

Following the 2019 OECD report *The Sharing and Gig Economy: Effective Taxation of Platform Sellers* (OECD, 2019<sup>[5]</sup>), the OECD published in 2020 a set of Model Rules that set the framework for digital platforms to collect information on the income realised by those offering accommodation, transport and personal services through platforms and to report the information to tax authorities. A key objective for the Model Rules is to help taxpayers be compliant with their tax obligations, and to provide a consistent framework to help business provide information to tax authorities. This supports the Model Rules goal of streamlining reporting regimes for tax administrations and platform operators alike. (OECD, 2020<sup>[6]</sup>)

Around the same time, the OECD Tax Administration 3.0 report (OECD, 2020<sup>[3]</sup>) identified the seamless taxation of platform sellers as a key action for multilateral collaboration. Work is currently ongoing to explore how co-operation between administrations and platforms can be deepened to explore the integration of identification and reporting processes into the applications used by the platforms in order to support tax compliance by platform sellers as well as reducing burdens for all parties.

More generally, common approaches to digital identity that are shared across government, and between government and third parties, will increasingly allow new services to be developed. These services can reduce burdens on taxpayers as third parties can supply information direct to tax administrations, as well as providing richer and more accurate pools of data to tax administrations.

#### Box 3.4. Netherlands – Trusted Information Partners

In the modern digital world, the need for qualified data and qualified data exchange is growing rapidly, and with that the receiver of data needs to determine the reliability of the data and be confident about the identity of the party. This is very important for the tax administration to improve and even guarantee the integrity of data.

Together with private and public parties the Netherlands Tax Administration (NTA) is creating an ecosystem that makes trusted, qualified information exchange possible. The ecosystem aims to provide standards to parties for implementing qualified, traceable, and secure data exchange. It ensures that the source and authenticity of the data are reliable, and thereby creates confidence in the data exchange for the parties involved. The goal is to make doing business digital, easy and reliable.

Source: Netherlands (2023).

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# 4 Assessment

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This chapter looks at the tax assessment function, which includes all activities related to processing tax returns and payments. It examines the use of e-channels for filing and paying, outlines administrations' efforts to provide pre-filled returns, and discusses the level of on-time return filing and payment. It also provides examples of the impact of technology in assessment processes.

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## Introduction

The tax assessment function includes all activities related to processing tax returns, including issuing assessments, refunds, notices and statements. It also includes the processing and banking of payments. These activities continue to be an area of significant change and focus as administrations look to take costs out of high-volume processes.

As reported in previous editions of this series, the widespread enabling of electronic filing and payment by taxpayers has helped administrations to reduce their costs and improve the services they provide. This trend has continued with an increasing range of supporting services and options now also being made available.

Tax administrations are also managing an expanding range of data that administrations are collecting electronically, including from a growing number of third-party organisations. This is facilitating a shift towards more intelligent use of data, and more complete pre-filled returns, increasingly driven by the use of artificial intelligence and machine learning. This is also helping to create more upstream compliance approaches that can minimise or prevent errors in returns. As well as updating information on the channels used for filing and paying, this chapter will outline:

- Administrations' efforts to provide pre-filled returns for individual and corporate taxpayers, including the expansion of this approach by some into "no-return regimes";
- The levels of on-time return filing and payment; and
- Examples of how technology and the application of data sciences have improved filing, payment and refund processes.

## Use of e-channels for filing and paying

With digitalisation continuing to transform everyday life, it is unsurprising that the uptake in the use of e-filing and payment channels continues to grow. Table 4.1. provides average e-filing rates from jurisdictions that provided details of channels used by taxpayers to file for the years 2018 to 2021. Over that period, around 95% business taxpayers filed their returns electronically. For personal income tax return filers this figure is above 85%. Also, it should be noted that for a significant number of administrations a 100% e-filing rate is the reality across the three main tax types (see Table D.23.).

**Table 4.1. Average e-filing rates (in percent) by tax type, 2018-2021**

Tax type	2018	2019	2020	2021
Personal income tax (50 jurisdictions)	81.1	83.4	86.6	87.2
Corporate income tax (52 jurisdictions)	92.4	93.5	94.2	94.9
Value added tax (46 jurisdictions)	94.4	96.0	97.1	97.5

Note: The table shows the average e-filing rates for those jurisdictions that were able to provide the information for the years 2018 to 2021. The number of jurisdictions for which data was available is shown in parenthesis.

Source: Table D.23.

Looking at the evolution of e-filing rates over the period 2014 to 2021 shown in Table 4.2., it is clear that e-filing rates have increased significantly – between 17 and 21 percentage points – across the three main tax types. (It should be noted that the table only takes into account information from jurisdictions for which data was available for both years 2014 and 2021, which explains the differences in 2021 averages shown in Tables 4.1. and 4.2.)



**Table 4.2. Evolution of e-filing rates (in percent) between 2014 and 2021 by tax type**

Tax type	2014	2021	Difference in percentage points
Personal income tax (33 jurisdictions)	65.0	85.1	+20.1
Corporate income tax (35 jurisdictions)	77.2	95.3	+18.1
Value added tax (32 jurisdictions)	81.4	98.7	+17.3

Note: The table shows the average e-filing rates for those jurisdictions that were able to provide the information for the years 2014 and 2021. The number of jurisdictions for which data was available is shown in parenthesis.

Sources: Table D.23. and OECD (2017), *Tax Administration 2017: Comparative Information on OECD and Other Advanced and Emerging Economies*, Table A.8., [https://doi.org/10.1787/tax\\_admin-2017-en](https://doi.org/10.1787/tax_admin-2017-en).

As for electronic payments rates, as can be seen in Table 4.3., around 90% of payments, measured by number and value, were made electronically in 2021. This represents a significant increase since 2018. The percentage of e-payments by value is slightly higher than the percentage of e-payments made by number, suggesting that particularly larger taxpayers make use of this payment channel. (Due to a change in the definition of the underlying survey question, it is not possible to look at the evolution of e-payment rates since 2014.)

**Table 4.3. Average e-payment rates (in percent) by number and value of payments, 2018-2021**

Measurement type	2018	2019	2020	2021
Percentage by number of payments (47 jurisdictions)	79.9	82.1	86.3	88.5
Percentage by value of payments (47 jurisdictions)	84.4	85.8	88.4	90.2

Note: The table shows the average e-payment rates for those jurisdictions that were able to provide the information for the years 2018 to 2021. The number of jurisdictions for which data was available is shown in parenthesis.

Source: Table D.32.

There remain a number of jurisdictions where the volume of returns filed using paper as well as payments through non-electronic means remains high. Among those jurisdictions that provided data, more than 57 million returns (for PIT, CIT and VAT) were still filed on paper (see Tables A.83., A.85. and A.87.). However, this is a significant reduction compared to the years prior to the COVID-19 pandemic.

It is to be expected that this figure will further decline over time as more administrations take steps to encourage more taxpayers to use electronic platforms where possible. This will not only lower administration costs but could also reduce the administrative burden on taxpayers over time.

#### **Box 4.1. Examples – E-filing**

##### **Hungary – Supporting flat-rate taxation**

One of the goals of the National Tax and Customs Administration (NTCA) of Hungary is to reduce the administrative burden from tax returns, and one of the first steps towards this is the development of the Flat Rate Tax Wizard Web Application. Flat-rate taxation can be chosen by self-employed entrepreneurs in Hungary fulfilling specific conditions.

The Flat Rate Tax Wizard helps taxpayers submit their monthly tax and social security contribution returns via an application that communicates with the taxpayer in the form of questions and answers.

The advantage compared to filling a traditional form-based return is that it can be used even without tax knowledge, since the calculations required for the return do not have to be performed by the taxpayer. The tax return is pre-filled with data content based on answers given to questions and the data in the registers of the NTCA relevant for the taxpayer's tax and social contribution returns. In addition to easier fulfilment of obligations, the platform also helps to determine the quarterly personal income tax in advance. The NTCA is now investigating the addition of this service to additional target taxpayer groups.

See Annex 4.A. for supporting material.

#### Japan – Tax withholding slip automatic entry function via smartphone camera

Thanks to filing assistance provided via the National Tax Agency (NTA) website, when a taxpayer enters the necessary information, income and tax amounts are automatically calculated and the filing data can be transmitted via the “filing through online (e-Tax)” application. During the 2021 filing period, the number of people having filed income tax returns using the filing assistance on the NTA website reached 11.71 million, including those prepared via computers set up at tax office consultation sites. This comprised about 51% of all taxpayers who filed returns and was around 17 times higher than the filings for 2004, when this online filing assistance service was first provided, reflecting steady growth in user numbers.

In addition, among the 11.71 million cases prepared using the filing assistance on the NTA website, about 2.56 million were prepared via smartphone. The NTA is working towards a smartphone-dedicated site for taxpayers. As part of this, a new function has been introduced to the filing assistance on the NTA website, allowing items to be entered automatically, such as amount of earnings from employment, withholding tax and names and address simply by using a smartphone camera to take a photo.

Sources: Hungary (2023) and Japan (2023).

## Pre-filled returns

One of the significant innovations in tax return process design over the last two decades has been the development of pre-filled tax returns, often for personal income taxpayers. The pre-filled approach involves administrations “pre-populating” the taxpayer's return or on-line account with information from third parties. The pre-filled return can be reviewed by the taxpayer and either filed electronically or in paper form. (Table 4.4. shows that an increasing number of administrations is pre-filing PIT returns.)

As the extent of pre-population is generally determined by the range of electronic data sources available to the administration, it is critical to this approach that the legislative framework provides for extensive and timely third-party reporting covering as much relevant taxpayer information as possible. The complexities of the legal frameworks governing tax can be a barrier to more automated tax calculations, and to help overcome this some tax administrations are exploring the use of machine-readable legislation which can help automate the calculation process through the use of algorithms. This is leading to reduced errors and reduced burdens for taxpayers.

**Table 4.4. Evolution of pre-filing of PIT returns, 2018-2021**

Percent of administrations that pre-fill PIT returns

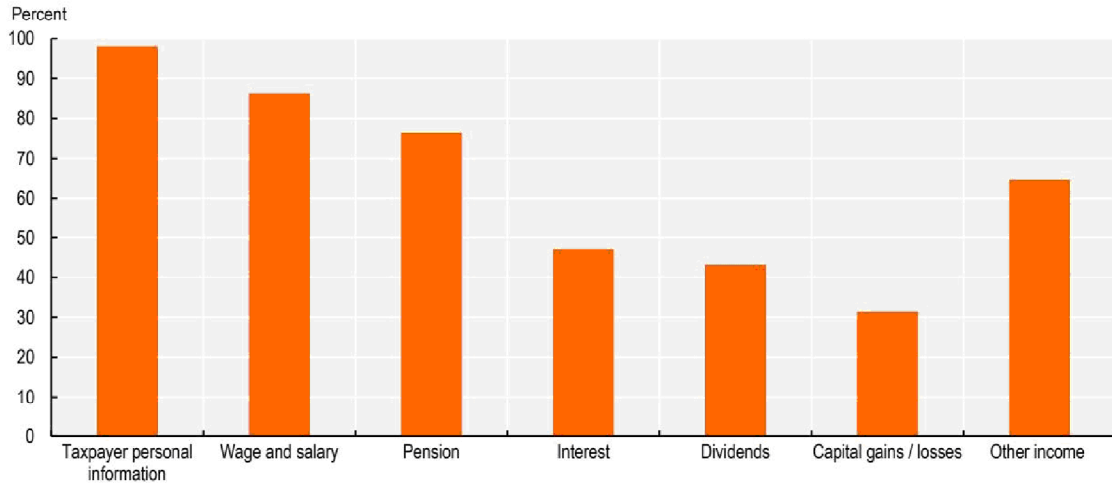
2018	2019	2020	2021	Difference in percentage points (2018-2021)
77.6	79.3	82.8	87.9	+10.3

Source: Table A.79.

Advocates of pre-filing initially encouraged its use with individual tax regimes that allowed relatively few deductions and credits, and where they could be verified with third party data sources. Advances in rules-based technologies, information-reporting requirements and the application of data science techniques mean that the approach can now be considered more widely. For example, survey responses show that in many jurisdictions PIT returns are pre-filled with different income information and deductible expenses such as donations, school and university fees and insurance premiums (see Figures 4.1. and 4.2.).

