and altered investment decisions are estimated to be similarly high. Mexico and Ireland are likely to be the countries most severely affected. However, this study omits other aspects of the tax reform, such as the legislation on the taxation of multinational corporations.

1. Macroeconomic effects of the tax reform

575. Estimates of the impact that the tax reform will have on economic output in the United States agree that **gross domestic product (GDP) is likely to increase in the short term**. In addition, a number of studies suggest a positive, albeit **slightly more modest long-term effect**. These measures are currently coinciding with a high level of capacity utilisation. The already high public debt will rise in the medium term. Although some of the measures are due to expire in a few years, they will **require** further **funding over the medium term**. The long-term impact of the tax reform will depend on the nature of this funding. The already fairly high inequality of disposable incomes compared with other OECD countries (GCEE Annual Report 2015 chart 109) is likely to increase further as a result of these reforms. ↘ ITEM 565

Impact on the United States

576. Using a model which abstracts from macroeconomic repercussions, the JCT estimates that the **adverse budget impact** of the reform will be roughly 1.5 tril-

⬊ TABLE 24

Estimates of the Tax Cuts and Jobs Act's impact on US GDP

Source	Relative deviation in the level of GDP from a scenario without the tax reforms			Models used[1]
	2018	2019	2027	
Joint Commitee on Taxation, JCT (2017b)	0.8 %–0.9 %[2]		0.1 %–0.2 %	MGM/OLG/NK-DSGE
Penn Wharton Budget Model (2017)	n/a		0.6 %–1.1 %	MSM/OLG
Tax Foundation (2017)[3]	0.4 %	0.9 %	2.8 %	MSM/MGM/OLG
Tax Policy Center, Page et al. (2017)	0.8 %	0.7 %	0 %	MSM/MGM/OLG
Congressional Budget Office, CBO (2018)	0.3 %	0.6 %	0.6 %	MGM
Council of Economic Advisers, CEA (2018)[4]	1.3 %–1.6 % up to 2020		long term 2 %–4 %	E
Deutsche Bundesbank (2018)[5]	0.7 %	1.6 %	n/a	NiGEM
Lieberknecht and Wieland (2018)[6]	0.7 %–2.2 %	1 %–3.1 %	1.9 %–2.7 %	NK-DSGE
Mertens (2018)[5,7]	1.1 %	1.4 %	n/a	E
Estimates which, in addition to the tax reforms, also take account of the approved spending increases:				
OECD (2018a)[5]	0.6 %	1.2 %	n/a	NiGEM
IMF (2018a)	1.5 % up to 2020		n/a	n/a

1 – E: Empirical results of econometric estimates; MGM: Macroeconomic equilibrium model; MSM: Microsimulation model; NK-DSGE: New Keynesian dynamic stochastic general equilibrium model; NiGEM: National Institute Global Econometric Model; OLG: Overlapping generations model. 2 – No figures given for individual years; the stated values relate to the majority of the ten-year projection period, for which the average effect amounts to 0.7 % overall. 3 – Level effect calculated from stated growth effect. 4 – Short-term effect owing to the cut in income tax; long-term effect owing to the lower business tax rate and to depreciation. 5 – Level effect calculated from stated growth effect assuming 2 % growth in the baseline scenario. 6 – Values relate to the scenarios with temporary tax rate cuts with or without variable capital use. 7 – Results based on empirical estimates of tax multipliers

Sources: stated sources; own calculations

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lion US dollars for the period up to 2027 (JCT, 2017a). This equates to around 7.5 % of nominal GDP in 2017. Because some of the reform components with the largest budget impact are time-limited, roughly half of the estimated revenue shortfall will occur in the first three years. ⬊ CHART 75 LEFT

However, this analysis ignores the fact that corporations' and households' **adaptive responses** to these changes in the tax system will influence macroeconomic developments throughout the economy. One can thus expect to see the reform having a noticeable **impact on economic growth** in the United States over the short to medium term. The income tax cuts are likely to boost consumer spending, although this benign effect will probably be impaired by expectations of subsequent financial burdens. Lowering taxes on corporations increases their incentive to invest. Higher levels of growth might slightly reduce the government's revenue shortfalls.

577. Estimates of the impact on GDP in the United States all agree that the tax reforms will act as a **positive stimulus** this year and next. The estimated extent of these effects does, however, vary – especially over the medium term. ⬊ TABLE 24 The Council of Economic Advisers (CEA), which is part of the US government, expects the income tax changes to boost real GDP by between 1.3 % and 1.6 % over the next two to three years and reckons that the business tax cuts will increase GDP by between 2 % and 4 % over the long term (CEA, 2018). These calculations use estimated elasticities.

578. The independent **Congressional Budget Office** (CBO, 2018) projected in April 2018 that the tax reform would boost real GDP by an average of 0.7 % up to 2028. The higher level of real GDP is largely attributable to stronger growth in the first few years. As some measures expire and credit costs rise owing to increasing public debt, the tax reforms' impact on growth rates is likely to weaken over time and eventually become negative. According to these estimates, however, **GDP** will remain **at a higher level** throughout this period.

The **Tax Policy Center** estimates that the tax reform will boost real GDP by a similar average of 0.5 % up to 2027 (Gale et al., 2018). While the increase in the first few years is slightly higher than in the CBO's analysis, the slowdown in growth is slightly more pronounced in later years, which means that the tax reforms' impact on GDP in 2027 will be negligible.

579. According to the CBO's projection, the growth in economic output is likely to be accompanied by an additional rise of up to 0.7 % in **employment**. In addition, wages and salaries are forecast to be 0.9 % higher on average over the period up to 2028. Because some capital spending will probably be provided by foreign investors, future payments to the latter will rise. Not least for this reason the average **increase of 0.4 % in real gross national income** projected by the CBO is slightly lower than that of GDP.

580. Mertens (2018) summarises the **results of empirical estimates of tax multipliers** and uses these to draw conclusions about the potential expansionary effects of the current tax reform. These calculations reveal that, on average across the various approaches, real GDP in the United States is likely to be roughly 1.3 % higher in 2020 as a result of the reform. A major contributing factor here will be much stronger growth in 2018.

581. Lieberknecht and Wieland (2018) use a **structural macroeconomic model** to analyse the effects of the TCJA. This model is based on the New Area-Wide Model (NAWM) by Coenen et al. (2008) that has been used in previous analyses conducted by the German Council of Economic Experts. It factors in wage and price rigidities as well as the behavioural adjustments made by corporations and households in response to the tax changes (GCEE Annual Report 2013 box 10; economic forecast 2017). The model also analyses monetary policy responses and future fiscal policy adjustments aimed at ensuring debt sustainability. This enables it to map **anticipatory effects** arising from higher levels of debt. This two-country model also provides an assessment of the **impact on the euro area**. In the model, the reform package is implemented via a decrease of tax rates on personal and corporate income. The model reflects the reductions in tax cuts over time in line with the relevant legislation.
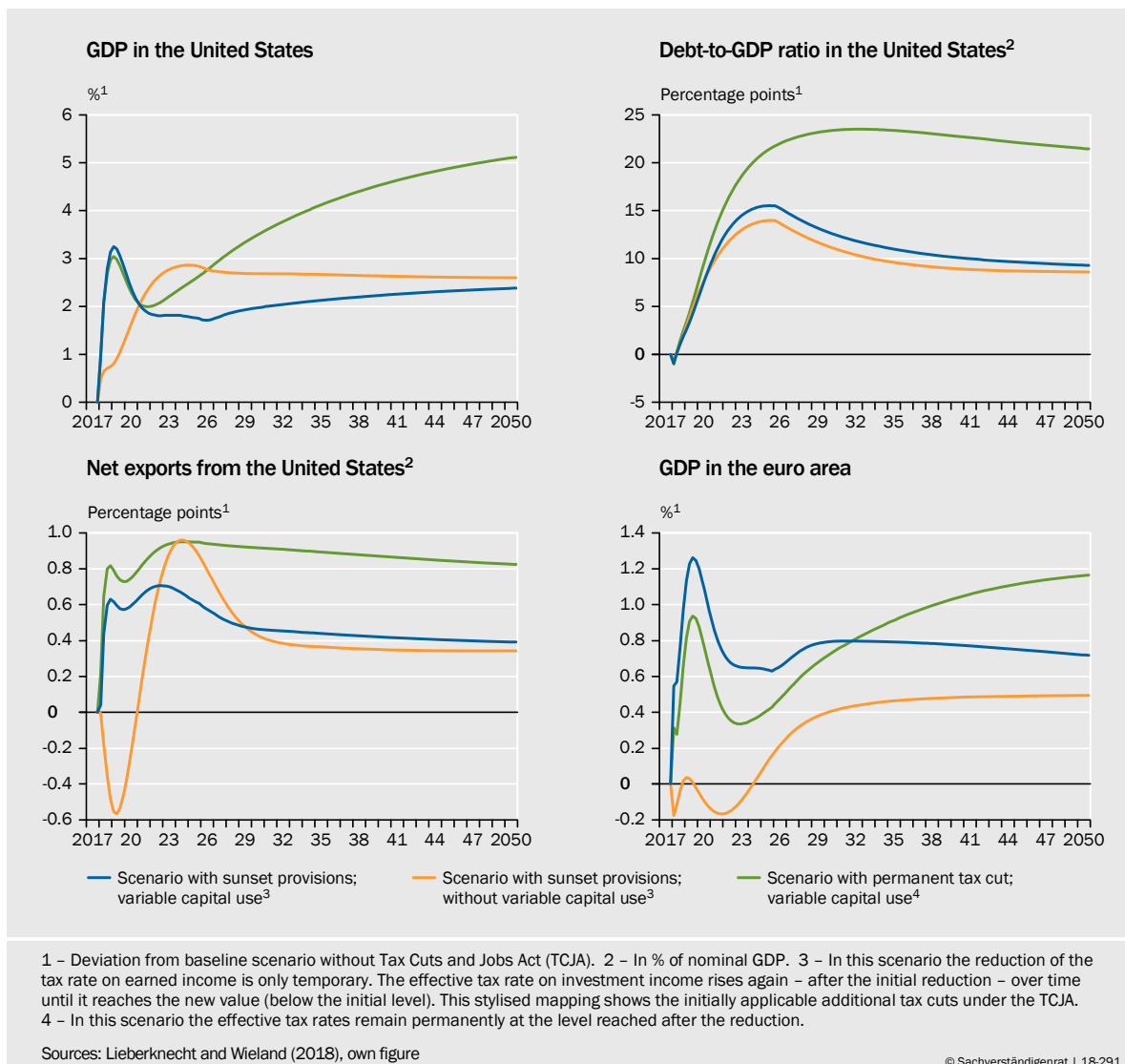
582. Model simulations show the impact on macroeconomic development over time. How GDP reacts to the tax reforms depends to a large extent on how flexibly the capital currently available in the economy can be used. ↘ CHART 77 TOP LEFT If capital utilisation is as variable as the empirical estimates underlying the model parameters suggest, then GDP – according to this analysis – will already rise sharply in the short term. This specification is consistent with empirical findings which suggest that business tax cuts have a positive impact on growth if the

stock of capital remains constant (Johansson et al., 2008; Arnold et al., 2011). However, macroeconomic capacity utilisation in the United States is probably high already. In such a situation it might not be possible to adjust the utilisation of capital quite so flexibly. In this case the rise in GDP would be more gradual and tend to be closer to the lower end of the estimated effects. In both cases, however, GDP would remain **at a higher level over the long term**. A major contributing factor here would be the growth in the capital stock as a result of higher capital spending.

Despite the growth in economic output, the research carried out by Lieberknecht and Wieland (2018) suggests that the **debt-to-GDP ratio in the United States will rise sharply** over the coming years. ↘ CHART 77 TOP RIGHT These findings match the analysis conducted by the CBO and the Tax Policy Center. The government deficit is rising against a backdrop of what is already a historically high level of public debt. ↘ ITEM 221 The higher public debt levels will incur higher interest payments in future and strengthen the need for fiscal policy adjustments, which could entail adverse repercussions for the economy. Although

↘ CHART 77

Model simulation of the macroeconomic effects of the US Tax Cuts and Jobs Act

1 – Deviation from baseline scenario without Tax Cuts and Jobs Act (TCJA). 2 – In % of nominal GDP. 3 – In this scenario the reduction of the tax rate on earned income is only temporary. The effective tax rate on investment income rises again – after the initial reduction – over time until it reaches the new value (below the initial level). This stylised mapping shows the initially applicable additional tax cuts under the TCJA. 4 – In this scenario the effective tax rates remain permanently at the level reached after the reduction.

