

Chapter 1. Introduction to the Interim Report on the Tax Challenges Arising from Digitalisation

This chapter provides an overview of the impact of digitalisation on society and the global economy, including its role in fostering innovation. It outlines the history of work relating to the tax issues arising from digitalisation, including the 2015 BEPS Action 1 Report as well as the work undertaken since then by the more than 110 members of the OECD/G20 Inclusive Framework on BEPS.

1.1. Overview

1. Digitalisation is transforming many aspects of our everyday lives, as well as at the macro-level in terms of the way our economy and society is organised and functions. The breadth and speed of change have been often remarked upon, and this is also true when one considers the implications of this digital transformation on tax matters.

2. This chapter first looks at the significant impact that digitalisation is making on our broader environment, and provides an update from the 2015 BEPS Action 1 Report on *Addressing the Tax Challenges of the Digital Economy*,¹ which described the evolution of information and communications technology (ICT). It then considers the history of work relating to the tax issues arising from digitalisation, including the OECD's 1998 Ottawa report on *Electronic Commerce: Taxation Framework Conditions*,² and the 2015 BEPS Action 1 Report. The 2015 Report described both the exacerbation of BEPS issues as a result of digitalisation, and, at the same time, identified a number of broader tax challenges that go beyond the scope of BEPS. The final section of this chapter describes the work undertaken by the Inclusive Framework on BEPS since 2015 through to the delivery of this Interim Report, which has included the involvement of a wide range of stakeholders.

3. Digitalisation raises a large number of public policy challenges, and is also changing the nature of policy-making itself, through the emergence of a new range of tools available to both develop and implement effective policies. The work being undertaken to consider the impact of digitalisation on the international tax rules and other aspects of the tax system forms only one part of this broader unfolding transformation. Considering the broader policy challenges, the OECD's *Going Digital* project launched in 2017 aims to help policymakers better understand digital transformation and develop and implement a resilient framework that fosters a positive and inclusive digital economy and society.³

1.2. The digital transformation

4. The digital transformation is changing the way people interact with each other and society more generally, raising a number of pressing issues in the areas of jobs and skills, privacy and security, education, health as well as in many other policy areas. Digitalisation is an important source of entrepreneurship, lowering barriers to entry and more broadly affecting the business environment by bringing down transaction costs, increasing price transparency and improving productivity (see Box 1.1). It is now easier for businesses to communicate with suppliers, customers, and employees using Internet-based tools, and developments in ICT are also leading to the emergence of new and transformed business models.

Box 1.1. How large are the productivity effects?

Evidence on productivity impacts from new production technologies come mainly from firm- and technology-specific studies. A sample of these studies is provided below. These studies suggest sizeable potential productivity impacts. However, the studies follow a variety of methodological approaches, and often report results from a few, early-adopting technology users, making aggregate estimates difficult to derive.

- In the United States, output and productivity in firms that adopt data-driven decision making are 5% to 6% higher than expected given those firms' other investments in ICTs (Brynjolfsson, Hitt and Kim, 2011).
- Improving data quality and access to data by 10% i.e., presenting data more concisely and consistently across platforms and allowing them to be more easily employed would increase labour productivity by 14% on average, but with significant cross-industry variations (Barua, Mani and Mukherjee, 2013).
- Autonomous mine haulage trucks could in some cases increase output by 15% to 20%, lower fuel consumption by 10% to 15% and reduce maintenance costs by 8% (Citigroup-Oxford Martin School, 2015).
- Autonomous drill rigs can increase productivity by 30% to 60% (Citigroup-Oxford Martin School, 2015).
- By raising productivity new technologies can also improve financial performance among adopters. A recent case study shows that by developing a significant Internet of Things and data analytics capability, a leading United States automaker saved around USD 2 billion over five years (2011-14 and most of 2015). A 1% increase in maintenance efficiency in the aviation industry, brought about by the industrial Internet, could save commercial airlines globally around USD 2 billion per year (Evans and Anninziata, 2012).

