European
Commission

Tax Reforms in EU Member States:

2015 Report

Taxation and
Customs Union

Tax reforms in EU Member States 2015

Tax policy challenges for economic growth and fiscal sustainability

ACKNOWLEDGEMENTS

ABBREVIATIONS

Member States

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
EA	Euro area
EU	European Union
EU-28	The 28 EU Member States
EA-19	The 19 Member States in the euro area

Others

ACE	Allowance for corporate equity
AETR	Average effective tax rate
AGS	Annual Growth Survey
AW	Average wage
BEPS	Base erosion and profit shifting
CPB	Central Planning Bureau, the Dutch government's research institute for economic policy analysis
CBIT	Comprehensive business income tax
CIT	Corporate income tax
CCCTB	Common consolidated corporate tax base
DG ECFIN	Directorate-General for Economic and Financial Affairs
DG TAXUD	Directorate-General for Taxation and Customs Union
EA	Euro area
EBITDA	Earnings before interest, taxes, depreciation and amortisation
ECB	European Central Bank
ECOFIN	Economic and Financial Affairs Council
EPC	Economic Policy Committee
ESA79	European system of accounts 1979
ESA95	European system of accounts 1995
ESA 2010	European system of accounts 2010
EU	European Union
FTT	Financial transaction tax
GDP	Gross domestic product
GNI	Gross national income
JRC-IPTS	The European Commission Joint Research Centre's Institute for Prospective Technological Studies
METR	Marginal effective tax rate
MOSS	Mini One Stop Shop
MoU	Memorandum of understanding
MTO	Medium-term budgetary objective
OECD	Organisation for Economic Cooperation and Development
PIT	Personal income tax
pp.	Percentage points
R&D	Research and development
SME	Small and medium-sized enterprise
SSC	Social security contributions
VAT	Value added tax
VRR	VAT revenue ratio

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FOREWORD

A carefully designed tax system can have a significant positive impact on a country's economy. It can help ensure stable public finances, boost growth, employment and competitiveness, and contribute to a fair distribution of income. The European Commission's annual Tax Reforms Report contributes to the discussion on better taxation by examining the trends in reforms seen across the EU. It also provides in-depth analysis of the challenges being faced by Member States and the policies available to them to address these issues. The use of indicator-based analysis helps to identify the specific policy areas in which individual Member States have scope to improve their tax systems. As a source of up-to-date analysis, the report also contributes to the EU's process of multilateral economic surveillance.

During the crisis, the urgent need to improve public finances forced many Member States to take immediate action. In practice, this often meant increasing taxes, also including taxes that are particularly detrimental to economic growth. As the financial crisis has abated and the need for further consolidation has moderated, governments should increasingly be focusing on the *quality* of the measures they introduce in relation to public finances.

The structure, efficiency, effectiveness and fairness of tax systems can have a significant effect on growth and employment. The tax systems of EU Member States tend to be heavily reliant on labour taxes, which can depress both the supply and demand for labour. Current discussions on policy in this area are therefore focusing on identifying appropriate ways to shift some of the tax burden away from labour and onto other types of taxation that are typically less harmful to growth and employment, such as consumption, recurrent property and environmental taxes. At the same time, labour tax reductions could usefully be targeted to those labour market segments that are the most reactive to tax reductions, such as low-income earners. The report shows that while some Member States have started to take action in this area, many could consider doing more.

In general, broader tax bases and lower tax rates tend to be more conducive to growth. The extensive use of exemptions and deductions across the EU means, however, that many taxes have fairly narrow bases. It also makes tax systems more complex and difficult to assess. Exemptions and deductions are, of course, sometimes justified, as a way of addressing specific social concerns or market failures. Where this is the case, they must then be carefully designed. This report assesses the efficiency of the design of a number of types of taxation, including consumption, housing, corporate and environmental taxes. This year, the report also discusses in detail the use of tax policy to incentivise investment.

In addition to examining the design of tax policy, the report also considers a number of issues relating to tax governance. The effectiveness of tax collection can be assessed in terms of how close a system is to a situation where the full amount of revenue due to the authorities is collected. The report includes an extensive discussion of tax compliance issues, and presents the most recent developments seen in the fight against aggressive international tax planning.

A country's tax system serves not only to finance government expenditure, but also offers a means of redistributing income. The report shows that, in most Member States, tax and benefit systems were able to contain a significant part of the increase in market income inequality seen during the crisis. Fairness of the tax system has also gained prominence recently as inequality can weigh negatively on the overall growth of the economy.

With public finances and the need to promote sustainable economic growth and employment likely to remain top priorities for the foreseeable future, tax reforms are set to stay high on the policy agenda. We hope that the analysis contained in this report will make a valuable contribution to the discussion.

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EXECUTIVE SUMMARY

By improving the design of their tax systems, EU Member States can improve their public finances, support growth and job creation, strengthen economic stability, and increase fairness. This report presents an overview of recent tax policy reforms across the EU and provides up-to-date analysis of challenges being faced in these areas. It also includes indicator-based assessments, which provide an insight into the relative performance of Member States' tax systems in terms of efficiency, effectiveness and equity to inform the national and European policy debate. Further, in-depth country-specific analysis would need to be carried out before any definite conclusions could be drawn as to the appropriate policies to be introduced in any particular country.

The first chapter of the report reviews recent trends in tax revenues and discusses the main reforms introduced by Member States over the past year. The overall tax burden, as a percentage of GDP has been increasing over the last few years. In 2015, the overall tax burden is expected to fall, albeit only very slightly. Indirect and direct taxes are forecast to remain broadly stable, while social security contributions are expected to see a slight drop. Despite a minor decrease in labour taxes, there is little evidence of a significant shift from labour taxation towards less detrimental revenue sources. Member States have continued to introduce reforms designed to stimulate investment. Tax administrations across the EU continue to take determined action against tax fraud and evasion, enacting reforms against a background of significant international developments related to aggressive tax avoidance and tax rulings.

The second chapter of the report examines two tax policy issues that are of particular macroeconomic relevance. The first question discusses the potential contribution that taxation can make to helping ensure fiscal sustainability. A number of Member States need to continue their efforts to fully secure the medium-term sustainability of their public finances. This involves finding an appropriate balance between reducing expenditure and increasing revenue. A few of the Member States that find themselves in this position appear to have scope to increase taxes as their overall tax levels and the levels of some of the more "growth-friendly taxes", such as VAT, recurrent property taxes and environmental taxes, are relatively low.

The second issue addressed in chapter two is the tax burden on labour, which is relatively high in the EU. Reducing this burden, particularly for low-income earners can be an effective way of stimulating growth and employment in many Member States. In most cases though, alternative sources of revenue or expenditure reductions need to be found to avoid putting pressure on public finances. The report finds that there is scope to shift labour taxes to more growth-friendly taxes in all the Member States where there the tax burden on labour (overall or for specific groups) is high. Although steps have been taken in this direction, most Member States in this position could go further.

The third chapter of the report considers various possible ways to improve the design of taxes in specific areas. It examines a variety of issues, namely consumption taxes, housing taxation, the debt bias in corporate taxation (with some focus on the financial sector), tax expenditures in the areas of housing and pensions, tax incentives for research and development (R&D) and environmental taxes. The main findings for each of these areas are summarised below.

Consumption taxes, such as VAT, are relatively growth-friendly and are an important source of revenue for many Member States. Several Member States, however, have numerous reduced rates and exemptions which create economic distortions, raise compliance costs and reduce revenues. Around one quarter of Member States appear to have particular scope to improve the efficiency of their VAT systems. New EU legislation on VAT came into force on 1 January 2015, meaning that telecommunications, broadcasting and electronic services are now taxed according to the "destination principle", i.e. they are taxed under the tax system of the country in which the consumer resides. This new system removes incentives for businesses to locate to low tax jurisdictions. These changes may have a significant effect on a number of EU Member States and could lead to a broadening of the VAT base in these sectors, thus reducing economic distortions and generating additional revenue.

Changes could be made to various aspects of housing taxation, in order to make it more efficient. Recurrent taxes on immovable property are among the taxes least detrimental to growth but currently generate only a relatively small proportion of total tax revenue. Increasing these taxes could be a potentially effective strategy for governments looking to consolidate their finances, to finance a shift away from labour taxes, or to reduce property transaction taxes, which are more distortive. The report observes that a number of Member States still offer relatively generous tax relief on mortgage interest payments, a policy that can encourage household indebtedness and over-investment in housing.

In a large majority of Member States, the tax system allows businesses to deduct interest payments from the tax base for corporate income tax while offering no equivalent provision for the cost of equity financing. This creates a bias in favour of debt over equity as the means for funding new investment. The report identifies a small number of Member States where the difference in the treatment of debt and equity is especially large. This asymmetry can encourage excessive leverage in the corporate sector, lead to higher volatility in the business cycle, be detrimental to investment, and create opportunities for international tax avoidance. In the financial sector, it goes against regulatory policies to strengthen the capital base of financial firms and can increase the fragility of banks and the likelihood and potential costs of financial crises. Besides anti-abuse measures, Member States could introduce more fundamental reforms to address the corporate debt bias by treating debt and equity-financing on equal footing for tax purposes.

The report provides a discussion of the effect of some tax expenditures relating to pensions and housing on both public finances and income distribution, for a number of selected Member States. The results suggest that the effects, both on revenue and on income distribution, can be considerable, in particular the effects of pension-related tax expenditures. The effectiveness of these types of tax expenditures as redistributive measures is found to very much depend on their design, which varies between countries.

Investment in R&D is essential for a country's economic competitiveness and creates many spill-over benefits. Because the returns from individual projects do not include positive externalities, private R&D investment can, therefore, fall short of socially desirable levels. The imperfect functioning of the market could be compensated for by means of well-targeted tax incentives or direct subsidies. The report discusses the design of R&D tax incentives in the EU, and presents examples of good practice, drawing on a recent study carried out on this subject.

Environmental taxes are doubly attractive because they are relatively growth-friendly and can help countries achieve their environmental policy objectives. The report identifies a group of around a third of Member States where there is particular scope for improving the design of environmental taxes. They could, in particular, consider restructuring vehicle taxation, indexing environmental taxes to inflation and adjusting fuel excise duties so as to reflect the carbon and energy content of different fuels.

In the fourth chapter, the report presents an in-depth assessment of tax governance and examines the link between taxation systems and income equality. A number of Member States could do more to improve tax collection – making sure all tax payers contribute their fair share –and enhancing the efficiency of their tax administration inter alia by offering more and better services to taxpayers, reducing the amount of tax debts and making tax collection cheaper for tax administrations and faster for taxpayers.

The report also reviews evidence on the effect of tax and benefit systems on changes in inequalities. Although the levels of inequality, as measured by market income (income derived from work and capital), rose significantly in the EU during the crisis years 2007-2013, income inequality after taxes and benefits changed relatively little. At least until 2013, tax and benefit systems were able to contain a significant part of the increase in market inequality in most Member States. There is, however, significant variation between countries, and the level of inequality increased in some Member States even taking into account the effect of taxes and benefits. Furthermore, low-income households in some Member States have seen their living standards deteriorate disproportionately.

INTRODUCTION

Purpose of the report

The report *Tax Reforms in EU Member States* serves four main purposes.

Firstly, it reviews the most important tax reforms recently implemented in EU Member States.

Secondly, it discusses a number of challenges relating to tax policy that may affect macroeconomic performance, in terms of growth, employment, public finances and macroeconomic stability.

Thirdly, the report provides a basis for dialogue, on the role of tax policies in promoting sustainable growth, employment and social equity. In this context, it also encourages a valuable exchange of best practice in the area of tax reforms.

Lastly, the report contributes to an informed dialogue with civil society on what is generally considered a sensitive topic. This is particularly relevant and important in the current economic context.

Screening methodology

The report includes an indicator-based screening of Member States' performance in several areas of tax policy. This is used to help identify the areas where individual Member States could improve their tax policy.

Under this screening approach, a Member State is considered to face a potential challenge in a particular area of tax policy if its performance is below the EU average to an extent that is statistically significant. It should be noted that the EU average is not considered as an 'ideal' level or target. For example, judging the EU's tax systems on their growth-friendliness, it would generally be acknowledged that labour taxes are on average too high, whereas recurrent housing taxes could be considered low on average.

The screening method provides a useful tool for identifying areas where policies could be improved, as part of the EU's wider process of multilateral surveillance. An essentially mechanical assessment such as this will, however, always need to be interpreted together with in-depth country analysis, before any conclusions can

be made as to appropriate policies. This type of in-depth analysis is beyond the scope of the general assessment provided in this report; it is instead carried out as part of the European Semester.

Full details on the screening methodology may be found in Annex 1 to this report.

European Semester

The annual European Semester exercise is a central part of the EU's economic policy surveillance. The cycle begins with the publication of the Annual Growth Survey, a document setting out broad economic policy priorities for the EU as a whole. The 2015 Annual Growth Survey set out an integrated approach to economic policy, built around three main pillars: growth-friendly fiscal consolidation, accelerating structural reforms and boosting investment. These pillars then form the basis for the country-specific recommendations proposed by the Commission and adopted by the Council at the end of the European Semester in July. ([1])

Tax policy plays an important role in each of these pillars, as demonstrated in this report. The report discusses the role of taxation in fiscal consolidation (the first pillar); it examines a variety of structural reforms that could be made to tax systems to make them more efficient and more conducive to promoting growth and creating jobs (the second pillar); and lastly, the report explores a number of tax issues relevant to investment (the third pillar). The section on tax governance is particularly relevant to this last pillar, as a transparent, simple and stable tax system is considered essential for creating a favourable investment climate.

Structure of the report

The structure of the report is largely the same as in previous years. Particular attention has been given to ensuring conciseness and readability.

Chapter 1 provides an overview of the most important tax reforms implemented by Member

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[1] More information on the European Semester, the Annual Growth Survey and the country-specific recommendations can be found at http://ec.europa.eu/europe2020/index_en.htm.

States between mid-2014 and mid-2015. Chapter 2 examines the role that taxation can play in ensuring fiscal sustainability, and also discusses the need and scope for a growth-friendly tax shift away from labour to sources of revenue less detrimental to growth. Chapter 3 investigates ways to improve the efficiency of the tax system by improving its design, with particular attention given to consumption taxes, housing taxes, the debt bias in corporate taxation, environmental taxes and tax expenditures. Chapter 4 examines tax administration and tax compliance, and discusses the effects of certain tax measures on income distribution. Chapter 5 provides an overview of the challenges faced by Member States in the area of tax policy, as identified in the different chapters. It also includes a comparison with the results of last year's report.

1. RECENT REFORMS OF TAX SYSTEMS IN THE EU

1.1. INTRODUCTION

This chapter identifies the main trends in tax reform seen between mid-2014 and mid-2015 in EU countries. A detailed description of these reforms carried out can be found in the Taxation Reforms Database. ([2])

The way in which tax reforms are categorised in this chapter reflects the main tax policy objectives set out in the 2015 Annual Growth Survey: towards employment-friendly tax systems; towards investment-friendly tax systems; fighting against tax fraud, evasion and avoidance.

1.2. MAIN TRENDS IN TAXATION

Over recent years, Member States have increased their total tax revenue, as illustrated in Graph 1.1. All the main types of taxation – indirect taxes, direct taxes and, to a lesser extent, social security contributions – have been increased as a share of GDP. In 2015, total tax revenue is expected to fall, albeit only very slightly. Whilst indirect and direct taxes are forecast to remain broadly stable, social

Graph 1.1: **Change in tax revenue (EU, percentage of GDP)**
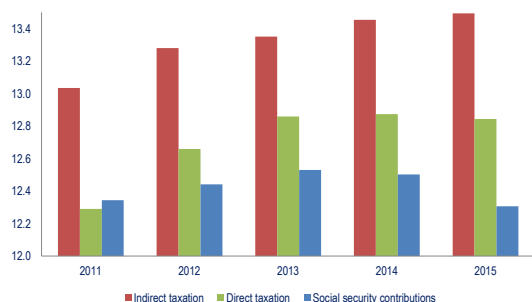
Note: 2015 data is based on the Commission's 2015 spring forecast. Data refers to general government tax revenue and excludes indirect taxes levied by national governments on behalf of EU institutions. Data is based on the ESA 2010 methodology.
Source: European Commission annual macroeconomic database.

(²)
http://ec.europa.eu/economy_finance/db_indicators/taxationrreforms_database/index_en.htm.
http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/index_en.htm

security contributions will fall marginally, to around their 2011 levels. The country-specific data for each of the categories may be found in Annex 2.

1.3. DEVELOPING MORE EMPLOYMENT-FRIENDLY TAX SYSTEMS

Labour taxes are decreasing overall but there is no clear indication that the tax burden is being shifted to taxes less detrimental to growth.

1.3.1. Taxation of labour

Between mid-2014 and mid-2015, nine Member States reduced the overall level of taxation on labour. Four others reduced labour taxes for low-wage earners and other specific groups, while increasing personal and labour taxes for higher-income groups.

Only three countries increased labour taxes: Bulgaria increased personal income tax (PIT) by removing a temporary tax relief previously given to those on the minimum wage, extending the taxation of interest and increasing social security contributions (SSC) (including by raising the minimum and maximum level of contributions). At the same time, the tax deduction for children was increased. Latvia increased the ceiling on pension contributions. In Luxembourg, a new employee tax item – the temporary tax for fiscal balancing (*impôt d'équilibrage budgétaire temporaire*) – was introduced.

Eight Member States reduced labour taxes by means of measures targeted at particular groups, including low-income earners and workers with children (Belgium, Bulgaria, Estonia, France, Croatia, Italy, Malta and the UK). Personal and family-related allowances were increased in Belgium (by increasing the lump-sum professional expenses deduction), Estonia, Croatia, Malta and the UK (increased personal allowance), Bulgaria introduced a PIT deduction for families with children and a general tax credit was introduced in Estonia. Additionally, Croatia and the UK both reduced SSC for young employees, as a way of incentivising employers to recruit more young people. Croatia reduced the tax burden on high-income earners by shifting the highest PIT bracket

upwards. Malta removed one of the tax brackets. Ireland reduced the Universal Social Charge rates and shifted the tax brackets upwards, thus favouring lower-income earners. Slovakia introduced an SSC allowance designed to help lower-income earners. In Italy, a tax credit for low-income earners, originally due to be phased out from 2014, was made permanent and labour costs became fully deductible from the regional production tax (IRAP). Additionally, employers' SSC for new employees taken on in 2015 on permanent contracts has been waived for three years. France increased the job creation tax credit in 2014 and implemented the 1st stage of the Responsibility Pact in January 2015, targeted at low income earners.

In four Member States (Spain, France, Austria and Portugal), targeted reductions in labour tax were accompanied by an increase in tax on higher-income earners, thus increasing the progressivity of the system. In Austria, a major labour tax reform has been enacted. The measures include reducing the PIT rate for the lowest tax bracket, increasing the child allowance, introducing a temporary increased tax rate for the highest tax bracket and increasing the tax paid on capital income. A complex PIT reform being introduced in Spain is intended to reduce labour tax for very low-income earners and families, and increase the progressivity of tax on capital income. In Portugal, the tax credit for family expenses was increased, while a temporary surcharge on high-income earners remained in place in 2015. In France, the measures already implemented as part of ongoing efforts to reduce the tax burden on labour are particularly targeted at low-income earners, and go some way to shifting the tax burden onto higher-income earners.

Three Member States (Latvia, Hungary and Romania) that operate single-rate PIT systems – thus placing a high tax burden on low-income earners – have introduced or announced non-targeted reductions in labour taxation. Most significantly, SSC were reduced by 5 percentage points in Romania as of October 2014. Furthermore, additional significant reductions in overall labour taxes were announced in 2015. Latvia reduced the PIT rate from 24 % to 23 % in 2015. Hungary enacted a decrease of the PIT rate from 16 % to 15 % as of 2016.

1.3.2. Increased reliance on tax bases less detrimental to growth

Value added tax

There were few reforms introduced relating to the standard rate of value added tax (VAT). Slovakia made the one-percentage-point increase in its standard VAT rate, originally introduced as a temporary measure, permanent. The two-percentage-point increase in the standard, reduced and parking VAT rates announced by Luxembourg in 2014 entered into force in January 2015.

Eight Member States (Belgium, Denmark, Estonia, Greece ([3]), Spain, France, Luxembourg and Austria) have broadened their VAT bases or increased the reduced rates applied to certain goods and services. Austria, for example, enacted an increase in the reduced VAT rate for several items including hotel services, theatre tickets and pet food, from 10 % to 13 %.

Eleven Member States (the Czech Republic, Denmark, Greece, Spain, Croatia, Lithuania, Hungary, Malta, the Netherlands, Portugal and Romania) either introduced new reduced rates, lowered their existing reduced rates or extended the scope of their application.

Environmental and health taxes

Over a third of Member States (Bulgaria, France, Croatia, Latvia, Hungary, Malta, the Netherlands, Portugal, Finland and Sweden) increased excise duties on energy. Slovenia increased its carbon tax. A number of Member States (Bulgaria, Denmark, Ireland, Hungary, Romania and Finland), however, decreased or extended previously introduced temporary reductions in excise duties.

Two Member States (Denmark and Finland) have taken measures to improve the design of their car tax laws. Sweden extended existing measures in the area of congestion charges and Belgium will introduce a kilometre charge for heavy vehicles in 2016.

A number of Member States (Estonia, Ireland, Spain, France, Malta, the Netherlands and

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([3]) The reform has been decided upon after the cut-off date for tax reforms covered in this report.

Portugal) introduced or reinforced increased tax incentives to promote the use of renewable energy sources and encourage energy efficiency. Conversely, several Member States (Belgium, Denmark, Latvia and Sweden – to some extent) phased out preferential treatment previously granted to eco-friendly products and Malta removed the eco-contribution on electronic and white goods.

Several Member States (Hungary, Malta, the Netherlands, Portugal and Sweden) introduced or increased taxes on pollution and resources. Almost a third of Member States increased excise duties on tobacco and/or alcohol.

Taxation of immovable property

Between mid-2014 and mid-2015, 13 Member States reformed or announced reforms to property taxes.

A number of countries (Lithuania, Romania, Finland and the UK) increased recurrent property taxes. Romania, for example, proposed the introduction of a progressive tax-rate structure, both for residential and business properties. Lithuania broadened the tax base by lowering the value above which tax is paid on immovable property used for non-commercial purposes. However, at the same time, Lithuania also reduced the applicable rate. Two Member States (Romania and the UK) reduced property taxes.

Three Member States (Germany ([4]), Spain ([5]) and Austria) increased property transfer taxes while two (Greece and Malta) reduced them.

1.4. DEVELOPING MORE INVESTMENT-FRIENDLY TAX SYSTEMS

Member States continued to introduce tax reforms designed to stimulate investment by narrowing the tax base. Efforts were also made to simplify the business environment in relation to taxation.

([4]) The German federal states Hessen, Saarland, Brandenbourg and North Rhine-Westphalia decided to increase the rate applied.
([5]) Only certain Autonomous Communities have increased transfer taxes.

Corporate income tax: tax rate versus tax base

Between mid-2014 and mid-2015, the trend of reducing the statutory corporate income tax rate seemed to slow, with reductions mainly being introduced in countries that had not lowered rates in previous years. Spain and Portugal reduced their headline rates, while in the UK a reduction that had already been announced came into force in 2015. As in previous years, two separate trends can be identified in reforms to the design of the corporate tax base. Member States narrowed their tax bases to stimulate investment and competitiveness, while at the same time often broadening the tax base to limit the scope for tax avoidance (see the discussion in Section 1.5) or to repeal ineffective tax incentives (Spain, for example, removed its reduced rate for SMEs).

Incentives for research and innovation

With many reforms to R&D tax incentives having been introduced during the crisis, fewer Member States made changes in this area between mid-2014 and mid-2015. Five countries (Ireland, Spain, Italy, Slovakia and the UK) introduced some form of modification to their R&D tax support system and Austria announced a tax reform to make its invention premium tax credit more generous. Slovakia overhauled its limited R&D tax incentive system, introducing a general 'super allowance' for R&D expenses of 125 %. In a number of countries, for example France and Belgium, focus seems to have shifted to implementation, e.g. facilitating the uptake of the measures and checking the eligibility of R&D costs.

Incentives for entrepreneurship and investment

Five Member States (Spain, France, Croatia, Portugal and Romania) introduced tax incentives to stimulate investment in plant and machinery. These involved allowing bonus depreciation or offering tax incentives for reinvestment of profits. Six Member States (Ireland, France, Italy, Luxembourg, Malta and the UK) focused their attention on helping younger or smaller companies. Stimulating socially responsible investment was also on the agenda of tax policy makers in a number of countries (Denmark, Spain, Italy, Malta and the UK). For example, tax reliefs for charitable giving were enhanced in Spain, Malta and Italy.

Addressing the debt bias

Only a small number of measures were introduced to reduce the debt bias. The corporate tax reform in Spain continued the move towards reducing interest deductibility, while providing an indirect incentive for companies to increase their reliance on their own funding. Italy and Belgium modified their rules on the allowance for corporate equity (ACE). Italy increased the benefits associated with the allowance and the possibility to convert the allowance into tax credits that can be used to offset local taxes, should there be no tax liability against which to deduct the ACE. Belgium announced changes to its ACE, involving the introduction of limits for the financial sector.

Services and simplification

Tax authorities are becoming increasingly service-oriented. In particular, they are providing more digital and online services. More than two thirds of Member States introduced or improved their online services. As an example, Romania set up a virtual online space for taxpayers, with the aim of facilitating compliance and communication between taxpayers and the tax authorities. A growing number of tax authorities have started to make use of social media, in particular to inform taxpayers about deadlines for submitting forms and possible compliance threats or to answer taxpayers' questions. Tax authorities' websites are becoming increasingly informative, comprehensive and transparent. The UK, for example, continued to publish and regularly update online guidance notes on how to manage tax administration issues.

In order to simplify tax compliance, in particular for small businesses and self-employed people, tax authorities have, for a number of years now, been developing simplified regimes for these categories of taxpayer. Recent examples of measures adopted by Member States include the following: France introduced simplified tax returns; Italy set up a new simplified tax regime for self-employed people and introduced pre-filled tax returns, accessible online to 20 million taxpayers; Austria continued implementing the 'fair play' project designed to supervise and support new small businesses also in tax compliance matters; and Poland simplified accounting requirements for micro-businesses.

1.5. FIGHTING TAX FRAUD, TAX EVASION AND TAX AVOIDANCE

Member States' tax authorities continued to demonstrate determination in fighting tax fraud and tax evasion. Several Member States also introduced reforms to address tax avoidance, in response to the developments taking place internationally in this area.

1.5.1. Reducing tax fraud and tax evasion

The majority of Member States' tax authorities are working increasingly closely with other national law enforcement agencies and with tax authorities in other countries. Over two thirds of Member States introduced new measures designed to increase cooperation. The Belgian tax authorities, for example, have started working more closely with other agencies, both nationally and cross-border, to facilitate the recovery of tax debts. Germany performed joint audits with Croatia and the Netherlands. Finland continued to implement its multiannual action plan to tackle the shadow economy. The plan relies on close cooperation between the tax authority, the police and the public prosecutor's office. The OECD Council of Europe Convention on Mutual Administrative Assistance in Tax Matters entered into force in several Member States: the Czech Republic, Estonia, Croatia, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Austria, Portugal, Romania and Slovakia. The Foreign Account Tax Compliance Act came into effect in Italy, Latvia, Lithuania, Poland, Slovenia and Sweden. The majority of Member States' tax authorities continue to make information reporting requirements for taxpayers stricter. Denmark, for example, increased the requirements for third-party reporting in respect of the purchase and sale of shares. Spain tightened the conditions regulating self-assessment declarations and tax information statements submitted to the tax authorities. Croatia introduced a new requirement applying to VAT-registered vendors of real estate. They must now submit all documents related to the acquisition of real estate to the tax authorities.

Increasing monitoring and checks remains a standard way of reducing tax fraud and evasion. All Member States introduced measures to step up the monitoring of tax compliance. The Czech Republic, for example, continued to focus on VAT

transactions. Denmark is concentrating its checks on cross-border activities which may lead to tax avoidance, and is monitoring transfer pricing, tax havens and money transfers particularly closely. Hungary introduced an electronic system that allows its tax authority to monitor the road transport of goods subject to VAT. In order to tackle VAT evasion, Italy approved a split payment system for public administration suppliers and the extension of the reverse charge mechanism to sectors characterized by a high risk of VAT evasion. Malta introduced the requirement for everyone carrying out a commercial activity to be registered for VAT purposes, regardless of annual turnover. Portugal began implementing its 2015-2017 strategic plan for tackling tax fraud and tax evasion. The plan includes 40 new measures designed to deter and detect tax evasion. These mainly involve data cross-checking and the use of new information technologies. Romania launched a new package of measures designed to fight tax evasion. More than 15 000 businesses were subject to checks in the first three months of 2015, leading to the discovery of around EUR 1 billion of undeclared taxes.

1.5.2. Tackling tax avoidance

Various measures have been taken at EU and international level to support the fight against tax avoidance. The most recent EU initiatives include the transparency package and the action plan for a fair and efficient corporate tax system in the European Union, as explained in further detail in Chapter 4 (Box 4.1).

Several Member States introduced or strengthened general or specific anti-avoidance provisions. Denmark announced the introduction of a general anti-abuse provision while Ireland tightened its general anti-avoidance rule and its mandatory disclosure regime. Four Member States (the Czech Republic, Spain, Poland and Slovakia) reinforced their transfer pricing rules, in particular by extending reporting requirements. Poland introduced new legislation on controlled foreign companies, and Spain broadened the scope of its existing legislation in this area. Spain also introduced new laws addressing hybrid mismatches that can lead to double non-taxation. Slovakia introduced thin capitalisation rules and a

few Member States (including Spain and Poland) tightened the criteria for benefiting from interest deductibility. As part of a broader review of its tax system, Italy issued draft legislation that redefines the concepts of abuse of law and tax avoidance, with the aim of increasing legal certainty for taxpayers.

The UK has announced the introduction of a tax on diverted profit. This tax will be levied on profits generated by multinationals from economic activity in the UK, if these profits are then artificially shifted out of the country.

In addition, some Member States have also taken action to ensure that specific tax regimes are less vulnerable to tax avoidance, and have addressed mismatches that arose as a result of the interaction between different countries' tax rules. Ireland, for example, announced that it would amend its corporate residency rules, thereby scheduling an end to the possibility to apply the 'double Irish' tax scheme. Other examples include two sets of measures introduced by the UK, the first preventing contrived loss arrangements and the second restricting loss relief for banks.

Lastly, a number of reforms have also been introduced or announced with the aim of improving transparency. In the UK, for example, a clause was introduced in the 2015 Finance Bill that gives HM Treasury power to set regulations introducing country-by-country reporting, as defined in guidance published by the OECD. Spain introduced a similar reform. Luxembourg adopted a Grand-Ducal Regulation that formalises the practice of advance tax rulings and provides amongst others for the rulings to be publicised, in an anonymised form.

Also of note are measures taken by a number of Member States to address international tax optimisation strategies used in relation to PIT. The new legislation aims to make systems fairer. The UK, for example, announced an increase in the PIT rate for people with a non-domiciled status and Denmark announced a widening of the tax base for PIT levied on income from foreign trusts and foundations. Belgium has introduced a 'transparency tax'.

2. CHALLENGES RELATED TO FISCAL SUSTAINABILITY AND THE TAX BURDEN ON LABOUR

This chapter focuses on two tax policy issues that are of particular relevance to countries' macroeconomic performance: the scope to use taxation to help improve fiscal sustainability (Section 2.1) and the potential need (Section 2.2) and scope (Section 2.3) for a growth- and employment-friendly reduction in taxes on labour. Section 2.4 discusses how reductions in labour tax should be targeted so as to ensure the best possible effect on employment. These issues are very much of relevance for the policy priorities as identified in the 2015 Annual Growth Survey, in particular the need for growth-friendly fiscal consolidation and an acceleration of structural reforms in order to boost growth and create jobs.

This report does not take a position on the overall level of taxation. This level is largely determined by societal choices, namely the level of public service provision that a particular society considers appropriate, and the extent to which society thinks income should be redistributed. These questions are beyond the scope of the analysis of tax policy presented here. The focus of the report is therefore on changes in the tax structure and on improving the design of individual taxes. Two of the specific situations considered in this chapter do have an effect on the overall level of taxation as they consider an increase or decrease in a tax without an offsetting measure elsewhere. The first of the two situations, discussed in Section 2.1, relates to a Member State increasing relatively growth-friendly taxes (and thus increasing the overall tax level), in order to improve the sustainability of public finances. The second situation, discussed in Section 2.3, relates to a Member State reducing labour taxation without increasing other taxes to offset the revenue loss (and hence lowering the overall level of taxation).

The methodology used in this chapter has been kept largely the same as in previous years, so as to allow results from different periods to be compared. A small number of refinements to the methodology have been introduced since last year's report. These are mentioned in the relevant sections.

The most recent indicators available at the time of writing this report were used. ([6]) Nonetheless, indicator scores do not always reflect measures recently adopted by Member States. In this chapter, this is of particular relevance when examining the scope to increase taxes that are less detrimental to growth. It is also relevant to the screening carried out to determine the potential need to reduce labour taxation, where, for example, the reforms currently being introduced in Austria to reduce the tax burden on low-income earners are not reflected in the indicators for the year 2014.

As in previous years' reports, Member States that are currently subject to an economic adjustment programme are excluded from the analysis of the scope to use taxation to help improve fiscal sustainability. Although these countries are included in the other parts of the screening, it should be emphasised that the results of the screening do not in any way pre-judge the contents of the Memorandum of Understanding or the programme implementation reviews carried out by the European Commission, the European Central Bank and the International Monetary Fund.

2.1. THE ROLE OF TAXATION IN ENSURING FISCAL SUSTAINABILITY

This section identifies the Member States that, in particular, need to take action to ensure fiscal sustainability and examines whether they have scope to increase taxes to help address this challenge. Graph 2.1 illustrates the screening approach followed.

The need to improve fiscal sustainability is determined on the basis of the commonly accepted indicator of fiscal sustainability in the medium term — the S1 indicator ('debt compliance risk'). The higher the value of the indicator, the less

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([6]) The latest data for the indicators used in this chapter can be found in the TAX LAF online database. This database collects available data relevant to measure the macroeconomic performance of tax policy in EU Member States. The database will be available by the end of November 2015: http://www.ec.europa.eu/economy_finance/indicators/economic_reforms/Quantitative/tax/

sustainable the level of public debt. ([7]) For the purpose of this report, a Member State is considered to need to take action to improve its fiscal sustainability if the indicator is above 2.5, which corresponds to 'high risk' in the Commission's sustainability assessment framework. ([8])

Graph 2.1:   **Potential scope to increase taxation in order to improve fiscal sustainability**
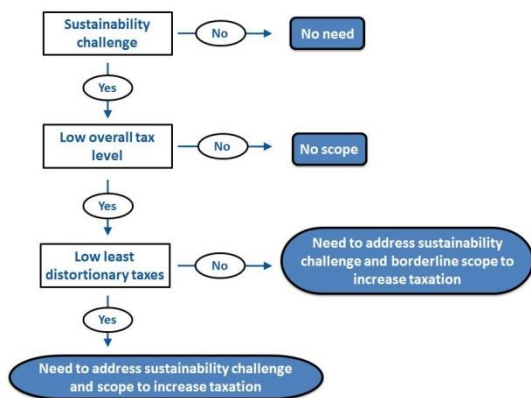
Source: Commission services.

Subsequently, it is examined whether there is potential scope to increase taxation as a way of supporting sustainability. A Member State is considered to have scope to increase taxation if it has an overall tax level (tax-to-GDP ratio) that is relatively low compared to the EU average, ([9]) and has scope to increase revenue from the least distortionary taxes in terms of market outcomes (taxes on consumption, recurrent housing taxes and environmental taxes). The potential scope to increase taxation is considered a borderline case if the tax-to-GDP ratio is relatively low but there is

no potential scope to increase revenue from the least distortionary taxes. ([10])

The question of there being scope to increase the least distortionary taxes is discussed in detail in Section 2.3.2 of this chapter. Graph 2.2 shows the S1 indicator and the tax-to-GDP ratio, highlighting the countries where there is a high risk to sustainability and which have a relatively low tax-to-GDP ratio.

Graph 2.2:   **Medium-term sustainability and tax-to-GDP ratio**
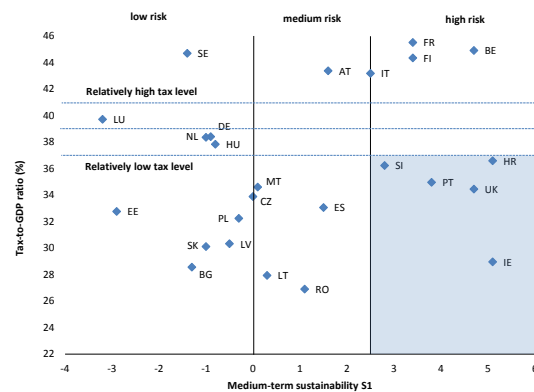
Notes: The S1 indicator refers to 2015. The tax-to-GDP ratio refers to 2014. The exact figures for the two indicators for each Member State can be found in Annex 2 to this report.
Source: Commission services.

The results of the screening are summarised in Table 2.1 below. Ireland, Croatia, Portugal and Slovenia are identified as needing to improve their fiscal sustainability, and have a relatively low overall tax level and potential scope to increase the least distortionary taxes or more 'growth-friendly' taxes. ([11]) The UK also has to improve the sustainability of its public finances, and has a relatively low overall tax level but, on the basis of the screening presented in Section 2.3, it has no scope to increase the least distortionary taxes.

([7])   The S1 indicator is used in the preventive arm of the Stability and Growth Pact to assess Member States' fiscal sustainability. It corresponds to the adjustment to the budget balance (as a percentage of GDP) needed by 2020 to achieve a general government gross debt of 60 % of GDP by 2030. Further information on this indicator is given in Annex A1.2. As of 2014, the Tax Reforms Report no longer uses the S2 indicator in this context. Reducing the long-term sustainability gap, represented by the S2 indicator, requires, in particular, structural measures capable of curbing the long-term trend in ageing-related expenditure, rather than measures designed to increase revenue, such as are discussed in this report.

([8])   See Commission (2012a) for detail.

([9])   To recall: the terms relatively low and relatively high are used in this report to refer to a statistically significant distance from the GDP-weighted EU average. See the introduction and Annex 1 of this report for further details.

([10]) Tax fatigue is no longer included in the screening. Tax fatigue is a political rather than an economic argument, and is theoretically also relevant for a number of other areas in the report. In practice, the results of the screening are the same when tax fatigue is excluded as they would have been had this factor been included in the manner it was in last year's report.

([11]) For Ireland, it should be noted that the relatively low tax-to-GDP ratio is partly due to the high proportion of multinational companies in the Irish economy. The ratio would be higher were GNI used, although it would still be relatively low compared to the EU average.

Table 2.1: **Overview of potential contribution of taxation to fiscal sustainability**

Country	Sustainability challenge	Low overall tax level	Scope to increase least distortionary taxes	Potential scope to use taxation to help address a sustainability challenge
BE	X		X	
BG		X	(X)	
CZ		X	X	
DK				
DE			X	
EE		X	(X)	
IE	X	X	X	X
ES		X	X	
FR	X		X	
HR	X	X	(X)	X
IT			X	
LV		X	X	
LT		X	X	
LU			(X)	
HU			X	
MT		X	(X)	
NL			(X)	
AT			X	
PL		X	(X)	
PT	X	X	X	X
RO		X	X	
SI	X	X	(X)	X
SK		X	X	
FI	X		(X)	
SE			(X)	
UK	X	X		(X)

Notes: X denotes a challenge, (X) a borderline case.
Source: Commission services.

In reality, the possibility to raise taxes depends on a wide variety of country-specific factors, including previous tax increases (e.g. Portugal's tax-to-GDP ratio has increased by approximately 4 percentage points over recent years) and the expenditure side of the budget. These results are therefore only an initial indication.

At the same time, it is also possible that a country that already has a relatively high overall tax burden and relatively high levels of less distortive taxes may still need to further increase taxes — in addition to curbing public expenditure — if it is to achieve the necessary level of consolidation, at least in the short to medium term.

Any measures taken to increase tax revenue should be carefully designed. Member States may prefer to broaden tax bases rather than to increase tax rates (see Chapter 3). Improving tax compliance, meanwhile, may also create additional revenue (see Chapter 4).

2.2. NEED TO REDUCE THE TAX BURDEN ON LABOUR

Labour taxes are considered to be relatively harmful to growth and employment as they depress labour supply and demand by increasing the gap between the cost of labour and employees' take-home pay. [12]

This report considers that a Member State has a potential need to reduce the overall tax burden on labour if the implicit tax rate on labour is relatively high compared to the EU average or if the labour tax wedge for the average wage is relatively high compared to the EU average. [13] The results of this screening can be found in Table 2.2. [14] [15]

Some groups within the population are considered particularly responsive to changes in after-tax wages, e.g. low-income earners and second earners.

There is considered to be a need to reduce the tax burden on second-income earners if the inactivity trap at 67 % of the average wage or the low-wage trap when moving from 33 % to 67 % of the average wage is relatively high, with labour taxes making a relatively high contribution to the disincentive effect. [16] When considering second-income earners, the principal earner is assumed to earn the average wage, rather than 67 % of the average wage as was the case in previous editions of the report. This gives a more realistic representation of the most typical situation. The results of this screening can be found in Table 2.3.

[12] See e.g. OECD (2010).
[13] It should be noted that the tax wedge does not include so-called non-tax compulsory payments to, for example, privately-managed pension funds.
[14] OECD (2009) includes a discussion as to whether consumption taxes should be included when calculating the tax burden on labour, and provides indicators for the tax wedge also including consumption taxes for selected countries. The report finds that consumption taxes can have a similar effect on the incentives to work as income taxes if workers are motivated by the quantities of goods and services that they can purchase with their after-tax wages. As consumption taxes are also levied on purchases that are made with non-labour income, it is not, however, always better to include consumption taxes in the tax wedge when analysing labour market behaviour.
[15] Wöhlbier et al. (2015) provide a comprehensive analysis of the need to reduce the tax burden on labour.
[16] The inactivity trap measures the financial incentive for an inactive person not entitled to unemployment benefits (but potentially receiving other benefits such as social assistance) to move from inactivity to paid employment. It is defined as the rate at which the additional gross income of such a transition is taxed. The low wage trap measures the financial incentive to increase a low level of earnings by working additional hours. It is defined as the rate at which the additional gross income of such a move is taxed.

Table 2.2: **Need to reduce the overall tax burden on labour**

Country	Implicit tax rate on labour (2012)	Tax wedge average wage (2014)	Overall employment rate (2014)	Potential challenge
BE	42.8	55.6	67.3	X
BG	24.5	33.6	65.1	
CZ	38.8	42.6	73.5	X
DK	34.4	38.1	75.9	
DE	37.8	49.3	77.7	(X)
EE	35.0	40.0	74.3	
IE	28.7	28.2	67.0	
EL	38.0	40.4	53.3	
ES	33.5	40.7	59.9	
FR	39.5	48.4	69.8	X
HR	29.2	39.5	59.2	
IT	42.8	48.2	59.9	X
CY	28.8	-	67.6	-
LV	33.0	43.9	70.7	
LT	31.9	41.1	71.8	
LU	32.9	37.6	72.1	
HU	39.8	49.0	66.7	X
MT	23.3	25.3	66.3	
NL	38.5	37.7	76.1	(X)
AT	41.5	49.4	74.2	(X)
PL	33.9	35.6	66.5	
PT	25.4	41.2	67.6	
RO	30.4	44.6	65.7	
SI	35.6	42.5	67.8	
SK	32.3	41.2	65.9	
FI	40.1	43.9	73.1	X
SE	38.6	42.5	80.0	(X)
UK	25.2	31.1	76.2	
EU	36.1	43.4	70.9	
EA	38.5	46.5	69.6	
LAF plus	33.8	40.5	73.7	
LAF minus	38.4	46.2	68.1	

Notes: X denotes a Member State that needs to reduce the overall tax burden on labour, (X) denotes a borderline case. The tax wedge data is for a single earner with no children. For Bulgaria, Croatia, Latvia, Lithuania, Malta and Romania, data on the tax wedge relates to 2013. Recent data for Cyprus is not available. The age group considered for the employment rate is 20-64 years.
Source: Commission services, European Commission tax and benefits indicator database based on OECD data.

Table 2.3: **Need to reduce the tax burden on second earners**

Country	Inactivity trap (2013)		Low wage trap (2013)		Employment rate female (2014)	Potential challenge
	67 % average wage	Contribution of taxation	Increase from 33 % to 67 % average wage	Contribution of taxation		
BE	49.2	49.2	58.8	58.8	62.9	X
BG	21.6	21.6	21.6	21.6	62.0	
CZ	31.1	31.1	26.3	26.3	64.7	
DK	48.9	42.9	40.5	40.5	72.2	(X)
DE	45.8	45.8	48.0	48.0	73.1	(X)
EE	24.2	24.2	24.2	24.2	70.6	
IE	29.5	24.2	33.6	33.6	61.2	
EL	7.8	27.8	19.8	29.8	44.3	
ES	24.3	24.3	29.9	29.9	54.8	
FR	29.8	29.8	31.9	31.9	66.2	
HR	27.9	27.9	29.9	29.9	54.2	
IT	34.0	30.3	39.2	39.2	50.3	
CY	-	-	-	-	63.9	-
LV	34.7	34.7	32.4	32.4	68.5	
LT	27.6	20.6	26.7	26.7	70.6	
LU	32.3	32.3	40.1	40.1	65.5	
HU	36.0	34.5	34.5	34.5	60.2	
MT	9.9	9.9	18.9	18.9	51.9	
NL	20.4	26.9	40.8	40.8	70.7	
AT	30.8	30.8	42.2	42.2	70.1	(X)
PL	34.5	29.5	30.3	30.3	59.4	
PT	40.4	34.7	46.5	46.5	64.2	X
RO	27.3	27.3	31.0	31.0	57.3	
SI	59.0	31.9	34.9	34.9	63.6	
SK	29.9	29.9	31.2	29.9	58.6	
FI	23.3	28.9	34.2	33.2	72.1	
SE	22.6	29.4	29.0	35.0	77.6	
UK	20.0	20.0	32.0	32.0	70.6	
EU	32.0	31.9	37.4	37.8	65.6	
EA	34.4	34.3	39.5	39.7	64.3	
LAF plus	27.9	28.3	34.2	34.7	68.9	
LAF minus	36.0	35.5	40.7	40.8	62.2	

Notes: X denotes a Member State that needs to reduce the tax burden on second earners, (X) denotes a borderline case. The trap data is for a second earner in a two-earner family with two children; the principal earner earns the average wage. 'Contribution of taxation' refers to the contribution made by taxation to the respective 'traps', in percentage points (other contributors being, e.g. withdrawn unemployment benefits, social assistance and housing benefits). Recent data for Cyprus is not available. The age group considered for the employment rate is 20-64 years.
Source: Commission services, European Commission tax and benefits indicator database based on OECD data.

