

2 Tax revenue trends

This chapter describes tax revenue trends – looking at both total tax-to-GDP ratios and tax mixes – in OECD countries, Argentina, Indonesia and South Africa. The analysis covers tax revenue trends until 2017, the latest year for which comparable tax revenue data is available. This overview of tax revenue trends is useful to understand the effects of past tax policy reforms and sets the stage for the subsequent discussion on the tax reforms that were recently introduced.

This chapter describes the latest tax revenue trends – looking at both total tax-to-GDP ratios and tax mixes – in all OECD countries as well as in Argentina, Indonesia and South Africa. Based on the OECD Global Revenue Statistics Database (Box 2.1), the analysis covers tax revenue trends until 2017, the latest year for which comparable tax revenue data is available¹ (OECD, 2018_[1]). This overview of tax revenue trends is useful to understand the effects of past tax policy reforms and provides background to the subsequent discussion on countries' latest tax reforms (Chapter 3).

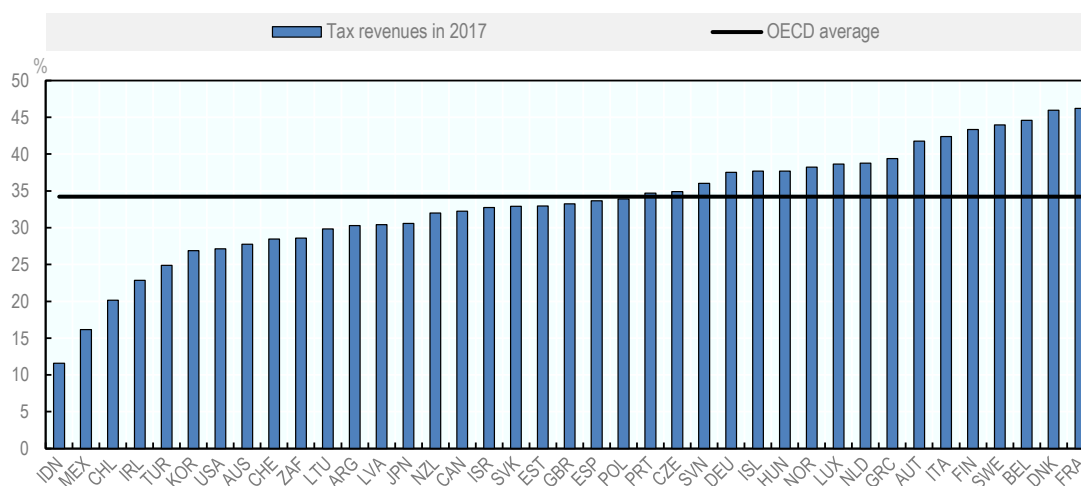
Overall, this chapter shows that tax revenues as a share of GDP have continued to increase on average across countries, with the OECD average tax-to-GDP ratio reaching a new record level in 2017. Trends have nevertheless differed across countries, with some countries exhibiting lower tax revenues as a share of GDP in 2017 than before the crisis. Over time, countries' tax-to-GDP ratios and tax structures have converged closer to the OECD average, showing greater similarity in the level and composition of tax revenues across countries but also a convergence towards an overall higher level of taxation.

2.1. Trends in tax revenue levels

2.1.1. Tax revenues vary across countries

Across the countries covered in the report, tax revenues ranged from just above 10% of GDP to more than 45% of GDP. In 2017, France recorded the highest tax revenues as a percentage of GDP (i.e. tax-to-GDP ratio), with tax revenues amounting to 46.2% of its GDP. Denmark, which had the highest tax-to-GDP ratio across OECD countries from 2002 to 2016, recorded the second highest tax-to-GDP ratio in 2017 (46.0%). On the other hand, the countries with the lowest tax-to-GDP ratios were Indonesia, with total tax revenues amounting to 11.6% of its GDP (2016 data), followed by Mexico (16.2%) and Chile (20.2%)² (Figure 2.1).

Figure 2.1. Tax revenues as a share of GDP by country in 2017



Note: For Australia, Indonesia, Japan and South Africa, 2016 data is used.

Source: OECD Global Revenue Statistics Database.

Box 2.1. The OECD Global Revenue Statistics Database

The Global Revenue Statistics Database provides the world's largest public source of harmonised tax revenue data, verified by countries and regional partners. Spanning more than 90 countries in all corners of the world, the database provides a rich and accessible resource for policymakers and researchers, based on the internationally-recognised OECD standard. It allows comparisons of the tax burden in these countries, measured by the tax-to-GDP ratio, as well as of the tax mix, i.e. the distribution of total tax revenues by the main types of taxes. The database presents tax revenue data in national currency and USD, and also provides information on the share of tax revenues attributed to different levels of government.

Domestic revenues are critical to efforts to fund sustainable development and to implement the Sustainable Development Goals. The database supports these efforts by measuring progress on domestic resource mobilisation, building statistical capability, and providing country-specific indicators as called for in SDG 17, in the Addis Ababa Action Agenda and by more than 55 countries and international organisations in the Addis Tax Initiative.

The database shows that countries have made strong progress toward mobilising domestic financing for development in the 21st century. Tax revenues are now higher as a percentage of GDP and their levels are more evenly distributed across countries than they were at the turn of the century. With few exceptions, the countries that recorded the lowest level of tax revenues in 2000 have increased their revenues the most.

