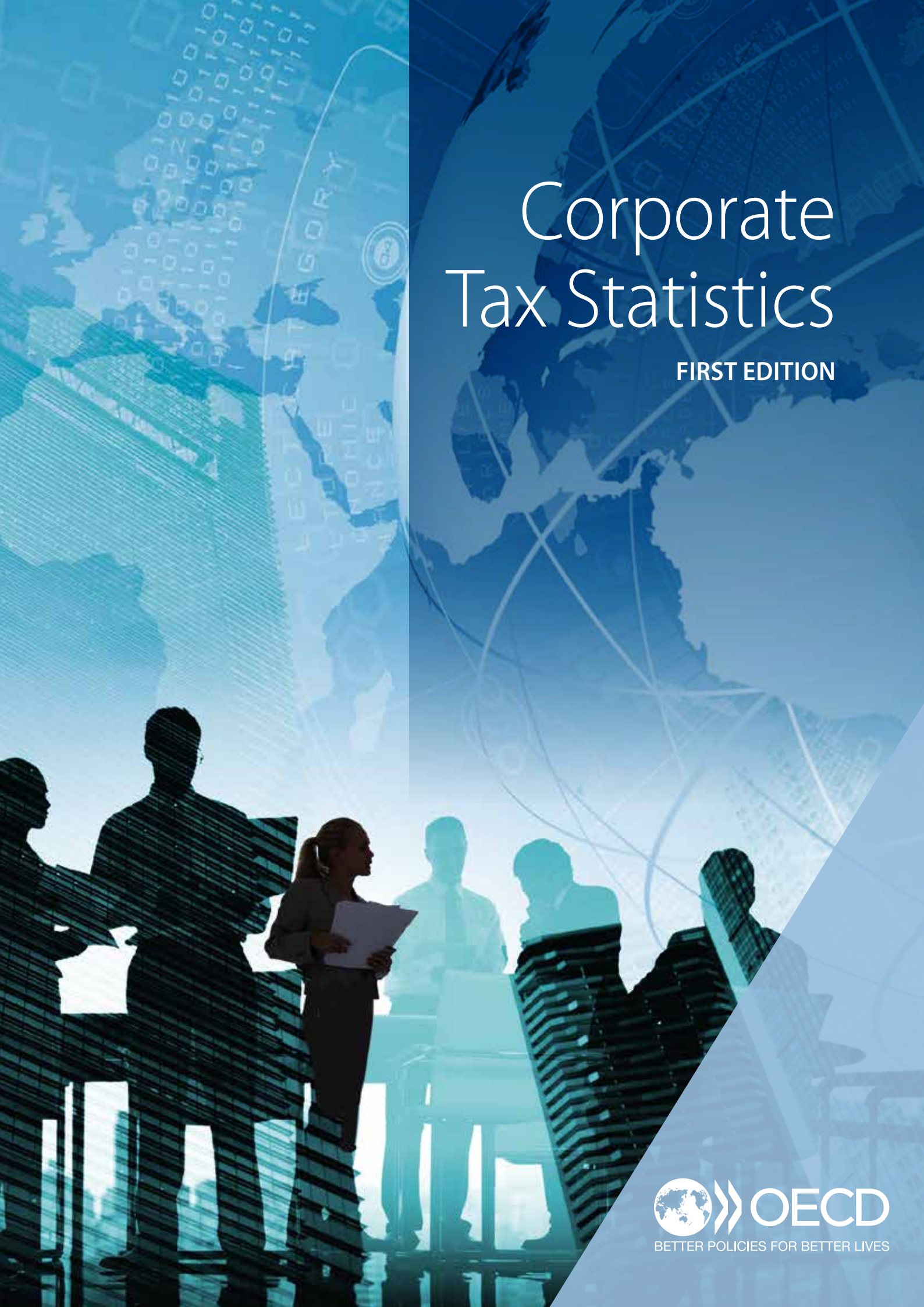

Corporate Tax Statistics

FIRST EDITION

OECD

BETTER POLICIES FOR BETTER LIVES

Corporate Tax Statistics

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

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NAMES OF COUNTRIES AND JURISDICTIONS

ALB Albania
AND Andorra
AGO Angola
AIA Anguilla
ARG Argentina
AUS Australia
AUT Austria
BHS Bahamas
BHR Bahrain
BRB Barbados
BEL Belgium
BLZ Belize
BMU Bermuda
BOL Bolivia
BWA Botswana
BRA Brazil
VGB British Virgin Islands
BRN Brunei Darussalam
BGR Bulgaria
BFA Burkina Faso
CPV Cabo Verde
CMR Cameroon
CAN Canada
CYM Cayman Islands
CHL Chile
CHN China
COL Colombia
COG Congo
COK Cook Islands
CRI Costa Rica
CIV Côte d'Ivoire
HRV Croatia
CUB Cuba
CUW Curaçao
CYP Cyprus
CZE Czech Republic
DNK Denmark
DOM Dominican Republic
COD DRC
EGY Egypt
SLV El Salvador
EST Estonia
SWZ Eswatini
FJI Fiji
FIN Finland
FRA France
GAB Gabon
DEU Germany
GHA Ghana
GRC Greece
GTM Guatemala
GGY Guernsey
GUY Guyana
HND Honduras
HKG Hong Kong, China
HUN Hungary
ISL Iceland
IND India
IDN Indonesia
IRL Ireland
IMN Isle of Man
ISR Israel
ITA Italy
JAM Jamaica
JPN Japan
JEY Jersey
KAZ Kazakhstan
KEN Kenya
KOR Korea
LVA Latvia
LBR Liberia
LIE Liechtenstein
LTU Lithuania
LUX Luxembourg
MAC Macau, China
MYS Malaysia
MDV Maldives
MLI Mali
MLT Malta
MUS Mauritius
MEX Mexico
MCO Monaco
MSR Montserrat
MAR Morocco
NLD Netherlands
NZL New Zealand
NER Niger
NGA Nigeria
NOR Norway
OMN Oman
PAN Panama
PNG Papua New Guinea
PRY Paraguay
PER Peru
PHL Philippines
POL Poland
PRT Portugal
ROU Romania
RUS Russia
RWA Rwanda
VCT Saint Vincent and the Grenadines
WSM Samoa
SAU Saudi Arabia
SEN Senegal
SRB Serbia
SYC Seychelles
SGP Singapore
SVK Slovak Republic
SVN Slovenia
SLB Solomon Islands
ZAF South Africa
ESP Spain
SWE Sweden
CHE Switzerland
THA Thailand
TGO Togo
TKL Tokelau
TTO Trinidad and Tobago
TUN Tunisia
TUR Turkey
TCA Turks and Caicos Islands
UGA Uganda
ARE United Arab Emirates
GBR United Kingdom
USA United States
URY Uruguay
VNM Viet Nam

Introduction

The *Corporate Tax Statistics* database is intended to assist in the study of corporate tax policy and expand the quality and range of data available for the analysis of base erosion and profit shifting (BEPS).

In developing this first edition of the database, the OECD has worked closely with members of the Inclusive Framework on BEPS (Inclusive Framework) and other jurisdictions willing to participate in the collection and compilation of statistics relevant to corporate taxation. The 2015 *Measuring and Monitoring BEPS, Action 11* report highlighted that the lack of quality data on corporate taxation is a major limitation to the measurement and monitoring of the scale of BEPS and the impact of the OECD/G20 BEPS project. While this database is of interest to policy makers from the perspective of BEPS, its scope is much broader. Apart from BEPS, corporate tax systems are important more generally in terms of the revenue that they raise and the incentives for investment and innovation that they create. The *Corporate Tax Statistics* database brings together a range of valuable information to support the analysis of corporate taxation, in general, and of BEPS, in particular.

The database compiles new data items and statistics currently collected and stored by the OECD in various existing data sets. The first edition of the database contains **four main categories of data:**

- **corporate tax revenues;**
- **statutory corporate income tax rates;**
- **corporate effective tax rates;**
- **tax incentives related to innovation**.

Future editions will also include an important new data source: **aggregated and anonymised statistics of data collected under the BEPS Action 13 Country-by-Country Reports.**

Box 1. **CORPORATE TAX STATISTICS**

- **Corporate tax revenues:**
  - data are from the OECD's *Global Revenue Statistics Database*
  - covers 88 jurisdictions from 1965-2016 (for OECD members) and 1990-2016 (for non-OECD members)
- **Statutory corporate income tax rates:**
  - covers 94 jurisdictions from 2000-18
- **Corporate effective tax rates:**
  - covers 74 jurisdictions for 2017
- **Tax incentives for research and development (R&D):**
  - data are from the OECD's *R&D Tax Incentive Database*
  - covers 47 jurisdictions for 2000-16 (for tax and direct government support as a percentage of R&D)
  - covers 44 jurisdictions for 2000-18 (for implied subsidy rates for R&D, based on the B-index)
- **Intellectual property (IP) regimes:**
  - data collected by the OECD's Forum on Harmful Tax Practices
  - covers 65 regimes in 41 jurisdictions for 2018

Corporate tax revenues

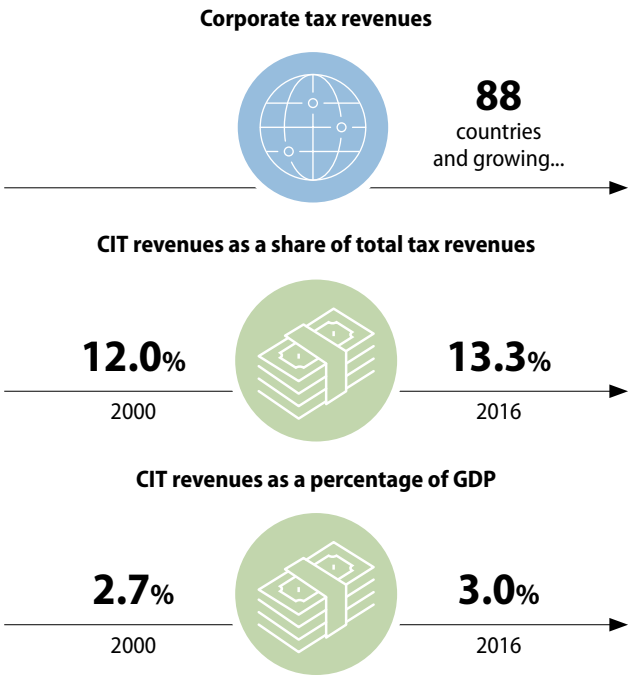
Data on corporate tax revenues can be used to compare the size of corporate tax revenues across jurisdictions and to track trends over time. The data in the *Corporate Tax Statistics* database allow the comparison of individual jurisdictions as well as average corporate tax revenues across OECD jurisdictions, 25 Latin American & Caribbean (LAC) jurisdictions, and 21 African jurisdictions[1].

Box 2. CORPORATE TAX REVENUES

The *Corporate Tax Statistics* database contains four corporate tax revenues indicators:

- the level of corporate tax revenues in national currency;
- the level of corporate tax revenues in USD;
- corporate tax revenues as a percentage of total tax revenues;
- corporate tax revenues as a percentage of gross domestic product (GDP).

The data are from the OECD's *Global Revenue Statistics Database,* which presents detailed, internationally comparable data on tax revenues. The classification of taxes and methodology is described in detail in the OECD's *Revenue Statistics Interpretative Guide.*

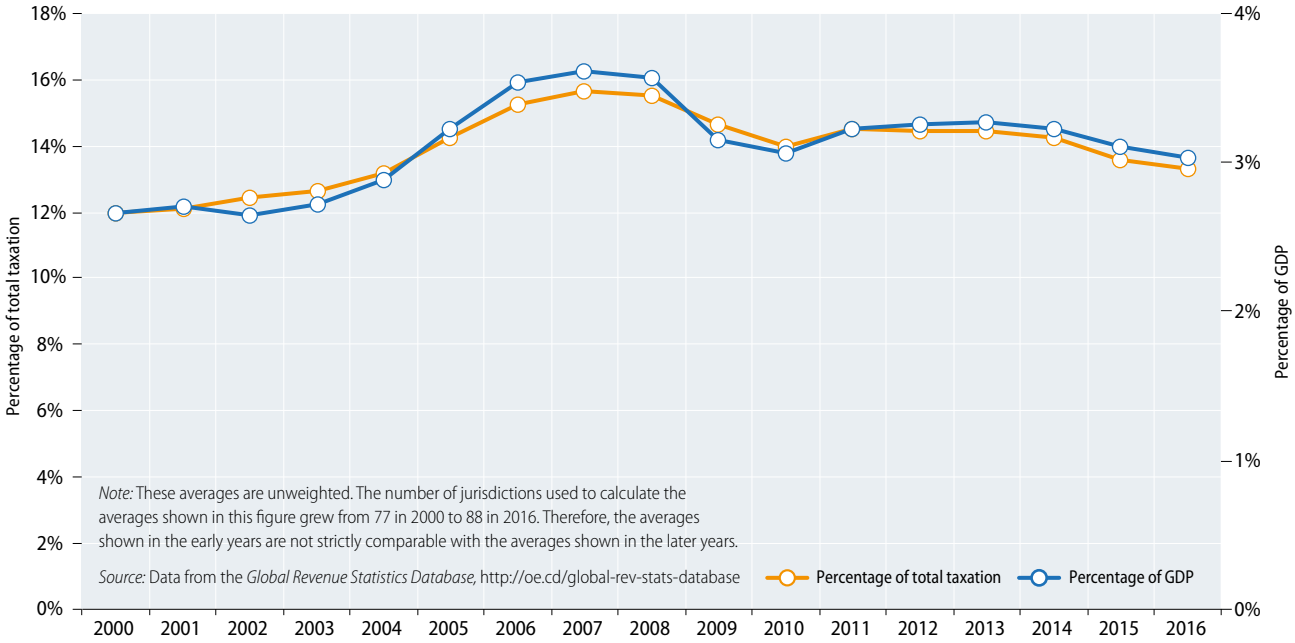


KEY INSIGHTS:

- In 2016, the share of corporate tax revenues in total tax revenues was 13.3% on average across the 88 jurisdictions in the database, and corporate tax revenues as a percentage of GDP was 3.0% on average.
- The size of corporate tax revenues relative to total tax revenues and relative to GDP varies by groupings of jurisdictions. In 2016, corporate tax revenues were a larger share of total tax revenues on average in Africa (15.3% in the 21 jurisdictions) and LAC (15.4% in the 25 jurisdictions) than the OECD (9%). The average of corporate tax revenues as a share of GDP was the largest in LAC (3.4% in the 25 jurisdictions), followed by the OECD (2.9%) and Africa (2.8% in the 21 jurisdictions).
- In five jurisdictions – Egypt, Kazakhstan, Malaysia, Papua New Guinea and the Philippines – corporate tax revenues made up more than one-quarter of total tax revenues in 2016.
- Corporate tax revenues are driven by the economic cycle. For the period 2000-16, average corporate tax revenues as a percentage of GDP reached their peak in 2007 (3.6%) and declined in 2009 and 2010 (3.2% and 3.1% respectively), reflecting the impact of the global financial and economic crisis.
- For jurisdictions where the exploitation of natural resources is a significant part of the economy, changes in commodity prices can have a significant effect on corporate tax revenues. From 2015 to 2016, the share of corporate tax in total tax decreased by more than five percentage points in two jurisdictions, the Democratic Republic of Congo (from 20.6% to 14.5%) and Trinidad and Tobago (from 44.0% to 23.4%). In both of these jurisdictions, the drop was driven by a decline in commodity prices.

1. The *Global Revenue Statistics Database* covers 92 jurisdictions in 2018. Data on corporate tax revenues is available for 88 of these jurisdictions. In addition to the OECD, Latin America & Caribbean jurisdictions, and African jurisdictions, the *Global Revenue Statistics Database* also contains data on Asian and Pacific jurisdictions, but the number of jurisdictions is not sufficiently large for the calculation of meaningful averages for the Asia and Pacific Region.

FIGURE 1: **Average corporate tax revenues as a percentage of total tax and as a percentage of GDP**

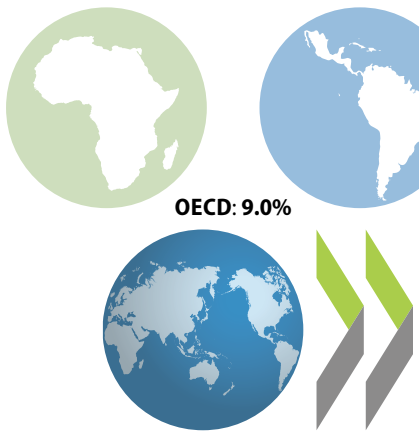


TRENDS IN CORPORATE TAX REVENUES

Data from the OECD's *Corporate Tax Statistics* database reveal that there was a slight increase in both the average of corporate income tax (CIT) revenues as a share of total tax revenues and as a share of GDP between 2000 and 2016 across the 88 jurisdictions for which data are available (see Figure 1).[2] Average corporate tax revenues as a share of total tax revenues increased from 12.0% in 2000 to 13.3% in 2016, and average CIT revenues as a percentage of GDP increased from 2.7% in 2000 to 3.0% in 2016.