There is considered to be a potential need to reduce the tax burden on low-income earners if the tax wedge on low wages (50 % and 67 % of the average wage) is relatively high, or if the inactivity trap or the unemployment trap are relatively high at low-wage levels, with labour taxes making a relatively high contribution to the disincentive effect. [17] If the indicators are high at only one of the two income levels, i.e. at 50 % or 67 % but not both, the Member State's need to reduce the tax burden is considered to be a borderline case. The results of this screening can be found in Table 2.4.

To gauge the importance of a need to reduce labour taxes, it is relevant to consider labour market outcomes. In this report, the potential need to reduce labour taxes is considered only a borderline case if the employment rate for the relevant group — the total working population, the low-skilled or women — is relatively high compared to the EU average. [18] The age group used for all employment indicators is 20-64 years. [19] In order to assess the employment situation in individual Member States in more detail, it would also be necessary to consider additional indicators, such as the average working hours or the proportion of part-time workers in the working population.

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[17] The unemployment trap measures the financial incentive for an unemployed person entitled to unemployment benefits to move from inactivity to paid employment. It is defined as the rate at which the additional gross income of such a transition is taxed.

[18] The employment rates for low-skilled workers and women are used as proxies for low-income earners and second earners. It is recognised that these are not necessarily the same. The overall employment rate that is considered 'relatively high' is 73.7 %, close to the EU-wide employment target of 75 % agreed under the Europe 2020 Strategy.

[19] In previous years, the age group 25-54 years was used for low-skilled workers and women.

Table 2.4:   **Need to reduce the tax burden on low- income earners**

Country	Tax wedge (2014)		Inactivity trap (2013)				Unemployment trap (2013)				Employment rate low-skilled (2014)	Potential challenge
	67% AW	50% AW	Trap 67% AW	Contribution of taxation	Trap 50% AW	Contribution of taxation	Trap 67% AW	Contribution of taxation	Trap 50% AW	Contribution of taxation		
BE	49.9	41.1	67.1	36.0	68.4	26.8	93.4	36.0	91.8	26.8	46.6	X
BG	33.6	33.6	35.8	21.6	40.6	21.6	81.6	21.6	81.6	21.6	38.6	
CZ	39.7	36.7	63.4	18.8	67.3	14.7	80.1	18.8	79.1	14.7	41.6	(X)
DK	36.4	35.1	86.5	25.5	102.1	20.4	89.8	10.8	94.6	7.8	59.8	
DE	45.1	42.0	66.3	34.5	73.4	30.7	73.0	34.5	75.3	30.7	58.0	(X)
EE	39.0	37.9	47.2	19.5	55.1	18.0	63.7	13.7	63.7	13.7	59.2	(X)
IE	22.1	11.4	75.3	13.1	86.3	3.0	74.5	12.3	85.3	2.0	45.9	
EL	35.7	33.3	19.8	19.8	16.5	16.5	50.8	19.8	58.1	16.5	46.5	
ES	37.3	32.2	44.3	18.5	46.4	11.8	81.7	11.7	77.1	7.1	48.2	
FR	45.2	31.4	55.3	26.3	59.3	23.2	77.3	19.6	80.4	20.2	53.4	(X)
HR	34.9	33.2	42.4	25.0	46.4	23.1	95.0	25.0	93.1	23.1	38.3	(X)
IT	42.4	38.2	27.2	27.2	23.1	23.1	79.6	19.5	87.7	15.5	48.7	X
CY	-	-	-	-	-	-	-	-	-	-	54.6	-
LV	43.1	42.3	55.3	29.4	63.2	28.4	89.4	29.4	88.4	28.4	50.0	X
LT	39.5	37.8	44.2	20.6	50.0	18.5	64.4	20.6	77.1	18.5	42.0	(X)
LU	30.4	26.3	70.3	18.4	82.4	12.9	86.5	6.5	89.7	4.8	57.3	
HU	49.0	49.0	50.9	34.5	56.5	34.5	78.8	18.9	80.9	18.9	44.3	X
MT	19.2	16.3	56.4	13.3	68.0	10.2	56.0	13.3	67.4	10.2	53.4	
NL	32.1	26.7	79.1	33.1	88.0	26.3	83.8	8.8	94.5	5.0	59.2	(X)
AT	44.8	40.1	66.6	28.5	74.2	23.1	67.8	28.5	74.2	23.1	53.1	X
PL	34.8	34.0	51.7	27.5	59.0	26.5	79.9	22.1	96.7	19.3	38.2	
PT	35.0	28.1	37.9	19.8	35.2	11.0	79.9	19.8	76.0	11.0	62.2	
RO	43.5	42.3	27.6	27.6	26.1	26.1	52.0	27.6	56.7	26.1	55.0	X
SI	38.5	33.6	62.0	28.6	58.3	22.8	89.8	9.8	79.3	5.1	47.5	
SK	38.6	35.9	29.2	19.3	28.9	15.7	44.3	19.3	40.7	15.7	31.6	
FI	38.4	34.6	71.1	28.9	80.6	26.9	75.6	16.5	80.7	14.0	51.7	(X)
SE	40.5	38.8	69.9	29.4	83.8	27.4	71.3	11.9	83.8	7.0	61.0	(X)
UK	26.4	21.4	62.7	20.0	73.1	15.9	62.7	20.0	73.1	15.9	58.8	
EU	39.2	33.7	56.5	26.9	61.9	22.7	74.8	21.9	79.9	18.4	53.7	
EA	42.1	35.8	54.6	28.3	58.3	23.7	76.9	22.9	80.3	19.6	53.2	
LAF plus	36.3	30.6	50.3	24.6	53.8	20.1	71.4	18.6	76.5	15.1	56.1	
LAF minus	42.1	36.7	62.7	29.3	69.9	25.3	78.2	22.5	83.2	21.7	51.4	

Notes: X denotes a Member State that needs to reduce the tax burden on low-income earners, (X) denotes a borderline case. The data on the tax wedge and the inactivity trap is for a single earner with no children. 'Contribution of taxation' refers to the contribution made by taxation to the respective 'traps' in percentage points (other contributors being, e.g. withdrawn unemployment benefits, social assistance and housing benefits). For Bulgaria, Croatia, Latvia. Lithuania, Malta and Romania, data on the tax wedge relates to 2013. Recent data for Cyprus is not available. The age group considered for the employment rate is 20-64 years. 'Low-skilled' refers to levels 0-2 ISCED.
Source: Commission services, European Commission tax and benefits indicator database based on OECD data.

The results of the screening, as reflected in Tables 2.2 – 2.4, suggest that several EU Member States have a potential need to reduce a currently high tax burden on labour, in particular for low-income earners. Given that public finances are already strained in many Member States, and that Member States need to meet their obligations under the Stability and Growth Pact, financing any reduction in labour tax cuts is an important challenge. The next section explores the scope to reduce the tax burden on labour through a (partly) unfinanced tax reduction, and through a tax shift to less distortive taxes.

2.3.   SCOPE TO REDUCE THE TAX BURDEN ON LABOUR

The previous section identified the Member States that have a potential need to reduce taxes on labour. This section moves on to discuss the financing of such a measure. It first considers whether Member States have potential scope to introduce a partly unfinanced reduction in labour tax, i.e. reducing labour tax without reducing public expenditure or increasing other taxes

sufficiently to fully replace the lost revenue loss. Subsequently, it examines whether Member States have potential scope to shift the tax burden away from labour to less distortive taxes. A reduction in labour tax partly or entirely financed by reducing public expenditure is also a very relevant policy option, but is beyond the scope of this report, which focuses on the revenue side of public finances.

2.3.1. Scope for a partly unfinanced labour tax reduction

For the purpose of this report, a Member State is considered to have potential scope for a partly unfinanced reduction in labour taxes if the indicator of medium-term sustainability risk, S1, is below 0, the level considered 'low risk'. Potential scope for a reduction in labour tax should not be understood to imply a recommendation to introduce such a measure in favour of other possible uses of any fiscal space a Member State may have.

For illustrative purposes, Graph 2.3 compares Member States' medium-term sustainability and

their tax wedge on labour for a single worker earning 67 % of the average wage. It is of course recognised that the potential need to reduce the tax burden on labour depends on a much wider variety of indicators than this particular tax wedge alone, as set out in Section 2.2.

Graph 2.3: **Medium-term sustainability and the tax wedge on labour at 67 % of the average wage**
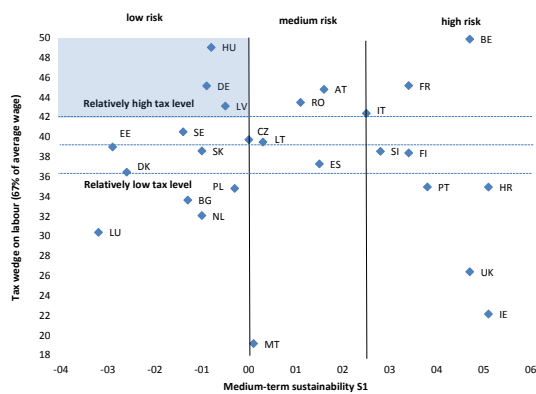
Notes: The S1 indicator refers to 2015. The exact figure for each Member State can be found in Annex 2.8 to this report. Data on the tax wedge relates to 2014 for all Member States except Bulgaria, Croatia, Latvia, Lithuania, Malta and Romania, for which it relates to 2013. The exact figure for each Member State can be found in Table 2.3.
Source: Commission services, European Commission tax and benefits indicator database based on OECD data.

The number of countries that have a potential need to reduce the tax burden on labour, overall or for a specific group (as established in Section 2.2), and that have a low risk to their medium-term sustainability is relatively small: Germany, Estonia, Latvia, Hungary, the Netherlands and Sweden. The results of this screening should, however, be interpreted with great caution, and should be considered in the context of the obligations of Member States to ensure compliance with the Stability and Growth Pact. Specifically, as shown in Table 2.5, a number of the countries mentioned above have an S1 indicator only just below 0, public debt of above 60 % and/or a deficit that is still above or only just below the medium-term objective. For Hungary, for example, based on the Commission's 2015 spring forecast, both the structural balance and the net expenditure growth suggest that the country is at a risk of a significant deviation from the required adjustment path towards the medium-term objective in 2015 and 2016. Therefore, further measures will be needed in 2015 and 2016.

Given that public finances are strained in many Member States, and in order to avoid putting fiscal sustainability at risk, a labour tax reduction would have to be financed by reducing public expenditure or by increasing alternative revenues. The next section discusses in detail the financing of a labour tax reduction.

Table 2.5: **Public finance indicators**

Country	S1 indicator (2015)	Public debt (2015)	Distance to medium-term objective (2015)
BE	4.7	106.5	3.1
BG	-1.3	29.8	1.6
CZ	0.0	41.5	0.6
DK	-2.6	39.5	0.0
DE	-0.9	71.5	-1.5
EE	-2.9	10.3	0.4
IE	5.1	107.1	3.6
EL	7.7	180.2	0.9
ES	1.5	100.4	2.4
FR	3.4	96.4	1.9
HR	5.1	90.5	-
IT	2.5	133.1	0.7
CY	0.8	106.7	-0.4
LV	-0.5	37.3	0.9
LT	0.3	41.7	0.9
LU	-3.2	24.9	-0.1
HU	-0.8	75.0	0.8
MT	0.1	67.2	2.1
NL	-1.0	69.9	-0.2
AT	1.6	87.0	0.3
PL	-0.3	50.9	1.5
PT	3.8	124.4	1.5
RO	1.1	40.1	0.3
SI	2.8	81.5	2.4
SK	-1.0	53.4	1.4
FI	3.4	62.6	1.3
SE	-1.4	44.2	0.0
UK	4.7	89.9	-
EU	1.8	88.0	
EA	1.6	94.0	

Source: Commission services.

2.3.2. Scope to shift the tax burden from labour to less distortive taxes

Labour taxes are considered to have a particularly negative effect on growth and employment, whilst certain other taxes are generally considered less distortive. Consumption taxes, environmental taxes and recurrent property taxes in particular are considered as being relatively less distortive or 'growth-friendly'. Depending on the motive for the bequest, inheritance taxes may also have only a small effect on economic behaviour. [20]

If growth-friendly taxes are currently relatively low, a Member State could increase these taxes as a way of increasing public revenue. This additional revenue may then be used to help improve the sustainability of public finances (as described in Section 2.1) or to finance a reduction in labour taxes. This latter scenario is explored in this section.

[20] For a discussion of the effect of different types of taxes on economic growth, see European Commission (2011).

Member States are considered to have potential scope to increase the least distortionary taxes in order to finance a reduction in labour tax if their consumption taxes, recurrent property taxes or environmental taxes are relatively low compared to the EU average. This screening approach is set out in Graph 2.4.

Graph 2.4:   **Need and scope to reduce labour taxation by means of a shift to less distortive taxes**
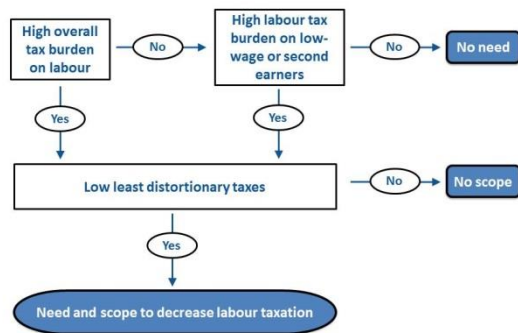
Source: Commission services.

As most of the data used in this section was not recently updated, it should be kept in mind that the, sometimes substantial, tax reforms carried out over the past couple of years may not be (fully) taken into account. This means that the actual scope for future tax increases may be more limited than suggested by the screening. It also confirms the importance of carrying out country-specific analysis before drawing any final conclusions. Table A2.3 in Annex 2 shows the changes in revenue from indirect taxes seen in recent years for each Member State. A significant increase in these revenues since 2012 would tend to limit the scope for future increases in indirect taxes.

There is considered to be potential scope to increase consumption taxes if: (i) revenue from consumption taxes as a percentage of GDP is relatively low compared to the EU average; (ii) the implicit tax rate on consumption is relatively low; and/or (iii) the gap between the implicit tax rate on labour and the implicit tax rate on consumption is relatively high, and the implicit tax rate on consumption is not relatively high. These indicators can be found in Table 2.6. This screening suggests that several Member States

have potential scope to increase consumption taxes. The final results may be found in Table 2.7.

When considering potential increases in consumption taxes, it is important to examine which specific types of tax can potentially be increased (e.g. VAT or excise duties). Also, broadening the tax base may be preferred to raising the standard tax rate as a way of increasing revenue, as it minimises distortions. Improving tax compliance can also be a meaningful way of increasing revenue for several Member States. Section 3.1 of Chapter 3 examines consumption taxes in more detail and Chapter 4 provides an in-depth discussion of tax compliance.

A second type of taxation that is relatively growth-friendly is recurrent property tax. For the purposes of this report, there is considered to be potential scope to increase recurrent property tax if the revenue currently generated from this tax as a percentage of GDP is relatively low compared to the EU average. This is the case for 19 Member States. The values for this indicator can be found in Table 2.6 while the Member States may be found in Table 2.7. A shift from labour taxation to recurrent property taxation may be more or less straightforward depending on country-specific circumstances. In some countries, for example, labour taxes are collected nationally whilst all or some recurrent property taxes are set and paid at local level. The revenue generated from recurrent property taxes may also serve different purposes in different countries, e.g. it may simply contribute to the government's general budget, or it may be specifically allocated to financing local services.

A third type of relatively growth-friendly taxation is environmental taxation, in particular environmental taxes on consumption. As discussed in detail in Chapter 3.7, environmental taxes do not only serve to generate revenue, but can also help in achieving environmental objectives. Member States are considered to have potential scope to increase environmental taxes if either the revenue from environmental taxes as a percentage of GDP or the implicit tax rate on energy is relatively low compared to the EU average, while the other is not relatively high compared to the average. [21] The

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[21] Measuring revenue from environmental taxes as a percentage of GDP does not take into account the level of energy consumption in a country (i.e. the energy intensity

Table 2.6:   **Scope to shift to consumption, environmental and property taxes (2012)**

Country	Consumption taxes			Environmental taxes		Recurrent property taxes revenue, % GDP	Inheritance, estate and gift taxes revenue, % GDP
	Revenue, % GDP	Implicit tax rate	Gap between the implicit tax rates on labour and consumption	Revenue, % GDP	Implicit tax rate on energy		
BE	10.8	21.1	21.7	2.2	131.5	1.3	0.62
BG	14.9	21.5	3.0	2.8	107.7	0.3	0.00
CZ	11.7	22.5	16.4	2.4	139.2	0.2	0.00
DK	14.9	30.9	3.5	3.9	381.5	2.1	0.21
DE	10.8	19.8	18.0	2.2	219.9	0.5	0.16
EE	13.6	26.0	9.0	2.8	148.5	0.3	0.00
IE	10.0	21.9	6.8	2.5	202.5	0.9	0.17
EL	12.3	16.2	21.8	2.9	258.6	1.4	0.05
ES	8.6	14.0	19.6	1.6	157.6	1.2	0.22
FR	11.1	19.8	19.8	1.8	197.6	2.4	0.42
HR	17.5	29.1	0.1	3.2	128.2	0.0	0.00
IT	10.9	17.7	25.1	3.0	307.5	1.6	0.04
CY	13.0	17.6	11.2	2.7	192.2	0.5	0.00
LV	10.7	17.4	15.6	2.4	105.5	0.8	0.00
LT	10.8	17.4	14.5	1.7	106.8	0.3	0.00
LU	11.0	28.9	4.0	2.4	231.8	0.1	0.17
HU	15.7	28.1	11.7	2.5	124.5	0.4	0.02
MT	13.1	18.7	4.6	3.0	241.6	0.0	0.00
NL	11.0	24.5	14.0	3.6	227.4	0.7	0.23
AT	11.9	21.3	20.2	2.4	183.3	0.2	0.00
PL	11.8	19.3	14.6	2.5	129.1	1.2	0.02
PT	12.1	18.1	7.4	2.2	173.5	0.7	0.00
RO	12.8	20.9	9.5	1.9	99.6	0.6	0.00
SI	14.2	23.4	12.3	3.8	225.6	0.5	0.02
SK	9.5	16.7	15.6	1.8	104.6	0.4	0.00
FI	14.3	26.4	13.6	3.1	158.7	0.7	0.26
SE	12.6	26.5	12.0	2.5	254.8	0.8	0.00
UK	12.0	19.0	6.2	2.6	274.8	3.4	0.20
EU	11.2	19.9	16.3	2.4	222.8	1.5	0.19
EA	10.8	19.3	19.1	2.3	215.8	1.2	0.21
LAF plus	11.8	21.2	13.8	2.6	246.0	1.9	0.25
LAF minus	10.7	18.6	18.7	2.2	199.4	1.1	0.13

Source: Commission services, Ernst & Young (2014) for revenues from inheritance, estate and gift taxes.

values of these two indicators are shown in Table 2.6. As summarised in Table 2.7, around a quarter of Member States would have potential scope to increase revenue from environmental taxes.

Of these three types of taxation, consumption taxes have by far the broadest base. If a Member State has scope to raise only recurrent property taxes or environmental taxes, its potential scope to raise less distortive taxes is considered a borderline

of the economy) and hence does not measure a 'true' tax burden. The implicit tax rate on energy may also be skewed by a country's pattern of energy consumption, as it is not the whole tax base (i.e. the total level of energy consumption) that is actually taxed. Transport is heavily taxed in most countries while energy used for heating and industrial production is taxed at a much lower rate or is exempt. As a result, Member States with a relatively large low-taxed industrial sector and a high proportion of — low- or untaxed — heating, appear to be performing poorly. Moreover, an increase in the use of untaxed renewable and non-carbon energy over time (as advocated in the EU's energy and climate policy) leads to a lower indicator score and hence, seemingly, weaker performance.

case, in recognition of the relatively small bases of these two sources of revenue.

Table 2.6 also shows the relative level of Member States' inheritance, estate and gift taxes. As the revenue potential of these taxes is limited, for the purposes of this screening, low tax revenue in this area is not considered a sufficient criterion for stating that a Member State has scope for a tax shift. Nonetheless, increasing revenue generated from this type of tax may contribute to fiscal consolidation or to a tax shift away from labour also financed by other sources of revenue.

A rise in taxes, and in particular a rise in consumption taxes, could increase prices, leading to higher inflation in the short run. Depending on how wages react to higher prices, which in turn is also influenced by indexation of benefits, this may lead to wage increases that, at least partly, counteract the reduction in labour costs resulting from the tax shift (referred to as the 'second round effect'). If wages do not react quickly, a shift from

Table 2.7: **Overview of the need to reduce labour taxation and the potential to finance a reduction in labour taxes**

Country	Potential need to reduce the tax burden on labour			Potential scope for a tax shift					Need to reduce labour taxation and potential scope for a tax shift	Need to reduce labour taxation and potential scope for a partly unfinanced reduction
	Overall	Low-wage earner	Second earner	Consumption	Recurrent housing	Environment	Inheritance, estate and gift	Summary: scope for a tax shift		
BE	X	X	X	X		X		X	X	
BG					X		X	(X)		
CZ	X	(X)			X	X	X	X	X	
DK			(X)							
DE	(X)	(X)	(X)		X	X		X	(X)	(X)
EE		(X)			X		X	(X)	(X)	(X)
IE				X	X			X		
EL				X			X	X		
ES				X		X		X		
FR	X	(X)		X		X		X	X	
HR		(X)			X		X	(X)	(X)	
IT	X	X		X			X	X	X	
CY	-	-	-	X	X		X	X	-	
LV		X		X	X	X	X	X	X	X
LT		(X)		X	X	X	X	X	(X)	
LU					X			(X)		
HU	X	X			X	X	X	X	X	X
MT					X		X	(X)		
NL	(X)	(X)			X			(X)	(X)	(X)
AT	(X)	X	(X)		X	X	X	X	X	
PL						X	X	(X)		
PT			X	X	X	X	X	X	X	
RO		X			X	X	X	X	X	
SI					X		X	(X)		
SK				X	X	X	X	X		
FI	X	(X)			X			(X)	X	
SE	(X)	(X)			X		X	(X)	(X)	(X)
UK										

Notes: X denotes a Member State that has a need to reduce the tax burden on labour, scope to shift the tax burden to less detrimental sources of revenue and scope for a partly unfinanced labour tax reduction (according to the column heading), (X) denotes a borderline case. A Member States is considered to have a potential need to reduce the tax burden on labour if it is relatively high overall or for a specific group. If the employment rate, overall or for a specific group, is relatively high, the need to reduce the tax burden is considered a borderline case. A Member State is considered to have scope for a tax shift if consumption taxes are relatively low or if recurrent property taxes and environmental taxes are relatively low. If only recurrent property taxes or environmental taxes are relatively low, the scope to shift is considered a borderline case. While an increase in inheritance, estate and gift taxes may contribute to a tax shift, this does not form part of the criteria for determining whether there is scope for a tax shift.
Source: Commission services.

labour to consumption taxes could have the same effect as a currency devaluation.

2.3.3. Summary of findings on the need and scope for a reduction in labour tax

Table 2.7 summarises the results of the screening, showing which Member States have a potential need to reduce the tax burden on labour, which have the potential to finance a shift away from labour taxation by increasing taxes that are less detrimental to growth, and which have the potential scope for a partly unfinanced reduction in labour taxes.

Belgium, the Czech Republic, France, Italy, Latvia, Hungary, Austria, Portugal and Romania and, to a lesser extent, Germany, Estonia, Croatia Lithuania, the Netherlands, Finland and Sweden, appear to have both a potential need to reduce a relatively high tax burden on labour (either overall or for specific groups) and potential scope to increase the least distortive taxes. These Member States could, therefore, consider shifting the tax burden away from labour. It should be noted that, as explained in Section 2.1, some of these

countries also need to address risks to their fiscal sustainability. A number of countries also appear to have scope for a partially unfinanced reduction in labour tax but, as already noted, these results should be interpreted with great caution. More in general, given that many EU countries still need to make further efforts to comply with the obligations of the Stability and Growth Pact and to make their budgets sustainable in the medium or long term, careful attention needs to be given to the design of any reduction in labour tax, and also to the timing and sequencing of its implementation.

Chapter 5 presents a comparison of this and last year's results and explains the main changes seen.

2.4. EFFECTIVELY TARGETING THE REDUCTION IN LABOUR TAX

Given that public finances are strained in many Member States, it is important to ensure that any reduction in labour tax is designed so as to ensure the best possible effect on employment. The European Commission commissioned a study *Effects and Incidence of Labour Taxation* (IHS and

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Box 2.1: *Simulating the effects of tax shifts on the cost of doing business using 'all-in' Effective Tax Rates*

Johansson et al. (2008) and Arnold (2008) show that corporate and labour income taxes are among the taxes most detrimental to growth. Tax policies should therefore aim to shift taxation away from these taxes and towards taxes that are less detrimental to growth. Increasing environmental taxes is, in particular, often seen as a way to make the structure of a country's tax system more growth friendly while at the same time helping to achieve environmental objectives. These types of changes often, however, meet with opposition from businesses, which argue that environmental taxation damages EU industry's external competitiveness.

Understanding the consequences of such a tax shift is therefore of great importance for policymaking. In their recent paper, Barrios, Nicodeme and Sanchez-Fuentes (2014) estimate the impact of shifting taxation away from labour and towards energy. They calculate effective marginal tax rates (EMTRs) for companies in 17 OECD countries (15 from the EU) for 11 manufacturing sectors. The calculations are based on a model proposed by McKenzie et al. (2007) that allows a company's EMTR to be calculated taking into account all its production inputs: capital, labour and energy. The EMTR describes the tax burden on the last euro invested by the company. The total EMTR can in turn be used as a measure of the cost of doing business from a tax perspective. It is derived on the basis of detailed information on tax legislation, which is then aggregated at sector level, using factor-specific weights. For capital, asset-specific EMTRs are calculated; for labour, the composition of the workforce (skills, gender and firm size) is used as the basis for weighting; and for energy, sector-specific energy consumption is used to construct a weighted average. This all-in approach offers a relatively simple framework for analysing the effect of tax policy changes using sensitivity analysis.

Barrios, Nicodeme and Sanchez-Fuentes use this approach to generate simulations of changes in tax policy, specifically changes which involve shifting taxation away from labour towards energy. They show how the tax incidence of production factors and the elasticity of substitution between production factors determine the efficiency gain that a tax-shifting strategy of this type could produce. They consider alternative scenarios, ranging from a 5 % to a 100 % reduction in the employers' social security contribution rate, increasing the rate for each scenario in steps of 5 percentage points, compensated in a revenue-neutral way by the required increase in energy taxes. Whilst the absolute tax burden on companies remains the same in these scenarios, the EMTR changes. The results show that the EMTR follows an inverted u-shaped curve, suggesting that reforms of this type would need to be ambitious if they are to have a noticeable effect.

The results obtained by Barrios, Nicodeme and Sanchez-Fuentes suggest that tax-shifting could lead to significant efficiency gains, as it reduces the total marginal cost of production, and could thus bring about an increase in productive efficiency. Environmentally friendly tax reforms also, therefore, have the potential to reduce the cost of doing business, in addition to offering the benefits for employment and for the environment traditionally discussed in the literature.

CPB, 2015), which explores the potential of tax reforms to mitigate tax-related problems in the labour market.

The study emphasises that, in order to address the 'employment problem' in a particular country effectively, the source of the problem should first be identified. It should, in particular, be determined whether the problem originates from the demand or the supply side of the labour market. Employment problems include unemployment (associated with insufficient demand for labour) and inactivity and underemployment (both mainly supply-side

problems). The causes of cyclical unemployment can be identified as being mainly on the demand side, as this type of unemployment reflects fluctuations in aggregate demand. Structural unemployment, meanwhile, can be caused by circumstances on both sides of the market, as it arises as result of mismatches between labour demand and labour supply. Labour supply is, in turn, influenced by socioeconomic changes such as population ageing, falling fertility levels, increasing participation of women in the labour force and increasing migration. Problems on the supply side of the labour market can be attributed to there being insufficient incentive to work, as a

result of tax and transfer systems and opportunity costs. Unemployment caused by developments on the demand side of the labour market results from occupational and sectoral changes and structural changes in the workplace. These changes increase the demand for certain skills while others become obsolete. Demand-side problems on the labour market can also be attributed to wage rigidities that prevent wages from adjusting downwards.

The effectiveness of reductions in labour tax in reducing unemployment depends on the interaction of the demand and the supply side of the labour market, which is determined by the behavioural responses of businesses and workers, measured in terms of elasticities. The greater the response to tax changes on the part of employers or employees, the higher the elasticity of labour demand or supply, respectively.

The tax burden is borne by the less elastic side of the labour market – in other words, the tax incidence falls on whichever of the employers or employees has the lower elasticity. When analysing tax reforms, it is therefore important to consider the economic incidence of a tax change, which is often quite different from its legal incidence. For example, according to tax legislation, the cost of employer social security contributions is borne by the employer, but in reality, this burden is often shifted onto the employee, in the form of a lower net wage.

Labour demand and supply problems may affect only specific groups in the labour market, such as the low-skilled, young people, migrants (in particular from non-European countries), elderly people and women.

IHS and CPB (2015) review the literature on tax incidence and conclude that the legal incidence does have an effect, at least in the short term. Tax reform analyses should therefore consider in detail the composition of the burden on labour, by assessing the implicit tax burden as well as the statutory tax measures relating to personal income tax and employers' and employees' social security contributions. The study presents reasonably robust evidence that in centralised and decentralised wage bargaining systems, a relatively considerable tax burden falls on labour, while in intermediate (industry-level) bargaining systems, a higher proportion of the tax burden falls on

employers. The existence of a binding minimum wage causes the tax incidence fall entirely on employers. Reducing taxes in order to improve the supply of low-income earners would therefore not be effective. The economic literature further suggests that the link between social security contributions and benefits may shift the economic incidence of employer social security contributions onto employees, at least in countries with decentralised wage bargaining system (such as Ireland and the UK). The reason for this phenomenon is that workers attach a high value to the benefits of the social security system and are therefore more willing to accept lower net salaries.

Changes to labour taxation are unlikely to be the most effective tool in mitigating either the cyclical unemployment experienced during a recession (apart from in so far as they stimulate aggregate demand) or structural problems that arise due to mismatches between supply and demand. Reducing taxation on labour can, however, be successful in addressing problems resulting from insufficient incentives and wage rigidities. The study's review of the literature on supply and demand elasticities indicates that the elasticity of labour supply seems to be decreasing over time, with the latest meta-analyses estimating it to be in the range of 0.4 to 0.3. The average elasticity of labour demand, meanwhile, is increasing over time, and is estimated to be around 0.3. This confirms that labour demand and labour supply respond to taxation, and, therefore, that taxation can be used as a way of addressing problems in the labour market.

The overall elasticity of supply is mainly determined by the elasticity at the extensive margin (whether to work or not) as the elasticity of supply at the intensive margin (how many hours to work) is almost zero. [22]

Tax reductions should therefore be targeted at the extensive margin rather than the intensive margin. The elasticity of supply at the extensive margin is higher for particular socioeconomic groups such as women, single mothers and men at the beginning or the end of their careers. The elasticity of

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[22] The review of the economic literature carried out in this study comes to a very conclusive result on this point, but some studies may find taxation to have an effect on the intensive margin.

demand is higher over the long run than the short run, and is typically higher for those on fixed-term contracts and low-skilled workers.

3. CHALLENGES RELATED TO BROADENING TAX BASES AND OTHER DESIGN ISSUES

Many taxes in the EU have a fairly narrow base, often as a result of the extensive use of tax exemptions and deductions. These types of exemptions and deductions can make the tax system complex and difficult to assess, and a broad tax base combined with low tax rates is, in general, more efficient, and therefore preferable.

This chapter examines in detail the main challenges encountered when broadening tax bases, and also discusses other specific issues related to the design of tax policy. It covers: (i) consumption taxation, with a focus on VAT; (ii) property and housing taxation; (iii) the debt bias in corporate taxation, also discussing issues related to financial sector taxation; (iv) the budgetary effects of certain specific tax expenditures related to direct taxation (including updated information on reporting on tax expenditures); (v) tax incentives for R&D; and (vi) environmentally-related taxation.

For each of these taxes, we consider how the tax base could be broadened in order to finance a given level of public spending and/or meet fiscal consolidation objectives. We also discuss how the design of the tax could be improved. Improvements to tax design would make the tax system more efficient and could provide an alternative to governments to increasing tax rates.

3.1. CONSUMPTION TAXES

Consumption taxes are generally an important source of revenue for Member States' governments, although there are significant differences between countries. In general, 'new' Member States tend to raise a higher proportion of their revenue from consumption taxes. Bulgaria and Croatia stand out with tax on consumption generating around half of total revenue.

VAT typically accounts for between two thirds and three quarters of the revenue raised from consumption taxes (Graph 3.1) ([23]), although there is, again, considerable variation between Member

States. ([24]) The other components of consumption tax are, however, also significant. Energy taxes constitute, on average across the EU, around 16 % of the implicit tax rate on consumption. These taxes mainly take the form of excise duties on mineral oils. The next largest category is excise duty on tobacco and alcohol, which accounts, on average, for 8 % of revenue from consumption taxes in the EU. These taxes constitute a relatively significant component of the implicit tax rate (ITR) on consumption in Bulgaria and Estonia, but contribute least to it in Sweden and the Netherlands.

Various other consumption taxes (besides VAT, taxes on energy, and alcohol and tobacco duties) also constitute important sources of revenue for certain Member States. In Hungary, these taxes (which include import duties and other taxes on production) represent 5.2 pp. of the ITR on consumption (the highest in the EU). In Lithuania, on the other hand, other consumption taxes only accounted for 0.5 pp. of the ITR (the lowest in the EU), with the EU average being 2.5 pp. As a percentage of GDP, VAT revenue ranged from 5.5 % in Spain to 12.3 % in Croatia (Graph 3.1, right-hand side). Revenue from excise duties is the second largest component of consumption tax revenue in many Member States. In Belgium, Denmark, Spain, Ireland, France, Italy, Hungary, the Netherlands, Austria, and Sweden,,however, other consumption taxes generate the second largest amount of revenue, ranging from 2.6 % of GDP in Ireland to 6.9 % of GDP in Sweden. On average across the EU, VAT revenue represents around 7.9 % of GDP, excise duties 3.2 % and revenue from other consumption taxes 2.8 %.

3.1.1. Broadening the VAT base

The use of reduced rates and exemptions considerably narrows the VAT base in many Member States and VAT revenue is therefore far below the level that could theoretically be collected were all consumption taxed at the standard rate. Limiting the use of reduced rates and exemptions can help to avoid economic distortions, reduce compliance costs and increase

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([23]) See European Commission (2014a) for a more detailed discussion.

([24]) In 2012, the proportion ranged from 56 % in Italy to 74 % in Sweden.

Graph 3.1: **Decomposition of ITR on consumption (left) and of consumption tax revenue as a percentage of GDP (right) in 2012**
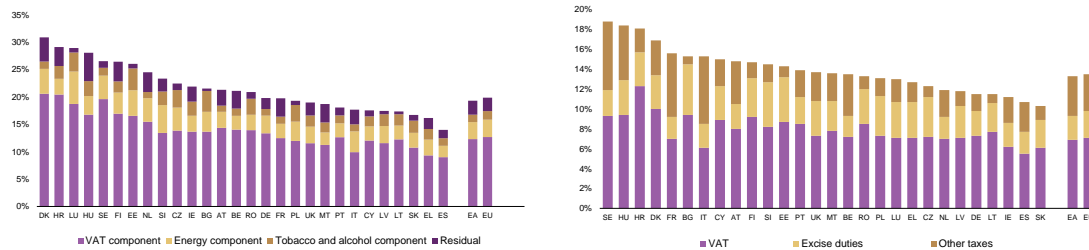
Source: Commission services.

tax revenue. ([25]) Additional revenue can allow the government to lower the standard VAT rate and/or to reduce the tax burden in other areas, such as labour. It can also contribute to fiscal consolidation.

A two-step screening process is used to identify Member States that would particularly benefit from broadening their VAT base.

- The first step is to look at the VAT revenue ratio. ([26]) Although subject to significant caveats (e.g. due to the fact that final consumption as quoted in national accounts may differ significantly from the tax base, and that the indicator is affected by tax evasion and by the economic cycle), this figure gives a first indication of the revenue foregone due to the use of exemptions and reduced rates and/or due to poor tax compliance.

- The second step of the screening involves two further indicators. The aim is to determine whether a low VAT revenue ratio (identified in the first step) is a result of the use of reduced rates and exemptions, i.e. a result of tax policy, or whether it is instead caused by poor tax compliance. The two indicators used for this stage are:

(i) the ratio of the average household VAT rate to the standard rate. This measures how the average overall VAT rate paid by a household compares with the standard rate. A low ratio indicates a large 'policy gap', created by the existence of numerous exemptions and reduced rates.

(ii) the VAT compliance gap.([27]) This measures non-compliance with the tax rules and the failure of the tax administration to collect revenue. A high value indicates a high level of tax evasion related to VAT.

Member States are considered to have the potential need to broaden the tax base if the VAT revenue ratio is significantly below the EU average, and the other two indicators confirm that the loss of revenue is related to VAT policy rather than to tax evasion (i.e. reduced rates and exemptions are creating a large policy gap while the compliance gap is relatively small). ([28])

As shown in Table 3.1, Greece, Spain, Italy, Poland and the UK have a VAT revenue ratio significantly below the EU average. The ratio of the average household VAT rate to the standard rate is also very low in these countries, suggesting that the low VAT revenue ratio is due to policy issues, and not, or not only, to poor compliance. Greece, Italy and Spain, do, however, also appear to have a high VAT compliance gap.

([25]) It should be noted that the VAT Directive (Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax), requires Member States to make certain compulsory exemptions, but leaves it to their discretion as to whether to apply reduced rates and a set of additional non-compulsory exemptions.

([26]) The VAT Revenue Ratio (VRR) can be defined as the ratio between the VAT actually collected and a situation where VAT would be collected at the standard rate on total consumption (See note to Table 3.1 for technical definitions).

([27]) The compliance gap measures the difference between the potential VAT and actual VAT revenues that might be attributed to non-compliance rather to policy issues.

([28]) The indicator values are compared to the EU averages to determine what is a 'large' or 'small' value (see also Section 4.2 on tax compliance).

Table 3.1: **VAT indicators**

Country	VAT revenue ratio (in %) 2014	Average household VAT rate/standard rate 2011	VAT policy gap (in %) 2013	VAT compliance gap (in %) 2009-2011	VAT gap as % of VAT theoretical tax liability 2013	Challenge
BE	47.0	0.49	53.8	15.7	10.5	
BG	65.7	0.71	26.7	13.3	17.2	(X)
CZ	58.9	0.58	33.0	27.3	22.4	
DK	58.9	0.62	42.7	9.3	9.3	
DE	54.4	0.50	42.6	11.7	11.2	
EE	70.0	0.68	30.5	15.3	16.8	
IE	49.8	0.44	16.9	12.0	10.6	
EL	36.3	0.42	50.8	35.0	34.0	X
ES	40.3	0.44	53.9	23.7	16.5	X
FR	47.8	0.53	53.4	19.3	8.9	
HR	73.8	-	-	-	-	
IT	36.8	0.50	45.6	27.7	33.6	X
CY	59.3	-	-	-	-	
LV	49.6	0.56	33.3	40.0	29.8	
LT	49.4	0.72	25.5	37.3	37.7	
LU	123.6	0.52	53.2	14.0	5.1	
HU	57.1	0.60	36.2	28.0	24.4	
MT	66.5	0.51	41.5	7.7	26.4	(X)
NL	48.3	0.44	52.0	7.0	4.2	
AT	58.6	0.57	40.7	10.7	11.4	
PL	43.3	0.44	43.0	14.0	26.7	X
PT	48.4	0.44	51.9	17.3	9.0	
RO	46.8	0.60	17.0	48.3	41.1	
SI	60.5	0.59	43.3	10.3	5.8	
SK	48.6	0.69	27.3	37.0	34.9	
FI	54.8	0.50	50.2	13.0	4.1	
SE	56.6	0.49	48.8	1.7	4.3	
UK	44.7	0.45	51.4	13.0	9.8	X
EU	48.1	0.49	47.2	17.2	14.5	
EA	48.0	0.50	47.4	18.1	14.9	
LAF plus	51.3	0.51	44.3	14.0	10.7	
LAF minus	44.9	0.47	50.1	20.4	18.3	

Note: VAT revenue ratio consists of actual VAT revenue divided by the product of the VAT standard rate and net final consumption expenditure, i.e. final consumption expenditure minus VAT receipts. A low value of the ratio suggests that exemptions, reduced rates or tax evasion have a significant effect on VAT revenue. The indicator is analogous to the 'C-efficiency' and 'VAT revenue ratio' computed by the OECD, see OECD (2014a). The high value for Luxembourg is due to the relatively large amount of VAT collected on sales to non-residents (data for Luxembourg for the VAT revenue ration are for 2013). The second column is the ratio of the average household VAT rate, as calculated in CPB/CASE (2013) (i.e. the rate that actually applies on the final household consumption taking into account reduced rates and exemptions), and the standard VAT rate applied in the Member State in 2011. The VAT policy gap is calculated as the ratio of the VAT theoretical tax liability (VTTL) on household consumption (the corresponding value of the VAT rate is applied to each good in the consumption basket) to the hypothetical tax liability that would be created were there no reduced rates or exemptions. The VAT compliance gap measures the difference between the collected and the theoretical VAT revenue, taking into account reduced rates and exemptions. 2009-2011 refers to the arithmetic average of the three years. The figures for the VAT gap as a percentage of total tax liability (the total tax base taking into account reduced rates and exemptions) are taken from the updated CPB/CASE study (2014). The VAT gap as a percentage of tax liability measures the difference between the VAT that would have been paid if all those liable for VAT had reported all their transactions correctly and the VAT that is actually collected by tax authorities, relative to total tax liability.
Source: Commission services, CPB/CASE (2013, 2014, 2015).

The above screening only captures the use of reduced rates and exemptions. An additional indicator, the VAT gap (as a percentage of VAT theoretical tax liability([29])), is therefore also considered. This can signal possible additional policy issues. Bulgaria, the Czech Republic, Greece, Spain, Italy, Latvia, Lithuania, Hungary, Malta, Poland, Romania and Slovakia can be seen to have a VAT gap significantly higher than the EU average. Of these countries, Bulgaria and Malta (as indicated in Table 3.1 by (X)) also have a low compliance gap, which suggests that the high VAT gap is explained by policy issues.

More generally, the above methodology, while offering useful insights, should nevertheless be interpreted with caution. It should be noted, for example, that the policy gap and the compliance gap are not independent of one another, as a superficial reading of the methodology may suggest. A reduced VAT rate (which increases the policy gap) may be introduced precisely because the compliance gap was large. In certain difficult-to-monitor sectors in particular, levying a reduced VAT rate is believed to increase revenue, as the financial incentive for tax evasion is reduced.

This was one of the reasons why certain Member States decided, for example, to grant a reduced rate on renovation work for the construction sector, and for other similar labour-intensive sectors. In such cases, the wish of the client to document the transaction and to be able to make a claim on the

([29]) Defined as the total amount of estimated VAT payments on the basis of national accounts and the existing structure of the VAT law regarding existing rates and exemptions plus some adjustments (e.g. for special VAT schemes, for small businesses).

basis of a producer's guarantee in the case of improper execution of the work may outweigh the economic incentive to collude with the company and conceal the transaction from tax authorities, if the applicable VAT rate is not too high. It is therefore quite possible in such cases that reducing the policy gap will not have the positive effect on revenue expected, but may even reduce revenue as a result of the endogenous increase in the compliance gap.

3.1.2. Implementation of the 'VAT destination principle' in telecommunications, broadcasting and electronic services

New VAT rules ([30]) have been in force since 1 January 2015, under which telecommunications, broadcasting and electronic services are taxed according to the 'destination principle'. This is in line with wider reforms designed to deepen the EU internal market for e-commerce. Several Member States may be significantly affected by these changes. The rules, together with the simplified procedures for registering and paying VAT (the 'mini one stop shop' scheme for VAT payment (MOSS)), will ensure that the vast majority of business-to-consumer supplies of telecommunications, broadcasting and electronic services are taxed at the place of consumption. Whereas under the previous system, the use of reduced rates and exemptions encouraged service providers to base themselves in low tax jurisdictions, under the new regime, there is no tax incentive to do so.

Some Member States expect to see a significant increase in VAT revenue as a result of the changes. France and the UK, for example, have indicated that the 'shift' in VAT to their countries will be, respectively, in the order of EUR 200 million and EUR 400 million per year, at current levels of activity, with subsequent further increases expected. ([31]) This reform is expected to result in revenue losses for low-tax jurisdictions, however.

The Member States that expect to see a significant fall in VAT revenue include Luxembourg, with an estimated loss of around EUR 800 million (1 ½ % of GDP) (Dale et al., 2014).([32]).

Reduced VAT rates and exemptions create considerable difficulties and complications for tax authorities and for telecommunications, broadcasting and electronic services providers. They are required to establish where each customer is located and determine their tax status. They also have to manage the various different VAT rates applied, and, in a small number of cases, the exemptions to which the customer is entitled (see Table 3.2). As indicated in Table 3.1 specific Member States show a need for VAT base broadening. Some of these Member States could benefit of reviewing reduced rates applied and exemptions used for telecommunications and electronic services. Limiting reduced rates and exemptions could increase the overall VAT efficiency by broadening the VAT base (Table 3.2)

However, the new simplification scheme (MOSS) ([33]), if chosen, is expected to mitigate this challenge (i.e. challenge which is mainly linked to the application of reduced rates and exemptions).

In 2015, the VAT rates applied and exemptions granted for telecommunications and similar electronic services vary significantly across Member States. Standard VAT rates range from 17 % to 27 % across the EU. Where reduced VAT rates apply, the range of tax rates is even greater, ranging from 2.1 % on public TV licences in France to 13 % on Pay TV in Greece (see Table A2.14 in Annex 2) ([34]). For certain Member States (e.g. Portugal and Greece), the above standard and reduced rates are further reduced for specific geographical areas. In addition,

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([30]) Council Directive 2008/8/EC of 12 February 2008 amending Directive 2006/112/EC as regards the place of supply of services was adopted as part of the VAT package, with the aim of ensuring the proper functioning of the single market (for details see also http://ec.europa.eu/taxation_customs/taxation/vat/how_vat works/telecom/index_en.htm#infosel).

([31]) Based on statements from national authorities. The effect of these VAT changes on businesses providing e-services is likely to be significant.

([32]) In Luxembourg's Stability and Growth programme, VAT on e-commerce is expected to fall from EUR 1.077 billion (2.3% GDP) in 2014 to EUR 458 million (0.9% GDP) in 2015 and EUR 46 million (0.1% GDP) in 2019. (Ministry of Finance of Luxembourg, 2015).