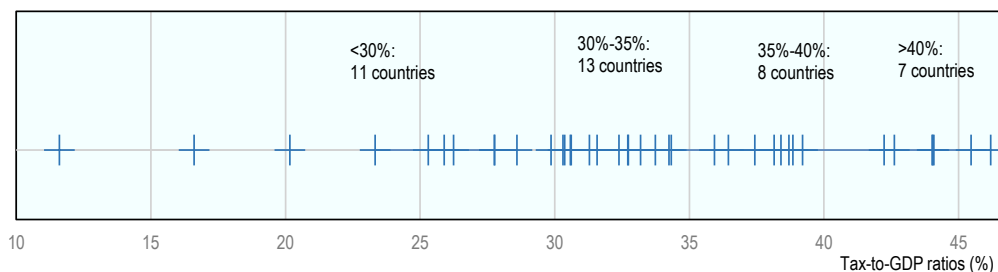
Between 2015 and 2016, the tax-to-GDP ratio increased in 52 countries and decreased in 40. For three-quarters of countries in each direction, the change was less than 1 percentage point. The OECD average tax-to-GDP ratio increased by 0.3 percentage points to 34.0% between 2015 and 2016, while the Africa (21) average, i.e. the average of the 21 African countries included in the publication, remained unchanged at 18.2% and the Latin American and Caribbean average decreased slightly by 0.1 percentage to 22.6% in the same time period.

The Global Revenue Statistics Database is updated several times a year with the latest available data from the regional Revenue Statistics publications, which cover African, Asian and Pacific, Latin American and Caribbean and OECD countries.

Access the database here: <https://www.oecd.org/tax/tax-policy/global-revenue-statistics-database.htm>.

Despite the wide range of tax-to-GDP ratios, there is a relatively high concentration of countries with tax-to-GDP ratios around the OECD average. On average across OECD countries, tax revenues amounted to 34.2% of GDP in 2017 (Figure 2.1). Figure 2.2 shows a high concentration of countries with tax revenues close to that level, with 13 countries recording tax revenues between 30% and 35% of GDP and eight countries with tax revenues ranging from 35% to 40% of GDP. A number of countries recorded tax-to-GDP ratios further away from the OECD average: 11 had tax-to-GDP ratios below 30% and seven recorded tax revenues above 40% of GDP.

Figure 2.2. Distribution of tax-to-GDP ratios in 2016

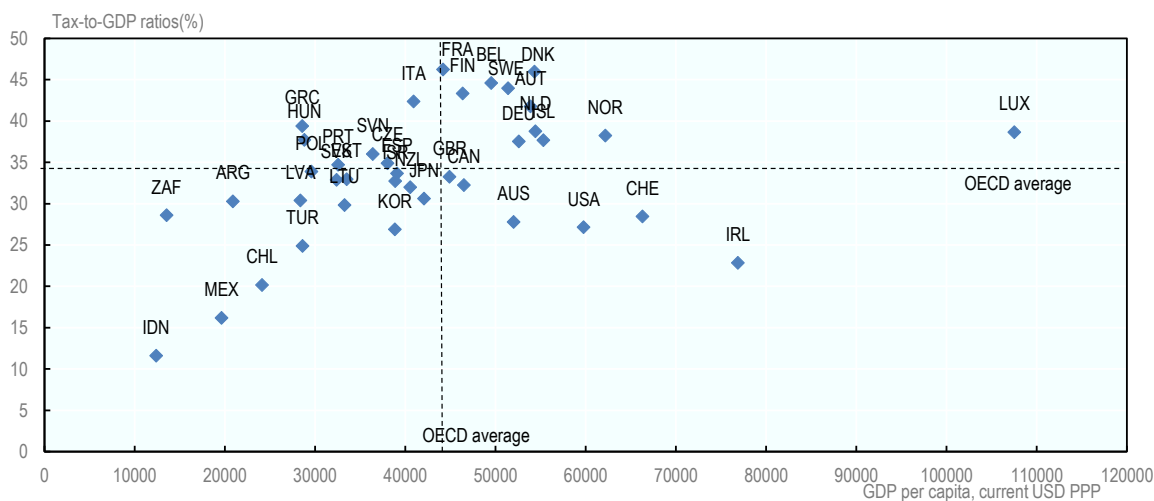


Note: Each + represents the tax-to-GDP ratio of a country in 2016.

Source: OECD Global Revenue Statistics Database, based on “Special feature: Convergence of tax levels and tax structures in OECD countries”, in (OECD, 2018^[2]).

As discussed in previous editions of this report, there is a positive correlation between countries’ tax-to-GDP ratios and GDP per capita levels. Countries with lower levels of GDP per capita tend to have lower tax revenues as a share of their GDP (e.g. Argentina, Chile, Indonesia, Mexico, South Africa and Turkey), while high-GDP per capita countries tend to have higher tax-to-GDP ratios (e.g. Scandinavian countries, Austria, Belgium, France) (Figure 2.3). There are important exceptions, however, with some countries characterised by high levels of GDP per capita but comparatively low tax-to-GDP ratios (e.g. Anglo-Saxon countries, Korea, Japan). There are also countries with below-average levels of GDP per capita but relatively high tax revenues as a share of GDP (e.g. some Central and Southern European countries). In general, the positive relationship between tax-to-GDP ratios and GDP per capita levels tends to be less pronounced for high income countries. Levels of tax-to-GDP ratios also follow regional patterns.

Figure 2.3. Tax revenues as a share of GDP and GDP per capita in 2017



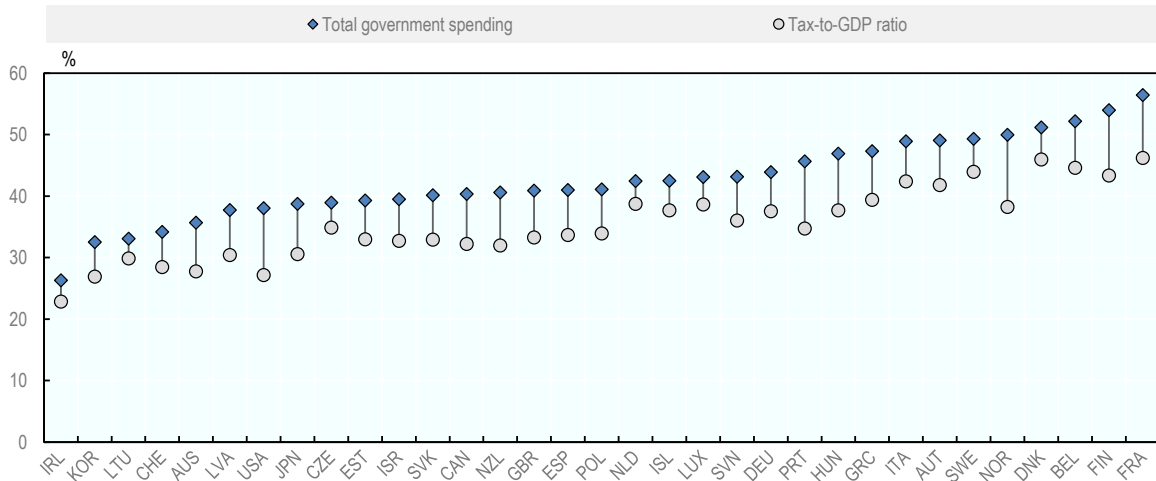
Note: 2016 tax revenue data for Australia, Indonesia, Japan and South Africa.