Between 2000 and 2016, the trend for both indicators is very similar. When measured both as a percentage of total tax revenues and as a percentage of GDP, corporate tax revenues reached their peak in 2007 and then dipped in 2009 and 2010, reflecting the impact of the global financial and economic crisis. While average CIT revenues recovered after 2010, the unweighted averages declined in each of the last three years for which data across all 88 jurisdictions are available (2014, 2015 and 2016). Some of the recent drop can be explained by a drop in commodity prices, which has decreased CIT revenues particularly in resource-intensive economies.

Corporate tax revenues are particularly important in developing economies
(CIT revenues as a share of total tax revenues in 2016)



Corporate tax revenues as a share of total tax in 2016

25% OR MORE

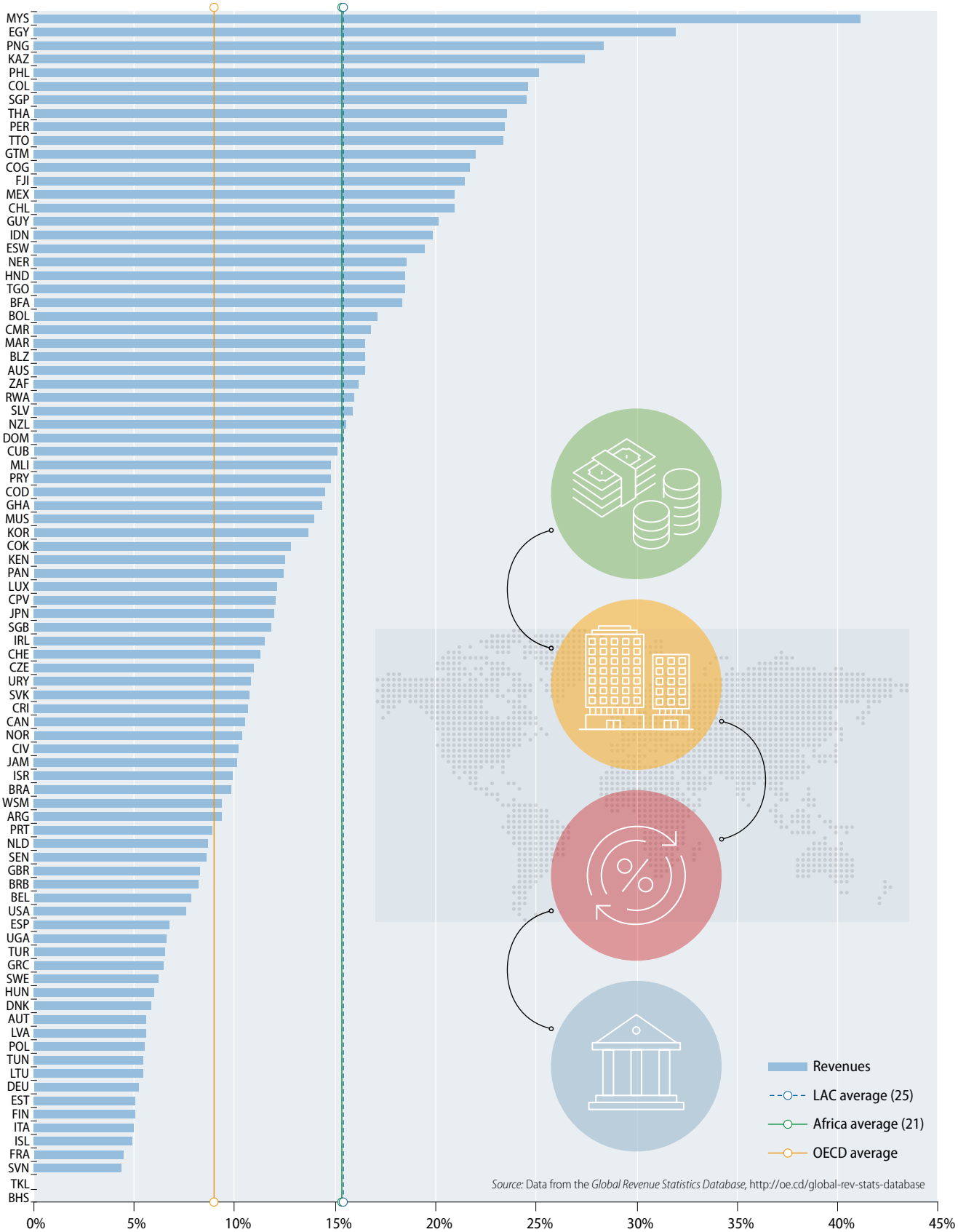
Corporate tax revenues made up more than one-quarter of total tax revenues in 2016: **Egypt, Kazakhstan, Malaysia, Papua New Guinea,** and **the Philippines**

5% OR LESS

Corporate tax revenues made up less than 5% of total tax revenues in 2016: **Bahamas, France, Iceland, Slovenia,** and **Tokelau**

2. The latest available tax revenue data available across all jurisdictions in the database are for 2016, although there are 2017 data available for some jurisdictions in the *Global Revenue Statistics database.*

FIGURE 2: **Corporate tax revenues as a percentage of total tax revenues, 2016**



Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The averages mask substantial differences across jurisdictions. In 2016, jurisdictions differed considerably in the portion of total tax revenues raised by the corporate income tax (see Figure 2). In Egypt, Kazakhstan, Malaysia, Papua New Guinea and the Philippines, CIT revenue accounted for more than 25% of total tax revenue. In Malaysia, it accounted for more than 40%. In contrast, some jurisdictions – such as the Bahamas, Tokelau,[3] France, Iceland and Slovenia – raised less than 5% of total tax revenue in the form of corporate income tax. The average revenue share of corporate tax in 2016 also varied across the OECD and the regional groupings (Latin American & the Caribbean and Africa). In 2016, the OECD average was the lowest, at 9.0%, compared to the African (21) average (15.3%) and the LAC (25) average (15.4%).

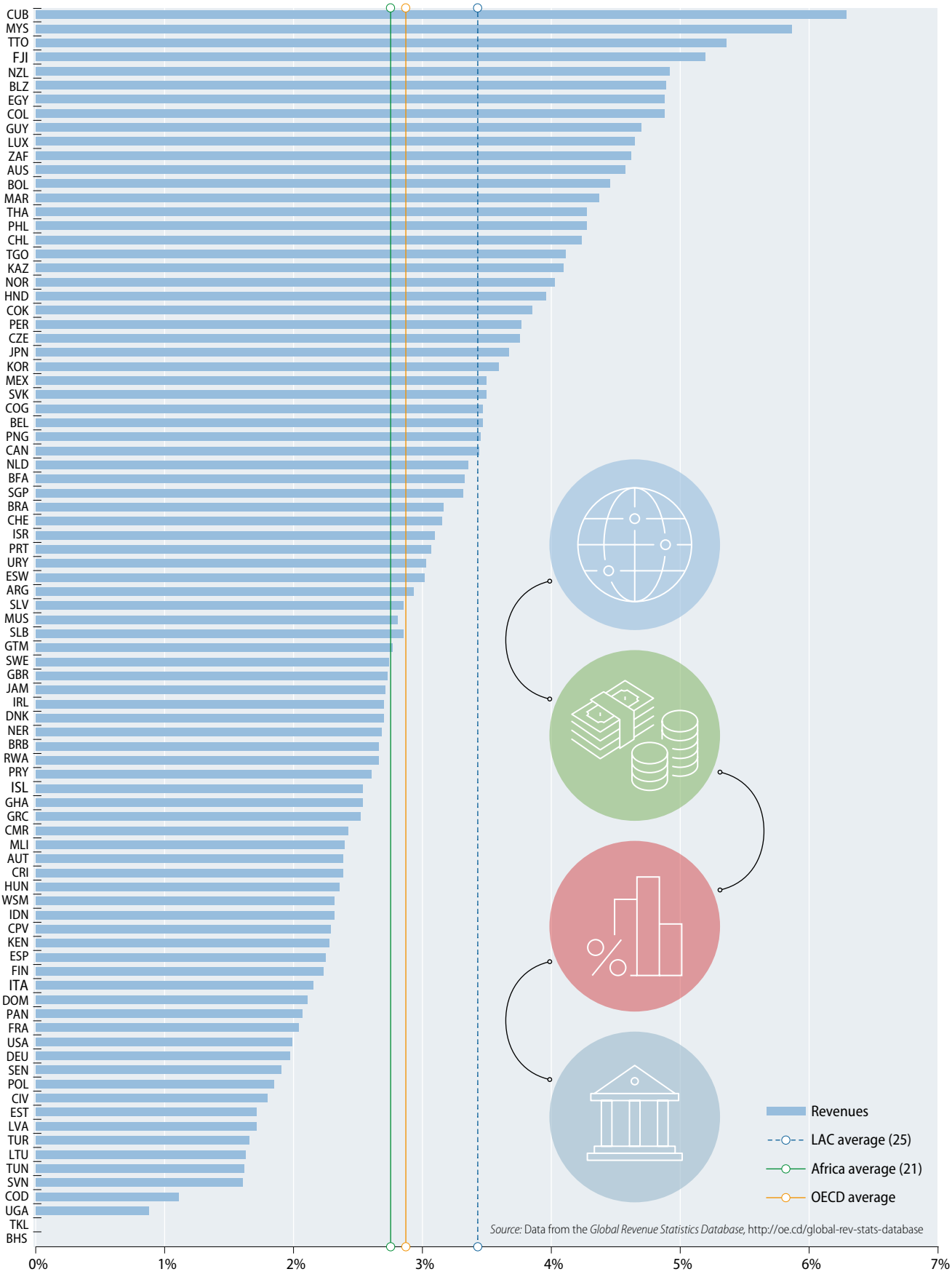
Some of the variation in the share of corporate income tax in total tax revenues results from differences in statutory corporate tax rates, which also vary considerably across jurisdictions. In addition, this variation can be explained by institutional and jurisdiction-specific factors, including:

- the degree to which firms in a jurisdiction are incorporated;
- the breadth of the corporate income tax base;
- the current stage of the economic cycle and the degree of cyclicality of the corporate tax system (for example, from the generosity of loss offset provisions);
- the extent of reliance on other types of taxation, such as taxes on personal income and on consumption;
- the extent of reliance on tax revenues from the exploitation of natural resources;
- other instruments to postpone the taxation of earned profits.

Generally, differences in corporate tax revenues as a share of total tax revenues should not be interpreted as being related to BEPS behaviour, since many other factors are more significant, although profit shifting may have some effects at the margin.

3. The Bahamas and Tokelau do not levy a corporate income tax.

FIGURE 3: **Corporate tax revenues as a percentage of GDP, 2016**



CORPORATE TAX REVENUES AS A SHARE OF GDP

Corporate tax revenues as a percentage of GDP also vary among jurisdictions. In 2016, the ratio of corporate tax revenues to GDP for a majority of jurisdictions fell between 2% and 5% of GDP (see Figure 3). For a few jurisdictions, corporate tax revenues accounted for a larger percentage of GDP; they are more than 5% of GDP in Malaysia, Cuba, and Trinidad and Tobago. In contrast, they are less than 2% of GDP in 12 jurisdictions.

In 2016, the OECD and African (21) averages were almost identical, at 2.8% of GDP, whereas the LAC (25) average was higher (3.4%).

The reasons for the variation across jurisdictions in corporate tax revenues as a percentage of GDP are similar to those that account for why the corporate tax revenue share of total tax revenue differs, such as differences in statutory corporate tax rates and differences in the degree to which firms in a given jurisdiction are incorporated. In addition, the total level of taxation as a share of GDP plays a role. For example, for the 21 African jurisdictions, the relatively high average revenue share of CIT compared to the relatively low average of CIT as a percentage of GDP reflects the low amount of total tax raised as a percentage of GDP (average of 18.2%). Total tax revenue as a percentage of GDP is higher for the 25 LAC jurisdictions (average of 22.7%) and OECD jurisdictions (average of 34.0%). Across jurisdictions in the database, low tax-to-GDP ratios may reflect policy choices as well as difficulties in domestic resource mobilisation.

In 2016, average corporate tax revenues as a percentage of GDP were highest in the LAC (25) region at 3.4%. The OECD and African (21) averages were 2.8%.

Statutory corporate income tax rates

Statutory corporate income tax rates show the headline tax rate faced by corporations and can be used to compare the standard tax rate on corporations across jurisdictions and over time. As statutory tax rates measure the marginal tax that would be paid on an additional unit of income, in the absence of other provisions in the tax code, they are often used in studies of BEPS to measure the incentive that firms have to shift income between jurisdictions.

Standard statutory tax rates, however, do not give a full picture of the tax rates faced by corporations in a given jurisdiction. The standard corporate tax rate does not reflect any special regimes or rates targeted to certain industries or income types, nor does it take into account the breadth of the corporate base to which the rate applies. Further information, such as the data on effective corporate tax rates and intellectual property (IP) regimes in the *Corporate Tax Statistics* database, is needed to form a more complete picture of the tax burden on corporations across jurisdictions.

KEY INSIGHTS:

- Statutory tax rates have been decreasing on average over the last two decades, although considerable variation among jurisdictions remains. The average combined (central and sub-central government) statutory tax rates for all covered jurisdictions was 21.4% in 2018, compared to 21.7% in 2017 and 28.6% in 2000.
- Of the 94 jurisdictions covered, 18 had statutory tax rates equal to or above 30% in 2018, with India having the highest statutory tax rate at 48.3%, which includes a tax on distributed dividends.
- In 2018, 12 jurisdictions had no corporate tax regime or a statutory income tax rate of zero. Only one jurisdiction, Hungary (9%), had a positive statutory tax rate less than 10%. Hungary, however, also has a local business tax, which does not use corporate profits as its base. This is not included in Hungary's statutory tax rate, but it does mean that businesses in Hungary are subject to a higher level of tax than its statutory tax rate reflects.
- Comparing statutory tax rates between 2000 and 2018, 76 jurisdictions had lower tax rates in 2018, while 12 jurisdictions had the same tax rate, and 6 had higher tax rates (Andorra; Chile; Hong Kong, China; India; the Maldives; Oman).
- The largest increases between 2000 and 2018 were in Andorra and Chile (both at 10 percentage points) and the Maldives (15 percentage points). Andorra and the Maldives did not have a corporate tax regime and introduced one during this time period.
- Comparing 2000 and 2018, six jurisdictions – Bulgaria, Germany, Guernsey, Jersey, the Isle of Man and Paraguay – decreased their statutory tax rates by 20 percentage points or more. During this time, Guernsey, Jersey and the Isle of Man eliminated preferential regimes and reduced their standard statutory tax rates to zero.
- From 2017 to 2018, the combined statutory tax rate decreased in ten jurisdictions and increased in six (Canada, India, Korea, Latvia, Portugal, Turkey).
- The jurisdictions with the largest decreases in the combined corporate tax rate between 2017 and 2018 were France (an almost 10 percentage point decrease) and the United States (a decrease of 13.07 percentage points). France repealed an exceptional surtax on corporate profits that had been in place in 2017, and the United States lowered its central government corporate tax rate by 14 percentage points. The jurisdiction with the largest increase was Latvia (an increase of 5 percentage points), which transitioned at the same time to a CIT system where tax is only imposed on distributed earnings.