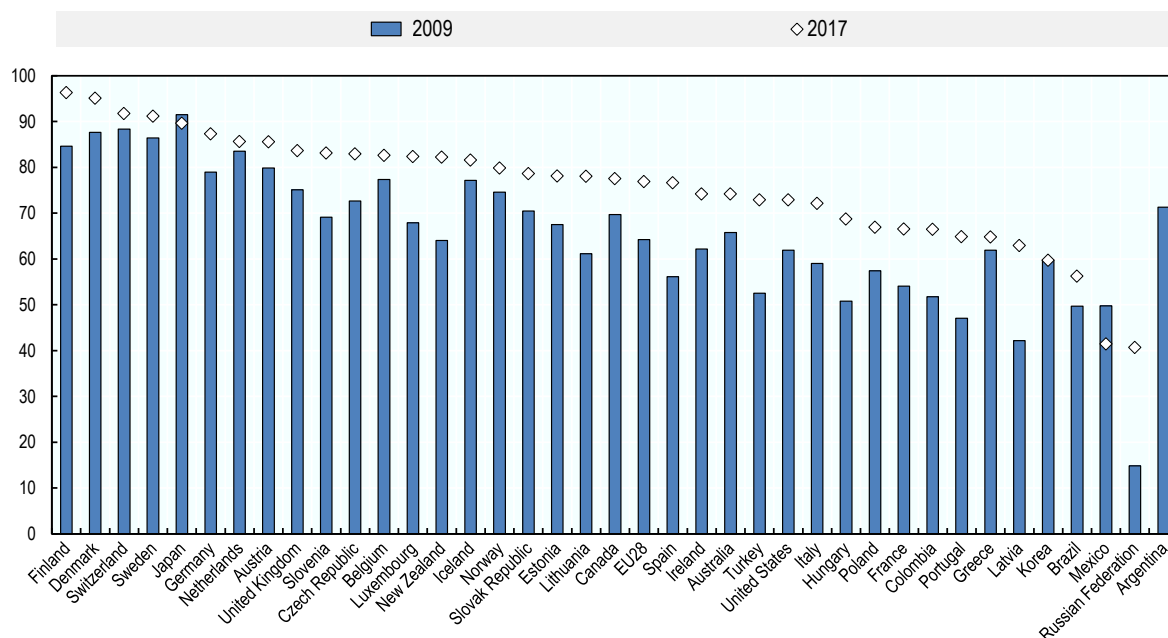
Source: OECD (2017c)

5. Ubiquitous digital devices, connectivity and “smart” technology are bringing significant changes that are profoundly affecting relationships and markets. ICT has become part of the foundational infrastructure for business and society, evidenced in a heavy reliance on efficient and widely accessible online communication networks and services, data, software, and hardware.

6. Part of the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project delivered in 2015, the Action 1 Report, *Addressing the Tax Challenges of the Digital Economy*,⁴ described the evolution over time of ICT and highlighted the interactions between its various layers. Since then, the diffusion of technologies, which had already begun to significantly change the economy and many aspects of our daily lives, has intensified. The use of cloud computing among firms has accelerated, with close to 50% of large businesses using cloud computing services in 2016, and a large proportion of businesses now with some degree of web presence (See for example Figure 1.1).

Figure 1.1. Business with a web presence

As a percentage of total businesses.