**Figure 4.1. Categories of third-party income information used to pre-fill PIT returns or assessments, 2021**

As a percent of administrations that pre-fill PIT returns

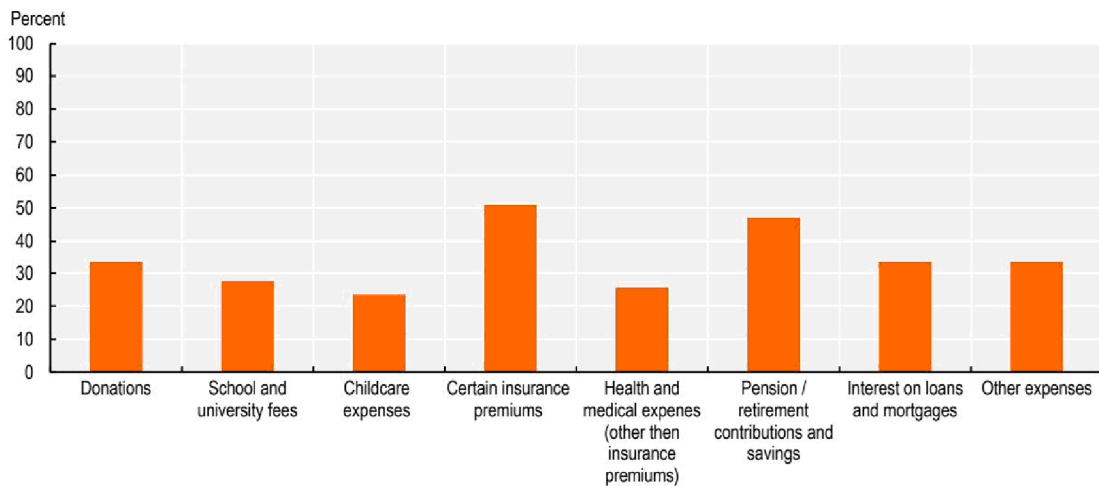


Sources: Tables A.79 and A.80.

StatLink  <https://stat.link/wexpa2>

**Figure 4.2. Categories of tax deductible expenses used to pre-fill PIT returns or assessments, 2021**

As a percent of administrations that pre-fill PIT returns



Source: Table A.81.

StatLink  <https://stat.link/sjkdtx>



In a growing number of jurisdictions, this concept now goes as far as totally pre-filling PIT returns, which the taxpayer then has to either agree (which may be by deemed agreement after a certain period of elapsed time) or provide further information which may lead to an upwards or downwards adjustment (see Table A.84.). In their most advanced form, complete pre-filled returns are being generated for large proportions of the individual tax base. In addition, the availability of technology solutions and approaches, such as electronic invoicing systems, allows tax administrations to start to go beyond PIT returns and pre-fill corporate income tax (CIT) and value-added tax (VAT) returns (see Tables A.82. and A.86.).

The latest pre-filling developments in some jurisdictions are described in Box 4.2.

### **Box 4.2. Examples – Pre-filling**

#### **Australia – Enhanced prefill**

In 2022, the Australian Taxation Office (ATO) introduced enhanced prefill to the individual tax return. Whilst the ATO has pre-filled returns for more than 20 years there was a taxpayer behaviour of deleting or changing the prefill information requiring compliance follow up with clients after the return was lodged to resolve the discrepancy. The ATO has piloted the use of its current risk models to prevent taxpayers from changing pre-filled Bank Interest information at lodgement unless the client can provide evidence why the amount should change. This has resulted in a 74% decrease in compliance activities after lodgement compared to the previous year. The ATO plans on expanding this approach over the coming years.

See Annex 4.A. for supporting material.

#### **Czech Republic – Real Estate Tax prefilling**

In 2021, the Czech Tax Office introduced the „MOJE daně“ (“My Taxes”) project which delivered a significant step forward in the simplification and extension of electronic services available for taxpayers. The efforts to make tax return filing even easier have continued and, in 2022, this led to a significant advance in the area of real estate tax.

Taxpayers are required to report real estate on their tax return when there are any changes such as purchasing or selling a property. However, the tax return must contain all information about all properties owned by the taxpayer and not just the one where there is a change. Now if the taxpayer uses the “My Taxes” portal, they can have a pre-filled tax return using the data from the previous period.

Another online service which taxpayers can make use of is a cross checking of the data filled in on the tax return with data from the Register of Real Estate. This tool can check for example whether a plot area or a size of share in case of joint ownership declared in tax return is the same as in the Register of Real Estate.

#### **Mexico – Pre-filling of business tax returns**

In 2004, the Mexican Tax Administration Service (SAT) established the legal framework for the CFD (acronym in Spanish for Digital Fiscal Receipt). Later, in 2010, a new invoicing scheme was introduced: the CFDI (acronym in Spanish for Digital Fiscal Receipt through Internet), which requires invoices to be sent via the internet to PACs (Authorized Certification Providers acronym in Spanish) - who are entities authorised by SAT -, for validation prior to being received within SAT’s infrastructure. CFDI replaced paper invoices, and by 2014, their use became mandatory for electronic accounting throughout Mexico. Nowadays, CFDI are utilised in 100% of economic transactions. The information derived from CFDI undergoes analysis and automatically populates the taxpayer’s tax return for the corresponding period. To ensure accuracy, taxpayers have the option to review and modify the statement via the services provided on the tax administration portal. The implementation of this system yielded significant benefits.



The declared tax base has seen a substantial increase of 150%. Moreover, between 2010 and 2016, it effectively reduced tax evasion from 35.7% to 16.1%. Furthermore, there has been a noteworthy rise in general tax revenue and social security contributions, achieving a 95% increase in revenue compared to the tax period of 2010. Notably, smaller companies are now obliged to utilise electronic invoicing, meaning micro-enterprises are entering the formal economy. This integration grants SAT real-time access to transactional information of registered taxpayers, thereby enhancing the collection and auditing process.

#### **Netherlands – Prefilling profit tax return directly from commercial bookkeeping software**

Self-employed find the process of keeping books and records together with tax return filing difficult and burdensome. This target group of SME's makes more unintended errors in filling out a tax return than the bigger enterprises. To make return filing for the self-employed easier and less labour intensive, the Netherlands Tax Administration started working together with developers of bookkeeping software to build a module which automates the transformation from the digital bookkeeping to a prefilled profit tax return. The module provides wizards in plain language, so transformation is easy to perform. This module makes manual actions unnecessary and reduces unintended errors. The aim of the module is to reduce the administrative burden and stimulate compliance.

The module is based on a standard ledger and can be integrated in the commercial bookkeeping software. The module is offered as a service to all software developers. It checks the numbers on the balance sheet and the profit and loss account and will generate ('prefills') the profit tax return automatically with the help of a wizard.

In 2022, the module has been integrated in two commercial bookkeeping software products and has been used by a few hundred taxpayers. An evaluation has been planned and the results are expected to be presented in the second quarter of 2023.

Sources: Australia (2023), Czech Republic (2023), Mexico (2023) and Netherlands (2023).

As the levels of data available to support pre-filing grows, tax administrations are able to develop predictive techniques that can spot errors that taxpayers make as they finalise their return, and also prevent non-compliance. Examples of this have been included in previous editions. See, for example, Box 4.3. in Tax Administration 2022 (OECD, 2022<sup>[1]</sup>). These can be combined with techniques to prompt action, creating whole new approaches to compliance which are bringing the compliance work 'upstream' into tax administration processes, as Box 4.3. highlights.

#### **Box 4.3. Examples – Preventing non-compliance activity**

##### **Argentina – Warnings prior to non-compliance**

The Argentinian tax administration (AFIP) is rolling out a communication project that aims to provide vulnerable taxpayers with personalised alerts of potential non-compliance across a range of contact channels. When a tax obligation is due, and prior to becoming a fiscal debt, a specific, systematized communicational strategy is planned to help taxpayer comply with their obligations:

- Prior to due date, messages highlight the need to comply with their obligations and the necessary requirements to do so.
- 5 days after the due date an electronic message is sent with a link to access information on the debt, payment options and the consequences of being in arrears.
- 15 days after the due date there is an automatic outgoing telephone call /contact by Chatbot.

- 25 days after the due date there is an outgoing telephone call from an AFIP employee.

### Spain – Predictive model for non-filers

Every year, the Spanish Tax Agency (AEAT) receives a lot of information from different sources related to personal income allocations. Based on this information, and in accordance with current regulations, the set of taxpayers who are required to submit a personal income tax return is determined. Unfortunately, every year, some of these taxpayers do not file the return, leading to a campaign for non-filers, the first step being sending a request to all those taxpayers who have not filed and whose calculated tax amount exceeds a certain threshold.

To improve the efficiency of filing AEAT is implementing an innovative project based on predictive models to identify and contact those taxpayers who are considered most likely not to submit their PIT return on time.

Through this project AEAT aims to:

- Improve taxpayer assistance, through contact during the voluntary filing period, to achieve an increase in the percentage of personal income tax returns filed on time.
- Reduce the number of sanctions and surcharges applied to those taxpayers who do not file a return on time.
- Increase the efficiency of AEAT systems by reducing the amount of non-filers which aims to decrease the number of request to be issued as well as subsequent audit actions.

See Annex 4.A. for supporting material.

Sources: Argentina (2023) and Spain (2023).

## On-time return filing

Even allowing for changes occurring because of pre-filled or no-return regimes, the filing of a tax return is still the principal means by which a tax liability is established and becomes payable. As a result, the on-time filing rate is seen as an effective measure of the health of the tax system as well as the performance of the tax administration itself.

Table 4.4. summarises on-time return filing for those administrations able to supply information by tax type. Apart from CIT, the rates are around 85%. The lower rates for CIT may be explained through more complexity in the corporate income tax system and the preparation of financial statements and year-end reports.

**Table 4.5. Average on-time filing rates (in percent) by tax type, 2018-2021**

Tax type	2018	2019	2020	2021
Personal income tax (37 jurisdictions)	85.6	85.1	85.5	85.5
Corporate income tax (40 jurisdictions)	78.3	79.2	78.2	76.2
Employer withholding (28 jurisdictions)	89.0	88.6	87.1	88.1
Value added tax (42 jurisdictions)	87.1	86.3	86.0	85.7

Note: The table shows the average on-time filing rates for those jurisdictions that were able to provide the information for the years 2018 to 2021. The number of jurisdictions for which data was available is shown in parenthesis.

Source: Tables D.21 and D.22.



Table 4.5. shows the evolution of on-time filing rates. On average, this has remained broadly static between 2014 and 2021, although the underlying data for on-time filing shows significant variation in the evolution of on-time filing rates between jurisdictions. In relation to the recent years 2020 and 2021, this may also be a reflection of the different responses that jurisdictions had to the pandemic. The 2020 report *Tax Administration Responses to COVID-19: Measures Taken to Support Taxpayers* highlighted how some jurisdictions may have required on-time filing, for example to pay out refunds or to provide other government benefits, but allowed delayed payment, while some may have relaxed penalties for late filing (CIAT/IOTA/OECD, 2020<sup>[2]</sup>).

Overall, it is encouraging that despite the impact of the pandemic on-time filing rates remained stable (except for a few jurisdictions, see Tables D.21. and D.22.). It should be noted that the table only takes into account information from jurisdictions that were able to provide data for both years 2014 and 2021, which explains the differences in 2021 averages shown in Tables 4.4. and 4.5.

**Table 4.6. Evolution of on-time filing rates (in percent) between 2014 and 2021 by tax type**

Tax type	2014	2021	Difference in percentage points	No. of jurisdictions with a decreasing on-time filing rate	No. of jurisdictions with an increasing on-time filing rate
Personal income tax (36 jurisdictions)	85.6	86.4	+0.8	13	23
Corporate income tax (36 jurisdictions)	80.0	78.5	-1.5	18	18
Employer withholding (18 jurisdictions)	86.7	89.8	+3.1	11	7
Value added tax (37 jurisdictions)	86.0 (2016)	84.8	-1.2	18	19

Note: The table shows the average on-time filing rates for those jurisdictions that were able to provide the information for the years 2014 and 2021. The number of jurisdictions for which data was available is shown in parenthesis. For VAT, the table compares information for the years 2016 and 2021, as the underlying question was changed with ISORA 2018.

Sources: Tables D.21. and D.22., OECD (2017), *Tax Administration 2017: Comparative Information on OECD and Other Advanced and Emerging Economies*, Table A.6., [https://doi.org/10.1787/tax\\_admin-2017-en](https://doi.org/10.1787/tax_admin-2017-en) and OECD (2019), *Tax Administration 2019: Comparative Information on OECD and Other Advanced and Emerging Economies*, Table D.12., <https://doi.org/10.1787/74d162b6-en>.

#### Box 4.4. Behavioural insight to improve filing

##### Brazil – Improving communications

Simplification can be considered the most basic “nudge” of all: making something simpler and easier to carry out has a very important effect on people deciding to adopt a certain action. However, as common to many tax administrations, communications from the Federal Revenue of Brazil (RFB) to taxpayers use quite a complex language: legal texts, acronyms and jargon, and long paragraphs that cause a great difficulty in understanding.

The need for simple and clear communication is a major challenge for public management, especially when in Brazil according to the last Functional Literacy Indicator Survey (2018), about 30% of Brazilians between 15 and 64 years-old are functionally illiterate and only 12% understand complex texts. In addition, a 2018 report showed only 2% of 15 year-old students in Brazil were top performers in reading, meaning that they can understand lengthy texts and deal with abstract concepts.

In order to face this problem, the Behavioural Economics National Centre (Cecom) developed a Guide (“Simplify in 7 Notes”) with seven basic rules for the use of Plain Language in RFB, each one associated with one of the seven musical notes (as a way of facilitating memorization). Based on this Guide, Cecom has been providing workshops for various teams inside RFB. In these hands-on workshops, each team receives training in Plain Language and reviews their own real communications, making them more

effective in promoting compliance. From what is experienced in the workshop, those that prepare the communication are able to change their mindset, understanding the importance of a more transparent interaction with society.