([33]) So far more than 8000 businesses have registered for the new simplified scheme for VAT payment (MOSS), and this is, in itself, a sign of a success. At a first glance the tax collected in 2015 through MOSS could reach at least 3 billion euros. To be noted that this does not include receipts from business opting for direct registration in the Member States of consumption (often very large companies with lots of revenue at stake for the tax authorities).

([34]) However, in Greece, as of 20 July 2015, Pay TV/Cable TV is moved to the standard rate (23%).

telecommunications and similar electronic services are often exempted from VAT when supplied by public authorities. The maximum levels of turnover below which companies are exempted from VAT also vary across Member States.

Table 3.2: **VAT efficiency — telecommunications sector**

	Need to broaden the VAT base	Reduced rates for the telecommunication sector	Exemptions	Overall need to broaden the VAT base in the telecommunication sector
BE			X	
BG	(X)			
CZ			X	
DK				
DE			X	
EE				
IE			X	
EL	X	X	X	X
ES				
FR		X		
HR			X	
IT	X	X		X
CY				
LV				
LT				
LU				
HU			X	
MT	(X)			
NL			X	
AT		X		
PL	X	X		X
PT		X		
RO				
SI			X	
SK			X	
FI		X		
SE			X	
UK	X		X	X

Source: Commission services.

Under the old system, Member States that applied reduced rates and/or granted exemptions for telecommunications and similar electronic services appear to have benefited significantly in terms of economic activity (i.e. by attracting companies to the country). In general, tax revenue from the supply of telecommunications services is highest for Member States that make use of reduced rates and exemptions for this sector. ([35]) Moreover, Luxembourg appears to have benefited from its low standard rate 15 % (until 1 January 2015).([36]) In 2012, Estonia, Croatia and Bulgaria declared the

([35]) In general Member States that offer reduced rates and exemptions to the telecommunications sector have benefited from doing so, in terms of attracting companies and in the form of higher tax receipts from the supply of telecommunication services. Estonia and Slovakia are an exception to this, as they are among the Member States with the highest tax revenue from telecommunication services but do not apply reduced rates in this sector (Slovakia granting only a limited exemption and Estonia not making any special provisions) (Eurostat, 2011, 2012).

([36]) In Luxembourg, as of 1 January 2015, the standard VAT rate was increased from 15 % to 17 %.

highest tax receipts from the telecommunications sector as a percentage of GDP, with revenue of 4.1 %, 3.9 % and 3.5 % respectively, well above the EU average of 2.5 % (see Graph 3.2). It is worth noting that, contrary to what the general trend would suggest, these Members States do not apply reduced rates for the telecommunications sector (with only Croatia granting a limited exemption and the other two countries not applying reduced rates nor exemptions). On the basis of the number of services providers in that country, and the total tax revenue generated from the telecommunications sector, it appears that, under the old system of taxation, Luxembourg was especially attractive to businesses. Austria, meanwhile, in the absence of figures for Germany

Graph 3.2: **Total tax revenue from the telecommunications sector as a percentage of GDP (2012)**
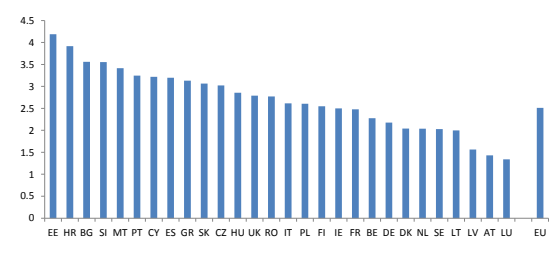
Source: Commission services.

and the UK, is the Member State with the highest number of service providers with a fixed establishment in the country (see Graph 3.3). Applying a single standard VAT rate for telecommunications and similar electronic services would increase the efficiency of the VAT system.

Graph 3.3: **Service providers with a fixed establishment in the country**
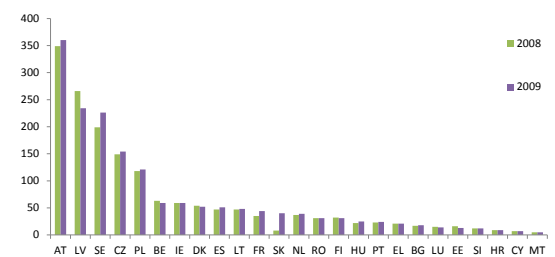
Note: No data is available for Germany and the UK.
Source: Commission services.

There is no strong theoretical or empirical evidence to support the use of reduced VAT rates for telecommunications, broadcasting and electronically supplied services. This type of reduced rate increases the complexity of the system and creates additional distortions (e.g. the need to define the status of services, thus whether the service is supplied to final consumer or to businesses, and the increased risk of distorting competition) ([37]) and may lead to losses of revenue under the new system. Based on the general screening (as shown in Table 3.1), Greece, Spain, Italy, Poland and the UK are found to have particular room for manoeuvre to improve the efficiency of their VAT systems by limiting the use of reduced rates and non-compulsory exemptions. Greece, Italy, Poland and the UK also apply reduced rates and grant exemptions to specific services in the telecommunications sector and could consider limiting these reduced rates and exemptions. Luxembourg has the lowest standard tax rate (17 %) for telecommunications services.

3.1.3. VAT on energy

The EU VAT Directive ([38]) explicitly allows Member States to apply reduced rates to natural gas, electricity, district heating and firewood (see Table A2.13 in Annex 2). A number of Member States make use of this possibility and charge reduced VAT rates on some or all of these energy products, namely Belgium ([39]), Ireland, Greece,

France ([40]), Italy, Latvia, Luxembourg, Hungary, Malta, Poland, Portugal and the UK. In addition, Member States are allowed to continue using the reduced VAT rates that were applied to energy products before the creation of the single market in 1992. Belgium, Ireland, Luxembourg, Portugal and the UK make use of this provision in order to grant favourable tax treatment to fuel oil and solid fuels.

As well as narrowing the VAT base, the use of reduced rates may distort energy consumption and influence consumers' choice of energy source. Moreover, the underlying aims of the policy could often be achieved in another, more efficient way. Recent research by the OECD ([41]) into the use of reduced VAT rates on energy products (e.g. electricity and natural gas) shows that, in the specific case of France, Greece, Italy, Ireland, Luxembourg and the UK, reduced rates provide greater support to the lower than the higher-income households as a proportion of expenditure. Despite this progressive effect, however, these reduced rates are shown to be often a relatively ineffective way of directing support towards less well-off households: at best, higher-income households receive as much support in absolute terms as do lower-income households; at worst, higher-income households benefit vastly more than lower-income households, again, in absolute terms (see Copenhagen Economics, 2007 and Mirrless review, 2011 ([42])).

Furthermore, the use of reduced VAT rates for energy-efficient products provides a market incentive for shifting towards more energy efficiency. However, it also raises some challenges. Rapid technological progress can render obsolete the particular technology or design on the basis of which the reduced rate was granted, thus creating a risk that better performing and more innovative alternatives are not supported by incentives. If this issue was addressed by

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([37]) Reduced VAT rates are occasionally used to reduce the tax burden on certain telecommunications services that are VAT-exempt when supplied by a public body (e.g. in Greece, services provided by public service radio and TV providers are exempted, while those supplied by private providers are subject to a reduced VAT rate). Under the EU VAT system, transactions carried out by bodies acting as public authorities are outside the scope of VAT, unless this treatment would lead to a significant distortion of competition. To counteract lesser distortions of competition, reduced VAT rates are sometimes applied to private agents. Empirical evidence (Copenhagen Economics, 2007 and Mirrlees et al., 2011, Box 1), however, suggests that applying reduced rates in order to reduce the tax burden on services supplied by private providers that are VAT exempted when provided by a public service provider may create further distortions.

([38]) Council Directive (2006/112/EC) of 28 November 2006 on the common system of value added tax (OJ L 347 11.12.2006, p. 1).

([39]) From April 2014 to September 2015, Belgium has also been applied the 6 % reduced rate to electricity for households.

([40]) France applies a reduced VAT rate to district heating. As regards natural gas and electricity, it applies a reduced VAT rate to the subscription, while natural gas and electricity consumption is taxed at the standard VAT rate.

([41]) OECD (2015). However, an evaluation of VAT system, by the Commission offers a different view (see 'A retrospective evaluation of elements of the EU VAT system' Final report TAXUD/2010/DE/328 FWC No. TAXUD/2010/CC/104).
http://ec.europa.eu/taxation_customs/resources/documents/common/publications/studies/report_evaluation_vat.pdf.

([42]) For a general overview of distributional effects of consumption taxes see also Section 4.5).

frequently changing criteria for granting the reduced rate, this could make the system more complex and less transparent for consumers, also creating a potential for significant compliance costs. The distributional impacts of such VAT reductions are ambiguous. While lower prices of more efficient products can allow lower-income consumers access to such products and the resulting energy savings, the reduced rates of consumption taxes apply to all taxpayers and, therefore, offer greater absolute benefits to high-income earners. Further analysis would help to see how policy objectives could be achieved in a more efficient way outside the tax system.

The current environment of low energy prices offers an opportunity for reforming energy taxation. While the proportion of energy costs constituted by taxes (mainly VAT and excise duties) has increased automatically in the recent past, [43] as a consequence of the large drop in fuel prices seen in the second half of 2014, [44] Member States could consider abolishing reduced VAT rates for energy in order to improve policy coherence between energy taxation and VAT, while broadening the VAT base and increasing VAT efficiency. Changes to excise duties on energy could also be considered. Carefully designed reforms could contribute to fiscal sustainability, help finance reductions in labour taxation and contribute to potential growth by reducing economic distortions.

3.1.4. VAT deductibility on company cars

A small number of Member States (Belgium, Estonia, Ireland [45] and Latvia) allow a partial deduction of the VAT charged on the purchase of company cars intended for private use by employees. This narrows the VAT base and may create distortions when the purchases are not related to activities that qualify for VAT deduction (e.g. when cars are sold in the market to private consumers for private use). Reviewing the tax treatment of company cars and limiting the VAT deductibility would broaden the VAT base, limit

economic distortions and generate additional revenue. [46]

3.2. PROPERTY AND HOUSING TAXATION

This section updates the analyses of housing taxation presented in previous years' reports, including by considering housing taxation within the broader context of taxation on immovable property. It focuses particularly on the contribution to revenue made by existing taxes. This serves as a basis for assessing the need for an internal shift within housing taxation, from taxes on transactions to recurrent taxes. This section also discusses the potential economic distortions arising as a result of current tax design, including exemptions and reliefs, particularly for owner-occupied residences.

3.2.1. Taxes on immovable property: size and structure

The contribution made by taxes on immovable property to Member States' budgets remains moderate. In 2012, revenue from this type of taxation was equivalent to 2.3 % of GDP, around a third of which came from taxes on transactions (see Graph 3.4). Revenue from recurrent property taxes thus only represented 1.5 % of GDP, on average, with a large degree of variation seen between Member States. While Malta does not levy any recurrent tax on property, revenue from this type of taxation accounted for 3.4 % of GDP in the UK (see Graph 3.1). [47]

The case for increasing revenue generated by recurrent taxes on immovable property rests upon the relatively limited negative effect they have on growth, compared to other taxes, notably taxes on income. [48] In view of this, bringing the tax base

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[43] European Commission COM(2011) 168/3.
[44] IEA, World Economy Outlook, (2014) and European Commission, (2015c).
[45] A provision was introduced on 1 January 2009 allowing 20 % VAT deductibility on a restricted category of cars, providing the car is continually used for at least 60 % business use, for a minimum of two years.

[46] A discussion of additional environmental issues related to personal and corporate income taxation of company cars can be found in Section 3.7 on environmental taxation.
[47] The recurrent property tax serves different purposes in different countries. The tax is a source of finance for local services in some Member States, while in other - such as Germany - additional charges are imposed for these purposes. The yield of such charges is normally not included in the revenue figures.
[48] Several arguments other than economic efficiency are brought up in discussions on housing taxation. First, distributional effects are important, particularly as the household main residence contributes to equalising wealth (see Section 4.4.3). Second, property taxes are inherently more salient than withholding taxes and consumption

into line with market values would not only lead to higher revenue whilst keeping tax rates constant, but would also correct the distortions and potentially inequitable effect currently being created by taxation, by making the tax liability reflect the current value of a property. Failure to update the tax base regularly risks causing erosion of the tax base — and thus of tax revenue — over time, while giving further support to rising property prices, particularly for housing. Moreover, the longer a revision is postponed, the more drastic will be the redistribution. This will, in turn, reduce the political feasibility of a reform.

Graph 3.4:   **Revenue from property taxation, 2012 (as a percentage of GDP)**
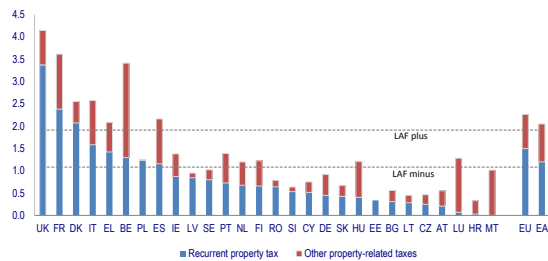
Note: Member States are ordered by their revenue from recurrent property taxes. 'Other property-related taxes' includes taxes on net wealth, inheritance, gifts and other property items, and on financial and capital transactions. Data does not include personal income tax on imputed rent. Details on the screening methodology behind the benchmarking ('LAF plus' and 'LAF minus' reference points) are in Annex 2.
Source: Commission services.

Many Member States have not updated property values for many years. As discussed in last year's report, at least 10 Member States (Belgium, Germany, Estonia, Greece, France, Italy, Cyprus, Luxembourg, Austria and the UK) apply somewhat out-of-date property values. A number of Member States (including several of those mentioned above) are currently reassessing real estate values, and several others are planning to do so. (^{49}) While reassessment of the tax base would

increase the efficiency and fairness of the property tax system, concerns about the distribution of the tax burden are often raised in relation to reforms that would increase the revenue being collected on immovable property, particularly when housing is affected. (^{50}) Specific features of the design of the tax (e.g. a progressive rate structure for a recurrent tax, or tax deferrals for disadvantaged categories of taxpayers) could be used to address such concerns, and also in order to facilitate the implementation of reforms.

Across the EU as a whole, transaction taxes generate revenue worth 0.8 % of GDP. As seen for recurrent taxes, the aggregate value hides significant variability at the level of the individual Member States. Belgium, Spain, France, Italy, Luxembourg and Malta recorded revenue close to or above 1 % of GDP in 2012. This includes revenue from other capital and financial transactions, however. (^{51})

The statutory tax rates on real estate transactions also show a significant level of variation between Member States (see Table 3.3). Belgium, with a tax rate above or equal to 10 % in all three regions, is still at the top of the spectrum, although some forms of relief and exemptions do apply, for example for first-time buyers. A second set of countries currently have rates of 5-9 %, whilst Portugal and the UK apply progressive rate structures. (^{52}) In Germany, rates are set by the

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taxes, since they usually consist of a single annual payment. Consequently, they might affect economic choices (e.g., in terms of consumption) of low-middle income classes more than other taxes. Finally, tax capitalisation into housing prices might affect the supply side, and ultimately the construction sector.

(^{49}) Italy, Greece, Cyprus, Romania, Ireland and France are taking steps to reassess real estate values. Belgium has commissioned a feasibility study. Portugal has concluded the reassessment of property values, which are already applied since the tax year 2012 (taxes collected in 2013), with full effects on the 2015 tax revenue. Cyprus has

reassessed its property values but the new values are not yet being applied for the purpose of recurrent property taxation. A commitment was made in the Memorandum of Understanding that the values will be applied within a new structure for immovable property taxation as of the 2015 tax year.

(^{50}) In particular, households with high-value properties but low disposable income (typically pensioners) may struggle to meet their tax obligations, and may have to reduce their spending.

(^{51}) A more detailed disaggregation of data is currently not generally available as a time series. An overview of the different taxes on wealth and wealth transfers in place as at June 2014 in the EU Member States is available in Ernst and Young (2014)..

(^{52}) In Portugal, the transaction tax payable on the purchase of first residences ranges from 0 % to 8 %. In the UK, the range of possible rates is from 0 % (for properties with a value of up to GBP 125 000) to 12 % (for the part of the property's value above GBP 1.5 million). In Scotland, the stamp duty land tax has been replaced by a land and buildings transaction tax. The top rate of 12 % applies above GBP 750 000. In Germany, the rates are set locally, and range from 3.5 % to 6.5 %. In Italy, the cadastral value,

federal states, with an arithmetic average rate of just above 5 %, following several recent increases. Nearly half of Member States apply tax rates on real estate transactions of below 5 %. A small number of Member States do not levy any tax on real estate transactions. From a budgetary perspective, reliance on transaction taxes will generate a more volatile revenue stream than a recurrent property tax yielding the same revenue. Furthermore, transaction taxes, when added to other transaction costs, will tend to discourage property sales and purchases, especially when statutory tax rates are high (see, e.g. Besley et al., 2014). Ultimately, this may result in a less active market for immovable property. Workers' mobility is restricted when the purchase of residential property is heavily taxed. This adds to imperfections in the labour market and thus gives rise to potentially larger economic distortions. ([53]) On the positive side, a tax on property transactions could theoretically deter speculation, although this relationship is not empirically unambiguous (Aggerer et al. 2013). The risk of soaring asset prices and bubbles is most effectively managed by policies/tools other than taxation (i.e. macroprudential tools); nevertheless, it is important that the structure of property and housing taxation does not contribute to such increases in asset prices or bubbles. ([54])

Property tax systems relying heavily on transaction taxes offer scope for reform, notably a shift away from transaction taxes and towards recurrent property taxes. This would maintain a constant level of revenue while reducing the distortions caused by transaction taxes. Two criteria have been used to assess Member States' current policy mix – the rate of the transaction tax and the revenue generated from recurrent property tax as a proportion of GDP, with those with a transaction tax of at least 5 % and recurrent property tax revenue as a proportion of GDP not significantly

above average defined as having scope to shift (within property taxation) from transaction taxes to recurrent property taxes. On the basis of these criteria, Belgium, Germany, Spain, Croatia, Luxembourg, Malta and Portugal appear to have, to varying extents, scope for this type of tax shift. ([55])

Table 3.3:	Taxes on real estate transactions in EU Member States, 2015
Tax level	**Member State**
≥10%	BE, UK*
5-9%	DE, FR, ES, LU, HR, IT, MT, PT*
<5%	AT, EL, IE, NL, SI, FI, CZ, DK, LV, PL, SE, HU, RO
None	EE, SK, BG, LT

Note: * indicates a progressive or multiple rate structure. In the UK, the top rate of 12 % applies to properties with a value above GBP 1.5 million. In Scotland, the stamp duty land tax has been replaced by a land and buildings transaction tax. In Italy, some rates may apply to cadastral values rather than transaction values and the main residence of first time buyers is subject to a special rate of 2 %. In Germany, the rate is set by the individual federal states with rates ranging from 3.5 % to 6.5 %, with a median rate of 5 %. In Spain, tax rates are set at the level of the Autonomous Regions. The average rate is 7%. In Poland, a 2 % rate applies to the sale of immovable property, which is VAT exempt. Cyprus grants a 50 % discount on the transfer fee for properties with sales registered after December 2011, while on sales registered before that date, the progressive tax (with rates from 3 % to 8 %) is levied on the full market value. In addition, there are a number of exemptions for transfer fees, in particular transfers fees for properties linked to restructured loans. In Bulgaria tax exemption is available in certain conditions (number and type of the properties sold/exchanged and years of their occupancy), otherwise a 10% rate is applicable on the gain from the immovable property sale/exchange after a discount of 10% for expenses.
Source: Commission services.

3.2.2. Design issues in housing taxation

Last year's report discussed at length the main issues arising from the current tax treatment of housing, in particular of owner-occupied residences. ([56]) In general, as a result of generous tax reliefs and exemptions, and given the low level of recurrent property taxation, owner-occupation appears to be undertaxed compared to other private investments. While promoting homeownership might be considered an important policy objective, it is not unlikely that tax breaks granted for this purpose will instead cause prices to rise, particularly when supply is rigid, thus ultimately making it more difficult for people to become

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rather than the acquisition price, can be used as the tax base. As a result, the statutory rate overestimates the effective tax burden on the transaction if cadastral values are below market values.

([53]) Econometric evidence from the Netherlands suggests that transaction taxes on property have a significant effect: a one-percentage-point increase in transaction costs as a percentage of the value of the residence reduces residential mobility rates by at least 8 % (Van Ommeren and Van Leuvensteijn, 2005).

([54]) Crowe et al. (2011) and Kuttner and Shim (2013).

([55]) Moving away from transaction taxes is always advisable if these are found to have a significant detrimental effect on labour mobility.

([56]) See European Commission (2014b) and Wöhlbier et al. (2015) for a more in-depth analysis.

Graph 3.5: **User cost of owner-occupied housing and the contribution made by various taxes to this cost**
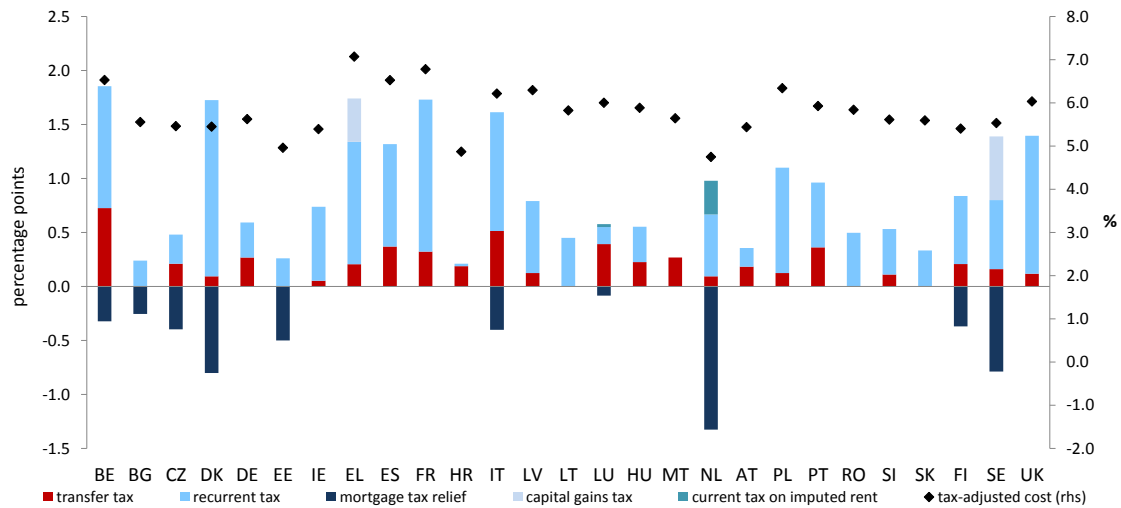
Notes: The tax-adjusted user cost is expressed as a percentage of an additional euro of house value (scale on the right-hand axis). The bars (scale on the left-hand axis) show the contribution made to this cost by various types of tax. No data is available for Cyprus. The data is based on the tax rules in place in each Member State in May 2015 that would apply to the purchase of an existing dwelling. For the underlying assumptions and methodology, see the 2014 Tax Reforms report.
Source: Commission services.

homeowners, especially younger and less well-off households. ([57])

The tax subsidy for owner-occupied housing arises as a result of the combined effect of a number of tax rules: imputed rent — the rental income implicitly accruing to homeowners — is generally not taxed ([58]); homeowners often benefit from tax relief on mortgage interest payments, in the form of a credit or deduction; and capital gains realised on a household's main residence are seldom subject to taxation by default. ([59])

The effect of taxation on owner-occupation can be estimated on the basis of the user cost of capital. This measures the annual cost of owning and operating the main residence per additional euro of

house value (Poterba, 1992; Poterba and Sinai, 2008).

Graph 3.5 shows the tax-adjusted user cost associated with an additional euro invested in housing capital (as a percentage of this additional euro). ([60]) The graph also shows the contribution made by various taxes to this cost. For each tax, this is calculated as the difference between the user cost with the relevant tax parameter set at its current level, and the user cost with the relevant tax parameter set to zero, with all the other tax parameters kept constant at their current level. ([61])

The countries where the user cost of housing investment is lowest are the Netherlands, Croatia, Estonia and Ireland. Finland, Austria and Denmark also have a relatively low user cost of housing investment. The highest user costs, meanwhile, are

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([57]) For a discussion of the macroeconomic implications of the tax subsidies granted in respect of housing, see European Commission (2015a).

([58]) The Netherlands and Luxembourg apply personal income tax on imputed rents in respect of an individual's main dwelling, while some other countries tax imputed rents from second homes. It should be noted that the tax proceeds from imputed rents are recorded as tax on income and not included in revenue from recurrent property tax.

([59]) Many countries reduce or defer the tax on capital gains made on the sale of a household's primary residence, or exempt such transactions entirely from capital gains tax. Levying capital gains tax on housing transactions tends to have the same negative effects as does a transaction tax, i.e. it creates lock-in effects and risks reducing labour mobility.

([60]) A more detailed description of the indicator, as well as the methodological background, is provided in European Commission (2014b).

([61]) Although the indicator is not representative of the actual cost of capital for investing in housing in each Member State (due to issues relating to the measurement of the cost and to the underlying methodological assumptions), it nonetheless provides a useful tool for comparing the marginal tax burden on owner-occupied housing across Member States. Country specificities, particularly those relating to financial variables, would need to be taken into account before drawing any final conclusions as to appropriate policies.

found in Italy, Latvia, Poland, Spain, Belgium, France and Greece. Of the different types of taxation, recurrent property taxes add the most to the user cost of housing investment, while tax relief on mortgage interest reduces the user cost, in some cases — in the Netherlands, Sweden and Denmark, for example — significantly so.

Table 3.4:	Summary of results of the assessment of immovable property taxation	
Country	**Housing taxation**	
	Structural shift	**Debt bias**
BE	X	X
BG		
CZ		X
DK		
DE	X	
EE		X
IE		
EL		
ES	X	
FR		
HR	X	
IT	X	X
CY		
LV		
LT		
LU	X	
HU		
MT	X	
NL		X
AT		
PL		
PT	X	
RO		
SI		
SK		
FI		X
SE		X
UK		

Source: Commission services.

Tax systems that offer tax relief on mortgage interest payments are clearly biased in favour of debt-financed house purchases. By lowering the after-tax cost of debt, this tax benefit can incentivise debt creation. ([62]) The generosity of the tax relief given on mortgage interest payments, and, in some cases, also on capital repayments, varies significantly across Member States. In general, this type of tax relief has been cut back in recent years. Table 3.5 provides an overview of the current situation in Member States. At present (disregarding loans taken out in earlier years) no mortgage tax relief is granted in 15 EU Members, while the majority of the other countries apply tax

relief with limitations. Particularly generous provisions are in place in Sweden, Finland, and the Netherlands. Reforms were most recently introduced in Belgium. Deduction rates were made less generous and new rules introduced at regional level, both applying to loans taken out from 1 January 2015.

As in the previous section, two criteria are used to identify a potential need for a policy change in individual Member States, namely: (i) the negative contribution of mortgage interest relief to the marginal cost of housing being relatively high compared to the EU average; and (ii) recurrent property taxes being relatively low compared to the EU average, or close to this average. On this basis, Belgium, the Czech Republic, Estonia, Italy, the Netherlands, Finland and Sweden appear to need to reduce their debt bias. The overall results of the assessment are shown in Table 3.4.

3.3. DEBT BIAS IN CORPORATE TAXATION

Corporate tax systems generally discriminate between debt and equity by treating interest payments as a deductible expense and equity returns as a reward for a company's owners. This asymmetry originates from accounting principles, but does not have a clear economic rationale. Considered from the point of view of a company choosing whether to use debt or equity to fund investment, the tax treatment is one point in favour of debt over equity. From an economic point of view, this debt bias is considered problematic for several reasons. ([63])

Most notably, it may lead to excessive leverage in the corporate sector. This makes companies more vulnerable to economic shocks. If the corporate sector is highly leveraged, an economic shock will cause more serious welfare losses, as companies suffer a disproportionate level of bankruptcy costs and are more vulnerable to increased economic volatility. The financial sector would suffer magnified negative effects from high levels of leverage, due to the possibility of systemic risk (see below). The distortion to investment created by the lack of deductibility of the cost of equity may give rise to additional welfare costs. An additional problem created by the debt bias is that

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([62]) Given that standard corporate income tax rules often also allow the deduction of interest payments, Member States' tax systems appear to encourage leverage for the private sector as a whole. See also Section 3.3 for a discussion of the debt bias in corporate taxation.

([63]) For a discussion of the debt bias, see Fatica et al. (2013).

Table 3.5:	**Rules on and reforms of mortgage interest tax relief for owner-occupied housing**
Belgium	Mortgage loans issued up to 31 December 2014 benefit from tax relief at the marginal income tax rate (or at 30 %, if the marginal income tax rate is below this). In Flanders, for new loans taken out after 1 January 2015 are subject to different rules on tax relief: interest payments and capital redemptions on a mortgage taken out for an own dwelling are granted tax relief at a deduction rate of 40 % in Flanders and Wallonia and 45 % in the Brussels Capital region. In Flanders, the maximum qualifying amount is capped at EUR 1 520 (base amount) and this maximum will not be subject to indexing. In Brussels and Wallonia, the maximum amount qualifying for tax relief is EUR 2 290 (unchanged from its level under the previous system). This base amount is indexed. In all three regions, an additional amount of EUR 760 each year is granted during the first 10 years of the loan and an additional EUR 80 each year for taxpayers with at least three dependent children on 1 January of the year following the year in which the loan was taken out.
Bulgaria	Tax relief is limited to the interest payments on the first BGN 100 000 (approximately EUR 50000) of a mortgage loan, and is only granted to young married couples below 35 years of age owning one family dwelling.
Czech Republic	Interest on the main residence is deductible up to a maximum of CZK 300 000 (approximately EUR 11000).
Denmark	The deduction on interest has a tax value of around 33%, which is being reduced gradually to 25% between 2012 and 2019 for interest payments above DKK 50 000 (around EUR 6 700) per person per year (DKK 100 000 per married couple).
Germany	No tax relief granted on mortgage interest.
Estonia	There is an overall limit of EUR 1 920 on the tax deduction granted for mortgage interest, education, donations and gifts. This ceiling was reduced in 2013 from the previous level of EUR 3 196.
Ireland	Tax relief is only granted on mortgage loans taken out between 1 January 2004 and 31 December 2012. The tax relief is granted in the form of a tax credit, at rates varying between 20 % and 30 % (depending on the year the loan was taken out) of the interest paid on qualifying loans for a period of seven years. Mortgage interest relief is capped at EUR 3 000 for single people and EUR 6 000 for married and widowed taxpayers. The credit rates and ceilings are higher for first-time buyers. The relief can be claimed until 2017.
Greece	No tax relief granted on mortgage interest. The tax credit previously offered was repealed with effect from 1 January 2013.
Spain	No tax relief granted on mortgage interest for mortgages taken out after 1 January 2013. Qualifying loans taken out before that date benefit from a 15 % tax credit, for expenses relating to the house (including repairs and mortgage interest), up to maximum of EUR 9 040.
France	No tax relief granted on mortgage interest. Subsidised loan schemes were introduced in 2010, targeted at first-time buyers, low-income earners, areas where there is a shortage of housing and purchases of new housing. These replace the tax relief provisions which had been in force between 2007 and 2010. During this period, housebuyers could benefit from a tax credit worth 20 % of interest payments, up to a maximum of EUR 3 750 per year for a single person, and double this for a couple, increased by EUR 500 per year for each dependent person in the household.
Croatia	No tax relief granted on mortgage interest.
Italy	Interest on mortgage loans for building or buying a principal residence is subject to a tax credit equal to 19%, up to a maximum interest payment of € 4 000 (i.e. a maximum tax credit of € 760).
Cyprus	No tax relief granted on mortgage interest.
Latvia	No tax relief granted on mortgage interest.
Lithuania	No tax relief granted on mortgage interest. Homeowners having taken out mortgage loans before 1 January 2009 benefit from a tax deduction for interest, on one dwelling only.
Luxemburg	The mortgage interest related to the household main residence qualifying for tax relief is capped at EUR 1 500 per person in the household, reduced to EUR 750 after 12 years of occupancy. No deduction is granted on second homes.
Hungary	No tax relief granted on mortgage interest.
Malta	No tax relief granted on mortgage interest.
Netherlands	Mortgage interest payments are fully deductible under the personal income tax system. As of 2013, new mortgages need to be paid off in full (at least as an annuity) within a maximum of 30 years to benefit from the relief. Moreover, the top deductible rate will be reduced gradually by 0.5 percentage points per year over 29 years, i.e. from 52% to 38% .
Austria	No tax relief granted on mortgage interest.
Poland	No tax relief granted on mortgage interest. Loans taken out between 1 January 2002 and 31 December 2006 qualify for tax deductions until 2027, on the basis of earlier provisions.
Portugal	Tax relief is only granted on mortgage loans taken out before 31 December 2011. The tax relief is granted in the form of a tax credit at 15 % of the interest payment, with a ceiling of EUR 296 per year.
Romania	No tax relief granted on mortgage interest.
Slovenia	No tax relief granted on mortgage interest.
Slovakia	As of 2015, interest expenses on mortgages and expenses on fees related to mortgages may be claimed as tax deductible expenses when calculating individuals' taxable income on the transfer of real estate.
Finland	Mortgage interest was previously deductible against capital income at a rate of 75 %, which, as of 2015, has been reduced to 65 %. This rate will be further reduced by 5 percentage points per year, to 50 % in 2018. In addition, 30 % of mortgage interest exceeding income from capital and 32 % of interest on mortgages taken out for the purchase of a first home can be credited against taxes paid on earned income. Deductions credited against earned income are capped at EUR 1 400 for single tax payers and EUR 2 800 for married couples, increased by EUR 400 per child up to two children.
Sweden	Mortgage interest is deductible against capital income. If capital income is not sufficient to allow a full deduction, then mortgage interest is deducted at a rate of 30 % against earned income up to a maximum deduction of SEK 100 000 (around EUR 10 000). Above this limit, the rate of tax reduction is 21 %.
United Kingdom	No tax relief granted on mortgage interest.

Source: Commission services, OECD.

it encourages multinationals to engage in a number of profit-shifting practices, involving changes to both the external and internal financial structure of the group. [64]

Empirical studies generally confirm that the asymmetric treatment of debt and equity affects firms' financial choices and influences profit-shifting practices. [65]

3.3.1. The debt bias in Member States

Graph 3.6 shows the debt bias of each Member State in 2014, measured as the difference between the post- and pre-tax costs of capital for new

[64] Please see the previous year's report for a more comprehensive discussion of the 'international' dimension of the debt bias with respect to profit shifting.

[65] For recent surveys of the effects of debt bias on the leverage of non-financial companies, see Feld and Heckemeyer (2013) and de Mooij (2011). For a recent review of the literature on the different profit-shifting channels, including the debt channel, see Riedel (2014).

Graph 3.6: **The percentage difference between the post- and pre-tax cost of capital for new equity- and debt-funded corporate investments, and the debt bias, 2014**
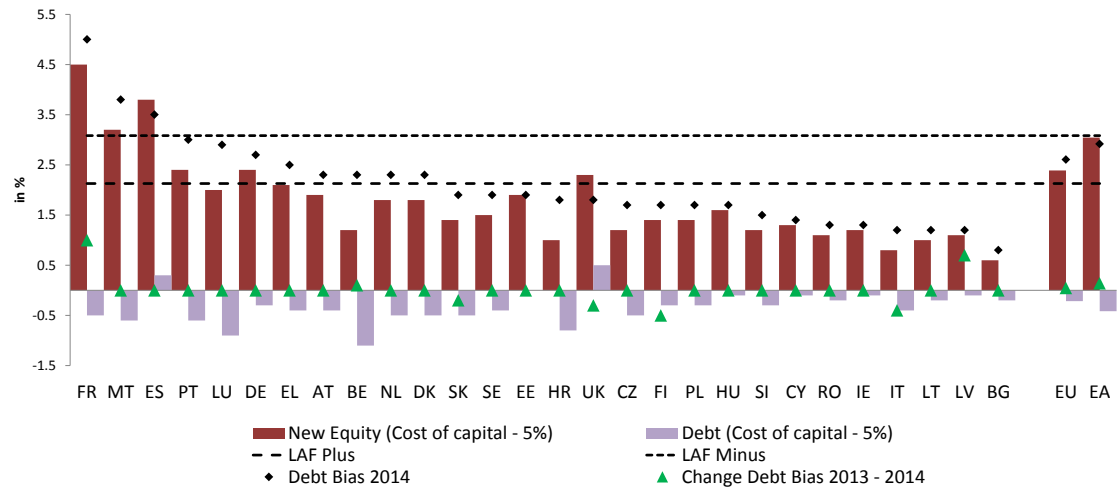
Source: ZEW (2014) and Commission services.

equity- and debt-funded investments. ([66]) ([67]) This indicator is mainly driven by the statutory tax rate (the 'tax rate effect'): a higher tax rate makes the favourable tax treatment of debt a more important point in its favour as it increases the value of the deduction. Member States with a high statutory tax rate are generally, therefore, identified as needing to address the debt bias in their tax systems, on the basis of this indicator. The indicator is also affected by tax provisions relating to the deductibility of interest expenses and/or the deductibility of the cost of equity, where applicable (the 'tax base effect'). The indicator takes into account, for example, provisions in place in Belgium and Italy allowing the notional cost of equity to be deducted, and provisions in place in France, Germany, Hungary, Italy and Spain limiting the deductibility of interest, including in relation to local business taxes. It is important to note that the indicator does not take account of thin capitalisation rules or rules making the deductibility of interest dependent on the company's profitability.

The countries where the difference between the post- and pre-tax costs of capital for new equity- and debt-funded investments is greatest, as calculated by the indicator as described above, are France, ([68]) Malta ([69]) and Spain ([70]).

Graph 3.6 also shows the change in the indicator between 2013 and 2014 for each Member State. The debt bias can be seen to have increased in France and in Latvia: in France, this was as a result of the increase, in 2014, of the temporary surcharge introduced in 2012; and in Latvia, as a result of the change in tax rules that meant that the cost of equity was no longer deductible. The debt

([66]) Considering retained earnings instead would not change the results significantly, with the exception of Estonia where retained earnings are not taxed. (Were this measure used, the debt bias for Estonia would disappear).

([67]) This indicator replaces that used in previous reports. The new indicator has been chosen because it avoids the spurious effect of depreciation rules on the debt bias, a problem when the debt bias is calculated as the difference between effective marginal tax rates for new equity- and debt-funded investments.

([68]) France applies a general limitation to the deductibility of interest targeted at large companies: only 75 % of interest is deductible if the total amount exceeds EUR 3 million. It should, however, be noted that taking account of these limits would reduce the debt bias indicator by 20 % (from 5 % to 3.9 %), but would not affect the ranking. Furthermore, in France, SMEs are subject to a reduced statutory tax rate of 15 % on the first EUR 38 120 of profit; the debt bias is therefore limited for such companies, but only if the profits do not exceed this level.

([69]) Malta is considered a borderline case as the tax treatment of dividends at the shareholder level should theoretically mean that companies consider debt and equity as 'equal' from a tax perspective. For large international companies, however, it is less clear whether this argument holds, as the extent to which shareholders' tax treatment is taken into account by companies when making financial choices is open to discussion.

([70]) As noted in Chapter 1, however, Spain has recently implemented a significant stepwise reduction of its statutory corporate tax rate, the effect of which is not yet reflected in the indicator.

bias fell, meanwhile in Finland, the UK, Slovakia and Italy: in the first three countries as a result of reductions in the statutory tax rate; and in Italy, due to the increase in the allowed deduction for the cost of equity.

3.3.2. Addressing the debt bias: the different policy options

As discussed in the 2014 Tax Reforms report, the corporate debt bias can be addressed either by limiting the deductibility of interest costs, or by extending the deductibility to include the return on equity. [71] A combination of the two approaches is also possible.

The deductibility of interest costs can be limited either by introducing fixed limits that apply to all interest payments, or by setting conditions under which these limits apply.

The first of these two options is very effective in correcting the incentive to take on excessive debt. It also reduces the incentive for companies to engage in debt-related profit shifting. A further advantage of systems that limit the deductibility of interest costs for all companies, irrespective of any other criteria is that they broaden the tax base, and thus allow the government to increase tax revenue without changing the tax rate. Introducing this type of tax policy may therefore be a preferable option for countries where fiscal consolidation is needed. It should, however, be noted that it is only by abolishing the deductibility of interest — in the way that the Comprehensive Business Income Tax (CBIT) does — that the tax treatment of debt and equity could be fully equalised. Moreover, tax systems that limit the deductibility of interest universally increase the cost of leveraging, with potentially damaging effects on investment. If the system is particularly extreme, there may even need to be a transition phase to allow specific measures to be applied to pre-existing debt. Extreme versions of these tax systems can also not be easily applied to the financial sector.

The second option mentioned above involves setting limits on the deductibility of interest that only apply under certain circumstances. The

criteria determining whether the deductibility of interest is subject to the limits may include the type of debt (internal or external debt) and the size, structure and profitability of the company or group. These types of system are often designed to prevent debt-related profit shifting, and are therefore relatively less effective in addressing the problem of 'excessive' external leverage. [72] Two examples of this type of tax system are thin-capitalisation rules – which restrict the deductibility of interest above a certain total or internal level of debt – and earning-stripping rules – which make the deductibility of interest costs dependent on the company's profitability, calculated as defined in the rules.

As can be seen in Table 3.6, thin-capitalisation rules are far more commonly used in the EU than earning-stripping rules, although several countries have introduced earnings-stripping rules in recent

Table 3.6: **Use of the Allowance for Corporate Equity, Comprehensive Business Income Tax, thin-capitalisation rules and earnings stripping rules in EU Member States, 2015**

Country	Some form of ACE/CBIT	Thin capitalization rules	Earnings-stripping rules
BE	x	x	
BG			x
CZ		x	
DK	(X)	x	x
DE			x
EE			
IE			
EL		x	
ES			x
FR	(X)	x	x
HR		x	
IT	x		x
CY			
LV	(X)	x	
LT		x	
LU			
HU		x	
MT			
NL			
AT			
PL		x	(X)
PT	(X)		x
RO		x	
SI		x	
SK		x	
FI			x
SE			
UK		x	

Source: Commission services.

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[71] See de Mooij and Devereux (2011) for a comparison of different solutions that can be used to deal with the debt bias within a general equilibrium framework.

[72] The importance of distinguishing conceptually between the effects of the asymmetric treatment of debt and equity on external financial choices and on tax planning — including when considering possible tax policies to address the two issues — was also highlighted during the IMF/European Commission conference *Corporate debt bias: economic insights and policy options* held in Brussels on 23-24 February 2015 (see de Mooij, 2015).

years. France and Latvia have both introduced aspects of the Comprehensive Business Income Tax (CBIT) into their tax systems.

The Allowance for Corporate Equity (ACE) is an alternative system for addressing the debt bias. It involves making a notional return to equity tax deductible, thus creating an equivalent, parallel measure to the deduction of interest costs. This system has many of the same attractive features as cash-flow taxation, namely that it concentrates taxation on above-normal returns or economic rents. Most notably, by taxing only the economic rent of the investment, it affects neither the choice between debt and equity nor the decision as to the scale of the investment. Switching from a traditional corporate tax system to a system based on the ACE could therefore boost investment.

This type of system does, however, also have some drawbacks. First, it does not address the distortionary effect that a traditional corporate tax system has on businesses' choice of location and use of profit-shifting strategies. These issues could only be addressed by introducing a much more radical change to the tax system, specifically by moving towards a destination-based cash-flow tax. ([73]) Second, the ACE narrows the tax base and thus reduces tax revenue. It is, however, possible to design the ACE in such a way that the deductibility of the notional return to equity depends only on new capital, rather than on the stock of existing capital (a system referred to as 'incremental ACE'). This would reduce revenue loss over the short and medium term. The new system introduced in Italy in 2011 is designed in this way. Lastly, the ACE may create an incentive for companies to engage in specific types of profit shifting, which may lead to additional losses of revenue. This problem can be addressed by introducing anti-avoidance provisions targeted at intra-group transactions. The tax rules introduced in Italy, as referred to above, also make for an interesting case study on this issue.

An important practical advantage of the ACE is that it has already been seen to have been successfully implemented in a number of countries. ([74]) The other EU countries having introduced ACE systems, in addition to Italy, are

Belgium and Portugal, the latter for SMEs only. ([75])

Given that the various options for addressing the debt bias discussed above all have some drawbacks, there may be some merit in combining limits on the deductibility of interest costs with a deduction for the notional return on equity, in order to minimise the adverse effects of each of these measures. ([76]) Combining different tax systems in this way would allow the debt bias to be reduced or even eliminated and the incentive to make use of profit shifting to be limited, while at the same time minimising the negative effect of CBIT-type measures on the cost of capital and of ACE-type measures on tax revenue. Further alternative systems include the Allowance for Corporate Capital (ACC), which allows deduction of a notional risk-free return to capital for both debt and equity financing, the Cost of Capital Allowance (COCA), and cash-flow taxation. ([77])

The Cost of Capital Allowance has been proposed by Kleinbard (2007, 2015). Under this system, a notional risk-free return to capital for both debt and equity financing is proposed. The COCA base is in addition adjusted for depreciation and revaluation of assets. It shares many properties of ACE, ACC and cash-flow taxes such as the exemption of the normal return on capital, removing distortions to investment decisions. Such system would also relieve discussions on the speed of depreciation. Indeed, the present value of the sum of depreciation and COCA deductions is a constant. An interesting element of the proposal is that investors (shareholders and creditors) would have to include in their profit their share in the COCA deductions done by the company in which they have invested. Under such system, capital is taxed in full and only once, avoiding double-taxation.

([75]) Please see last year's report for a comparison of the Belgian and Italian ACE systems (see also Zangari, 2014). The Italian ACE system did attract interest as a viable ACE reform during the IMF/European Commission conference *Corporate debt bias: economic insights and policy options* held in Brussels on 23-24 February 2015. The same is true of tax systems that combine aspects of the ACE and the CBIT. Findings and other material from the conference can be found at http://ec.europa.eu/taxation_customs/taxation/gen_info/tax_conferences/corporate_debt_bias/index_en.htm. .

([76]) See De Mooij and Devereux (2011).

([77]) The Estonian corporate tax system has many features of an S-based cash-flow tax.

([73]) See, for example, the discussion in Devereux (2012).

([74]) See Klemm (2007) and Massimi and Petroni (2012).

3.4. DEVELOPMENTS IN FINANCIAL SECTOR TAXATION

This section reviews the main developments relating to taxation of the financial sector and discusses recently produced empirical evidence of how debt bias in taxation of the financial sector affects financial stability. It also examines the potential cost to public finances of banking crises in Europe.

The financial crisis triggered a debate among both policymakers and academics about the possible roles of taxation in the financial sector. This has developed further in the light of the internationally agreed changes to regulatory and supervisory frameworks set out in Basel III, which are now being implemented.