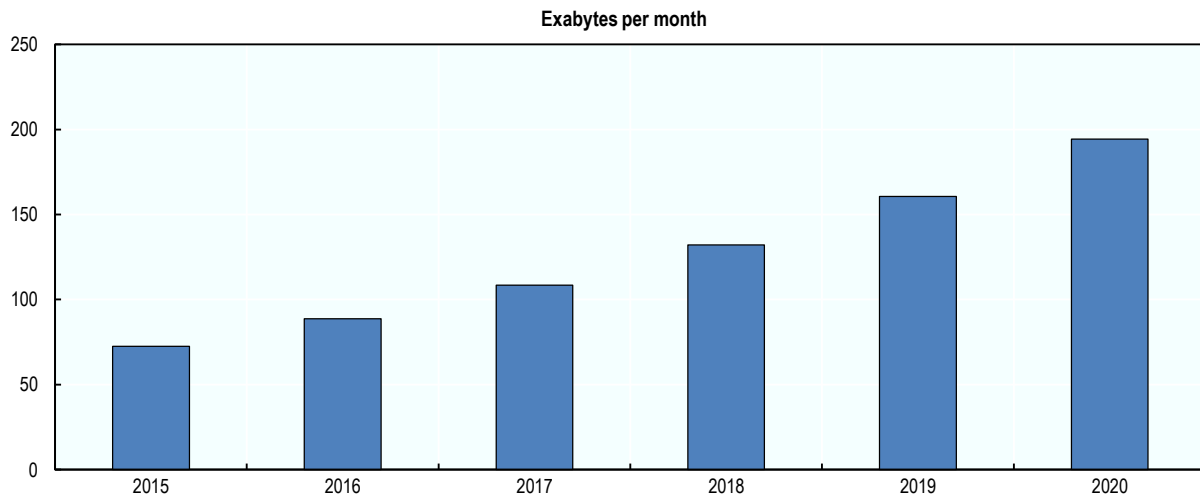


Notes: 2009 series - the following countries show different year data: Canada (2007), Iceland (2010), Mexico (2008), New Zealand (2008) and the United States (2007).

2017 series - the following countries show different year data: Australia (2016), Brazil (2015), Canada (2013), Switzerland (2011), Colombia (2015), Japan (2015), Korea (2015), Mexico (2012), New Zealand (2016), the Russian Federation (2014) and the United States (2012).

Source: Eurostat; OECD; UNCTAD, February 2018.

7. Connectivity has become increasingly ubiquitous, with 83% of adults in OECD countries accessing the Internet in 2016, and 95% of businesses now benefitting from a high-speed Internet connection.⁵ The increasingly central role of digital technologies to people's lives can be seen in the growth of global Internet traffic (Figure 1.2).

Figure 1.2. Global Internet traffic forecast, 2015-20⁶

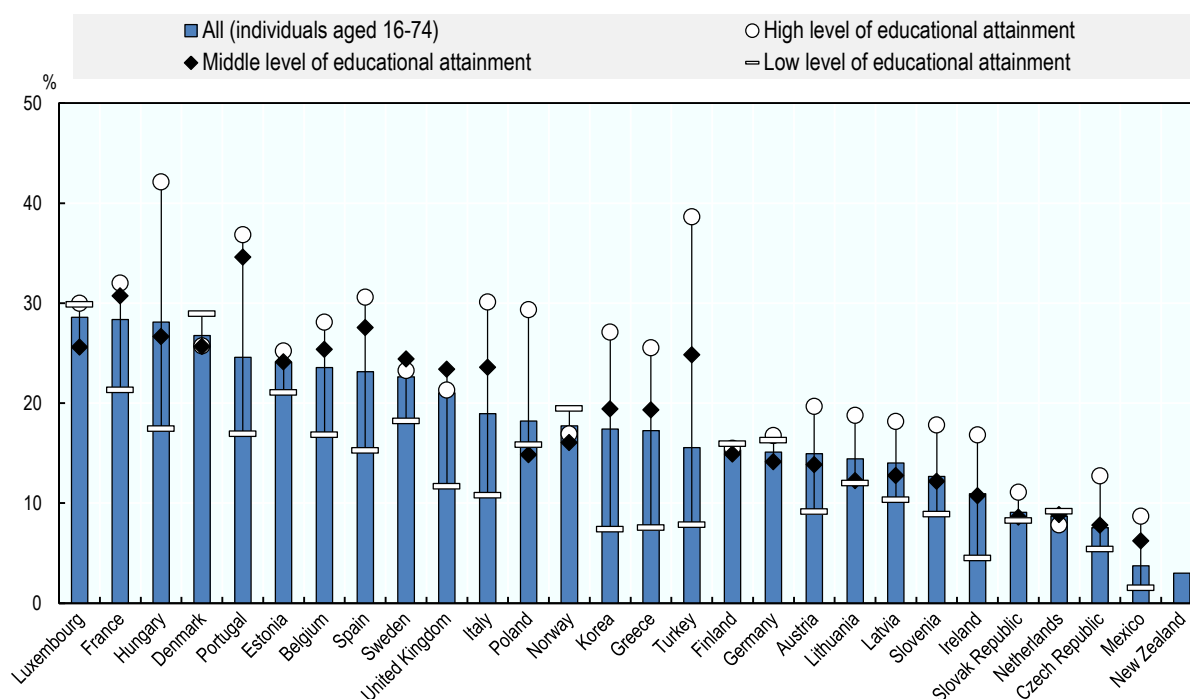
Source: Cisco (2016).