Sources: Lieberknecht and Wieland (2018), own figure

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Lieberknecht and Wieland (2018) map fiscal policy adjustments, they might turn out to be less growth friendly than is assumed in their model analysis.

583. In addition to their short-term expansionary effects on demand, the analysed tax cuts have a positive **impact on potential output**. The CBO (2018) also estimates that both potential and actual GDP are likely to be higher by 0.7 % on average over the eleven years up to 2028 as a result of these reforms. Contributing factors here are the greater work incentives and, in later years, the higher labour productivity driven by capital spending. Because this projection suggests that actual GDP will grow faster, however, the macroeconomic output gap will initially widen slightly before closing again.

A higher level of macroeconomic capacity utilisation would help to intensify price pressures, to which the most likely monetary policy response would be to raise interest rates. If the acceleration in growth were to cause interest rates to rise unexpectedly rapidly, this would constitute a further channel through which other economies would be affected by these tax reforms.

584. The research conducted by Lieberknecht and Wieland (2018) suggests that the impact on **inflation** depends on the degree of **flexibility in the utilisation of capital**. Although the scenario of flexible capital use causes GDP to rise sharply in the short term, it does not fuel price pressures. The lower production costs cause prices to fall in this case. Consequently, there is no need for the central bank – whose reaction follows a Taylor rule – to raise interest rates. If capital is used less flexibly, however, the research conducted by Lieberknecht and Wieland (2018) reveals modest inflationary effects.

The level of flexibility in the use of capital also has **implications for a country's foreign trade and payments**. In the calculations by Lieberknecht and Wieland (2018) assuming a scenario of flexible capital use, for example, the lower prices resulting from the tax reform trigger a real devaluation and cause the United States' net exports to increase. ↘ CHART 77 BOTTOM LEFT Under the scenario without flexible use of capital, however, net exports initially decrease and the US trade deficit grows.

585. The projection by the CBO (2018) also suggests that the United States' net exports will fall as a result of the country's tax reforms. This is attributable to strong growth in domestic demand and the assumption that the US dollar exchange rate will rise moderately in the short term. This assessment is also consistent with a study by the International Monetary Fund (IMF, 2018b) on the impact of changes in business taxation, which suggests that the tax reforms will trigger a real currency appreciation and cause the **US trade deficit to grow**.

The reforms are likely to make it relatively more attractive for companies to report profits in the United States (Chalk et al., 2018). Adjustments to the profits shifted within corporations – for example in the form of licence fees – could lead to a situation where the statistically reported decline in the balance of trade is less pronounced (CBO, 2018; Gale et al., 2018).

586. One adverse impact that the tax reform might potentially have on the balance of trade is inconsistent with the insistence expressed by the United States during the trade conflict that its trade deficit should be reduced. ↘ ITEM 11 Christofzik and Elstner (2018) show that tax cuts in the United States have in the past been accompanied by an **increase in Germany's current account balance**. ↘ BOX 17

Impact on other economies

587. Stronger economic growth in the United States is likely to **boost growth in other economies**. The model simulation by Lieberknecht and Wieland (2018) suggests that real GDP in the euro area will increase significantly over the long term as a result of the tax reform in the United States. ↘ CHART 77 BOTTOM RIGHT The short-term effects suggested by the model, however, depend on the degree of variability in the utilisation of capital. If this is flexible, GDP in the euro area could already in the short term be around 1 % higher than without the reform, especially as a result of income effects. The long-term impact on economic output is slightly more modest. This means that growth in the euro area – as in the United States – would be dampened somewhat after a few years.

The scenario in which capital utilisation is inflexible, on the contrary, initially produces a slightly adverse short-term impact on GDP in the euro area. Although the euro area's net exports grow under this scenario, private capital spending contracts sharply because the euro area's relative appeal as a business location declines.

588. Deutsche Bundesbank (2018) conducted research using the macroeconometric model NiGEM, which also found slightly adverse effects on **growth in the euro area**, whereas the impact on growth in the United States is clearly positive in the first few years. However, research carried out by the OECD (2018a) using the same model finds moderately positive effects on the euro area. In addition to the tax reform, this study also contains the approved government spending increases in the United States.

Christofzik and Elstner (2018) demonstrate that tax reforms in the United States during the period from 1970 to 2017 had a **moderately positive impact on GDP in Germany**. Although stronger demand from the United States boosted German exports, a deterioration in price competitiveness and a relatively restrictive tax policy appear to have dampened this positive effect. ↘ BOX 17

↘ BOX 17

**Effects of US tax reforms on the German economy and German tax policy**

Past experience can be used to make statements about **US tax reforms' spillover effects on the German economy** and responses by German economic policy. A major challenge in identifying tax-related effects on the economy is that tax reforms do not take place randomly. Rather, policymakers often implement such reforms to react to economic developments. Cyclical fluctuations in US tax revenue must therefore be separated from actual changes in tax legislation. In the case of the United

States there are a large number of studies that aim at addressing this identification problem in various ways, for example by using structural VAR models (Blanchard and Perotti, 2002; Mountford and Uhlig, 2009; Barro and Redlick, 2011; Caldara and Kamps, 2017), narrative approaches (Romer and Romer, 2010) or combinations of both approaches (Mertens and Ravn, 2014). How well these approaches solve the problem and, thus, allow causal statements to be made depends on the plausibility of the assumptions.

In order to estimate the impact that US tax reforms have had on economic growth in the United States, Christofzik and Elstner (2018) utilise the method of Mertens and Ravn (2014), which applies exogenous tax changes under the narrative approach of Romer and Romer (2010) as an instrument for tax reforms. This method therefore provides a direct link to tax policy in the United States. This approach is supplemented by including one German variable in the VAR model in each case. Christofzik and Elstner (2018) use quarterly data over an **estimation period of 1970 to 2017** to investigate, among other things, the spillover effects on German economic growth, the German current account balance and the scale of discretionary tax changes in Germany.

↘ CHART 78

Effects of a US tax cut amounting to 1 % of GDP

Point estimates — — 68 % confidence band · · · 95 % confidence band
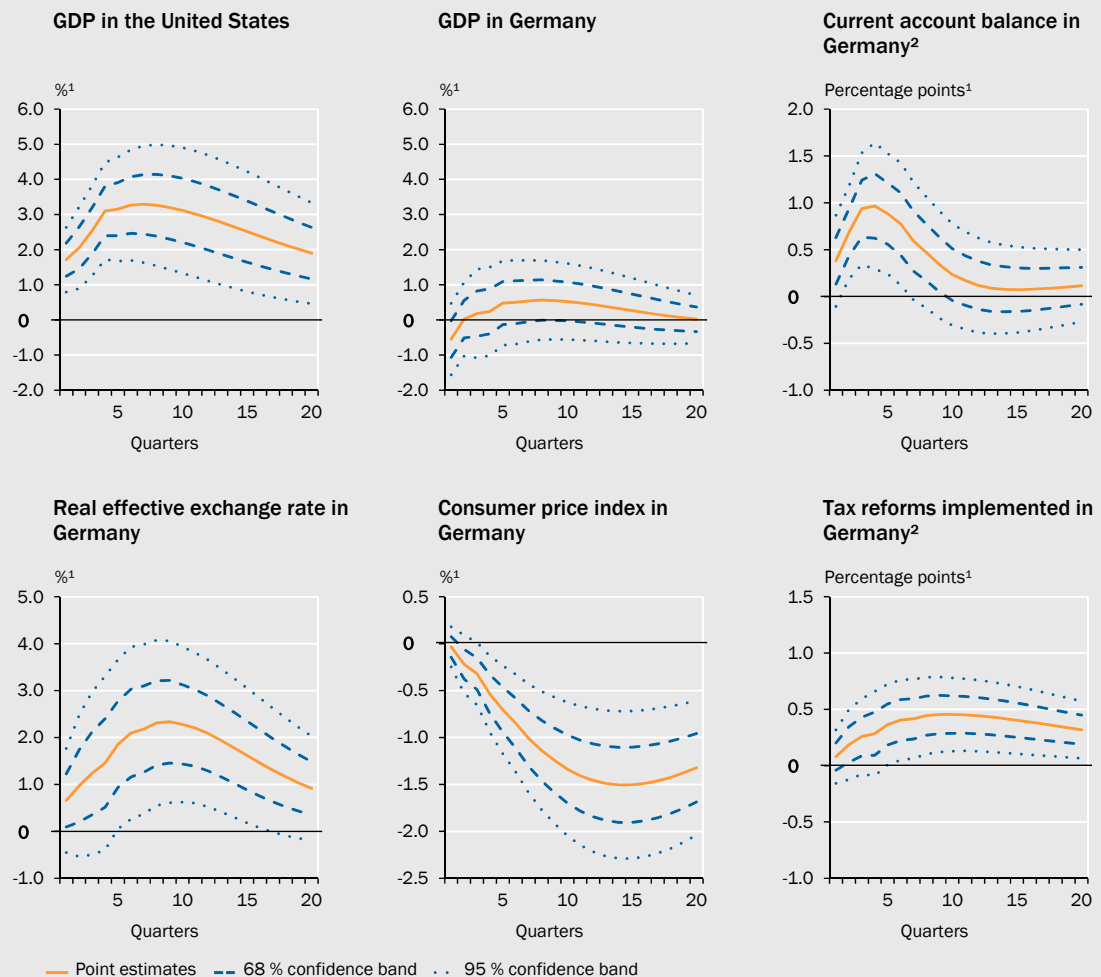
1 – Impulse-response sequences from vector autoregressive models after a US tax cut amounting to 1 % of nominal US GDP. 2 – % of GDP.

Sources: Christofzik and Elstner (2018); own figure

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The last-mentioned metric shows responses of German tax policy. It is based on the **quantitative effects of legislated tax changes** used by Hayo and Uhl (2014) and taken from the financial reports of Germany's Federal Ministry of Finance. This data is supplemented by the latest figures from 2010

onwards. The result is a quarterly series that shows the full annual impact of a reform measure in each case, i.e. the revenue surplus or shortfall estimated by the German government once the measure has been in place for a full twelve months. This enables the actual tax legislation changes to be depicted in isolation. While the implemented tax measures are correlated with **changes in the tax ratio**, they do not fully explain them. This is illustrated particularly clearly by the development since 2011, when there have been virtually no tax reforms. Far from keeping the tax ratio constant, however, this increases it. ↘ CHART 5 PAGE 18 One reason for this is bracket creep.

The baseline specification used by Christofzik and Elstner (2018) shows that real GDP in the United States grows by around 3 % following a tax cut amounting to 1 % of GDP. ↘ CHART 78 The US dollar depreciates against the German currency. This weakens price competitiveness in Germany, its real effective exchange rate rises and import prices fall. The US balance of trade deteriorates by a total of 0.6 % of GDP. Although the depreciation of the US dollar stimulates American exports, the effect of rising domestic demand in the United States is stronger.

The German economy is also influenced through the demand and price channels. The stronger demand from the United States boosts German exports and, at the same time, German products become more expensive owing to the exchange-rate effect. **Germany's current account balance** as a proportion of GDP **increases significantly** by up to one percentage point **during the first two years following the US tax reform**. This reflects the fact that the stronger demand outweighs the adverse price effect of the real currency appreciation.

Overall the point estimate for the increase in German GDP is also positive after one year, although it is not statistically significant. These findings also reveal that **German tax policy** in previous decades systematically responded to tax changes in the United States by implementing **countervailing policies**. Tax cuts in the United States tended to be followed by tax-raising measures in Germany over time. However, estimations from 1980 onwards no longer reveal this effect.

Building on the approach adopted by Mertens and Ravn (2013), this research also analyses separately the impact that tax changes have on personal income and corporate income. Whereas the transmission channels of **tax cuts for personal income** hardly differ from those of general reforms, this does not apply to **tax cuts for corporate income**. In this case the US dollar appreciates and the real effective exchange rate in Germany falls initially. The current account balance rises more sharply and deflationary trends increase.