Source: OECD Global Revenue Statistics Database and OECD National Accounts Statistics.

Tax revenues are closely linked to countries’ public expenditure levels. Unsurprisingly, Figure 2.4 shows that there is a close link between countries’ levels of public spending and their tax revenues as a share of GDP. Tax-to-GDP ratios are heavily influenced by the extent to which countries rely on the public sector to finance their social security systems. The gap between the level of government spending and tax

revenues shows the extent to which public expenditure is financed either through non-tax revenues or public debt. .

Figure 2.4. Tax revenues and total government spending as a share of GDP in 2017



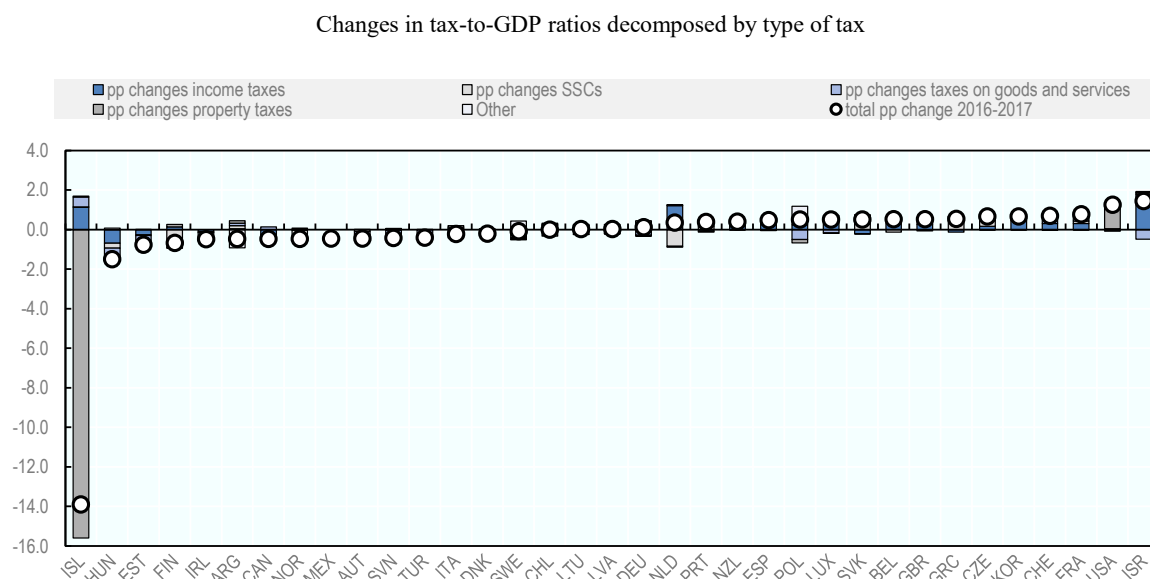
Note: No data on government spending for Argentina, Chile, Indonesia, Mexico, South Africa and Turkey; 2016 data for Argentina, Indonesia, Japan and South Africa.

Source: OECD Global Revenue Statistics Database and OECD Economic Outlook 104 Database.

2.1.2. Recent tax revenue trends have differed across countries

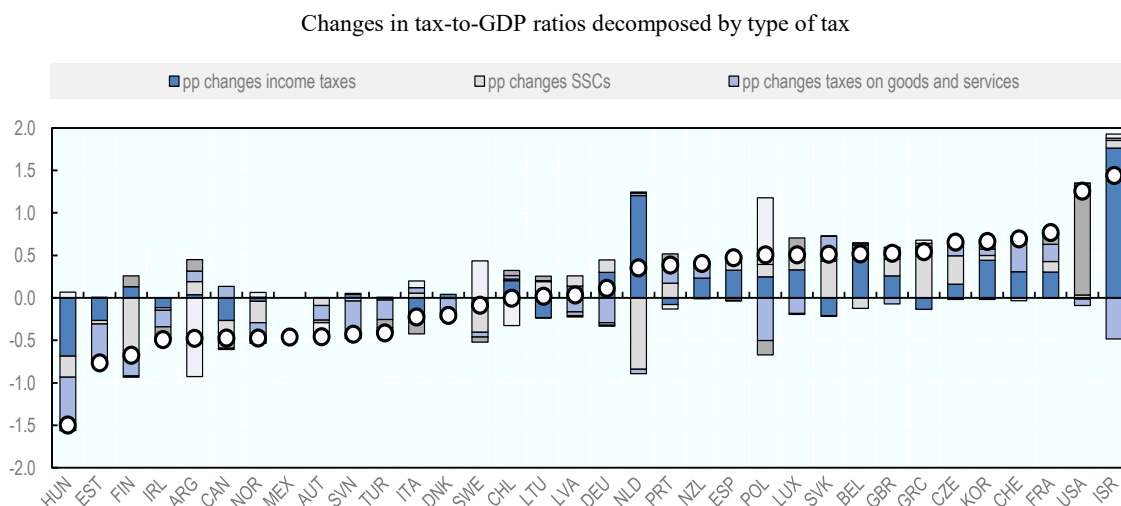
Between 2016 and 2017, a majority of countries experienced an increase in their tax-to-GDP ratios. Indeed, 19 of the 35 countries for which 2017 data is available recorded an increase in their tax revenues as a share of GDP (Figure 2.5 and Figure 2.6). Between 2016 and 2017, Israel and the United States saw the largest tax ratio increases. In Israel, the 1.4 percentage point increase in the tax-to-GDP ratio was mainly due to the temporary decrease in the tax rate on dividends, which encouraged the distribution of past retained earnings (around ILS 50 billion were distributed). The tax-to-GDP ratio in the United States increased by 1.3 percentage points, partly due to the one-off deemed repatriation tax on foreign earnings under the Tax Cuts and Jobs Act (OECD, 2018^[11]). No other country experienced an increase of more than one percentage point in their tax-to-GDP ratio between 2016 and 2017.