8. An enormous amount of data is now generated by these constantly connected users and devices. Today, the annual volume of data created across the globe is estimated to double every year, with more than 44 zettabytes of data⁷ expected to have been produced by 2020.⁸ This data is being collected by businesses and governments, and combined with advances in data analytics and technology diffusion, are providing the insights necessary to transform and shape the way people behave and organisations operate.

9. Scientific innovation continues to push the digital frontier, as was recognised in the 2015 BEPS Action 1 Report, which identified a number of emerging technologies, including the Internet of Things, digital (crypto-)currencies, the sharing economy, 3-D-printing, advanced robotics, and open government data, which are combining in new and innovative ways. Only a few years later, the growing importance of these trends has been confirmed. The Internet of Things (i.e., online connectivity between devices) is expanding exponentially – up 31% from 2016 to 2017, and is expected to reach 2.5 times current levels by 2020.⁹ Although many observers have raised concerns about their underlying stability and value, more than 1 500 crypto-currencies are now in existence.¹⁰ Their underlying distributed ledger technology, blockchain, is also offering a number of other applications, many of which are still being explored. This includes enhanced security and protection features, which could provide a more secure record of transactions and other dimensions of economic activity. This is particularly important noting the significant numbers of digital security incidents now being experienced by individuals online (See for example Figure 1.3.).

Figure 1.3. Digital security incidents experienced by individuals in a 3-month period, 2015

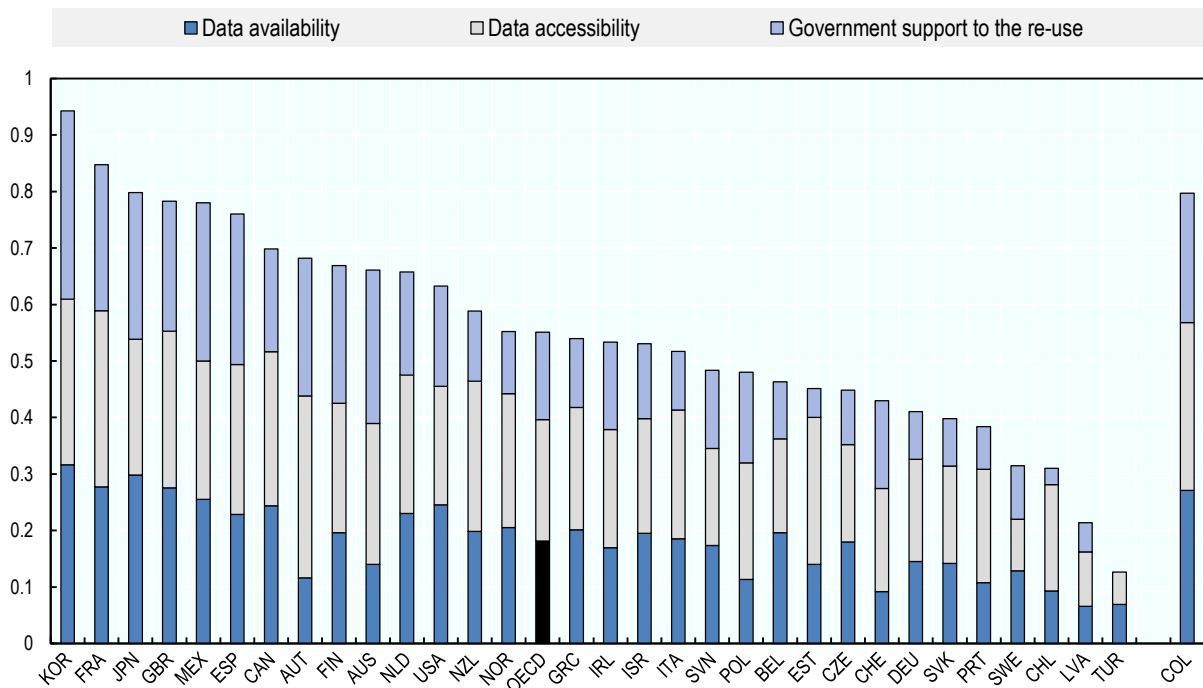
As a percentage of all individuals and by level of educational attainment.