In response to a request by the G20, the IMF in September 2010 issued a report exploring several possible policies for the taxation of the financial sector that could be used to reduce the probability of another financial crisis, and ensure that the financial sector made a fair and substantial contribution to the public cost of the last financial crisis and of possible future crises. The report recommended two, not-mutually-exclusive solutions: a contribution fee or bank levy linked to a resolution mechanism and potentially dependent on the contribution of each bank to systemic risk; and financial activities taxes (FATs) – taxes to be levied on the sum of the profit made by the financial sector and the remunerations it pays and paid to the general budget. Since then, many countries have introduced bank levies primarily targeting uninsured debt.

France, Germany and the UK are among the EU countries to have introduced bank levies. An important, related development was the adoption of the Bank Recovery and Resolution Directive (BRRD) in May 2014. This requires all Member States to apply a single rulebook for the resolution of banks as of 1 January 2015. In October 2014, the European Commission adopted a delegated act, setting out the details as to how to calculate the contributions to be made by banks to the national resolution funds. These contributions — calculated based on banks' liabilities and risk — are similar to the bank levies mentioned above. This means, therefore, that all Member State will effectively be applying a bank levy. One of the

other main developments seen at EU level during the period following the outbreak of the financial crisis was the emergence of the idea of a financial transaction tax (FTT). A proposal was submitted in September 2011 for a directive implementing a harmonised FTT in Europe. Difficulties encountered in achieving unanimity on this file within a reasonable amount of time led to a further proposal being submitted in February 2013, this time implementing enhanced cooperation. This proposal mirrors the scope and objectives of the original FTT proposal, while also strengthening the anti-relocation and anti-abuse rules. In the meantime, a number of countries, including France and Italy, have introduced FTT-type taxes independently.

In academia, a new field of research has emerged, bringing together public finance and banking theory. Taxation of the financial sector is being re-examined, and often being considered as a tool to be used alongside regulation, rather than as an alternative to it. Moreover, several proposals for specific tax reforms for the financial sector have been put forward and assessed. These proposals can be classified in two broad categories: revenue-raising and corrective (or Pigouvian) reforms.

Revenue-raising tax reforms — while potentially also having some corrective effect — are primarily designed to ensure that the financial sector bears the cost of the public sector intervention that may be needed in the case of a financial crisis. The taxes examined in the 2010 IMF report — bank levies, FATs, FTT — belong primarily to this category of tax reforms.

Pigouvian reforms aim instead, explicitly and directly, to reduce systemic risk by changing behaviours exhibited by banks that are liable to increase the probability of a banking or financial crisis. Any thorough assessment of these reforms must consider the link between taxation and regulation. The corrective tax proposals suggested to date include default rate taxes, determined on the basis of a bank's default risk (see, for example, Acharya, 2010; Hart and Zingales, 2009); and liquidity taxes, designed to incentivise banks to rely less on short-term funding and liabilities other than deposits and equity (see Perotti and Suarez, 2009; Shin, 2010). Proposals for reforms to address the corporate tax debt bias in the financial sector can be assessed on the same basis (see

below). Overall, the new literature on this issue suggests that tax reforms designed to correct certain behaviour may have some limitations in terms of how far they can go in addressing systemic risk in the financial sector. From a practical point of view, it is difficult to measure the contribution to systemic risk made by each bank, and it would therefore be difficult to design the 'optimal' tax. More generally, the 'polluters should pay' principle cannot be fully extended to the financial sector, for at least two reasons: first, after a financial crisis it would be impossible to collect taxes from the businesses and individuals that have 'polluted' banks' finances, as they will have been declared bankrupt; second, taxes introduced to correct externalities may end up increasing banks' debt ratios by shrinking their cash-flow, before they have had any positive effect in changing banks' 'polluting' behaviour. These taxes could therefore exacerbate the systemic risk in the banking system. Given these problems, capital requirements remain crucial, and any corrective role of taxation has to be assessed in the light of the existing regulation, rather than as an alternative solution.

The debt bias in the financial sector: the effects on financial stability and on the cost of banking crises in the EU

One area that has attracted particular attention in recent research is the link between taxation and leverage in the financial sector, and its possible consequences. As demonstrated on a dramatic scale by the recent financial crisis, a banking crisis entails high social costs. Excessive leverage in the banking sector is typically the main cause of a banking crisis, but it may also act as a catalyst exacerbating the risk of contagion. The preferential tax treatment given to debt under traditional corporate tax systems may therefore be particularly dangerous in the financial sector. This issue has not, however, traditionally been considered important, due to the existence of capital requirements.

Empirical studies have recently provided insight into the factors other than regulation that play a role in determining banks' financial structures. Surprisingly, banks' financial choices appear to be affected by the same variables as determine non-financial companies' decisions, such as size, collateral and profitability. Corporate taxation also seems to play a significant role. The first empirical study to investigate this issue is Keen and De Mooij (2012). The authors provide robust econometric evidence of the existence of a 'tax effect', i.e. that taxation does influence banks' financial structures. Their findings are based on a large cross-country panel studied over the period 2001-2009. The tax effects they identify are, in some specifications, strikingly similar to those estimated for non-financial firms, especially for banks whose level of equity capital is above the regulatory minimum. The existence of a minimum regulatory requirement is found to reduce the effect of taxation, as would intuitively be assumed to be the case. They also find the tax effect to be much smaller for large banks and banks close to the minimum requirements. Empirical evidence suggesting similar patterns is also provided by Hemmelgarn and Teichman (2014), who focus on the short-run effects of corporate tax reform, and by Heckemeyer and de Mooij (2013), who examine the differences between non-financial and financial firms.

The ultimate effects of the excessive tax-related leverage in the banking sector must therefore be assessed in the light of the above empirical evidence. Two specific aspects have been investigated to date: (i) the relationship between the debt bias in the banking sector and financial stability; and (ii) the effect of debt bias in the financial sector on the cost to public finances of a banking crisis.

If the debt bias created by corporate tax systems increases the leveraging of the financial sector — as seems to be suggested by the recent econometric literature — and greater leveraging in the financial sector increases the likelihood of a financial crisis, then it is possible to establish a link between the asymmetric tax treatment of debt and equity and the probability of a banking crisis. On the basis of this conceptual framework, De Mooij et al. (2014) find the debt bias, in most cases, to have statistically significant effects on the capital structure of banks, and a correspondingly sizeable effect on the probability of banking crises. One important implication of these results is that the welfare gains that would result from a reduction of the debt bias in the corporate sector could be far greater than previously thought, as earlier calculations did not consider the additional gains arising from the reduced probability of a financial

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Box 3.1: **How does taxation affect investment?**

The EU has been suffering from low levels of investment since the outbreak of the global economic and financial crisis. The new Commission made boosting investment in the EU one of its top priorities.

There are many factors that affect the level of investment, including financial constraints, economic prospects, regulation and taxation. In general, a transparent, simple and stable tax system is an important factor in encouraging investment. Reducing tax compliance costs and administrative costs, for example, creates a more investment-friendly business environment, as discussed in Chapter 4.

More specifically, the level of taxation has a significant influence on investment. Numerous studies have been published on the link between the level of corporate taxation and investment. De Mooij and Ederveen (2003, 2006) find that decreasing the effective marginal corporate tax rate (EMTR) by one percentage point increases foreign direct investment by 3 %. Studies on the effect of the cost of capital on domestic investment also find high corporate taxes to have statistically significant negative effects on investment (Harhoff and Ramb, 2001; Cummins and Hassett, 1992). Whilst the effective marginal tax rate affects the overall level of investment, it is the effective average tax rate (EATR) that influences firms' decisions as to location (Devereux and Griffith, 1999).

Taxation affects investment choices because it drives a wedge between the cost of capital faced by companies and the net return on a project required by investors. Whereas the corporate income tax rate is very visible in this context, and varies widely between EU Member States, the tax wedge depends on both the tax rate at which profits are taxed and on other tax provisions determining the tax base and the overall level of tax paid. (1) Member States use a variety of tax exceptions and exemptions, with a wide range of objectives, including as a way of incentivising investment. Tax incentives for R&D expenses, for example, can help stimulate investment in R&D. R&D investment is essential for economic progress and improves social welfare. At the same time, however, the returns are highly uncertain and knowledge externalities can make it difficult for businesses to capture the return on their investment. Companies' expenditure on R&D is often therefore below the socially desirable level. The imperfect functioning of the market could be compensated for by means of well targeted tax incentives and/or direct subsidies. The design of R&D tax incentives is discussed in more detail in Section 3.6.

As is the case for any type of tax incentive, it is important to ensure that tax incentives for investment target productive investments and that they do not create distortions, favouring certain sectors or companies over others. They may also complicate the tax system and increase the risk of tax evasion and avoidance, and cannot be used a substitute for necessary structural reforms, such as reforms to reduce the administrative burden or facilitate access to finance.

The effective marginal tax rate and how it can be used to encourage investment

It is important to consider which measure of corporate taxation influences investment. The EMTR measures the effective tax rate on the last euro invested in a project that just breaks even, i.e. on the 'marginal' investment. It is thus this measure that influences whether a company will invest less (because it is not profitable to invest at this level) or more (because additional profit can be made).

Designing corporate tax systems in such a way that the EMTR is as low as possible would encourage investment. A first obvious way of achieving a low EMTR is to decrease the statutory corporate tax rate itself. Economists have been critical of current systems of corporate income taxation as corporate taxes are

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(1) In standard corporate income tax systems, assets with an estimated useful life longer than the taxable year benefit from depreciation allowances. In this case, fiscal depreciation allows a proportion of the investment costs to be deducted from revenue. In general, depreciation does influence investment decisions. In particular, the more closely fiscal depreciation approximates true economic depreciation, the lower the distortive effect on the type of investment chosen. For a discussion on corporate taxes and capital accumulation, see European Commission (2013) and Fatica (2015).

> *Box (continued)*
>
> very distortive and affect not only investment but also, e.g. business location, profit shifting, and the choice of company structure.
>
> There are also other ways of decreasing the EMTR. One option is to introduce an allowance for corporate equity (ACE). An ACE system allows companies to deduct a notional level of interest in respect of their capital. Italy and Belgium currently operate this type of system. Another way to reduce the EMTR would be to change the definition of corporate profit, which is currently based on arbitrary accounting techniques, and to switch to a cash-flow tax system. Under this type of system, all revenue would be taxed immediately and all production expenses deducted immediately, thus ensuring an effective marginal tax rate of zero. Both ACE and cash-flow tax systems address the discrepancy in the tax treatment of debt and equity (as discussed in Section 3.3) and could thus reduce the overdependence on debt financing, which, beyond a certain level, acts as a drag on growth, and promote investment by ensuring a lower cost of capital.

crisis. De Mooij et al. (2014) link the tax incentives encouraging indebtedness and the likelihood of financial crises. Their results suggest that eliminating the debt bias could lead to potential GDP gains of between 0.5 and 11.9 %

One of the ways in which a banking crisis creates welfare costs is through the public finance used to provide capital support to the financial sector. A recent study by Langedijk et al. (2014) has given some insight into the relationship between this public cost and the asymmetric tax treatment of debt and equity. It attempts to quantify the gains for public finances offered by reforms reducing the corporate debt bias. More precisely, the public cost is defined as the resources needed to cover bank losses and recapitalize the banks up to the minimum regulatory requirement. The study uses a balance sheet-based model of the cost of systemic crises (the Systemic model of banking originated losses or SYMBOL) that allows simulations to be generated showing the distribution of losses across banks that would occur in a banking crisis, assuming a certain degree of correlation between the losses made by different banks. The overall loss is calculated by aggregating individual banks losses. SYMBOL has also been used to assess the effect of regulatory reforms, bank levies and FATs in the financial sector. The empirical analysis considers the largest banks of each of six EU countries (Germany, Spain, France, the Netherlands, Italy and the UK), which together represented 75 % of total EU banking assets in 2012. The banking crisis simulated for the study is of the same order of magnitude as the 2008-2012 banking crisis. A crucial input for modelling the reduction of public finance costs that would result from a lessening of the debt bias is the sensitivity

of leverage to the corporate tax rate. The study considers parameters for this variable ranging from 0.05 to 0.20, implying that for a 10-percentage-points reduction of the CIT rate, the leverage would decrease by between 0.5 percentage points to 2.0 percentage points.

The simulations show the substantial reduction in the losses resulting from a banking crisis that could be achieved by eliminating the corporate debt bias. The simulations of the effects of the complete elimination of debt bias are particularly interesting from a policy point of view. As seen in Section 3.3.2, the debt bias can be entirely eliminated either by no longer allowing the deductibility of interest or by allowing the deductibility of the return on equity. The authors find that the gains are very large. Even when assuming a long-run parameter of 0.05 for the baseline scenario, the public costs that would be created by a banking crisis are reduced by between 25 % of the initial loss for Spain, to 55 % for France. For the full range of elasticities (0.05-0.20), potential public finance gains in a financial crisis of the magnitude of the 2008-2012 crisis range across the countries between 0.5 and 11.2% GDP.

As mentioned above, recent econometric evidence has shown that the leveraging of large banks may be significantly less sensitive to corporate taxation, and some simulations therefore take into account this heterogeneity among banks. The overall results, however, remain the same: the reduction in the cost to public finances caused by a banking crisis remains substantial, irrespective of how the effect of CIT on leverage is modelled across banks of different sizes. In addition, even if the long-term effect of CIT on leverage is assumed to be almost

negligible for banks whose level of capital is close to the regulatory minimum, the simulations still show that the overall cost to public finances of banking crises could be substantially reduced even assuming low long-run effects of CIT on the leverage for capital-tight banks.

Other interesting extensions of the simulations consider the possibility of the corporate tax system causing changes to the asset side of the balance sheet. Given the interaction between taxation and regulation, it is by no means implausible that CIT could affect the asset side of the balance sheet, thus changing the risk level of the asset portfolio. In particular, to the extent that banks target an internal risk-weighted capital ratio, they may adjust the risk-weighted assets (RWA) density (RWA/TA) of their asset portfolio in response to any increase in capital. If banks act in this way, the reduction of the potential losses to the public sector in a banking crisis achieved by reducing or eliminating the tax bias would be smaller. While the benefits of eliminating the debt bias in CIT are then less under these assumptions than in the previous simulations, the losses incurred by the public sector as a result of banking crises would still be substantially reduced under all plausible scenarios.

To conclude, recent empirical research appears to confirm that the corporate debt bias in the financial sector is an important issue to address, as it may increase the leverage in the financial sector, make banks more fragile and increase the risk and the costs of banking crises. Ending the preferential tax treatment of debt could therefore complement the new regulatory framework in ensuring the stability of the financial sector.

3.5. BUDGETARY AND DISTRIBUTIONAL EFFECTS OF TAX EXPENDITURES RELATING TO PENSIONS AND HOUSING

EU Member States make extensive use of tax expenditures, [78] in pursuing a wide variety of aims, including creating employment, promoting innovation, education, entrepreneurship and homeownership and achieving income redistribution. Although tax expenditures may be motivated by economic or social objectives, they

are not necessarily the most cost-efficient instrument and may, in some cases, lead to severe economic distortions. Such preferential treatment could instead be provided through government spending, or granted through direct regulation.

The 2014 Tax Reforms report reviewed some of the most commonly used tax expenditures, affecting areas including employment, pensions, education, housing and research and development. It highlighted potential risks and challenges that Member States may face in connection to tax expenditures, and which should be considered when assessing or designing policies. [79] One important aspect to take into account is the budgetary cost of a particular expenditure, which can be significant.

The effect of tax expenditures on tax revenue and on social equity is not, however, always clear, and their effectiveness and efficiency as a policy instrument needs to be carefully evaluated, especially in the present context of constrained public finances. In the same way as any other preferential scheme, tax expenditures introduce distortions into the tax system, making it less transparent and more prone to rent-seeking behaviour, and can sometimes have regressive effects. The identification of tax expenditures remains a highly controversial and arguably difficult topic, however, (see OECD, 2010 and European Commission, 2014b) and there is almost no comparable data available for Member States. [80] Box 3.2 provides an overview of Member States' reporting practices on tax expenditures, updating the analysis included in the 2013 Tax Reforms report.

As a first step to improving the analysis on this issue, this section provides an analysis of the effects of tax expenditures related to pensions and housing included in personal income tax codes in a selected group of EU Member States to capture the diversity of tax systems across Member States. These specific tax expenditures are especially relevant when considering the redistributive effects of tax breaks and could have a potentially

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[78] Tax expenditures are reductions in government revenue created by preferential tax treatment of specific groups of taxpayers or specific activities.

[79] For a more detailed discussion of tax expenditures in direct taxation see also Kalyva et al. (2014).
[80] OECD (2010) provides information for selected OECD countries, but the benchmarks used differ between countries.

Box 3.2: **Reporting on tax expenditures in EU Member States**

The European Commission and other international organisations ([1]) regularly emphasise the need to report on and review tax expenditures as part of national budget management. Member State governments should describe clearly the use of tax expenditures in their tax systems, and provide an explanation of the main policies in place. This should include defining the benchmark situation (from which the tax expenditure is a deviation), the estimated cost of the measure in lost revenue and its coverage. In addition to reporting tax expenditures in the budget, governments should also carry out regular evaluations of the tax expenditures they apply. The evaluations may be conducted by independent bodies or commissions, if this is thought more appropriate, and should assess the efficiency and cost effectiveness of current tax expenditures. Member States may choose to carry out more extensive evaluations on a less frequent basis (i.e. less than once a year).

Under the EU Directive on requirements for budgetary frameworks (2011/85/EU), Member States have been required since 1 January 2014 to publish detailed information on the effect of tax expenditures on revenue (Article 14(2)). The Directive does not specify a standardised procedure for evaluating tax expenditures.

The analysis presented here provides an overview of the current reporting on tax expenditures in EU Member States, updating the information given in the 2013 report. Table 1 shows in which Member States reporting on tax expenditures is required under national law, and also gives further detail on the coverage of national reporting: the level(s) of government covered, the time period reported on and the categorisation of tax expenditures used. The information provided shows that 19 Member States now regularly report on tax expenditures, two more than in 2013. Reporting practices do, however, vary widely across countries, and the reports produced therefore also vary, in terms of their presentation, depth and coverage.

In 2014, a national legal requirement to report on tax expenditures was in place in 14 of the 19 Member States that currently report regularly, a significant increase from the 9 Member States that had such requirements in 2013. Different countries' reporting on tax expenditures varies in terms of the levels of government covered. While tax expenditures administered by central government are always covered, those related to local taxes and social security funds appear to be generally less well documented. In the case of local and regional government, this is partly due to the heterogeneity of the taxes applied. Member States' reporting practices do, however, share some common features:

- Reporting is typically carried out on an annual basis, by the Ministry of Finance, the Ministry for the Economy or the tax authorities, or by services reporting to one of these.

- Some Member States publish tax expenditure figures together with other budget documents, as specified in national law, while others publish them as individual reports.

- The reports generally use the 'revenue forgone' method for calculating tax expenditures, but there are significant differences in methodology, for example, whether revenue is estimated on a cash or accruals basis. The time period covered by the reports and the categorisation ([2]) of tax expenditures used varies greatly. Similarly, some countries' reporting is backward-looking and others' forward-looking.

- Tax expenditures are most often identified in reference to their tax category or tax base (e.g. VAT, personal income tax and corporate income tax), but this type of categorisation is also routinely combined

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([1]) See, e.g., IMF (2011), OECD (2010) and European Commission (2014a, b). For a more detailed discussion, see the 2014 Directorate-General for Economic and Financial Affairs paper *The use of tax expenditures in times of fiscal consolidation* (see Bauger, 2014).

([2]) ESA 2010 introduces explicit new rules on how tax credits are to be recorded in national accounts. This is a significant change from the method previously used under ESA 95. Tax credits that constitute non-contingent government liabilities are now treated as expenditure instead of as a reduction in tax revenue, and are recorded at the moment when a government recognises the obligation to pay. The new system of recording on a gross (rather than a net) basis leads to an increase in total revenue and in total expenditure, compared to the approach used in the past.

(Continued on the next page)

Box (continued)

with other categorisations. Expenditures are often grouped according to the type of tax measure (e.g. allowances, rate relief or exemptions), the purpose (e.g. supporting low-income earners or reducing the tax on certain types of housing) or the sector (e.g. households, businesses or agriculture).

- Some countries also link tax expenditures to the expenditure side of the budget.

- Some Member States, where reports on tax expenditures are produced on an annual basis and accompany the budget, send their reports to the national Parliament for examination and discussion (e.g. Belgium, Denmark, Germany, Greece, Spain, France, Austria, Portugal and Finland).

Some countries have recently produced one-off tax expenditure reviews or inventories (see Table A3.15 in Annex 3 for references). These reports are generally more extensive, produced in some cases by independent experts (e.g. in Denmark, Ireland and Finland) and may include reviews of or opinions on specific tax expenditure items.

National reporting on tax expenditures and characteristics of regular reporting practices

Country	Legal requirement	National reporting		Levels of government covered				Time coverage	Categorization
		Regular (annual*)	non-regular (latest)	Central government	State government	Local government	Social security funds		
BE	X	X		X				t-5, t-4, t-3, t-2, t-1	tax base, purpose
BG	X	X	2012						
CZ		X							
DK	X	X	2009	X	n.a.	X		various years	tax base
DE	X	X	2009	X	X	X		t-2, t-1, t, t+1	tax base, type of tax measure, purpose, sector
EE		X		X	n.a.			t, t+1	tax base, purpose
IE			2010						
EL	X	X		X	n.a.	n.a		t-2	tax base, purpose, sector
ES	X	X		X	X			t+1	tax base, type of tax measure, expenditure category
FR	X	X	2011	X	n.a.		X	t-1, t, t+1	tax base, expenditure category
IT	X	X	2010/11	X	n.a.			t, t+1, t+2	type of tax measure, purpose, sector
LU	X			X	n.a.			t+1	type of tax measure
NL	X	X		X	n.a.			t-2, t-1, t, t+1, t+2, t+3, t+4	tax base, sector, law, policy area
AT	X	X		X	X			t-3, t-2, t-1	tax base, sector
PT	X	X		X	n.a.			t-2, t-1, t, t+1	tax base, purpose
SK	X	X		X	n.a.	X	X	t-2, t-1, t, t+1, t+2, t+3	tax base
FI		X	2010	X	n.a.	X		t-1, t, t+1	tax base, purpose
LV		X		X	n.a.			t-2, t-1	tax base
HU	X	X		X	n.a.			t+1	tax base
PL		X		X	n.a.	X		t-1	tax base, purpose
SE	X	X		X	n.a.	X	X	t-1, t, t+1, t+2	tax base, type of tax measure, purpose/sector (expenditure category or technical tax expenditure)
UK		X		X	n.a.	X		t-1, t	tax base

Note: 'State government' refers to the Länder (federal states) in Austria and Germany, the gewesten en gemeenschappen/régions et communautés (regions and communities) in Belgium and the comunidades autonomas (autonomous communities) in Spain. In the column for time coverage, 't' refers to the year of publication. Regular reporting is carried out twice-yearly in Germany. In Denmark, only some tax expenditures are reported on annually. Latvia published a report on tax relief in personal income tax in 2011. Belgium's reporting covers taxes collected by the national government. In Spain, the autonomous communities publish their own tax expenditure reports. In France, reporting on tax expenditure in social security funds refers to the provisions introduced under Annex 5 of the law on financing social security (Projet de loi de financement de la Sécurité sociale — Annexe 5: Présentation des mesures d'exonérations de cotisations et contributions et de leurs compensations). The data for 'time coverage' given for Finland refer to the figures published for individual tax expenditure items by the Ministry of Finance in the budget proposal. The VAT report shows the effect of all tax expenditures for t-2, t-1, t and t+1. In the Netherlands, government ministries also have to report on tax expenditures that fall within their policy area individually in their budget reports.
Source: Commission services based on national sources. See Table A2.15 in Annex 2 for references to the national sources.

Overall, information on the tax expenditures in force or planned in Member States is still often incomplete, and the data provided are not fully comparable across countries and over time. This makes it more difficult to identify possible improvements to fiscal and tax arrangements, and can thus make fiscal policymaking less effective and efficient. This can, in turn, affect the strength of countries' national budgetary frameworks as — more or less hidden — losses of revenue may weaken the positive effect to be gained from new measures increasing transparency on the expenditure side. (The changes that recently entered into force under the current European System of Accounts (ESA 2010) relating to the recording of certain tax credits in national accounts also affect some tax expenditure classifications and are expected to improve budgetary transparency and strengthen budgetary discipline.)

distortive effect on the decisions regarding labour force participation and homeownership. The challenges created by ageing populations for the public pay-as-you-go pension systems have led several countries to create tax incentives for private pension savings. Pensions also play a

critical role in the inter-generational redistribution of income and in redistribution between income-levels. In some countries, pension income has also been essential for smoothing fluctuations in households' income, particularly during the recent crisis (Figari et al., 2015). As discussed in Section 3.2, however, tax expenditures related to housing are often considered to favour homeownership (over renting), in particular through mortgage interest tax relief, while property taxes are not necessarily designed to reflect housing wealth and the consumption of housing services (Figari et al., 2015). Both pensions- and housing-related tax expenditures therefore merit further discussion, in relation to their effects both on government finances and on equity. The effects of both types of tax expenditures on tax liabilities and, consequently, revenue are gauged by comparing the benchmark scenario, of no tax expenditures, with the actual tax regimes currently in place in selected Member States. ([81]) ([82]) Importantly, in some cases, moving from the actual tax provisions to the benchmark case entails the removal of negative tax expenditures.

Graph 3.7 shows the budgetary effect of pensions-related (left-hand side) and housing-related (right-hand side) tax expenditures for several Member States.

Graph 3.8 provides an overview of the distributional effect (by income decile) of pensions-related (top graphs) and housing-related (bottom graphs) tax expenditures in France, Spain, Belgium and Italy. ([83])

3.5.1. Tax expenditures relating to pensions

In practice, Member States apply different tax treatment to pension contributions and pension revenues. Most systems tax pensions savings following the 'EET approach' (pensions contributions are exempt from tax, investment income and capital gains made by the pension provider are exempt from tax, and benefits, i.e. withdrawals from the pension, are taxed). This approach, in the same way as the TEE (Taxed, Exempt, Exempt, i.e. the contributions, as income, are taxed, but the return on pension savings and pension payments are both exempt), is equivalent to a consumption tax (see European Commission, 2014b, Box 5.1) and the deductibility of contributions is justified in order to avoid double taxation. ([84]) There are, however, several exceptions to this, and the taxation of state pensions in the EU is often affected by country-specific features of Member States' tax systems. In particular, contributions to pension schemes are sometimes taxed (fully or partially) and pension payments are sometimes not taxed (or only partially taxed, as a result of extra allowances and credits). For the analysis presented here, whenever a system differed from the EET in some way, it was made comparable to the EET system in order to obtain a common benchmark scenario across countries. ([85]) The assumed changes needed to

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([81]) The results shown for this selection of countries do not aim to reflect the specific features of their tax expenditures. The results are taken from a research project being conducted by the European Commission Joint Research Centre and the University of Insubria. See in particular Barrios et al. (2015). Additional countries and categories of tax expenditures will be covered by this project.

([82]) The benchmark tax-expenditures-free scenario is compared with the actual – baseline – tax regimes in place in the Member States. The results presented here are from microsimulations based on the national tax and benefits codes in force in June 2013. They do not take into account any reforms introduced since that date or behavioural effects, and relate only to personal income taxes (see Barrios et al., 2015 for a recent analysis of tax expenditure based on the EUROMOD model and incorporating behavioural effects). In order to quantify the effect of tax expenditures on governments' tax revenue and on households' disposable income, a benchmark scenario is created for each Member State where tax expenditures – in the form of allowances, deductions, exemptions, reliefs and credits – are removed from the national tax codes. This may imply the exclusion of the negative tax expenditures for some Member States.

([83]) The measure of income used is the equivalised household disposable income, which is calculated, in accordance with the Eurostat definition, as the after-tax income of a household available for spending or saving, divided by the number of household members, weighted according to the following factors: 1.0 to the first adult; 0.5 to the second and each subsequent person aged 14 and over; 0.3 to each child aged under 14. Deciles are based on equivalised household disposable income under the existing tax system. The results shown for this selection of countries do aim to illustrate the contrasting effects across the income distribution after removing the tax expenditures relating to pensions and housing.

([84]) The fiscal treatment of accrued or realised investment income, which is mainly relevant for funded, private pension systems, is not considered.

([85]) In the benchmark scenario, the contributions for both private and public pensions are deducted from the taxable base and pension income is included in that base. Any other tax allowances or tax credits are removed in creating the benchmark scenario. In the case of Italy, where a general tax allowance does not exist, removing the tax credit designed to apply to pension income makes this income fully subject to tax, without any tax relief. Table

Graph 3.7:   **Budgetary impact of tax expenditures (percentage change in tax revenues in baseline scenario)**

Pensions-related tax expenditures

Housing-related tax expenditures
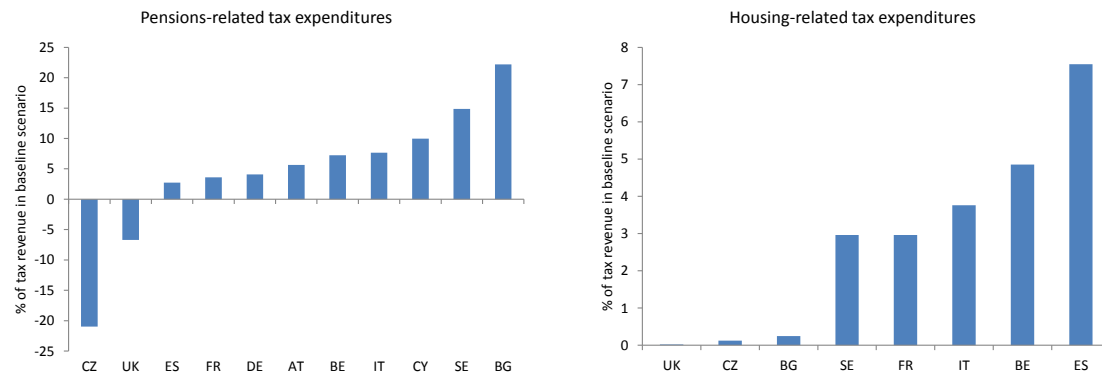
Notes: Results for all countries are from microsimulations performed based on the national tax and benefits codes in force in June 2013.
Source: European Commission Joint Research Centre, based on the EUROMOD model.

replicate the benchmark scenario may, however, imply redistribution between different groups of taxpayers, namely workers paying pension contributions and pensioners receiving pensions. Lifecycle implications are not considered in this analysis.

For the great majority of the countries selected, removing tax expenditures related to pension income would lead to an increase in tax revenue, with the exception of the Czech Republic and the UK, where tax revenue would fall. The estimated fall in tax revenue from personal income taxation is above 20 % in the Czech Republic, in contrast to the increases in tax revenue of around 22 % and 15 % that would be expected in Bulgaria and Sweden, respectively. Removing tax expenditures would reduce tax revenue in the Czech Republic and the UK as a result of negative tax expenditures arising due to pensions contributions being partially deducted from taxable income in the actual tax system and becoming fully deducted after the removal of the tax expenditures in the benchmark scenario (see also Table A2.16 in Annex 2). The removal of tax expenditures relating to pensions is equivalent to a lower taxable income and a lower tax liability.

The upper part of Graph 3.8 provides an overview of the distributional effect of removing pensions-

related tax expenditures on households in different parts of the income distribution, in France and Spain. Three types of households are defined here, based on their specific tax expenditure, namely: working age, pensioners and multigenerational households, the latter being assumed to be made up of working age people and pensioners. There are a number of interesting features to note.

In France, the effect of removing pensions-related tax expenditures on disposable income is strongest for pensioners, followed by multigenerational households. Removing tax expenditures has a more marked effect on the disposable income of pensioners in the second- and third-lowest deciles of the distribution, compared with the rest of the population. This reflects the strongly redistributive nature of pensions-related tax expenditures. The redistributive effect of removing pensions-related tax expenditures is, however, small in magnitude, reducing disposable income by a little less than 3 % in the worst case and by less than 1 % for an average household. In Spain, by contrast, the removal of pensions-related tax expenditures would affect the disposable income of pensioners in the middle and top deciles of the distribution most severely. Conversely, however, removing these tax expenditures leads to a slight increase in the disposable income of working age households across the whole distribution. These results suggest that pensions-related tax expenditures tend to be regressive in two ways: across pensioners, by favouring higher-income pensioners, and across generations, by favouring pensioners over the working age population across the whole income

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A2.16 provides an overview of the tax expenditures related to pension income included in EUROMOD, and the way in which the benchmark scenario has been created, according to the above-mentioned assumptions.

Graph 3.8: **Distributional effect of tax expenditures in selected EU Member States (for different types of households by income decile)**
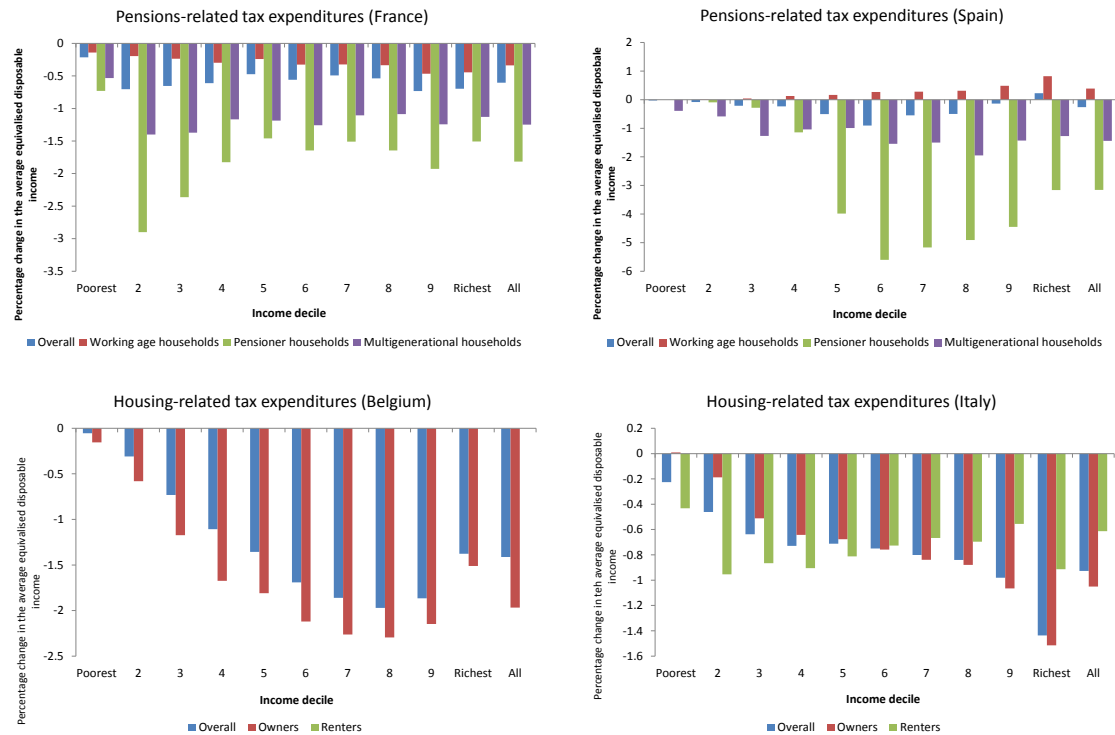
Source: European Commission Joint Research Centre, based on the EUROMOD model.

distribution. This result may be attributed to the fact that, in the baseline scenario (i.e. under the system actually in place in Spain), private pension contributions, mostly made by individuals of working age, are not deducted from the tax base (see Table A2.16 in Annex 2). The removal of this negative tax expenditure in the benchmark scenario (i.e. making them deductible, in line with an EET tax system) is therefore equivalent to a reduction in taxable income, and, other things being equal, a decrease in tax liabilities.

3.5.2. Tax expenditures relating to housing

Tax expenditures in the area of housing can take the form of preferential treatment given, within the personal income tax schedule, to interest paid on a mortgage, income from renting immovable property, rent paid for immovable property, and expenses related to immovable property. ([86]) Table

A2.17 in Annex 2 provides an overview of the tax provisions in place in each Member State, together with a description of the methodology used to construct the benchmark scenario. Households are classified as 'owners' and 'renters' for the purpose of analysing housing-related tax expenditures. Details on the tax treatment of mortgage interest payments of homeowners in the EU Member States are reported in Table 3.5 in Section 3.2.

For all the Member States considered in this analysis, removing tax expenditures related to housing from the personal income tax schedule increases tax revenue — although to a lesser extent than was the case for pensions-related tax expenditures. In Germany (where there are no tax expenditures related to housing), the UK, the Czech Republic and Bulgaria, the budgetary effect is negligible, however. In countries such as Belgium and Spain, meanwhile, the effect of removing housing-related tax expenditures on tax

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([86]) For reasons of data availability (e.g. the use of net imputed rent), and due to considerations relating to the tax system to be considered as a benchmark (European Commission, 2014b; Verbist et al., 2015), in this analysis we do not

consider the fiscal treatment of the value (return or imputed rent) of owner-occupied immovable property.

revenue is found to be significant. In Belgium, housing-related tax expenditures reduce revenue from personal income taxation by around 5 %. In Spain, the estimated budgetary cost is around 7.5 % of personal income taxation, based on the assumption that all homeowners benefit from the tax relief on mortgage interest. The calculations do not yet reflect the wide-ranging measures that have been introduced in Spain in recent years to reduce tax expenditures in this area. In particular, mortgage interest deductibility has been abolished for new mortgages taken out on houses purchased from 1 January 2013. These reforms will lead to a significant reduction in the cost of tax expenditures over time. [87]

The bottom part of Graph 3.8 shows the effect of housing-related tax expenditures in two selected countries – Belgium and Italy.

In Belgium, the reduction in owners' disposable income is evidence of the distributional effect of these tax expenditures. It should be noted that those renting housing do not benefit from any tax relief in Belgium, and the benchmark scenario therefore only shows the effect of removing the tax relief on mortgage interest for owners. As a result, overall household disposable income (i.e. for renters and owners combined) is reduced across the whole income distribution. The deciles most affected are, however, in the middle and at the top of the distribution, with the seventh and eight deciles seeing the largest fall in disposable income, of around 2.3 %, reflecting the fact that homeowners are usually in the middle- and high-income categories.

In Italy, as can be seen from the graph, removing housing-related tax expenditures would affect the top income deciles, most notably the richest 10 % of the population, who benefit the most from the current tax provisions on housing. This is particularly true for homeowners: those in the top income decile would see their disposable income fall by around 1.5 %, were housing-related tax expenditures to be removed, while homeowners in the first three deciles of the distribution would lose less than 0.5 % of their disposable income. Renters in the lowest income deciles would, however, be more severely affected, as tax expenditures are proportionally larger for renters than owners in this part of the distribution.

Overall, these results suggest that tax expenditures can have a significant effect on tax revenue and on income distribution. This is particularly true of pensions-related tax expenditures. The redistributive effect of tax expenditures can, however, be either progressive or regressive, with examples of both cases found in different EU countries. It is, therefore, essential to consider each country's particular system of tax expenditures individually, on a case-by-case basis.

3.6. R&D TAX INCENTIVES

The Europe 2020 strategy and the Annual Growth Surveys both emphasise the importance of investment in research and innovation for 'kick-starting' growth (European Commission, 2014d). [88] Investment in research and development (R&D) is essential for economic progress and improves social welfare. Returns on this type of investment are, however, highly uncertain and knowledge externalities make it difficult for businesses to capture the full return on their investment. The amount invested by companies in R&D is often therefore below the socially desirable level. The imperfect functioning of the market could be compensated for by governments offering well targeted tax incentives and/or direct subsidies. Opinions differ as to which approach is more effective and most countries adopt a combination of both instruments. This may be a reflection of developments in innovation policy. Current thinking advocates combining the traditional approach of designing policies to correct market failure with a system-based approach to policy design that relies on experimentation and the evolution of institutions, rather than on trying to find an absolute 'solution' (Metcalfe, 1994; Dodgson et al., 2011).

This section will focus exclusively on the use of tax incentives to encourage R&D and does not discuss government subsidies. It draws on a recent study on the effectiveness and design of R&D tax

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[87] This assumption is made as data on the proportion of homeowners that do not benefit from mortgage interest deductibility is not yet available in EUROMOD.

[88] Europe 2020 is the EU's growth strategy. http://ec.europa.eu/europe2020/index_en.htm.

incentives carried out for the European Commission in 2014 (CPB, 2014).

The effects of R&D tax incentives

The vast majority of studies find that fiscal incentives designed to encourage spending on R&D are effective in stimulating additional investment. Results from different studies do vary widely, however, in terms of the magnitude of the effect that they find tax incentives to have. This is partly due to differences in the methodologies used and also to differences between the specific countries being studied. The general consensus appears to be that tax incentives have a moderate effect on levels of R&D investment. The effects, may, however be underestimated, as some research suggests that R&D tax incentives will tend to be found to be less effective than they really are if studies do not take into account the endogenous determination of tax policies, i.e. the fact that tax reforms are often introduced to offset economic downturns (Chang, 2014).

In addition to the direct effect of tax incentives, i.e. encouraging higher investment in R&D, policymakers also hope that they will lead to companies producing more innovative products and services, and to gains for society. The effect of R&D tax incentives on businesses' behaviour and on welfare is, however, rarely studied. There is some, albeit limited, evidence suggesting that granting tax relief on R&D has a positive effect on innovation, but there are no conclusive findings as to the effect on productivity. Cost-benefit analyses of the social effects of R&D tax incentives carried out in the Netherlands, Canada and Japan find that they can have a positive effect on welfare. The results of such studies seem, however, to be highly sensitive to the assumptions made (e.g. Parsons and Phillips, 2007; Mohnen and Lokshin, 2009).

The claim that R&D tax incentives can have a positive effect in terms of stimulating innovation should however be further qualified. This seems only true for tax incentives linked to input (i.e. tax relief on R&D expenditure), and not for those linked to output (i.e. patent boxes). The use of patent boxes — tax reductions on the income earned from exploiting intellectual property — has become more widespread in recent years and has given rise to concerns that they will create harmful tax competition. There is no clear rationale for using patent boxes as a means of stimulating innovation, as they do not appear to address any specific market failure. They can lead to patent and profit shifting, without stimulating corresponding increases in R&D activity (Alstadsæter et al., 2015) and result in large losses of tax revenue (Griffith et al., 2014). An agreement has been reached in the OECD and in the EU on the approach to be taken to ensure that there is a clear link between the tax advantage being granted under the patent box and a firm's R&D activities (OECD, 2014a).

R&D tax incentives in the EU and beyond

A total of 26 Member States are currently using fiscal incentives to encourage investment in R&D. This is also common practice in major economies outside the EU, including the US, Canada, Japan, China and South Korea. Tax incentives have become an important policy tool for supporting private R&D, and have thus helped to maintain levels of R&D investment during the crisis. Private investment generally follows cyclical patterns determined by GDP growth. Businesses' expenditure on R&D fell between 2008 and 2009 following the outbreak of the crisis, before starting to rise again as of 2010, although with growth rates remaining below pre-crisis levels (Eurostat, 2015). In response to these circumstances, almost all Member States that already used R&D tax incentives extended their policies during the crisis years, and five other countries introduced tax relief on R&D (Garnier et. al, 2014).

The tax relief regimes in place in different countries vary widely, but they do share a number of common features (see Table 3.7). The most popular type of tax incentive is tax credits reducing corporate taxation. Half of EU Member States also grant enhanced R&D tax allowances and a third allow accelerated depreciation to be applied to the R&D capital expenditure. Eight countries also grant tax relief for the social contributions and/or payroll taxes paid on the salaries of employees working in R&D. The definition of R&D costs also varies between countries. While in some countries only salaries are considered an eligible cost, other countries apply a much broader definition, allowing buildings and overhead costs to be counted when calculating tax reliefs. R&D tax incentives are often designed to offer a more generous tax advantage to small and medium-sized

Table 3.7: **R&D tax incentives**

Country	Type of R&D tax incentive				Design features			Administration				R&D investment	
	Tax credits	Enhanced allowance	Accelerated depreciation	Patent Box	Ceilings	Carry forward	Cash refunds	E-application	One-stop	Evaluation planned	Evaluation performed	R&D intensity (2013) % of GDP	National R&D target under Europe 2020 % of GDP
BE	X	X	X	X	X	X	X	X	X	X	X	2.28	3.00
BG	X		X			X						0.65	1.50
CZ	X[a]	X				X		X	X			1.91	1.00 (c)
DK	X	X	X		X	X	X	X	X	X		3.06	3.00
DE												2.85	3.00
EE												1.74	3.00
IE	X					X	X	X	X	X[b]	X	1.58 (2012)	2.00 (d)
EL		X		X		X		X				0.80	1.21
ES	X	X		X	X	X	X	X			X	1.24	2.00
FR	X			X	X	X	X	X		X	X	2.23	3.00
HR		X			X	X	X				X	0.81	1.40
IT	X		X	X	X			X	X		X	1.26	1.53
CY		X		X								0.48	0.50
LV		X				X		X	X			0.60	1.50
LT		X	X		X	X						0.95	1.90
LU			X									1.16	2.3 -2.6
HU		X		X	X							1.41	1.80
MT	X			X	X				X			0.85	2.00
NL	X	X		X	X	X		X	X	X	X	1.98	2.50
AT	X					X		X	X		X	2.81	3.76
PL	X[a]	X			X	X			X			0.87	1.70
PT	X			X	X	X		X	X		X	1.36	3.00
RO		X	X		X							0.39	2.00
SI		X	X		X	X		X	X			2.59	3.00
SK	X				X			X	X			0.83	1.20
FI		X	X		X	X		X	X	X		3.31	4.00
SE	X							X	X			3.30	4.00
UK	X	X	X	X	X	X	X	X	X		X	1.63	:

Note: The information on the type, design features and administration of R&D tax incentives is directly taken from the 2014 study by the CPB. R&D intensity is measured as the gross domestic expenditure on R&D, as a percentage of GDP. a. reduced corporate tax rate; b. Systematic evaluation principles are to be applied to income tax expenditures as per the October 2014 Guidelines for Tax Expenditure Evaluation; c. The Czech Republic's R&D target of 1 % applies only to public sector R&D; d. Approximately 2% of GDP (Ireland's national target: 2.5 % of GNP).
Source: Commission services based on the 2014 CPB study and Eurostat data.

companies (SMEs) and to young firms. Furthermore, most countries set an overall maximum amount that can be claimed, and in two Member States, the generosity of the scheme decreases with the level of R&D expenditure. This approach indirectly provides more generous support to smaller firms, which typically have smaller R&D budgets. Almost all schemes grant tax allowances on the basis of total R&D expenditure, rather than only allowing additional R&D to qualify for support. The trend in recent reforms has been to phase out incremental schemes (as Ireland did, for example, in 2015, when it removed its 2003 base year restriction ([89])) as they create high administrative and compliance costs and introduce distortions in investment planning.