### **Slovak Republic – Real estate sales: Behaviourally oriented letter campaign**

A significant proportion of property sales produce a high net profit, but with no declared income on the side of a seller. A private individual is obliged to declare income when selling a property within five years from its acquisition. However, based on analysis of data from Slovak Real Estate database, only a third of identified sellers was tax compliant before an intervention. A campaign was developed based on a behavioural experiment focused on improving awareness of real estate sales taxation and the collection of personal income tax.

Letters were sent in 2021, just before the due date for filing tax return for the tax year 2020 and two groups of sellers were identified. First, non-declaring taxpayers who sold a property in 2016 – 2019. These were matched with tax revenue data and classified as “overdue”. Second, potential taxpayers, who sold a property in 2020 and were expected to declare income of this sale in March 2021. A control group was established and those in the test received personalised communication notifying them of the obligation to declare income of real estate sales. Different letter texts were tested to measure the effect of letter itself and also the different approaches.

The results show the rate of declared income increased by 27 percentage points (p.p.) for non-declaring taxpayers and 14 p.p. for potential taxpayers (in comparison with taxpayers with no letter received). The overall impact of the campaign is additional EUR 2.5 million for the state budget and a 16 p.p. increase in the observed tax compliance at minimal costs for the tax administration. This approach will continue in future years.

See Annex 4.A. for supporting material.

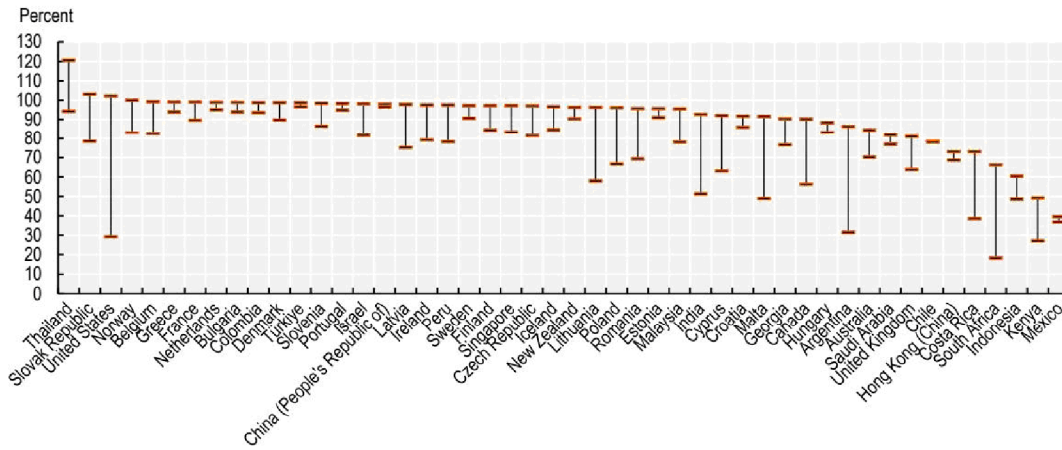
Source: Brazil (2023) and Slovak Republic (2023).

The variation of on-time filing rates by jurisdiction are also visible in Figure 4.3. which shows the range of on-time filing rates across major tax types. For a number of jurisdictions this range is significant.

Given the impact on compliance rates, many tax administrations are turning to behavioural insight techniques to try and encourage more timely and accurate filing. This is seeing promising results, with tax administrations reporting that ‘nudges’ at key points in the filing process can increase the timeliness of filing. Not only is this improving compliance rates but it is also freeing up resources that can be used elsewhere.



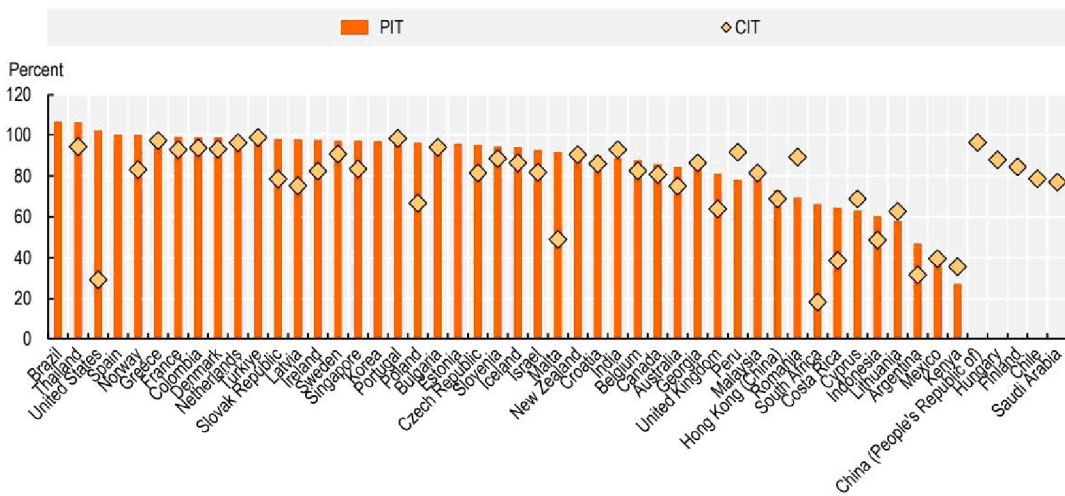
Figure 4.3. Range in on-time filing performance across major tax types, 2021



Note: On-time filing performance is expressed as a percentage of returns expected and can therefore be above 100%. The figure shows for each jurisdiction the range in on-time filing performances in 2021 across the four tax types: PIT, CIT, Employer WHT and VAT (where applicable). It only includes jurisdictions for which information was available for at least two tax types.  
Sources: Tables D.21. and D.22.

StatLink <https://stat.link/atox6y>

Figure 4.4. PIT and CIT on-time filing rates, 2021



Note: On-time filing performance is expressed as a percentage of returns expected and can therefore be above 100%.  
Source: Table D.21.

StatLink <https://stat.link/f3muc8>

## On-time payment

Payment of tax constitutes one of the most common interactions between taxpayers and tax administrations, especially for businesses that are typically required to regularly remit a variety of payments covering both their own tax liabilities and those of their employees. Administrations continue to make progress in increasing the range of e-payment options available to taxpayers and to increase their use. This progress not only lowers the cost to the administration, it can also increase on-time payments and reduce the number of payment arrears cases by providing improved access and a better payment experience. One significant development is the growth of payment facilities being built into the natural systems of taxpayers. This is making payment more seamless for taxpayers as they can use their existing banking or accounting software to make payments.

**Table 4.7. Average on-time payment rates (in percent) by tax type, 2018-2021**

Tax type	2018	2019	2020	2021
Personal income tax (30 jurisdictions)	81.5	81.2	81.0	77.2
Corporate income tax (33 jurisdictions)	84.6	85.1	82.5	83.5
Employer withholding (29 jurisdictions)	94.5	94.3	91.6	91.4
Value added tax (33 jurisdictions)	87.9	88.0	87.0	86.9

Note: The table shows the average on-time payment rates for those jurisdictions that were able to provide the information for the years 2018 to 2021. The number of jurisdictions for which data was available is shown in parenthesis.

Source: Tables D.30 and D.31.

On-time payment rates for those administrations able to supply information by tax type are summarised in Tables 4.6. and 4.7. Table 4.6 shows that in 2020 and 2021 on-time payment rates have fallen when compared with years 2018 and 2019. The range of on-time payment depicted in Figure 4.5. shows a significant gap in on-time payment across the main tax types for a number of jurisdictions, in some cases above 50 percentage points.

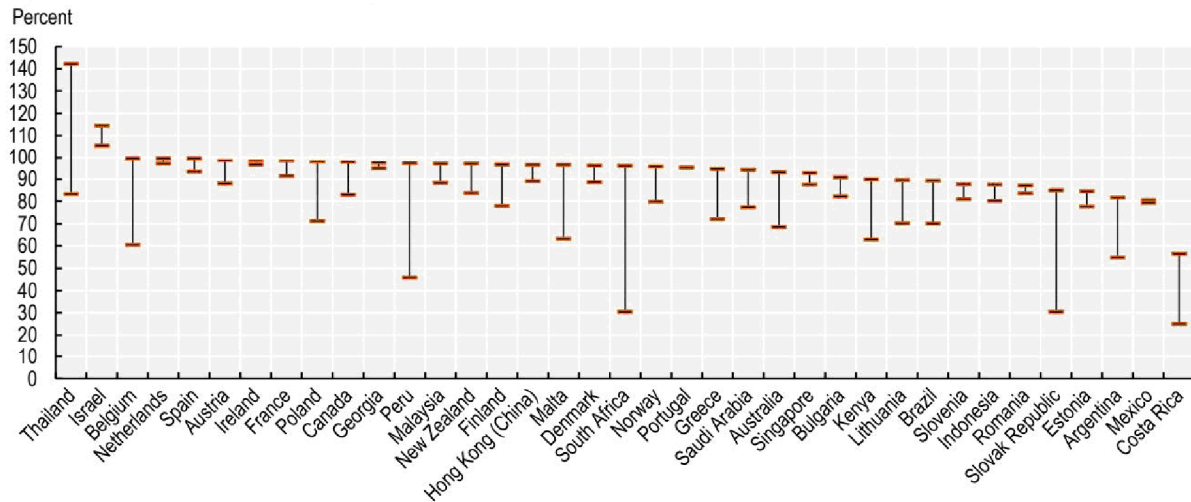
This reduction in on-time payment rates is almost certainly an impact of the pandemic, reflecting the cash flow challenges businesses and individuals may have had. It may also reflect the numerous easements some tax administrations gave on payment timeliness to assist with the challenges of the pandemic, for example where taxpayers may have been required to file on time but had longer time to pay.

**Table 4.8. Evolution of on-time payment rates (in percent) between 2014 and 2021 by tax type**

Tax type	2014	2021	Difference in percentage points	No. of jurisdictions with a <b>decreasing</b> on-time payment rate	No. of jurisdictions with an <b>increasing</b> on-time payment rate
Personal income tax (16 jurisdictions)	80.7	80.3	-0.4	9	7
Corporate income tax (16 jurisdictions)	90.1	86.9	-3.2	8	8
Employer withholding (13 jurisdictions)	92.8	93.4	+0.6	5	8
Value added tax (18 jurisdictions)	88.8	88.7	-0.1	8	10


Note: The table shows the average on-time filing rates for those jurisdictions that were able to provide the information for the years 2014 and 2021. The number of jurisdictions for which data was available is shown in parenthesis. Data for Costa Rica has been excluded from the calculations as it would distort the average ratios.

Sources: Tables D.30 and D.31, and OECD (2017), *Tax Administration 2017: Comparative Information on OECD and Other Advanced and Emerging Economies*, Table A.9, [https://doi.org/10.1787/tax\\_admin-2017-en](https://doi.org/10.1787/tax_admin-2017-en).

**Figure 4.5. Range in on-time payment performance, 2021**

Note: On-time payments are expressed as a percentage of estimated payments expected by due date and can therefore be above 100%. The figure shows for each jurisdiction the range in on-time payment performances in 2020 across the four tax types: PIT, CIT, Employer WHT and VAT (where applicable). It only includes jurisdictions for which information was available for at least two tax types.

Source: Tables D.30. and D.31.

StatLink  <https://stat.link/8ezaoq>

Future editions of this report will continue to track these trends, and recovering and increasing on-time payment rates should remain an area of focus for administrations given the amounts of revenue involved. This is why some tax administrations report investing resources in this area, to make payments easier and more in real time as can be seen in the example in Box 4.5.

#### Box 4.5. United Kingdom - VAT Split Payments

The UK Government has announced its intention to further explore the concept of VAT Split Payment, an alternative method of VAT collection which would involve the tax element of a digital payment being taken out and paid directly to His Majesty's Revenue and Customs (HMRC).

Modernising tax collection in this way would tackle the issue of lost tax revenue resulting from overseas traders' VAT non-compliance. Losses happen where online sellers do not account to HMRC for VAT due on the sales of goods or services to UK consumers, which also allows them to undercut and place VAT compliant sellers at a disadvantage.

HMRC has already worked with academia and FinTech collaborators on a payment data carriage technique that does not rely on payment messaging standards. This could allow new data about a payment intervention to be transmitted to a tax authority (for taxpayer reconciliation purposes) outside of existing payments processing channels.

Going forward, HMRC intends using the payments sector and FinTech companies to seek to prove the conceptual viability of taking VAT from a payment in real-time before the money leaves the UK's authority, whilst remaining within the rules set by various payment networks. This paves the way for real-time tax collection, reducing the need for extra administration.

The ambition is to tackle the tax gap driven by overseas non-compliance and ensure more fairness for VAT compliant sellers.

Source: United Kingdom (2023).



## Refunds and credits

Given the underlying design of the major taxes administered (i.e. PIT, CIT and VAT), some element of over-payment by a proportion of taxpayers is unavoidable. Excess tax payments represent a cost to taxpayers in terms of “the opportunity cost”, which is particularly critical to businesses that are operating with tight margins where cash flow is paramount. Any delays in refunding legitimately overpaid taxes may therefore result in significant “costs” to taxpayers.