III. GERMANY FACING INTERNATIONAL TAX COMPETITION

1. Profit tax rates internationally on a downward trend

589. The United States is not the only country to reform its tax system. **Profit tax rates** have been on a **downward trajectory** for several decades now. As a first step, France has just lowered its profit tax rate slightly and plans to gradually reduce it further to 25 % by 2022. Italy has recently completed a tax cut, and Belgium has started to gradually lower its taxes. These countries all had higher tax rates than Germany as recently as 2016. ↘ CHART 79 However, this trend is also evident in countries that already had lower tax rates, such as the United Kingdom. In this context, **Brexit could also impact on companies in Germany**. If

EU directives are subsequently no longer applied, transactions such as profit distributions could incur additional tax burden (Gsödl and Schmid, 2018). Tax competition is intensifying not least because more and more countries are conferring preferential tax treatment on profits derived from the use of intellectual property (IP). ↘ ITEMS 595 FF.

590. Although the corporate tax reforms implemented by Germany in 2000 and 2008 cut its tax rates (GCEE Annual Report 2015 items 745 ff.), its rates remained above the international average. ↘ CHART 79 Because the municipalities have, **on average, raised the tax multipliers for the local business tax** in recent years, the average statutory tax rate in Germany was 31.6 % in 2017 (Spengel et al., 2018). The European Commission bases its calculations on the local taxes applicable in each capital city. Because Berlin has not altered its tax multiplier for some years now, this trend towards a growing statutory tax burden does not show up in the Commission's figures. ↘ CHART 79

Depending on the tax multiplier, the tax rate in 2017 varied between 22.8 % – with a legally prescribed minimum tax multiplier of 200 % – and 47.3 % in Dier-

↘ CHART 79

International comparison of statutory profit tax rates[1]
%
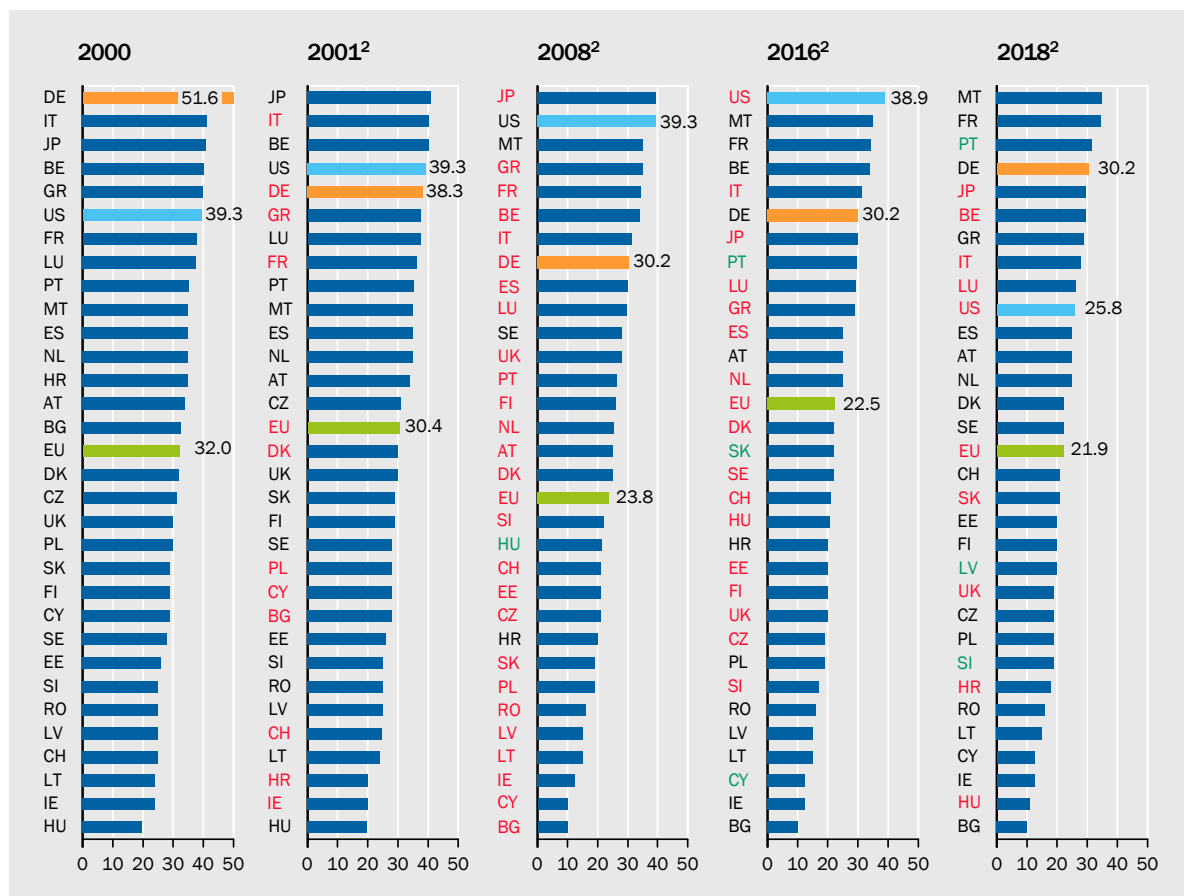
1 – Statutory tax burden on corporate profits considering taxes at the national level and, where applicable, at the local level. In case of regional heterogeneity the tax burden in the capital city is assumed. AT-Austria, BE-Belgium, BG-Bulgaria, CH-Switzerland, CY-Cyprus, CZ-Czech Republic, DE-Germany, DK-Denmark, EE-Estonia, ES-Spain, EU-European Union (28, unweighted average), FI-Finland, FR-France, GR-Greece, HR-Croatia, HU-Hungary, IE-Ireland, IT-Italy, JP-Japan, LT-Lithuania, LU-Luxembourg, LV-Latvia, MT-Malta, NL-Netherlands, PL-Poland, PT-Portugal, RO-Romania, SE-Sweden, SI-Slovenia, SK-Slovakia, UK-United Kingdom, US-United States (average for the states). 2 – Red indicates tax cuts; green indicates tax hikes.

Sources: European Commission, OECD

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feld, a municipality in the German federal state of Rhineland-Palatinate with on-ly ten inhabitants and a tax multiplier of 900 %. In Oberhausen, the major city with the highest tax multiplier (550 %), the statutory tax rate was 35.1 %. Compared with 2008, when corporate taxation was last reformed, the statutory tax rate has risen by 0.84 percentage points, with tax multipliers weighted according to the population size. ↘ ITEM 636
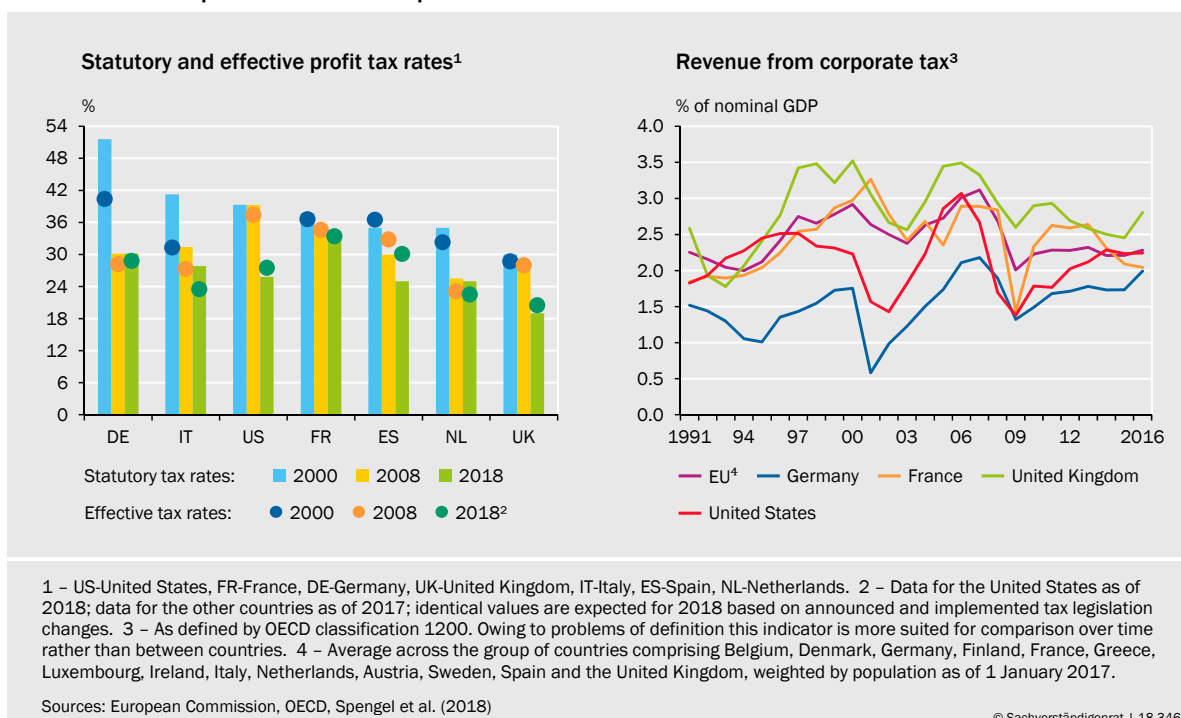
591. The **solidarity surcharge**, which continues to be levied on corporation tax, accounts for just under 0.8 percentage points of the statutory tax rate. Although the German government's coalition agreement calls for the partial abolition of the solidarity surcharge from 2021 onwards, its wording suggests that this tax cut will only apply to income tax. Moreover, the abolition of this tax is to be structured in such a way that roughly half of the amount raised from income tax will continue to be paid. This means that most firms and self-employed would continue to pay this additional levy. ↘ ITEMS 637 FF.

The GCEE considers the chosen form of the partial abolition using an exemption limit to be associated with huge disincentives. In addition, the **total abolition** of the solidarity surcharge would be a step in the right direction that would at least compensate for the average additional burden arising from the local business tax increases.

592. The statutory tax rate is, however, just one **determinant of the tax burden**. One example of its limited meaningfulness is Malta. Given its high profit tax rate, it might easily be classified as a high-tax country. But once refunds are factored in, the actual tax burden falls to just under 5 %. This clearly illustrates that, in addition to the tax rate itself, the tax base to which the tax rate is applied is very important. These two factors together determine the **effective tax rate**. ↘ CHART 80 LEFT Because reductions in tax rates have usually been accompanied by

↘ CHART 80

International comparison of effective profit tax rates and tax revenue

Statutory and effective profit tax rates[1]

Revenue from corporate tax[3]

Statutory tax rates: 2000, 2008, 2018
Effective tax rates: 2000, 2008, 2018[2]

EU[4], Germany, France, United Kingdom, United States

1 – US-United States, FR-France, DE-Germany, UK-United Kingdom, IT-Italy, ES-Spain, NL-Netherlands. 2 – Data for the United States as of 2018; data for the other countries as of 2017; identical values are expected for 2018 based on announced and implemented tax legislation changes. 3 – As defined by OECD classification 1200. Owing to problems of definition this indicator is more suited for comparison over time rather than between countries. 4 – Average across the group of countries comprising Belgium, Denmark, Germany, Finland, France, Greece, Luxembourg, Ireland, Italy, Netherlands, Austria, Sweden, Spain and the United Kingdom, weighted by population as of 1 January 2017.

Sources: European Commission, OECD, Spengel et al. (2018)

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a broadening of the tax base, the trend of falling effective tax rates is less pronounced (Devereux et al., 2002). In recent years, however, the major OECD countries have witnessed a certain parallel trend here. Empirical studies have shown that both rates influence business decisions. ↘ BOX 18

593. While statutory and effective tax rates have fallen in recent years, the **revenues from these taxes as a percentage of GDP have remained remarkably constant**. ↘ CHART 80 RIGHT One explanation for this apparent contradiction might perhaps be that higher levels of profits and business start-ups in themselves produce higher revenues. This appears to have partly offset the revenue reduction resulting from the tax reforms (De Mooij and Nicodème, 2008).