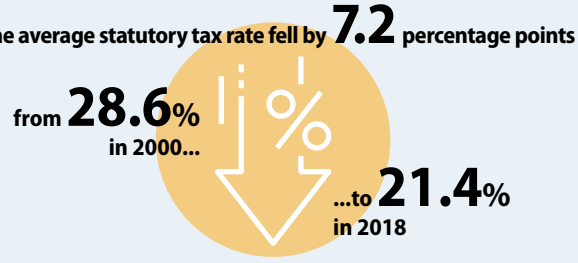
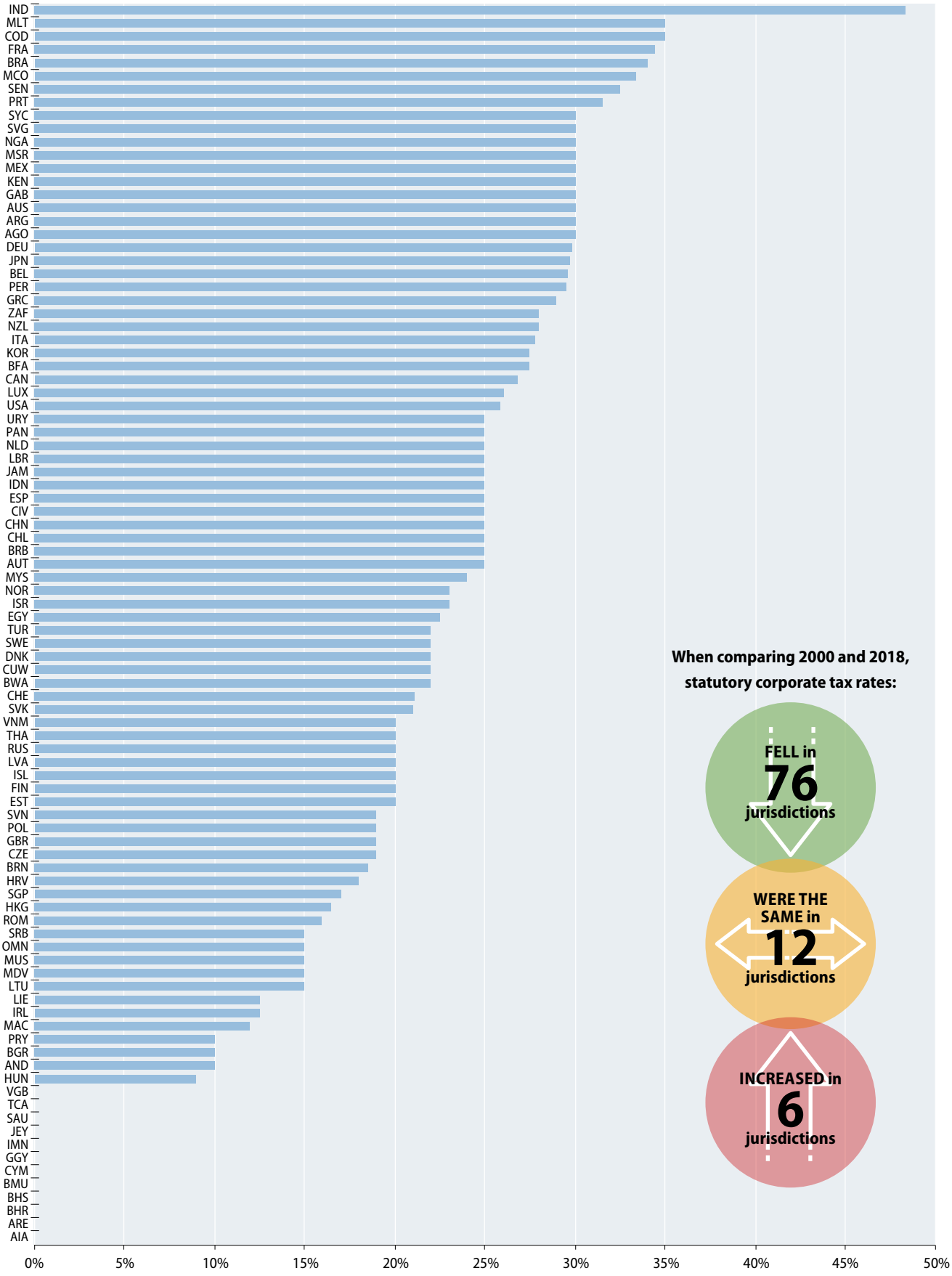


FIGURE 4: **Statutory corporate income tax rates, 2018**



Box 3. **STATUTORY CORPORATE INCOME TAX RATES**

The *Corporate Tax Statistics* database reports statutory tax rates for resident corporations at the:

- central government level;
- central government level exclusive of any surtaxes;
- central government level less deductions for subnational taxes;
- sub-central government level;
- combined (central and sub-central) government level.

The standard rate, that is not targeted at any particular industries or income type, is reported. The top marginal rate is reported if a jurisdiction has a progressive corporate tax system. Other special corporate taxes that are levied on a base other than corporate profits are not included.

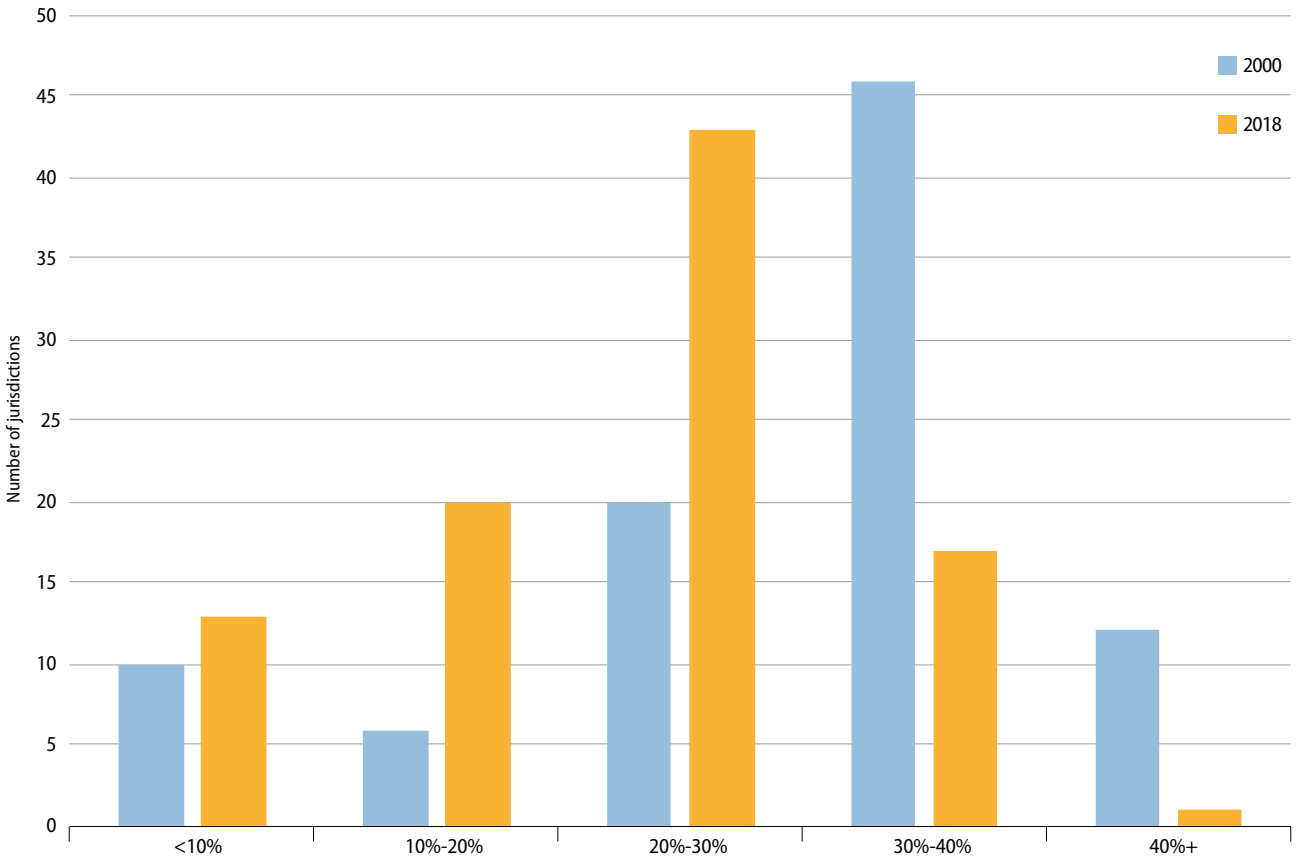
The statutory tax rate data presented in this report refer to combined statutory corporate tax rates, unless otherwise noted.

STATUTORY CORPORATE TAX RATES SINCE 2000

The distribution of statutory tax rates changed significantly between 2000 and 2018 (see Figure 5). In 2000, 12 jurisdictions had tax rates greater than or equal to 40%, while only 1 jurisdiction (India) had a rate exceeding 40% in 2018, and that rate only applies to distributed earnings. Over three-fifths (58 jurisdictions) of the 94 jurisdictions in the database had statutory tax rates greater than or equal to 30% in 2000 compared to less than one-fifth (18 jurisdictions) in 2018.

Most of the downward movement in tax rates between 2000 and 2018 was to statutory tax rates equal to or greater than 10% and less than 30%. The number of jurisdictions with tax rates equal to or greater than 20% and less than 30% jumped from 20 jurisdictions to 43 jurisdictions, and the number of jurisdictions with tax rates equal to or greater than 10% and less than 20% more than tripled, from 6 to 20 jurisdictions.

FIGURE 5: **Changing distribution of statutory corporate tax rates**



The average statutory corporate tax rate declined more significantly in the OECD than in the regional groupings (a decline of 8.5 percentage points, from 32.2% in 2000 to 23.7% in 2018).

Despite the general downward movement in tax rates during this period, the number of jurisdictions with very low tax rates of less than 10% remained fairly stable between 2000 and 2018. There were 10 jurisdictions with tax rates less than 10% in 2000, and 13 below that threshold in 2018.

There has, however, been some movement of jurisdictions into and out of this category, and these movements illustrate how headline statutory tax rates do not give a complete picture of the tax rate in a jurisdiction. Between 2005 and 2009, the British Virgin Islands, Guernsey, Jersey and the Isle of Man all moved from standard statutory corporate tax rates above 10% to zero corporate tax rates. In all of these cases, however, before changing their standard corporate tax rate to zero, they had operated broadly applicable special regimes that resulted in very low tax rates for qualifying companies. Meanwhile, Andorra and the Maldives instituted corporate tax regimes and moved from zero rates to positive tax rates (10% in Andorra beginning in 2012 and 15% in the Maldives beginning in 2011). However, they also introduced preferential regimes as part of their corporate tax systems that offered lower rates to qualifying companies. (Andorra has recently amended or abolished its preferential regimes that were not compliant with the BEPS Action 5 minimum standard, and the Maldives is also in the process of amending or abolishing such regimes.)

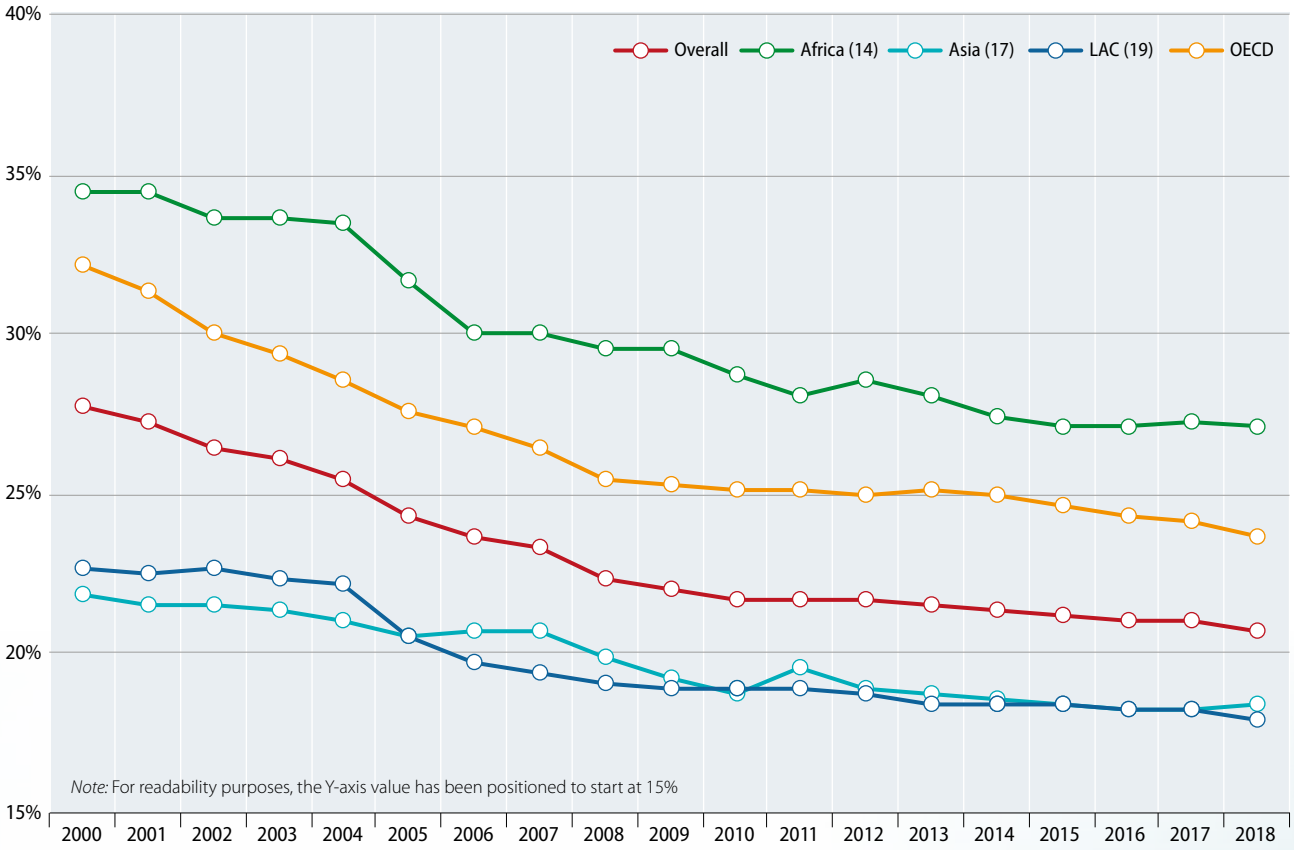
CORPORATE TAX RATE TRENDS ACROSS REGIONS

Since 2000, average statutory tax rates have declined across OECD member states and three regional groupings of jurisdictions: 14 African jurisdictions, 17 Asian jurisdictions and 19 LAC jurisdictions (see Figure 6).[4]

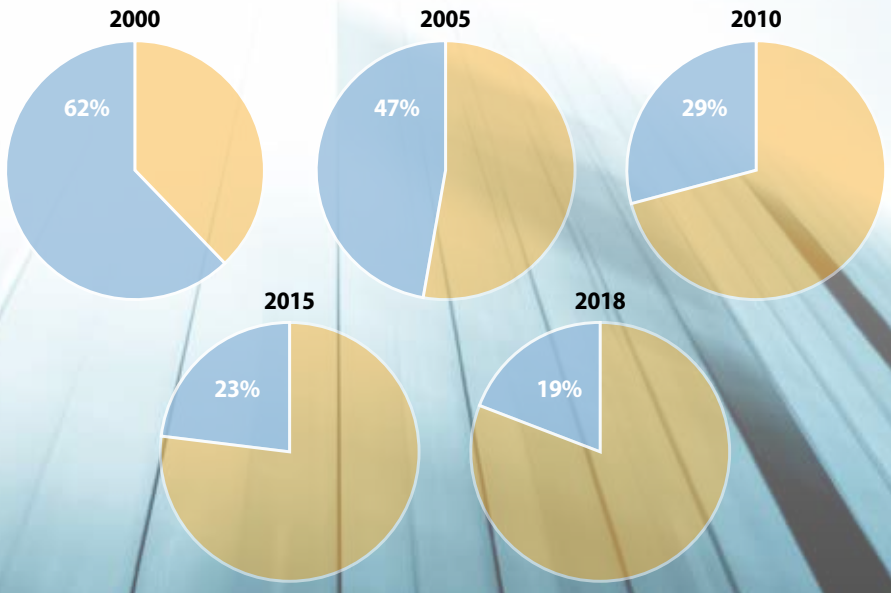
The grouping with the most significant decline has been the OECD (a decline of 8.5 percentage points, from 32.2% in 2000 to 23.7% in 2018) followed by the African (14) average with a decline of 7.3 percentage points, from 34.4% in 2000 to 27.1% in 2018. While the averages have fallen for each grouping over this period, there remains a significant level of difference between the average for each group: the average corporate tax rate for Africa (14) was 27.1% in 2018, compared to 23.7% for the OECD, 18.4% for Asia (17) and 17.9% for LAC (19).

4. As the sample of jurisdictions for which tax revenue data are available and the sample of jurisdictions for which statutory corporate tax rate data are available are not the same, the average corporate tax revenue and statutory tax rate data for the different regional groups should not be directly compared.