Good practices for the design and implementation of tax incentives

The effectiveness of tax incentives will, to a large extent, be determined by the way in which they are designed and implemented. In many countries, for example, small firms seem to be more responsive to R&D tax incentives than are larger businesses, but this is not universally so. Differences in the effect of R&D tax incentives may be, in part, due to the specificities of the innovation system in different countries, but they may also arise as a result of the varying levels of complexity of different countries' rules, and the administrative burden they create. The variation in the effectiveness of tax incentives is also reflected in figures on uptake. For example, around ten times fewer companies take advantage of R&D tax incentives in Spain than in Canada, even though the Spanish system appears to be more generous. ([90])

The CPB study proposed twenty good practices related to the design and management of R&D tax incentives. These included the ideas set out below.

R&D tax incentives should be linked to R&D expenditure (i.e. the input) rather than the results of R&D (i.e. income made from intellectual

([89]) R&D tax relief only applied to the R&D expenditure in a given year in excess of the amount spent in 2003.

([90]) As measured by the OECD B-index. http://www.oecd.org/sti/rd-tax-stats.htm.

property). Furthermore, tax relief should be granted on R&D expenditure that creates significant knowledge spillovers, such as researchers' salaries. Linking tax incentives to salaries also has the practical advantage of lower administration and compliance costs. There is, however, a potential risk that this will serve to offset the cost to companies of wage increases if the supply of skilled workers is rigid. Another way of defining the R&D expenditure that qualifies for tax support, and which offers potentially the largest social returns, is to apply a stricter 'novelty' requirement, thus allowing measures to be directed specifically at the most radical innovation.

R&D tax incentives should be more specifically targeted at young companies, as these are the companies that can challenge incumbent businesses, and they also generate proportionally more jobs (Criscuolo et al., 2014). In addition, the EU has fewer young, leading innovative companies than the US in fast moving sectors (Cincera and Veugelers, 2013). Tax incentives can serve to support young companies if they include options to carry forward the R&D expenditure and/or to get a cash refund (^{91}) as these features offer firms greater flexibility and reduce the uncertainty associated with investment decisions. Most of the R&D tax incentives in place in the EU have a carry-forward option. There are still only seven countries using cash refunds, even though they became more popular during the crisis. Some countries offer tax schemes that explicitly target young firms, such as the tax credit for young innovative companies used in France.

Simple administrative procedures are crucial to the effectiveness of R&D tax incentives. Frequent changes should also be avoided, as they will tend to undermine the effectiveness of policies, irrespective of their design (Westmore, 2013). One-stop and online application procedures are already in place in most countries. Once an application has been received, the decision on the eligibility of expenses should be taken as quickly as possible. A number of countries have already

introduced an option allowing smaller companies, which are usually subject to liquidity constraints, to receive an immediate tax refund.

R&D tax incentives should be evaluated regularly, in order to ensure that they are delivering results and that public funds are being put to good use. Regular reviews also allow the government to monitor and address potential risks relating to the implementation of the measures, in particular to monitor the volume and the quality of the R&D receiving support, and the complementarity of the tax policies with direct subsidies. An expert group commissioned by the European Commission issued specific guidance in 2009 on conducting such evaluations. Only a third of Member States have, however, carried out evaluations. Six Member States have planned evaluations for at least one of their R&D tax incentives.

Benchmarking

In the absence of any evidence that could be used to compare the performance of specific R&D tax incentives, the CPB study scored them on the basis of the good practices already identified. France's tax credit for young innovative companies ranks first. It provides generous support to young SMEs for which R&D expenditure represents at least 15 % of total costs. The 'novelty' requirement ('new to the world') that must be met for R&D to qualify is in line with best practice. The immediate refund option and short response time mean that firms can obtain funding more quickly.

The scores awarded to the 80 R&D tax incentives reviewed in the CPB study vary widely both across countries, as a result of the inherent characteristics of different countries' environments (such as their R&D systems and their standard tax rates), and also within countries, as many have more than one type of R&D tax relief. This high level of variation demonstrates that there is scope for Member States to improve the design of their R&D tax incentives.

3.7.   ENVIRONMENTALLY-RELATED TAXATION

Environmentally-related taxes (^{92}) can be used by governments both as a way of raising revenue and

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(^{91}) Young firms often lack taxable income to fully benefit from R&D tax incentives. Thus, the provision to carry forward the expenditure to offset against future profits, together with an option to receive the tax benefit in a form of cash refunds in case of losses, make it easier for these firms to benefit.

(^{92}) The term 'environmentally-related taxes' was introduced by the OECD to cover: (i) environmental taxes (resources,

to help the country achieve its environmental objectives. These two aims must therefore be reconciled when designing environmentally-related tax policies. As discussed in Chapter 2, environmentally-related taxes are amongst the taxes least detrimental to growth and are considered to be a source of revenue that can, for example, be used to help finance a reduction in the tax burden on labour. Environmentally-related taxes are also designed with the aim of protecting the environment, and therefore target different sources of pollution, including energy, transport and resource use. Environmental taxation is therefore often used to reduce greenhouse gas emissions, specifically in order to meet emissions targets.

Although environmentally-related taxes do raise a number of issues from a political economy perspective (see Box 3.3), experience has proven that they can offer an effective and efficient way of achieving environmental policy objectives. It is, however, important to remember that taxation is only one of several policy instruments that can be used to reduce pollution. Which policy instrument is most suitable will depend on the specific situation, including, for example, the nature of the pollutant. Policymakers can use market-based measures (e.g. taxation or cap-and-trade policies) or a command-and-control approach (e.g. setting targets or technological standards) to reduce environmentally harmful behaviour and counteract climate change. If appropriately managed, market-based policies (e.g. the EU emissions trading system) provide an efficient way of addressing the global issue of carbon emissions, while both market-based and command-and-control regulations have often been used efficiently to deal with local issues (Mirrlees et al., 2010).

Environmentally-related taxes should be designed carefully, in order to ensure that they raise revenue while at the same time serving their environmental purpose – in particular in view of the fact that environmentally-related taxes are designed to change behaviour, and, if effective, will therefore reduce their own tax bases, i.e. polluting activities. These two objectives therefore need to be reconciled. A number of principles established in

the economic literature are of relevance to this task and should be taken into account when considering the use of environmental taxation. First, negative externalities should be taxed in proportion to the environmental damage they create (Pigou, 1920). This implies that the pollution cost is internalised within the total cost of polluting activities and that it is thus borne by the agent who causes it (the 'polluter pays' principle). Second, once all externalities have been corrected using Pigouvian taxes, additional taxes should only be levied on final consumption goods (Diamond and Mirrlees, 1971). This implies that inputs to production should only be taxed to the extent necessary to correct negative externalities. Although these principles limit the use of environmentally-related taxes, they also ensure their cost efficiency.

3.7.1. Energy taxes

Taxes on energy generate the most revenue among environmentally-related taxes (see Graph 3.9) and are probably also the type of tax that has the greatest effect in terms of reducing carbon dioxide emissions. Furthermore, energy taxes stimulate innovation and encourage companies to develop alternative, more energy-efficient processes. In the long run, however, increased energy efficiency will reduce the level of revenue that can be generated from energy taxes and it is, therefore, important to find ways to maintain their revenue-generating potential, while still ensuring their effectiveness in influencing consumer behaviour. Setting different rates of taxation according to the use and carbon content of the energy source, and indexing the rates to inflation could help to achieve this.

Moreover, the current falling fuel prices provide an opportunity to increase the level of, and reform, energy taxation.

Differentiation according to the use and carbon content of energy sources

The current minimum tax rates set in the EU Energy Taxation Directive (2003/96/EC) differentiate between energy uses, e.g. there are different rates for motor fuels and heating fuels, and for fuels used for industrial and commercial purposes. In addition, a number of Member States exempt household consumption of some heating fuels and electricity from excise duties. Applying

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waste and water), (ii) energy-related taxes and (iii) vehicle taxes.

Box 3.3: **Political economy aspects of environmental tax reforms**

Member States' experience of using environmentally-related taxes has demonstrated that this type of taxation can offer an effective and efficient way of helping to achieve environmental policy objectives. While minimum rates for taxes on energy are harmonised at EU level (by the Energy Taxation Directive (2003/96/EC)), Member States may choose which types of policy to use to achieve the environmental targets set in EU legislation (e.g. under the Water Framework Directive (2000/60/EC), the Packaging Waste Directive (94/62/EC) and the Air Quality Directive (2008/50/EC)). Governments often, however, face political economy obstacles when implementing environmental taxes, and therefore have to use specific strategies to make use of these taxes successfully.

Implementation barriers

Equity issues
From a political economy perspective, the potentially regressive nature of environmental taxes, and energy taxes in particular, is seen as a major barrier to increasing their use. There is, however, substantial empirical evidence suggesting that not all environmental taxes have this type of distributional effect. Taxes on domestic heating fuels are found to be regressive in almost all studies, while transport-related taxes (taxes on fuels and vehicles) are demonstrated to be less regressive, or even progressive, depending on the country considered (see, e.g. Kosonen, 2012, European Commission, 2012 (Box 5.5) and OECD, 2014). The use of tax reductions or exemptions on domestic heating fuels mitigates the regressive character of these taxes, but reduces their effectiveness in achieving environmental objectives. Giving targeted support to those who genuinely need assistance allows the standard tax rate to be maintained, and is a more efficient solution. It has the advantage of not affecting the influence of the tax on behaviour (i.e. the effect of the higher price paid by consumers), while reducing the negative effect of the tax on household income.

Effect on competitiveness
Another common barrier to more widespread use of environmentally-related taxes is concern about the potentially harmful effect on the competitiveness of the sectors concerned. Governments face especially strong opposition to resource taxes from sectors whose use of resources is highly inelastic, and from the interest groups representing them. Recent industry-based studies show, however, that a strengthening of environmental legislation does not have a detrimental effect on growth rates in most technologically advanced countries (Albrizio et al., 2014) and that higher energy taxes, compensated for by a reduction in labour taxation, can improve competitiveness (Barrios et al., 2014). At the same time, some model simulations indicate that environmental taxes can cause shifts in production in certain industrial sectors, especially where the commodity is standardised and internationally traded (e.g. copper and aluminium), and equivalent taxes are not levied in other countries. In such cases, Member States often grant partial or total tax exemptions (see IEEP, 2012 and IVM, 2014 for examples), even though those reduce the incentive effect of the taxes.

Administrative and enforcement costs
The administrative and enforcement costs of implementing environmentally-related taxes should be taken into account when deciding to use this type of taxation, and when designing the tax. Although, for example, a tax on emissions would target the environmental damage being created more precisely than an energy tax on fuel, it would be significantly more costly to implement: the levels and composition of emissions would need to be measured, standards would need to be set for the equipment used for measuring emissions, and auditing schemes would need to be set up if emissions were to be self-reported. Moreover, for reasons related to competitiveness and fairness, many environmental tax schemes involve tax reductions, refund mechanisms and other special provisions, which increase the administrative costs. In such situations, governments need to weigh up the level of the administrative costs and the importance of the political objective the measure is designed to achieve (see OECD, 2006).

(Continued on the next page)

> *Box (continued)*
>
> **Strategies for successful implementation**
>
> *Transparency and influencing public opinion*
> In order for an environmentally-related tax to function effectively, the public needs to understand the reasons for introducing the tax, and its desired effect. Experience shows that in cases where environmental problems were visible to a large proportion of the population, environmental taxes could be implemented without any major problems, the levy on plastic bags introduced in Ireland being a clear example. Where the environmental problem was more distant, however (such as the effect of soil sealing on biodiversity), tax proposals have tended to be defeated. Transparency and early engagement with those affected by a proposal will also help to create support for the tax and will legitimise the process. Creating a 'green tax commission' that includes representatives from government ministries, industry, academia, and environmental and social NGOs can also give public and technical legitimacy to environmental tax reforms (as was seen in Portugal in 2014). The level of public acceptance may also be higher if a tax is implemented gradually, according to a pre-announced schedule, as was the case for the carbon tax on motor fuels introduced in France in 2014.
>
> *Bundling policy measures*
> As environmentally-related taxes are not always sufficient to address a particular environmental problem on their own, they are most often applied alongside regulatory instruments. A typical example of this is waste policy, where almost all Member States that apply landfill taxes have also introduced a producer responsibility scheme. Taxes on emissions are, similarly, applied in conjunction with air quality standards (e.g. in Sweden and Denmark). Member States sometimes combine environmental taxation with another economic instrument, in order to strengthen its effect on behaviour. In the United Kingdom, for example, a tax on the initial extraction of rock, sand and gravel was complemented by an increase in the landfill tax, with the aim of increasing the level of recycling of these materials (Ecorys, 2011). In addition to increasing the effectiveness of the measure itself, experience shows that making tax measures part of a broader policy package designed to achieve specific environmental objectives also increases public acceptance.

reduced VAT rates on energy (see Section 3.1 on consumption taxes for details) also means that the purpose for which the energy is used and the negative externalities it creates cannot be taken into account.

When taxation is used as an environmental policy instrument, the level of taxation should be determined according to the environmental damage caused by the energy product, e.g. by taking into account its carbon content. Graph 3.10 shows the marginal tax rates on the two most commonly used motor fuels, diesel and unleaded petrol. It can be seen that, in all Member States, excise duty rates on diesel are lower than those on unleaded petrol, despite diesel having a higher carbon and energy content than unleaded petrol. Some Member States offset this advantage by levying a higher registration tax (Croatia, Hungary and Slovenia) or circulation tax (Denmark, Germany, Luxembourg, Malta, the Netherlands, Finland and Sweden) on diesel cars. ([93])

While a registration tax affects a buyer's decision when purchasing a car, and an annual tax adds to the overall cost of owning the car, neither affects the marginal cost of driving the car. In order to make the tax rates applied to different fuels correspond better to the level of environmental damage they cause, a number of Member States (Denmark, Ireland, Slovenia, Sweden, Finland,

Graph 3.9: **Environmentally-related taxes as a percentage of GDP (2012) and implicit tax rate on energy**
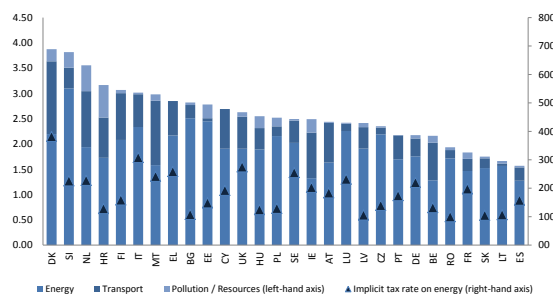
Note: Data is based on the ESA 95 methodology.
Source: Commission services.

([93]) Taxes in Europe database.

Graph 3.10:   **Marginal tax rates on petrol and diesel when used as propellants, 2015 (euros per gigajoule)**
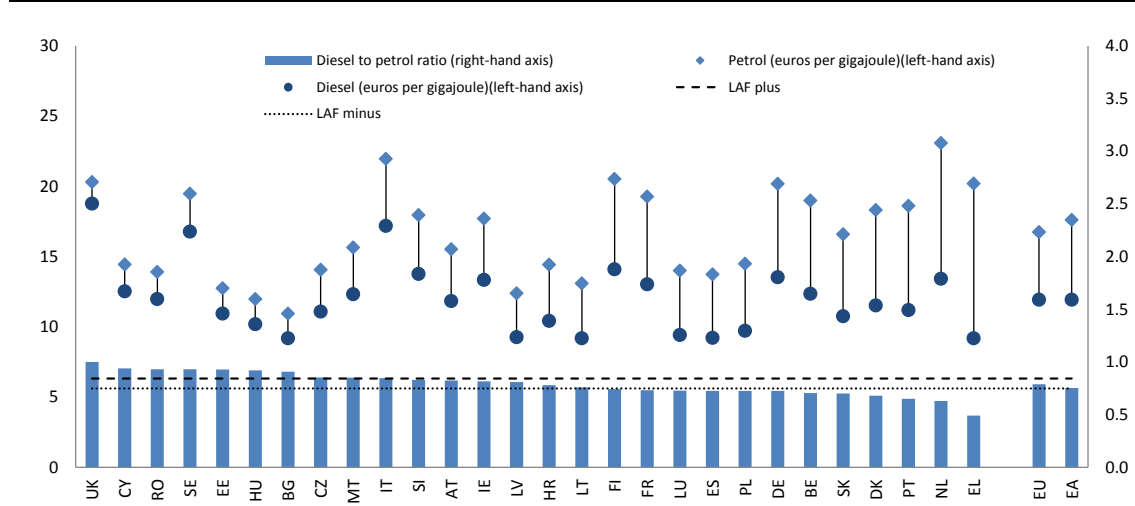
Note: Marginal tax rates are calculated on the basis of excise duty rates, and exclude VAT but include carbon taxes.
Source: Commission services.

France and the UK) also levy a carbon tax on energy products. This is included in the marginal tax rates shown in Graph 3.10.

Indexation

Indexing energy taxes to inflation would help to maintain both their influence on consumer behaviour and their contribution to tax revenue. An appropriate index to use would be a core inflation index that excludes the price of energy and unprocessed food. Despite the potential usefulness of such a system of indexation, very few Member States currently index environmentally-related taxes using a consumer price index (see Table 3.8). The absence of indexation is less problematic, however, if regular tax increases maintain the level of revenue generated ([94]) and the ability of environmentally-related taxes to influence behaviour. Moreover, the current context of low inflation makes the absence of indexation less important.

3.7.2. Vehicle taxes

Vehicle taxes can be used to address sources of pollution linked to car use and ownership that are not addressed through fuel taxation. Road transport not only imposes a welfare cost in terms of carbon dioxide emissions, but also as a result of the air

pollution, noise and congestion created. Most Member States therefore levy vehicle taxes, in addition to excise duties on energy. Vehicle taxation includes registration taxes (levied on the purchase of a car) and circulation taxes (most often levied annually on car ownership). Vehicles taxes are also used to encourage fuel efficiency by making the tax rate dependent on the carbon dioxide emissions of the vehicle. Registration taxes are currently dependent on carbon dioxide emissions in fifteen Member States, and twelve countries take emissions into account in the rate of circulation taxes payable on different vehicles (see Table 3.9). Neither registration taxes nor circulation taxes affect the marginal cost of using a vehicle, however. Moreover, the absence of harmonisation of registration taxes at EU level can create a significant administrative burden and sometimes double taxation when vehicles are (temporarily or permanently) transferred to another country. These problems could also be considered a violation of primary EU law, insofar as they constitute discrimination of non-residents or businesses, or discourage residents from purchasing or leasing cars abroad.

Favourable tax treatment of company cars creates significant losses of revenue and environmental costs. Building on the methodology used in previous studies (Copenhagen Economics, 2009 and OECD, 2014b), a recent update of the work in this area (Wöhlbier et al., 2015) shows that several Member States subsidise the private use of

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([94]) Ireland, for example, annually considers energy taxation in the context of its budget.

Table 3.8: **Summary of the aspects of environmentally-related taxation which Member States could improve**

Country	Scope to increase environmental taxes (Chapter 2)	Scope to improve environmental tax design					
		Summary	Low ratio of diesel to petrol excises	No indexation of evironmental taxes	Reduced VAT on energy	Low taxation of company cars	Scope for vehicle taxation based on carbon dioxide emissions
BE	X	X	X		X	X	
BG		X		X		X	X
CZ	X			X			X
DK							
DE	X		X	X			
EE				X			X
IE				X	X		
EL		X	X	X	X	X	
ES	X		X	X			
FR	X	X	X	X	X	X	
HR			-	X		-	
IT		X		X	X	X	
CY							-
LV	X	X		X	X	X	
LT	X					X	X
LU		X	X	X	X		
HU	X	X		X	X	X	
MT		X		X	X	X	
NL			X				
AT	X			X			
PL	X	X		X	X		X
PT	X	X	X		X	X	
RO	X						
SI				X			
SK	X	X	X	X		X	X
FI			X	X			
SE							
UK				X	X		

Note: '-' indicates countries not covered by the screening.
Source: Commission services.

company cars. These countries' income tax rules often do not differentiate between the use of a company car for business and private purposes, leading to undesirable environmental consequences. Advantageous company car schemes tend to encourage car ownership and often affect the choice of model and driving habits. Moreover, they risk counteracting the incentives provided by energy and vehicle taxation to reduce fuel consumption. In addition, a small number of Member States allow partial deduction of the VAT charged on the purchase of company cars intended for private use by employees (see Section 3.1 on consumption taxes for further details).

Table 3.9 summarises the aspects of environmentally-related taxation which Member States could improve. The table shows which Member States have scope to increase the use of environmentally-related taxes, at an overall level. It also identifies which Member States have scope to improve the different specific aspects of their environmental tax policies. Individual Member States are considered to have scope for improvement in this area if the design of their tax policies is found to be poor according to three of the five following criteria: (i) ratio of diesel to petrol excises; (ii) indexation of environmental taxes; (iii) VAT rates on energy; (iv) taxation of company cars; and (v) vehicle taxation based on carbon dioxide emissions. On the basis of this screening, around a third of Member States are found to have scope to improve their environmentally-related taxation.

4. TAX GOVERNANCE AND REDISTRIBUTION

This chapter discusses the challenges currently faced by Member States in relation to tax governance and redistribution. Section 4.1 examines issues in the areas of tax compliance and tax administration. It also includes a discussion (Box 4.1) of recent international developments in the fight against tax evasion and tax avoidance. Section 4.2 gives an overview of issues relating to the measurement of the tax gap. Section 4.3 discusses recent improvements seen in Member States' tax administration and gives updated results of an indicator-based screening measuring current performance in this area. Section 4.4 analyses the effect of wealth and inheritance taxes in terms of income redistribution. Section 4.5 discusses the distributional effects of consumption taxes.

4.1. IMPROVING TAX GOVERNANCE

A fair and efficient tax collection system is an essential part of a well-functioning system of public finances. The main objective of tax authorities is to collect all taxes due under the country's legislation, while keeping the administrative costs of collection and the compliance costs for taxpayers as low as possible.

When a government needs to increase its revenue, its first step is often to increase tax rates, to broaden the tax base of existing taxes, or to introduce new taxes, as these changes can all be legislated relatively quickly. Governments sometimes, however, overlook the importance of tax compliance as a way of increasing revenue. A considerable amount could be raised by improving collection of existing taxes and by introducing measures to improve compliance. The amount of potential revenue that the government 'misses out on' is measured by the tax gap, which is generally defined as the difference between the total amount of tax potentially owed to the government and the tax revenue actually collected.

The tax gap is also an important consideration for governments when they decide to increase taxes or to introduce new taxes, as any increase in the tax burden may increase non-compliance. One reason for this is that compliant taxpayers may feel that they are being treated unfairly compared to those

that do not pay the taxes they are legally required to. Businesses that comply with tax rules may find themselves at a competitive disadvantage compared to companies engaged in tax evasion or tax avoidance.

Collecting taxes and tackling tax evasion and avoidance are primarily competencies belonging to Member States. In most cases, tax compliance can be improved through national measures, such as by: 1. simplifying tax legislation, to remove ambiguous provisions and to avoid placing an unnecessary administrative burden on taxpayers; 2. improving tax collection by targeting inspections on the basis of thorough risk assessments; and 3. improving support services so as to make it easier for taxpayers to meet their tax obligations. Nonetheless, in a globalised economy where tax planning strategies and tax evasion are planned and conducted internationally, it is impossible for a single Member State to successfully tackle tax fraud and tax avoidance alone. The EU provides a framework for tax governance measures and offers instruments to handle cross-border tax issues. The EU approach to good governance is based on three pillars: transparency, sharing information and fair tax competition. Box 4.1 provides further detail on recent developments in the fight against tax evasion and tax avoidance.

4.2. MEASURING THE TAX COMPLIANCE GAP

A significant amount of revenue is lost due to tax evasion and avoidance. While there are no reliable and comparable statistics on the size of the total tax gap, comparable estimates do exist for some specific taxes, such as were presented in the study on the VAT gap commissioned by the European Commission. [95] Since tax evasion and avoidance are, by their very nature, not observable, it is difficult to measure the level at which they are present. Even when estimates are available, their accuracy and reliability is often questioned. The European Commission is encouraging Member States to develop and improve methodologies for estimating the tax gap, as reliable statistics would allow governments to design better targeted

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[95] CPB/CASE, (2015).

Box 4.1: **Recent international developments relating to the fight against tax evasion and tax avoidance, including BEPS and tax rulings**

The financial crisis has given renewed momentum to the fight against tax evasion and tax avoidance, with government action being driven by widespread demands for the tax burden to be spread more fairly in the current difficult times of fiscal consolidation. Several important results have already been achieved, and other initiatives are progressing. The fight against tax evasion and tax avoidance is one of the European Commission's political priorities. [1] The 2012 EU action plan marked the beginning of a new phase in policymaking. More recently, the EU adopted the transparency package in March 2015 and its action plan on corporate taxation in June 2015. At global level, the agreement on the automatic exchange of information and the ongoing Base Erosion and Profit Shifting (BEPS) initiative are among the most important recent developments.

In September 2013, G20 leaders agreed on a move towards greater international transparency with the automatic exchange of financial account information, designed to become the new global standard. The importance of this agreement is self-evident: the automatic exchange of information will make it easier to assess and collect taxes on the income and capital that individuals have abroad, in accordance with the rules of their country of residence. The EU — for many years a pioneer in the area of automatic exchange of information between countries — actively contributed to the discussions taking place in the international fora, especially in order to ensure that the new standard would be, as far as possible, compatible with the existing EU systems for the exchange of information and with EU laws on data protection. The new global standard was endorsed by the G20 in April 2014. All 34 OECD member countries and many non-member countries have since endorsed it.

In 2013, the G20 and the OECD launched the Base Erosion and Profit Shifting (BEPS) policy initiative. [2] The trigger for this initiative were concerns about the increasingly aggressive tax practices being used by some multinationals, specifically by taking advantage of international tax standards that are no longer in line with the changing global business environment. These practices may give multinationals a competitive advantage over domestic companies, may cause losses of economic efficiency as a result of distorted investment choices, and may undermine the voluntary compliance of other taxpayers (both firms and private individuals). The approach taken by the OECD is to close the gaps and loopholes that arise as a result of the interactions between different tax systems, and which allow multinationals to minimise their tax burden. Specifically, it is providing countries with legal instruments that allow them to better align the right to tax with the economic activity being carried out in their jurisdictions. An action plan was drawn up identifying 15 actions that should be taken as part of the BEPS initiative. [3] The main areas concerned are the digital economy, hybrid financial instruments and entities, [4] anti-avoidance provisions, 'excessive' interest deductibility, harmful preferential tax regimes, transfer pricing, the transparency of multinationals' tax files and the statistical and economic analysis of BEPS. A first set of reports and recommendations relating to seven of these actions was published in September 2014. The remaining areas should be addressed by the end of 2015.

In December 2012, the European Commission adopted an action plan to strengthen the fight against tax fraud and tax evasion. [5] It included over 30 measures covering automatic exchange of information, aggressive tax planning, harmful tax competition, tax governance, digital taxation, transparency between countries at the corporate level and VAT compliance. Progress has since been made in several of these areas. The measures taken include: the creation of a platform for good tax governance, where an expert group composed of all the relevant parties can serve as a consultative forum on tax matters; the introduction

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[1] A new start for Europe: political guidelines for the next European Commission (June 2014).

[2] See OECD, 2013, *Addressing Base Erosion and Profit Shifting*, Paris. See also the G20 leaders' declaration made after their meeting in Los Cabos on 18-19 June 2012, p. 8, paragraph 48: https://g20.org/wp-content/uploads/2014/12/G20_Leaders_Declaration_Final_Los_Cabos.pdf.

[3] See OECD, 2013, *Action Plan on Base Erosion and Profit Shifting*, Paris.

[4] A hybrid entity is an entity that is treated as a taxable person in one country but as a tax 'transparent' entity in another country. A hybrid financial instrument presents features of both debt and equity. Multinationals can exploit these mismatches between countries to minimise their overall tax burden at group level.

[5] European Commission (2012), Communication from the Commission to the European Parliament and the Council: *An action plan to strengthen the fight against tax fraud and tax evasion*, COM(2012) 722 final.

Box (continued)

of a general anti-avoidance rule into the Parent-Subsidiary Directive and the closing of some loopholes related to specific tax planning schemes that had emerged as a result of the different legal definitions of debt and equity used in different countries; the proposal of equivalent anti-avoidance revisions for the Interests and Royalties Directive; and the launch of a forum on VAT where businesses and tax authorities can discuss ideas. One particularly important development is the revision of the Directive on Administrative Cooperation.

The revision of the Directive on Administrative Cooperation, adopted by the Council in December 2014, lays the legislative foundation for the automatic exchange of information at EU level, in accordance with the global OECD/G20 standard discussed above. It also marks the end of bank secrecy for tax purposes across the EU. Under the new regime, the scope of the exchange of information is much wider than was previously the case. Member States have committed to automatically exchanging information on the full spectrum of financial information used for tax purposes. Specifically, the Directive covers capital income in the form of dividends, capital gains and any other financial income and account balances. This new Directive makes the Savings Tax Directive essentially redundant, and this Directive is therefore expected to be repealed. The negotiations for stronger tax agreements with Switzerland, Andorra, Monaco, San Marino and Lichtenstein, which are currently being finalised, will also lead to greater transparency.

The Commission presented the transparency package in March 2015. ([6]) Transparency is an essential criteria for fighting tax evasion and curbing tax avoidance and harmful tax practices, which often rely on an environment characterised by complexity and non-cooperation. A more transparent and open European tax system may also contribute to ensuring fairer tax competition between Member States. The initiatives included in the transparency package aim to: simplify the legislation on the automated exchange of information, promote tax transparency, improve the quantification of the tax gap and review the code of conduct for business taxation. The possibility of extending the scope of the country-by-country reporting (which is currently carried out for the banking sector) will be also assessed. One of the most critical parts of the transparency package is the proposal to introduce the automatic exchange of information between Member States on their tax rulings. ([7]) Tax rulings are a useful tool for reducing compliance costs and uncertainty for taxpayers. In a cross-border context, they may, however, be used by multinationals to artificially shift profits and reduce the tax burden. Moreover, they can be used as a way of creating unfair tax competition. The new proposal would ensure greater transparency and would restore the rulings' original positive function of reducing the uncertainty for taxpayers.

In June 2015, the Commission presented its action plan on corporate taxation. It put forward a number of proposals designed to make corporate taxation in the EU fairer and more efficient. The proposals included: re-introducing the common consolidated corporate tax base (CCCTB), providing Member States with additional ways of maintaining their tax bases; improving the business environment by removing tax obstacles and making it more attractive for businesses to operate across borders; and simplifying and improving EU-level governance on tax matters.

The latest developments in the fight against tax evasion and tax avoidance, as described above, make it clear that the international tax environment is changing. The wider scope of the automatic exchange of information will bring greater transparency, and it will be easier for the tax authorities to manage the inevitable complexity of international tax rules and to raise a given amount of tax revenues, as it will be easier for them to tax profits where they are generated, while at the same minimising administrative costs. The BEPS initiative and the various EU initiatives are making the international and European tax systems more difficult for tax evaders and tax planners to abuse. These changes may have particularly significant economic effects in terms of the overall tax revenue collected on capital income, the distribution of tax revenue across jurisdictions and the design of taxes.

([6])   European Commission (2015), Communication from the Commission to the European Parliament and the Council on tax transparency to fight tax evasion and avoidance, COM(2015) 136 final.

([7])   European Commission (2015), Proposal for a Council Directive repealing Council Directive 2003/48/EC, COM(2015) 129 final; European Commission (2015), Commission Staff Working Document: Technical analysis of focus and scope of the legal proposal, accompanying the document Proposal for a Council Directive amending Directive 2011/16/EU as regards exchange of information in the field of taxation, COM(2015) 135 final.

policies. [96] Researching and monitoring the nature and extent of tax fraud and avoidance on a regular basis is one of the strategic objectives of the Fiscal Blueprints, the EU guidelines for robust, efficient and modern tax administration. [97]

The tax gap can be measured using indirect methods [98] or direct methods. [99] The indirect methods include using data from national accounts and macro modelling. The direct methods include microeconomic surveys, enquiry programmes, audits, data matching, data mining and profiling, which collect information from individual taxpayers and then estimate the tax gap by extrapolating these results for the whole economy. The main advantages of the indirect method are that it provides a single estimate, requires relatively few resources to obtain and can be based on sources independent of the tax authorities. [100] The indirect method may also be more accurate than direct methods, particularly in cases where the data collected by the tax authorities for operational purposes is sparse and may not be reliable due to governance issues. [101] The main disadvantage of the indirect method is that it does not provide explanation as to the causes and distribution of the tax gap. Its usage is also limited by the fact that only areas and activities which are traceable in macroeconomic statistics can be estimated in this way, and the quality of the estimates depends to a large extent on whether the adjustment made in the national accounts for the non-observed economy is sufficient, i.e. reflects reality. [102]

An increasing number of Member States calculate estimates of the tax gap for various individual taxes, but the overall tax gap for all taxes combined is rarely estimated. Furthermore, not all of the Member States that produce estimates actually publish these results, or provide details of the methodology used. The UK offers an example

of good practice in this area, as it estimates the total tax gap, and publishes the results together with an explanation of the underlying methodology. [103] Sixteen Member States carry out research on national tax compliance gap (Belgium, Denmark, Estonia, Greece, Croatia, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Slovenia, Slovakia, Finland, Sweden and the UK). However, only nine of these Member States publish their estimates. [104]

Although the tax gap and the non-observed economy are not by definition the same, the latter could be used to give an indication of the size of the tax gap. Estimates of the size of the non-observed economy are generally produced by national statistical institutes, for the purpose of calculating the country's gross national income. A significant number of Member States do not, however, make these estimates public and the data for different Member States are not comparable due to differences in the methodologies used. Publicly available data on the non-observed economy remains scarce and covers only a short time period, and often not recent years, as shown in Table 4.1.

Since 2009, the Commission has commissioned studies to estimate the VAT gap in EU Member States based on the indirect ('top down') method, which calculates the VAT gap as the difference between the theoretical tax liability according to tax law (VTTL) and the VAT revenue actually collected. The VAT gap does not arise only as a result of fraud or tax evasion, but also captures the effect of other phenomena that affect the payment of VAT, such as errors, failure to take reasonable care and non-payment due to bankruptcy or insolvency. The latest study carried out in 2015 by the Centre for Social and Economic Research and the Netherlands Bureau for Economic Policy Analysis (CPB/CASE, 2015) estimated the VAT compliance gap for the period 2009-2013 and analysed the trends seen in 26 Member States. Member States have tended to slightly reduce their VAT gap over this period. For the 26 Member States studied combined, the gap fell by four percentage points, from 19 % to 15 % of VTTL.

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(96) European Commission (2015b) Communication from the Commission to the European Parliament and the Council on tax transparency to fight tax evasion and avoidance. 18.3.2015 COM(2015) 136 final.

(97) The European Commission emphasised the importance of measuring the tax gap in the Fiscal Blueprints. See Section FB 09 – 2 in European Commission (2007) Fiscal Blueprints: *A path to a robust, modern and efficient tax administration*.

(98) Also referred to as the macro or top-down method.

(99) Also referred to as the micro or bottom-up method.

(100) Rubin (2012).

(101) Keen (2013).

(102) Keen (2013).

(103) HM Revenue & Customs (2014a and 2014b).

(104) OECD (2015b) and Italy's Stability Programme 2015, pp. 109-115.

The overall VAT for these Member States was EUR 168 billion in 2013.

Table 4.1:	Value of the non-observed economy, reference years as specified (as a percentage of GDP)

Country	Non-observed economy adjustments (% of GDP, reference year)
BE	4.6 (2009)
BG	13.4 (2011)
CZ	8.1 (2009)
DK	NA
DE	NA
EE	9.6 (2002)
IE	4 (1998)
EL	NA
ES	11.2 (2000)
FR	6.7 (2008)
HR	10.1 (2002)
IT	17.5 (2008)
CY	NA
LV	13.6 (2000)
LT	18.9 (2002)
LU	NA
HU	10.9 (2009)
MT	NA
NL	2.3 (2007)
AT	7.5 (2008)
PL	15.4 (2009)
PT	NA
RO	21.5 (2010)
SI	10.2 (2007)
SK	15.6 (2009)
FI	NA
SE	3.0 (2009)
UK	2.3 (2005)

Notes: Italy and Latvia: upper estimates given; Bulgaria: estimate of the total size of the shadow economy; Romania: estimate of the gross value added of the non-observed economy. Please refer to the original sources of information for additional notes and clarifications on the data.
Source: For Belgium, the Czech Republic, France, Italy, Hungary, the Netherlands, Austria, Poland, Slovenia, Slovakia, Sweden and the UK: OECD (2012b). For Estonia, Ireland, Spain, Croatia, Latvia and Lithuania: UN (2008), as reported in OECD (2012b). For Bulgaria: national statistical institute. For Romania: national statistical institute, quoted in the annual report of the Romanian Fiscal Council (2012).

Graph 4.1 shows the individual VAT gap as a percentage of VTTL for each of the 26 Member States in 2012 and 2013. The 2013 data show that there is scope to improve tax compliance in the Czech Republic, Greece, Italy, Latvia, Lithuania, Hungary, Malta, Poland, Romania and Slovakia. All of these countries have a VAT compliance gap, measured as a percentage of theoretical VAT liability, greater than LAF minus.

The latest CBP/CASE study also provides greater insight into the policy gap, which is an indicator of the additional VAT revenue a Member State could theoretically collect were it to apply a uniform rate of taxation to all consumption. A new indicator, the 'actionable policy gap' has been calculated by adjusting the policy gap to exclude imputed rents,

public goods and financial services that respectively do not involve monetary transactions or are subject to a compulsory exemption following articles 132 and 135 of the VAT Directive. By subtracting these three exemptions from the total effect of exemptions, one can compute the 'actionable' policy gap that consists of reduced (and zero) rates and 'actionable' exemptions. Whereas on average the policy gap is 42.3 % (including a 9.8 % rate gap), the 'actionable' policy gap is 12.4 %. This is because of the influence of public goods (20.3 %), imputed rents (8.2 %) and financial services (1.4 %) in the exemption gap. As a result of this distinction, the relative importance of better enforcement (compared to the unadjusted policy gap indicator) as ways of improving the revenue potential of the VAT system is increased. As such, it places greater emphasis on the compliance gap. Nevertheless, the policy gap also remains an important area for action for some Member States, as discussed in Section 3.1 of this report. Furthermore, enforcement of VAT rules should be improved not only within a country but also internationally, as a considerable amount of VAT revenue is lost due to 'missing trader intra-community fraud'.

4.3. REDUCING THE TAX COMPLIANCE GAP BY IMPROVING TAX ADMINISTRATION

Why tax administration matters

The administrative aspect of taxation must always be considered when analysing tax policy, alongside the design of taxes. Tax authorities are the bodies responsible for administering the tax laws of a particular country or regional or local authority. They perform various tasks, often referred to as 'core functions', including: identification and registration of taxpayers, filing and payment of taxes, collection and recovery of taxes, audit and investigation, and dispute resolution. Tax administration refers to the set of measures, procedures and systems that a tax authority uses to collect the taxes due under national legislation in the most effective way and at the lowest administrative and compliance costs (Jensen and Wöhlbier, 2012). Tax authorities are not, however, the only body with a role to play in tax collection, but are part of a larger network. Businesses acting as tax withholders and collectors (VAT) play a central role in modern tax systems.

Graph 4.1: **VAT gap in EU Member States, 2012-2013, as a percentage of VAT theoretical tax liability**
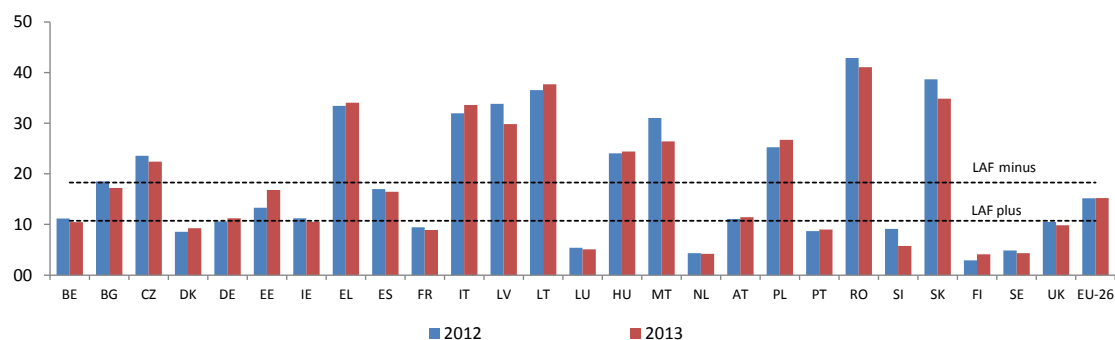
Note: No data shown for Croatia and Cyprus
Source: CPB/CASE (2015).

In many countries, tax intermediaries and professionals help businesses and individuals with the preparation of their tax returns. IT providers also play a role, by developing the tools and systems needed for the tax collection process itself (Shaw et al., 2010).

The European Commission has further deepened its expertise on tax administration over recent years, particularly in view of the changing nature of tax administration, as described above. Tax administration issues have, for example, been explicitly addressed by this report since 2011. Since then, the objective of the analysis presented in the report has been to identify which Member States need to improve their tax administration. A number of different indicators have been used to assess the performance of Member States' tax authorities, and the criteria for assessment updated each year, as necessary.

In February 2014, the Commission published a comprehensive report comparing Member States' performance in VAT collection. The data collected on individual Member States were measured against common benchmarks drawn up by the Commission on the basis of recommendations made in earlier reports and developments at EU and national level. These developments mainly relate to preventive measures, measures promoting voluntary compliance, services to taxpayers, risk management and optimisation of the use of IT. Other examples of Commission work on tax administration are the Fiscal Blueprints (European Commission, 2007) and the 2012 action plan to combat tax fraud and tax evasion (European Commission, 2012b). The Commission is also

taking part in the Tax Administration Diagnostics Assessment Tool (TADAT) project. ([105])

Multidimensional tax administration

The economic and financial environment has changed considerably in recent decades, evolving from a series of national markets into European and global markets – a change which brings particular challenges for tax administration. The difficulties currently faced in the EU single market specifically have arisen as a result of a fragmented and changing tax landscape. Twenty-eight sets of national tax legislation co-exist alongside EU tax legislation, making cooperation and coordination essential.

The increasing trade flows, greater capital mobility and changing trade patterns within the EU and with non-EU countries mean that both tax authorities and business need to take a different approach to tax management. Moreover, globalisation has highlighted the importance of preventing fraud and tax evasion. The existence of different tax systems and procedures in different countries create an opportunity for tax fraud and non-compliance, especially where there is a lack of cooperation and communication between tax authorities.

Businesses are under pressure to cut costs, in order to be able to compete on internal and global

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([105]) TADAT is designed to provide an indicator-based assessment of the relative strengths and weaknesses of different countries' tax administration. The project is supported by the European Commission and other donors (including Germany, the Netherlands and the UK).

markets. At the same time, pressure on tax revenue, meanwhile, has obliged tax authorities to improve the administration of the tax system, in order to encourage compliant behaviour by taxpayers. These considerations apply to both direct and indirect taxes, and particularly to VAT, which is a major source of revenue for Member States. Furthermore, the pressure on government budgets, resulting in particular from the financial crisis and its aftermath, is unlikely to ease in the near future. Tax authorities are therefore likely to come under significant pressure in the coming years.

With most tax authorities facing significant reductions in human resources and operational budgets, there is a clear need to improve efficiency. Furthermore, in both the EU and global markets, Member States' tax authorities have become increasingly dependent on each other in the area of tax collection. In particular, they have shared responsibility for ensuring correct tax collection in all Member States. In view of this, improving the effectiveness of the tax administration system has become more important than ever.

Tax compliance strategy

Tax authorities operate in a society in which the public, businesses, organisations and public bodies all react to each other's actions. In order to influence taxpayer behaviour, a tax authority needs to be aware of its own behaviour and the effect this can have, but also of the behaviour of other actors in society. It is important for tax authorities to understand what causes non-compliance among individuals and businesses. Making mistakes because of ignorance of tax rules is very different from aggressive tax planning and tax fraud. Behavioural science has shown that criminal sanctions are not the appropriate response (and may have an adverse effect) when non-compliance is caused by the complexity of the legislation or a taxpayer's lack of awareness or understanding of tax rules.

Tax authorities should therefore match their compliance strategy to the taxpayer's attitude and motives. Their systems and structures should ensure that non-compliance with tax law and tax fraud are kept at the lowest possible levels.

Tax authorities are responsible for managing a range of different risks, such as the risk of non-compliance, including of tax fraud, and the risk of insolvency on the part of the taxpayer. Compliance risk management strategies involve finding ways to address these risks by analysing the behaviour of taxpayers, and, in particular, how their behaviour gives rise to these risks. An effective tax compliance policy should include a balanced mix of preventive and corrective measures, ranging from information and advisory services to law enforcement measures. The measures should be chosen on the basis of a risk assessment. Equally importantly, tax compliance policies should aim to build confidence in the tax administration system and trust between the taxpayer and the tax authority.

Whereas in the past tax authorities relied heavily on enforcement and punishment, a balanced tax compliance approach is now becoming more and more popular worldwide. A number of seminars and workshops organised by the Commission have helped to raise awareness of new developments in this field. This new way of thinking is also reflected in several international studies and papers on tax administration (OECD, 2012; Russell, 2010; and Australian Taxation Office, 2009). The core principle emphasised in all these studies is that a tax compliance strategy should balance preventive and corrective measures, in such a way as to ensure that taxpayers fulfil their tax obligations.

One of the essential features of preventive measures is that they facilitate tax compliance by providing services to taxpayers. The aim of these measures is to promote voluntary compliance and prevent tax avoidance and evasion by making it as simple as possible to pay taxes. This type of measure is generally thought to be effective in ensuring correct tax payment by taxpayers who are willing to be compliant, but struggle with the practicalities of paying their taxes. For taxpayers who purposefully try to avoid paying taxes, however, enforcement measures are needed. These measures are designed to force taxpayers to pay the taxes they owe, and involve checking whether the taxpayer has properly reported his tax obligations and paid the tax due.

Of particular interest are recent improvements seen in the level of trust being developed between taxpayers and the tax authorities. Social norms can

help to increase compliance among taxpayers and to build trust between taxpayers and tax authorities. The quality of tax administration and of the provision of public goods can help to increase voluntary compliance, reduce tax evasion and ultimately increase tax revenue. In its latest report on the issue, the OECD finds that that the importance attached to cooperative compliance has increased in recent years and it has now become established practice in a number of countries to take steps to improve cooperative compliance as part of tax policy. The success of cooperative compliance programmes depends very much on staff having the commitment and level of training necessary for the programmes to be successfully implemented. There is also evidence that transparency and disclosure on the part of businesses is increasingly considered to be an important part of tax compliance systems, as it can reduce uncertainties for both tax authorities and taxpayers (OECD, 2013a).