594. In addition to the tax treatment of corporate profits, **further factors and conditions** are crucial for business activity. Two cases in point here are the public goods that are provided – especially for public infrastructure – and the rules and regulations with which companies have to comply. Even if we control for these factors we find that statutory tax rates mainly have an effect on profit shifting by companies, effective average tax rates impact on discrete locational and investment decisions, and effective marginal tax rates affect the scale of private investment at a given location (Devereux and Loretz, 2013). The extent and impact of international tax competition are a controversially debated topic. ↘ BOX 18

↘ BOX 18

Empirical literature on tax competition

The term 'tax competition' is generally understood to mean a situation in which various countries or regional and local authorities compete for tax revenue. A mobile tax base reacts particularly sensitively to higher taxes and can avoid them. The circumvention and the distortions that they cause depend on how mobile the respective factor is. For example, tax avoidance behaviour in case of the property tax is less pronounced than it is for corporation tax (GCEE Annual Report 2015 item 776) because property is less mobile than capital. The optimum form of taxation therefore always represents a trade-off between its costs – i.e., the distortions and reduced tax base involved – and the benefits that can be obtained in the form of tax revenue and politically desirable redistribution or the public goods that can be funded as a result. The content of this chapter focuses on corporate taxation, although competition for labour is also significant (GCEE Annual Report 2015 item 773).

Tax competition does not necessarily have to involve the relocation of production (Voget, 2011). Tax burden can be avoided by tax-motivated profit shifting, for example in the form of inappropriate transfer pricing or the valuation of intangible assets (Heckemeyer and Overesch, 2017; Riedel, 2018). This situation arises, for example, in connection with the taxation of digital services (Olbert and Spengel, 2017).

The justification often given for lower taxation is that it helps to attract and retain new companies. A number of studies provide evidence of the adverse impact that higher tax rates have on companies' – particularly multinationals' – choice of location (Devereux and Griffith, 1998; Feld and Heckemeyer, 2011). Becker et al. (2012) demonstrate this aspect, for example, by analysing variations between German municipalities, while Fajgelbaum et al. (2018) and Giroud and Rauh (2018) document similar effects stemming from federal taxes in the United States. Corporations' choice of location is also determined by many other factors, such as the quality of infrastructure and the amount of regulation

(Bénassy-Quéré et al., 2007). In addition, agglomeration effects can induce companies to opt for a particular location (Borck and Pflüger, 2006; Brülhart et al., 2012; Koh et al., 2013).

This might explain why larger locations tend to be less exposed to tax competition, and large economies in particular tend to be high-tax countries. At the same time, the intensity of tax competition increases as the location concerned becomes more open (Devereux, 2008). The findings by Büttner (2003) suggest that tax competition is also present between municipalities in Germany which hits small regional and local authorities in particular. Janeba and Osterloh (2013), however, stress the importance of the peer-group effect. Major cities, for example, compare themselves with other major cities. Smaller regional and local authorities may thus be less exposed to the competitive pressures of globalisation and therefore set higher levels of tax.

In addition to extensive decisions such as the choice of location, taxes impact on intensive decisions such as the amount of direct investment (Feld and Heckemeyer, 2011). The effect of corporate taxation on companies' financing decisions is especially important in the context of international tax competition (Feld et al., 2013). If average tax rates are higher, multinational corporations increase their borrowing much more than companies that operate domestically.

Evidence of strategic interactions between countries is very much mixed. Estimated response functions are mainly used for this purpose (Brueckner, 2003). Redoano (2014) finds that EU member states compete more with each other than with non-EU countries. Whereas Overesch and Rincke (2011) find evidence of competition based on statutory tax rates, Chirinko and Wilson (2017) draw on data from the US federal states to show that the declining trend in tax rates can be explained by symmetric shocks rather than by responses to other countries' fiscal policies.

2. Discriminatory taxation of mobile and immobile activities

595. In addition to lowering statutory tax rates while at the same time broadening the tax base, governments have in recent years adopted the practice of **conferring preferential tax treatment on particularly mobile activities**. This involved introducing separate arrangements for highly mobile income – especially income derived from intangible assets. Such initiatives are often collectively described as 'smart tax competition'.

596. The optimal form of taxation represents a trade-off between the **welfare gains of redistributive taxes and their efficiency costs**. There is thus a conflict between the objectives of efficiency and distribution. The key question here is to what extent **avoidance responses** are triggered by higher taxation. This aspect is especially relevant if the taxable item is internationally mobile and can easily avoid taxation. Patents and trademark rights, for example, are particularly easy to transfer.

597. Tax incentives for R&D can, in principle, be implemented using input-based or output-based measures. **Input**-based tax incentives offer the possibility that spending on R&D is disproportionately tax-deductible. **Output**-based incentives allow profits derived from research – such as licence income – to be taxed at a lower rate. The provision of **tax incentives for R&D** therefore encourages to

retain these activities at a specific location as the result of a government scheme of preferential tax treatment.
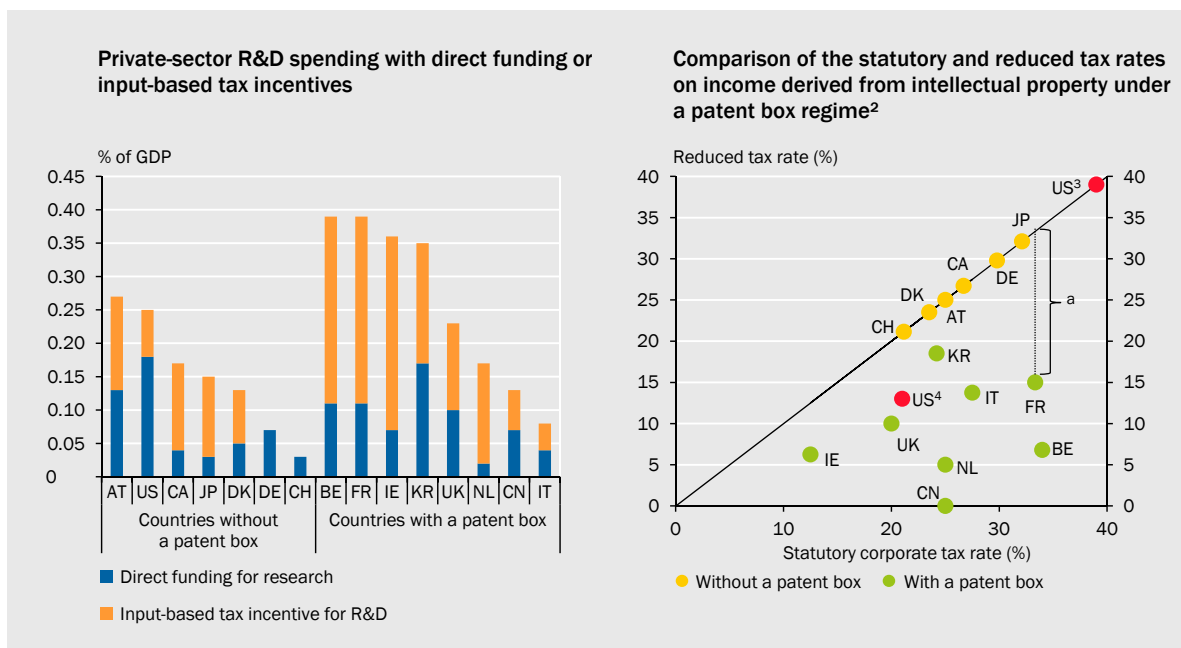
By enacting the TCJA, the United States has introduced output-based tax incentives for R&D in the form of a **patent box regime** under which certain research-derived income is taxed at a lower rate. The US is therefore following a number of EU member states which have been offering output-based tax incentives for companies' private research activities since the start of this millennium.

598.   Unlike in most European countries, private **R&D undertaken by companies in Germany does not benefit from tax incentives**. ↘ CHART 81 LEFT Instead there are various **individual initiatives** that offer government subsidies to specific industries and technologies. These include special credit lines that the German Kreditanstalt für Wiederaufbau (KfW) development bank provides for business start-ups and innovation, investments in venture capital funds, and earmarked innovation support subsidies.

European funds are also used to provide direct funding for R&D. The current multiannual financial framework (2014-2020) within the European structural and investment funds has set aside approximately €6.4 billion for the funding of R&D in Germany. Furthermore, jointly used funding amounting to a total cumulative budget of around €75 billion is available over the same period as part of the Horizon 2020 research and innovation programme (EFI, 2018).

Draft legislation on **tax incentives for R&D** in Germany is currently at the stage of interdepartmental coordination between the relevant government institutions. The draft forms part of a government high-tech strategy and will enable companies with up to 3,000 employees to claim an additional tax deduction of

↘ CHART 81

Direct funding and tax incentives for R&D[1]

Private-sector R&D spending with direct funding or input-based tax incentives

Comparison of the statutory and reduced tax rates on income derived from intellectual property under a patent box regime[2]

1 – AT-Austria, US-United States, CA-Canada, JP-Japan, DK-Denmark, DE-Germany, CH-Switzerland, BE-Belgium, FR-France, IE-Ireland, KR-Republic of Korea, UK-United Kingdom, NL-Netherlands, CN-China, IT-Italy. 2 – Data relates to 2015 except in the cases of BE: 2014, FR: 2014, IE: 2014, UK: 2014, CN: 2013, US: 2013. 3 – Value relates to 2013 without a patent box. 4 – Value relates to 2018 with a patent box. a – Vertical distance corresponds to the reduction in the tax burden.

Sources: OECD, own calculations

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up to 25 % of the staff costs for proprietary R&D or for commissioned research. This tax incentive will be limited to €2 million per company per year, although the cost of the research projects benefiting from this tax relief must not exceed a total of €15 million. Germany would thus be introducing (a moderate form of) input-based tax incentive for R&D.

599. However, Germany is currently not considering introducing any **output-based tax incentives for R&D**. In other countries, patent boxes vary considerably in terms of their scope and amount of tax relief conferred on acquired patents that have potentially been developed abroad. Occasionally it is reasonable to at least question whether the motivation is really to encourage research and to assume that the true **motive** is a **competitive** one (GCEE Annual Report 2014 item 673). Patent boxes allow the possibility of tax avoidance in the form of profit shifting between companies. This is fuelling scepticism about patent boxes in Germany.

600. The OECD **BEPS action plan**, which aims to **combat harmful tax practices**, therefore proposes to adopt the **nexus approach** to patent boxes. This will create a stronger link between a company's tax relief on income derived from IP and the company's actual contribution to research. Specifically, this approach will determine the amount of eligible spending as a proportion of total spending on the development of IP. This eligible spending must not, for example, include any payments to subsidiaries or spending on the acquisition of patents. Eligible spending must amount to no more than 130 % of the amount that the taxpaying company has spent on the development of IP. The figure thus calculated constitutes the proportion of IP-derived income to which the tax relief is applied (OECD, 2015).

601. The nexus approach therefore **makes it more difficult to shift profits** between corporations because the taxpaying company itself must have worked on developing the IP. Nonetheless, this still leaves **companies with a certain leeway for tax planning**. It is very difficult to verify, for example, what contribution a patent makes to the sale of a product and, consequently, to what extent tax reliefs are applicable. It is equally difficult to clearly define what proportion of a company's spending can genuinely be attributed to the development of IP.

602. After the BEPS action plan was published, virtually all EU member states that have patent boxes adapted them accordingly. However, the reduced **tax rate on IP-derived income continues to vary considerably**. ↘ CHART 81 RIGHT In the United Kingdom, for example, it amounts to 10 %, which is slightly more than half the regular rate of corporation tax (19 %), whereas in Cyprus it amounts to only 2.5 %, which is one-fifth of regular corporation tax. The lower tax rate applied in all countries relates to income derived from patents and other IP such as software and pharmaceuticals. Trademark rights, which – before the nexus approach was published – were often included in this list, are now, however, excluded.

It is doubtful whether the new tax legislation in the **United States** is consistent with the nexus approach. In America, for example, there is no legal requirement

governing proprietary R&D. Moreover, trademark rights are among the intangible assets that benefit from preferential tax treatment.