FIGURE 6: **Average statutory corporate income tax rates by region**

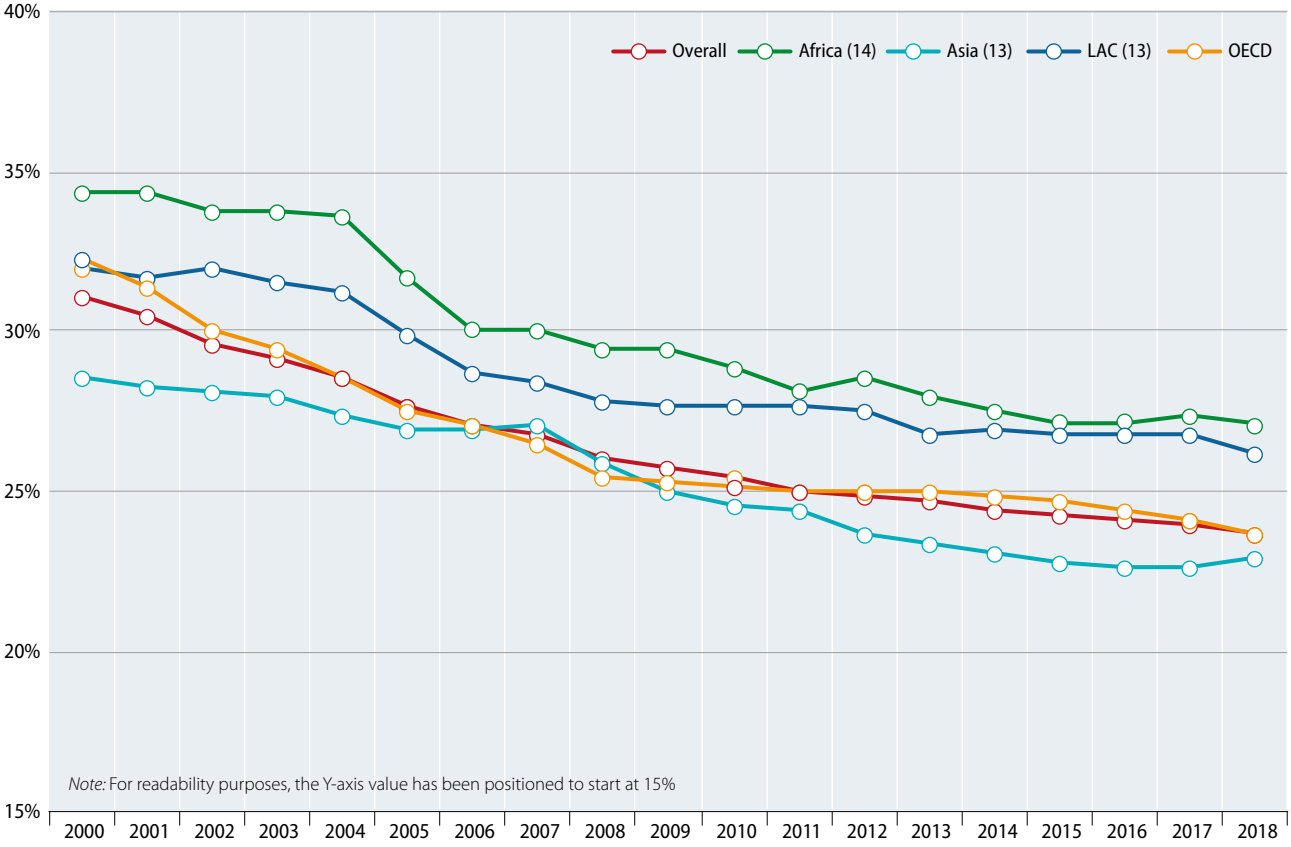


Percentage of jurisdictions with statutory corporate tax rates greater than, or equal to, 30%



Excluding jurisdictions with a zero statutory tax rate, the overall average statutory tax rate declined from 31.7% to 24.0% from 2000 to 2018.

FIGURE 7: **Average statutory corporate income tax rates by region excluding zero-rate jurisdictions**



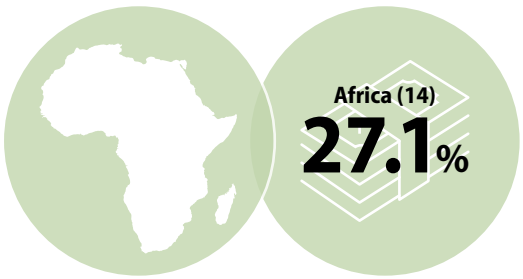
The inclusion of jurisdictions with corporate tax rates of zero affects the average tax rate and has larger effects on some regions than on others, since zero-rate jurisdictions are not evenly distributed among the different groups (see Figure 7).

Excluding zero-rate jurisdictions raises the overall average statutory tax rate by about 3.6 percentage points per year, while the general downward trend remains the same. From 2000 to 2018, the overall average statutory rate for non-zero rate jurisdictions declined from 31.7% to 24.0%.

The effect of excluding zero-rate jurisdictions varies by grouping. There are no zero-rate jurisdictions in the OECD or Africa (14), and so the average statutory tax rates of these groupings are not affected. However, 4 of the 17 Asian jurisdictions and 6 of the 19 LAC jurisdictions have or had statutory corporate tax rates set at zero; therefore, the average statutory tax rates of the 13 Asian jurisdictions with positive statutory tax rates and the 13 LAC jurisdictions with positive statutory tax rates are higher than the averages for those regions when all jurisdictions are included. The average statutory rates of non-zero-rate Asian (13) jurisdictions and the OECD jurisdictions are extremely similar over the time period; meanwhile, the average statutory tax rate for the full group of 17 Asian jurisdictions is 5-10 percentage points lower per year than the average statutory tax rate for OECD jurisdictions.

Excluding zero-rate jurisdictions results in the most striking difference in the LAC region. In 2018, the average statutory tax rate across all 19 LAC jurisdictions (17.9%) was 8.3 percentage points lower than the average statutory tax rate for the 13 LAC jurisdictions with positive CIT rates (26.2%). With the exclusion of zero-rate jurisdictions, the LAC (13) average is higher than the OECD average and is second only to the average statutory rate for African (13) jurisdictions.

In 2018, the African (14) region had the highest average statutory corporate tax rate at 27.1%.



THE STANDARD STATUTORY CORPORATE TAX RATE IS NOT THE ONLY CORPORATE TAX RATE

Standard statutory tax rates provide a snapshot of the corporate tax rate in a jurisdiction. However, jurisdictions may have multiple tax rates with the applicable tax rate depending on the characteristics of the corporation and the income.

- Some jurisdictions operate preferential tax regimes with lower rates offered to certain corporations or income types.
- Some jurisdictions tax retained and distributed earnings at different rates.
- Some jurisdictions impose different tax rates on certain industries.
- Some jurisdictions have progressive rate structures or different regimes for small and medium sized companies.
- Some jurisdictions impose different tax rates on non-resident companies than on resident companies.
- Some jurisdictions impose lower tax rates in special or designated economic zones.

Jurisdictions with broadly applicable tax regimes available to international companies

Preferential tax regimes are especially important in understanding how standard statutory tax rates do not always capture the incentives that may exist to engage in BEPS behaviours. In particular, some jurisdictions offer or have offered very low rates through regimes that are available to international companies with relatively few restrictions, while maintaining high standard statutory tax rates.

For example, a number of jurisdictions offer or have offered International Business Companies regimes. Companies qualifying for these regimes pay a reduced rate of tax relative to the standard statutory CIT rate. While the standard statutory tax rate may be quite high in these jurisdictions, qualifying international business companies are typically exempt from tax or pay a tax rate of only a few percentage points. There are also other cases, like Malta, which offers a refund of up to six-sevenths of corporate income taxes to both resident and non-resident investors through its imputation system.

FIGURE 8: **Tax rates of broadly applicable tax regimes available to international companies**

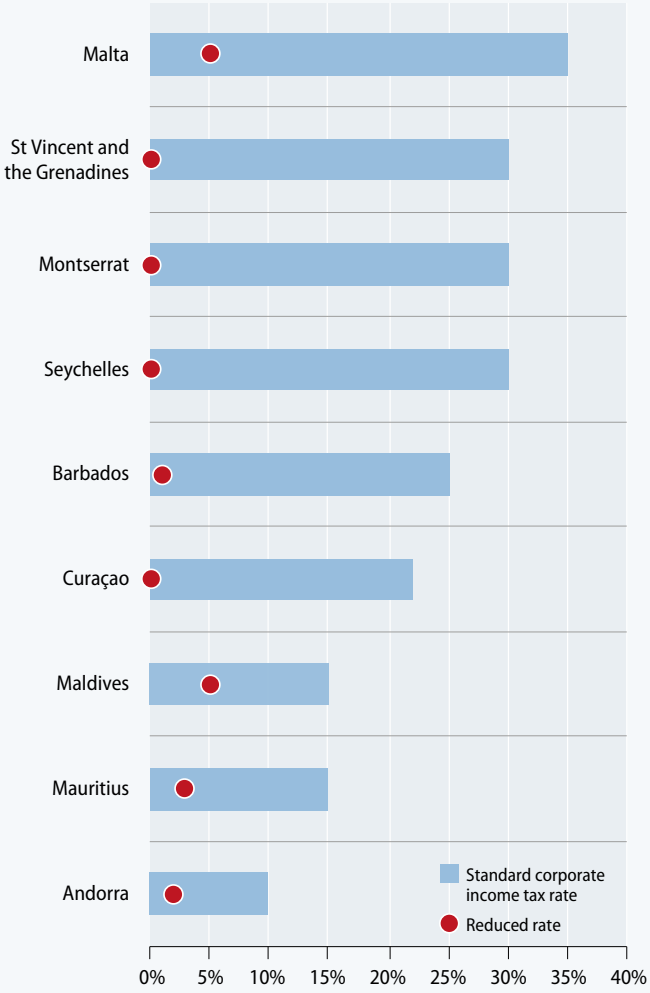


Figure 8 shows the standard CIT rate in 2018 as well as a reduced CIT rate available through a special regime (or through an imputation system, in the case of Malta), for jurisdictions which have been identified as implementing regimes, with broad application, that offer low rates to international companies. The jurisdictions shown in Figure 8 are only those for which statutory CIT rate data is available in the *Corporate Tax Statistics* database; there are similar regimes around the world in other jurisdictions. Since jurisdictions may offer multiple special regimes and the exact tax rate may depend on the companies' circumstances, the reduced rates shown are representative.

Except for the Maltese imputation system, which is not in the scope of the BEPS project, all of the regimes shown were amended or abolished during 2018 or are in the process or being amended or abolished to be aligned with the BEPS Action 5 minimum standard. These changes should greatly diminish the incentives these regimes provide for BEPS behaviour.

Taxes on distributed earnings

Another way in which standard statutory tax rates may not reflect the rates imposed on companies is if jurisdictions tax distributed earnings in addition to (or instead of) a corporate income tax on all profits.

In some jurisdictions, there is a tax on all corporate profits when they are earned and an additional tax on any earnings that are distributed. This is the case in India, for example, where corporate profits, whether retained or distributed, are taxed at a rate of 34.9%, and an additional tax on dividend distributions raises the total tax rate on distributed profits to 48.3%.

In other jurisdictions, there is no tax on profits when they are earned, and corporate tax is only imposed when profits are distributed. This is the case in both Estonia and Latvia, which both tax distributed profits at 20% and impose no tax on retained earnings. While 20% is reported for both countries in the *Corporate Tax Statistics* database, the rate faced by corporations in these jurisdictions could be much lower and will depend on the proportion of profits that are distributed. In the case of both of these jurisdictions, where a corporation retains all profits and does not pay any dividends in a given period, it will not be subject to any corporate income tax.

Corporate effective tax rates

Variations in the definition of corporate tax bases across jurisdictions can have a significant impact on the tax liability associated with a given investment. For instance, corporate tax systems differ across jurisdictions with regard to several important features, such as fiscal depreciation rules as well as other allowances and deductions. To capture the effects of these provisions on corporate tax bases and tax liabilities, it is necessary to go beyond a comparison of statutory tax rates.

It is well understood that cross-jurisdiction competitiveness is not solely driven by the tax costs associated with an investment; many other factors, such as the quality of the workforce, infrastructure and the legal environment, affect profitability and are likely to have significant impacts on investment decisions. In measuring the competitiveness of jurisdictions, however, effective tax rates (ETRs) provide a more accurate picture of the effects of corporate tax systems on the actual tax liabilities faced by companies than statutory tax rates.

The *Corporate Tax Statistics* database presents "forward-looking" ETRs, which are synthetic tax policy indicators calculated using information about specific tax policy rules. Unlike "backward-looking" ETRs, they do not incorporate any information about firms' actual tax payments. As described in more detail in Box 6, the ETRs reported in the first edition of *Corporate Tax Statistics* focus on the effects of fiscal depreciation and several related provisions (e.g., allowances for corporate equity, half-year conventions, inventory valuation methods). While this includes fiscal depreciation rules for intangible property, such as acquired patents or trade-marks, for example, the effects of expenditure-based R&D tax incentives and intellectual property (IP) regimes are not accounted for. It is intended that the effects of R&D tax incentives and IP regimes will be included in the dataset in the future.

In addition, it should be noted that the ETRs reflect tax rules as of 1 July 2017, thus not accounting for the effects of the US Tax Cuts and Jobs Act, which entered into force in 2018. Recent studies applying similar forward-looking ETR methodologies suggest that this reform package has significantly reduced the ETRs in the United States.

Box 4. CORPORATE EFFECTIVE TAX RATES

The *Corporate Tax Statistics* database contains four forward-looking tax policy indicators reflecting tax rules as of 1 July 2017:

- the effective marginal tax rate (EMTR);
- the effective average tax rate (EATR);
- the cost of capital;
- the net present value of capital allowances as a share of the initial investment.

All four tax policy indicators are calculated by applying jurisdiction-specific tax rules to a prospective, hypothetical investment project. Calculations are undertaken separately for investments in different asset types and by sources of financing (i.e. debt and equity). Composite tax policy indicators are computed by weighting over assets and sources of finance. In addition, more disaggregated results are also reported in the *Corporate Tax Statistics* database.

The tax policy indicators are calculated for three different macroeconomic scenarios. Unless noted, the results reported in this report refer to composite effective tax rates based on the macroeconomic scenario with a 3% real interest rate and 1% inflation.

Largest statutory tax rate reductions due to fiscal acceleration
(percentage points, 2017)

USA	India	Papua New Guinea	Belgium
4.8	**3.8**	**3.8**	**3.6**
percentage points	percentage points	percentage points	percentage points

If capital allowances are more generous than economic depreciation, fiscal depreciation is accelerated. Fiscal acceleration can be measured by comparing the EATR to the statutory rate.

KEY INSIGHTS:

- Of the 74 jurisdictions covered in 2017, 55 provide accelerated depreciation, meaning that investments in these jurisdictions are subject to EATRs below their statutory tax rates. Among those jurisdictions, the average reduction of the statutory tax rate was 1.8 percentage points; in 2017, the largest effects were observed in the United States (4.8 percentage points), India (3.8 percentage points), Papua New Guinea (3.8 percentage points) and Belgium (3.6 percentage points).

- In contrast, fiscal depreciation was decelerated in 11 jurisdictions, leading to EATRs above the statutory tax rate. Among those jurisdictions, the average increase of the statutory tax rate was 2.4 percentage points; the largest increases were observed in Costa Rica (8 percentage points), Chile (6.8 percentage points) and Botswana (5.3 percentage points).

- Among all 74 jurisdictions, only 5 jurisdictions had an allowance for corporate equity (ACE): Belgium, Brazil, Italy, Liechtenstein and Turkey. Including this provision in their tax code has led to an additional reduction in their EATRs of 1.3-4.4 percentage points.

- The average EATR across jurisdictions (20.5%) is 1.1 percentage points lower than the average statutory tax rate (21.6%). EATRs are also less dispersed across jurisdictions compared to the statutory tax rate. While the median is about the same as for the statutory tax rate, the highest EATR is only 44.1%, compared to the highest statutory tax rate at 47.9%; half of the jurisdictions covered have EATRs between 14.5% and 27.4%.

- Effective marginal tax rates (EMTRs) are the lowest in jurisdictions with the most accelerated fiscal depreciation rules, including two large economies with comparatively high statutory tax rates: India and the United States. In addition, jurisdictions with an ACE also have considerably lower EMTRs.

- Disaggregating the results to the asset level reveals that fiscal acceleration is strongest for investments in buildings and machinery. For these two asset categories, the average EATR across jurisdictions is 19.3% and 19.6%, considerably lower than the average composite EATR (20.5%).

- Investments in intangibles are subject to very different ETRs due to significant variation in tax treatment across jurisdictions. In particular, intangibles are non-depreciable in Botswana, Chile and Costa Rica, leading to strongly decelerated fiscal depreciation. Argentina, Australia, Brazil, South Africa and Spain provide moderately decelerated depreciation of intangibles. On the other hand, a significant number of jurisdictions accelerates depreciation of intangibles, including Denmark, Kenya, Papua New Guinea and the United States.

- Comparison of statutory tax rates and the degree of acceleration measured in percentage points suggests that jurisdictions with higher statutory tax rates tend to provide stronger fiscal acceleration, especially among OECD jurisdictions.

CORPORATE EFFECTIVE TAX RATES 2017

ETRs fall into two categories: forward-looking and backward-looking ETRs. Forward-looking ETRs capture information on corporate tax rates and bases as well as other relevant provisions within a comparable framework. They provide an appropriate basis for cross-jurisdiction comparisons of the combined impact of corporate tax systems on the investment decisions of firms. Although these forward-looking ETRs do not reflect actual tax payments by specific taxpayers in the past, they are accurate indicators of the investment incentives delivered by corporate tax systems and therefore provide comparable information on the competitiveness of tax systems.