Figure 2.5. Percentage point changes in tax-to-GDP ratios by country between 2016 and 2017



Note: No 2017 data for Australia, Indonesia, Japan and South Africa.
 Iceland's tax-to-GDP ratio was exceptionally high in 2016 due to one-off stability contributions from entities that previously operated as commercial or savings banks and were concluding operations.
 Source: OECD Global Revenue Statistics Database.

Figure 2.6. Percentage point changes in tax-to-GDP ratios by country between 2016 and 2017 (without Iceland)



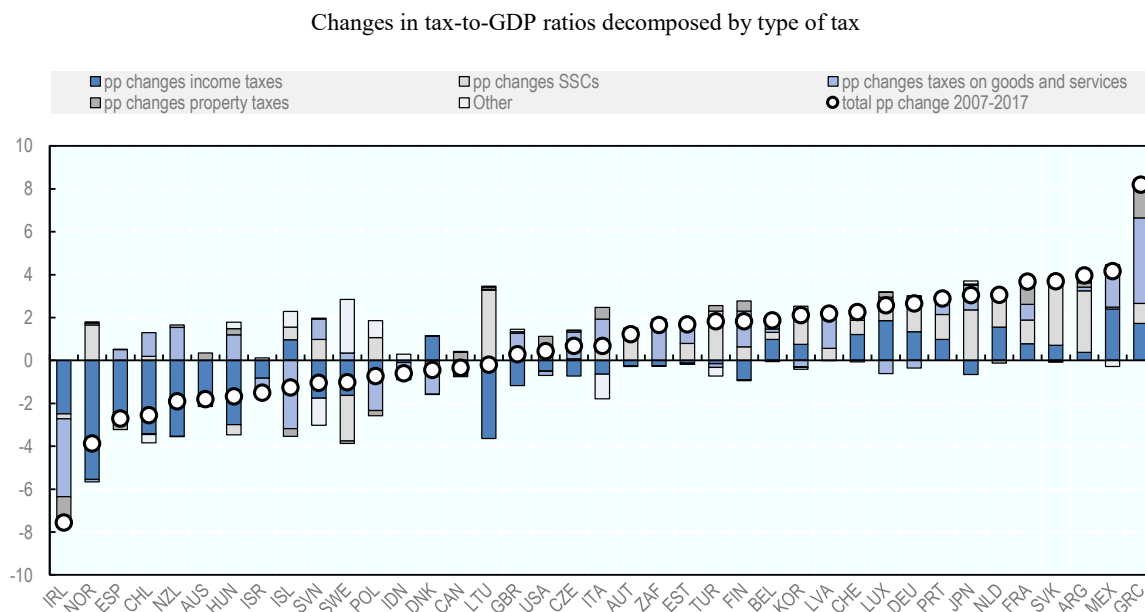
Note: No 2017 data for Australia, Indonesia, Japan and South Africa.
 Source: OECD Global Revenue Statistics Database.

On the other hand, 16 countries experienced a decrease in their tax-to-GDP ratios in 2017 relative to 2016. The largest tax revenue fall was recorded in Iceland (Figure 2.5). Iceland's tax-to-GDP ratio was exceptionally high in 2016 due to one-off stability contributions from entities that previously operated as commercial or savings banks and were concluding operations (OECD, 2018_[1]). The one-off stability contributions raised nearly ISK 385 000 million in 2016, equivalent to 15.7% of Iceland's GDP which

caused Iceland's tax-to-GDP ratio to rise from 36.3% in 2015 to 51.6% in 2016, before dropping by 13.9 percentage points to 37.7% in 2017. The second largest tax revenue fall was recorded in Hungary (1.5 percentage points) due to lower revenues from taxes on income and profits and from taxes in goods and services following a comprehensive tax reform in 2016. There were no other decreases of over one percentage point between 2016 and 2017.

Looking at longer-term trends, tax-to-GDP levels are now higher than their pre-crisis levels in 23 of the 39 countries covered in the report (Figure 2.10). The largest increase over this period was recorded in Greece (8.2 percentage points). Six other countries (Mexico, Argentina, the Slovak Republic, France, the Netherlands and Japan) experienced tax ratio increases of at least 3 percentage points over the same period. On the other hand, there were 16 countries that had lower tax-to-GDP ratios in 2017 than in 2007. The biggest fall was seen in Ireland, from 30.4% in 2007 to 22.8% of GDP in 2017, largely due to the exceptional increase in GDP in 2015. The second largest fall occurred in Norway, from 42.1% of GDP in 2007 to 38.2% in 2017, due largely to declining CIT revenues.