603. There is **mixed empirical evidence** as to whether patent boxes help to increase a country's research output. Although there is extensive evidence of the tax-driven shifting of patents (Bösenberg and Egger, 2017; Alstadsæter et al., 2018), this has not necessarily boosted the amount of national research activity (Baumann et al., 2018; Gaessler et al., 2018). Rather, the research conducted by multinational corporations appears to remain at the original location while the patent alone is transferred to the low-tax country. However, the lower level of taxation in this country can have positive spillover effects on research in the high-tax country (Schwab and Todtenhaupt, 2016).

604. The empirical evidence concerning the impact of input-based tax incentives on R&D is also mixed. Specifically, studies reveal considerable variation in the estimated tax elasticity of R&D spending (Bloom et al., 2002; Lokshin and Mohnen, 2013). In addition, a **causal interpretation** of these effects is often **not warranted**. Very few studies use quasi-experimental methods to demonstrate that tax incentives make a positive contribution to R&D (Agrawal et al., 2014; Dechezleprêtre et al., 2016; Güçeri, 2018; Güçeri and Liu, 2018). Pfeiffer and Spengel (2017), for example, do not provide any proprietary empirical analysis of the effectiveness of input-based tax incentives for R&D. ↘ ITEM 654

However, two caveats need to be made. These studies and methods are not based on multi-country analyses, which means that the **findings cannot necessarily be generalised** and applied to other countries. In addition, the level of spending on wages in the context of R&D – which serves as a proxy for the amount of research activity and is usually the object of tax incentives for R&D – might be problematic. The empirical findings cannot, for example, necessarily distinguish between a tax-driven rise in wage costs for an existing workforce and the same amount of research activity, on the one hand, and a genuine workforce expansion and a larger amount of research on the other hand (Güçeri, 2018). Lokshin and Mohnen (2013), for example, document a wage-increasing effect in the case of the Netherlands.

605. A comparison of input-based and output-based tax incentives reveals further peculiarities. Input-based tax incentives that do not enable **losses to be carried forward** cannot have a beneficial impact on companies that incur losses. Roughly 40 % of the countries shown in ↘ CHART 81 LEFT cannot carry losses forward (OECD, 2017). A further potential drawback of input-based tax incentives is that the tax reduction granted can result in a negative effective average tax rate. This tax incentive would thus amount to a **subsidy** paid out regardless of the profitability of the underlying research project (Evers et al., 2014). Ernst et al. (2014) find that, on average, patents that benefit from output-based tax incentives have a higher degree of innovativeness than those benefiting from input-based tax incentives.

Against this background, the introduction of tax incentives for R&D with the sole objective of increasing research output should be viewed critically because it would be likely to involve substantial deadweight losses. Nonetheless, patent

boxes might be a **sensible instrument to deploy in international tax competition**. Although input-based tax incentives for R&D could also be used as a tool in tax competition, the mixed evidence of its beneficial impact on R&D means that a patent box that was consistent with the nexus approach would probably be more appropriate because it would create fewer adverse incentives.

IV. CHALLENGES OF INTERNATIONAL TAXATION

606. The measures implemented as part of the US tax reform **will intensify international tax competition**. In addition to altering the overall tax burden, individual elements of these reforms are likely to have a particularly pronounced impact. The shift towards a territorial tax regime, for example, could help improve US companies' competitive position in mergers and acquisitions (M&A). Feld et al. (2016) investigate the situation back in 2009 when the United Kingdom and Japan abolished repatriation taxes on the M&A activities of their companies abroad. If these estimated findings are translated into an American context, the United States' transition towards a territorial tax regime could mean an increase of up to 11 % in acquisitions by US companies overseas.

607. However, a change in the **incentives to harmonise taxes at European level** should not be viewed solely in the context of the US tax reform. Similar incentives could, for example, arise from Brexit. Irrespective of this situation, every EU member state is already free to set its own tax rates and could cut corporate taxes in order to improve its tax competitiveness. Against the backdrop of intensified tax competition associated with Brexit, Fuest and Sultan (2017) use a theoretical model to show that any resultant discriminatory taxation would not increase the incentives to harmonise taxes in Europe because the member states remaining in the EU would, by doing so, impair their own competitiveness. Furthermore, Gaigné and Wooton (2011) demonstrate the importance of trade barriers in creating incentives for tax harmonisation. These incentives exist when trade barriers and their associated costs are high.

608. Individual countries have already announced that they plan to take unilateral measures. The question is, however, whether a multilateral approach to tax harmonisation might be a better response. There is currently a debate about implementing more fundamental reforms and moving towards consumption-oriented taxation by introducing a **destination-based cash flow tax (DBCFT)**. ↘ ITEM 625 FF. In addition, the harmonisation of the corporate tax base in connection with minimum tax rates remains firmly on the agenda. ↘ ITEMS 628 FF. And, last but not least, options for reforming taxation of the digital economy in conjunction with a 'digital services tax' (DST) on the revenues generated by digital enterprises in Europe are being discussed. ↘ ITEMS 615 FF.

1. Principles determining taxation rights

609. Sovereign states are free to organise and structure their national tax legislation as they see fit and are merely governed by the rules of international law. Sovereignty over national fiscal policy within the EU resides with the member states. Only in a few areas such as customs do these states transfer a very small amount of their fiscal policy sovereignty to the EU. These fundamental freedoms give rise to **considerable heterogeneity of tax legislation** between countries. The jurisdiction of national tax legislation does not necessarily have to be limited by physical national borders and may, for example, include income from abroad. Intensive international trade, cross-border capital flows and the mobility of labour pose major challenges for an efficient international taxation regime that prevents both the double taxation and non-taxation of income and profits.

610. Depending on the type of tax that applies, a subjective tax liability can arise either from characteristics of the taxable item or of the taxpayer. There are three taxation principles that establish a personal tax liability: the **residence principle**, the **nationality principle** and the **source principle**. The residence principle gives rise to a tax liability for individuals and legal entities at the taxpayer's residence or at a company's domicile. The nationality principle gives rise to a tax liability for individuals in the country of their nationality. The source principle gives rise to a tax liability at the place where income or profits originate.

The residence principle and the source principle are often **applied simultaneously**. Tax legislation gives rise to an income tax liability in Germany for residents and for income earned in Germany. In the case of property tax, however, the tax liability is based solely on property owned in Germany and is therefore unrelated to the residence.

611. **International taxation** recognises two further principles that establish an objective tax liability: the **world income principle** and the **territorial principle**. In the case of the world income principle the personal tax liability is determined by the taxpayer's entire global income. The territorial principle relates solely to income and profits earned in the country concerned. German income tax combines both principles. Residents' global income is taxed under the residence principle. If the taxpayer is not a resident under the prevailing tax legislation, he or she is taxed under the source principle and the territorial principle.

612. Because countries are free to choose how they apply these principles, this creates a further range of combinations that can give rise to **double taxation** or **non-taxation** in the case of cross-border income. Double taxation arises if the country of residence levies taxes according to the residence principle while at the same time, however, income derived from abroad is taxed under the source principle. Non-taxation arises in exactly the opposite case where income is taxed neither at the place of origin nor at the place of residence. Both cases involving violations of the **principle of one-time taxation** could be avoided if the aforementioned principles were uniformly applied and all countries agreed to use either the residence principle or the source principle.

613. Unless these principles are uniformly applied on a coordinated basis, further measures will be needed in order to safeguard the principle of one-time taxation. **Double taxation treaties** can be used for this purpose. Such conventions can apply the **credit method**, under which the withholding tax paid abroad is credited to the tax liability in the country of residence. Another alternative is to apply the **exemption method**, under which the country of residence exempts foreign-derived income from taxation. The **deduction method** allows withholding taxes paid abroad to be deducted from the tax base in the country of residence. The application of these three methods can result in differing overall tax burdens even in cases where two countries have identically progressive tax rates.

Because double taxation treaties are not available everywhere and their nature and structure vary from country to country, the possibility of non-taxation or multiple taxation cannot be totally ruled out. This enables multinational corporations to legally reduce their effective tax liability.

614. Multinationals exploit the aforementioned discrepancies between various countries' tax legislation by, for example, using **intercompany transactions** to shift their profits and reduce their tax base (GCEE Annual Report 2014 items 655 ff.). Faced with stiff international tax competition, a number of countries have therefore incorporated **anti-abuse rules** into their national tax legislation. These often include transfer pricing rules, undercapitalisation rules and controlled foreign corporation (CFC) tax rules. At international level the OECD has launched its **BEPS action plan** in order to more effectively coordinate efforts to limit tax avoidance by multinational corporations (OECD, 2013).

2. Taxing the digital economy poses challenges

615. One of the key challenges facing national and international tax legislation is to ensure an efficient and effective method of taxation at a time when production processes and consumer behaviour are constantly changing. The **taxation of digital companies** is being hotly debated in this context. This debate is often guided by the argument that it is very easy for multinational corporations in the digital sector to minimise their effective tax liability by pursuing active tax management strategies. At the same time – so runs the argument – this distorts purely national tax competition between digital and non-digital companies, thereby creating an unlevel playing field – not least in the European single market (European Commission, 2017).

616. These challenges are not a new phenomenon. Rather, they illustrate the fundamental problem of taxing intangible assets. Because national taxation rights **presuppose** a physical presence in the form of a **permanent establishment**, digital companies can often avoid taxation as their business models do not necessarily require them to maintain a physical presence at the location where their business activity is based. The taxation of digital companies already tops the agenda of the **OECD's BEPS action plan** (OECD, 2013) as part of an attempt to thwart harmful tax avoidance strategies and ensure an effective taxation system within an internationally coordinated framework. The plan – according to the timetable – is to devise an internationally coordinated negotiating solution

by 2020 (OECD, 2018b). Outside the scope of this timetable the **European Commission** has now presented its **own solution** based on two proposed directives.

617. In its first draft directive the European Commission proposes the concept of a **significant digital presence**, on the basis of which national taxation rights could be established and digital companies' profits could be taxed under existing national business tax regimes (European Commission, 2018a). The definition of a digital permanent establishment within the meaning of this proposal requires that **digital services be delivered via a digital interface** and that one or more of the following criteria be met: i) revenue of more than €7 million within a year from the provision of digital services, ii) more than 100,000 users within a year for the total package of digital services offered, and iii) more than 3,000 business contracts within a year for the provision of digital services.

In addition to specifying these criteria for digital permanent establishments, the proposed directive outlines a **functional analysis** that can be used to attribute profits from digital companies' business activities to digital services in the respective member states. For this purpose the proposed directive specifies, among other things, research and marketing expenditure and the number of users in the respective member state.

618. However, the definition of a digital permanent establishment according to the **criteria** proposed by the European Commission is **problematic** for several reasons. For example, rather than the consumption of services offered being the sole taxation criterion, even the **provision of data** by users could establish taxation rights. This might, however, be inconsistent with existing principles of international taxation (Becker and Englisch, 2018b). Moreover, the relevant value added could generally be attributed to the user rather than to the company, which could theoretically give rise to a tax liability on the part of the user. This problem of definition affects all areas of business in which companies collect user data digitally and process it as part of their digital services (Fuest, 2018). Even the German automotive industry would be affected by this because it already collects large amounts of data about its users' driving behaviour and will increasingly do so as driverless cars become more popular. As things stand, therefore, this data would be taxable and motor vehicles in the narrowly defined sense would constitute digital permanent establishments.

In addition to the definition of the user as distinct from the service provided, there are problems of definition with respect to the place where value is added. For this purpose, for example, it is not clear whether the key determinant is the place where the data is collected or the place where it is processed. This in turn would have direct consequences for the attribution of taxation rights and could in future give rise to a direct tax liability in the country of destination.

619. Until the concept of a digital permanent establishment has been finalised, the European Commission is proposing to introduce a temporary **digital servies tax** on the **revenues generated by digital companies** in the EU (European Commission, 2018b). This digital services tax would be payable if online companies' global revenues exceeded €750 million in a financial year and, at the same

time, revenues of at least €50 million were generated within the legal territory of the European Union. According to the proposed directive, the tax base encompasses revenues derived from three digital services: i) the placement of advertising, ii) the provision of digital platforms for the social exchange of information or the trading of goods, and iii) the transfer of collected user data created by the use of digital services. These revenues are taxed at a rate of 3 % and the tax receipts are shared among EU member states according to the users' location.