Table 4.8. shows the different treatment of VAT refunds, and highlights that the majority of administrations pay out refunds immediately. This is helpful to business but tax administrations need to continue to be cognisant of fraud risks. Tax regimes with a high incidence of tax refunds are particularly attractive to fraudsters (especially via organised criminal attacks) necessitating effective risk-based approaches for identifying potentially fraudulent refund claims.

During the COVID-19 crisis, the importance of paying out refunds quickly was a key issue for many governments, as a significant number of taxpayers were facing severe cash-flow problems. Tax administrations responded to this by prioritising refund applications or adapting refund processes, in some cases fully automating them. (CIAT/IOTA/OECD, 2020<sup>[2]</sup>)

**Table 4.9. Treatment of VAT refunds, 2021**

Percent of jurisdictions were ...			
VAT refunds are automatically paid out immediately	VAT refunds are paid out immediately subject to the availability of funds	VAT refund are established as a 'credit' in the taxpayer's account, until such time as the taxpayer may legally request the refund	VAT refund are established as a 'credit' in the taxpayer's account, until such time as the taxpayer may legally request the refund, subject to the availability of funds
60	5	35	0

Source: Table A.53.

The learning from both the pandemic and previous approaches is now being combined with advances in technology, and the growth of data science to provide tax administrations with new options to mitigate risks and simplify processes. This can lead to reduced administrative and compliance burdens, and the creation of new innovative approaches which can be seen in Box 4.6.

### Box 4.6. Netherlands - Selection model for VAT refunds

Refunding VAT is a large process within the Netherlands Tax Administration (NTA). Annually some 2.5 million requests for a VAT refund are submitted. Resource restrictions do not permit manual inspection of this large flow. Even a quick manual scan is practically impossible with this amount of requests.

In 2015, the NTA started to build software that is able to make a selection for manual inspection. The software supports the review of this vast amount of VAT refunds to a significant extent, and simultaneously doubles the effectiveness of the selection, according to an investigation published by the Netherlands Court of Audit in 2019. The software implements business rules as well as several (relatively) simple statistical procedures. Both these rules and statistical procedures were developed in close cooperation with experts from the shop floor. The software includes a Workflow Management System to assist the manual inspection by auditors. A component is included as well that blocks payments for the duration of the inspection.

The latest developments include a focus on clarity of explanation, modernising the selection process, an extension of the software to include foreign businesses that request a VAT refund in the Netherlands, and a tour around the country to collect fresh ideas for improvements from the end-users.

Source: Netherlands (2023).



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## Annex 4.A. Links to supporting material (accessed on 26 May 2023)

- Box 4.1. – Hungary: Link to a video providing more detail on the Flat Rate Tax Wizard Web Application: <https://youtu.be/hSaKYhponBY>
- Box 4.2. – Australia: Link to further information on the enhanced prefill solution: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.4.2-australia-enhanced-prefill.pdf>
- Box 4.3. – Spain: Link to a presentation on the predictive model for non-filers: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.4.3-spain-predictive-model-for-non-filers.pdf>
- Box 4.4. – Slovak Republic: Link to further information on the behavioural insights letter campaign: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.4.4-slovak-republic-real-estate-letters.pdf>

# 5 Services

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This chapter examines how tax administrations' compliance goals are met by providing effective and efficient services to taxpayers, increasingly through technology.

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## Introduction

A core part of supporting taxpayer compliance is the provision of a wide range effective and easy to use services to taxpayers such as specific guidance, appropriate prompts or calculation tools. Tax administrations report that their investment in services is growing, with a focus on providing services that are more relevant to the taxpayer's individual circumstances.

This increased range of services is helping facilitate the drive towards self-service, on a real-time and 24/7 basis. In addition, tax administrations are reporting a rapid growth in the use of technology to transform their operational models. The use of advanced techniques in artificial intelligence, machine learning and machine to machine links are opening up new service options for tax administrations that allow more 'compliance-by-design' style approaches to be made possible. This is a growing trend that is expected to accelerate as tax administrations continue to unlock the power of digital transformation. Box 5.1. provides an example of digital transformation allowing the introduction of new services and access channels.

### Box 5.1. Italy – Enhancing taxpayer assistance

Within the innovation framework of the Italian Public Administration, the topic of improving the digital services delivered to citizens plays a central role. The possibility of offering customised, reliable, and easy-to-use services represents a strategic objective of primary importance in the modernisation and digitalisation of the national administration.

All this was achieved thanks to the migration process to Customer Relationship Management, where the Italian Revenue Agency embarked on a digital transformation journey. This aimed at updating the technological tools used to manage requests for assistance and to ensure a greater effectiveness in supporting taxpayers who require assistance or information. Several online services and access channels have been implemented to:

- Manage assistance to taxpayers through different channels (telephone, web mail, SMS);
- Carry out surveys to measure user satisfaction at the end of the service subject of monitoring; and
- Manage surveys, synthetic or analytical, to find out citizen satisfaction in the specific service.

See Annex 5.A. for supporting material.

Source: Italy (2023).

## Taxpayer insights

This growth in the use of technology and more personalised services has seen tax administrations focus more on the experience of taxpayers in using these services. This has also led to taxpayer centred service improvements which help improve outcomes for administrations and taxpayers alike. Box 5.2. below contains examples of taxpayer feedback being used to drive service improvements.

Service improvements have often been supported by the use of behavioural insights. Behavioural insights is an interdisciplinary field of research using principles from the behavioural sciences such as psychology, neuroscience, and behavioural economics to understand how individuals absorb, process, and react to information. These principles can be used to design practical policies and interventions based on human behaviour. This can be particularly powerful when combined with insights gathered from the analysis of



the increasingly large volumes of data available to tax administration, both internally and externally generated.

Previous editions of this series have seen an increasing number of tax administrations report employing behavioural researchers and using behavioural insights in specific areas to influence voluntary compliance. This trend has continued with three-quarters of administrations reporting the use of behavioural insight methodologies or techniques in 2021 (see Chapter 6, Figure 6.1.). The 2021 report from the OECD's Forum on Tax Administration Behavioural Insight Community of Interest also contains many examples of this in practice (OECD, 2021<sup>[11]</sup>).

### Box 5.2. Examples – Taxpayer insights

#### Australia – Deliberate choice behavioural insights letters

In 2022, the Australian Taxation Office (ATO) undertook research to better understand why taxpayers did not resolve their outstanding obligations after receiving reminder letters from the ATO. The ATO conducted two randomised controlled trials (RCT) to test the impact on compliance rates of:

- combining outstanding lodgement and debt reminder letters – a first for the ATO which usually sends separate lodgement and debt letters, and
- using behavioural levers that put responsibility for acting on the client, such as: the surveillance effect, social norms, salient consequences, and enablement messaging.

The ATO found that:

- combining lodgement and debt reminders did not conclusively impact on client's total debt positions but did significantly increase payment plan outcome rates, and
- using behavioural levers improved lodgement compliance rates compared with a softer control letter, and provided similar rates compared with a firmer legal warning control letter.

These results enable the ATO to quantify the value proposition of updating their letter suite to include behavioural levers, payment reminders and promotion of payment self-service channels.

The ATO were also able to leverage the underlying robust RCT datasets to understand the characteristics and traits of sub-populations which respond more, or less favourably to treatment, such as: Does having a tax agent influence the outcome? This enhanced understanding is then fed in as actionable insights into the development of future tailored strategies to re-engage clients with the tax and super systems.

#### Brazil – Improving fiscal citizenship

The Receita Federal do Brasil (RFB) identified that they needed to invest in programmes that make taxpayers aware of the economic importance of taxes and how taxes provide the resources needed to support public services.

To measure the success of this, the RFB defined an indicator to measure how the Fiscal Citizenship activities affect people's perceptions of taxation. This is done through the analysis of comments made by citizens on the RFB's social networks, where each activity is classified according to whether there was a positive, neutral, or negative comment. This allows the RFB's team of Fiscal Citizenship representatives to identify whether the programme addresses issues that are important to citizens.

### **Georgia – Feedback mechanism**

The Georgia Revenue Service's 2021-2024 strategy document and 2022 action plan commits it to providing taxpayers with an easy access to electronic services accompanied by a feedback system, through which users will be able to share their opinions and experience of using such services.

Therefore, from 2021, users had an opportunity to evaluate the services/information received through the website, contact centre, electronic chat, emails, web portals and so on. As a result, in 2022, the average monthly pieces of feedback received from taxpayers was 1 644, which suggests that taxpayers are active in the feedback system.

This feedback has been used to deliver changes, with for example, English-speaking employees being added to the chat function and call centre, as well as changing the topics available for discussion on the chat function. This has led to increased satisfaction rates amongst users of these functions, rising to 95% by the end of 2022 (from 45% in March 2022). Thanks to this success further departments will be included within the feedback function.

### **Italy – Improving the delivery of services to taxpayers**

Customer Satisfaction (CS) surveys are a fundamental component of the Italian Revenue Agency's "Citizen Voice System" used to determine how well the services, initiatives and tools provided fulfil users' needs.

Qualitative research in the field of CS (focus groups, interviews) can measure not only citizen satisfaction but also test the requirements of a new service. This can identify usability issues in the testing phase and help create a "tailor-made" design in the development of new services.

In particular, the Revenue Agency conducts both in-depth surveys tracing the user experience for the most critical services and a lighter form of survey (CS light) to survey the customer satisfaction on a larger number of services. The latter enables the process owner to identify areas of taxpayer dissatisfaction, intervening promptly with improvement actions and undertaking more detailed analyses to retrace the user 'journey' through the service.

CS light, with few but essential questions, is accessible to the user via a link available at the end of the service. This employs a five-point scale and the possibility for the user to insert comments/considerations against the selection of the extreme values of the scale. In addition to the overall satisfaction level, two of the reference indicators for comparing the usability of services are used: the Customer Effort Score and the Net Promoter Score. In addition, a survey dashboard allows a greater autonomy in the management of CS survey campaigns on the services identified. In this way, a continuous CS Feedback Survey is achieved, where the return data complement the other elements of the Citizen Voice System (Complaints monitoring and the Service Charter).

See Annex 5.A. for supporting material.

### **New Zealand – IR Connection Panel**

During Inland Revenue's (IR) business transformation to deliver a modern, digital revenue system that makes tax and payments easier for customers, the business question moved from "Should the customer voice be embedded into decision-making?" to, "How can it be done faster and better?". In October 2021, IR's first in-house customer research panel – 'IR Connection' was launched. It enables flexible and timely engagement with customers, giving IR deeper insights into customer experiences, motivations, and emotions. Customer feedback is available in real-time and supports informed and agile decision-making.

A 7 000 strong community has taken the opportunity to contribute to the development of IR's strategies, policies, products and services. 'IR Connection' provides representation across IR's core customer



segments and products, and also allows IR to identify and connect with traditionally hard-to-reach customers, such as new migrants and those living with disability. The community is designed to be inclusive and diverse, with branding in multiple languages to acknowledge the majority of New Zealand's unique communities.

Since its launch, 'IR Connection' has contributed to various initiatives in the organisation, including communication testing for annual tax assessments, concept testing of products and services and gathering insights for a policy review.

'IR Connection' is a genuine way to bring the customer voice into decision-making at IR and it exemplifies the organisation's commitment to being intelligence-led and customer-centric. As it continues to provide insights, IR will be better-positioned to deliver seamless, customer-focused services and solutions that enhance voluntary compliance.

### **Spain – Assistance portal improvements**

The Portal for Integral Assistance to Taxpayers, PACO, (Portal de Asistencia al Contribuyente) is a new programme that brings together guidance and support materials across all functional areas and puts them at the disposal of the officials delivering assistance to taxpayers. The programme allows an easy search of contents to help tax officials give an answer to a specific taxpayer's need, either digital, by phone or onsite, and it is designed to enable continuous updating.

An important part of PACO is the feedback and support mechanism which is at the bottom of every page. Three icons guide this:

- A question mark opens a window for tax officials to send suggestions on improvements or inform on mistakes.
- A "plus or minus show" button allows access to all the information for a functionality or a restricted version with only the most relevant information.
- A 'PACO' button leads to a new window with a summary of useful data for the assistance to a specific taxpayer and informative contents on taxes and other subjects such as PIT, VAT, registration, phone assistance, notifications, legal framework and rulings, frequently asked questions and taxpayer areas. Each section centralises the main information and assistance tools on the subject to facilitate the delivery of the service by tax officials.

See Annex 5.A. for further information.

### **Türkiye – Applying behavioural insight**

The Turkish Revenue Administration has reviewed and evaluated all practices and services to taxpayers across the administration to consider how a behavioural public policy approach can be applied to increase tax awareness and voluntary compliance of taxpayers. This has led to a programme of medium and long-term behavioural public policies, supported by experimental studies. This has required the establishment of a Behavioural Public Policy Development and Implementation section, which is a team of 141 people, established from 17 departments at the headquarters and 30 tax office directorates in the provinces. Studies include:

- Raising awareness of the Pre-Filled Return Filing System; and
- Increasing payment of Motor Vehicle Tax Debt.