Note: Data for Korea refer to 2016 for all individuals but the breakdown by level of educational attainment refers to 2014. Data for New Zealand and Switzerland refer to 2014. Data for Iceland refer to 2010. Data for Korea, Mexico, New Zealand and Switzerland follow a different methodology.

Source: OECD, ICT Access and Usage by Households and Individuals (database), <http://oe.cd/hhind> (accessed June 2017).

10. Further, in recent years, 3D-printing has increasingly entered the mainstream, shifting from bespoke use for the development of prototypes towards replacing traditional mass manufacturing methods, changes which are also altering the supply chain. In the aerospace industry for example, Boeing is already using 3D printing to create more than 50 000 units of over 900 distinct parts for both its aircraft and spacecraft. We have also seen “narrow” artificial intelligence (machine based systems that can carry out tasks only within a delineated field) deployed and growing in a diverse number of fields, with some forecasts estimating that “broad” or “general” artificial intelligence (machine based systems that can learn and resolve innovative problems) could be achieved in the not too distant future. Meanwhile, open government data (the publication of machine-readable data by public entities) is becoming the default approach for governments as an effort to ensure that it is available for appropriate use by business, civil society and the public at large (see Figure 1.4.).¹¹

Figure 1.4. Open Useful Reusable Government Data Index (OURdata), 2017¹²

Note: Data for Hungary, Iceland and Luxembourg are not available. Denmark does not have a Central/federal data portal and therefore are not displayed in the Index.

Detailed methodology and underlying data available in the annex online (http://dx.doi.org/10.1787/gov_glance-2017-en)

Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

Source: OECD Survey on Open Government Data

11. In this changing environment, the challenges for policymakers are complex as the future is far from certain. There are multiple possible trajectories, with many of these being explored in the OECD's Going Digital project.¹³ Digitalisation is also changing the nature of policy-making itself with a new range of tools available to develop, monitor and evaluate the effectiveness of a range of different policies and their outcomes. It is, thus, also important to be able to harness technological innovation to support the delivery of more effective and tailored solutions and foster a supportive environment for innovation and growth, as well as ensure that the risks from digitalisation are mitigated or avoided through appropriate safeguards. For tax matters, this means that policy development and implementation must be designed to allow for the changing environment, while being sufficiently clear to provide the certainty and clarity that facilitates sustainable, long-term economic growth.

1.3. Work under the OECD/G20 BEPS Project on the tax challenges arising from digitalisation

1.3.1. The OECD/G20 BEPS Project

12. Launched in 2013, the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project consisted of 15 separate action areas targeting the gaps and mismatches in the international tax system that facilitated the shifting of profits by multinational enterprises

(MNEs) away from where the underlying economic activity and value creation took place. Action 1 of the BEPS Project undertook to consider the tax challenges raised by digitalisation for both direct and indirect taxation.

13. To carry out this work, the Task Force on the Digital Economy (TFDE) was established as a subsidiary body of the Committee on Fiscal Affairs (CFA), with the participation of more than 45 countries¹⁴ including all OECD and G20 members. In preparing the 2015 BEPS Action 1 Report, the TFDE drew from previous work on this topic, including the 1998 Ottawa report on *Electronic Commerce: Taxation Framework Conditions*,¹⁵ as well as the work of the Technical Advisory Group on Monitoring the Application of Existing Treaty Norms for Taxing Business Profits.¹⁶

14. The 2015 BEPS Action Report, *Addressing the Tax Challenges of the Digital Economy*, was released in October 2015 as part of the BEPS package. The full BEPS package was endorsed by the G20 Leaders in November 2015, more than 110 countries and jurisdictions having committed to its implementation as members of the Inclusive Framework on BEPS, which was established in June 2016.

1.3.2. BEPS issues exacerbated by digitalisation

15. The 2015 Action 1 Report recognised that digitalisation and some of the business models that it facilitates present important challenges for international taxation. The report also acknowledged that it would be difficult, if not impossible, to ‘ring-fence’ the digital economy from the rest of the economy for tax purposes because of the increasingly pervasive nature of digitalisation. Instead, it considered digitalisation as a transformative process affecting all sectors brought by advances in ICT.¹⁷

16. The report identified a number of key features of digitalisation that are potentially relevant from a tax perspective. These include mobility, reliance on data, network effects, the spread of multi-sided business models, a tendency towards monopoly or oligopoly, and volatility. There was recognition that digitalisation has also accelerated and changed the spread of global value chains in which MNEs integrate their worldwide operations. More specifically, the report observed new phenomena such as the collection and exploitation of data, network effects and the emergence of new business models, such as multi-sided platforms, as exacerbating the challenges to the existing tax rules.