620. However, this proposed digital services tax is misguided. It is likely to be interpreted as a **unilateral tariff that the EU is imposing on the United States** because the revenue thresholds applied mean that it could well be primarily multinational US corporations in the digital sector that are affected by this tax and might incur the greatest tax burden (Fuest et al., 2018). Such an asymmetric effect would be questionable in terms of WTO rules and could send out a negative message in the trade dispute with the United States.

621. Because this tax would be levied on digital companies – irrespective of the extension of the concept of a permanent establishment – and would therefore not be based on conventional taxation rights, the EU would require the **administrative assistance of the non-European tax authorities** in the taxpaying companies' country of domicile in order to collect the tax. Any potential asymmetric impact of the digital tax might therefore elicit very little willingness to provide administrative assistance, which means that it might be difficult to ensure the effective taxation of digital companies by means of this tax (Becker, 2018).

622. Moreover, levying a digital tax on the revenues of companies that are already paying profit taxes would impose an additional burden that could amount to **double taxation**. This gives rise to a tax liability even in the event that the companies concerned incur losses. As the tax base in such cases is determined by the level of gross income, such a tax is likely to impose a disproportionately heavy burden on young companies. This would increase the barriers to market entry (Academic Advisory Board to the Federal Ministry of Finance, 2018).

623. Last but not least, the starting point for the proposed directive is the observation that companies with primarily digital business models incur a lower tax burden than those with traditional business models. This observation derives from a study carried out by the Centre for European Economic Research (ZEW, 2017), which attributes the **differences in effective tax burdens** to the more beneficial depreciation and amortisation rules governing digital assets and to the **tax relief provided for research**. This does not in itself justify any separate tax treatment of digital business models, because the availability of tax relief for research is mainly a desirable thing in the EU member states. It would be counterproductive to introduce tax relief owing to the positive externalities of research and then to reverse this decision via a circuitous route by levying a separate tax on digital companies. Given the tax management options available to digital corporations, a more sensible approach would be to abolish tax relief for research.

624. The overall conclusion therefore has to be that a **separate tax on digital revenue would not be an appropriate way** of ensuring that digital companies

are taxed effectively and efficiently. There are serious concerns about the concept of a digital permanent establishment that is largely based on the collection and use of data. Instead of boosting tax revenues in EU member states as intended, this might ultimately cause taxes to migrate to emerging markets and less developed countries. An **effective** tax policy **approach** would be to take more decisive action to ban the harmful **tax management strategies pursued by multinational corporations**. Suitable instruments for this purpose would be transfer pricing rules or CFC tax rules in order to ensure that digital companies are taxed effectively according to the residence principle. Unilateral solutions pursued by individual EU member states should be avoided. This would further increase fiscal policy divergence within the European single market, thereby raising companies' tax compliance costs.

3. Alternative harmonisation efforts

625. Variations in taxation rights in the field of international tax legislation enable companies to reduce their effective tax burden legally through profit shifting. One approach to combating harmful tax avoidance behaviour might thus be to implement the principles of **international taxation in a multilaterally coordinated**, consistent way. One potential approach would be to apply the country-of-destination principle consistently and to tax consumption more heavily by introducing a destination-based cash flow tax (DBCFT) (Auerbach and Devereux, 2013). The latter would also produce a financing-neutral tax system.

626. Instead of basing taxation on the residence principle or the source principle, as is usually the case, the concept of the DBCFT would **base taxation on the country of destination**. Taxes would then be levied at the place of consumption and not necessarily where the company's profits are earned. This paradigm shift would drastically reduce the incentives for tax-driven profit shifting because consumers would probably be less mobile and, consequently, companies would be less likely to relocate their operations for tax reasons. In addition, the concept of the DBCFT could be combined with a border adjustment tax, which means that taxes would be levied under the territorial principle. Although domestic companies' exports would then be tax-exempt, imports would be fully taxed.

627. Whereas multilateral implementation of such a taxation strategy should remove the incentives for tax-driven profit shifting, any unilateral introduction would presumably significantly intensify tax competition (Becker and Englisch, 2017). More rigorous application of the country-of-destination principle should, however, cause substantial shifts in tax revenues, which would be likely to meet with **stiff political resistance**. Unilateral implementation would also have macroeconomic consequences that could not simply be neglected. These could include significant exchange-rate movements and changes in price levels.

628. Although a multilateral approach would make economic sense, this would appear to be difficult to implement in the case of the DBCFT. Instead, alternative harmonisation measures could be taken to decrease incentives for multinational corporations to engage in profit shifting. In this regard the European Commis-

sion proposed a directive back in 2011 to create a **Common Consolidated Corporate Tax Base (CCCTB)**, and it updated this proposal in 2016.

629. This proposal first aims to **harmonise** computation of the **corporate tax base** at European level and then to ensure the **group-wide consolidation of profits and losses** (GCEE Annual Report 2017 box 2). This is intended to reduce tax compliance costs and incentives for tax-driven profit shifting within the EU. However, the proposal still contains defects. For example, it would create significant tax management opportunities as a result of the formula-based apportionment of profits and losses and the applicable ownership structures.

630. The German government's coalition agreement calls for **minimum business tax rates in conjunction with a CCCTB**. Such a proposal – as a means of ensuring an effective minimum level of corporate taxation – is **misguided**. The first point to make here is that minimum tax rates would unnecessarily restrict economically desirable tax competition. Economically harmful tax competition, which primarily takes the form of tax base regulation, can be effectively limited by unilateral measures. The second point to note, however, is that the initial impression that the tax burden on companies is continually falling is deceptive. Business tax revenues are not on a downward trend. ⩘ ITEM 593

631. A **minimum level of taxation** in the form of **CFC tax rules**, such as those proposed as part of the US tax reforms ⩘ BOX 16, could at most act as a **temporary solution** in helping to make the taxation of multinational corporations more effective. The introduction of such an approach is currently being considered in Germany and France. One note of caution here, however, is that this type of approach does not address the fundamental problems and merely treats the symptoms. Although such an approach – if carried out correctly – could provide incentives for low-tax countries to raise their tax rates, there **remains the problem** of determining the **effective tax burden** on profits earned **abroad**. Moreover, this does not solve the **fundamental problem** of the inadequate definition of a **permanent establishment**.

632. On the whole, thus, there does not currently appear to be an effective multilateral response to the intensifying international tax competition. Instead, the German government should take **action at national level** to remove the distortions in the tax system and improve the country's international tax competitiveness.

V. TAX POLICY OPTIONS FOR ENCOURAGING PRIVATE INVESTMENT

633. Against the backdrop of the US tax reform and the general intensification of international tax competition, the key question now is what options the German government has in terms of a tax policy response to the relative deterioration in Germany's appeal as an investment location. It would not be appropriate to gen-

erally adopt a wait-and-see approach because **trust in multilateral agreements** – such as those based on the OECD's BEPS action plan – has been **seriously undermined** by the United States' recent behaviour in not adhering to international agreements on tax legislation. A largely continental European solution based on a Common Consolidated Corporate Tax Base and minimum tax rates, which would be extremely difficult to alter in future, would be up against flexible-response tax policies in the United States and the United Kingdom and could therefore entrench competitive disadvantages.

634. The obvious solution for Germany is thus to respond promptly and unilaterally to these new challenges. One effective option here would be to **cut corporate tax rates**. Primarily, this would be possible by totally abolishing the solidarity surcharge. The German government could also respond to challenges coming from the United States by making changes to the **tax base**. The GCEE's longstanding proposal to remove discrimination against equity finance by introducing an **allowance for corporate equity** could counteract the United States' introduction of the ability to write off the full cost of investments in the first year. In addition, Germany could introduce its own BEPS-compliant **patent box**, which could compete with the recently adopted rules on tax relief for research in the United States.
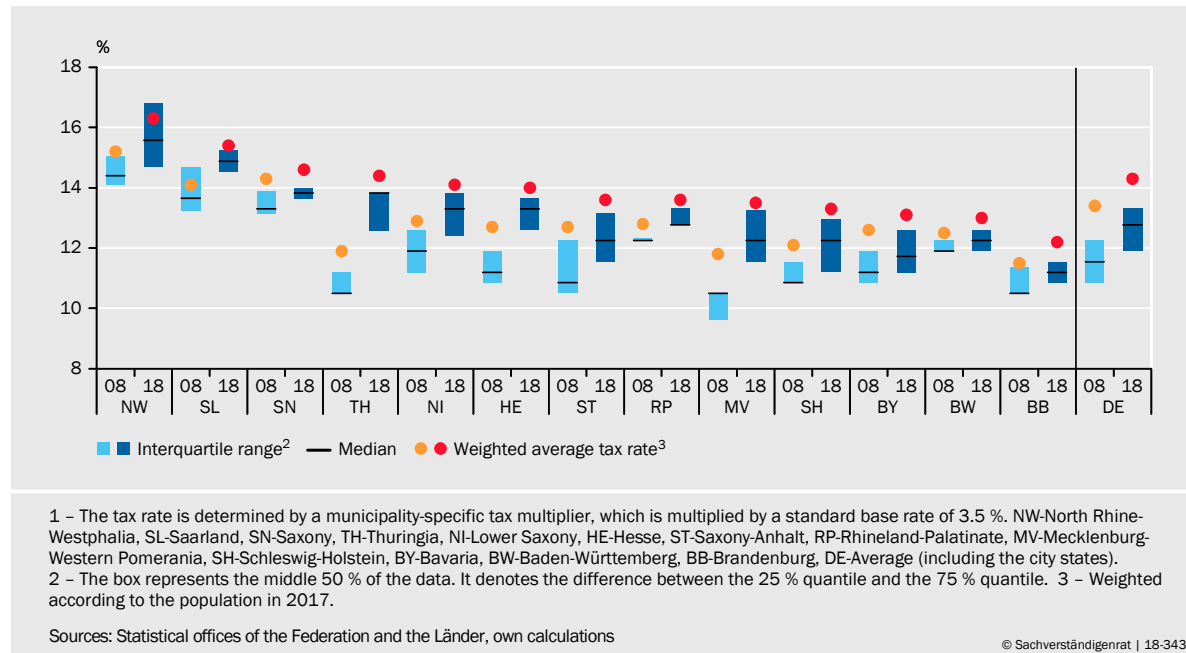
1. Moderate reduction of the tax burden

635. One of the best ways in which to improve Germany's competitiveness would be to **lower the statutory tax burden on corporate profits**. In contrast to the public spending measures contained in the German government's coalition agreement, a tax cut of this kind would probably expand the economy's potential output and would therefore not necessarily have a procyclical impact. The current total tax burden on corporations consists of a corporation tax rate of 15 %, the solidarity surcharge (which is levied on the resultant corporation tax liability) and the local business tax. Small and medium-sized enterprises as well as partnerships can claim a deduction up to a maximum amount for the local business tax when they file their income tax returns.

636. The increases in the municipality-specific tax multipliers for **local business tax**, which have been implemented since the corporate tax reforms of 2008, indicate financial problems in various municipalities. At the same time, this might reflect repercussions from municipal fiscal equalisation systems (Büttner, 2006). The **average tax multipliers have increased** in all of Germany's federal states since 2008. In addition, the variation has increased. Moreover, the weighted tax rate is above the median in all cases. ⌄ CHART 82 Firstly, this reflects the fact that, in all of Germany's non-city states, cities with more than 100,000 inhabitants have chosen higher rates; and, secondly, the statutory minimum tax rate has been 7 % since 2004, while outliers on the upside remain common.

The increased heterogeneity between municipalities is thus evident not only in terms of their levels of debt (GCEE Annual Report 2017 item 596) but also in terms of their tax rates. Concerted attempts to lower the local business tax burden are therefore as equally likely to be doomed as the repeatedly failed attempts

Average and distribution of the local business tax rates in Germany's non-city states[1]

1 – The tax rate is determined by a municipality-specific tax multiplier, which is multiplied by a standard base rate of 3.5 %. NW-North Rhine-Westphalia, SL-Saarland, SN-Saxony, TH-Thuringia, NI-Lower Saxony, HE-Hesse, ST-Saxony-Anhalt, RP-Rhineland-Palatinate, MV-Mecklenburg-Western Pomerania, SH-Schleswig-Holstein, BY-Bavaria, BW-Baden-Württemberg, BB-Brandenburg, DE-Average (including the city states).
2 – The box represents the middle 50 % of the data. It denotes the difference between the 25 % quantile and the 75 % quantile. 3 – Weighted according to the population in 2017.