Figure 2.7. Percentage point changes in tax-to-GDP ratios by country between 2007 and 2017



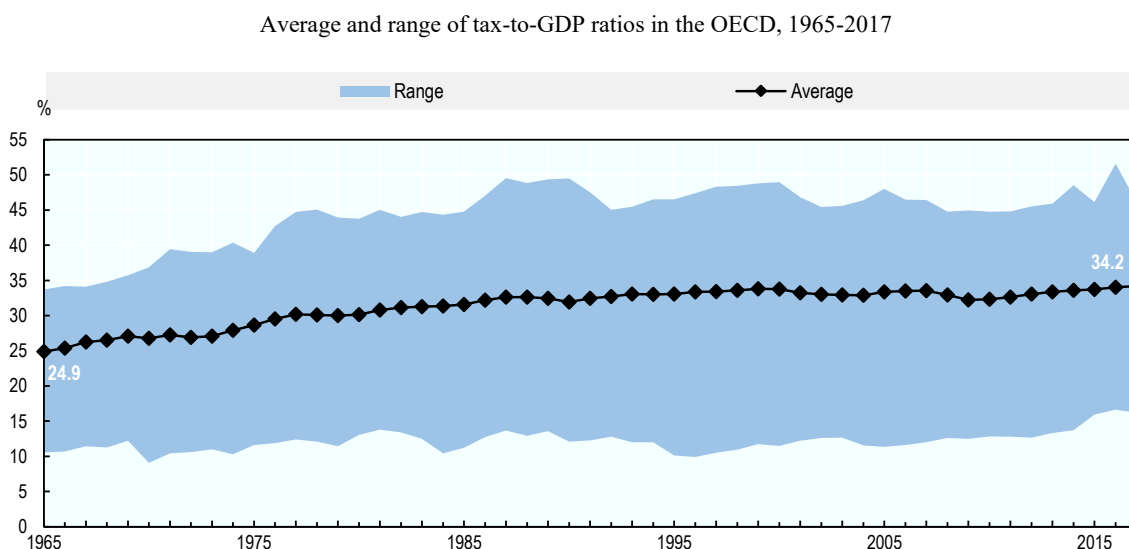
Note: P.p. changes between 2007 and 2016 for Australia, Indonesia, Japan and South Africa.

Source: OECD Global Revenue Statistics Database.

2.1.3. Tax-to-GDP ratios have converged towards higher levels over time

Looking at OECD countries, the average tax-to-GDP ratio reached a new record level in 2017. Between 2016 and 2017, the OECD average tax-to-GDP ratio increased from 34.0% to 34.2%.³⁴ This is the eighth consecutive annual increase since the low-point in the OECD average experienced in 2009 as a consequence of the financial and economic crisis. Looking at longer-term trends, the 2017 OECD average tax-to-GDP ratio was the highest ever recorded since the OECD started collecting tax revenue data in 1965, with a total increase of more than 9 percentage points over the last 50 years (Figure 2.8).

Figure 2.8. Long-term evolution of the OECD average tax-to-GDP ratio

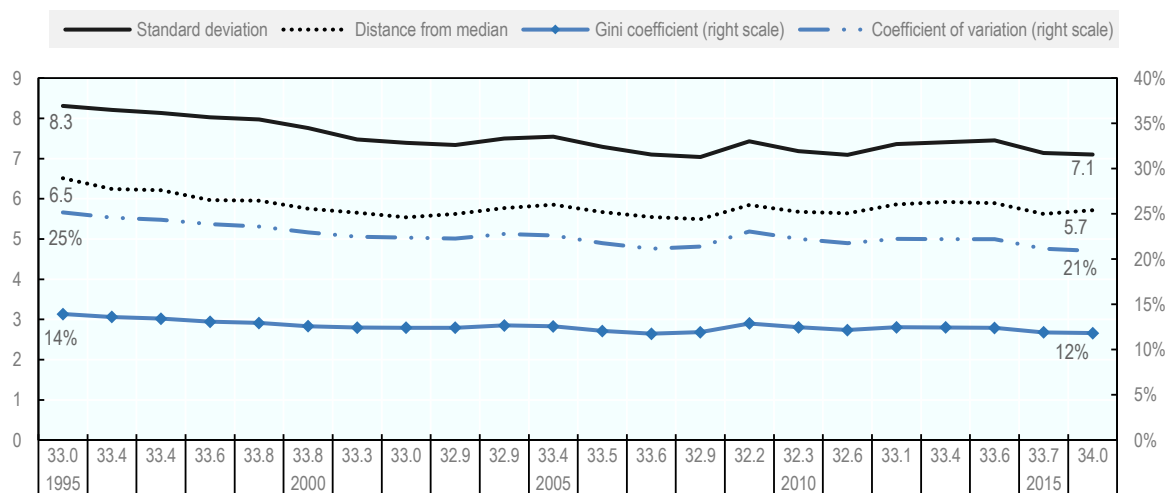


Source: OECD Revenue Statistics Database.

The recent increases in tax-to-GDP ratios have resulted in large part from fiscal consolidation efforts and slow but positive growth. The rise in tax revenues across OECD countries in the years following the crisis was partly the result of active fiscal consolidation measures, as reported in previous editions of this report. Slow growth also contributed to rising tax-to-GDP ratios, as tax revenues recovered and had higher nominal levels of growth than GDP in most countries.

Trends since the mid-1990s show that countries' tax-to-GDP ratios have become more similar. The latest *Revenue Statistics* publication, which focuses on OECD countries, measures the convergence of tax levels across countries (OECD, 2018^[1]). It shows that across the OECD, the dispersion of tax-to-GDP ratios decreased between 1995 and 2016, with a brief interruption in 2009, a period that coincided with the lowest average OECD tax-to-GDP ratio in the period. Figure 2.9 shows that the dispersion of tax-to-GDP ratios decreased around the OECD average tax-to-GDP ratio (standard deviation and coefficient of variation) as well as around the median (absolute deviation) and when country pairs are considered (Gini coefficient); with these measures of dispersion showing similar trends across the period. This means that the OECD average tax-to-GDP ratio in 2016 is more representative than it has been at any point in the last twenty years and that countries' tax levels are converging towards the higher OECD average tax-to-GDP ratio (OECD, 2018^[1]).