For details of the methodologies used, and the results of these studies, see Annex 5.A.

Sources: Australia (2023), Brazil (2023), Georgia (2023), Italy (2023), New Zealand (2023), Spain (2023) and Türkiye (2023).



## Managing service demand

An important aspect of meeting taxpayer preferences is getting the mix of channels right. Such strategies of course need to be based on good measurement and understanding of demands and constraints. Table 5.1. highlights the shift to digital that occurred since the pandemic, with use of online channels continuing to grow significantly. The rapid decline of in-person visits to the tax office persisted during 2021, while the use of paper correspondence went back to pre-pandemic volumes. Digital assistance, for example through chatbots, has become an important channel in many jurisdictions. The data hints at a structural shift away from costly and time-consuming in-person visits to online interactions.

**Table 5.1. Evolution of service demand by channel between 2018 and 2021**

Channel type		No. of jurisdictions providing data	2018	2019	2020	2021
Online via taxpayer account	Number	31	1 130 253 409	1 310 985 136	1 731 456 863	2 292 638 417
	Previous year change in %			+16.0	+32.1	+32.4
Telephone call	Number	52	328 816 038	314 207 157	333 302 424	366 456 409
	Previous year change in %			-4.4	+6.1	+9.9
In-person	Number	35	109 620 990	109 052 857	48 699 279	41 594 555
	Previous year change in %			-0.5	-55.3	-14.6
Mail / post	Number	19	35 045 875	35 167 199	31 998 546	35 602 576
	Previous year change in %			+0.3	-9.0	+11.3
E-mail	Number	29	11 996 438	13 396 755	18 533 129	20 297 619
	Previous year change in %			+11.7	+38.3	+9.5
Digital assistance	Number	28	11 071 830	21 405 307	30 933 041	53 271 347
	Previous year change in %			+93.3	+44.5	+72.2

Note: The table only includes jurisdictions for which data was available for 2018 to 2021.

Sources: Tables A.76. to A.78.

### Supporting self-service

The self-service offering from tax administrations continues to grow, with an expanding range of self-services being provided. Common examples of this include the ability to register, file and pay on-line, along with a range of interactive tools. This is leading to efficiency gains in tax administrations, as well as being able to provide a more 24/7-style service to taxpayers. A number of tax administrations are also applying artificial intelligence techniques to the large amounts of data that is collected through these services to help develop them further to better meet taxpayers' needs.

#### Box 5.3. Examples – Enhancing self-service

##### Canada – The 'Progress Tracker'

The 'Progress Tracker' is a new digital service, available within secure portals (My Account and My Business Account), that provides clients with a convenient self-service option to track the status of files submitted to the Canada Revenue Agency (CRA) for processing. It also provides users with a target completion date of their requests, as well as e-notifications when the status of their file changes.

The 'Progress Tracker' service was successfully implemented in February 2022 into My Account with the first group of on-boarders:

- The disability tax credit,
- Appeals covering (digital) individuals' notices of objections and requests for taxpayer relief on penalties and interest, and
- The taxpayer services agent desktop for individuals service for contact centre agents.

The May 2022 release made the 'Progress Tracker' service available to users in the My Business Account portal with the second group of on-boarders:

- Charities' services: application and return, and
- Appeals services submitted by paper for formal disputes and taxpayer relief.

Subsequent releases have expanded this further to cover additional business' appeals services, and corporation tax initial assessment and adjustments. The CRA will continue to add additional options for individuals, businesses and representatives in subsequent systems releases.

### **Japan – Enhanced payments service**

The Japanese National Tax Agency (NTA) is striving to make things easier for taxpayers by introducing various measures for national tax payments, and is promoting cashless payments and co-operating with financial institutions and other related entities to deliver new services. These include for cashless payments:

- Transfer tax payment: A tax payment procedure whereby tax amounts are automatically debited from a bank account or savings account.
- Direct type online payment of national tax: A tax payment procedure whereby tax amounts are debited from a designated bank account via a simple operation after using the "filing through online (e-Tax)" portal.
- Online tax payment using internet banking, or ATMs.
- Payment with credit card: A tax payment procedure whereby the required information from a taxpayer's credit card is entered on a dedicated website.
- Payment with smartphone application: A tax payment procedure involving the use of a smartphone application payment service on a dedicated website.

For those who want to pay by cash, tax payments can be made at the counters of financial institutions and tax offices via tax payment slips, or via convenience stores with tax payment slips or 2D barcodes.

See Annex 5.A. for further details.

### **Netherlands – Prefilled digital payment service**

The Netherlands Tax Administration (NTA) experience is that taxpayers make all kinds of accidental mistakes in tax payments. The amount due, the bank account number and the payment reference easily lead to unintended errors in the Netherlands. Furthermore, the process of the payment itself is labour intensive for SME's and results in many cases in late payment with default penalties. The NTA has to put effort into correcting these unintended errors as well. Addressing this issue will lead to substantial reduction of burden in administrative processes for both parties.

In 2018, the NTA started a pilot that enables prefilled digital online payments for SME's. In the pilot phase the service was offered to 4 software developers. The service prefills the amount due; the bank account number and payment reference. Due to the use of this service the error rate made in payments has been reduced from 4% to 0%. The percentage of late payments has been reduced from 8% to 5%.

A survey of users has shown that 99% found paying with the service much easier, giving the service a grade of 9.2 (scale 1-10). This service has proven to enhance compliance due to its easy-of-use. The



ambition for the near future is to provide the prefilled digital payment service for all tax types. Also, the NTA is promoting the use of the payment service to a wider number of software developers.

### United Kingdom – Open banking technology

In March 2021, His Majesty's Revenue and Customs (HMRC) became a leader in implementing a bank transfer payment journey using open banking technology via a Payment Initiation Services Provider (PISP).

PISP provides customers with a way of paying most taxes directly from their bank account to HMRC in a few clicks, using prepopulated payment information meaning payments are not misallocated.

Since its launch, 4.4 million payments (GBP 12 billion) have been submitted via PISP with volumes increasing exponentially (50%) in the 12 months to January 2023. This has led to a significant drop in customer errors and subsequent follow-up contact. In February 2022, the service was extended to users of HMRC's mobile phone app, which has taken GBP 200 million in payments, including the largest single payment into HMRC of GBP 9 million in January 2023, via the HMRC app.

Enabling customers to use preferred, and familiar, biometric authentication methods such as fingerprint and face recognition is proving popular, with QR codes scanned 600 000 times in 12 months. The QR code option has been developed for customers logged into their online accounts, allowing people to begin payment on a personal computer and complete it securely and seamlessly on a mobile phone.

During 2023, HMRC will introduce functionality enabling customers logged into their online accounts to set a payment to be made on a future date, helping them to manage their tax responsibilities more efficiently.

Sources: Canada (2023), Japan (2023), Netherlands (2023) and United Kingdom (2023).

### Virtual assistants

The previous editions of this series highlighted how a growing number of administrations are using virtual or digital assistants to help respond to taxpayer enquiries and support self-service. As Table 5.2. shows the growth has been significant and these services are now commonly used by many administrations.

**Table 5.2. Evolution of use of virtual assistants, artificial intelligence and application programming interfaces between 2018 and 2021**

Percent of administrations that use this technology

Status of implementation and use	Virtual assistants (e.g. chatbots)			Artificial intelligence (AI), including machine learning			Application programming interfaces (APIs)		
	2018	2021	Difference in percentage points (p.p.)	2018	2021	Difference in p.p.	2018	2021	Difference in p.p.
Technology is implemented and used	34.5	63.8	+29.3	31.6	54.4	+22.8	79.0	93.0	+14.0
Technology is in the implementation phase for future use	13.8	12.1	-1.7	15.8	28.1	+12.3	7.0	5.3	-1.7
Technology is not used, incl. situations where the implementation has not started	51.7	24.1	-27.6	52.6	17.5	-35.1	14.0	1.7	-12.3

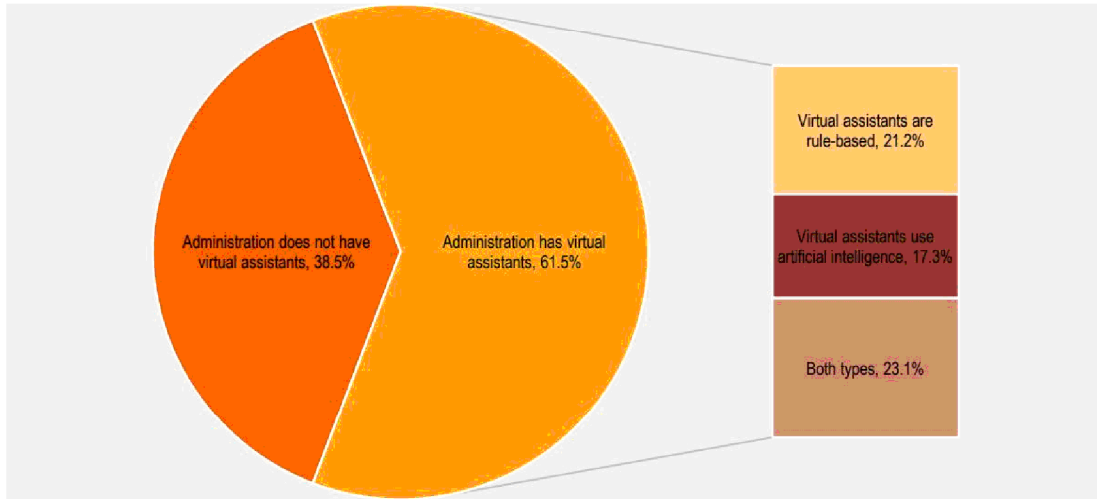
Sources: Tables A.91. to A.93.



The success of these services are now being developed further with jurisdictions investigating how they use advances in artificial intelligence (AI) to deliver more sophisticated levels of support. Figure 5.1 shows that 40% of administrations who have a virtual assistant are using AI in some form to improve the service. This can allow the system to cope with more complex questions being asked by taxpayers and/or more personalised answers being given. This is part of the wider trend of the use of AI in tax administration which can be seen throughout this report.


**Figure 5.1. Type of virtual assistants, 2022**

Percent of administrations



Note: The figure is based on ITTI data from 52 jurisdictions that are covered in this report and that have completed the global survey on digitalisation.

Source: OECD et al. (2023), Inventory of Tax Technology Initiatives, <https://www.oecd.org/tax/forum-on-tax-administration/tax-technology-tools-and-digital-solutions/>, Table TT5 (accessed on 22 May 2023).

StatLink  <https://stat.link/wd90xb>

### Box 5.4. Examples – Virtual assistants

#### Portugal – Enhanced virtual assistant

The Portuguese Tax and Customs Authority's (AT's) virtual assistant 'cATia', available 24/7 on the AT website and social media channels, provides individual taxpayers with answers to the most frequently asked questions, using simple and clear language. On working days, from 9am to 7pm, it is supported by live agents.

One of the advantages of 'cATia' is that, while maintaining users' data privacy and security, it enables AT to channel contacts from face to face and phone services to an automated response service, allowing the standardisation of responses between the different social media platforms. It also allows interactions between the chatbot and social media.

The planned development of the virtual assistant will add speech recognition to the chatbot, enabling voice-bot conversation, and making it available on other social media platforms.

### **United States – Chatbot**

Chatbots, which have handled 2 million chats for collection in the past 6 years, are currently available in both English and Spanish on the Internal Revenue Service (IRS) web page. The chatbots provide taxpayers with self-service options to resolve their Collection notice without calling the IRS. Services offered include information about making a payment, notice clarification and responses to frequently asked questions, with the option to escalate to a live assistor.

The IRS also offers Collection voice bots, which have handled 8.2 million calls in the past 12 months, in both English and Spanish, for taxpayers calling into the Automated Collection System (ACS) and Accounts Management toll-free lines that allow them to use natural language to speak with a bot in a simplified simulation rather than using menu prompts. Voice bots were an important factor in the IRS being able to answer 30% more calls in ACS last fiscal year. Eligible taxpayers can authenticate their identity in a few short steps to receive options to resolve their accounts, such as setting up a payment plan, obtaining a payoff amount, and receiving account transaction information. Additionally, taxpayers can receive unauthenticated services that provide taxpayers with information about making a payment, notice clarification and responses to frequently asked questions.

Taxpayers authenticate their identity by providing their Social Security Number, date of birth, and the caller ID number contained on their collection notice. The taxpayer is then prompted to create a Personal Identification Number that is used to navigate the process.

Sources: Portugal (2023) and United States (2023).

### **Mobile applications**

The recent trend for the increasing use of mobile applications by tax administrations seen in other editions of this series has continued. Mobile applications allow taxpayers to access services on the go and thus provide additional flexibility and support self-service.

While the main use often remains the provision of information and guidance, mobile applications are becoming increasingly transactional, and are becoming a primary way for taxpayers to access relevant records and personal tax accounts, communicate with the tax administration, supply information and tax returns and make payments. Box 5.5. provides latest developments in this area.