Two complementary forward-looking ETRs are typically used for tax policy analysis, capturing incentives at different margins of investment decision making:

- EMTRs measure the extent to which taxation increases the pre-tax rate of return required by investors to break even. This indicator is used to analyse how taxes affect the *incentive to expand existing investments* given a fixed location (along the intensive margin).
- EATRs reflect the average tax contribution a firm makes on an investment project earning above-zero economic profits. This indicator is used to analyse *discrete investment decisions* between two or more alternative projects (along the extensive margin).

In contrast, backward-looking ETRs are calculated by dividing actual tax payments by profits earned over a given period. They are calculated on the basis of historical jurisdiction-level or firm-level data and reflect the combined effects of many different factors, such as the definition of the tax base, the types of projects that firms have been engaged in, as well as the effects of possible tax-planning strategies. Although backward-looking ETRs may not reflect how corporate tax systems affect incentives to invest at present, they provide information on how tax payments and profits of specific taxpayers or groups of taxpayers compare to each other in the past. Therefore, backward-looking ETRs are often referred to in public debates about multinational tax avoidance and BEPS. The second edition of *Corporate Tax Statistics* will include aggregated and anonymised data from Country-by-Country Reports allowing for the calculation of some backward-looking ETRs for certain groups of multinational enterprises.

Box 5. KEY CONCEPTS AND METHODOLOGY

Forward-looking effective tax rates (ETRs) are calculated on the basis of a prospective, hypothetical investment project. The OECD methodology has been described in detail in the OECD *Taxation Working Paper* No. 38 (Hanappi, 2018), building on the theoretical model developed by Devereux and Griffith (1999, 2003).

The methodology builds on the following key concepts:

- **Economic profits** are defined as the difference between total revenue and total economic costs, including explicit costs involved in the production of goods and services as well as opportunity costs such as, for example, revenue foregone by using company-owned buildings or self-employment resources. It is calculated as the net present value (NPV) over all cash flows associated with the investment project.

- **The cost of capital** is defined as the pre-tax rate of return on capital required to generate zero post-tax economic profits. In contrast, the real interest rate is the return on capital earned in the alternative case, for example, if the investment would not be undertaken and the funds would remain in a bank account.

- The **effective marginal tax rate** (EMTR) measures the extent to which taxation increases the cost of capital; it corresponds to the case of a marginal project that delivers just enough profit to break even but no economic profit over and above this threshold.

$$EMTR = \frac{(Cost\ of\ capital) - (Real\ interest\ rate)}{(Cost\ of\ capital)}$$

- The **effective average tax rate** (EATR) reflects the average tax contribution a firm makes on an investment project earning above-zero economic profits. It is defined as the difference in the NPV of pre-tax and post-tax economic profits relative to the NPV of pre-tax income net of real economic depreciation.

$$EATR = \frac{(Economic\ profit\ {}^{pre\text{-}tax}_{NPV}) - (Economic\ profit\ {}^{post\text{-}tax}_{NPV})}{(Net\ income\ {}^{pre\text{-}tax}_{NPV})}$$

- **Real economic depreciation** is a measure of the decrease in the productive value of an asset over time; depreciation patterns of a given asset type can be estimated using asset prices in resale markets. The OECD methodology uses economic depreciation estimates from the US Bureau of Economic Analysis (BEA, 2003).

- Jurisdiction-specific tax codes typically provide **capital allowances** to reflect the decrease in asset value over time in the calculation of taxable profits. If capital allowances match the decay of the asset's value resulting from it being used in production, then fiscal depreciation equals economic depreciation.

- If capital allowances are more generous, fiscal depreciation is **accelerated**; where capital allowances are less generous, fiscal depreciation is referred to as **decelerated**. The NPV of capital allowances, measured as percentage of the initial investment, accounts for timing effects on the value of capital allowances, thus providing comparable information on the generosity of fiscal depreciation across assets and jurisdictions.

The cost of capital, EMTR, EATR as well as the NPV of capital allowances are all available for 74 jurisdictions in the *Corporate Tax Statistics* online database.

EFFECTIVE AVERAGE TAX RATES

Figure 9 shows the composite EATR for the full database, ranking jurisdictions in descending order. In most jurisdictions, EATRs diverge considerably from their statutory tax rate; if fiscal depreciation is generous compared to true economic depreciation or if there are other significant base narrowing provisions, the EATR (and also the EMTR) will be lower than the statutory tax rate, i.e. tax depreciation is *accelerated*. On the contrary, if tax depreciation does not cover the full effects of true economic depreciation, it is *decelerated*, implying that the tax base will be larger and effective taxation higher.

Box 6. ASSET CATEGORIES AND TAX PROVISIONS COVERED

The calculations build on a comprehensive coverage of jurisdiction-specific tax rules pertaining to four quantitatively relevant asset categories:

1. **buildings**: e.g. office buildings or manufacturing plants;
2. **machinery**: e.g. machinery, cars, furniture or equipment;
3. **inventories**: e.g. goods or raw materials in stock;
4. **intangibles**: e.g. acquired patents or trademarks.

The following corporate tax provisions have been covered:

- combined central and sub-central statutory corporate income tax rates;
- asset-specific fiscal depreciation rules, including first-year allowances, half-year or mid-month conventions;
- general tax incentives only if available for a broad group of investments undertaken by large domestic or multinational firms;
- inventory valuation methods including first-in-first-out, last-in-first-out and average cost methods;
- allowances for corporate equity.

The composite ETRs reported in this brochure are constructed in three steps. First, ETRs are calculated separately for each jurisdiction, asset category and source of finance (debt and equity); while the debt-finance case accounts for interest deductibility, jurisdiction-specific limitations to interest deductibility have not been covered in this edition. Second, an unweighted average over the asset categories is taken, separately for both sources of finance. Third, the composite ETRs are obtained as a weighted average between equity- and debt-financed investments, applying a weight of 65% equity and 35% debt finance.

To allow comparison with the statutory tax rate, the share of the EATR (in percentage points) that is due to a deceleration of the tax base is shaded in light blue in Figure 9; reductions of the statutory tax rate due to acceleration are transparent. In addition, the reduction in the EATR due to an ACE is indicated as a striped area. The composite EATR corresponds to the combination of the unshaded and shaded blue components of each bar, as indicated by the red line marker. Across the entire sample of jurisdictions, the EATRs range from around 44% in India to 0% in the British Virgin Islands, Turks and Caicos Islands, Saudi Arabia, Isle of Man, Jersey, Guernsey, and the Cayman Islands. Ranking just above these jurisdictions, Andorra, Bulgaria and Hungary have EATRs around 9%, the lowest non-zero rates in the sample.

Comparing the patterns of tax depreciation across jurisdictions shows that most jurisdictions provide some degree of acceleration, as indicated by the transparent bars; the most significant effects are observed in jurisdictions with an ACE, such as Belgium, Brazil and Italy, as well as in jurisdictions with generous bonus depreciation schemes, such as India and the United States. While fewer jurisdictions have decelerating tax depreciation rules, the effect of deceleration can become quite large in terms of percentage point increases compared to the statutory tax rate; e.g. in Botswana, Chile and Costa Rica, where intangible assets are non-depreciable.

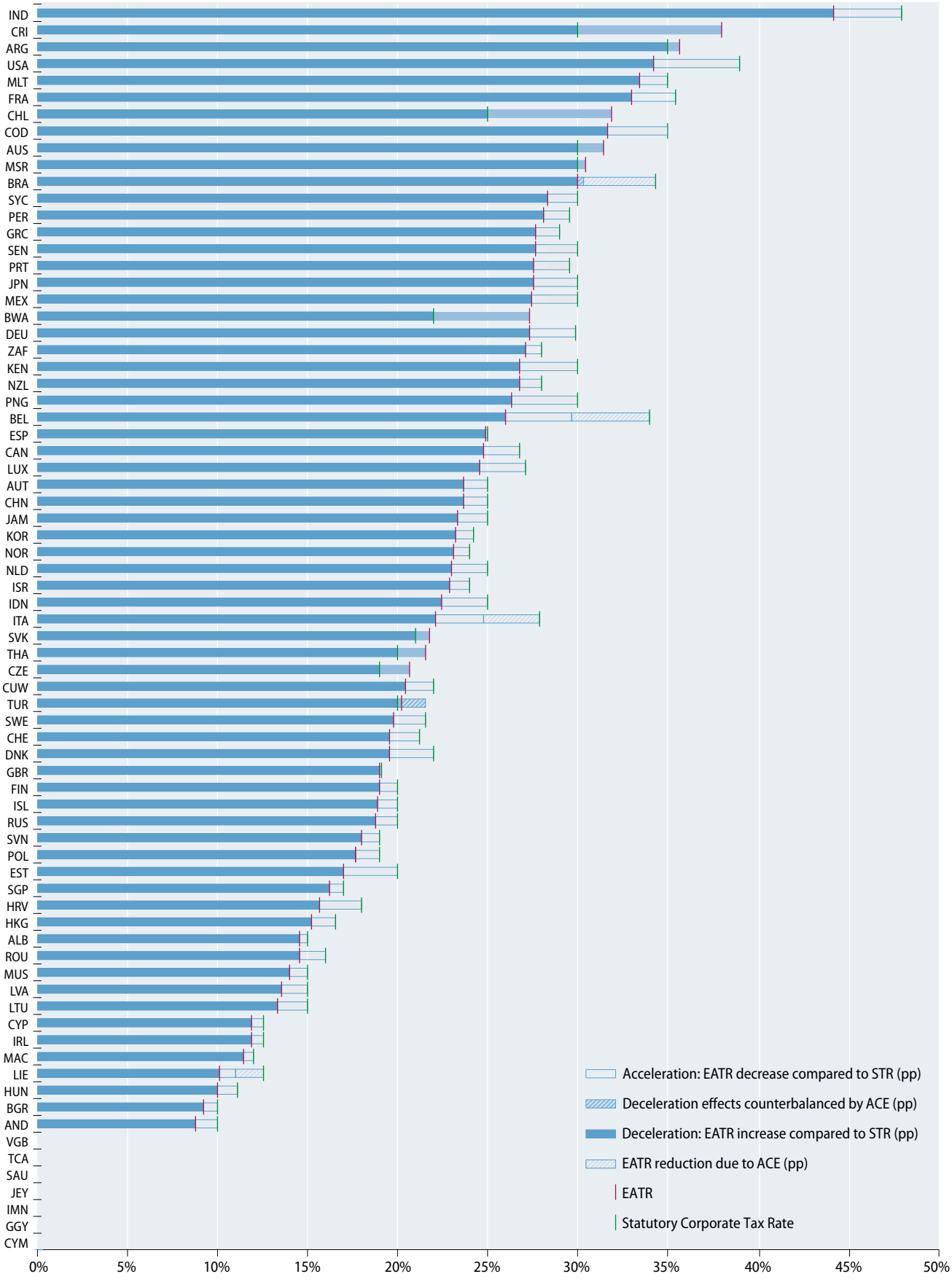
Box 7. MACROECONOMIC SCENARIOS

The two main macroeconomic parameters, inflation and interest rates, interact with the effects of the tax system in various ways and can have ambiguous effects on the effective tax rates (ETRs).

The *Corporate Tax Statistics* database contains ETR results for three different macroeconomic scenarios. In the first two scenarios, interest and inflation rates are held constant; the third scenario uses jurisdiction-specific macroeconomic parameters. While the former approach addresses the question of how differences in tax systems compare across jurisdictions holding other factors constant, the latter approach gives better indications on the tax effects on investment incentives in a specific jurisdiction at a specific point in time.

The results published in this brochure build exclusively on the macroeconomic scenario with constant 3% interest and 1% inflation rates, however, results from the two additional macroeconomic scenarios are available in the online database.

FIGURE 9: **Effective average tax rate: OECD, G20 and participating Inclusive Framework jurisdictions, 2017**



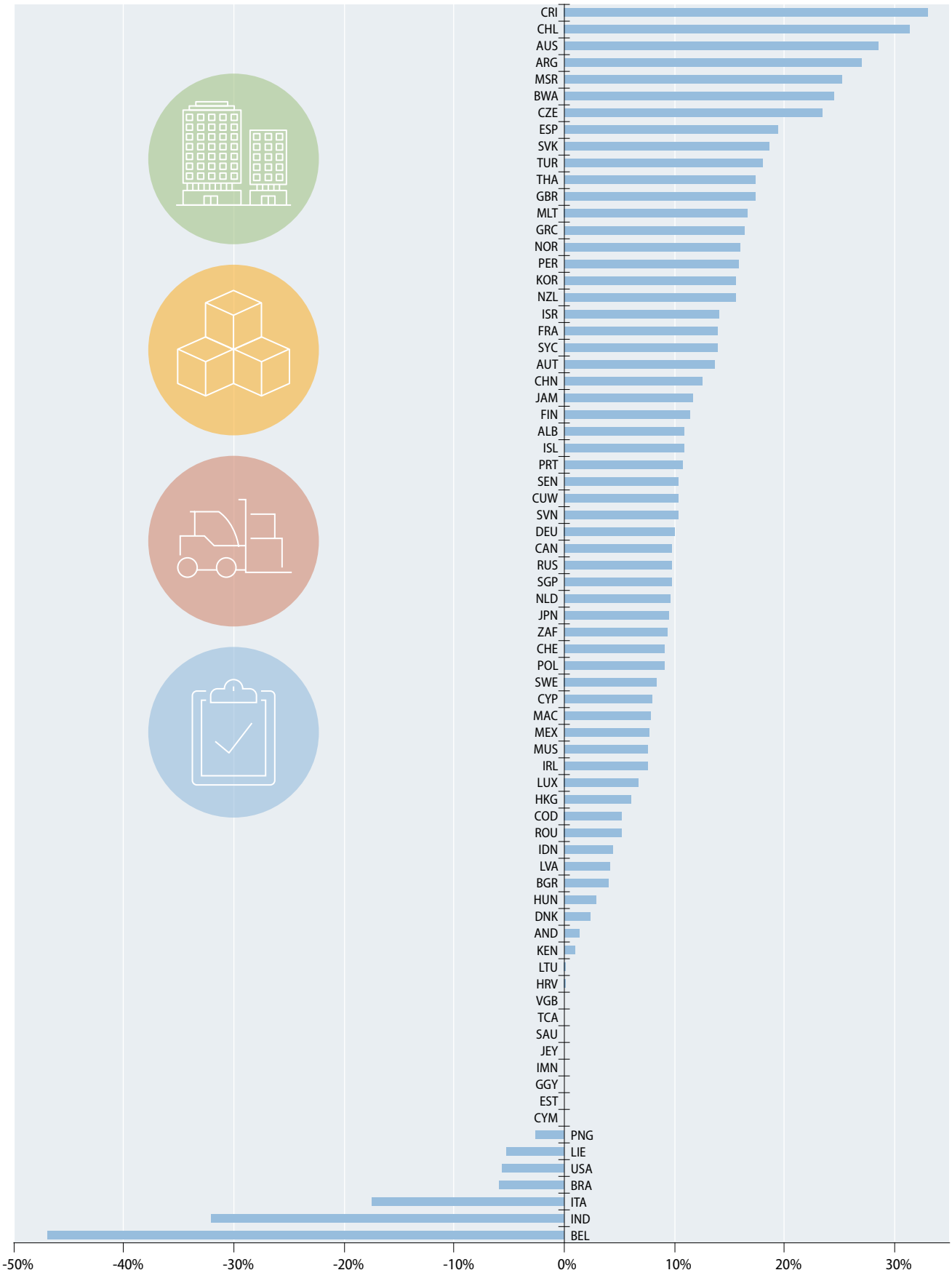
EFFECTIVE MARGINAL TAX RATES

Figure 10 shows the ranking based on the composite EMTR. As highlighted above, the EMTR measures the effects of taxation on the pre-tax rate of return required by investors to break even. While the effects of tax depreciation and macroeconomic parameters work in the same direction as in the case of the EATR, their impacts on the EMTR will generally be stronger because marginal projects do not earn economic profits (see Box 5). As a consequence, jurisdictions with high statutory tax rates and generous capital allowances, notably India and the United States, rank much lower than in Figure 9. On the other hand, jurisdictions with decelerating fiscal depreciation, including Australia, the Czech Republic, Slovakia or Thailand, are ranked higher up based on the EMTR, as shown in Figure 10.

If investment projects are financed by debt, it is also possible for the EMTR to be negative, which means that the tax system, notably through interest deductibility, reduces the pre-tax rate of return required to break even and thus enables projects that would otherwise not have been economically viable. Figure 10 shows that the composite EMTR, based on a weighted average between equity- and debt-financed projects, is negative in 7 out of 74 jurisdictions; this result is due to the combination of debt finance with comparatively generous tax depreciation rules. For jurisdictions with an ACE, the composite EMTR will generally be lower because of the notional interest deduction available for equity-financed projects.