Sources: Statistical offices of the Federation and the Länder, own calculations

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to abolish local business tax. The best way to **cut corporate tax rates** would thus be to reduce corporation tax. The solidarity surcharge might also be a starting point.
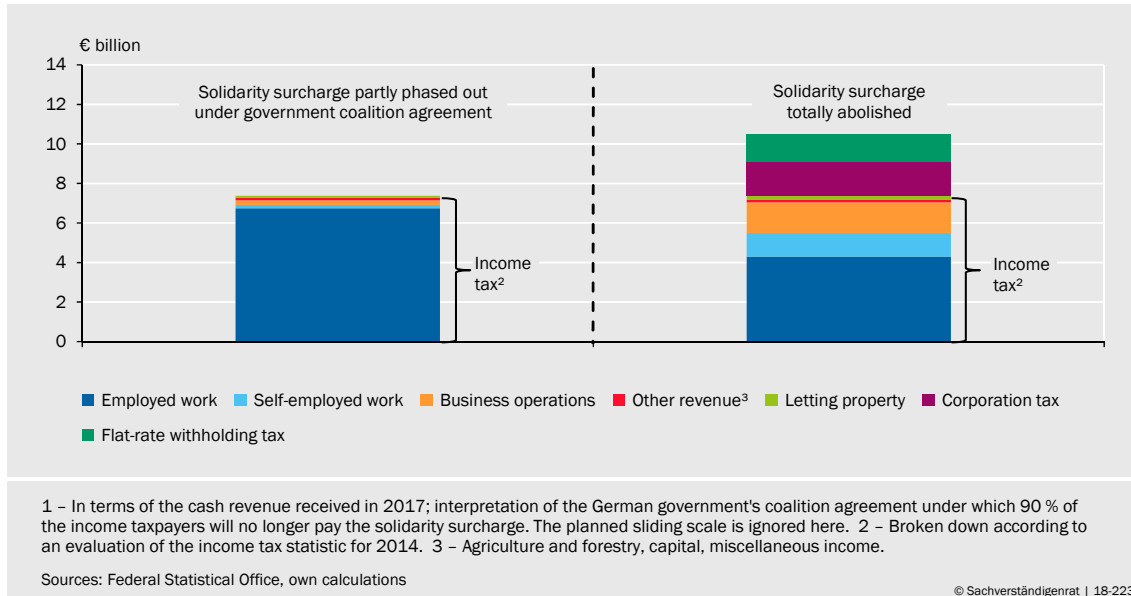
637. The **solidarity surcharge** was initially launched for a limited period from 1 July 1991 to 30 June 1992 and then, in 1995, was introduced as an open-ended additional levy on income tax, corporation tax and withholding tax in order to bring living standards in West and East German states into line with each other following reunification. This justification will no longer apply once the Solidarity Pact II has ended. The German government's coalition agreement therefore calls for the currently very modest exemption limit from the solidarity surcharge to be significantly increased from 2021 onwards. Its wording suggests that this tax cut will only apply to income tax.

The **exemption limit** means that taxpayers with a taxable income of less than about €55,000 are likely to be fully exempt from the solidarity surcharge. Individuals earning more than the exemption limit would pay the surcharge in full. This abrupt effect is to be mitigated by a sliding scale. These **reform plans** are **problematic** for several reasons.

638. Firstly, the exemption limit gives rise to a **very high marginal tax burden** despite the plans for a sliding scale. If the tax scale for 2018 is applied, this would effectively mean that a taxpayer with a taxable income that exceeded the exemption limit by one euro would have to pay the solidarity surcharge of roughly €800, whereas no surcharge would be payable for incomes below the exemption limit. Although the sliding scale mitigates this abrupt effect, the marginal tax burden remains high in this area. Secondly, there may be **doubts about the constitutionality** of the solidarity surcharge if it is seen as a permanent supplementary levy (Kube, 2017). If taxation or tax relief is deemed to be politically desirable for certain income groups, this should be implemented in the form of

↘ CHART 83

Revenue shortfall if the solidarity surcharge is abolished[1]

€ billion

Solidarity surcharge partly phased out
under government coalition agreement

Solidarity surcharge
totally abolished

Income
tax[2]

Income
tax[2]

■ Employed work ■ Self-employed work ■ Business operations ■ Other revenue[3] ■ Letting property ■ Corporation tax
■ Flat-rate withholding tax

1 – In terms of the cash revenue received in 2017; interpretation of the German government's coalition agreement under which 90 % of the income taxpayers will no longer pay the solidarity surcharge. The planned sliding scale is ignored here. 2 – Broken down according to an evaluation of the income tax statistic for 2014. 3 – Agriculture and forestry, capital, miscellaneous income.

Sources: Federal Statistical Office, own calculations

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changes to the income tax schedule rather than by means of a supplementary levy.

And, thirdly, the solidarity surcharge continues to impose a financial burden on entrepreneurial activity in particular because it is levied on the liability payable in each case for income tax, capital gains tax and corporation tax. The total abolition of the solidarity surcharge would be a step in the right direction and an easy way of reducing the **tax burden on corporations and partnerships as well as individual entrepreneurs and the self-employed**.

639. The **tax revenue generated by the solidarity surcharge** in 2017 amounted to just under €18 billion. In October 2018 the Working Group on Tax Revenue Estimates reckoned that the revenue received from the solidarity surcharge will be likely to have grown to around €21.7 billion by 2021. Last year just under one-third of this revenue came from the income taxpayers who, according to the previous interpretation of the government's coalition agreement, would benefit from tax relief in future. If the income tax statistics for 2014 are extrapolated, roughly 91 % of this revenue is likely to have come from the solidarity surcharge paid by employees. 10 % of income taxpayers would continue to pay the surcharge. In the past these individuals have paid around half of the solidarity surcharge revenue generated by income tax. A large proportion of this revenue – roughly 40 % – comes from entrepreneurial activity. In addition, corporations paid approximately €1.7 billion of this revenue in 2017, while €1.4 billion came from capital gains tax. ↘ CHART 83 Businesses and the self-employed in particular would therefore continue to pay the solidarity surcharge. The total abolition of this surcharge would thus boost private investment activity.

2. Removal of distortions

640. It is very important for a high-tax country such as Germany to remove **existing distortions in its tax system**. Despite the business tax reform implemented

in 2008 and the introduction of a flat-rate withholding tax, however, equity finance continues to be discriminated against (GCEE Annual Report 2012 items 385 ff.). This discriminatory treatment can have an adverse impact on domestic companies' investment activity (Council of the European Union, 2018, Recommendation on the National Reform Programme No. 11; GCEE Annual Report 2015 items 779 ff.). For this reason the GCEE has proposed the concept of an **allowance for corporate equity** (GCEE Annual Report 2012 items 407 ff.).

641. There are basically **two ways of achieving financing neutrality**. The deduction for interest on debt can be restricted, thereby raising the taxation of debt finance to the level of equity finance. The term Comprehensive Business Income Tax (CBIT) is often used to describe this approach. Alternatively, it may be possible to deduct imputed interest for equity, which enables financing neutrality to be achieved at the lower taxation level of debt finance. This approach is known in the academic literature as an allowance for corporate equity (ACE).

Whilst both approaches achieve financing neutrality, they have **differing impacts on international tax competition**. The CBIT approach could theoretically dispense with the taxation of interest income at shareholder level, instead of which investment income would be fully taxed at company level. However, this would increase the tax burden at company level and would have an adverse impact in terms of international tax competition. These problems would remain even if this approach was combined with uniform taxation at shareholder level in the form of a flat-rate withholding tax. Domestic investment would face tax discrimination and in such cases would have to yield higher returns (GCEE Annual Report 2012 items 402 ff.). It is therefore questionable whether the CBIT approach is appropriate for achieving financing neutrality.

The **allowance for corporate equity** (ACE) proposed by the GCEE allows imputed interest to be deducted for (adjusted) equity. This would therefore achieve financing neutrality if there was uniform taxation at investor level. At the same time, the reduction in the average tax burden on companies would have a beneficial effect in terms of international tax competitiveness.

642. The ACE approach is often **criticised** because of the **considerable revenue shortfall** resulting from the reforms implemented in **Belgium**. In contrast to the concept proposed by the GCEE, the ACE approach adopted in Belgium was applied to the total amount of equity. In addition, tax management strategies in the form of combined equity and credit transactions within multinational corporations were allowed (Zangari, 2014; Hebous and Ruf, 2017). Belgium has also decided to adopt an incremental method for the 2019 tax year.

Italy first implemented an allowance for corporate equity back in 1997 before abolishing it for a while and then reintroducing it in 2012. In contrast to Belgium, only the equity added since 31 December 2010 is used as the basis for allowances in Italy. In addition, tax management strategies in the form of intercompany transactions are not allowed (Zangari, 2014).

643. The GCEE has updated its estimates of the total revenue shortfall based on an evaluation of data from the corporation tax statistics for 2012. Implementation of the ACE approach would probably give rise to an immediately effective **an nual revenue shortfall of between €2.8 billion** at an imputed interest rate of 1.5 % **and €5.6 billion** at an imputed interest rate of 3.0 %. ↘ TABLE 25

↘ TABLE 25

Estimation of the tax revenue shortfall with an allowance for corporate equity based on the corporation tax statistics for 2012[1]

€ million

	Scenario 1.5 %	Scenario 2 %	Scenario 2.5 %	Scenario 3 %
(1) Tax deposit account held by non-controlled companies	1,501,624			
(2) Subscribed capital of non-controlled companies	162,504			
(3) of which: from conversion of retained earnings	8,936			
(4) Lump-sum addition on minority shareholders' share capital at controlled companies[3]	118,333			
(5) Share capital of taxpayers with unrestricted tax liability before deduction of equity investments [= (1) + (2) - (3) +(4)]	1,773,525			
(6) Tax-exempt dividens	21,141			
(7) Acquisition cost of equity investments[4]	741,805			
(8) Tax-free overseas profits under double taxation agreements	6,612			
(9) Share capital attributable to tax-exempt overseas income[5]	94,455			
(10) Share capital of taxpayers with unrestricted tax liability [= (5) - (7) - (9)]	937,265			
(11) Lump-sum addition for restricted taxpayers[6]	53,227			
(12) Share capital in 2012 [= (10) + (11)]	990,493			
(13) Share capital in 2019[7]	1,263,337			
(14) Share capital attributable to profits[8]	769,439			
(15) Share capital attributable to losses[8]	493,898			
(16) Immediate revenue shortfall from corporation tax and the solidarity surcharge[9]	1,826	2,435	3,044	3,653
(17) Immediate revenue shortfall from local business tax[10]	1,212	1,616	2,020	2,424
(18) Tax revenue surplus owing to immediately increased payouts as a result of the lower tax burden on companies[11]	240	321	401	481
(19) Immediately effective tax revenue shortfall [= (16) + (17) - (18)]	**2,798**	**3,731**	**4,663**	**5,596**
(20) Long-term annual revenue shortfall owing to increased loss carryforwards	1,950	2,600	3,250	3,901
(21) Long-term revenue surplus from dividend taxation owing to higher payouts as a result of the lower tax burden on companies	1,252	1,670	2,087	2,505
(22) Long-term tax revenue shortfall (annual impact based on 2019) [= (19) + (20) - (21)]	**3,496**	**4,661**	**5,826**	**6,992**

1 – Own calculations; rounding differences. 2 – Result extrapolated from the DAFNE financial statements database. 3 – A proportion of 10 % has been recognised. The controlled companies' share capital is determined by the controlled companies' tax deposit account as a percentage of the non-controlled companies' account. 4 – Estimate assuming a dividend yield of 3 %. 5 – Estimate assuming a total return on capital of 7 %. 6 – Derived using the restricted taxpayers' total income as a percentage of the unrestricted taxpayers' income. 7 – Estimate using the growth in nominal gross domestic product over the period 2012 to 2019. 8 – The figure used is the 2012 allocation of the amounts in the tax deposits accounts to the relevant profits and losses. 9 – The allowance interest rates vary between 1.5 % and 3 %. 10 – A local business tax multiplier of 400 % is assumed. The imputed interest deduction is only 75 % effective on the local business tax base because it is classified as a finance cost. 11 – It is generally assumed that 30 % of the amount of tax saved is paid out and that, consequently, 70 % remains in the company.