#### **Box 5.5. Examples – Mobile applications**

##### **Argentina – Biometric authentication**

Facial biometric authentication has been incorporated in the Argentinian tax administration's (AFIP) mobile app "Mi AFIP" which can allow taxpayers to validate their identity without the need to be physically present in an AFIP office.

Before facial biometric authentication was in place, citizens needed to go to an AFIP office and show proof of their identity to obtain their tax login code, which in turn would allow them to digitally interact with AFIP.

Nowadays, citizens can certify their identity from their mobile phones, get their tax login code and, using that same mobile device, they can report their economic activity and register themselves in all relevant taxes so they can be authorised to issue electronic invoices and conduct business.



This development streamlines citizen services, reduces time spent on formalities and procedures, and simplifies compliance with tax obligations. It also provides considerable savings for taxpayers living far from an AFIP office.

### **Germany – Online tax portal app**

The German tax administration is offering a mobile application that can be used to scan individual documents and upload them to the taxpayer's user account in ELSTER, the online tax portal.

Using this app, taxpayers will be able to photograph documents with their smartphone camera immediately after receiving them. The photographed documents will then be scanned (using OCR or possibly a QR code) and appropriate values will be extracted from them. The user can also assign these documents to different categories. When the income tax return is prepared, the app will automatically insert the metadata into the appropriate input fields of the tax return.

This will make it significantly easier for taxpayers to prepare their income tax returns. They can efficiently scan individual documents that are relevant for the tax return and manage them in their personal online ELSTER account.

As the app will record the metadata (amounts, date, category), time-consuming searches for documents will no longer be necessary when preparing income tax returns. Furthermore, any problems and errors resulting from transfers between different media formats will be avoided, as all tax-related information will be available electronically and can be accessed online at any time through the user account. This will save users a significant amount of time and extend the range of citizen-friendly online services provided by the tax administration.

The app will also reduce the workload for the tax administration. When the scanned documents are filed in the taxpayer's user account, they can easily be made available to the case worker at the tax office if needed and no longer have to be requested in a laborious written process. This will avoid interruptions in processing tax returns.

### **Hungary – Vehicle tax via a mobile app**

The National Tax and Customs Administration (NTCA) of Hungary took over the assessment of motor vehicle tax from local governments in 2021. In order to support tax assessment and to make the payment smoother for taxpayers, it was necessary to develop new IT solutions. During the design process, the NTCA aimed at providing simple and cost-free payment options making it easier for taxpayers to fulfil their obligations thus ensuring the collections of state revenues. Two new payment services were created so that every taxpayer can find the most suitable solution:

- **Payment link** where electronic letters were sent containing a personalised link, which redirects to an online bank card payment interface. This payment service uses customer authentication and also requires credit / debit card data.
- **NTCA-Mobile application** where taxpayers were sent a push notification. In the application, a separate menu item supports the viewing and settling of the motor vehicle tax.

The advantage of these new payment methods is that the vehicle tax can be settled with a few clicks and through an electronic payment. As a result, the number of postal check payments are down by more than 50%.

See Annex 5.A. for supporting material.



### **Poland – E-receipts**

The Ministry of Finance in Poland is working on providing a publicly available service that allows every citizen to download an electronic receipt from a cash register to a smartphone, from a mobile application open to any software supplier, and the service will be fully anonymous via a unique identifier. At the point of purchase the customer will present the barcode identifier to the cashier, the cashier scans it and the cash register sends the receipt to the distribution system. Within a few seconds, the customer can download their receipt from the system to their smartphone. No customer identification data is required to receive the barcode identifier. This service will bring many benefits such as access to the e-receipt at any time, will help to reduce paper use and reduce the shadow economy.

### **Portugal – Supporting self-employed taxpayers**

ATGO is a newly developed mobile application launched by AT that allows individual taxpayers, who are self-employed and without paid accounting support, to easily comply with their tax obligations and manage their professional activities in a single point of access.

By accessing ATGO, taxpayers can view professional activity data, namely consult VAT and PIT schemes, and they can also issue and view their receipts and send them, on the spot, to their clients electronically. Taxpayers are also able to save templates for easier filling, and analyse previous income and expenses to compare them with the same period of the previous year. A "Top 5 clients" feature is also available, either by the amount of income earned or by the number of receipts issued.

Tutorials and help by tax officials are provided to guide taxpayers into all the features. In the near future, the application will have new developments, such as a digital fiscal agenda, alerts on tax compliance, electronic payments through the app, speech recognition in search and invoice issuance, and it will also be available in English.

The development of solutions such as the ATGO application reinforces the technological innovation plans for AT. The goal is to strength the communication and relationship with taxpayers and minimise the costs associated with tax compliance, through an improved and helpful service.

See Annex 5.A. for supporting material.

### **Spain – Tax debts app**

Following a piece of complex analysis work to present taxpayers with redesigned interfaces so that they can proceed to pay their tax debts, request deferral or pay in instalments, the Spanish Tax Agency (AEAT) has implemented a project to make it easier for taxpayers to pay their tax debts via an application. This system allows the payment of several debts through a single payment to be made online by debiting an account or paying by card at any of the financial institutions that collaborate with AEAT.

Additionally, through the "Consult debts" option, which can be accessed either by a taxpayer or their authorised representative, taxpayers can view their total or partial outstanding debts, accessing all the detailed information about them. In addition, an automated system for processing requests for deferment or instalments of debts has been developed, so that in a high percentage of cases the file is resolved almost instantaneously. In this way, and in a matter of minutes, the taxpayer receives an SMS communication from the AEAT of the result of their application.

The application also includes an "Interest and deferral calculator", a personalised tool that AEAT makes available to all citizens so that they can find out the legal or late payment interest applicable to both tax and non-tax debts, as well as deferrals and payment by instalments. At the end of the payment process, taxpayers are offered the possibility of requesting the issuance of a tax certificate of being up to date with their tax obligations.

See Annex 5.A. for supporting material.

Sources: Argentina (2023), Germany (2023), Hungary (2023), Poland (2023), Portugal (2023) and Spain (2023).

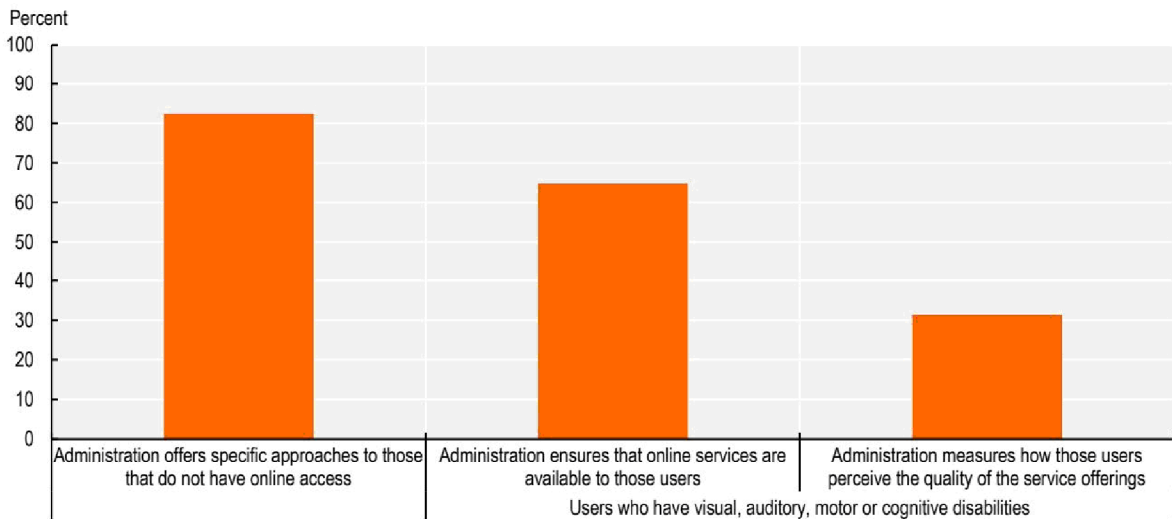
## Digital inclusion

Digital services have been critical to tax administrations delivering enhanced services to customers, as well as opening up new service options. While there is an increasing shift to the use of electronic services for both convenience and cost-efficiency purposes, a proportion of taxpayers will not have access to, or be comfortable with such services. This calls for considered strategies as to how to influence channel shift for those for whom it would offer better outcomes without adversely affecting the service offering to other taxpayers.

Figure 5.2 highlights that 80% of administrations offer specific services to support those who are not online, and over 60% make sure their services are available to those with a disability. Whilst more progress clearly needs to be made in this space, these programmes are starting to ensure that all taxpayers are served effectively by the tax administration. Tax administrations are therefore continuing to invest in detailed research to understanding the needs and drivers of these taxpayer groups and to develop considered strategies as to how to serve these taxpayers in the most appropriate way.

**Figure 5.2. Non-digital services and services for users with visual, auditory, motor or cognitive disabilities, 2022**

Percent of administrations



Note: The figure is based on ITTI data from 52 jurisdictions that are covered in this report and that have completed the global survey on digitalisation.

Source: OECD et al. (2023), Inventory of Tax Technology Initiatives, <https://www.oecd.org/tax/forum-on-tax-administration/tax-technology-tools-and-digital-solutions/>, Table TT4 (accessed on 22 May 2023).

StatLink  <https://stat.link/gulfts>



## Box 5.6. Examples – Digital inclusion

### Canada – Individual Tax Filing Assistance

Through the Individual Tax Filing Assistance (ITFA), dedicated CRA employees can reach out to eligible individuals to direct them towards various options to meet their tax obligations and help them access their benefits and tax credits. Agents begin by promoting Community Volunteer Income Tax Program (CVITP) clinics, including virtual tax clinics; followed by other filing methods, such as certified tax software; or agents may complete the individual's tax return over the phone. ITFA does not replace the services offered by CVITP clinics but is presented as a viable alternative to individuals who may have trouble accessing a clinic or filing on their own.

During the pandemic, the CRA recognised that vulnerable individuals may experience barriers to accessing the CVITP and established a new business model whereby qualified individuals are sent a letter offering the CRA's assistance in helping them access an alternate means to file their individual tax and benefit return. To be eligible for ITFA, individuals must have a modest income, a simple tax situation, and have previously accessed tax preparation services through a CVITP free tax clinic or are currently eligible to use one. Clients must pass confidentiality screening prior to an ITFA agent preparing the return over the phone.

The CRA developed enhanced security measures, including passwords for agents to verify with callers, a specific Canada.ca webpage, and personalised letters to individuals, anticipating the needs and concerns of clients with regards to scams and fraud. The CRA's efforts contributed to strengthening confidence in the integrity of the Agency.

### Latvia – New services to support taxpayers not online

The Electronic Declaration System (EDS) was deployed in 2019 as a secure and easy way to submit all tax returns, declarations and other documents to the State Revenue Service (SRS). EDS is open to all taxpayers, and the main advantages are saving time and increased accuracy, as well as improved data security.

'Authorization to complete EDS e-services' was created so that individuals who are not online can still work with the tax administration and submit the information electronically. Two types of services are currently provided: annual tax return submissions and changes to electronic payroll registration.

Private individuals can visit an SRS client service centre with paper documents and have an authorised SRS employee input the information electronically. Data entry is performed in the "employee workplace" solution created in EDS.

### Spain – Supporting the elderly

In 2022, AEAT and the Platform for the Elderly and Pensioners (PMP), which is a representative body for this group, signed a protocol setting the basic guidelines of the assistance that AEAT offers to the elderly and a general framework of collaboration for future actions.

PMP brings together the most important organisations, federations, confederations of senior citizens and pensioners in the country, representing 15 079 associations, with more than 5 746 000 affiliated individuals.

The protocol underlines the commitment of AEAT to deliver a customised assistance to the elderly through the promotion of actions that assure them complete and updated tax information. The protocol provides for:



- The creation of a joint committee, composed of members of AEAT and the platform, responsible for the identification and analysis of the specific problems of the elderly;
- An annual plan of assistance to the elderly;
- The development of specific assistance protocols for the elderly; and
- Simplification of forms.

Sources: Canada (2023), Latvia (2023) and Spain (2023).

## Collaborative services

As the digital services developed by tax administrations grow, more and more administrations recognise that these services bring opportunities to connect into the systems of taxpayers, often through Application Programming Interfaces (APIs). APIs are allowing connectivity between systems, people and things without providing direct access, and are the critical enablers of many of the innovative services highlighted in this report. It is against this background that 80% of tax administrations are now creating APIs and that three-quarters of them are making the APIs available to third party developers. See Box 5.7. for examples of latest developments in administration regarding APIs and Chapter 10 which contains more detail on the role of APIs in digital transformation.

The OECD report *Unlocking the digital economy – a guide to unlocking application programming interfaces in government* (OECD, 2019<sup>[2]</sup>) provides an overview of the practices, techniques and standards used to deliver contemporary and effective digital services for taxpayers through APIs. As the services delivered become more sophisticated, and play a greater role in delivering a quality service to taxpayers, tax administrations are having to invest more in the management and oversight of their APIs.