5 jurisdictions had an allowance for corporate equity (ACE): Belgium, Brazil, Italy, Liechtenstein and Turkey. Including this provision in their tax code has significant effects on the incentive to expand existing investments as measured by the EMTR.

FIGURE 10: **Effective marginal tax rate: OECD, G20 and participating Inclusive Framework jurisdictions,2017**



EFFECTIVE TAX RATES BY ASSET CATEGORIES

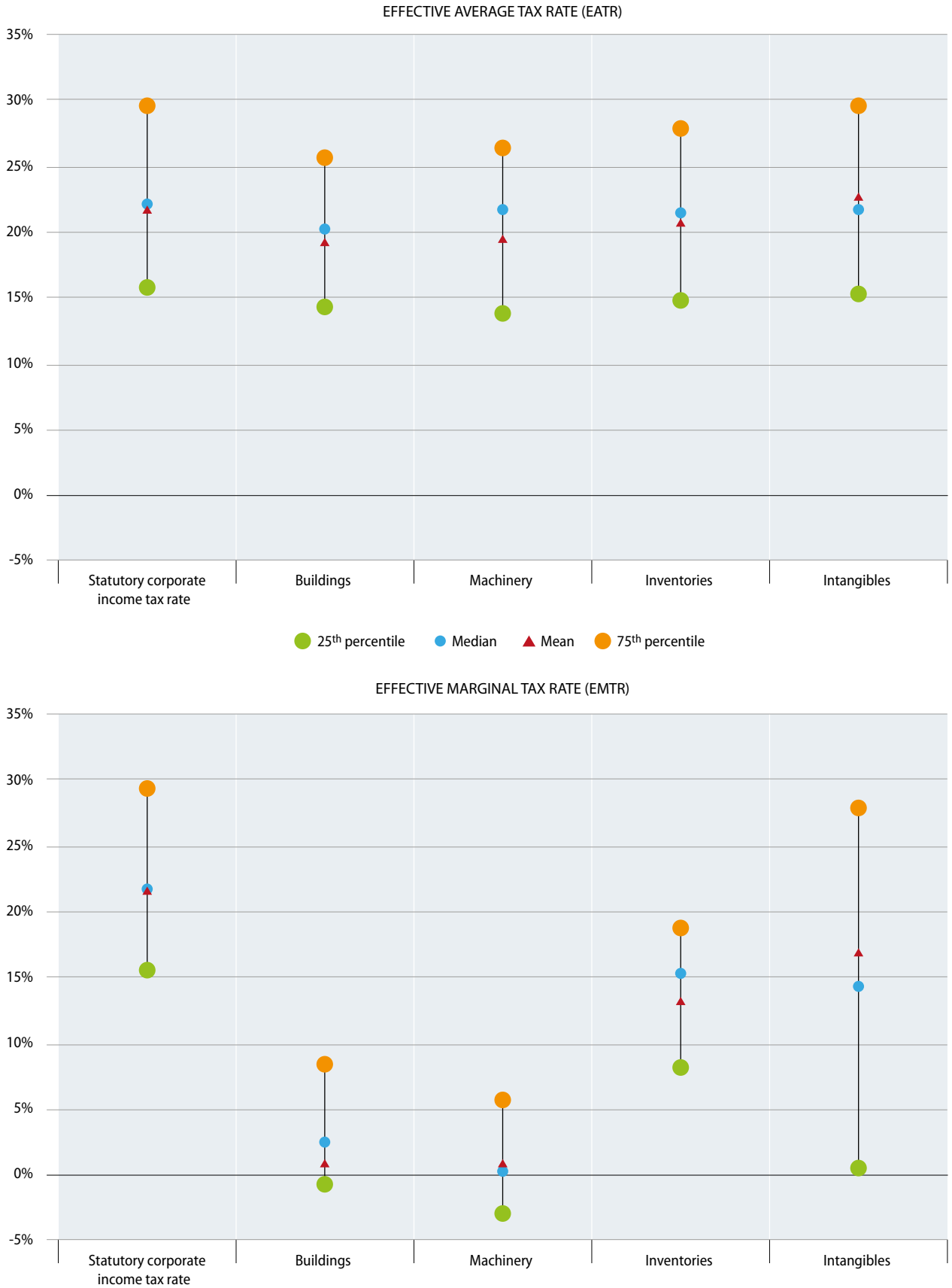
The composite ETRs can be further disaggregated by asset categories; jurisdiction-level EATRs and EMTRs by asset categories are available in the online *Corporate Tax Statistics* database. Figure 11 summarises these data on asset-level ETRs. The upper panel provides more information on the distribution of asset-specific EATRs, comparing them to the distribution of statutory tax rates. The first vertical line depicts information on the statutory tax rates; it shows that the mean (i.e. the red triangle in the middle of the first vertical line) and the median (the blue circle) are both around 22%, while the 50% of jurisdictions in the middle of the distribution have statutory tax rates between 16% and 30%.

The other four vertical lines in the upper panel of Figure 11 illustrate the distribution of EATRs across jurisdictions for each of the four asset categories: buildings, machinery, inventories and intangibles. Comparing them with the statutory tax rate shows that the distribution of EATRs is more condensed for investments in buildings and machinery. For both of these asset categories, the middle 50% of jurisdictions have EATRs between around 14% and 26%, however, the mean EATR on investments in machinery is around 2 percentage points lower than the median, indicating that some jurisdictions have much lower EATRs on this type of investment. For investments in the other two asset categories, the distributions are similar to the statutory tax rate, although the comparatively high mean EATR for investments in intangibles suggests that there are several outliers at the top of the distribution.

The lower panel depicts further information illustrating the EMTR distribution for each of the asset categories. From this graph, we can draw the following insights:

- Investments in machinery benefit more often from accelerated tax depreciation than other investments; as a result, the corresponding vertical line is more condensed and centred around zero.
- Investments in buildings are also often accelerated, as evidenced by the vertical line that ranges from 0% to around 9%.
- Investments in inventories often benefit from lower EMTRs, compared to the statutory tax rate, although to a lesser extent than the first two asset categories.
- Marginal investments in intangibles can be subject to very different EMTRs in different jurisdictions, reflected in the vertical line that stretches out more than the others, ranging from around 0% to just below 30%. This result is driven, on the one hand, by the variation surrounding the actual economic depreciation of intangible assets as well as, on the other hand, different policy treatments across jurisdictions.

FIGURE 11: **EATR and EMTR: Variation across jurisdictions and assets: OECD, G20 and participating Inclusive Framework jurisdictions, 2017**



Tax incentives for research and development

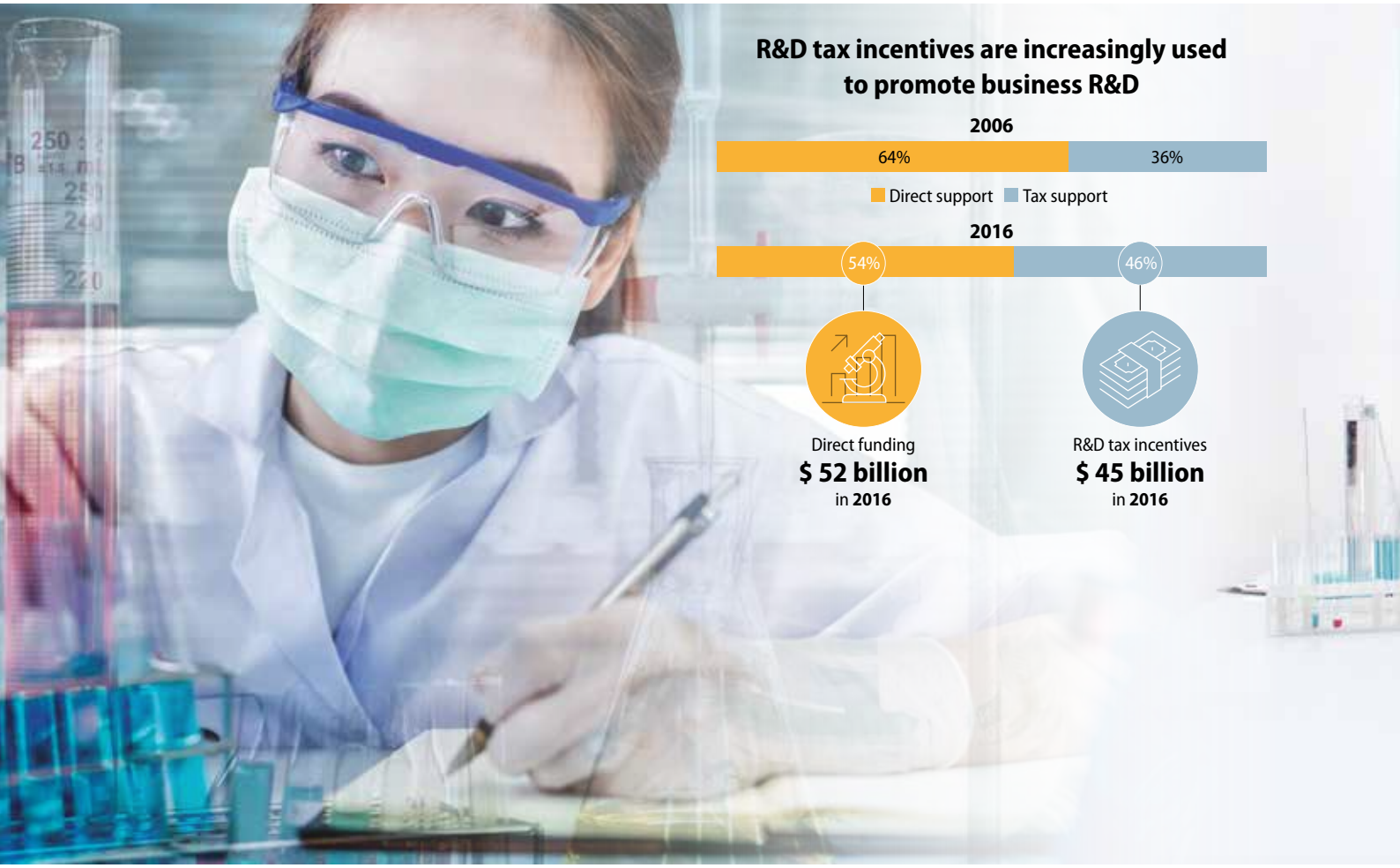
Incentivising investment in research and development (R&D) by businesses ranks high in the innovation policy agenda of many jurisdictions. R&D tax incentives have become a widely used policy tool to promote business R&D. Several jurisdictions offer them in addition to direct forms of support such as grants or purchases of R&D services. The significant variation in the design of tax relief provisions across jurisdictions and over time impacts the implied generosity of the R&D tax incentives.

Box 8. **INDICATORS OF R&D TAX INCENTIVES**

The *Corporate Tax Statistics* database incorporates two R&D tax incentives indicators that offer a complementary view of the extent of R&D tax support:

- Government tax relief for business R&D reflects the cost of R&D tax provisions to the government. This indicator is complemented with figures of direct support for business R&D to reflect total government support to business R&D investment.
- Implied tax subsidy rates for R&D (1-B-index) reflect the design and implied generosity of R&D tax incentives for firms of different size and profitability.

These indicators feature in the OECD *R&D Tax Incentive* database compiled by the OECD Directorate for Science, Technology and Innovation.



KEY INSIGHTS:

- R&D tax incentives are increasingly used to promote business R&D. In 2018, 30 out of the 36 OECD jurisdictions offered tax relief on R&D expenditures compared to 19 in 2000.
- Most jurisdictions use a combination of direct support and tax relief, but the policy mix varies. Tax incentives account, on average, for 46% of total government support for business R&D in the OECD, reaching more than 80% in Australia, Canada, Japan and the Netherlands.
- Over time, there has been a shift in the policy mix towards R&D tax incentives. From 2006 to 2016, the share of tax incentives in total government support increased in 23 out of 33 OECD jurisdictions for which relevant data are available.
- The volume of R&D tax support has increased by 70% over the last decade, reaching USD 45 billion in the OECD in 2016. Direct support for business R&D has increased by 10% since 2006, reaching USD 52 billion in 2016.
- In 2018, implied tax subsidy rates are highest for profitable large and small and medium-sized enterprises (SMEs) in France, Portugal and Colombia (0.43, 0.38 and 0.34 respectively).
- Eighteen OECD jurisdictions offer refundable (payable) tax credits or equivalent incentives. Such provisions explicitly target SMEs and young firms vis-à-vis large enterprises in Australia, Canada and France.
- R&D tax incentives have become more generous, on average, over time. This is due to the higher uptake and increases in generosity of R&D tax relief provisions. In recent years, the trend has stabilised.

In 2018, 30 out of the 36 OECD jurisdictions offered tax relief on R&D expenditures compared to 19 in 2000.

GOVERNMENT SUPPORT FOR BUSINESS R&D

Indicators of government tax relief for business R&D (GTARD) combined with data on direct R&D funding provide a more complete picture of governments' efforts to support business R&D (BERD). Together, these indicators facilitate the cross-jurisdiction comparison of the policy mix provided by governments to support R&D and the monitoring of its changes over time.

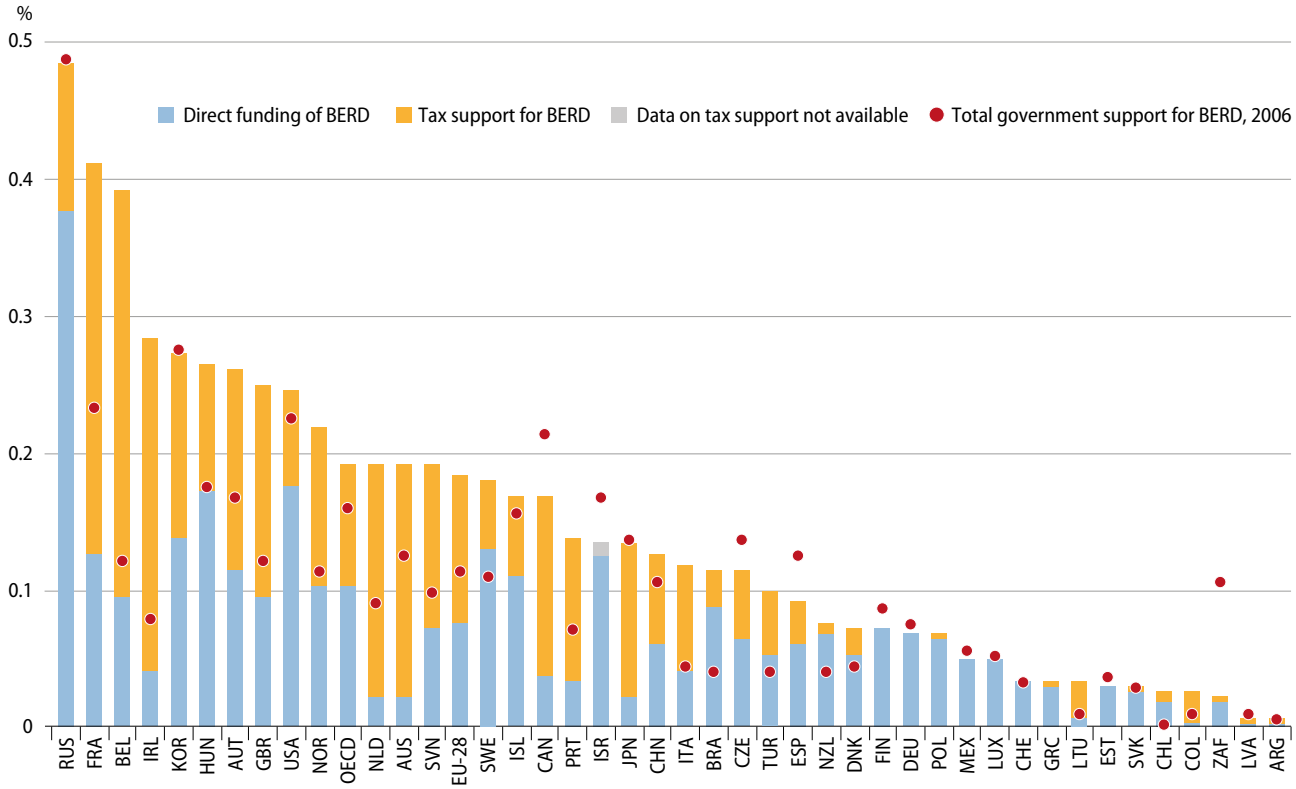
Between 2006 and 2016, total government support for business R&D expenditure as a percentage of GDP increased in 30 out of 42 jurisdictions for which relevant data are available. The Russian Federation, France and Belgium provided the largest levels of support in 2016.