Figure 2.9. Dispersion of tax-to-GDP ratios in OECD countries, 1995-2016



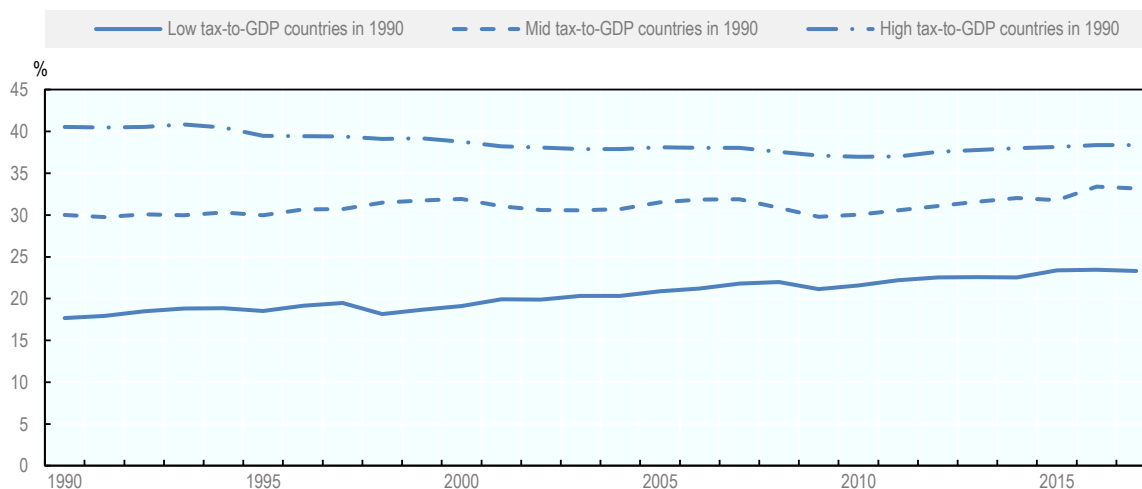
Note: The figures on the horizontal axis (above the years) show the OECD average tax-to-GDP ratio in each year.

Source: "Special feature: Convergence of tax levels and tax structures in OECD countries", in (OECD, 2018^[2]).

Greater similarity in tax-to-GDP ratios is also apparent from the converging patterns between high- mid-, and low-tax countries. Figure 2.10 breaks down OECD countries, Argentina, Indonesia and South Africa into three sub-groups: countries with high tax-to GDP ratios in 1990s, countries with mid-levels of tax-to-GDP ratios in 1990, and countries with low revenues as a share of GDP in 1990 (see note in Figure 2.10). It shows that there has been a strong increase in tax revenues on average in the countries with low tax-to-GDP ratios in 1990, a smaller increase in countries with medium tax-to-GDP ratios, and a small decrease in the average tax-to-GDP ratio of countries exhibiting high levels of tax revenues in 1990. Overall, these trends have led to a greater convergence in tax-to-GDP ratios across countries.

Figure 2.10. Evolution of tax-to-GDP ratios in low-, mid- and high-tax countries since 1990

Average tax-to-GDP ratios for each group of countries



Note: Low tax-to-GDP ratio countries include all the countries covered in the report that had tax-to-GDP ratios below 25% in 1990 (8 countries); mid tax-to-GDP ratio countries include all the countries that had tax-to-GDP ratios between 25% and 35% in 1990 (13 countries); and high tax-to-GDP ratio countries include all the countries that had tax-to-GDP ratios above 35% in 1990 (18 countries).

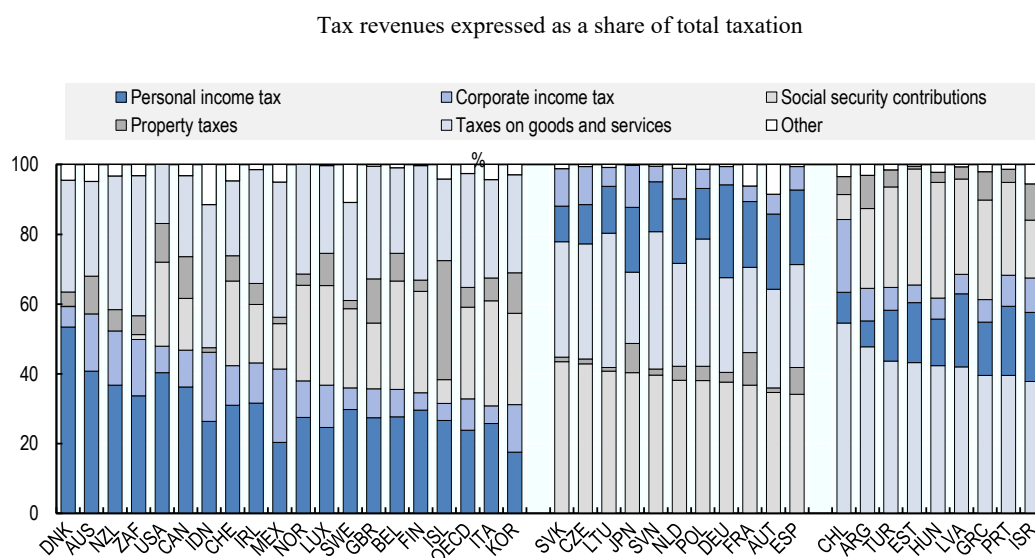
Source: OECD Global Revenue Statistics Database.

2.2. Trends in the composition of tax revenues

2.2.1. The composition of tax revenues varies across countries

The tax structure – or composition of total tax revenues – varies quite significantly across countries. As shown in Figure 2.11, income taxes – including both PIT and CIT – are the largest source of tax revenues in 20 countries. In Denmark, Australia, New Zealand, South Africa and the United States, income taxes account for close to half or more of total tax revenues. This is partly explained by the fact that Australia, Denmark, New Zealand and South Africa do not collect (or collect very little) SSCs and by the comparatively small share of consumption taxes in the United States due to the absence of a VAT. In a number of countries, including Central European countries and large Western European countries, SSCs are the primary source of tax revenues. Finally, a third group of countries collect most of their tax revenues from consumption taxes.