Sources: Federal Statistical Office, own calculations

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The imputed interest rate is based on market rates (credit interest rates for companies with total borrowings of more than €1 million from new business) and should be adjusted accordingly over time as part of a rules-based process (GCEE Annual Report 2012 items 413 ff.).
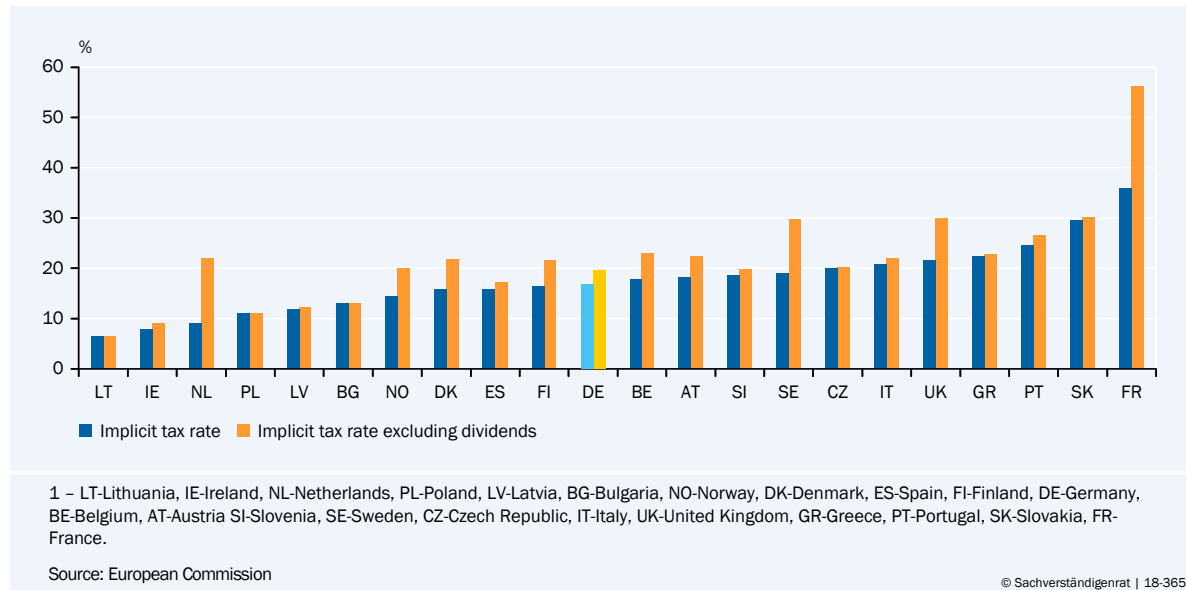
644. By contrast, the German federal government plans to **abolish the flat-rate withholding tax on interest income** in order to achieve financing neutrality. Although this action will push up costs for taxpayers and administrators alike, it is only likely to boost tax revenues to a limited extent. This will ultimately place a greater financial burden on savers with taxable income of more than approximately €20,000 who do not invest in shareholdings or real estate because, for example, they either do not wish to or are unable to take any risks. This means that the middle classes will shoulder the greatest burden. Introducing an allowance for corporate equity, however, would enable the flat-rate withholding tax to be fully integrated into the German tax system.

A differing opinion

645. One of the members of the German Council of Economic Experts, Peter Bofinger, has a different opinion on the statements regarding tax policy in this chapter. Unlike the majority, he does not believe that international tax competition should be accepted. Rather, Germany should do everything it can at European level to prevent **tax competition and its draining effect**.

646. The majority are in favour of tax relief for companies, particularly in view of the extensive tax reforms implemented in the United States. The German government should "mount a timely response to this changing competitive situation rather than simply adopting a wait-and-see approach to the emerging relative deterioration in Germany's tax competitiveness." To this end, the majority are considering the complete abolition of the solidarity surcharge for limited companies, the introduction of patent boxes and an allowance for corporate equity.

647. When making **comparisons with the United States**, it should not be forgotten that the tax cuts that came into force at the start of 2018 were accompanied by a **sharp increase in government debt**. According to the estimates of the International Monetary Fund, the debt ratio will climb from 106 % in 2018 to 117 % in 2023. It is therefore a distinct possibility that these changes will sooner or later make tax rises unavoidable, including for the corporate sector. Firms that relocate to the United States solely because of the tax advantages are therefore exposed to the risk that the favourable tax situation will not last.

648. When conducting international comparisons, it cannot be generally deduced that high tax rates mean an unattractive **location for business**. The majority

⭢ CHART 84

Implicit tax rates on corporate income in European countries in 2016[1]

■ Implicit tax rate ■ Implicit tax rate excluding dividends

1 – LT-Lithuania, IE-Ireland, NL-Netherlands, PL-Poland, LV-Latvia, BG-Bulgaria, NO-Norway, DK-Denmark, ES-Spain, FI-Finland, DE-Germany, BE-Belgium, AT-Austria SI-Slovenia, SE-Sweden, CZ-Czech Republic, IT-Italy, UK-United Kingdom, GR-Greece, PT-Portugal, SK-Slovakia, FR-France.

Source: European Commission

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make references to studies that highlight the importance of infrastructure and agglomeration economies. ⭢ BOX 18

649. It is doubtful whether either the statutory tax rates or the generally closely related effective tax rates are a good reflection of **companies' actual tax burden**. Effective tax rates are calculated on the basis of a **typical company** and do not fully take into account the many different tax arrangements available to international companies.

650. The **implicit tax rates calculated for limited companies** by the European Union are derived from the taxes actually paid by companies relative to the profits generated by the corporate sector. The Commission also determines a variant of the implicit tax rate by excluding the dividends received by companies from the denominator of this ratio. It does this because such dividends are largely exempt from tax due to the Parent-Subsidiary Directive.

In a European ranking based on the two implicit tax rates, Germany is no longer at the top but in the middle. ⭢ CHART 84 It achieves a similar position when the European countries are ranked in order of their **tax receipts from limited companies** relative to economic output. ⭢ CHART 85

651. Taking account of these factors, it does not appear necessary for Germany to actively and directly participate in the current round of competition to lower taxes or, as a major player, for it to contribute to the intensification of this process.

652. Fundamentally, international tax competition represents a considerable **threat to the process of globalisation** in goods and services markets. The growing global division of labour clearly has **positive effects on countries' prosperity** (GCEE Annual Report 2017, items 630 ff.). However, this trend is frequently accompanied by an unequal **distribution of prosperity gains** within economies. The economic literature has therefore acknowledged for quite some time that **the absolute or relative losers need to be compensated** (Südekum

2017). However, countries are able to balance out this inequality only when they have **sufficient financial resources**. Tax competition reduces their potential for doing so.
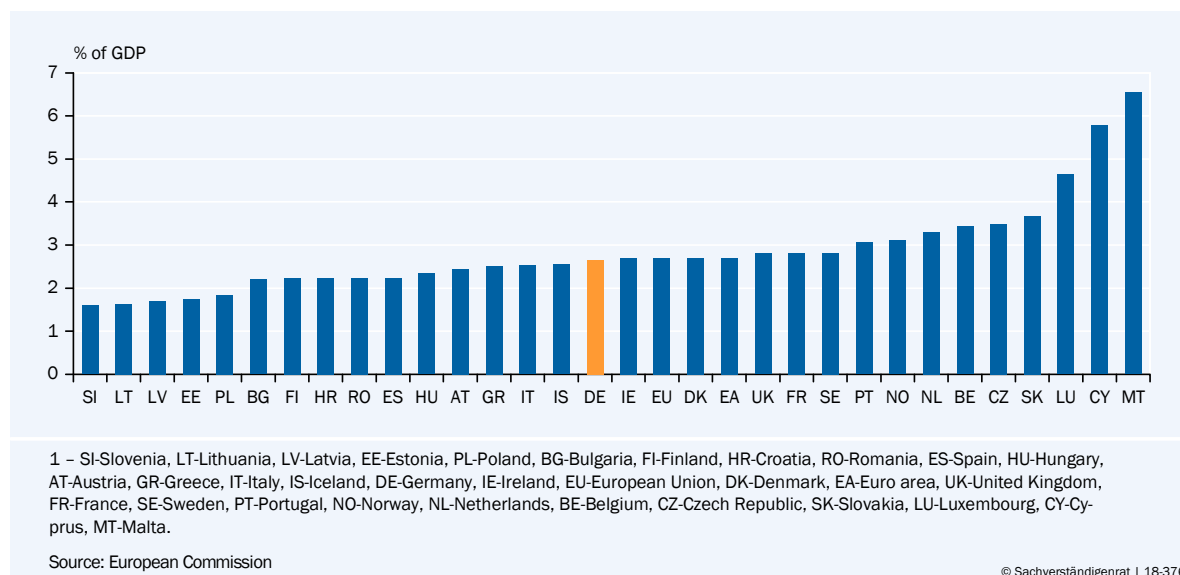
653. The growth of protectionism reflects the fact that globalisation is now seen not just as an opportunity but as a threat. The way to dispel this opinion is not by actively contributing to the intensification of tax competition. Instead, everything possible should be done to restrict it. It is therefore helpful that, in the context of the BEPS discussions, France and Germany recently proposed discussing **minimum tax rates for corporate taxes** and to levy them as standard.

654. Although the majority wish to make Germany a more attractive business location from a tax perspective, they are against input-based tax incentives for research and development. However, they believe it is **worth considering** the introduction of **patent boxes** as a means of output-based incentivisation of research and development.

As illustrated by ⌄ CHART 81 LEFT, Germany is a **complete outsider** in terms of **input-based incentivisation** and can therefore indeed be said to be at a disadvantage as a business location. A study by Pfeiffer and Spengel (2017) finds robust evidence in the empirical literature that the introduction of input-based tax incentives has a beneficial impact on a company's innovation activities, whereas studies on output-based tax incentives cannot support this argument. It also finds that multinational companies use output-based tax incentives for tax planning purposes but not as a way of fostering research and development.

The Commission of Experts for Research and Innovation has also long been in favour of the input-based incentivisation of research (EFI, 2018). It cites a study by Spengel et al. (2017) that, based on analysis of numerous empirical studies, concludes that companies are making significant use of the incentives and that R&D expenditure is rising across the board. Many academic studies based on extensive data records and statistical methods also confirm a positive correlation between input-based tax incentives for R&D and private investment in R&D.

⌄ CHART 85

Revenue from corporate taxes in European countries in 2016[1]

1 – SI-Slovenia, LT-Lithuania, LV-Latvia, EE-Estonia, PL-Poland, BG-Bulgaria, FI-Finland, HR-Croatia, RO-Romania, ES-Spain, HU-Hungary, AT-Austria, GR-Greece, IT-Italy, IS-Iceland, DE-Germany, IE-Ireland, EU-European Union, DK-Denmark, EA-Euro area, UK-United Kingdom, FR-France, SE-Sweden, PT-Portugal, NO-Norway, NL-Netherlands, BE-Belgium, CZ-Czech Republic, SK-Slovakia, LU-Luxembourg, CY-Cyprus, MT-Malta.

Source: European Commission

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The draft legislation on tax incentives for research, which is currently going through the interdepartmental consultation process, is thus a step in the right direction.

655. An **allowance for corporate equity**, for which the majority have been calling for years, should be rejected as it is effectively a **negative wealth tax with an asymmetrical effect**. A detailed critique can be found in the dissenting opinion for the GCEE Annual Report 2015/16 (items 812 ff.). In principle, the underlying taxation-driven distortion of equity and debt capital, which is rightly criticised by the majority, will be essentially resolved by the **abolition of the flat-rate withholding tax on interest income**, which had been proposed for many years in the dissenting opinions (GCEE Annual Report 2012, Item 429) and has now been put forward in the federal government coalition agreement.

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