It is difficult to assess how well EU tax authorities are performing. This is not due to lack of data on the results achieved by Member States' tax authorities *per se*: in most cases, tax authorities report extensively on the results of their activities, e.g. in annual reports and through press releases. Comparative data, however, remain scarce: 'the absence of comparable data across countries on tax administration has made the comparative analysis of tax agencies (almost — author' note) impossible' (Alm and Duncan, 2013). This gap has been filled, to some extent, by a comparative report on tax administration published by the OECD Forum on Tax Administration. This report is now in its sixth edition. It provides reference data on the main aspects of tax administration, including organisation, strategic and human resources management, resources, operational performance, services, the relationship between tax authorities and intermediaries, and the overall legal framework within which tax authorities operate. Although the report is primarily designed to assess the tax authorities of OECD member countries, the 2015 edition nonetheless covers all EU Member States, including those that are not OECD members. The OECD compiles the report largely on the basis of data gathered during its own survey of tax authorities. Other sources used include annual reports produced by tax authorities and the Commission's report on VAT collection and inspection (European Commission, 2014c). The

OECD report has been the main data source for the comparison of the performance of Member States' tax authorities presented in this report in previous years.

Performance of Member States' tax authorities: an overview

The following paragraphs discuss the results of an initial screening of the performance of Member States' tax authorities, carried out using data from the latest OECD report.

Data on the cost of collecting taxes may be considered as a rough proxy indicator of the institutional performance of a tax authority. The assumption is that taxpayers tend to have greater trust in an organisation that is perceived to be efficient and effective in performing its duties. The cost of tax collection is generally calculated as the ratio of the annual administrative costs of the tax authority to the total tax revenue collected, net of refunds, in one fiscal year. Almost all Member States' tax authorities calculate and publish this ratio in their annual reports. The OECD regularly records these data and publishes them as part of its report on tax administration.

The data published in the 2015 OECD report show the average cost of tax collection in the EU to be EUR 0.97 (or other national currency) per 100 units of revenue in 2013. ([106]) On the basis of this information, the tax authorities in Poland and Slovakia, Germany, the Czech Republic, Bulgaria and Romania stand out as having relatively high costs of revenue collection, i.e. above LAF minus (see Graph 4.2).

Given that tax authorities are being required to 'do more with less', it is important that governments invest in making the tax administration system more efficient and effective. All tax authorities will need to be ready to face this challenge, and to adapt to their changing environment. New technologies, for example, will allow them to develop more sophisticated systems for online tax administration, which will offer taxpayers more

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([106]) The trend in the cost-of-collection ratio is influenced by a number of factors, thus limiting its usefulness as a measure. These include: changes in tax rates over time, macroeconomic changes, abnormal expenditure by tax authorities and changes in the scope of taxes.

online services and make it easier to spot and avoid mistakes.
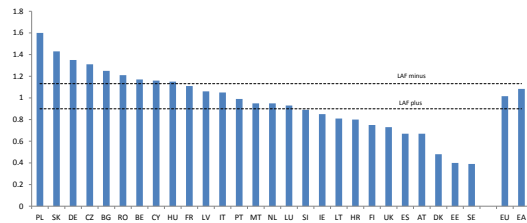
Source: OECD (2015b).

A widely used indicator of tax compliance costs for small and medium-sized enterprises is the 'paying taxes' indicator, which is part of the larger 'Doing Business' project coordinated by the World Bank. ([107]) The indicator includes a measurement of the administrative burden in terms of time required to prepare, file and pay (or withhold) corporate income tax, VAT or sales tax, and labour taxes (including payroll taxes and social security contributions) for a case study medium-sized company, active on the domestic market (see Graph 4.3).

Graph 4.3:   **Time to comply (hours) with tax obligations for a medium-sized company, 2013**
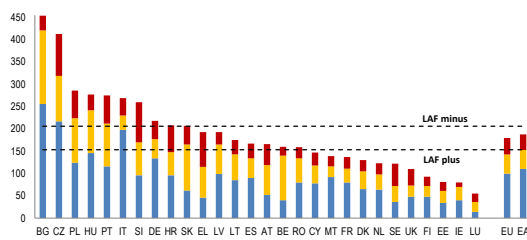
Source: World Bank (2014).

Five criteria are used to identify which Member States have a particular need and scope to make tax collection more efficient and effective. These are the same criteria as were used in the 2014 report, thus allowing results from the two reports to be compared, and reflect the issues discussed in the sections above.

The five criteria considered to indicate a possible weakness in tax collection systems are as follows: 1. undisputed tax debt as a proportion of net revenue, with a level significantly above the EU average signalling a possible weakness in enforcement of tax policy; 2. the proportion of tax returns filed online, with a level significantly below the EU average signalling a possible weakness in the services provided by tax authorities; 3. use of pre-filled tax returns, with, again, a low level of use being indicative of poor service; 4. the administrative burden placed on an SME by the tax system, a high burden suggesting weaknesses in the services provided by the tax authorities; and 5. the cost of tax collection, used as a proxy of tax administration efficiency, high costs thus potentially indicating inefficiency. The last two criteria were discussed earlier in this section. The exact figures for the first three criteria may be found in Table A2.18 in Annex 2.

It should be noted that some Member States have introduced reforms since the period to which these indicators refer.

Table 4.2 presents an overview of the screening carried out on the basis of these five indicators. A Member State may need to improve its overall performance in tax administration if it is found to have scope for improvement in at least four of the five areas, or in the last three — the level of undisputed tax debt, the burden of paying taxes and the cost of revenue collection – this indicating a weakness in all three aspects of tax administration (enforcement of tax policy, the services provided by the tax authorities and efficiency of tax administration). The Member States identified as potentially needing to improve their overall performance in tax administration are thus Bulgaria, Czech Republic, Germany, Poland and Slovakia. As stated in previous years' reports, it is important to emphasise that this initial screening may not identify all the countries that have particular scope for improving their tax administration. Weaknesses in some countries' tax administration may only be able to be identified using country-specific information, often of a qualitative nature.

([107]) Comparisons based on this indicator are subject to limitations because, for example, the case study company is not a representative company and regional variations across a country are not taken into account.

Table 4.2: **Overview of tax administration assessment**

Country	No / low use of e-filing 2013	No pre-filling 2013	Undisputed tax debt 2013	Cost of revenue collection 2013	Cost of paying taxes 2013	Overall challenge
BE			X			
BG	X	X	X	X	X	X
CZ	X	X	X	X	X	X
DK						
DE	X	X		X	X	X
EE			-			
IE						
EL	X	X	-			
ES			-			
FR						
HR	-		-			
IT			X		X	
CY	X	X	X			
LV		X	X			
LT						
LU	X	X	-			
HU			X		X	
MT	X		X			
NL						
AT		-				
PL	X	X	X	X	X	X
PT			X		X	
RO		X		X		
SI					X	
SK	X	X	X	X	X	X
FI			-			
SE			-			
UK		X				

Note: Data for pre-filling is 2011 for EL and LU. Data for undisputed tax debt is 2012 for DE and 2011 for LV.
Source: Commission services based on OECD (2015b), OECD (2013a), World Bank (2014) and results of consultations with Member States, namely in the case of information on IT use of pre-filling.

4.4. WEALTH AND INHERITANCE TAXES FROM A REDISTRIBUTIVE PERSPECTIVE

4.4.1. Introduction

With fiscal consolidation continuing to pose a challenge to governments, and while trying to find the tax policies most conducive to growth, stocks of wealth are increasingly being seen as a potential base for taxation. ([108]) The taxation of wealth is also attractive as a way of addressing concerns relating to distributive justice. Piketty's (2014) research on wealth distribution in industrialised countries and the subsequent discussion around his data and concepts have sparked off a new debate about wealth distribution and taxation.

EU Member States levy tax on wealth and transfers of wealth to varying degrees. Ernst and Young (2014) carried out a survey of the various taxes used in different Member States for the European Commission. As shown by this study,

real estate and land taxation is the most widespread type of taxation among EU Member States, followed by inheritance tax. Recurrent taxes on net wealth are found in Italy (on financial assets), Spain, France and the Netherlands (the latter three applying various forms of net wealth taxation). The levels of usage of the different types of tax reflect their potential budgetary importance: where applied, taxes on the possession or transfer of real estate or land contribute around 3 % to tax revenue on average, while inheritance and gift taxes account for around 0.6 % of revenue, and net wealth taxes 0.5 %.

In a context where governments are trying to achieve a growth-friendly tax shift away from labour, broadening the assessment of the effects of asset-based taxation to include a discussion of equity aspects seems appropriate. Chapter 2 of this report shows that taxes on housing and inheritance could help to finance such a shift, as these types of taxation have favourable properties in terms of efficiency. As taxation is shifted onto stock-type bases, it is also important to consider the distributional properties of such taxes: who would bear the costs and how the income and wealth distribution among households could possibly be affected. This section discusses a number of aspects of this, assessing first the possible reasons for stock-based taxation in general (4.4.2), before going on to examine the equity of housing taxation (4.4.3) and of net wealth taxes and inheritance taxes respectively (4.4.4). The last part of the section discusses the possible scope for policy at EU level (4.4.5).

4.4.2. Wealth taxation

Wealth-related taxation has generally been regarded negatively in recent decades. Rates have tended to be lowered, and the scope of wealth taxation reduced, on the basis of theoretical and political arguments that taxing wealth, a form of taxing capital, was not optimal for efficiency reasons. The high level of tax avoidance and the administrative costs associated with wealth taxes were also cited as practical difficulties for levying tax on wealth. Despite these arguments, the debate on the usefulness of wealth taxes and more generally on the wider effects of the inequality of wealth distribution has gained prominence recently. Some of the arguments put forward in this debate are summarised below.

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([108]) The question of wealth taxation was discussed at the 2014 annual tax workshop organised by the European Commission's Directorate-General for Economic and Financial Affairs. The proceedings of the workshop may be found at http://ec.europa.eu/economy_finance/events/2014/2014111 3-taxation/index_en.htm.

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Box 4.2: **Changes in income inequality in EU Member States during the crisis**

Changes seen in the level of income inequality in EU Member States over recent years continue to be a topic of general interest. The below graph compares the income distribution before and during the crisis, on the basis of the latest available Gini indicators[1], extending the analysis presented in last year's report.

Graph 1: **Inequality of market and disposable (i.e. after tax and benefits) income in EU Member States, 2007 and 2013, measured by the Gini index**
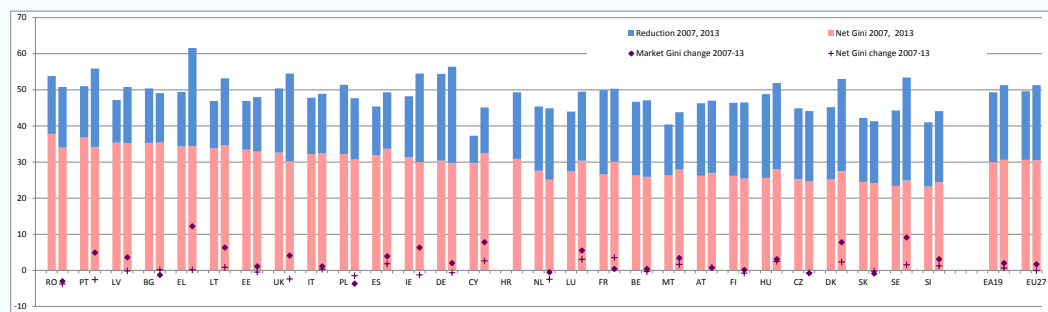
Note: The sum of the red and blue bars corresponds to the Gini index of market income inequality. The countries are shown in declining order of net income inequality in 2007. Information on market income inequality in Croatia is available as of 2010 only.
Source: Eurostat.

In the EU as a whole, inequality of market income increased slightly during the crisis years, but inequality of disposable income remained stable. Looking at the developments in more detail, the following observations can be made:

- Inequality of market income increased in the majority of Member States during the period 2007-2013, with a more marked increase being seen after 2009. The largest increase over the whole period was recorded in Greece, followed by Sweden, Denmark, Cyprus, Ireland and Latvia. Market income inequality fell in six countries over the period 2007-2013, namely in the Netherlands, the Czech Republic, Slovakia, Bulgaria, Romania and Poland.

- Tax and benefit systems had a significant effect in mitigating the changes in market income inequality. Overall, disposable income inequality for the EU as a whole (excluding Croatia) remained almost unchanged. The largest falls in disposable income inequality were seen in the United Kingdom, the Netherlands, Portugal and Romania. France, Luxembourg, Cyprus, Hungary and Denmark, meanwhile, all experienced an increase in after tax and benefits income inequality of 2 percentage points or more.

- The redistributive effect of the tax and benefit system, measured by the difference between the Gini indices for market and for disposable income inequality, increased in 21 Member States. The increase was particularly noticeable in Greece, Sweden, Ireland, Portugal, the United Kingdom, Denmark, Latvia and Cyprus, where the difference between the indices was between 5 and 12 percentage points. Six Member States — France, Poland, Bulgaria, Slovakia, the Czech Republic and Austria — saw a slight fall in the redistributive effect of the tax and benefit system, with the difference in the indices increasing by up to 3 percentage points.

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[1] The Gini index indicates the extent of inequality over the whole population and is not focussed at either the bottom or upper part of the distribution, as other statistical indicators might be.

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Diamond and Saez (2011 and 2012) and Jacobs (2013) have questioned the reliance on labour taxes at the detriment of capital and wealth taxes in economic theory. The argumentation is especially relevant for high-income earners, as labour and consumption taxes alone do not seem able to make

them contribute effectively, as the distinction between capital and labour income becomes blurred at the top of the income scale, and, furthermore, as the correlation between earning opportunities and the propensity to save is positive. In addition, the tax rates applied to the highest incomes are, in practice, limited by the need to preserve the positive incentive effects on labour supply and human capital investment, and also because top personal income tax rates are bound by the corporate income tax rate, which acts as a 'backstop', and which, in turn, is limited by international tax competition. Finally, in terms of equity, net asset taxation could benefit borrowing-constrained households, and could potentially have a greater redistributive effect, as a result of the higher concentration of wealth compared to income (see below). [109]

The practical concerns associated with wealth taxation are also being reconsidered, because the terms used to assess the practical feasibility of wealth taxes — the level of tax avoidance and the administrative costs — are changing. New international standards on third-party reporting and on information exchange relating to asset holdings and capital income are making the avoidance of capital taxation less profitable. The new standards and the falling cost of managing large databases can similarly be expected to lower the administrative costs of wealth taxation. In countries where taxes are levied on net wealth, information on assets can provide a useful way of checking the validity of capital income reporting.

Another argument for wealth taxation is that wealth is a source of utility independent of income. The saving behaviour of wealthy populations is consistent with an interpretation of wealth as a source of utility in its own right (Carroll, 1998). The most obvious and widely acknowledged utility properties of wealth is that it lessens the effect of a temporary reduction in income and allows individuals to maintain the same lifestyle throughout lifetime, and therefore acts as 'insurance' and consumption smoother during the life cycle. [110] In addition to this, wealth also

confers the power that results from the command over resources, thus providing an advantage in bargaining situations (Bowles, 2012), and creating disproportional political influence and encouraging rent-seeking. [111] It is therefore argued that wealth distribution matters and that tax design should be evaluated on how it redistributes wealth in addition to income, and finally that stocks of wealth should be considered among possible tax bases. Household income and wealth are positively, but not necessarily highly, correlated (within individual countries). Income may therefore not be a good proxy for wealth. Growing income inequality, combined with the limitations on income tax progressivity and the unequal initial capital endowments, all create inequities between households that are not mitigated by income tax systems. The ability of the wealthiest households to accumulate assets over their lifetime and beyond is argued to give grounds to suppose that the taxation of labour income and consumption could be complemented by a tax on unconsumed lifetime wealth. Proponents of wealth taxes put forward further arguments in favour of the progressivity of wealth taxation. These are mainly based on the desirability of a more equal wealth distribution.

First, the highly unequal distribution of net assets can be a source of macroeconomic instability. In the US, household debt helped to mitigate consumption inequality against widening disparities in household income, but resulted in a highly vulnerable pre-crisis growth model (Cynamon and Fazzari, 2008 and 2014). In Europe, difficulties in adjusting household portfolios to income and wealth shocks played an important role in depressing consumption and growth in the countries most affected by the crisis (Pontuch, 2014).

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[109] Some theoretical work (Straub and Werning, 2014) goes even further, refuting the optimality of not taxing capital in the long run, within the logic of the modelling framework of Chamley (1986) and Judd (1995).

[110] Other types of utility classically derived from wealth at the individual level, but whose collective effect is dubious, are

feelings of prestige (which signal societal position, and are solely distribution related, i.e. based on the relative rather than the absolute level of wealth) and the exercise of exclusive consumption.

[111] The potentially disproportional ability of the affluent to influence political deliberations in their favour has received attention in the context of financial regulation in the United States in particular. The large bonuses paid in the financial industry in the UK and the US before the crisis appear to result from the sector's ability to enjoy and share rents (Philippon and Reshef, 2012). For more information on the possible role of political lobbying in the incomplete implementation of the Dodd-Frank Act more recently, see Rivlin (2013), quoted from Oxfam (2014).

Second, widening asset ownership may encourage entrepreneurial activity and growth. Asset ownership is an important prerequisite for accessing credit, as the value of the asset is pledged as insurance on the borrowing: a more equitable distribution of assets would ease funding constraints for less wealthy sub-populations, and may thus generate entrepreneurial activity and innovation, and thus improve general economic performance (Piketty, 1997; Bowles, 2012). ([112]) Wealth inequality can also have an effect on external imbalances, via the significant effect of the saving behaviour of the wealthiest on aggregate savings and the responsiveness of consumption to changes in stocks of wealth. The nature and extent of these macroeconomic effects vary, depending on the country-specific market mechanisms and their strength. ([113]) Finally, stock-based progressivity would allow higher levels of wealth to be taxed more, complementing the income tax system in helping to mitigate socioeconomic inequality, without affecting the part of savings and wealth accumulation that performs a useful function for the economy (as a shock absorber and for smoothing households' consumption levels over life). ([114])

4.4.3. Housing taxation between efficiency and equity

The consumption of housing services by owner-occupiers has historically received more favourable tax treatment than other forms of investment in many EU Member States. The outdated property valuations used as the tax base further increase this advantage. For the tax system to be neutral, housing taxation would need to be aligned with the approach taken to other forms of investment on the one hand, ([115]) and to savings (in principle including pensions) on the other (see Chapter 3). Reducing incentives for housing investment could encourage more productive forms of investment in its place. Additional arguments are first that increases in asset prices allow economic rents to be taxed, and, second, that housing taxation is difficult to evade.

The effects of housing taxation on equity must be considered for different parts of the income distribution separately. The proportion of owner-occupiers is considerably lower among households in the lower deciles of the income distribution than among those in the higher deciles. The housing consumption of owners in the lower deciles is also more modest (Eurosystem Household Finance and Consumption Network, 2013). Increasing taxation on household main residences would therefore appear to increase equity at first sight. The role of housing in asset distribution must, however, be examined more closely, as housing has a number of specific characteristics as an asset.

- Household main residences are a form of asset that contributes to equalising wealth rather than exacerbating differences. Home ownership is the characteristic asset of households in the middle part of the income and wealth distribution, and in a number of euro-area

- countries, over half of households in the bottom income quintile are homeowners. Furthermore, the housing assets owned by households at the top of both the income and the wealth distribution are less than proportional to the proportion of overall

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([112]) See Bowles (2012, Ch. 4) for a detailed discussion of the effects of wealth inequality on macroeconomic efficiency. The central argument is that asset concentration prevents individuals providing non-contractible work for owners of productive assets from making residual claims on the results of their work, thus creating a disincentive to performance (as income is then not linked to results, workers merely doing the minimum not to be fired instead of working to the best of one's abilities). There is empirical evidence of the positive effect of wealth and notably home ownership on entrepreneurial activity when credit constraints are present (e.g. Evans and Jovanovic, 1989; Schmalz et al., 2013). The effect of capital concentration on growth has not yet, however, been fully explored. The possible benefits of asset concentration include the availability of venture capital at a lower cost, in view of the fact that risk aversion falls as wealth increases (Carroll, 2000).

([113]) Policies and practices designed to offer access to credit for homeownership to financially vulnerable populations was one of the causes of the subprime crisis (Hemmelgarn et al., 2012). Policies of this type may create the illusion of redistributing assets, while they might not do so as they are credit based.

([114]) To the extent that higher taxation of higher stocks of wealth reduces the incentive to accumulate additional wealth, this type of taxation may also facilitate social mobility by changing the distribution of investment risk along the wealth distribution.

([115]) Neutrality would require the taxation at the same rate of imputed income net of costs (including mortgage interest, ie debt-financed homeownership), maintenance costs, and allowance for equity where such allowance exists for business investment.

household wealth they hold. According to statistical decomposition analysis, owner-occupied housing has an equalising effect in euro-area countries, because it tends to account for a larger proportion of the total net wealth of low-wealth households than of households higher up the wealth distribution. Wealth inequality is also found to be lower in countries with higher rates of owner-occupant housing (Bezrukovs, 2013; Sierminska and Medgyesi, 2013). [116] Increasing the tax burden on owner-occupied housing relative to other assets, even if beneficial for neutrality, could make households in the lower and middle deciles of the wealth distribution worse off relative to the most affluent. Other instruments would then be needed to mitigate wealth inequality.

- Home ownership is regarded as having positive side effects (Dietz and Haurin, 2003). [117] It also appears to have a favourable effect on saving: controlling for anterior savings and other relevant covariates, homeowners are found to accumulate significantly higher wealth than renters (Di et al., 2007, Turner and Luea, 2009). [118] Furthermore, as state pensions become increasingly less generous, home ownership is becoming ever more important as a way for retirees to maintain their standard of living.

- The distribution of asset ownership has an important generational dimension that needs to be considered in tax policy reforms. Elderly homeowners are typically mortgage-free. In many countries, pensioners were shielded from the effects of fiscal adjustment policies relative to younger households (Darvas and Tschekassin, 2015). In countries where house prices have fallen, younger households with mortgages, meanwhile, may have seen their net worth fall sharply, potentially into negative territory, and may have experienced negative income shocks that increase their repayment rates. The instability of personal income and the more cautious lending on the part of banks in some countries have made it more difficult for the youngest households to purchase a house at all. Market instruments (e.g. reverse mortgages) could be made available and/or housing taxes designed in such a way (e.g. with the option to defer payments), so as not to exacerbate inequities between generations.

4.4.4. How should wealth taxes be designed? Net wealth and inheritance taxes

A net wealth tax may not face the same immediate difficulties as would a capital income tax. [119] The risk of taxpayers evading taxes by relocating assets could be limited by basing it on worldwide assets, or by basing it on the possession of a difficult-to-relocate asset such as real estate or a family business. [120] For a net wealth tax on worldwide assets to be able to be effectively implemented, there would need to be a strong international reporting and anti-avoidance framework. Furthermore, for the tax to be both effective and fair, 'tax shelters' available to the wealthiest, such as legal vehicles used to conceal beneficial asset ownership, and outright exclusions of certain assets from the tax base, would need to be limited. At the same time, tax duties that could potentially be high as a proportion of realised or earned income require appropriate administrative solutions. The option to defer payments, and some protection against the depletion of the assets by the tax could be useful. Switzerland is an example of

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[116] Based on decomposition analysis of wealth inequality, Sierminska and Medgyesi (2013) argue in favour of encouraging homeownership across the wealth distribution, in order to promote a more equitable distribution of wealth. See also Yellen (2004) for a similar view on the role of home equity for most households in the US, with the exception of those at the very top at the wealth distribution.

[117] For some time now, the argument has been made that high levels of owner occupancy create positive local social externalities, such as higher local political participation. Empirical research has failed to produce conclusive evidence on most of the claimed advantages, mainly due to the difficulties in isolating exogenous variation in home ownership from other variables. One area where the benefits of home ownership are robustly established is socially desirable traits in children (Dietz and Haurin, 2003). Some questions remain as to the methodology used, but this finding is nonetheless particularly noteworthy in light of the growing recognition of the long-run effects of interventions early in life.

[118] Leveraged home ownership serves to create the commitment needed to stick to a saving plan: the high psychological cost and the delay there would sometimes be in liquidation may promote short-term discipline among periodically inconsistent savers, as described by Laibson's (1997) 'golden egg' model.

[119] e.g. the need to ensure neutrality between capital import and export.

[120] New forms of avoidance are, however, emerging, a recent trend being to secure wealth in the form of art and other expensive goods in 'freeports', in practice, fiscal 'no-man's-land'.

an advanced economy where a net wealth tax has a long-established role in the national tax system (see Box 4.3).

Instead of being subject to recurrent taxation, assets can also be taxed on the transfer of ownership, whether this be a market-based transfer (i.e. the sale of an asset) or a transfer of another type (e.g. gifts and bequests). The main wealth transfer taxes, apart from real estate transfer taxes, which have considerable disadvantages, [121] are taxes on gifts and inheritances. [122] There are a number of arguments in favour of such taxes, as explained below.

Inheritance taxation has been of particular interest in the EU in recent years, as the population is getting older and the older cohorts are relatively wealthier. The potential base for this tax is therefore increasing. [123] Inheritance taxation is expected to mitigate 'dynastic' wealth inequality and to help create greater equality of opportunity. In the Haig-Simons framework, bequests are included in total income. Taking this approach, it would appear straightforward to tax them at the prevailing rate applied to capital and unearned income. From an efficiency point of view, unplanned bequests constitute an ideal situation in which to levy a tax, because the bequeather has not taken action in advance in response to the existence of the tax, i.e. the tax has not caused a change in behaviour, and no action is possible subsequent to the bequest. Concerning the scope for taxation upon the utility of the bequeather, policy prescriptions depend on the normative approach taken (Boadway et al., 2010). Under a welfarist approach, bequests that a person chooses to make in return for services such as caring would be taxed similarly to the bequeather's other consumption, but accidental bequests would be subject to lighter taxation, as they do not provide the bequeather with any utility. This contrasts with the efficiency argument, which regards unplanned bequests as a good opportunity for levying taxes. Opinions differ as to the appropriate treatment of altruistic bequests: some variants of welfarism suggest that bequests involving some altruism should be taxed more lightly than strategic bequests, and under the 'restricted welfarism' approach, there is a case for the non-taxation of altruistic wealth transfers.

Most EU Member States' current legislation on taxation of bequests is characterised by highly complex rules and numerous exemptions. Firstly, modest bequests made to close family (surviving spouse and children) are usually not taxed. [124] The complexity of the legislation reflects the conflicting principles and social norms at play, with policymakers attempting to strike a balance between equality of opportunity and equity between generations, on the one hand, and respect for the economic role of the family on the other. [125] The second most common exception to inheritance taxes in the EU is for the passing on of family businesses. This is widely exempted from inheritance tax in order to preserve business continuity. This exception is, however, one of the main ways in which the scope of inheritance taxation is reduced. Dynastic family businesses may pass on not only productive assets but also firm specific knowledge and entrepreneurial behaviour. [126]

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[121] Transaction taxes on housing potentially reduce both the efficiency and the depth of the housing market, including by encouraging housing hoarding. They may also increase economic imbalances, as they tend to restrict labour mobility and the revenue they provide is more cyclical and erratic than that from other taxes. A detailed discussion can be found in the Taxation Trends report (European Commission, 2012a) and in recent editions of this report.

[122] The design of these two taxes is similar in some countries and dissimilar in others, reflecting the different approaches as to whether governments should encourage people to plan bequests through gifts.

[123] For France, Piketty (2011) finds that the annual flow of inheritance accounted for around 15 % of national income in France in recent years, up from about 5 % in the post-war period.

[124] See EY study. The survey by Horioka (2014) shows there to be country-specific differences in households' reasons for making bequests that correspond to prevailing social norms relating to inheritance.

[125] The rationale ranges from the recognition of parenting as a socially beneficial altruistic activity, to the generally recognised role of families as economic units with risk sharing, pooling of resources, and joint investment decisions. From a sociological point of view, it has been argued that the ageing societies of advanced economies tend to be age-segregated, and to feature age-homogeneous institutions. Resource transfers across generations are thus crucial for maintaining age integration (Uhlenberg and Riley, 2000, quoted from Kohli, 2004).

[126] Empirical findings also support the hypothesis that dynastic family management may slow down productivity increases within the firm as well as the Schumpeterian process of creative destruction in the overall economy (Bloom, 2006; Grossmann and Strulik, 2010).

Box 4.3: The net wealth tax in Switzerland

There is a long-standing tradition of levying regional (sub-federal) taxes on individuals' net wealth in Switzerland. These taxes typically cover real estate and other real and financial capital, including businesses, life insurance, pension investments and art works. These assets are assessed at as close as possible to fair market value. Net wealth is offset against liabilities before calculating the tax due, and retirement savings are exempted before access. Taxpayers must declare their worldwide assets, but businesses, permanent establishments and real estate abroad are not included in the base. Non-residents are subject to a limited net wealth tax liability. Rates are progressive, usually ranging from 0.3 % to 0.7 %, and up to 1 % in some cases. Some but not all cantons have measures in place to prevent the depletion of assets by tax payments that would exceed income (tax shield). The net wealth tax can provide up to 10 % of the tax revenue collected at cantonal (sub-federal level). An additional benefit of the tax is that it provides information that can be used to assess the reliability of taxpayers' income reporting.

A further aspect to be considered when designing inheritance taxation is the flow of resources between generations. Increased longevity means that heirs are now often already in or near retirement. Relying on expected inheritance as the means to live on during retirement is a risky approach, due to the inherent uncertainty as to the timing and the amount received, and the limited scope for changing strategy (Pfeiffer and Braun, 2011). This approach should therefore not be encouraged. At the same time, it may be useful to speed up the flow of resources to younger generations, arguably in higher need of investment (Arrondel and Masson, 2013). There may therefore be a case for incentivising the skipping of generations in bequeathing, e.g. by applying the same tax rates to bequests to children and grandchildren, or allowing tax-exempt donations of bequests to future heirs' children. [127] In general, intergenerational transfers raise the question of the role of the family in the various possible social structures, ranging from individualistic systems where only market borrowing and savings are used, in varying proportions throughout a person's life, to fully-funded state systems, providing child care, education, social insurance and old-age pensions, financed from income, and potentially wealth, taxes.

Net wealth and inheritance taxes each have their own advantages and disadvantages. The former

levies a low rate of tax on capital, at a relatively high frequency, whilst the latter is usually fixed at a higher rate but levied less often. Over 30 years, an annual asset tax of 1 % diminishes the capital stock by about the same amount as a one-off tax of 26 % every 30 years. Inheritance taxation has the advantage of efficiency, as it allows for fluctuations of wealth during a person's lifetime, and is also more effective in ensuring comparable treatment of individuals with pension income and those depending on asset-based resources to support them in their retirement. [128] Nonetheless, the tax burden created by inheritance taxation varies somewhat between individuals due to differences in lifetimes. Resistance to more effective and broader inheritance taxes, as seen at present, also raises the question of their political economy. [129] A continuous tax on high net worth may ultimately be easier for people to accept than a cumulative burden associated with the event of death. In view of the cost of valuing assets and of administration, a less frequent tax may have some appeal, but the advantage of having up-to-date information on asset stocks would then be lost. Lastly, taxes on net wealth are less complex to apply in international environments, and imply a lesser need for normative choices: the difficulties

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[127] Another way of encouraging the transfer of resources to younger generations would be to offer preferential tax treatment to lifetime gifts relative to bequests. This type of tax policy favours however the wealthiest, whose income from assets is sufficient to meet precautionary needs, and is thus inimical to the objective of achieving greater equity.

[128] Depending on the structure of retirement income for different populations, taking pension entitlements into account when assessing wealth could change figures for household wealth inequality considerably, e.g. for Germany, Frick and Grabka (2010) show that the Gini coefficient of net wealth inequality among individuals aged 17 and over drops from 0.79 to 0.64 (for 2007) when the net present value of pension rights is taken into consideration.

[129] Profetta et al (2014) seem to show, based on descriptive econometric regression analysis, that, given the larger proportion of older voters, the political opportunity for higher inheritance taxes in OECD countries is falling.

of defining the motive for bequests and judging their level of altruism is thus avoided. Inheritance and net wealth taxes are not mutually exclusive in international practice.

4.4.5. Taxes on wealth and transfers of wealth: the role of EU-level policymaking

Whilst taxation of wealth, similarly to other areas of tax policy, is a national competency, the EU nonetheless has a role to play in the recently revived discussions around wealth, redistribution and the taxation of assets. The main supranational issues related to wealth taxation are the preservation of the single market and the fight against fraud, but EU-level coordination may also be relevant in the areas of policy analysis, policy advice and policy coordination.

To date, cross-border issues relating to asset-based taxation have mostly been limited to inheritances and gifts, with multiple combinations of citizenship and tax residency of the bequeather and the heir, and the location of the asset creating considerable legal complications. Furthermore, EU Member States tend to levy higher inheritance taxes on border-crossing bequests (Hirst, 2015). ([130]) Commission Recommendation 2011/856/EU on relief for double taxation of inheritances constituted a first step towards the creation of a common framework for the taxation of assets, including inheritances and gifts. Effective taxation of financial wealth requires administrative cooperation between Member States and reporting on the part of banks. This is also necessary for improving the general acceptance of such taxes among the public. Significant progress has been made recently in improving administrative cooperation and bank reporting on foreign accounts. Alternative frameworks conducive to tax evasion are, however, likely to appear (Elsayyad and Konrad, 2012), and EU Member States can best address this problem at international level when acting together.

The EU level also contributes to the economic analysis. One way in which the EU can contribute is by the provision of good-quality statistical information to ground the analysis. The collection of the Eurosystem Household Finance and Consumption Survey (HFCS) data is an important step in this direction, although country coverage is not complete, and some gaps remain, notably relating to public pension entitlements, and to wealth at the upper tail of the distribution (Vermeulen, 2014). In addition, and while property taxes are already covered by policy guidance to policy guidance to EU member states; further analysis could be carried into the design of this type of tax policy, in particular as relates to the distributional implications, as a partial approach could increase wealth inequality instead of reducing it.

4.5. DISTRIBUTIONAL EFFECT OF CONSUMPTION TAXES

As discussed in Chapter 2, a tax shift away from labour towards sources of revenue that are considered less detrimental to growth (consumption taxes, recurrent housing taxes and environmental taxes) may help to stimulate growth and to increase employment and investment. It is, however, often argued that a shift towards consumption taxes could have negative distributional effects. The 2014 Tax Reforms report presented the results of modelling exercises performed to simulate different tax shift scenarios, using the European Commission's QUEST model. ([131]) Recent research carried out by the OECD using micro data sheds new light on this debate.

OECD (2015a) examines the distributional effects of consumption taxes in 20 OECD countries, ([132]) focusing on VAT and excise duties. In summary, this research shows that consumption taxes do indeed have a regressive effect when the cost to households is measured as a percentage of current

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([130]) The European Court of Justice requires EU Member States not to discriminate between residents or citizens of the country and other EU citizens as bequeathers or recipients of bequests. It has, however, no power to prevent the taxation of assets by two Member States, a matter which is left to Member States to resolve by means of bilateral agreements between jurisdictions.

([131]) Research by the European Commission based on the QUEST model (Burgert and Roeger, 2014) studies the distributional effects of tax shifts on the basis of functional income categories and finds that a tax shift redistributes income from capital owners to wage earners.

([132]) The EU Member States were: Belgium, Czech Republic, Germany, Estonia, Ireland, Greece, Spain, Italy, Hungary, Luxembourg, Netherlands, Austria, Poland, Slovenia, Slovakia and the UK. The non-EU countries were: New Zealand, Chile, Korea and Turkey.

income, but can be shown to be generally either proportional or slightly progressive when their effect is measured as a percentage of expenditure (see Graphs 4.4 and 4.5). They may, however, also be slightly regressive when measured as a percentage of expenditure if few reduced rates and exemptions are applied. These results confirm and expand on the results of previous analyses (see Box 4.4).

Graph 4.4: **Average VAT burden on households, by expenditure decile (all countries, simple average)**
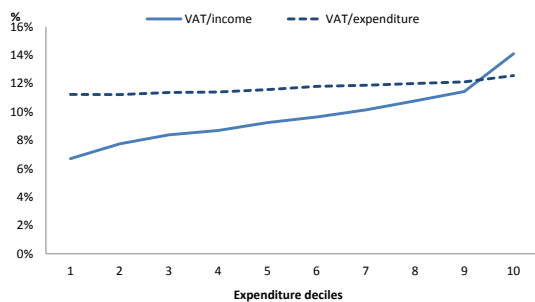
Note: In almost all countries, as income increases, VAT payments fall as a percentage of net income, and stay roughly the same or increase slightly as a proportion of pre-tax expenditure (Graph 4.4). In all countries, as expenditure increases, the VAT burden increases as a percentage of income. Similar trends are also seen for excise duties. The data relates to various years from 2008 to 2013.
Source: OECD (2015a)

Graph 4.5: **Average VAT burden on households, by income decile (all countries, simple average)**
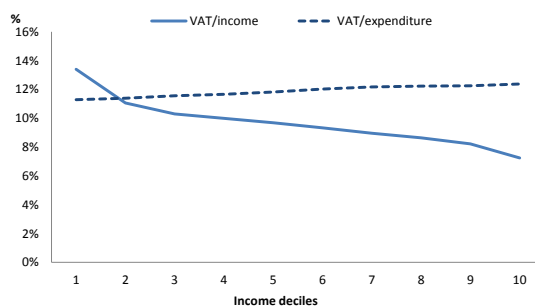
Note: See Graph 4.4.
Source: OECD (2015a)

The OECD research argues that an income-based approach, which measures VAT or excise duty paid as a proportion of current income across income deciles, is of particular interest when analysing the immediate distributional effects of these consumption taxes. Indeed this approach can be considered more suitable where household consumption patterns are not strongly affected by borrowing or savings behaviour. On the other hand, the expenditure-based approach, which measures the tax burden as a proportion of expenditure, across the expenditure distribution, may provide an indication of the distributional effect of consumption taxes over a person's lifetime. This is, firstly, because expenditure is expected to vary less over a person's lifetime than income, and secondly, because this approach takes into account the effect of borrowing and saving. [133]

The effectiveness of reduced VAT rates as a distributional tool

OECD (2015a) confirms the findings presented in previous studies as regards the effectiveness of reduced VAT rates as a distributive measure. [134] It shows that many of the reduced rates introduced to support low-income households, such as reduced rates on food and on energy products, do increase the purchasing power of these households. Nonetheless, it also clearly shows that reduced VAT rates are a poorly targeted and costly way of achieving this aim. At best, rich households receive as much benefit from a reduced rate as do poor households. At worst, rich households benefit much more than poor households. In some cases, the benefit of reduced VAT rates to rich households is so large that they actually have a regressive effect — benefiting the rich more not only in absolute terms, but also as a proportion of expenditure. This is generally the case for most reduced rates introduced to help meet social, cultural and other objectives.

Given that supporting low-income households is one of the main reasons for applying reduced VAT rates (see also Section 3.2), the above results provide some evidence in favour of a simpler VAT

[133] For example, the VAT burden measured as a proportion of current income rather than of expenditure would be higher for low-income households that borrow or use savings to sustain their consumption, as VAT is paid on consumption expenditure financed both from earned income and from borrowed money or savings. In contrast, households with a high current income that save face a low VAT burden, measured as a proportion of their income (See also Fullerton and Rogers (1993) and Caspersen and Metclaf (1994)).
[134] In particular Copenhagen Economics (2007) and Mirrlees Review (2011).

Box 4.4: **Distributional effects of consumption taxes: Literature review**

A number of studies have examined the distributional effects of consumption taxes. Most have focused on a single country, using microdata from household expenditure surveys. Warren (2008) provides a broad and detailed review of the methods used in different studies for modelling the distributional effects of consumption taxes. Some studies choose to analyse consumption tax burdens relative to current income, while others prefer to consider lifetime income, generally using expenditure as a proxy for lifetime income.

The most comprehensive cross-country study undertaken following the first approach, measuring the tax burden as a proportion of current income, is O' Donoghue et al. (2004). They incorporate information on household expenditure into the EUROMOD income tax microsimulation models for 12 European countries (Belgium, Ireland, Greece, Spain, France, Italy, Luxembourg, Netherlands, Portugal, Finland, Sweden, and the United Kingdom) in order to compare the redistributive effect of consumption taxes with that of income taxes and social security contributions. The household expenditure survey data used is from between 1990 and 1996, depending on the country. They show the tax burden created by each type of tax both as a percentage of disposable income and as a percentage of pre-tax expenditure, for each equalised income decile. They favour measuring the consumption tax burden as a percentage of income, however, and consequently conclude that both VAT and excise taxes are significantly regressive. In contrast, they find benefits, pensions and direct taxes to be significantly progressive. Leahy et al. (2011) come to the same conclusion using data from the 2005 household expenditure survey for Ireland. They also find that removing the reduced VAT rates on food and children's clothing would be regressive. Ruiz and Trannoy (2008) use 2001 data on household expenditure for France, and also conclude that consumption taxes are highly regressive when measured as a percentage of income, with the data broken down by equalised income deciles. They also simulate the effects of a number of reforms, including a revenue neutral move to a single-rate VAT system. They conclude that income tax, rather than consumption taxes, should be used to achieve the desired redistribution of income. Decoster et al. (2010) measure the consumption tax burden both as a proportion of income and as a proportion of expenditure, noting the case for each approach but not stating a definitive preference for either. Using data from the household expenditure surveys for 2003-2005 for five European countries (Belgium, Ireland, Greece, Hungary, and the United Kingdom), they find consumption taxes to be regressive in all five countries when measured as a proportion of disposable income by income decile, and to be proportional or progressive, in all five countries, when measured as a proportion of expenditure.

The only comprehensive cross-country study that expresses a strong preference for the expenditure-based approach is IFS (2011). They took results from nine different European country-specific studies (Belgium, Germany, Greece, Spain, France, Italy, Hungary, Poland, and the United Kingdom) that had used broadly similar microsimulation methodologies. The original data was from household expenditure surveys for the years from 2004 to 2009, depending on the country. Similarly to O'Donoghue et al., IFS measure the tax burden both as a percentage of disposable income and as a percentage of pre-tax expenditure (and, unlike O'Donoghue et al. they break the data down both by equalised income deciles and by expenditure deciles). They argue, however, that, due to the ability to borrow and save, measuring VAT as a percentage of income can create a misleading impression of its distributional effect. They therefore conclude that measuring the tax burden created by VAT as a proportion of expenditure gives a truer reflection of its distributional effect. They find VAT to be regressive in all nine countries when measured as a percentage of disposable income, by income decile. When measured as a percentage of expenditure by income deciles, however, they find it to be either close to proportional or progressive in eight of the nine countries (Spain being the exception). This progressivity was found to be a result of reduced VAT rates.

Metcalf (1994) uses US household expenditure data for 1990 and shows the simulated VAT burden measured both as a percentage of current income and as a percentage of expenditure. He concludes that VAT would have a roughly proportional effect over a lifetime, using expenditure as a proxy for lifetime income. Similarly to other studies, he also finds that VAT appears to be a regressive measure when its effect is measured as a percentage of current income. Caspersen and Metcalf (1994) go further and attempt to estimate lifetime income using US panel income data (i.e. using data from the Panel Study of Income and Consumers Expenditures Survey), which they then match with 1988 household expenditure data to simulate results for the household VAT burden as a percentage of lifetime income. They conclude that the introduction of VAT

(Continued on the next page)

in the US would be slightly regressive based on their measure of lifetime income, and proportional using current expenditure as a proxy for lifetime income.

Burgert and Roeger (2014) use the European Commission's QUEST model, a macroeconomic model which allows a distinction to be made between income from financial and non-financial wealth, labour and social transfers. Using data from EU Member States they argue that an increase in consumption tax, accompanied by a reduction in the tax burden on labour, would shift tax from income from labour to all sources of income. In particular, this type of tax shift would redistribute income from capital owners to wage earners. A tax shift can have regressive effects on benefit recipients' purchasing power, especially if they are not compensated for the VAT increase. This is, however, outweighed by improved employment opportunities, arising as a result of more favourable taxation of labour.

Source: OECD (2015) and Warren (2008)

system with few reduced rates (which would, correspondingly, be more efficient and have lower compliance costs). This argument is based on the view that support to low-income households can be better achieved through more direct mechanisms such as income-tested cash transfers (i.e. benefits). The initial results of simulations carried out by the OECD show that a targeted cash transfer can generally compensate the vast majority of low-income households for the loss in purchasing power they would suffer as a result of reduced VAT rates being abolished. A small number of low-income households may, however, lose out. Moreover, problems related to the practical implementation of this type of cash transfer can have significant implications for the results of such a reform (e.g. the effect on government revenue, the complexity of their design and the level of rent-seeking behaviour).

5. OVERVIEW OF TAX POLICY CHALLENGES

This chapter provides an overview of the changes that Member States could potentially make to improve different areas of their tax policy, as identified in this report. It also compares the screening results with those from last year's report. It should be noted that a number of indicators are soon to be updated, which could affect the results set out below.

As emphasised throughout the report, the mechanical screening that is used to identify of these challenges needs to be interpreted together with in-depth country analysis before any firm policy conclusions can be made. The European Commission and Member States work together, in particular within the context of the European Semester, to gain a better understanding of the current strengths and weaknesses of their systems, beyond what is shown by the indicators alone, and to identify challenges and consider possible solutions.

Chapter 2 examined macroeconomic challenges related to the sustainability of public finances, and discussed the need and scope to reduce the high tax burden on labour. Table 5.1 provides a summary of the main findings from this chapter.

The results of the indicator-based screening suggest that Ireland, Croatia, Portugal and Slovenia in particular need to do more to ensure fiscal consolidation, while, at the same time, they have potential scope to use taxation to help address this issue. The UK also needs to improve the sustainability of its public finances, but its scope to increase taxation is considered a borderline case. Although its overall tax-to-GDP ratio is relatively low compared to the EU average, the least distortive taxes are not at a low level. These findings are largely in line with those from last year's report. Slovenia's S1 indicator had fallen below the threshold last year but has moved back above it again this year. Data for Croatia is available for the first time.

The indicator-based screening also found that many Member States (Belgium, the Czech Republic, Germany, Estonia, France, Croatia, Italy, Latvia, Lithuania, Hungary, the Netherlands, Austria, Portugal, Romania, Finland and Sweden) have a relatively high tax burden on labour, and would have at least some scope for shifting the tax

burden to less distortive taxes, such as consumption taxes, recurrent property taxes and environmental taxes. It should be noted that the summary table does not reflect the fact that in some Member States the need to reduce the tax burden on labour is broad, pertaining to the overall level as well as to specific groups, whereas for other Member States, the need to reduce the tax burden relates only to one specific group, often low wage earners. For Portugal it concerns second earners only. The results of the screening show only a relatively limited number of changes since last year, and – in some cases – these changes are due to a change in the methodology used. ([135])

Chapter 2 also identified a number of Member States (Germany, Estonia, Latvia, Hungary, the Netherlands and Sweden) that appear to have potential scope for a partially unfinanced reduction in labour tax. These results should, however, be treated with great caution, and should be interpreted in the context of Member States' obligation under the Stability and Growth. In general, the best way to finance a reduction in high labour taxes tends to be to reduce public expenditure or to shift taxation towards less distortive taxes.