Figure 2.11. Tax structures by country in 2016



Note: Countries are grouped and ranked by those where income tax revenues (personal and corporate) form the higher share of total tax revenues, followed by those where SSCs, and taxes on goods and services, form the highest share.

Source: OECD Global Revenue Statistics Database.

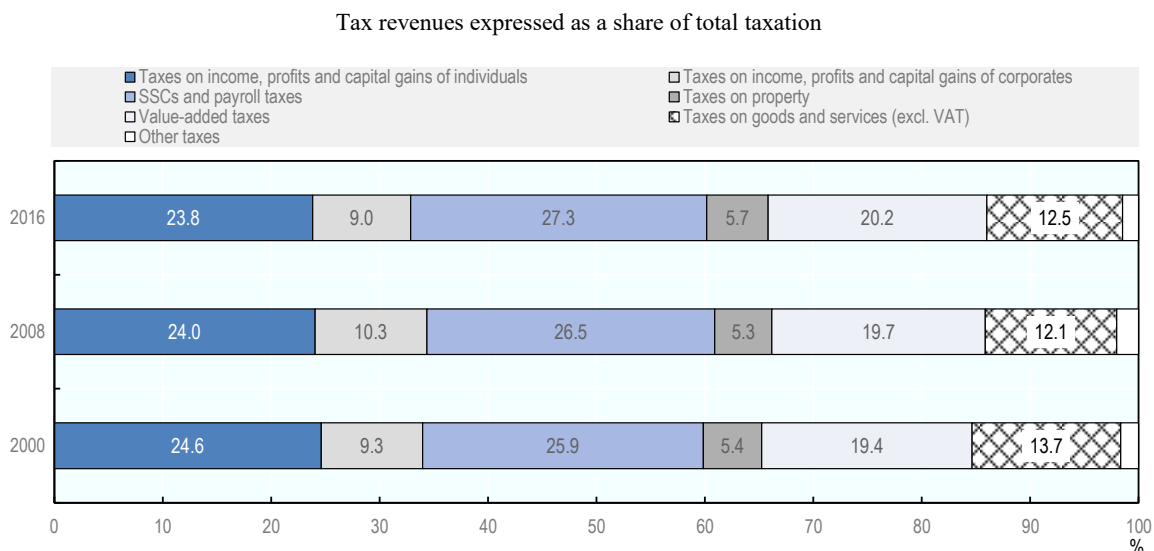
As with tax-to-GDP ratios, there tends to be a link between countries' tax mixes and their GDP per capita levels. Last year's report showed that the share of PIT in total tax revenues is positively correlated with countries' levels of GDP per capita, with more developed countries exhibiting higher shares of tax revenues from PIT. In contrast, the shares of consumption taxes and CIT in total tax revenues tend to be lower in countries with high levels of GDP per capita (OECD, 2018^[3]). A recent paper also discusses the link between tax structures and tax-to-GDP ratios, showing that the correlation between PIT and SSCs as a share of total taxation and tax-to-GDP ratios is positive, while higher tax-to-GDP ratios tend to be associated with lower shares of CIT and VAT in total tax revenues (Modica, Laudage and Harding, 2018^[4]).

2.2.2. Tax structures have converged towards the OECD average

The average tax structure across OECD countries is dominated by SSCs, PIT and VAT. Overall, in the OECD, SSCs and payroll taxes accounted for 27.3% of total tax revenues in 2016. PIT was the second largest source of tax revenues, accounting on average for 23.8% of total tax revenues. VAT also plays a

major role, making up about one fifth of the OECD's average tax mix in 2016, while other consumption taxes accounted for 12.5% of the tax mix. On the other hand, taxes on corporate income and property are much less significant sources of tax revenues on average, respectively accounting for 9.0% and 5.7% of the OECD average tax mix in 2016 (Figure 2.12).

Figure 2.12. OECD average tax mix in 2000, 2008 and 2016



Source: OECD Revenue Statistics Database.

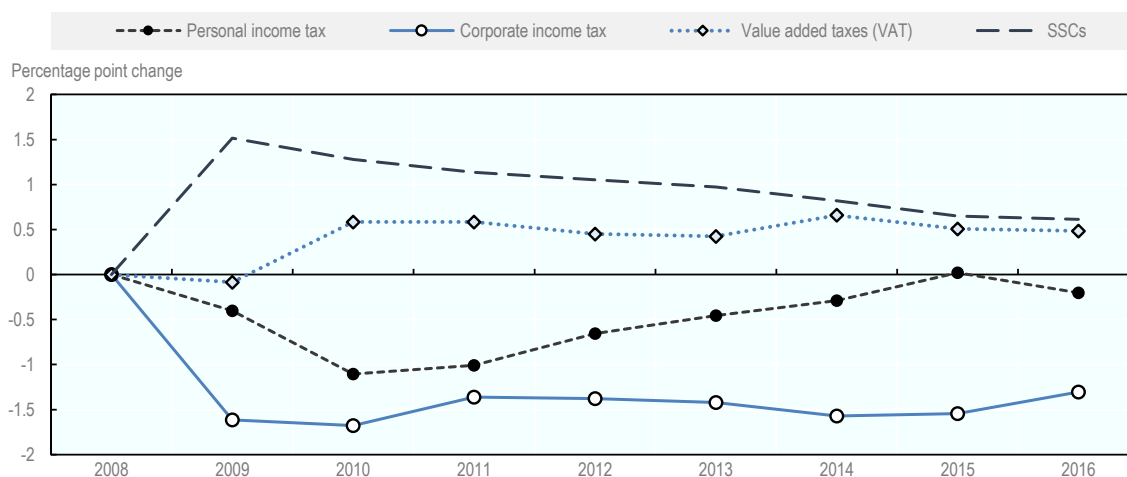
On average across OECD countries, the shares of SSCs and VAT have increased, especially after 2007. On average, the shares of SSCs and taxes on goods and services in total tax revenues rose to highs of 26.6% in 2009 and 33.0% in 2010 respectively. This reflected in part the effects of the tax reforms that were introduced in the wake of the crisis, including increases in SSCs and in standard VAT rates (OECD, 2016^[5]). These trends also highlight the rapid revenue-raising effects of increases in SSCs and consumption taxes compared to other taxes. Since then, the shares of total tax revenues from SSCs have steadily declined and the shares of VAT have been relatively stable (Figure 2.13), but these taxes remain larger sources of revenues on average than in 2007 (Figure 2.12).