Most jurisdictions integrate both direct and indirect forms of R&D support in their policy mix, but to different degrees (see Figure 12). In 2016, 15 OECD jurisdictions offered more than 50% of government support for business R&D through the tax system, reaching over 80% in Australia, Ireland, Japan and the Netherlands. Six OECD jurisdictions relied solely on direct support in 2016. These are Estonia, Finland, Germany, Luxembourg, Mexico and Switzerland; however, Mexico reintroduced an R&D tax incentive in 2017.

Differences in the cost of R&D tax relief reflect differences in design features and eligibility rules, but also the role of factors impacting the demand for tax support by firms and their ability to claim it. From 2000 to 2016, the absolute and relative magnitude of R&D tax support increased throughout many OECD and partner economies, only interrupted by the onset of the global financial and economic crisis. The volume of R&D tax support typically increases following the first-time launch (e.g. Ireland in 2004) or the introduction of new or redesigned tax relief measures (e.g. France in 2008, Japan in 2003 and 2013).

Combining time-series estimates of GTARD and direct funding helps illustrate variations in governments' policy mix over time. In recent years, many jurisdictions have granted a more prominent role to R&D tax incentives (see Figure 13). Compared to 2006, the share of tax support in total government support in 2016 increased in 23 out of 33 OECD jurisdictions for which data are available. This implies a general shift towards less discretionary forms of support for business R&D, with some exceptions (Canada and Hungary).

FIGURE 12: **Direct government funding and tax support for business R&D (BERD), 2016**



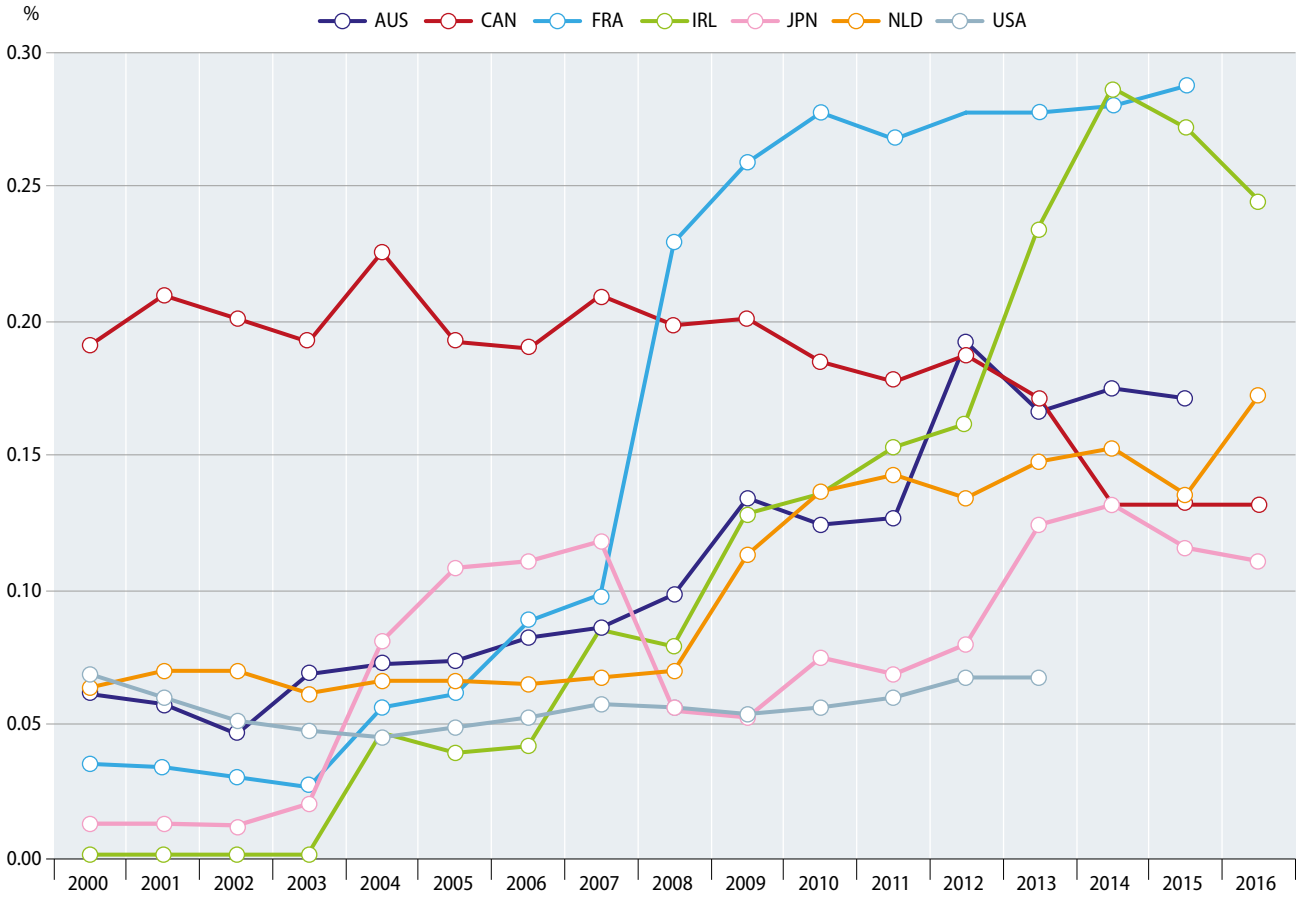
Data and notes: https://oe.cd/ds/rdtax.

Source: OECD (2019), *R&D Tax Incentive Database*, http://oe.cd/rdtax (accessed in January 2019).

46% **of total government support for R&D in OECD jurisdictions was delivered through R&D tax incentives in 2016 (up from 36% in 2006).**

15 **out of 30 OECD jurisdictions that offered R&D tax relief in 2016 provided more than 50% of support for business R&D through R&D tax incentives.**

FIGURE 13: **Government tax relief for business R&D expenditure in a selected number of countries**



Data and notes: https://oe.cd/ds/rdtax.

Source: OECD (2019), *R&D Tax Incentive Database*, http://oe.cd/rdtax (accessed in January 2019).

Box 9. **MEASURING GOVERNMENT SUPPORT FOR R&D**

Direct government support for business R&D (BERD): This indicator measures the component of business R&D expenditures that businesses report to be directly funded by all levels of government. These estimates comprise government grants (transfers) and payments to firms in return for R&D services and exclude indirect forms of support that are not necessarily targeted towards R&D or that are expected to be repaid. By convention, estimates of tax support for R&D are also excluded because effective support may depend on taxable profits or payable taxes (OECD, 2015). This indicator features in the OECD *Main Science Technology Indicators* and is based on data collected by OECD in its R&D Statistics database.

Government tax relief for R&D expenditures (GTARD): This indicator estimates the cost to the government of R&D tax relief provisions. GTARD refers to the enhanced relief available to taxpayers for their engagement in R&D activities relative to a normal or baseline tax structure (OECD, 2015). Cost figures reported refer to tax relief for business R&D offered through expenditure-based R&D tax incentives available at the national (central) government level. Estimates of GTARD are provided by the OECD R&D tax incentive network integrated by the Working Party of National Experts on Science and Technology Indicators in collaboration with experts in Public Finance as part of the OECD R&D Tax Incentives data collection led by the Directorate of Science, Technology and Innovation.

IMPLIED TAX SUBSIDY RATES FOR R&D

Implied tax subsidy rates, based on the B-index indicator (see Box 10), provide a synthetic indicator of the expected generosity of the tax system towards R&D investment by firms. This indicator, available for four combinations of firm size and profitability scenarios, is instrumental in comparing preferential tax regimes targeting business R&D investment across 44 OECD and partner economies during the period 2000-18.

Implied tax subsidy r ates are inherently linked to both the design features of the R&D tax relief provisions as well as to the general provisions of the tax system. Subsidies vary also with business characteristics such as firm size and profitability. Some jurisdictions such as Australia or Canada offer enhanced tax relief provisions for SMEs that are not available to large firms. This induces a gap in the expected tax subsidy rates estimated for these two types of firms (see Figure 14).

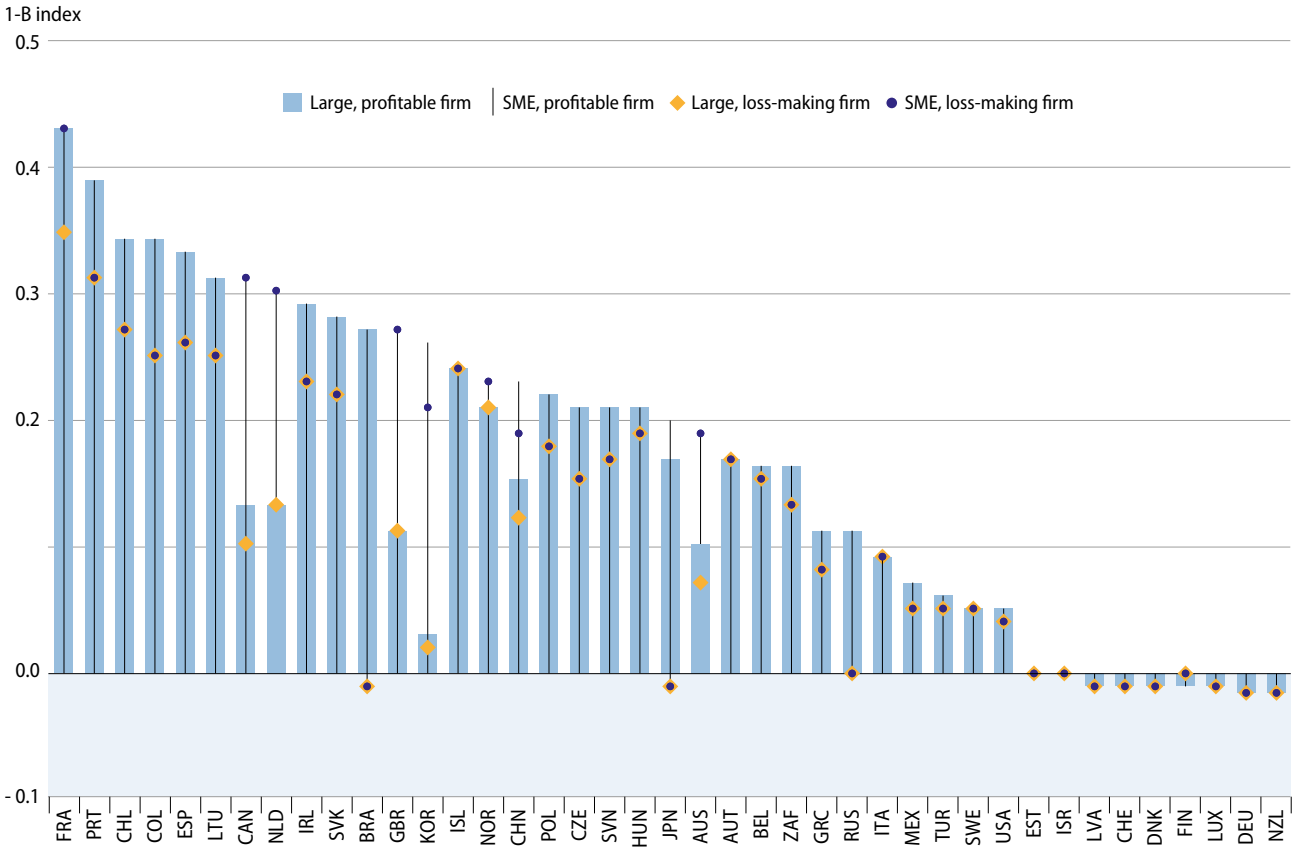
Refunds and carry-over provisions are common to promote R&D in firms that would not otherwise be able to utilise the support provided by the tax system. This may arise when firms do not have sufficient tax liability to offset earned deductions or do not draw a profit. Implied subsidy rates are calculated under two scenarios: profitable firms (which are able to fully utilise the tax support available to them) and loss-making firms (which may not be able to fully utilise the tax support available to them) to reflect the varying impact of these provisions. Refundability provisions such as those available in Austria and Norway align the subsidy for profitable and loss-making firms. Compared to refunds, carry-over provisions imply a lower subsidy for loss-making firms as the benefits may only be used in the future. In jurisdictions where no such provisions exist, such as Brazil or Japan, loss-making firms experience a full-loss of tax benefits.

Time-series estimates of implied marginal tax subsidy rates allow an analysis of jurisdiction-specific and aggregate trends in the provisions and generosity of R&D tax support by firm size and profit scenario. Changes in subsidy rates are driven by first-time introductions of R&D tax support (Belgium in 2005), additions of new R&D tax provisions to existing ones (Hungary in 2013) and reforms of existing R&D tax relief measures (France in 2013) (see Figure 15). Over time, R&D tax incentives have become more generous, on average, stabilising in recent years. Persistently higher subsidy rates are offered over time to SMEs *vis-à-vis* large firms in both the profit scenarios considered (profitable and loss-making).

Average tax subsidy rates for R&D in OECD countries, 2018

Large, profitable firm	SME, profitable firm	Large, loss-making firm	SME, loss-making firm
0.14	**0.16**	**0.11**	**0.14**

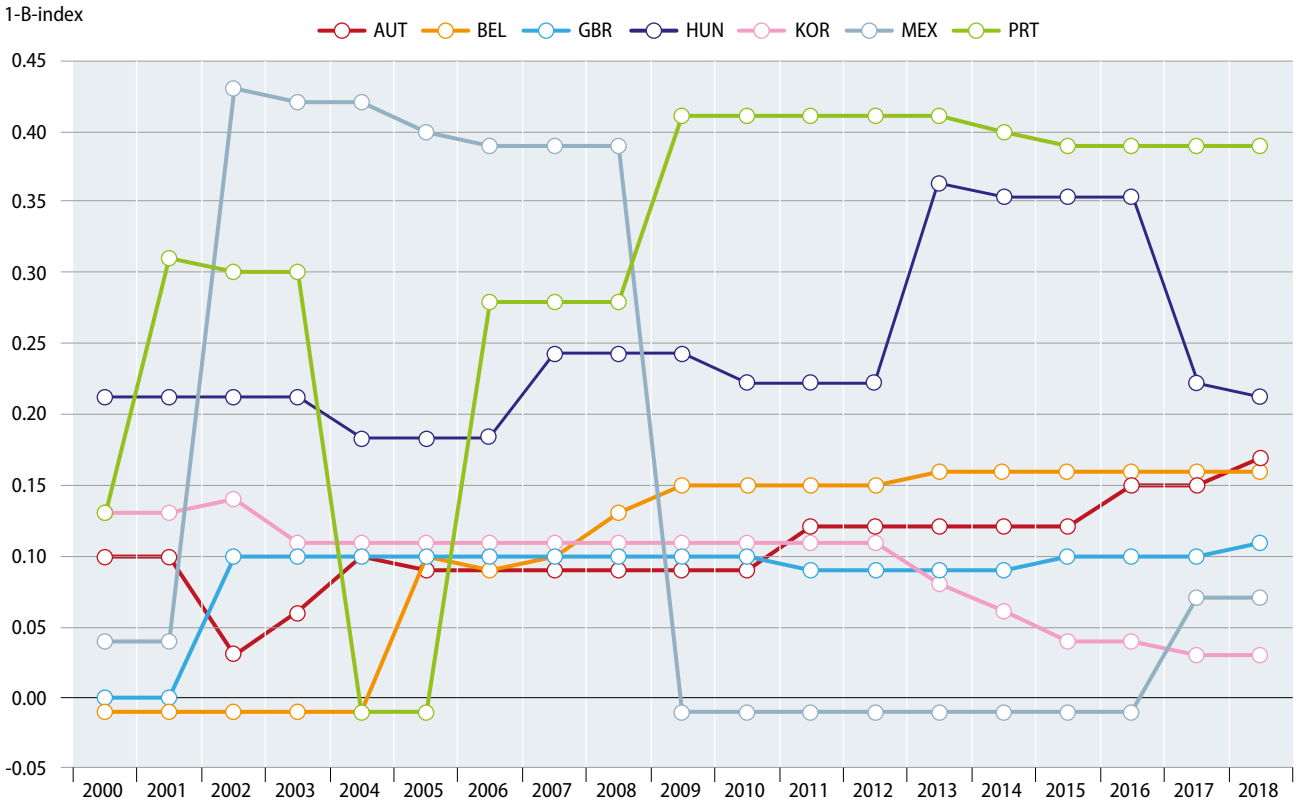
FIGURE 14: **Implied tax subsidy rates on business R&D expenditures, 2018**



Data and notes: https://oe.cd/ds/rdtax.

Source: OECD (2019), *R&D Tax Incentive Database*, http://oe.cd/rdtax (accessed in January 2019).

FIGURE 15: **Implied tax subsidy rates on R&D expenditures in a selected number of countries**



Data and notes: https://oe.cd/ds/rdtax.

Source: OECD (2019), *R&D Tax Incentive Database*, http://oe.cd/rdtax (accessed in January 2019).