### Box 5.7. Examples – Using APIs to provide better services

#### Latvia – Electronic declaration system API

Using the EDS, which was developed to submit information to the SRS, manual input is reduced to a minimum as information from a company's accounting system is transferred to SRS using a fully automated intersystem interface, the "System to System" principle, and placed in the EDS database. The solution uses recognised standards and protocols to preserve the data structure and content of existing EDS documents. Documents received through EDS are subjected to logic and maths checks, with the results highlighted to the taxpayer, indicating possible errors that can be fixed.

An additional functionality "Taximeters" has been created for the EDS service. Taximeters allows the sending of passenger transportation information to SRS using an authentication and authorisation system for users that can register taxi trips in the EDS.

#### Mexico – Managing APIs

The Mexican Tax Administration Service (SAT) is in the process of implementing a platform for the management of APIs, which will facilitate the exchange of information between SAT and external entities. This platform aims to streamline APIs administration for users by categorising and classifying the available services. It will also provide the institution with improved oversight of API development and publication. As part of this ongoing initiative, every deployed API will be registered within the platform. The portal will also publish explanatory documentation and serve as the primary access point for obtaining APIs, offering sample code for adaptation. The platform will allow for comprehensive

control by SAT throughout the lifecycle of APIs, including design, implementation, and retirement. Additionally, it will enable the management of API versions and generate detailed usage reports, identifying which users or applications are utilising each API, frequency of usage, and quantifying successful or failed calls.

As part of the evolving project, SAT aims to provide API services that will enhance access to taxpayer information. These services will allow users to verify taxpayer registration status and determine if they are up to date with their tax obligations. The work on implementing these services is currently underway, reflecting the institution's commitment to improving information exchange and streamlining processes.

### **United Kingdom – API development**

In the UK's Making Tax Digital (MTD) programme, taxpayers are required to digitally capture information on a business's transactions, and then submit updates or returns drawn from that data to His Majesty's Revenue and Customs (HMRC), using MTD compatible software.

Businesses send tax information directly to HMRC from their records securely with only a click of a button because of the sophisticated APIs HMRC has developed with the software industry. HMRC sets out technical standards for software providers to follow on cyber-security and the security, storage, management and processing of customers' personal data as a condition of recognising software products as authorised to operate with HMRC's systems.

These APIs allow taxpayers to send summary-level data to HMRC (derived from the underlying transaction-level data) and for HMRC to send through relevant prompts and nudges to the taxpayer. HMRC already receive financial information securely through this channel for over 2.4 million VAT-registered businesses across the UK, and HMRC is expanding this obligation to other taxes and taxpayers in stages.

For income tax, which is on an annual basis in the UK, in-year updates gathered through APIs will allow HMRC to give the taxpayer a notional estimate of the tax they are on course to owe at the end of the year. These estimations have huge potential benefits for taxpayers, allowing businesses to better plan for future tax liabilities and manage cash flow.

See Annex 5.A for supporting material.

Sources: Latvia (2023), Mexico (2023) and United Kingdom (2023).

The new possibilities for service development opened up by APIs means that tax administrations are also deepening their collaboration with an increasing number of organisations outside of government, including in the development of new joined-up services. It is expected that this trend will accelerate and grow as tax administrations digitally transform their operating models and the natural systems of taxpayers and tax administrations become more connected. Box 5.8. illustrates this.

### **Box 5.8. Examples – Developing collaborative services**

#### **Finland – Digital platform for real estate transactions**

This project digitised real estate transactions through the "Digital Housing Trade Platform" (DIAS) and was developed in Finland in co-operation with the entire property ecosystem, including real estate agents and banks. The Finnish Tax Administration was also involved in the platform, which makes it possible to carry out real estate transactions electronically.



The initiative to digitise the transactions with residential real estate came from key market players who identified a place for efficiency in their mutual processes. In particular, this project started from the inefficiency of paperwork recognised by commercial operators and the opportunities that today's technology can offer. In parallel, government authorities had already identified opportunities for co-operation as part of the real-time economy project, but there were no natural drivers for co-operation.

As a result of this co-operation, the process became more efficient and faster between banks and brokers. It improved the buyer's experience and automated the reporting and payment of the transfer tax. The definition of common information and process has also made it possible to take a step towards the digitisation of the national, paper-based share capital, of which the implementation period started on 1 January 2023.

See Annex 5.A for supporting material.

### **Singapore – Redesigning the agent appointment system for banks**

As part of the wider drive for digitalisation, the Inland Revenue Authority of Singapore (IRAS) partnered with banks to adopt the use of an encrypted digital listing to improve operational efficiency and eliminate many manual handling processes. Previously, most agent appointment notices were transmitted automatically via secure file transfer to the major banks while hardcopy appointment notices were sent to the remaining banks. The new approach offered a low-cost yet secure and simple digital solution to the banks which can now receive the notice of appointment in an encrypted digital listing format transmitted via email. This approach was well accepted by the banks due to its ease of implementation and cost effectiveness and was fully implemented within 6 months.

The digitalisation of hardcopy appointment notices brought about productivity gains to the banks with the elimination of sorting and distribution processes. Taxpayers also experienced greater convenience as their bank accounts can now be released promptly. IRAS also made subsequent enhancements by using Robotic Process Automation (RPA) to generate the listings and update appointment statuses after responses are received from the banks, which led to further efficiency gains.

The move to digital listings has also allowed for easier identification of digital payments made by banks vs. other agents. The distinctive classification of payments has provided IRAS with insights and allowed IRAS to appoint the most effective agent going forward. About 97% of all bank appointments are now digitalised.

### **Slovak Republic – E-seizure of bank accounts**

In the Slovak Republic, the debt recovery strategy focusses on starting the recovery processes as soon as possible, without giving debtors chance to become insolvent. This depends on swift interactions and the IT tool – IPEX (informative support for tax recovery official) can collate information from banks, the Social Security Agency, as well as the Real Estate Register, and Motor Vehicle Register in just a few clicks. This means that data from organisations like banks can be provided very quickly, often in just a few hours. When these searches indicate there are assets that can be recovered, recovery procedures can begin.

These proceedings are completed electronically, allowing the whole procedure to be carried out quickly, and which prevents debtors from possible fraudulent behaviour. The swift resolution for debtors also helps them get clarity on their position without the need for a long-term freezing of their assets.

See Annex 5.A for supporting material.



### United Kingdom – Collaborative services through APIs

The UK's MTD programme was one of the first of HMRC's major programmes to embrace APIs.

HMRC's random audit programme has shown that errors in small business tax returns are more likely to lead to too little tax being paid than too much being paid. Requiring taxpayers to keep digital records and file digitally through API-enabled software reduces transposition and calculation errors and other mistakes, which HMRC expects to lead to better compliance.

A research study found that MTD had reduced errors, leading to additional tax revenue of approximately GBP 115 million in its first year, in line with forecasts from the Office of Budget Responsibility, the UK's independent fiscal institution.

HMRC's API strategy provides the commercial software industry with the ability to build standard functionality into products, which ensure ease of compliance with MTD legislation, while still providing the flexibility to personalise design to best meet the target audience's diverse needs and budgets. Software developers have responded by producing over 500 MTD compatible software options from simple free and low-cost products to fully integrated cloud accounting software.

Many MTD users report that MTD makes it faster to prepare and submit tax returns. Studies have also found that MTD has increased business confidence in using technology. Businesses who respond to new MTD obligations by digitalising their tax compliance operations further can experience considerable productivity gains.

See Annex 5.A for supporting material.

Sources: Finland (2023), Singapore (2023), Slovak Republic (2023) and United Kingdom (2023).

## References

- OECD (2021), *Behavioural Insights for Better Tax Administration: A Brief Guide*, [1]  
<https://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/behavioural-insights-for-better-tax-administration-a-brief-guide.htm>.
- OECD (2019), *Unlocking the Digital Economy - A guide to implementing application programming interfaces in Government*, OECD, Paris, <http://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/unlocking-the-digital-economy-guide-to-implementing-application-programming-interfaces-in-government.htm> (accessed on 22 May 2023). [2]
- OECD et al. (2023), *Inventory of Tax Technology Initiatives*, <https://www.oecd.org/tax/forum-on-tax-administration/tax-technology-tools-and-digital-solutions/> (accessed on 22 May 2023). [3]

## Annex 5.A. Links to supporting material (accessed on 26 May 2023)

- Box 5.1. – Italy: Link to more information on the Customer Relationship Management system: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.1-italy-crm-system.pdf>
- Box 5.2. – Italy: Link to more information on the Customer Experience Survey: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.2-italy-customer-experience-survey.pdf>
- Box 5.2. – Spain: Links to presentations with more information regarding the Portal for Integral Assistance to Taxpayers:
  - English version: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.2-spain-paco-english.pdf>
  - Spanish version: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.2-spain-paco-spanish.pdf>
- Box 5.2. – Türkiye: Link to more details of the methodologies used and the results of the behavioural insights studies: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.2-turkiye-behavioral-insight-studies.pdf>
- Box 5.3. – Japan: For more information on cashless payment options, see pages 21 and 22 of the NTA's Annual Report 2022: [https://www.nta.go.jp/english/Report\\_pdf/2022.htm](https://www.nta.go.jp/english/Report_pdf/2022.htm)
- Box 5.5. – Hungary: Link to a video with more detail on the mobile app for vehicle tax: <https://youtu.be/dtbxc5sT31M>
- Box 5.5. – Portugal: Link to a presentation on the ATGO mobile application: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.5-portugal-atgo-mobile-app.pdf>
- Box 5.5. – Spain: Links to videos, a presentation and a flyer on the tax debt application:
  - Video: <https://youtu.be/RbQ40o8gvJl> (English) and <https://youtu.be/RutCSyTm61c> (Spanish)
  - Presentation: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.5-spain-debt-app.pdf>
  - Flyer: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.5-spain-debt-app-flyer.pdf>
- Box 5.7. – United Kingdom: Links to further material on the use of APIs:
  - <https://www.gov.uk/government/publications/making-tax-digital-review>
  - <https://www.gov.uk/government/publications/hmrc-third-party-tax-software-and-api-strategy>
  - <https://developer.service.hmrc.gov.uk/api-documentation>
- Box 5.8. – Finland: Link to more information on the “Digital Housing Trade Platform”: <https://dias.fi/tiedote-29-11-2018.html>
- Box 5.8. – Slovak Republic: Link to more information on the debt recovery approaches: <https://www.oecd.org/tax/forum-on-tax-administration/database/b.5.8-slovak-republic-debt-recovery.pdf>
- Box 5.8 – United Kingdom: Links to more information on the UK’s Making Tax Digital programme and its impact:

- <https://www.gov.uk/government/publications/making-tax-digital/overview-of-making-tax-digital>
- <https://www.gov.uk/government/publications/evaluating-additional-tax-revenue-from-making-tax-digital-for-vat>
- <https://www.gov.uk/government/publications/impact-of-making-tax-digital-for-vat>



# 6 Verification and compliance management

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Assessing the accuracy and completeness of taxpayer reported information is a core function of tax administrations and this chapter takes a closer look at tax administrations' work in this area, including how they manage compliance.

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## Introduction

The audit, verification and investigation function assesses the accuracy and completeness of taxpayer reported information. This function employs on average thirty percent of tax administration staff to verify that tax obligations have been met. While this often happens through conducting desk or field based “tax audits”, there is an increased use of automated electronic checks, validations and matching of taxpayer information. The undertaking and visibility of these and other compliance actions is critical in supporting voluntary compliance, including through their impacts on perceptions of fairness in the tax system, as well as creating a ‘deterrent effect’. This chapter therefore looks at:

- How tax administrations manage compliance risks, including the use of large and integrated data sets;
- The delivery of compliance actions undertaken by tax administrations including moving field audit work into a virtual environment; and
- The work on tax and crime.

## Compliance risk management

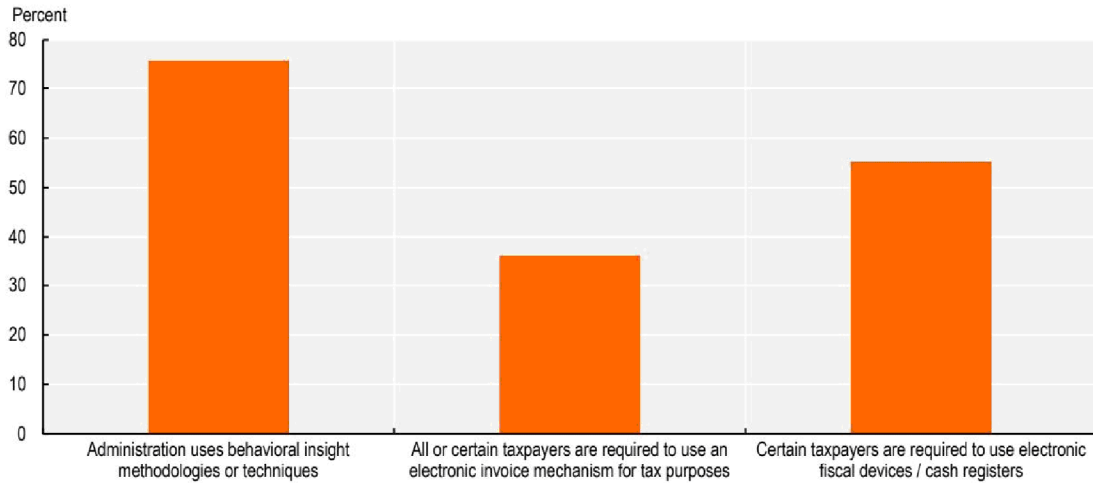
The OECD report *The Changing Tax Compliance Environment and the Role of Audit* (OECD, 2017<sup>[1]</sup>) looked at the range of incremental changes occurring across tax administrations which, taken together, were changing the nature of the tax compliance environment, allowing for more targeted and managed compliance.