The share of PIT in the OECD average tax mix is close to its pre-crisis level, but has fluctuated over the last ten years. In contrast with trends in SSC and VAT revenues, the share of PIT revenues in the OECD average tax mix initially fell after the crisis, from 23.7% in 2007 to a low of 23.2% in 2010. From 2010 to 2015, the trend reversed with a steady increase in PIT revenues, partly reflecting the effects of PIT rate increases and PIT base broadening measures (OECD, 2016^[5]). The share of PIT then fell again, by 0.3 percentage points between 2015 and 2016 (from 24.1% to 23.8% of total revenues), driven by falls in revenues from PIT in 20 countries.

The share of CIT in the OECD average tax mix is still lower than before the crisis but has recently increased. After an unusual increase in CIT revenues between 2005 and 2007, the share of CIT fell back to earlier levels and remained stable for years (Figure 2.13). Between 2015 and 2016, however, the share of CIT increased by 0.2 percentage points (from 8.8 to 9.0% of total revenues), its highest level since the crisis. The increase in the share of CIT in the OECD average tax mix was driven by increases in revenues from CIT in 23 countries in 2016.

Figure 2.13. Cumulative percentage point changes in tax revenues since 2008

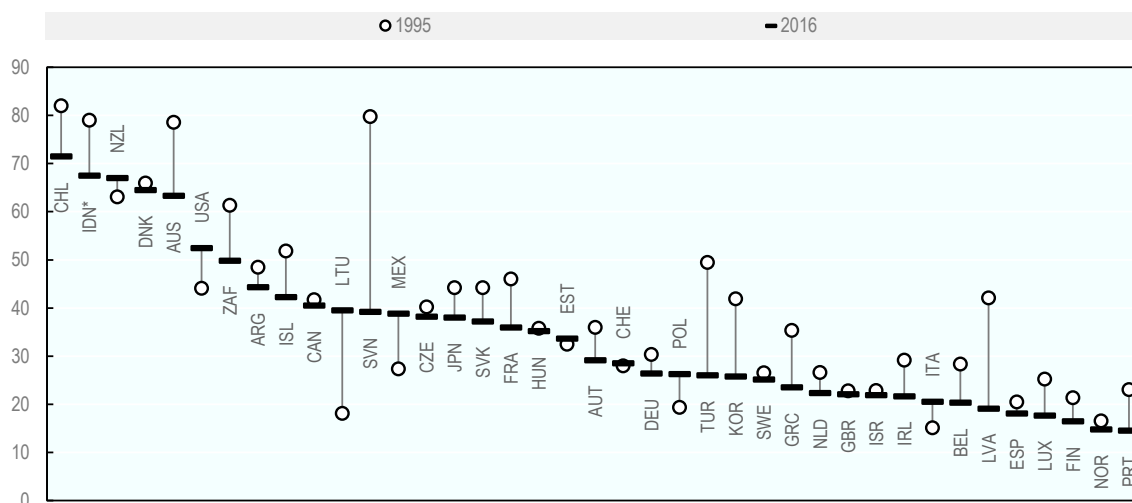
OECD average, p.p. changes in tax revenues as a % of total tax revenues



Source: OECD Revenue Statistics Database.

As with tax-to-GDP ratios, tax structures in most countries have converged towards the OECD average tax structure between 1995 and 2016. The *Revenue Statistics 2018* “Special Feature” analyses the convergence of tax structures in OECD countries between 1995 and 2016. One of the indicators measured as part of this analysis is the D-index, which calculates the absolute difference for the share of each tax category in a country from its share in the OECD and sums it, providing an indicator of the difference of that country’s tax structure from the OECD average tax structure. Using D-indices, Figure 2.14 shows that all but eight OECD countries had tax structures that were more similar to the OECD average tax structure in 2016 than in 1995. Countries that increased their similarity to the OECD average the most were those that introduced VAT (Slovenia and Australia) or that made large changes in SSCs (e.g. in Latvia where they fell as a percentage of GDP and total taxes, or in Korea, where they increased strongly in both) (OECD, 2018^[1]). In 2016, the OECD countries with the greatest difference in tax structures from the OECD average were Chile, New Zealand, Denmark, Australia and the United States; whereas the smallest differences were observed in Portugal, Norway, Finland, Luxembourg and Spain (OECD, 2018^[1]). In the non-OECD countries – Argentina, Indonesia and South Africa – tax structures have also converged towards the OECD average, although they remain among the countries with the greatest differences in tax structures from the OECD average.

Figure 2.14. Distance from the OECD average tax structure (D-index), 1995 and 2016



Note: The D-index calculates the absolute difference for the share of each tax category in a country from its share in the OECD and sums it, providing an indicator of the difference of that country's tax structure from the OECD average tax structure. Consequently, a value of 0 indicates that the country's tax structure is the same as the OECD average structure. * For Indonesia, 2002 data is used instead of 1995 data due to the unavailability of earlier data.

Source: Based on "Special feature: Convergence of tax levels and tax structures in OECD countries", in (OECD, 2018_[2]).

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Notes

¹ It should be noted that the 2017 tax revenue data presented in this chapter is provisional.

² The majority of Chile's social contributions are paid into privately managed funds under the obligatory social security system of Chile and are therefore excluded from the calculation of Chile's tax revenues as such payments are, under the definition applied, not regarded as taxes.

³ This data is provisional.

⁴ Due to the exceptional nature of Iceland's stability contributions, they are not representative of trends in tax levels across OECD countries and have been excluded from the calculation of the OECD average in 2016.



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