Box 10. UNDERSTANDING AND INTERPRETING THE B-INDEX INDICATOR

Tax support provisions lower the after-tax cost of performing R&D. More generous incentives reduce the level of return a firm requires before tax to break even after tax on one additional unit of R& D investment. The B-index captures this pre-tax rate of return for a representative firm on a marginal investment across jurisdictions and over time. The B-index represents the tax component of the cost of capital for an R&D asset (see Box 5).

The B-index is computed as the after-tax cost of investing one unit of R&D taking all R&D tax provisions into consideration normalised by the net-of-tax rate (1-CIT rate) for cross-jurisdiction comparability. When no enhanced provisions are in place, firms are generally allowed to deduct R&D costs from their taxable profits. The B-index in this case equals one. This serves as a benchmark to assess the extent to which the tax system subsidises R&D. Enhanced relief provisions reduce the after-tax cost of R&D yielding a B-index lower than one. Implied tax subsidy rates can be computed as the distance to the benchmark, i.e. as one minus the B-index, and give an indication of the preferential treatment of R&D in a given tax system.The more generous the tax provisions for R&D, the higher the implied subsidy rates for R&D.

The calculation of the B-index is customised to each jurisdiction's specific design features and to capture the general parameters of the tax system. It focuses on expenditure-based R&D tax incentives and schemes that apply at the central/federal level. In the generation of R&D assets, firms usually incur a combination of current costs and capital investments. The enhanced tax treatment of each component differs across jurisdictions. To facilitate interpretability, the modelling of the B-index considers a fixed mix of 90% current expenditure (60% labour; 30% other current expenditure) and 10% capital (5% machinery and equipment; 5% buildings and land) to produce the R&D asset, reflecting average shares in OECD R&D statistics. A fixed project composition ensures that variations across jurisdictions can be attributed to taxation. The indicator is computed for four different scenarios of firm size (SMEs and large firms) and profitability (profitable and loss-making), as these represent major defining business features that impact the notional level of tax subsidy firms can expect to receive.

Intellectual property regimes

The final set of information included in the first release of the *Corporate Tax Statistics* database relates to intellectual property (IP) regimes. Many jurisdictions have implemented IP regimes, which allow income from the exploitation of IP to be taxed at a lower rate than the standard statutory corporate tax rate.

IP regimes may be used by governments to support R&D activities in their jurisdiction. In the past, IP regimes may have been designed in a manner that incentivised firms to locate IP assets in a jurisdiction regardless of where the underlying R&D was undertaken.

However, the nexus approach of the BEPS Action 5 minimum standard now requires that tax benefits for IP income are made conditional on the extent to which a taxpayer has undertaken the R&D that produced the IP asset.

KEY INSIGHTS:

- In 2018, there were 65 IP regimes in 41 jurisdictions which had been reviewed or were under review by the Forum on Harmful Tax Practices (FHTP).
- 24 regimes were found to be not harmful (of which two are harmful only in respect of a transition issue for a certain period), one was found to be potentially harmful and one was found to be harmful. Three regimes were abolished during 2018, and 25 were in the process of being amended or eliminated since they were not compliant with the BEPS Action 5 minimum standard.
- Of the 24 non-harmful IP regimes, all 24 offer benefits to patents, 10 offer benefits to copyrighted software and 6 offer benefits to the third allowed category of assets that are restricted to SMEs.
- Tax rate reductions for the 24 non-harmful IP regimes range from a full exemption from tax to a reduction of about 30% of the standard tax rate.
- Among the 25 regimes that are in the process of being amended or eliminated, over half offer a full exemption from taxation for IP income, and 21 of the regimes offer reduced rates equal to or less than 3%.

Box 11. **BEPS ACTION 5**

Countering harmful tax practices more effectively, taking into account transparency and substance

BEPS Action 5 is one of the four BEPS minimum standards that all Inclusive Framework members have committed to implement. One part of the Action 5 minimum standard relates to preferential tax regimes where a peer review is undertaken to identify features of such regimes that can facilitate BEPS, and therefore have the potential to unfairly impact the tax base of other jurisdictions.

The *BEPS Action 5 Report* placed a renewed focus on requiring substantial activity for any preferential regime, and the "nexus approach" is the substantial activity requirement developed for IP regimes. The nexus approach requires a link between the income benefiting from the IP regime and the extent to which the taxpayer has undertaken the underlying R&D that generated the IP asset. In addition to the nexus approach, features of regimes such as ring-fencing from the domestic economy and a lack of transparency are also considered in the peer reviews.

Box 12. **INTELLECTUAL PROPERTY REGIMES**

The information reported for each IP regime in the *Corporate Tax Statistics* database is:

- the name of the regime;
- the qualifying IP assets;
- the reduced rate that applies under the IP regime;
- the status of the IP regime per the OECD's Forum on Harmful Tax Practices (FHTP).

The *Corporate Tax Statistics* database draws on the detailed information collected by the FHTP for its peer reviews of preferential tax regimes. The information and the status presented are as of November 2018. Changes to regimes that have been legislated in 2018 but are not effective until 2019 are not reflected in this edition of the database.

The information presented in this edition provides a basic description of IP regimes in place in 2018. Future editions will incorporate the effects of IP regimes into the corporate effective tax rate analysis.

Reduced rates available under non-harmful IP regimes ranged from 0% to 18.75% in 2018. These reduced rates are equivalent to rate reductions ranging from 100% (full exemption from tax) to around 30%.

WHAT QUALIFIES AS AN INTELLECTUAL PROPERTY REGIME?

IP regimes can be regimes that exclusively provide benefits to income from IP, but some regimes categorised as IP regimes are "dual category" regimes. These regimes also provide benefits to income from other geographically mobile activities or to a wide range of activities and do not necessarily exclude income from IP.

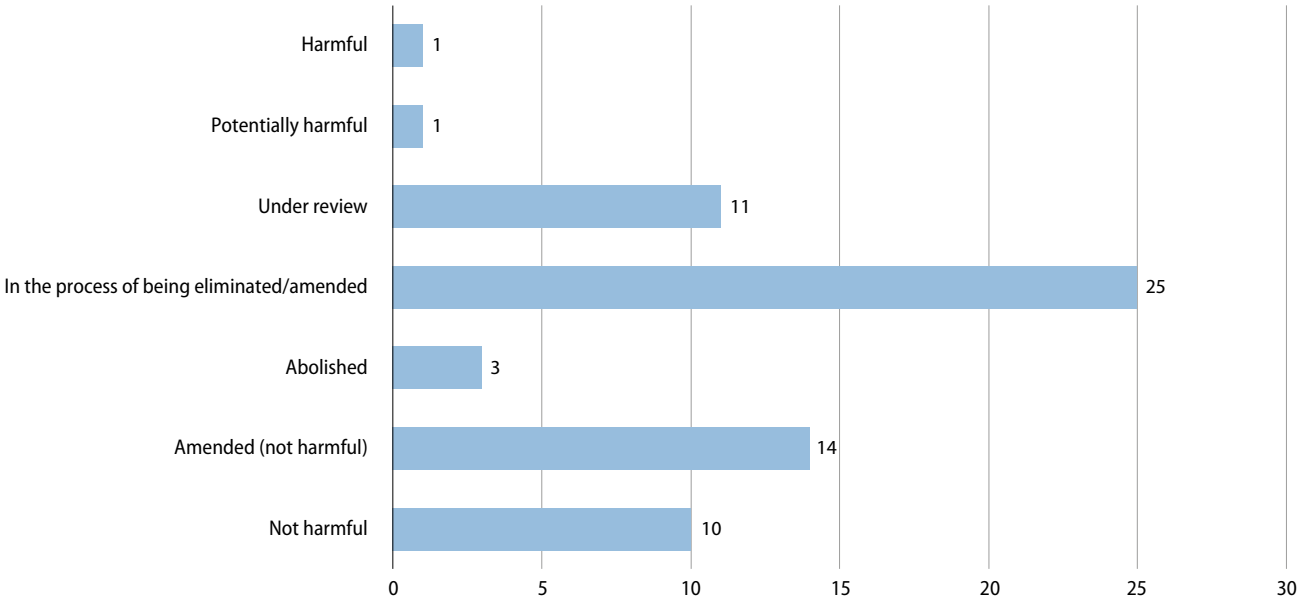
The *Corporate Tax Statistics* database shows information both on regimes that narrowly target IP income and on regimes that offer reduced rates to IP income and other types of income. Of the 65 IP regimes contained in the database, 31 were reviewed by the FHTP as IP regimes only and 34 were reviewed as "dual category" regimes (IP and non-IP regimes).

STATUS OF INTELLECTUAL PROPERTY REGIMES

On the basis of the features of the regime, IP regimes are found to be either: harmful (because they do not meet the nexus approach), not harmful (when the regime does meet the nexus approach and other factors in the review process), or potentially harmful (when the regime does not meet the nexus approach and/or other factors in the review process, but an assessment of the economic effects has not yet then place). The peer review process is ongoing, and in 2018 many jurisdictions were in the process of amending or abolishing their regimes to ensure that they are fully aligned with the Action 5 minimum standard. These are listed with the status "in the process of being amended/eliminated", and are expected to be closed to new entrants in 2018. Regimes that were already closed to new entrants in 2018 (according to the peer reviews approved by the Inclusive Framework in November 2018) are listed as "abolished" in the database, although continuing benefits may be offered for a defined period of time to companies already benefiting from the regime. In most cases, this grandfathering would end by 30 June 2021.

The *Corporate Tax Statistics* database contains information on 65 IP regimes that were in place in 41 different jurisdictions in the year 2018. Twenty-four regimes in total were found to be not harmful; 14 of these regimes were found to be not harmful after having been amended to align with the Action 5 minimum standard (see Figure 16). Two regimes (in Italy and in Turkey) were found to be not harmful, but have a transition rule that is found to be harmful for a limited period of time. One regime (in Jordan) was found to be potentially harmful, and one regime (in France) was found to be harmful. Three regimes (one in Curaçao and two in Mauritius) were abolished in 2018. Twenty-five regimes are in the process of being amended or eliminated since they were not compliant with the BEPS Action 5 minimum standard. Eleven regimes are under review, since it has not yet been determined whether they meet the Action 5 minimum standard. This is the case with newly introduced IP regimes and IP regimes of jurisdictions that have recently joined the Inclusive Framework.

FIGURE 16: **Status of intellectual property regimes in place in 2018**



Source: November 2018 update to OECD (2017), http://www.oecd.org/tax/beps/update-harmful-tax-practices-2017-progress-report-on-preferential-regimes.pdf

QUALIFYING ASSETS AND REDUCED TAX RATES

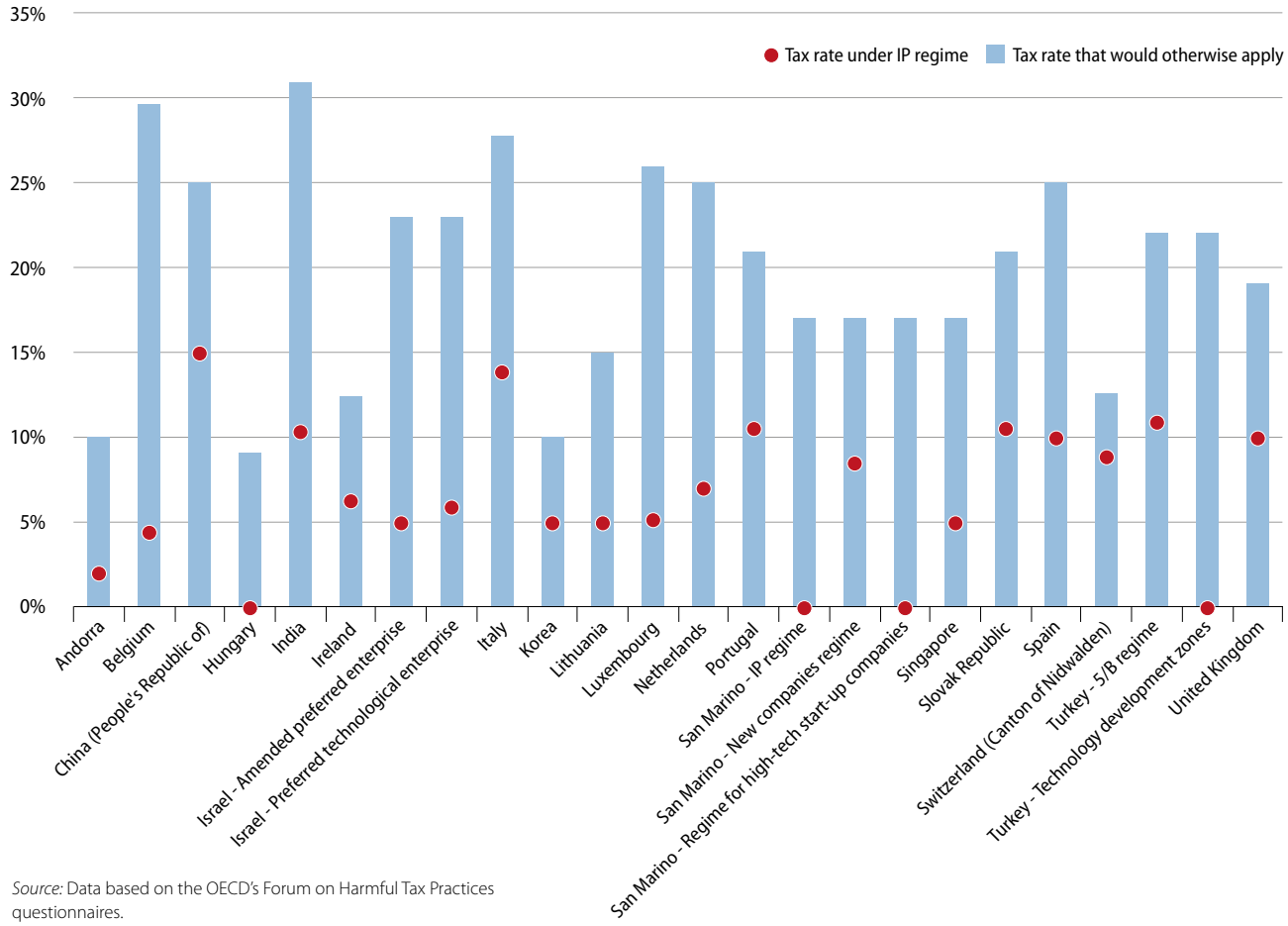
In the *Corporate Tax Statistics* database, qualifying assets of IP regimes are grouped into three main categories: patents, software and Category 3. These correspond to the only three categories of assets that may qualify for benefits under the Action 5 minimum standard: 1) patents defined broadly; 2) copyrighted software; and 3) in certain circumstances and only for SMEs, other IP assets that are non-obvious, useful and novel. The *Action 5 Report* explicitly excludes income from marketing related intangibles (such as trademarks) from benefiting from a tax preference. If a regime does not meet the Action 5 minimum standard, then the assets qualifying for the regime may not fall into the three allowed categories.

Of the 24 regimes found to be not harmful, all 24 regimes cover patents, 10 cover software, and 6 regimes cover assets in the third category (Category 3). Most of the regimes that are in the process of being eliminated or amended do not have any restrictions on the type of income that qualifies for a reduced rate, although some are restricted to certain industries or income types.

The reduction in the rate on IP income varies among the regimes, and some regimes offer different rates depending, for example, on the type of income (e.g., royalties or capital gains income) or size of the company.

Among the 24 regimes found to be not harmful, a full exemption to a reduction of about 30% of the tax rate that would otherwise apply is offered. The most common reduction is a 50% reduction. The reduced rates range from 0% (Hungary's IP regime for royalties and capital gains (the 0% rate only applies to capital gains); San Marino's IP regime; San Marino's regime for high-tech start-up companies under law no. 71/2013 and delegated decree no. 116/2014; Turkey's technology development zones regime) to 18.75% (Korea's Special taxation for transfer, acquisition, etc. of technology; this IP regime offers reduced rates ranging from 5% to 18.75%).

FIGURE 17: **Reduced rates under non-harmful intellectual property regimes, 2018**



Source: Data based on the OECD's Forum on Harmful Tax Practices questionnaires.

For each of the 24 non-harmful IP regimes, Figure 17 shows the lowest reduced rate offered under the regime and the tax rate that would otherwise apply. The tax rate that would otherwise apply is typically the standard statutory corporate income tax rate, but it may not include certain surtaxes or sub-central government taxes. Similarly to the reduced rate, the tax rate that would otherwise apply may also fall into a range, if for example, the standard statutory rate depends on the level of profits. Therefore, the tax rates shown in the figure are illustrative and do not represent the full range of tax reductions offered in each IP regimes.

Among the 25 regimes that are in the process of being amended or eliminated, over half offer a full exemption from taxation for IP income, and 21 of the regimes offer a reduced rate equal to or less than 3%.

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