Chapter 3 discussed a range of challenges in relation to the broadening of tax bases, and also considered other issues connected to the design of taxes. The main findings from this chapter are shown in Table 5.2.

EU Member States are currently collecting VAT revenue at a level far below that which could be collected were all goods and services taxed at the standard rate. The widespread use of reduced VAT rates and VAT exemptions is one of the main causes of this gap. The indicator-based screening suggests that Greece, Spain, Italy, Poland and the UK have a potential challenge in this area whereas for Bulgaria and Malta the potential challenge is

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([135]) Portugal, for example, is identified as having a potential need to decrease the tax burden on second-earners due to the fact that the principal earner was in this year's report assumed to earn the average wage, whereas in last year's report he/she was assumed to earn 67 % of the average wage. Finland's potential need to reduce labour taxation is no longer considered a borderline case as, for the 20-64 age group, the reference group used in this year's report, the country does not have a relatively high employment rate, whereas for the reference group used last year, it does.

Table 5.1: **Overview of tax policy challenges (1)**

Country	Sustainability challenge and potential scope to use taxation to help address it				Need to reduce labour taxation and potential scope for a tax shift to least detrimental taxes				Need to reduce labour taxation and potential scope for a partly unfinanced cut	
	2015	2014	2013	2012	2015	2014	2013	2012	2015	2014
Belgium					X	X	X	X		
Bulgaria										
Czech Republic					X	X	X	X		
Denmark										
Germany					(X)	(X)	(X)	(X)	(X)	
Estonia					(X)				(X)	
Ireland	X	X	-	-						
Greece	-	-	-	-						
Spain			X	X						
France					X	X	X	X		
Croatia	X	-	-	-	(X)	-	-	-		
Italy					X	X	X	X		
Cyprus	-	-	-	-	-	-	-	-		
Latvia					X	X	X	X	X	X
Lithuania					(X)					
Luxembourg										
Hungary					X	X	X	(X)	X	X
Malta			-	-						
The Netherlands					(X)				(X)	
Austria					X	(X)	(X)	(X)		
Poland										
Portugal	X	X	-	-	X					
Romania					X	X	X	X		X
Slovenia	X		X	X						
Slovakia				X						
Finland					X	(X)	(X)	(X)		
Sweden					(X)	(X)	(X)	(X)	(X)	X
United Kingdom	(X)	X								

Notes: X denotes a challenge, (X) a borderline case.
Source: Commission services.

considered a borderline case. The screening approach used in this area has been made more sophisticated since the previous year's report, and now includes a measure of the VAT gap as a percentage of the VAT theoretical tax liability (VTTL). This change to the methodology is what caused Bulgaria and Malta to be identified for the first time as countries with potential scope for improvement in this area.

Chapter 3 also revisited the issue of property taxation. A number of Member States have relatively high transaction taxes on property transfers, while recurrent taxes on property are not particularly high, suggesting that there is scope to improve efficiency by shifting taxes within property taxation. This is the case for Belgium, Germany, Spain, Croatia, Italy, Luxembourg, Malta and Portugal. The brackets used to indicate borderline cases last year are no longer used in this year's report. The concept of 'borderline cases' was introduced within property taxation to distinguish between high and the very highest transaction taxes. This is no longer necessary as Belgium is the only country still applying transaction taxes above 10 %.

In a number of countries, housing taxation continues to favour the accumulation of debt, due to the combined effect of relatively generous mortgage interest deductibility while recurrent housing taxes are not high. This is the case for Belgium, the Czech Republic, Estonia, Italy, the Netherlands, Finland and Sweden. The main changes seen since last year are that Denmark and Luxembourg are no longer considered to face a potential challenge in this area – the former because recurrent property taxes are relatively high, and the latter because mortgage interest deductibility is very low.

Corporate taxation in the EU continues to be characterised by a debt bias, with a large majority of Member States allowing the deduction of interest paid on loans, while allowing no equivalent deduction for equity returns. The indicator-based screening suggests that Spain, France and Malta have the highest gap between the effective marginal tax rates for debt financing and equity financing. Malta is, however, considered a borderline case as it has a full imputation system that is not reflected in the indicator. The main changes since last year are that Spain is now

Table 5.2:   **Overview of tax policy challenges (2)**

Country	Increasing VAT efficiency		Housing taxation				Debt bias in corporate taxation		Environmental tax design		Tax governance			
			Structural shift		Debt bias						VAT compliance	Tax compliance	Tax administration	
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Belgium			X	X	X	X			X	X				
Bulgaria	(X)								X			(X)	X	X
Czech Republic					X	X				X	X		X	X
Denmark						X								
Germany			X	(X)						X			X	X
Estonia					X	X								
Ireland		X												
Greece	X	X							X	X	X	X		
Spain	X	X	X	(X)			X					X		
France							X	X	X	X				
Croatia			X	X								-	-	-
Italy	X	X	X	(X)	X	X			X	X	X	X		
Cyprus												X		
Latvia									X	X	X	X		
Lithuania											X	X		
Luxembourg			X	(X)		X		X	X	X				
Hungary									X		X	X		
Malta	(X)		X	X			(X)	(X)	X		X			
The Netherlands					X	X								
Austria														
Poland	X	X							X		X	(X)	X	X
Portugal			X	(X)				X	X	X		(X)		X
Romania											X	X		
Slovenia														
Slovakia									X	X	X	(X)	X	X
Finland					X	X								
Sweden			X	X										
United Kingdom	X	X												

Source: Commission services.

included ([136]) among the countries with a potential challenge in this area whilst Luxembourg and Portugal are no longer identified as having a potential challenge on the basis of the mechanical screening.

Chapter 3 also examined the design of environmental taxation. Around a third of Member States (Belgium, Bulgaria, Greece, France, Italy, Latvia, Luxembourg, Hungary, Malta, Poland, Portugal and Slovakia) are identified to face a potential challenge in this area. The Czech Republic and Germany, which were identified as facing a potential challenge in this area last year are no longer among the countries identified while Bulgaria, Latvia, Hungary, Malta and Poland are new additions. The reason for these changes is that data on the taxation of company cars was included in the analysis for more countries than had been the case last year.

Chapter 4 discussed issues relating to tax governance, in particular improving tax compliance and improving the functioning of tax administration. The main findings from this chapter are presented in Table 5.2.

Most of the indicators for tax compliance used in previous years' reports have not been updated for a number of years. The analysis in this area is therefore narrower, focusing specifically on VAT compliance. On the basis of a dedicated VAT compliance gap indicator, the following countries are identified as facing a potential challenge in this area: the Czech Republic, Greece, Italy, Latvia, Lithuania, Hungary, Malta, Poland, Romania and Slovakia. These results are largely similar to last year's.

The Member States identified as facing a potential challenge in the area of the efficiency of the tax administration are: Bulgaria, the Czech Republic, Germany, Poland and Slovakia. Portugal is no longer identified as facing a potential challenge as its costs of collection declined significantly during the past years.

([136]) As noted in Chapter 1, however, Spain has recently implemented a significant stepwise reduction of its statutory corporate tax rate, which is not yet reflected in the indicator.

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GLOSSARY

Allowance for corporate equity (ACE) A corporate tax system where interest payments and the return on equity can both be deducted from the corporate income tax base (taxable profits). It equalises the tax treatment of debt and equity finance at the corporate level.

Comprehensive business income tax (CBIT) A type of corporate tax system where neither interest payments nor the return on equity can be deducted from corporate profits, and are thus fully taxed at the normal corporate income tax rate. It equalises the tax treatment of debt and equity finance at the corporate level.

Direct taxes Taxes levied on income, wealth and capital, whether personal or corporate.

Discretionary fiscal policy Changes in the government's fiscal activities (e.g. in taxation or spending), the effect of which is to cause a change in the budget balance, specifically in the components of the budget balance that are under government control. The effect of discretionary fiscal policy is usually measured as the residual of the change in the balance after the exclusion of the budgetary effect of automatic stabilisers. See also *fiscal stance*.

Economic Policy Committee (EPC) A group made up of representatives of the Member States that contributes to the work of the Economic and Monetary Affairs Council with regard to the coordination of Member State and EU economic policies. It also advises the Commission and the Council on policies in this area, particularly on structural reforms.

Effective tax rate The ratio of broad categories of tax revenue (labour income, capital income and consumption) to their respective tax bases.

Environmental taxes Taxes on energy, transport, pollution and resources (excluding VAT, as this is levied on all products). **Energy taxes** include taxes on energy products used for both transport (e.g. petrol and diesel) and stationary purposes (e.g. fuel oils, natural gas, coal and electricity). **Transport taxes** include taxes related to the ownership and use of motor vehicles. They also include taxes on other transport equipment such as planes and on related transport services, e.g. duties on charter or scheduled flights. **Pollution taxes** include taxes on

measured or estimated emissions to air (except taxes on carbon dioxide emissions) and water, on the management of waste and on noise. **Resource taxes** include any taxes linked to the extraction or use of a natural resource (e.g. taxes on the extraction of gas and oil and licence fees paid for hunting and fishing rights). ([137])

ESA95/ESA2010 The European system of national and regional accounts. The national accounts data for EU and European Free Trade Association countries used in this report follows the ESA95 standard. Data for other countries used in this report follows the system of national accounts (SNA93 and SNA08). As of 1 September 2014, ESA95 has been replaced by ESA2010. The use of a single system across the EU allows national data on public finances to be compared and analysed more easily.

European Semester The European Semester is the first phase of the EU's annual cycle of economic policy guidance and surveillance. Each year, during this first phase, the European Commission analyses Member States' budgetary and structural reform policies, provides recommendations to each Member State, and monitors their implementation. In the second phase of the annual cycle, known as the National Semester, Member States implement the policies agreed.

Fiscal consolidation An improvement in the budget balance achieved by implementing *discretionary fiscal policy*.

Fiscal stance A measure of the effect of *discretionary fiscal policy*. For the purpose of this report, it is defined as the change in the primary structural budget balance relative to the preceding period. When the change is positive (negative) the fiscal stance is said to be expansionary (restrictive).

General government This term, where used in the context of EU budgetary surveillance under the *Stability and Growth Pact*, should be understood to include national, regional and local government and social security funds. State-owned companies

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([137]) This definition is based on 'Environmental taxes — a statistical guideline' (European Commission, 2001). National classifications may deviate from the guidelines.

are excluded, as are transfers to and from the EU budget.

Implicit tax rates A general measure of the effective average tax burden on different types of economic income or activity, i.e. on labour, consumption and capital, and also on energy. It is calculated as the ratio of the revenue from the type of tax in question to its maximum possible base.

Implicit tax rate on consumption The ratio of revenue from all consumption taxes to households' final consumption expenditure.

Implicit tax rate on labour The ratio of the sum of all direct and indirect taxes and social contributions levied on employment income to total compensation of employee, as given in the national accounts.

Implicit tax rate on capital The ratio of taxes on capital to total income from capital and savings. Taxes on capital include taxes levied on the income earned by households and corporations on savings and investments, and taxes related to stocks of capital resulting from savings and investments made in previous periods. The total income from capital and savings is an approximation of the worldwide capital and business income of residents for domestic tax purposes.

Implicit tax rate on energy The ratio of total revenue from energy taxes to final energy consumption.

Imputed rent The estimated rent that households that own the residence where they live would pay were they renting that exact same accommodation.

Inactivity trap The inactivity trap measures the financial incentive for an inactive person not entitled to unemployment benefits (but potentially receiving other benefits such as social assistance) to move from inactivity to paid employment. It is defined as the rate at which the additional gross income of such a transition is taxed.

Indirect taxation Taxes that are levied at the production stage, and not on the income or property resulting from economic production processes. The main examples of indirect taxation

are VAT, excise duties, import levies, and energy and other environmental taxes.

Low-wage trap The low wage trap measures the financial incentive to increase a low level of earnings by working additional hours. It is defined as the rate at which the additional gross income of such a move is taxed.

Medium-term objective A defined, country-specific budgetary position, determined so as to provide a safety margin and thus minimise the risk of breaching the 3 % of GDP deficit threshold, and to ensure the long-term sustainability of public finances. The medium-term objective is usually close to budget balance.

One-off and temporary measures Measures adopted by the government that have a transitory budgetary effect and do not lead to a sustained change in the budgetary position. See also *structural balance*.

Policy mix The combination of fiscal and monetary policies chosen by a government. Various combinations of expansionary and restrictive policies may be used, with a given *fiscal stance* either supported or offset by monetary policy.

Pro-cyclical fiscal policy A *fiscal stance* which amplifies the economic cycle by increasing the structural primary deficit during an economic upturn, or by decreasing it in a downturn. A neutral fiscal policy keeps the cyclically adjusted budget balance unchanged throughout the economic cycle but allows the automatic stabilisers to work to cushion the effects of the economic cycle. See also *tax smoothing*.

QUEST The macroeconomic model developed by the European Commission Directorate-General for Economic and Financial Affairs.

Social security contributions Mandatory contributions paid by employers and employees into a social insurance scheme set up to cover pensions, healthcare and other welfare provisions.

Stability and Growth Pact A rule-based framework for the surveillance of national fiscal policies in the European Union. It was established to safeguard sound public finances, based on the

principle that economic policies are a matter of shared concern for all Member States.

Stability programme A document setting out the medium-term budgetary strategies presented by the euro-area Member States.

Statutory tax rate on corporate income Corporate income is not only taxed through corporate income tax, but, in some Member States, also by means of surcharges or even additional taxes levied on tax bases that are similar, but often not identical, to the tax base used for corporate income tax. The simple corporate income tax rate is adjusted in order to take these additional taxes into account when making comparisons between Member States. If several rates of corporate income tax exist, the top rate is given in its 'basic' (non-targeted) form, and the surcharges and averages of other additional taxes (e.g. local taxes) are added to the standard rate.

Tax elasticity A parameter measuring the relative change in tax revenues corresponding to a given relative change in GDP. Tax elasticity is one of the factors determining budgetary sensitivity.

Tax expenditure Public expenditure within the tax system due to the existence of special tax concessions — such as exclusions, exemptions, allowances, credits, preferential rates or tax deferrals — that results in reduced tax liability for certain subsets of taxpayers.

Tax gap The difference between the amount of tax owed to the government and the revenue actually received.

Tax smoothing The idea that tax rates should be kept stable in order to minimise the distortionary effects of taxation, while relying on automatic stabilisers to smooth the economic cycle. Tax smoothing would in practice entail the use of neutral *discretionary fiscal policy*. See also *pro-cyclical fiscal policy*.

Tax wedge on labour The difference between the wage costs to the employer of a worker and the amount of net income that the worker receives. The difference arises as a result of taxes, including personal income tax and compulsory social security contributions.

Unemployment trap The unemployment trap measures the financial incentive for an unemployed person entitled to unemployment benefits to move from inactivity to paid employment. It is defined as the rate at which the additional gross income of such a transition is taxed.

VAT revenue ratio The ratio of the VAT revenue actually collected to the revenue that would theoretically be raised if VAT was applied at the standard rate to all final consumption. In theory, the closer the VAT system of a country is to a 'pure' VAT regime (i.e. where all consumption is taxed at a uniform rate), the closer its VAT revenue ratio is to 1. A low ratio can indicate that the tax base has been reduced by extensive use of exemptions or reduced rates (a 'policy gap') or that taxes due to be paid are not being collected, as a result of fraud, for example (a 'collection gap').

VAT policy gap The ratio of the VAT theoretical tax liability (VTTL), i.e. the VAT legally due under the current system, to the 'ideal' tax liability that would exist were there no reduced rates or exemptions.

VAT collection gap The difference between VAT revenue actually collected by the government and the theoretical net VAT liability for the economy as a whole, under the country's current VAT system. The theoretical net liability is estimated by identifying the categories of expenditure that give rise to irrecoverable VAT and applying the appropriate VAT rates to the respective estimates of expenditure in the different categories.

VTTL (VAT theoretical tax liability) The total value of estimated VAT payments, calculated on the basis of national accounts aggregates and the existing structure of rates and exemptions, making some adjustments, e.g. for special VAT schemes, small businesses and derogations.

ANNEX 1

Screening methodology

A1.1. BENCHMARKING APPROACH TO IDENTIFYING MEMBER STATES THAT FACE A CHALLENGE IN A PARTICULAR AREA OF TAX POLICY

The reference point for benchmarking used in the 'horizontal' screening presented in this report is the GDP-weighted average for the 28 EU Member States. A Member State is considered to have performed poorly in a particular area if the value of the relevant indicator is significantly lower, after normalisation, than the EU average. Conversely, a high value of the indicator corresponds to good performance. The normalisation process — not displayed in the tables — is an important step in calculating the two critical points for describing performance: the 'LAF plus' and 'LAF minus' thresholds. These indicate, respectively, good and poor performance. The 'direction' of performance therefore needs to be determined: does a high original value of the indicator represent poor or good performance? Care must be taken when determining the 'direction' of performance in each case. Each indicator may relate to several different aspects of tax policy, and the way it is interpreted therefore depends on the aspect of tax policy it is being used to analyse.

Countries' performance can be described as being 'significantly worse' or 'significantly better' than the average. Being 'significantly worse' than the average means that the indicator is at least 0.4 standard deviations below the weighted EU average (after normalisation). This approach captures the bottom third of the total distribution, under the normality assumption (i.e. the worst performers). This method for comparing Member States' performance is set out in the Lisbon methodology assessment framework (LAF) (see European Commission, 2008). For the sake of

simplicity, the wording 'above/below LAF plus' and 'above/below LAF minus' or 'relatively high' and 'relatively low' are used in the report to describe the position of a value for an indicator on the normalised distribution. If a high value for a normally distributed indicator represents good (poor) performance, the values above (below) 'LAF plus' capture the top one third of performers. The values below (above) 'LAF minus' capture the worst one third. The values between 'LAF plus' and 'LAF minus' capture the middle third, which are not significantly different to the EU average.

A more sophisticated approach is needed if several indicators are used to assess whether a Member State faces a challenge in a particular policy area. The general principle followed is that a country faces a challenge if at least one of the indicators is, after normalisation, significantly below the average. The rules on the required level for the other indicator(s) vary according to the particular policy area in question. A more detailed explanation is provided in Sections A1.2 and A1.3 of this annex.

This mechanical screening exercise does not take into account any further country-specific information. This means that Member States not identified as having a potential challenge in a specific policy area could still need to take action in that area. Furthermore, countries identified as having a potential challenge may not be considered to have a major problem with their policies once all relevant, country-specific information has been taken into account. An in-depth analysis should therefore always be carried out before any firm conclusions can be drawn as to appropriate policies in a particular area. Such detailed country-specific scrutiny lies beyond the scope of this report and is carried out in the context of the European Semester.

A1.2. SCREENING TO IDENTIFY MEMBER STATES IN WHICH TAXATION CAN CONTRIBUTE COULD BE USED TO ADDRESSING A SUSTAINABILITY CHALLENGE

Quantitative screening is used to identify Member States that could consider increasing taxation, in addition to expenditure control — to improve the sustainability of their public finances. The screening identifies whether there is both a particular sustainability challenge and scope to increase taxation.

As explained in Section A1.1 the terms 'relatively high' and 'relatively low' are used to describe the results of the screening. They are equivalent to 'significantly above the EU average' and 'significantly below the EU average'.

The following screening criteria are considered.

Fiscal sustainability challenge

1) Fiscal sustainability is considered a particular challenge if:

The indicator of the fiscal sustainability gap in the medium term, S1, is high (above 2.5).

The S1 indicator ('debt compliance risk') captures the medium-term fiscal challenges, identifying specifically: 1. fiscal gaps related to the excess of projected age-related and non-age-related expenditure — notably on pensions, healthcare and long-term care — over projected revenue; and 2. any gap associated with the steady adjustment of the structural primary balance over the years to 2020 being undertaken in order to bring the debt-to-GDP ratio down to 60 % of GDP by 2030.

The S1 indicator is made up of three components. The first measures the gap between the current (or initial) structural primary balance and the debt-stabilising primary surplus needed to ensure sustainability. The second represents the cost of ageing. This component corresponds to the additional adjustment to the primary balance required to account for the expenses that will be incurred in the years up to 2030 as a result of the ageing of the population. The third component depends directly on the debt requirement set for the end of the time period (60 % of GDP in 2030). For countries whose public debt above 60% of GDP initially, the required adjustment to reach the target debt by 2030, as reflected in this component, will increase the overall indicator, whilst for countries with a debt below 60 %, this component will be negative, irrespective of pressures on the budget stemming from long-term trends, and will therefore reduce the overall value of the fiscal gap, as measured by the S1 indicator.

Scope to increase taxation

2) There is considered to be scope to increase taxation if:

the tax-to-GDP ratio is relatively low compared to the EU average, i.e. below 'LAF plus',

and

there is potential scope to increase the least distortionary taxes (consumption taxes, environmental taxes and recurrent property taxes, see Section A1.3 for details).

If the tax-to-GDP ratio is relatively low but there is not considered to be potential scope to increase the least distortionary taxes, on the basis of the results of the screening set out in the next section, the availability of tax space is considered to be a borderline case.

A1.3. SCREENING TO IDENTIFY MEMBER STATES WITH A POTENTIAL NEED, AND SCOPE, FOR A TAX SHIFT

Quantitative screening is used to identify Member States that could consider shifting taxation away from labour. This screening identifies whether there is both a need to reduce labour taxation, and the availability of tax space within specific other categories of tax.

As explained in Section A1.1, the terms 'relatively high' and 'relatively low', are used to describe the results of the screening, are equivalent to 'significantly above the EU average' and 'significantly below the EU average'.

The screening assesses the following areas.

Need to reduce labour taxation

A Member State is considered to have a potential need to reduce labour taxation if:

1. The overall tax burden on labour is high. This is considered to be the case if: (i) the implicit tax rate on labour, or (ii) the tax wedge at average earnings, is relatively high.

2. The tax burden on low-wage earners is high. This is considered to be the case if: (i) the tax wedge on low-wage earners is relatively high or (ii) either the inactivity trap or the unemployment trap is relatively high, with labour taxes making a relatively large contribution to the disincentive effect.

This analysis is carried out by looking at the indicators at 50 % and 67 % of the average wage. The need to reduce the tax burden on labour for low-wage earners is considered a borderline case if the relevant indicators (the tax wedge and the inactivity and unemployment traps) are above the critical level for only one of the two income levels.

3. The tax burden on second earners is high. This is considered to be the case if the inactivity or the

low-wage trap is relatively high, with labour taxes making a relatively large contribution to the disincentive effect.

If the employment level for the relevant group (overall, low-skilled workers or female) is relatively high, the need to reduce the tax burden on labour is considered a borderline case.

Scope to increase the least distortionary taxes

Increasing taxes does not necessarily mean introducing higher tax rates. Additional revenue can also be generated by broadening tax bases and improving tax compliance. There is considered to be potential scope to increase the least distortionary taxes in the following situations:

There is scope for increasing consumption taxes. This is considered to be the case if: (i) taxes on consumption as a percentage of GDP are relatively low, or (ii) the implicit tax rate on consumption is relatively low, or (iii) the gap between the implicit tax rate on labour and the implicit tax rate on consumption is relatively high and the implicit tax rate on consumption is not relatively high.

There is scope for increasing recurrent property taxes. This is considered to be the case if revenue from recurrent property tax as a percentage of GDP is relatively low.

There is scope for increasing environmental taxation. This is considered to be the case if: (i) revenue from environmental taxes as a percentage of GDP is relatively low, or (ii) the implicit tax rate on energy is relatively low. If one of the indicators is relatively high, there is not considered to be a challenge, even if the other indicator is relatively low.

The scope for increasing taxes is considered a borderline case if there is only scope to increase either recurrent housing taxes or environmental taxes, as both of these taxes generate relatively limited revenue as compared with taxes on consumption.

Table A2.1: Total taxes, % of GDP, 2000-2015

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
BE	43.88	43.78	43.92	43.38	43.44	43.31	42.96	42.75	43.20	42.33	42.69	43.34	44.42	45.12	45.01	44.79
BG	30.47	29.84	27.87	30.38	31.74	30.83	30.31	32.16	31.36	28.09	27.05	26.08	27.23	28.25	28.49	28.56
CZ	32.53	32.44	33.35	34.12	34.58	34.21	33.85	34.40	33.09	32.13	32.54	33.67	34.14	34.85	34.18	33.89
DK	48.13	47.11	46.59	46.76	47.55	49.07	47.46	47.39	45.82	46.15	46.28	46.34	47.27	48.38	51.31	48.03
DE	40.39	38.39	37.91	38.24	37.37	37.36	37.64	37.70	38.03	38.37	37.03	37.53	38.18	38.39	38.51	38.42
EE	30.97	30.25	31.09	30.84	31.16	29.90	30.43	31.11	31.32	34.91	33.20	31.92	32.08	31.82	32.73	32.77
IE	30.87	28.81	27.99	28.64	29.70	30.14	31.57	30.85	29.12	27.75	27.53	27.42	28.07	28.85	29.60	28.97
EL	:	:	:	:	:	:	30.91	31.73	31.56	30.32	31.56	33.17	34.32	34.17	35.08	34.96
ES	33.23	32.84	33.23	33.15	34.13	35.17	35.96	36.38	32.15	29.75	31.27	31.08	31.88	32.45	32.96	33.07
FR	42.87	42.66	42.06	41.98	42.11	42.74	43.15	42.61	42.53	42.00	42.16	43.30	44.51	45.36	45.62	45.52
HR	:	:	:	:	:	:	:	:	:	:	35.23	35.89	36.47	36.28	36.59
IT	39.85	39.90	39.57	39.79	39.16	38.97	40.12	41.40	41.22	41.70	41.47	41.46	43.42	43.29	43.33	43.21
CY	27.68	28.47	28.53	29.43	29.92	31.88	32.48	36.62	35.29	32.29	32.37	32.25	31.47	31.23	33.98	33.47
LV	29.97	29.50	28.91	28.32	28.78	28.47	29.29	28.55	28.79	28.91	30.33	29.44	30.09	29.97	30.45	30.33
LT	:	:	:	:	28.90	29.09	30.00	29.89	30.44	30.02	28.15	27.07	26.85	26.95	27.84	27.93
LU	37.31	38.26	38.11	38.30	37.24	38.31	36.44	37.45	37.36	39.31	38.22	37.71	38.57	39.50	39.85	39.72
HU	39.20	38.11	37.48	37.50	37.23	36.92	36.79	39.73	39.74	39.28	37.60	36.95	38.63	38.40	38.52	37.84
MT	27.29	28.63	29.99	29.06	30.05	31.55	31.94	32.83	32.11	32.46	31.19	31.83	31.96	32.86	34.39	34.61
NL	37.18	36.04	35.56	35.29	35.42	35.69	36.75	36.31	36.60	35.35	36.09	35.85	36.33	37.18	37.95	38.36
AT	42.49	44.02	42.81	42.62	42.13	41.23	40.65	40.79	41.64	41.23	41.15	41.24	41.86	42.69	43.27	43.38
PL	33.02	32.81	33.03	32.49	32.12	33.15	33.76	34.65	34.35	31.44	31.31	31.90	32.16	31.79	31.96	32.25
PT	31.05	30.82	31.25	31.34	30.15	30.81	31.33	31.82	31.73	29.91	30.40	32.33	31.78	34.29	34.27	34.96
RO	30.35	28.51	28.01	27.56	27.22	27.72	28.33	28.97	27.62	26.49	26.37	28.12	28.00	27.30	27.47	26.91
SI	36.83	37.04	37.38	37.55	37.68	38.20	37.89	37.29	36.83	36.71	37.25	36.78	37.12	37.18	36.42	36.23
SK	33.63	32.70	32.57	32.22	30.85	30.68	28.72	28.69	28.57	28.29	27.58	28.20	27.92	29.88	30.32	30.12
FI	45.99	43.33	43.49	42.53	41.96	42.25	42.29	41.63	41.32	41.06	40.92	42.17	42.81	43.99	44.21	44.36
SE	49.59	47.46	45.84	46.19	46.36	47.34	46.65	45.71	44.78	44.91	44.86	44.20	44.24	44.56	44.44	44.70
UK	35.60	35.71	34.34	34.32	34.99	35.36	36.03	35.67	37.10	34.27	34.80	35.34	34.80	34.78	34.35	34.45
EA	:	:	:	:	:	:	38.83	38.94	38.50	38.09	38.02	38.51	39.52	40.02	40.26	40.30
EU	:	:	:	:	:	:	:	:	:	:	:	37.97	38.65	39.04	39.14	39.03

Source: Commission services.

Table A2.2: Direct taxes, % of GDP, 2000-2015

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
BE	16.63	16.80	16.72	16.18	16.19	16.29	16.09	15.85	16.09	14.88	15.18	15.71	16.08	16.71	16.78	16.81
BG	6.56	7.18	6.08	5.88	4.59	4.45	4.71	7.36	5.96	5.43	5.04	4.73	4.80	5.22	5.34	5.41
CZ	7.58	7.93	8.38	8.82	8.75	8.44	8.42	8.62	7.62	6.91	6.63	6.84	6.79	7.01	7.20	7.14
DK	29.30	28.26	28.06	28.37	29.66	30.26	28.81	28.62	27.97	28.48	28.72	28.63	29.56	30.61	33.73	30.45
DE	12.43	10.88	10.49	10.46	10.24	10.54	11.31	11.70	12.03	11.17	10.64	11.10	11.61	11.86	11.94	11.99
EE	7.74	7.22	7.56	8.07	7.93	6.94	7.00	7.37	7.73	7.39	6.60	6.38	6.71	7.24	7.57	7.27
IE	13.84	12.91	12.31	12.69	13.15	13.08	13.94	13.47	12.51	12.18	12.06	12.37	13.08	13.28	13.60	12.88
EL	:	:	:	:	:	:	8.24	8.27	8.18	8.50	8.18	9.14	10.57	10.26	9.39	8.96
ES	9.98	9.82	10.30	9.81	10.22	10.84	11.59	12.73	10.45	9.41	9.31	9.49	10.07	10.01	9.98	9.84
FR	11.62	11.90	11.07	10.76	10.90	11.14	11.65	11.55	11.75	10.52	11.04	11.57	12.31	12.73	12.59	12.53
HR	:	:	:	:	:	:	:	:	:	:	6.18	6.11	6.32	5.87	5.69
IT	13.79	14.10	13.41	12.82	12.78	12.81	13.77	14.49	14.68	14.13	14.11	13.84	14.84	14.97	14.70	14.93
CY	10.10	10.25	10.24	8.69	7.26	8.36	9.68	12.44	11.65	10.11	9.93	10.59	9.95	10.34	10.32	9.99
LV	7.26	7.55	7.63	7.20	7.53	7.48	7.91	8.31	9.04	6.99	7.30	7.30	7.61	7.58	7.62	7.50
LT	:	:	:	:	8.66	8.94	9.55	9.07	9.23	5.93	4.62	4.35	4.83	4.99	5.08	5.15
LU	14.21	14.59	14.79	14.63	12.94	13.82	13.26	13.60	14.04	14.61	14.57	14.17	14.34	14.59	14.50	15.17
HU	9.64	9.94	9.92	9.37	8.85	8.84	9.20	10.13	10.36	9.70	7.90	6.31	6.82	6.67	6.73	6.45
MT	8.85	9.54	10.69	10.97	10.35	10.86	11.32	12.61	12.12	12.96	12.24	12.31	13.08	13.78	14.51	14.51
NL	10.82	10.76	10.79	10.04	9.84	10.81	10.87	11.16	10.90	10.96	11.11	10.67	10.24	10.25	10.83	11.69
AT	13.06	14.68	13.59	13.44	13.21	12.70	12.66	13.12	13.71	12.45	12.55	12.62	12.94	13.29	13.71	13.87
PL	7.08	6.42	6.57	6.27	6.32	6.89	7.38	8.26	8.42	7.21	6.70	6.77	7.00	6.79	6.98	6.96
PT	9.41	8.98	8.87	8.23	8.14	7.98	8.33	9.17	9.30	8.63	8.45	9.48	8.99	11.45	10.93	10.88
RO	7.19	6.33	5.74	5.94	6.38	5.29	5.97	6.67	6.59	6.42	5.95	6.09	6.01	5.89	6.20	6.33
SI	7.16	7.35	7.61	7.79	8.02	8.54	8.96	9.01	8.75	8.10	8.03	7.83	7.55	7.14	7.01	7.11
SK	7.32	7.36	6.92	6.95	6.37	6.26	6.38	6.43	6.75	5.86	5.67	5.78	5.86	6.41	6.62	6.87
FI	20.47	18.31	18.24	17.08	16.99	16.93	16.78	17.03	16.81	15.51	15.45	15.85	15.61	16.30	16.56	16.65
SE	21.37	19.60	18.47	19.06	19.75	20.93	21.10	20.15	18.75	18.50	18.17	17.64	17.43	17.76	17.74	17.87
UK	15.68	15.95	14.91	14.55	14.84	15.53	16.20	15.96	16.21	15.21	14.99	15.00	14.32	14.20	13.90	13.76
EA	:	:	:	:	:	:	12.01	12.38	12.25	11.42	11.38	11.65	12.21	12.48	12.46	12.53
EU	:	:	:	:	:	:	:	:	:	:	:	12.29	12.66	12.86	12.87	12.84

Source: Commission services.

Table A2.3: Indirect taxes, % of GDP, 2000-2015

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
BE	13.02	12.57	12.60	12.61	12.75	12.85	12.78	12.69	12.47	12.46	12.75	12.70	13.07	12.91	12.87	12.83
BG	13.33	13.02	12.30	14.23	15.93	16.39	17.01	16.26	17.09	14.77	14.69	14.07	14.94	15.32	14.82	14.78
CZ	10.52	10.17	10.08	10.24	10.90	10.78	10.30	10.56	10.37	10.82	11.14	11.94	12.38	12.86	12.11	12.02
DK	16.66	16.79	17.03	16.91	17.08	17.39	17.30	17.45	16.49	16.42	16.31	16.42	16.58	16.75	16.61	16.52
DE	10.75	10.58	10.51	10.68	10.36	10.30	10.29	10.73	10.69	11.22	10.78	10.93	10.93	10.84	10.80	10.75
EE	12.44	12.53	12.68	12.26	12.83	12.65	13.35	13.34	12.06	14.54	13.73	13.67	13.99	13.48	14.09	14.37
IE	13.02	11.87	11.78	12.34	12.54	12.68	13.45	12.93	11.84	10.70	10.76	10.21	10.44	10.87	11.20	11.30
EL	:	:	:	:	:	:	12.24	12.55	12.56	11.71	12.58	13.46	13.32	13.94	15.42	15.93
ES	11.46	11.10	11.05	11.39	11.82	12.23	12.27	11.53	9.69	8.55	10.21	9.91	10.37	10.99	11.19	11.43
FR	15.31	14.89	14.93	14.87	15.05	15.21	15.10	14.91	14.70	14.92	14.67	15.09	15.32	15.53	15.71	15.80
HR	:	:	:	:	:	:	:	:	:	:	:	17.45	18.34	18.92	18.68	18.67
IT	14.39	14.06	14.10	13.72	13.74	13.93	14.53	14.37	13.57	13.44	13.94	14.10	15.24	14.83	15.28	15.12
CY	11.43	11.88	12.00	14.21	15.08	15.31	15.90	17.40	16.73	14.45	14.56	13.91	14.02	13.75	14.94	14.70
LV	12.48	11.95	11.19	11.77	11.50	12.19	12.50	11.82	10.47	10.72	11.44	11.55	11.76	11.87	12.27	12.52
LT	:	:	:	:	11.18	11.21	11.31	11.63	11.59	11.56	11.85	11.61	11.18	11.09	11.35	11.25
LU	13.21	12.95	12.51	12.56	13.31	13.54	12.81	13.32	12.50	12.71	12.43	12.41	12.79	13.18	13.59	12.72
HU	16.42	15.32	14.83	15.60	16.06	15.46	14.97	15.79	15.59	16.43	17.58	17.41	18.65	18.59	18.63	18.30
MT	11.98	12.55	12.35	12.22	13.27	14.08	14.24	14.09	13.77	13.35	12.94	13.35	12.84	12.97	13.66	13.92
NL	11.30	11.81	11.63	11.65	11.83	11.93	12.03	11.83	11.52	11.03	11.30	10.84	10.69	11.12	11.47	11.64
AT	14.73	14.68	14.76	14.67	14.49	14.22	13.83	13.71	13.85	14.26	14.23	14.27	14.49	14.43	14.45	14.40
PL	12.93	13.01	13.61	13.58	13.56	13.91	14.20	14.45	14.50	12.95	13.65	13.80	12.98	12.71	12.74	12.78
PT	13.49	13.46	13.97	14.48	13.79	14.50	14.80	14.40	13.95	12.65	13.21	13.86	13.86	13.84	14.22	14.74
RO	11.86	11.26	11.57	12.18	11.67	12.82	12.72	12.41	11.62	10.66	11.77	12.97	13.13	12.75	12.79	12.66
SI	15.47	15.23	15.53	15.66	15.42	15.37	14.84	14.42	13.93	13.57	14.08	14.04	14.47	15.00	14.98	14.77
SK	12.33	11.21	11.21	11.70	11.93	12.22	11.07	10.97	10.33	10.32	10.02	10.45	9.88	10.36	10.57	10.47
FI	13.42	12.89	13.22	13.65	13.24	13.31	13.23	12.66	12.42	12.91	12.95	13.81	14.08	14.47	14.52	14.40
SE	22.66	22.77	22.99	22.80	22.34	22.52	22.05	21.98	22.34	22.63	22.21	21.93	22.16	22.13	22.05	22.17
UK	13.04	12.75	12.70	12.51	12.49	12.08	12.06	12.03	11.60	11.15	12.18	12.68	12.74	12.85	12.89	13.18
EA	:	:	:	:	:	:	12.87	12.80	12.31	12.27	12.44	12.57	12.87	12.94	13.11	13.12
EU	:	:	:	:	:	:	:	:	:	:	:	13.04	13.28	13.35	13.45	13.49

Source: Commission services.

Table A2.4: Social contributions, % of GDP, 2000-2015

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
BE	13.38	13.57	13.69	13.69	13.38	13.17	13.03	13.15	13.52	14.01	13.70	13.85	14.09	14.18	14.06	13.92
BG	10.47	9.52	9.35	10.10	9.99	9.58	8.19	7.84	7.56	7.47	6.91	6.91	6.99	7.55	7.85	7.89
CZ	14.41	14.31	14.87	15.03	14.80	14.79	14.95	15.04	14.91	14.25	14.60	14.71	14.81	14.82	14.72	14.57
DK	1.89	1.82	1.30	1.29	1.24	1.19	1.11	1.05	1.02	1.04	1.06	1.07	0.97	0.86	0.82	0.81
DE	16.87	16.63	16.63	16.81	16.44	16.17	15.71	14.93	14.94	15.64	15.28	15.17	15.32	15.37	15.42	15.38
EE	10.92	10.68	10.61	10.61	10.33	10.18	10.01	10.37	11.45	12.87	12.78	11.79	11.34	11.09	11.15	11.20
IE	3.66	3.77	3.71	3.69	3.83	3.85	3.89	4.13	4.46	4.51	4.29	4.47	4.16	4.40	4.45	4.43
EL	:	:	:	:	:	:	10.26	10.71	10.73	10.17	10.17	10.66	10.61	10.43	10.43	10.22
ES	11.77	11.94	11.90	11.94	11.93	11.89	11.90	11.91	12.00	12.14	12.00	12.00	11.69	11.45	11.52	11.57
FR	15.61	15.62	15.70	15.94	15.73	15.87	16.02	15.81	15.82	16.38	16.20	16.35	16.59	16.86	17.07	16.90
HR	:	:	:	:	:	:	:	:	:	:	:	11.61	11.45	11.25	11.76	12.26
IT	11.44	11.54	11.72	11.85	11.95	11.98	11.68	12.38	12.81	13.23	13.06	12.95	13.11	13.12	13.14	12.93
CY	6.14	6.35	6.24	6.44	7.08	7.56	7.13	6.89	7.10	7.95	8.14	8.04	7.78	7.52	8.90	8.95
LV	9.87	9.17	9.06	8.43	8.25	7.93	8.06	7.87	7.95	9.22	8.55	8.69	8.63	8.33	8.23	7.95
LT	:	:	:	:	9.13	8.88	9.13	9.11	9.53	12.63	11.77	11.12	10.84	10.85	11.20	11.33
LU	9.64	10.54	10.60	10.83	10.74	10.69	10.14	10.33	10.63	11.77	11.10	11.05	11.29	11.40	11.44	11.51
HU	13.08	12.79	12.68	12.46	12.14	12.36	12.38	13.54	13.52	12.94	11.96	13.07	13.01	13.02	13.10	13.03
MT	6.25	6.42	6.28	6.06	6.05	5.96	5.85	5.74	5.73	5.62	5.80	5.73	5.78	5.90	5.86	
NL	14.38	12.88	12.52	13.03	13.15	12.31	13.21	12.66	13.55	12.76	13.10	13.76	14.80	15.17	15.03	14.41
AT	14.46	14.42	14.23	14.29	14.21	14.10	13.97	13.76	13.90	14.35	14.24	14.20	14.20	14.66	14.86	14.95
PL	13.04	13.58	12.97	12.75	12.29	12.34	12.17	11.92	11.39	11.26	10.95	11.32	12.17	12.31	12.26	12.52
PT	7.92	8.18	8.23	8.46	8.10	8.19	8.09	8.13	8.37	8.55	8.59	8.90	8.68	8.92	9.02	9.26
RO	11.04	10.92	10.69	9.43	9.17	9.61	9.70	9.77	9.27	9.32	8.58	8.99	8.81	8.67	8.61	8.06
SI	14.15	14.38	14.20	14.12	14.18	14.25	14.03	13.69	14.03	14.90	15.18	14.98	15.22	15.03	14.46	14.38
SK	13.95	14.11	14.41	13.54	12.87	12.43	11.55	11.64	12.36	12.09	12.13	12.37	13.32	13.48	13.11	
FI	11.74	11.78	11.64	11.46	11.35	11.62	11.88	11.58	11.65	12.30	12.24	12.21	12.78	12.82	12.91	13.04
SE	5.28	4.84	4.13	4.10	4.04	3.70	3.33	3.41	3.51	3.63	4.32	4.47	4.51	4.53	4.50	4.50
UK	6.46	6.59	6.36	6.91	7.27	7.34	7.36	7.27	7.48	7.45	7.28	7.31	7.36	7.32	7.20	7.15
EA	:	:	:	:	:	:	13.62	13.45	13.64	14.06	13.92	13.97	14.17	14.29	14.36	14.23
EU	:	:	:	:	:	:	:	:	:	:	:	12.34	12.44	12.53	12.50	12.31

Source: Commission services.

Table A2.5: **Tax structure by economic function, % of GDP, 2000-2012, EU total**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Structure by economic function													
Consumption	11.2	11.2	11.2	11.1	11.1	11.1	11.1	11.0	10.8	10.7	11.1	11.2	11.2
Labour	19.7	19.7	19.7	19.7	19.4	19.3	19.2	19.1	19.5	19.9	19.7	19.8	20.1
Employed	18.0	18.0	18.0	18.0	17.6	17.6	17.5	17.5	17.8	18.1	17.8	17.9	18.2
Paid by employers	7.7	7.7	7.7	7.9	7.8	7.7	7.7	7.6	7.8	8.0	7.9	7.9	8.0
Paid by employees	10.2	10.2	10.2	10.1	9.9	9.8	9.8	9.8	10.0	10.0	9.9	10.0	10.2
Non-employed	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.6	1.7	1.9	1.9	1.9	1.9
Capital	8.0	8.0	8.0	8.0	8.2	8.5	9.2	9.3	8.9	7.8	7.7	7.9	8.2
Capital and business income	5.4	5.4	5.4	5.3	5.5	5.8	6.3	6.4	6.1	5.1	5.2	5.3	5.4
Income of corporations	2.6	2.6	2.6	2.6	2.8	3.0	3.4	3.4	3.1	2.3	2.4	2.6	2.6
Income of households	0.7	0.7	0.7	0.7	0.7	0.8	0.9	1.0	0.9	0.9	0.8	0.8	0.9
Income of self-employed (incl. SSC)	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0
Stocks of capital / wealth	2.7	2.7	2.7	2.6	2.7	2.8	2.9	2.8	2.8	2.7	2.5	2.6	2.8

Source: Commission services.

Table A2.6: **Tax structure by economic function, % of GDP, 2000-2012, euro area total**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Structure by economic function													
Consumption	11.2	10.9	10.8	10.8	10.8	10.8	10.8	10.8	10.5	10.5	10.7	10.8	10.8
Labour	21.2	21.0	20.9	20.9	20.5	20.4	20.3	20.2	20.7	21.1	20.9	21.0	21.5
Employed	19.2	19.1	18.9	18.9	18.5	18.4	18.3	18.3	18.7	19.0	18.8	18.9	19.3
Paid by employers	8.8	8.8	8.8	8.9	8.7	8.7	8.7	8.6	8.7	8.9	8.9	8.9	9.0
Paid by employees	10.4	10.3	10.2	10.0	9.7	9.7	9.7	9.7	10.0	10.1	9.9	10.0	10.4
Non-employed	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.1	2.1	2.2	2.2
Capital	8.7	8.2	7.8	7.9	8.0	8.3	8.9	9.2	8.5	7.6	7.5	7.8	8.2
Capital and business income	6.2	5.8	5.4	5.5	5.5	5.7	6.3	6.5	6.1	5.1	5.1	5.3	5.5
Income of corporations	3.1	2.9	2.6	2.6	2.7	2.9	3.3	3.4	3.0	2.1	2.3	2.5	2.5
Income of households	0.7	0.6	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.7	0.7	0.7	0.8
Income of self-employed (incl. SSC)	2.4	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2
Stocks of capital / wealth	2.4	2.4	2.4	2.4	2.5	2.6	2.6	2.6	2.4	2.5	2.4	2.5	2.6

Source: Commission services.