A significant part of this change is driven by the increased availability of data. As digital transformation continues, even more tax related data from taxpayers and third parties is becoming available (for example, data from e-invoicing, online cash registers and financial account information), which is contributing to a clearer understanding of tax gaps. Most tax administrations now apply data sciences techniques and use analytical tools as part of compliance processes (see Table 6.1.), and this is explored in more detail later in this chapter. Box 6.1. also contains some examples of the range of data exploration techniques being used by tax administrations, including the analysis of unstructured data.

Another growing trend is the combination of analytics with behavioural analysis to build a more holistic understanding of compliance risks, behavioural patterns and appropriate compliance interventions. Figure 6.1., shows the percent of tax administrations who are using behavioural insights in their work. This percentage has grown from 62 percent of administrations in 2018 to 76 percent in 2021 (see also Table A.89.).

**Figure 6.1. Use of techniques and methodologies to improve compliance, 2021**

Percent of administrations that use those techniques and methodologies



Source: Table A.89.

StatLink  <https://stat.link/vw7n3i>**Box 6.1. Examples – Data exploration****Canada – Predictive models**

The Canada Revenue Agency (CRA) continuously explores new and innovative ways to better target reporting non-compliance. Advanced analytics, including machine learning and deep learning, are being tested for identifying potential high-risk small and medium businesses for audit.

- Graph database management systems and algorithms are used to automatically link all taxpayers by common ownerships and identify economic entities for population analysis, risk assessment, and workload selection.
- Social network analysis is incorporated to identify influential legal entities in the organisational structures and discover different patterns and characteristics of economic entities to enhance risk assessment.
- Ensemble anomaly detection (isolation forest, local outlier factor, mean shift clustering) and unsupervised learning (K-means, Gaussian mixture model, agglomerative clustering) methods are used to identify high-risk and anomalous segments in the small and medium enterprises population.
- Advanced techniques are used to generate powerful predictors, including incorporating artificial intelligence auto-encoder techniques to compress high dimensional data and a short-term memory neural network to extract information from longitudinal (sequence) financial and economic entity data, as well as economic entities' structure, which are used as predictors to enhance non-compliance prediction.
- Advanced analytics, including deep learning and graph neural networks, are used to identify high-risk small and medium enterprises taxpayers and their associated economic entities.



These predictive models will supplement existing CRA tools that are used for workload development, and risk assessment, including incorporating factors arising from the impacts of the pandemic.

### **Sweden – Analysing unstructured data**

In Sweden, private individuals and businesses can file their income tax returns digitally or using a paper form. Although the Swedish Tax Agency (STA) aims to promote digital tax returns, paper forms will still be needed for years to come. Every year, the STA receives about 150 000 paper forms containing handwritten free-text information. This service analyses and classifies free-text information in income tax return forms which improves the STA's ability to process unstructured data for different types of analyses (risk evaluation, audits, etc.).

The service uses artificial intelligence in two ways. Firstly, to interpret and convert the handwritten text into digital text, and, secondly, to classify the text into one of about 60 subject categories. The text is interpreted using a deep-learning model that has been developed and trained by the STA. AI models are available on the market, but there are few models for the Swedish language, or with the capacity to interpret millions of unique handwriting samples.

The ability to interpret handwritten text can also be useful for a variety of other applications for the STA, as well as for other public authorities, municipalities, etc.

Key benefits of automated interpretation and classification of handwritten text:

- The information reaches the right competence much faster than before
- Increased ability to quantify and analyse the content of free-text information
- Automation of specific cases

Sources: Canada (2023) and Sweden (2023).

### ***Increasing availability of data***

As more and more data is stored electronically, and the transfer, storage and integration of data has become easier through the application of new techniques and processes, there has been a huge increase in the amount of data available to tax administrations for compliance purposes. Frequently used data sources include:

- **Data from devices:** Data can be collected from devices that register transactions such as online cash registers and trip computers for taxis and trucks, and also gate registrations from barriers and weigh bridges.
- **Data from banks, merchants or payment intermediaries and service providers:** This allows direct verification of income or assets reported by the taxpayer. Some jurisdictions already receive transaction details or transaction totals for taxpayers on a regular basis.
- **Data from suppliers:** Collecting data from suppliers, either directly or through the taxpayer, allows a more complete picture to be drawn about the activities and income of the taxpayer. This is seen in the increasing use of e-invoicing systems which, as noted in Chapter 4, allows some tax administrations to prefill tax returns.
- **Data from the customer:** This is easiest in cases where the number of customers is limited and known, but increasingly mechanisms to leverage customers in compliance are being used, for example in the verification of cash receipts.
- **Unstructured data concerning the taxpayer:** Increasingly electronic traces relevant to business activities and transactions can be found on the internet and in social media.

- **Data from other government agencies:** Data held by other government agencies for example for licencing, regulatory or social security purposes can be relevant in verifying tax returns or in risk assessments.
- **Data from international partners:** New international exchanges of data commencing under the Common Reporting Standard and Country-by-Country Reporting is massively increasing the quantity of data available on international activity and providing useful information for audit and case selection processes and in some cases for prefilling of tax returns.

### Box 6.2. Examples – Increased availability of data to support innovation

#### Chile – Income Tax Dashboard

The large volume of available tax data constitutes a big challenge for tax administrations especially in the development of relevant indicators and monitoring mechanisms. The monitoring of relevant indicators and their evolution is important as it allows a better use of the available resources, that can be focussed on the compliance control actions with the most revenue-relevant risk.

The Servicio de Impuestos Internos (SII) has developed interactive reports enabling the analysis of taxpayer behaviour using SII held information, inconsistencies detected on tax returns and third party sworn statements received during the income tax filing process. These reports allow tax officials to monitor and understand multiple issues from different perspectives, for example, most frequent inconsistencies, the amounts involved, geographical location, taxpayer classification and their evolution in the last three fiscal years.

The visualisation of income tax returns and the identified inconsistencies allows the design of corrective actions to be taken according to the level of non-compliance. These actions can include preventive measures for ensuring an accurate tax filing process in the future.

The platform adopted to implement this interactive reporting tool ensures an institutional-wide availability, where information can be shared amongst officials and accessed by multiple users simultaneously, reinforcing the decision-making process.

See Annex 6.A for supporting information.

#### Finland – The ‘Incomes Register’

The ‘Incomes Register’ is a centralised national database for income information at an individual level. It contains comprehensive data on earned income, pensions and benefits, and implements the principle of one-time reporting.

After each payment, the ‘Incomes Register’ receives information about wages paid from employers, pensions, benefit payers, etc. The information reported to the ‘Incomes Register’ is then available in real time both when the wage earner applies for a new tax card and when the National Pension Institute and other operators grant benefits and pensions. The data creates the basis for the processing of insurance claims, and it is also used in occupational health and safety, statistics and the determination of various customer fees.

For those reporting the information, this means that they only need to report once, and they can be sure the data has gone to all relevant parties. For data users, this means that they have access to more accurate information in real-time.

In 2021, some 50 million earnings-payment reports containing payroll amounts, 2 million employer declarations and 65 million benefit information declarations were reported to the ‘Incomes Register’. A total of 250 000 different payers reported salary information. Benefits were reported by nearly 400



different payers. Income information was shared more than 800 million times with the 380 information users entitled to access the information. Payroll information is stored in the 'Incomes Register' from 2019 and pension and benefit information from 2021. Payroll and benefit information for a total of 4.7 million people has been reported to the 'Incomes Register'.

See Annex 6.A for supporting information.

### **Poland – The National e-Invoice System**

From 1 January 2022, Polish entrepreneurs can use the National e-Invoice System (KSeF). KSeF is a widely available invoice exchange platform that allows taxpayers to issue, send, receive and store electronic documents (e-invoices) in a structured form. Currently, the use of an e-invoice is optional with mandatory electronic invoicing being introduced in Poland from 1 January 2024.

KSeF will increase the speed of data exchange in contacts between contractors and mutual settlements. Accounting for invoices will become much easier, with the invoice made available to the recipient practically in real time, which allows for automation of accounting processes. At the same time, it will allow taxpayers to reduce errors with manual data entry and save time. This will reduce the business costs associated with handling the invoicing process. KSeF will also strengthen the analytical processes of the tax administration in the fight against tax fraud.

### **Sweden – Property taxes**

The Swedish Tax Agency (STA) is continuously working to improve and simplify the methods for calculating assessment values. Evaluations of previous agricultural property assessments indicate that timber stocks have been one of the valuation factors that have deviated furthest from reality.

To address this, data is now derived from maps that provide a variety of information, including timber stocks. The maps are produced by combining data from the Swedish Mapping, Cadastral and Land Registration Authority ("Lantmäteriet") and field data from the Swedish National Forest Inventory ("Riksskogstaxeringen").

This new method will help to ensure more fair and equal assessment of forest properties, while improving the quality of the STA's registers. The analysis is carried out on an ongoing basis, as it takes about seven years to scan all of Sweden's forests. The STA believes this new method will help to ensure a better service to property owners through higher data quality.

In the process of developing the method, the STA has identified further areas where the use external data could help make the assessment process both more effective and simpler for property owners. One such example is the land types associated with a property.

Sources: Chile (2023), Finland (2023), Poland (2023) and Sweden (2023).

There are, though, some emerging risks to the availability of large data sets. In particular, it is increasingly possible for data relevant to the tax administration in one jurisdiction to be held within the territory of another jurisdiction. In these circumstances, it can be difficult to obtain the data on an automatic basis from the data holder located in another jurisdiction. This could make it more difficult to risk assess in some circumstances, as well as making it more difficult to prefill tax returns and to further develop compliance-by-design processes.

An example of this comes from the growth of the sharing and gig economy facilitated through online platforms which can operate across border. This may become an increasing risk as the online economy grows, particularly if it is accompanied by a shift from salaried employment (and the reporting of incomes by employers) to self-employment. This issue was considered in the OECD report *The Sharing and Gig Economy: Effective Taxation of Platform Sellers* (OECD, 2019<sup>[2]</sup>). That report looked at a number of



strategies currently being adopted by tax administrations as well as their limitations and recommended the development of standardised reporting requirements to facilitate possible future automatic exchange of information between tax administrations. It also led to the development of:

- A set of Model Rules that when used in legislation require digital platforms to collect information on the income realised by those offering accommodation, transport and personal services through platforms and to report the information to tax authorities (OECD, 2020<sup>[3]</sup>).
- A Code of Conduct to facilitate a possible standard approach to co-operation between administrations and platforms on providing information and support to platform sellers on their tax obligations while minimising compliance burdens (OECD, 2020<sup>[4]</sup>).
- A report that explored the practical issues raised by real-time connections between tax administrations and sharing and gig economy platforms (OECD, 2022<sup>[5]</sup>).

Another risk that has been identified is that posed by digital financial assets (DFAs), such as cryptocurrencies. The owners of DFAs can be very difficult to trace even though they may be linked to the creation of a specific digital wallet (which is somewhat similar to a bank account). Tracking down the individuals or entities behind particular wallet addresses is at best very difficult and resource intensive. In August 2022, the OECD approved the Crypto-Asset Reporting Framework which provides for the reporting of tax information on transactions in Crypto-Assets in a standardised manner, with a view to automatically exchanging such information. (OECD, 2022<sup>[6]</sup>)

While not a risk as such, it should also be noted that data protection requirements could limit the circumstances in which data can be kept, processed or shared. This is a key consideration for administrations in designing systems which rely on large data sets and the retention of data.

## **Sharpened targeting of risks**

### *Data science*

Over recent years, the application of advanced analytics to risk management and risk targeting is becoming increasingly common:

- Figure 6.3. shows 80% of tax administrations reporting using big data in their work, and of those that use big data nearly all are using it to improve their compliance work.
- Of the 58 tax administrations covered by this report, 55 report using data science / analytical tools with the remaining administrations in the process of preparing the use of such tools going forward (see Table 6.1.).
- Similarly, the use of artificial intelligence, including machine learning, for risk assessments and detecting fraud is already undertaken or in the process of being implemented by the majority of administrations covered in this publication (see Table 6.1. and Figure 6.4.).

This increasingly sophisticated use of analytics on expanded data sets is leading to a sharpening of risk management and the development of a range of intervention actions, including through automated processes. A selection of examples is included in Box 6.3. Additionally, the OECD report *Advanced Analytics for Tax Administration: Putting data to work* (OECD, 2016<sup>[7]</sup>) provides practical guidance on how tax administrations can use analytics to support compliance and service delivery.