Table A2.7: **Implicit tax rates on labour, consumption and capital**

	Implicit tax rate on labour			Implicit tax rate on consumption			Implicit tax rate on capital		
	1995	**2005**	**2012**	**1995**	**2005**	**2012**	**1995**	**2005**	**2012**
BE	43.6	43.6	42.8	20.4	22.3	21.1	25.5	32.6	35.5
BG	29.9	33.2	24.5	17.3	21.8	21.5	:	:	:
CZ	41.4	41.3	38.8	20.9	21.1	22.5	22.4	20.4	18.0
DK	40.2	37.1	34.4	30.5	33.9	30.9	29.9	49.9	:
DE	38.8	37.5	37.8	18.5	18.4	19.8	21.7	20.4	22.2
EE	38.6	33.8	35.0	21.2	22.0	26.0	14.7	8.0	8.1
IE	:	25.4	28.7	24.4	26.0	21.9	:	19.2	13.0
EL	:	33.3	38.0	:	15.5	16.2	:	:	:
ES	:	32.4	33.5	14.2	16.7	14.0	:	35.5	25.3
FR	40.5	39.3	39.5	21.7	20.3	19.8	32.8	40.5	46.9
HR	:	29.6	29.2	:	30.0	29.1	:	:	:
IT	37.8	41.2	42.8	18.1	17.4	17.7	26.3	27.3	37.0
CY	22.1	24.4	28.8	13.0	19.7	17.6	18.0	27.1	26.0
LV	39.2	33.2	33.0	19.5	19.9	17.4	19.8	10.6	9.9
LT	34.5	34.9	31.9	17.7	16.5	17.4	12.7	11.1	9.8
LU	29.3	29.9	32.9	21.0	26.3	28.9	:	:	:
HU	42.3	38.4	39.8	29.5	26.1	28.1	15.3	17.6	21.4
MT	18.8	22.5	23.3	15.2	19.1	18.7	:	:	:
NL	34.5	32.3	38.5	22.6	24.4	24.5	22.7	17.9	13.7
AT	38.5	40.8	41.5	20.6	21.7	21.3	26.8	24.2	25.0
PL	36.8	33.8	33.9	20.7	19.8	19.3	20.9	20.4	19.0
PT	22.3	22.4	25.4	18.2	19.7	18.1	21.2	29.3	29.5
RO	31.6	28.1	30.4	:	17.9	20.9	:	:	:
SI	38.5	37.6	35.6	24.4	23.5	23.4	13.4	23.2	19.6
SK	38.5	32.9	32.3	25.9	21.5	16.7	35.8	18.8	16.7
FI	44.2	41.6	40.1	27.6	27.6	26.4	31.1	28.8	29.9
SE	46.8	43.6	38.6	27.9	27.3	26.5	19.8	33.3	30.6
UK	25.8	25.9	25.2	19.3	17.9	19.0	32.3	37.2	35.7
EU average									
GDP-weighted	37.1	35.4	36.1	20.0	19.7	19.9	:	:	:
arithmetic	35.6	33.9	34.2	21.2	21.9	21.6	:	:	:
EA average									
GDP-weighted	38.7	37.3	38.5	19.4	19.4	19.3	:	:	:
arithmetic	35.0	33.6	35.0	20.4	21.2	20.5	:	:	:

Note: the EU average is for all 28 current Member States in 2005 and 2012, and for 27 Member States (excluding Croatia) in 1995. Methodology and country details can be found in European Commission (2014c). Eurostat online data code: gov_a_tax_itr.
Source: Commission services.

Table A2.8:   **Medium term sustainability gap 2015 (% of GDP)**

| | **Total** | of which | | |
		Initial budgetary position	Debt requirement	Ageing costs
BE	4.74	0.11	3.35	1.28
BG	-1.29	1.50	-1.97	-0.82
CZ	0.03	0.54	-1.28	0.77
DK	-2.59	-0.08	-1.44	-1.07
DE	-0.87	-2.27	0.57	0.83
EE	-2.86	0.22	-3.47	0.39
IE	5.07	0.37	3.15	1.56
EL	7.67	0.14	8.34	-0.80
ES	1.50	-0.40	3.03	-1.14
FR	3.44	0.65	2.64	0.16
HR	5.15	3.49	2.17	-0.51
IT	2.48	-2.06	4.80	-0.26
CY	0.83	-1.83	3.30	-0.65
LV	-0.48	1.09	-1.32	-0.26
LT	0.32	0.31	-1.40	1.41
LU	-3.17	-1.55	-2.82	1.19
HU	-0.83	-0.61	0.93	-1.15
MT	0.15	-1.10	0.39	0.86
NL	-0.97	-1.09	0.64	-0.53
AT	1.57	-0.67	1.83	0.41
PL	-0.30	0.32	-0.68	0.06
PT	3.76	-0.73	4.25	0.23
RO	1.14	2.09	-1.20	0.26
SI	2.77	0.63	1.51	0.63
SK	-1.02	-0.54	-0.50	0.02
FI	3.37	1.39	0.35	1.62
SE	-1.40	-0.41	-1.26	0.26
UK	4.70	1.68	2.16	0.86
EU	1.83	-0.32	1.86	0.28
EA	1.55	-0.94	2.29	0.20

Note: Indicator values above zero represent a sustainability gap.
Source: Commission services.

Table A2.9: **Top statutory tax rates in personal and corporate income taxation, in %**

	Top personal income tax rate						Adjusted top corporate income tax rate					
	1995	2000	2005	2010	2014	2015	1995	2000	2005	2010	2014	2015
BE	60.6	60.6	53.7	53.7	53.8	53.8	40.2	40.2	34.0	34.0	34.0	34.0
BG	50.0	40.0	24.0	*10.0*	*10.0*	*10.0*	40.0	32.5	15.0	10.0	10.0	10.0
CZ	43.0	32.0	32.0	*15.0*	22.0	22.0	41.0	31.0	26.0	19.0	19.0	19.0
DK	65.7	62.3	62.3	55.4	55.6	55.8	34.0	32.0	28.0	25.0	24.5	23.5
DE	57.0	53.8	44.3	47.5	47.5	47.5	56.8	51.6	38.7	30.2	30.2	30.2
EE	*26.0*	*26.0*	*24.0*	*21.0*	*21.0*	*20.0*	26.0	26.0	24.0	21.0	21.0	20.0
IE	48.0	44.0	42.0	47.0	48.0	48.0	40.0	24.0	12.5	12.5	12.5	12.5
EL	45.0	45.0	40.0	49.0	46.0	48.0	40.0	40.0	32.0	24.0	26.0	29.0
ES	56.0	48.0	45.0	43.0	52.0	46.0	35.0	35.0	35.0	30.0	30.0	28.0
FR	59.1	59.0	53.5	45.4	50.3	50.3	36.7	37.8	35.0	34.4	38.0	38.0
HR	42.9	41.3	53.1	50.2	47.2	47.2	25.0	35.0	20.0	20.0	20.0	20.0
IT	51.0	45.9	44.1	45.2	47.9	48.9	52.2	41.3	37.3	31.4	31.4	31.4
CY	*40.0*	*40.0*	30.0	30.0	35.0	35.0	25.0	29.0	10.0	10.0	12.5	12.5
LV	*25.0*	*25.0*	*25.0*	*26.0*	*24.0*	*23.0*	25.0	25.0	15.0	15.0	15.0	15.0
LT	*33.0*	*33.0*	*33.0*	*15.0*	*15.0*	*15.0*	29.0	24.0	15.0	15.0	15.0	15.0
LU	51.3	47.2	39.0	39.0	43.6	43.6	40.9	37.5	30.4	28.6	29.2	29.2
HU	44.0	44.0	38.0	40.6	*16.0*	*16.0*	19.6	19.6	17.5	20.6	20.6	20.6
MT	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
NL	60.0	60.0	52.0	52.0	52.0	52.0	35.0	35.0	31.5	25.5	25.0	25.0
AT	50.0	50.0	50.0	50.0	50.0	50.0	34.0	34.0	25.0	25.0	25.0	25.0
PL	45.0	40.0	40.0	32.0	32.0	32.0	40.0	30.0	19.0	19.0	19.0	19.0
PT	40.0	40.0	40.0	45.9	56.5	56.5	39.6	35.2	27.5	29.0	31.5	29.5
RO	40.0	40.0	*16.0*	*16.0*	*16.0*	*16.0*	38.0	25.0	16.0	16.0	16.0	16.0
SI	50.0	50.0	50.0	41.0	50.0	50.0	25.0	25.0	25.0	20.0	17.0	17.0
SK	42.0	42.0	*19.0*	*19.0*	25.0	25.0	40.0	29.0	19.0	19.0	22.0	22.0
FI	62.2	54.0	51.0	49.0	51.5	51.6	25.0	29.0	26.0	26.0	20.0	20.0
SE	61.3	51.5	56.6	56.6	56.9	57.0	28.0	28.0	28.0	26.3	22.0	22.0
UK	40.0	40.0	40.0	50.0	45.0	45.0	33.0	30.0	30.0	28.0	21.0	20.0
EU arithmetic	47.2	44.6	40.4	38.6	39.4	39.3	35.0	32.0	25.3	23.2	22.9	22.8
EA arithmetic	46.9	45.2	40.6	39.7	42.3	42.1	35.8	33.3	26.7	24.5	24.8	24.6

Notes:

Personal income tax:
Definition:
1. The indicator reported in the table is the "top statutory personal income tax rate". The "top statutory personal income tax rate" indicator does not differentiate by source of income and therefore as well, surcharges and deduction specific to income source are not taken into account. The "top marginal tax rate from employment income", which is also sometimes used, can differ from the "top statutory personal income tax rate" with respect to (1) source of income: any personal income vs. earnings income and to (2) statutory vs. marginal tax rate. The marginal tax rate calculation (increase in tax revenue for a unit increase in gross earnings) is only possible for the latter type of indicator. The existence of differences between the two indicators relate directly to the design and complexity of the tax system.
2. General surcharges are included even when not part of PIT or not legally a tax (see country notes below)
3. Local and regional taxes are normally added (see country notes below).
The reader is referred to the "Taxes in Europe Database" and to Part II of this report for detailed information about the specificities of each country PIT, and in particular for the level of income from which the top statutory income rate applies.
General notes:
1. Figures in italics represent flat-rate tax
2. Rates given in the table are (top) rates applicable during the fiscal year considered, that is the year when incomes are received.
Country notes:
Belgium: including crisis tax (1993-2002) and (average) local surcharges. Special SSC (capped) is not included.
Bulgaria: (not included in the table) the net income of sole proprietors is taxed separately (15 % final flat tax)
Czech Rep.: including a 7 % solidarity surcharge added to the flat tax rate of 15% since 2013. The surcharge applies to the employment business and professional income above four times the average wage.
Denmark: including local taxes and labour market contribution (8% in 2015), but excl. church tax. The top rate is further capped (to 51.7% in 2013-2014 and 51.95% in 2015), by decrease of the state tax if needed. The top rate in the table above includes the labour market contribution: e.g. for 2015 it is calculated as: 8% + (100-8%) x 51.95% = 55.8%.
Germany: in addition, a solidarity surcharge of 5.5 % of the tax liability is applied subject to an exemption limit.
Ireland: including the 'universal social charge' of 8 % (for self-employed income > EUR 100 000, it is 11%)
Greece: including solidarity contribution for years 2011-2015 (for the period 2011-14, rate ranges from 1 % to 4 % with the top 4% rate applicable on net annual income exceeding EUR 100 000). From 2015 rates changed, with a 6% rate for annual income of EUR 100 000-500 000, and 8% for income over EUR 500 000. The top rate calculation for 2015 in the above table includes the solidarity contribution for the income band EUR 100 000-500 000 at the rate of 6%.
Spain: Regional government can use their own tax schedule.
France: Several contributions are added to PIT; but while the PIT applies to individualised global net personal income, the contributions may vary depending on the income source. The value in the table reflects the top statutory rate for earnings: It includes the top PIT rate (45%), the general social welfare contribution (CSG, applicable rate: 7.5 % of which 5.1 % are deductible) and the welfare debt repayment levy (CRDS, rate: 0.5 %). 1.05% of social contributions are deductible from the base of calculation of the PIT. For other property income, in addition to CSG (applicable rate: 8.2% of which 5.1 % are deductible) and CRDS, additional social and solidarity levies (4.5 % +0.3 % and 2 %) apply, leading to a top all-in rate around 58.3 %. The exceptional contribution for incomes above EUR 250 000 is not shown in the table.
Croatia: including average crisis tax (2009-2011) and surtax for Zagreb (maximal local surtax rate of 18%).
Italy: including regional and municipal surcharge (values given for Rome) and 3% solidarity contribution (deductible from the tax base); the increases of 0.5% in 2014, and of 1% on 2015 correspond to increases in the Latium regional surcharge.
Cyprus: not including the (tax deductible) special contribution on gross wages (2012-2016), of up to 3.5 % (up to 4% for (semi) public employees).
Luxembourg: including crisis contribution in 2011, solidarity surcharge for Unemployment Fund (since 2002) of 9% (for top incomes) and not the IEBT (Impot d'équilibrage budgétaire temporaire) of 0.5% since 2015 (which is added to SSC).

Source: European Commission.

Notes to Table A2.9 — continued:

Hungary: including solidarity tax (2007-2009). In 2010-2012 rates include the effect of a base increasing component which was applicable in 2010 and 2011 to total earnings, and in 2012 to the part of monthly earnings above HUF 202 000 (€ 653), roughly the average wage, leading to a two-rate system: 16 % and 20.3 %. In 2013 the base increasing component was phased out and the 16 % tax rate applies to all income.
Portugal: including a surcharge of 3.5 % levied on all aggregated categories of income (applicable since 2013), and an additional solidarity surcharge (top rate 5 % since 2013). [not included: the special rate of 60% applied to "unjustified increases" in personal wealth (above EUR 100 000)]
Finland: including general government taxes plus (average of) municipality taxes. Variation to be attributed to variation in average local taxes.
Sweden: including general government taxes plus (average of) municipality taxes. Variation to be attributed to variation in average local taxes.
United Kingdom: Rates given are rate for the fiscal year starting in April. An additional higher rate of 50% was introduced for income exceeding GBP 150,000 from fiscal year 2010-2011, cut to 45 % as of 2013.

Corporate income tax:
1. The 'basic' (non-targeted) top rate is presented here; some countries apply small profits rates or special rates, e.g., in case the investment is financed through issuing new equity, or alternative rates for different sectors. Such targeted tax rates can be substantially lower than the effective top rate.
2. Existing surcharges and local taxes are included - when they are targeted to large enterprises or when their level vary, the top rate is used in the table (see country notes below).
Country notes:
Belgium: (a) A 3 % 'crisis' surcharge is applicable since 1993; (b) since 1/1/2006 Belgium applies a system of notional interest deduction (ACE) which reduces the 'effective tax rate' by several percentage points, depending on the difference between the rate of return and the rate of the notional interest deduction.
Cyprus: Public corporate bodies were subject to higher 25% rate (2003-2008). The 5 % surcharge levied on all companies (incl. public bodies) with taxable income exceeding € 1.7 million in 2003 and 2004 is not included. In 2013, under the macro-financial adjustment programme and prior to the first disbursement of assistance, the corporate income tax rate was increased to 12.5 % (with effect on 01.01.2013).
France: 33.33%; 34.43% including 3.3% additional social surcharge for large companies;36.1% (2011-2012) and 38.0% (2013-2015) including the temporary surcharge (contribution exceptionnelle) for very large companies (turnover above EUR 250 million). Companies can benefit from a tax credit equal to 6 % (since 2014) of the payroll for (most) employees. The local business tax (contribution économique territoriale) is not included (capped to 3 % of value added).
Germany: The rate includes the solidarity surcharge of 5.5 % and the Berlin rate for the trade tax ('Gewerbesteuer' - 14.35%; in 2012 average trade tax rate for former federal territory was 13.825 % and 12.985 % for new Länder). From 1995 to 2000 the rates for Germany refer only to retained profits. For distributed profits lower rates applied. Until 2007 the trade tax was an allowable expense for the purpose of calculating the income on which corporation tax is payable. As from 2008 enterprises are subject to an overall tax burden of around 30 %.
Greece: The rate includes a special contribution introduced in 2009 (2008 income) on companies with net income above € 5 million. The contribution is levied at progressive rates, with the marginal rate reaching 10 %. In 2010 (2009 income) the contribution applies to income above € 100 000, top rate being 10 % (income above € 5 million).
Hungary: Including the local business tax of maximum 2 % that applies on the gross operating profit (turnover minus costs) and which is deductible from the CIT. In the typical case of a local tax of 2%, the total tax paid is 19*(1-2%) + 2 = 20.62. For energy providers and other utilities, a cca. 50% CIT rate applies. An 'Innovation tax' of 0.3 % is also due on the same base as the local business tax while micro and small enterprises are exempted from paying (not included in the calculation).
Ireland: 25 % for non-trading income, gains and profits from mining petroleum and land dealing activities. Until 2003, Ireland applied a 10 % CIT rate to qualifying manufacturing and services companies.
Italy: As from 1998 the rates for Italy include IRAP (rate 3.90 %), a local tax levied on a tax base broader than corporate income. The rate may vary up to 0.92 percentage point depending on location. "Robin tax" on financial institutions is not included. From 2012, an ACE is in force, reducing the effective tax rate (see also previous note on Belgium).
Lithuania: A 'social tax' (applied as a surcharge) has been introduced in 2006 and 2007 (at 4 % and 3 % respectively). As from 2010, companies with up to ten employees and taxable income not exceeding LTL 500 000 (approx. EUR 144 810), benefit from a reduced tax rate of 5 % . As from 2012, the threshold has been increased to LTL 1 000 000 (about EUR 289 603) and from 2015 to EUR 300000.
Luxembourg: Basic local tax (municipal business tax) is 3 % to be multiplied by a municipal factor ranging from 2 to 3.5. The rate in the table is for Luxembourg City.
Malta: The rate shown does not take into account the corporate tax refund system
Portugal: As from 2007 the rate for Portugal includes the maximum 1.5 % rate of a municipal surcharge. As from 1.1.2014 the State tax is 3 % on taxable profits between EUR 1.5 and 7.5 million, 5 % on taxable profits between EUR 7.5 and 35 million and 7 % on profits exceeding EUR 35 million.
Slovakia: the standard CIT rate has been reduced to 22% on the 01.01.2014, together with the introduction of a minimum (lumpsum) tax, whose value vary with turnover (EUR 480 for not VAT registered companies, EUR 960 if small VAT registered companies and EUR 2880 if annual turnover above EUR 500 000)
United Kingdom: Rates given are rate for the tax year starting in April.

Table A2.10:   **Energy tax revenues relative to final energy consumption**

	Nominal					Real (2000 deflator)			
	2000	**2005**	**2011**	**2012**		**2000**	**2005**	**2011**	**2012**
BE	96.0	121.7	130.8	131.5	BE	96.0	110.7	104.3	102.4
BG	38.3	59.9	106.1	107.7	BG	38.3	49.0	66.8	65.5
CZ	53.3	95.9	145.7	139.2	CZ	53.3	73.3	83.1	79.1
DK	298.9	313.9	387.8	381.5	DK	298.9	289.8	316.4	303.6
DE	191.1	212.6	230.4	219.9	DE	191.1	197.4	197.3	185.3
EE	31.3	74.8	137.8	148.5	EE	31.3	62.4	87.6	91.1
IE	138.5	166.9	205.6	202.5	IE	138.5	141.4	175.5	172.1
EL	116.6	114.9	228.7	258.6	EL	116.6	100.4	166.1	186.1
ES	137.4	140.5	157.2	157.6	ES	137.4	119.3	116.7	114.2
FR	165.7	170.1	199.4	197.6	FR	165.7	155.8	166.0	161.6
HR	:	129.8	130.3	128.2	HR	:	108.9	90.9	87.4
IT	245.3	233.0	266.9	307.5	IT	245.3	204.9	208.3	233.4
CY	43.0	144.7	186.4	192.2	CY	43.0	126.6	140.3	141.3
LV	48.1	72.4	101.0	105.5	LV	48.1	71.8	70.4	70.4
LT	57.6	79.2	105.5	106.8	LT	57.6	72.2	71.0	69.6
LU	166.8	192.3	221.3	231.8	LU	166.8	173.9	175.9	181.3
HU	76.9	103.9	120.6	124.5	HU	76.9	75.1	74.8	75.4
MT	132.1	158.9	238.3	241.6	MT	132.1	153.7	201.2	200.4
NL	153.1	195.0	237.0	227.4	NL	153.1	171.8	192.1	180.2
AT	138.9	154.5	182.1	183.3	AT	138.9	141.8	147.7	145.0
PL	58.6	95.1	124.7	129.1	PL	58.6	84.3	95.0	96.4
PT	110.0	164.3	174.3	173.5	PT	110.0	142.4	136.7	134.1
RO	57.6	59.3	98.7	99.6	RO	57.6	47.7	66.0	68.1
SI	110.2	138.5	205.0	225.6	SI	110.2	125.4	159.1	172.2
SK	39.7	71.0	103.4	104.6	SK	39.7	50.4	48.6	47.5
FI	106.6	115.6	156.3	158.7	FI	106.6	109.8	129.5	127.6
SE	179.3	211.2	242.4	254.8	SE	179.3	216.1	216.6	216.9
UK	247.8	236.1	258.4	274.8	UK	247.8	245.9	285.2	276.3
EU average					EU average				
GDP-weighted	186.3	192.0	216.8	222.8	GDP-weighted	186.3	179.0	186.3	185.2
base-weighted	169.2	179.3	206.6	211.9	base-weighted	169.2	165.8	175.0	173.7
EA average					EA average				
GDP-weighted	175.9	185.4	212.3	215.8	GDP-weighted	175.9	167.0	172.6	171.7
base-weighted	169.6	181.2	209.0	212.6	base-weighted	169.6	163.2	169.5	168.7

Note: Nominal: EUR per tonne of oil equivalent; Real: per tonne of equivalent, deflated by the cumulative percentage change in the final demand deflator (year 2000 = 100). The methodology and country details can be found in European Commission (2014c). Eurostat online data code: gov_a_tax_itr.
Source: Commission services.

Table A2.11:   **The composition of the tax wedge in 2014, single average-income worker**

Country	Income tax plus employees' and employers' social security contributions (as % of labour costs, 2014)				Annual change 2014/13 (in percentage points)			
	Tax wedge	**Income tax**	**Employee SSC**	**Employer SSC**	**Tax wedge**	**Income tax**	**Employee SSC**	**Employer SSC**
BE	55.6	21.8	10.8	23.0	-0.1	0.0	0.0	-0.1
BG*	33.6	7.4	10.9	15.3	0.0	0.0	0.0	0.0
CZ	42.6	9.1	8.2	25.4	0.2	0.2	0.0	0.0
DK	38.1	35.3	2.8	0.0	-0.1	-0.2	0.0	0.0
DE	49.3	16.0	17.1	16.2	0.1	0.1	0.0	0.0
EE	40.0	13.2	1.5	25.4	0.1	0.1	0.0	0.0
IE	28.2	14.9	3.6	9.7	1.1	1.1	0.0	0.0
EL	40.4	7.1	12.7	20.6	-1.2	-0.1	-0.2	-0.9
ES	40.7	12.8	4.9	23.0	0.0	0.0	0.0	0.0
FR	48.4	10.6	10.2	27.7	-0.4	0.2	0.3	-1.0
HR	39.5	8.9	17.4	13.2	0.0	0.0	0.0	0.0
IT	48.2	16.7	7.2	24.3	0.4	0.4	0.0	0.0
CY**	:	:	:	:	0.0	0.0	0.0	0.0
LV*	43.9	15.6	8.9	19.4	-0.6	-0.6	0.0	0.0
LT*	41.1	10.5	6.9	23.7	0.2	0.2	0.0	0.0
LU	37.6	15.7	11.0	11.0	0.3	0.3	0.0	0.0
HU	49.0	12.5	14.4	22.2	0.0	0.0	0.0	0.0
MT*	25.3	11.7	6.8	6.8	0.8	0.4	0.2	0.2
NL	37.7	14.6	13.9	9.2	0.7	0.1	-0.2	0.8
AT	49.4	12.8	14.0	22.6	0.2	0.2	0.0	0.0
PL	35.6	6.0	15.3	14.4	0.0	0.0	0.0	0.0
PT	41.2	13.1	8.9	19.2	-0.1	-0.1	0.0	0.0
RO*	44.6	9.8	12.9	21.9	0.1	0.1	0.0	0.0
SI	42.5	9.6	19.0	13.9	0.1	0.1	0.0	0.0
SK	41.2	7.2	10.2	23.8	0.1	0.1	0.0	0.0
FI	43.9	18.3	6.5	19.1	0.8	0.0	0.3	0.5
SE	42.5	13.2	5.3	23.9	-0.5	-0.6	0.0	0.0
UK	31.1	13.0	8.4	9.7	-0.3	-0.2	0.0	0.0
EU	43.4	14.1	10.7	18.6	0.0	0.1	0.0	-0.1
EA	46.5	14.4	11.4	20.8	0.1	0.2	0.1	-0.2

Note: all figures calculated for a worker on 100 % of average wage; * data for non-OECD EU countries (Bulgaria, Croatia, Latvia, Lithuania, Malta and Romania) are only available for 2013. For these countries, the change in the tax wedge refers to the change between 2012 and 2013. ** No recent data is available for Cyprus.
Source: European Commission tax and benefits indicator database, based on OECD data.

Table A2.12:   **Standard and reduced VAT rates in the EU**

Country	VAT rate	2000	2005	2010	2011	2012	2013	2014	2015
BE	Standard	21	21	21	21	21	21	21	21
BE	Reduced	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12
BG	Standard	20	20	20	20	20	20	20	20
BG	Reduced	-	-	7	9	9	9	9	9
CZ	Standard	22	19	20	20	20	21	21	21
CZ	Reduced	5	5	10	10	14	15	15	10/15
DK	Standard	25	25	25	25	25	25	25	25
DK	Reduced	-	-	-	-	-	-	-	-
DE	Standard	16	16	19	19	19	19	19	19
DE	Reduced	7	7	7	7	7	7	7	7
EE	Standard	18	18	20	20	20	20	20	20
EE	Reduced	5	5	9	9	9	9	9	9
IE	Standard	21	21	21	21	23	23	23	23
IE	Reduced	12.5 (4.2)	13.5 (4.8)	13.5 (4.8)	9/13.5 (4.8)	9/13.5 (4.8)	9/13.5 (4.8)	9/13.5 (4.8)	9/13.5 (4.8)
EL	Standard	18	19	23	23	23	23	23	23
EL	Reduced	8 (4)	9 (4.5)	5.5/11	6.5/13	6.5/13	6.5/13	6.5/13	6.5/13
ES	Standard	16	16	18	18	18	21	21	21
ES	Reduced	7 (4)	7 (4)	8 (4)	8 (4)	8 (4)	10 (4)	10 (4)	10 (4)
FR	Standard	19.6	19.6	19.6	19.6	19.6	19.6	20.0	20.0
FR	Reduced	5.5 (2.1)	5.5 (2.1)	5.5 (2.1)	5.5 (2.1)	5.5/7 (2.1)	5.5/7 (2.1)	5.5/10 (2.1)	5.5/10 (2.1)
HR	Standard	22	22	23	23	25	25	25	25
HR	Reduced	(0)	(0)	10 (0)	10 (0)	10 (0)	5/10	5/13	5/13
IT	Standard	20	20	20	20	21	21	22	22
IT	Reduced	10 (4)	10 (4)	10 (4)	10 (4)	10 (4)	10 (4)	10 (4)	10 (4)
CY	Standard	10	15	15	15	17	18	19	19
CY	Reduced	5	5	5/8	5/8	5/8	5/8	5/9	5/9
LV	Standard	18	18	21	22	22	21	21	21
LV	Reduced	-	5	10	12	12	12	12	12
LT	Standard	18	18	21	21	21	21	21	21
LT	Reduced	5	5/9	5/9	5/9	5/9	5/9	5/9	5/9
LU	Standard	15	15	15	15	15	15	15	17
LU	Reduced	6/12 (3)	6/12 (3)	6/12 (3)	6/12 (3)	6/12 (3)	6/12 (3)	6/12 (3)	8/14 (3)
HU	Standard	25	25	25	25	27	27	27	27
HU	Reduced	12 (0)	5/15	5/18	5/18	5/18	5/18	5/18	5/18
MT	Standard	15	18	18	18	18	18	18	18
MT	Reduced	5	5	5	5/7	5/7	5/7	5/7	5/7
NL	Standard	17.5	19	19	19	19	21	21	21
NL	Reduced	6	6	6	6	6	6	6	6
AT	Standard	20	20	20	20	20	20	20	20
AT	Reduced	10	10	10	10	10	10	10	10
PL	Standard	22	22	22	23	23	23	23	23
PL	Reduced	7	7 (3)	7 (3)	5/8	5/8	5/8	5/8	5/8
PT	Standard	17	21	21	23	23	23	23	23
PT	Reduced	5/12	5/12	6/13	6/13	6/13	6/13	6/13	6/13
RO	Standard	19	19	24	24	24	24	24	24
RO	Reduced	-	9	5/9	5/9	5/9	5/9	5/9	5/9
SI	Standard	19	20	20	20	20	22	22	22
SI	Reduced	8	8.5	8.5	8.5	8.5	9.5	9.5	9.5
SK	Standard	23	19	19	20	20	20	20	20
SK	Reduced	10	-	6/10	10	10	10	10	10
FI	Standard	22	22	23	23	23	24	24	24
FI	Reduced	8/17	8/17	9/13	9/13	9/13	10/14	10/14	10/14
SE	Standard	25	25	25	25	25	25	25	25
SE	Reduced	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12
UK	Standard	17.5	17.5	17.5	20.0	20.0	20.0	20.0	20.0
UK	Reduced	5	5	5	5	5	5	5	5
EU arithmetic	Standard	19.3	19.6	20.5	20.8	21.1	21.5	21.5	21.6
EA arithmetic	Standard	18.1	18.8	19.6	19.8	20.1	20.5	20.7	20.8

Notes: Rates given in the table are rates applicable (for more than 6 month in the year considered, or) on the 1st July of that year. When change of rates occurred during the year (not on 1st January) the exact date is available in the notes. Super-reduced rates (below 5%) are shown in brackets. Note that 'Parking rates' are not included in this table, as they are "historic rates" below 15% negotiated by member states, and an exception to the EU directive (only 5 member states retain them). Full information on VAT rates is available at

http://ec.europa.eu/taxation_customs/taxation/vat/how_vat_works/rates/index_en.htm including full information on reduced rates and products to which they are applicable

Bulgaria: Reduced rate increased to 9 % on 1.04.2011

Czech Rep.: Standard rate decreased to 19 % on 1.05.2004

Denmark: In respect of Article 81, Denmark reduces the taxable amount to 20% to which the 25% rate is applied, resulting in an effective rate of 5% for imports of both works of art and antiques. the same applies in respect of supplies by creators.

Estonia: Standard rate increased to 20 % on 1.07.2009

Greece: All rates were increased on 01.04.2005. A further general increase occurred on 15/03/2010 (to 5/10 % and 21%, followed the same year by the increase to 5.5/11 and 23 %, which occurred on July 1st. Reduced rate increased to 13% and super reduced rate to 6.5% on 1.1.2011. Super reduced rate is lowered to 6% as of 20.07.2015.

Spain: The 2010 increase (reduced rate to 8% and standard rate to 18%) occurred on 1st July. Both rates were further increased on 01.09.2012 (to 10% and 21%).

France: Before 01.04.2000, standard rate was equal to 20.6 %.

Croatia: Standard rate increased to 23 % on 01.08.2009. A further increase - to 25 % - took place on 01.03.2012.

Ireland: The (super-) reduced rate was 4% on 01.03.1999. It increased to 4.2% on 01.03.2000.The rate increased to 4.3% on 01.01.2001 and it increased to 4.4% on 01.01.2004.The rate increased to 4.8% on 01.01.2005 and remains at this rate at present. Standard rate increased to 21 % on 01.03.2002. Standard rate increased further to 21.5 % on 01.12.2008. Standard rate decreased to 21% on 01.01.2010. Standard rate increased to 23% on 01.01.2012 and remains at this rate. An additional reduced rate of 9 % was introduced on 01.07.2011.

Italy: Standard rate increased to 21 % on 17.09.2011. A further increase - to 22 % - took place on 01.10.2013.

Cyprus: The reduced rate of 5 % was introduced on 01.07.2000 together with the increase of the standard rate from 8 % to 10 % . Standard rate increased to 13% on 01.07.2002. The second reduced rate of 8% was introduced on 01.08.2005. Standard rate increased to 17 % on 01.03.2012, and further increased to 18 % on 14.01.2013. On 13.01.2014 the second reduced rate increased to 9 % and the standard rate increased to 19 %.

Latvia: Reduced rate decreased to 5 % on 01.05.2004. Standard rate decreased to 21 % on 01.07.2012.

Lithuania: Reduced rate (5 %) introduced on 01.05.2000. Standard rate increased to 19 % on 01.01.2009 and further increased to 21 % on 01.09.2009.

Hungary: The second reduced rate (15 %) was abolished on 01.09.2006. Reintroduced on 01.07.2009 at 18 % together with the increased of the standard rate to 25 %.

Netherlands: Standard rate increased to 21 % on 1.10.2012

Poland: The (super-)reduced rate of 3 % was introduced on 04.09.2000.

Portugal: Standard rate increased to 19 % on 05.06.2002. Standard rate further increased to 21 % on 01.07.2005. Standard rate decreased to 20 % on 01.07.2008. All rates increased by 1 % on 01/07/2010.

Romania: The second reduced rate (5 %) introduced on 01.12.2008. Standard rate increased to 24 % on 01.07.2010.

Slovenia: Reduced rate increased to 9.5 % and standard rate increased to 22 % on 1.07.2013

Slovakia: The second reduced rate (6 %) introduced on 01.05.2010. Abolished on 01.01.2011 together with the standard rate increase to 20 %.

Finland: Second reduced rate decreased to 12 % on 1.10.2009. Second reduced rate subsequently increased to 13 % on 01.07.2010 together with the increase of the first reduced rate to 9 % and the increase of the standard rate to 23 %

UK: Standard rate increased to 20 % on 04.01.2011

Source: European Commission.

Table A2.13:   **Reduced VAT rates for energy (2015)**

	Standard rate	Reduced rate			
		Natural gas	Electricity	District heating	Firewood
BE	21	21	6/21	21	6
BG	20	20	20	20	20
CZ	21	21	21	21	15
DK	25	25	25	25	25
DE	19	19	19	19	7
EE	20	20	20	20	20
IE	23	13.5	13.5	13.5	13.5
EL	23	13	13	13	13
ES	21	21	21	21	21
FR	20	20/5.5	20/5.5	5.5	10
HR	25	25	25	25	25
IT	22	10	10	22	10
CY	19	19	19	19	19
LV	21	21	21	12	12
LT	21	21	21	9	21
LU	17	8	8	14	8
HU	27	27	27	5	27
MT	18	18	5	18	18
NL	21	21	21	21	21
AT	20	20	20	20	10
PL	23	23	23	23	8
PT	23	23	23	23	23
RO	24	24	24	24	24
SI	22	22	22	22	22
SK	20	20	20	20	20
FI	24	24	24	24	24
SE	25	25	25	25	25
UK	20	5	5	20	20
EU	21.6	19.1	18.1	18.8	17.4
EA	20.8	17.9	16.4	17.7	15.7

Source: Commission services.

Table A2.14:   **VAT rates for telecommunication services**

	Phone/Fax/Telex etc	Pay TV/Cable TV	TV Licence
BE	21	21	
BG	20	20	20
CZ	21	21	21
DK	25	25	25
DE	19	19	
EE	20	20	20
EL	23	13*	
ES	21	21	21
FR	20	10	2.1
HR	25	25	
IE	23	23	
IT	22	22	4
CY	19	19	19
LV	21	21	21
LT	21	21	21
LU	17	17	
HU	27	27	27
MT	18	18	
NL	21	21	
AT	20	10	10
PL	23	8	23*
PT	23	23	6
RO	24	24	24
SI	22	22	22
SK	20	20	20
FI	24	24	10
SE	25	25	
UK	20	20	
EU	21.6	20.3	17.2
EA	20.8	19.6	14.7

Note: Rates applicable on 1 January 2015. * For Poland licences for TV broadcasting services issued by the public authority are not subject to VAT. For Greece as from 20 July 2015 Pay TV/Cable TV moved to the standard rate of 23%.
Source: Commission services.

Table A2.15: **National publications on tax expenditure**

	Regular publications		
Country	**Publisher (in english)**	**Publisher (in national language(s))**	**Document(s)**
AT	Ministry of Finance	Bundesministerium für Finanzen	Förderungsbericht 2013
BE	The Belgium Chamber of Representatives	Chambre des Représentants de Belgique/Belgische Kamer van Volksvertegenwoordigers	Inventaire 2013 des exonérations, abattements et réductions qui influencent les recettes de l'État, doc 54 0495/006 (annexe au budget des voies et moyens pour l'année budgétaire 2015) / Inventaris 2013 van de vrijstellingen, aftrekken en verminderingen die de ontvangsten van de Staat beïnvloeden, doc 54 0495/006 (bijlage tot de middelenbegroting voor het begrotingsjaar 2015).
BG	Ministry of Finance	Министерство на финансите	"Tax Expenditure Report 2013" ("Доклад за данъчните разходи 2013 г.").
CZ	Ministry of Finance	Ministerstvo financí ČR	"Zpráva o daňových úlevách v České republice za roky 2011-2015", Year 2014.
DE	Ministry of Finance	Bundesministerium der Finanzen	Vierundzwanzigster Subventionsbericht
DK	Ministry of Taxation	Skatteministeriet	list on homepage of the ministry
EE	Ministry of Finance	Rahandus-Ministeerium	Stability Programme 2013
EL	Ministry of Finance	Υπουργείο Οικονομικών	Annex to the Budget, Year 2014
ES	Ministry of Finance and Public Administration	Ministerio de hacienda y administraciones publicas	Presupuestos Generales del Estado. Memoria de beneficios fiscales
FI	Ministry of Finance	Valtiovarainministeriö/ Finansministeriet	Valtion tilinpäätöskertomus 2011/ Statens bokslutsberättelse för 2011
	Government Institute for Economic Research (VATT)	Valtion taloudellinen tutkimuskeskus (VATT)	VEROTUET SUOMESSA 2009–2012
FR	Ministry of Finance	Ministère de l'Economie et des Finances	Dépenses fiscales, annexe au projet de loi de finances 2015
HU	Ministry of National Economy	Nemzetgazdasági Minisztérium	Törvényjavaslat magyarország 2013. évi központi költségvetéséről
LU	Ministry of Finance	Ministère des Finances	Budget pluriannuel 2015, 2016, 2017, 2018
NL	House of Representatives of the States-General	Tweede Kamer der Staten-Generaal	Nota over de toestand van 's rijks financiën and Toelichting op de belastinguitgaven
PT	Ministry of Finance	Ministerio das Finanças	Despesa fiscal 2013
SE	Ministry of Finance	Finansdepartementet	Redovisning av skatteutgifter 2014
UK	Her Majesty's Revenue and Customs(HMRC)	Her Majesty's Revenue and Customs(HMRC)	Various documents available on the homepage
IT	Ministry of Economy and Finance	Ministero dell'Economia e delle Finanze	Bilancio dello Stato. In particolare gli allegati A e B "Effetti Finanziari delle Disposizioni Vigenti Recanti Esenzioni o Riduzioni del Prelievo Obbligatorio" della Tabella N.1 "Stato di Previsione dell'Entrata"
PL	Ministry of Finance	Ministerstwo Finansów	Preferencje podatkowe w Polsce

	Non-Regular publications			
Country	**Publisher (in english)**	**Publisher (in national language(s))**	**Document(s)**	**Year of publication**
BG	Ministry of Finance	Министерство на финансите	Presentation of reporting in english on the homepage	2012
DE	Fifo Köln, Copenhagen Economics and ZEW	Fifo Köln, Copenhagen Economics and ZEW	Evaluierung von Steuervergünstigungen. Band 1-3.	2009
DK	Ministry of Finance	Finansministeriet, Nordic working group	Tax expenditures in Nordic Countries	2009
FI	Government Institute for Economic Research (VATT)	Valtion taloudellinen tutkimuskeskus (VATT)	Valmisteluraportit 5. Verotuet Suomessa 2009	2010
FR	Ministry of Finance	Ministère de l'Economie et des Finances	Comité d'évaluation des dépenses fiscales et des niches sociales	2011
IE	Ministry of Finance	Ministry of Finance	Commission on Taxation	2009
IT	Senate's services for public budget	Servizio del bilancio del Senato	Esenzioni e riduzioni del prelievo obbligatorio. Una analisi del bilancio per il 2011	2010

Source: Commission services.

Table A2.16:   **Tax expenditures related to pension income included in EUROMOD**

Member State	Tax expenditures in Member States' tax systems (2013) that are included in EUROMOD	Changes made within EUROMOD to construct the benchmark scenario
Austria	Additional, private pensions deducted from taxable income and taxed separately	Additional, private pensions not deducted and separate taxation removed
	Contributions to private pensions not deducted (negative tax expenditure)	Contributions to private pensions deducted from taxable base
	Tax allowance granted on pension income	Tax allowance removed
	Tax credit for pensioners	Tax credit removed
Belgium	Contributions to private pensions not deducted (negative tax expenditure)	Contributions to private pensions deducted from taxable base
	Tax credit granted on pension income	Tax credit removed
	Tax credit granted on replacement income	Tax credit removed (insofar as it relates to pension income)
Bulgaria	Pension inome not included in taxable income	Income from state and private pensions included in taxable income
	Pension contributions deducted from taxable income, up to a maximum value of 10% of taxable income	Contributions fully deducted
Cyprus	Contributions to private pensions deducted from taxable income, up to a maximum value of one sixth of taxable income	Contributions fully deducted
	Some old-age and survivors pensions not included in taxable income	Old-age and survivor pensions included in taxable income
Czech Republic	Contributions to private pensions above CZK 12 000 deducted from taxable income, up to a maximum value of contributions of CZK 12 000	Contributions fully deducted
	Tax credit not granted to those with pension income (negative tax expenditure)	Tax credit granted to all tax payers
	Pensions included in taxable income only if above 36 times the minimum wage	State pensions included in taxable income
	Pension contributions not deducted (negative tax expenditure)	Contributions fully deducted
France	Contributions to private pensions deducted, subject to maximum limits	Contributions fully deducted
	Tax deduction granted on pension income	Tax deduction removed
Germany	Some pensions not included in taxable income	Pensions included in taxable income
	Tax allowance for elderly people over 64	Tax allowance removed
	Contributions to private pensions not deducted (negative tax expenditure)	Contributions fully deducted
Italy	Contributions to private pensions deducted, subject to a maximum of EUR 5 164.57 per year	Contributions fully deducted
	Tax credit granted on pension income	Tax credit removed
	Private pensions subject to separate income tax	Private pensions included in taxable income, thus subject to standard progressive income tax
Spain	Contributions to private pensions not deducted (negative tax expenditure)	Contributions fully deducted
	Tax credit for elderly people over 65 (plus an additional credit for those over 65 and over 75 respectively)	Tax credit removed
	Tax allowance related to employment income: supplement given to elderly workers	Supplement for elderly workers removed
	Regional tax credit granted on the basis of age (Balearic Islands, Canary Islands and Castille-La Mancha)	Tax credit removed
Sweden	Contributions to private pensions deducted up to a maximum of SEK 12 000 per year	Contributions fully deducted
	Additional tax allowance for pensioners	Tax allowance removed
	Contributions to pensions fully credited against income tax liability	Contributions made deductible from taxable income rather than credited against tax liability
United Kingdom	Contributions to state pension not deducted (negative tax expenditure)	Contributions fully deducted
	Age-related tax allowances	Age-related tax allowances removed
	Married couples tax allowance	Married couples tax allowance removed

Note: For more detailed information, see the EUROMOD country reports (https://www.iser.essex.ac.uk/euromod/using-euromod/country-reports).
Source: European Commission Joint Research Centre, based on the EUROMOD model.

Table A2.17: **Tax expenditures related to housing income included in EUROMOD**

Member State	Tax expenditures in Member States' tax systems (2013) that are included in EUROMOD	Changes made within EUROMOD to construct benchmark scenario
France	Income from renting immovable property is partially deductible	Deduction removed
	Mortgage interest can be deducted from tax due at a rate of 40 %. (This provision was introduced in May 2007 and subsequently repealed in 2011, but tax relief continues to be granted on mortgages taken out while this rule was in place. The tax credit applied only during the first five years of the mortgage. The simulations are run based on the assumption that if the main earner in the household is under 45, the house was bought less than five years earlier.)	Tax credit removed
Belgium	Tax relief granted on mortgage interest (see Figari, Verbist and Zantomio, 2015 for details of the different measures in place)	Tax credit removed
Bulgaria	Tax relief (in the form of a tax deduction) is granted on mortgage interest for young families. This is not included in the simulation.	
	Deduction for rental income from immovable property	Deduction removed
Czech Republic	Tax relief granted on mortgage interest (in the form of a tax deduction)	Deduction removed
Italy	Tax relief granted on mortgage interest (in the form of a tax credit of 19 % of interest payments on a mortgage for a main residence, up to EUR 4 000 per year)	Separate taxation removed
	Income from renting immovable property is subject to a specific tax, at a rate of 21 % (a lower rate than personal income tax)	Income from renting immovable property included in taxable income, thus subject to standard progressive income tax
	Tax credit granted for rent paid on a main residence (if the taxpayer's income is below certain limits)	Tax credit removed
	Tax credit granted for the refurbishment of immovable property (between 36 % and 65 % of the cost, to be claimed back over 10 years)	Tax credit removed
Spain	Tax relief granted on mortgage interest (in the form of a tax credit). In the EUROMOD model, the assumption is that all homeowners would have benefited from this tax credit in 2013. Special rules on mortgage tax credit are applied in Catalonia.	Tax credit removed
	Tax credit for rent paid on a main residence	Tax credit removed
	Regional tax credit for rent paid on a main residence for young taxpayers	Tax credit removed
Sweden	Tax relief granted on mortgage interest (in the form of a tax credit for any negative capital income, calculated as mortgage interest payments on a main residence, net of investment income and property income)	Tax credit removed
	Interest on mortgage payments is deducted from capital income (i.e. investment income and property income) before taxation	Deduction of mortgage interests removed
	Income from renting immovable property is taxed as capital income (i.e. a proportional tax). This deduction is not included in the simulation.	Income from renting immovable property included in taxable income, thus subject to progressive income tax
United Kingdom	Income from renting out rooms in household's own residence not taxed up to GBP 4 250 per year	Income from renting rooms in own residence included in taxable income of progressive income tax

Note: For more detailed information, see the EUROMOD country reports (https://www.iser.essex.ac.uk/euromod/using-euromod/country-reports).
Source: European Commission Joint Research Centre, based on the EUROMOD model.

Table A2.18:   **Tax administration data (2013)**

Country	PIT e-filing	CIT e-filing	VAT e-filing	Undisputed tax debt
BE	70	82	97	16.3
BG	11	52	94	15.3
CZ	3	21	17	18.1
DK	98	100	99	4.9
DE	51	0	80	1.7
EE	95	99	99	:
IE	91	99	98	2.2
EL	49	0	83	:
ES	99	99	96	:
FR	34	96	82	7.7
HR	:	76	98	:
IT	100	100	100	190.8
CY	23	97	4	47.6
LV	18	91	99	22.9
LT	96	82	97	6.4
LU	1	0	50	:
HU	20	99	99	21.1
MT	1	95	3	23.2
NL	96	100	100	3.8
AT	80	97	89	2.4
PL	25	10	33	15.6
PT	87	100	100	24.2
RO	1	74	86	8.6
SI	100	99	99	8.6
SK	2	15	49	33
FI	45	58	85	:
SE	77	75	75	:
UK	85	98	99	2.6
EU	66	70	87	4.4
EA	66	66	88	4.0
LAF plus	78	87	94	2.0
LAF minus	55	53	81	6.7

Note: Italy has been treated as an outlier for the undisputed tax debt LAF calculation.
Source: OECD (2015b), p. 231 and pp. 251-253.

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