17. The report recognised that some of these key features, while not generating unique BEPS issues, can exacerbate BEPS risks. Accordingly, they were identified and taken into consideration during the work conducted under the BEPS Action Plan. The related outcomes were expected to have a significant impact in reducing BEPS risks arising as a result of digitalisation, in particular through the modifications of the definition of permanent establishment (Action 7), the revised transfer pricing guidance (Action 8-10) and recommendations on the design of effective controlled foreign company (CFC) rules (Action 3). Since reaching agreement over the BEPS package in 2015, countries have begun implementing these measures. The impact of these measures on the challenges raised by digitalisation is discussed further in Chapter 3 of this report.

1.3.3. The broader tax challenges raised by digitalisation

18. The 2015 Action 1 Report also identified a number of broader tax challenges raised by digitalisation, notably in relation to nexus, data and characterisation. These challenges go beyond BEPS and chiefly relate to the question of how taxing rights on income generated from cross-border activities in the digital age should be allocated

among countries. The 2015 Report also recognised that in the area of indirect taxation, new challenges arose in particular with respect to the collection of Value Added Tax/Goods and Services Tax (VAT/GST) on the continuously growing volumes of goods and services that are purchased online by private consumers from foreign suppliers.

19. To address these indirect tax concerns, it was recommended that countries implement the OECD's International VAT/GST Guidelines,¹⁸ and in particular the destination principle for determining the place of taxation of cross-border supplies, and consider implementing the mechanisms for the effective collection of VAT/GST presented in the Guidelines. The 2015 Action 1 Report also identified a number of possible approaches for a more effective VAT/GST collection on the significantly growing volume of imports of low value goods from online sales.

20. To tackle the broader direct tax issues raised by digitalisation, the TFDE analysed three options, namely (i) a new nexus rule in the form of a "significant economic presence" test, (ii) a withholding tax which could be applied to certain types of digital transactions, and (iii) an equalisation levy, intended to address a disparity in tax treatment between foreign and domestic businesses where the foreign business had a sufficient economic presence in the jurisdiction.

21. None of these options were ultimately recommended in the 2015 Action 1 Report, however it was concluded that countries could introduce any of these options in their domestic laws as additional safeguards against BEPS, provided they respect existing treaty obligations, or in their bilateral tax treaties. Further, it was recognised that the measures developed in the BEPS Project would mitigate some aspects of the broader tax challenges and that the implementation of the measures to address the VAT/GST challenges that were included in the 2015 Action 1 Report, particularly the International VAT/GST Guidelines, would lead to a more effective and efficient collection of these taxes in the market jurisdiction. It was agreed to continue to monitor developments in respect of the digital economy, with a further report to be delivered by 2020.

1.4. Taking forward the work on tax and digitalisation since 2015

22. Following the delivery of the 2015 BEPS package and a call from the G20 to engage an even broader range of countries in the implementation of the measures, the OECD/G20 Inclusive Framework on BEPS was established in June 2016. Open to interested countries and jurisdictions, today the Inclusive Framework has more than 110 members participating on an equal-footing, committed to the implementation of the 2015 BEPS package and to working together further on BEPS-related issues.

23. With the establishment of the Inclusive Framework, a further mandate of the TFDE was agreed in January 2017, including for the delivery of an interim report by the end of 2018 and a final report in 2020.¹⁹ In March 2017, the G20 called on the TFDE to deliver an interim report by the 2018 IMF/World Bank Spring Meetings – a request that was reiterated by the G20 Leaders at their July 2017 Hamburg Summit. With this timeframe in mind, the TFDE resumed its work, including the monitoring of developments in digital technology and business models, the individual measures taken by countries to address the broader tax challenges raised by digitalisation, and the extent of implementation and impact of the relevant Actions from the BEPS package.

24. A critical element contributing to the development of the BEPS package in 2015, and which has been continued through the work of the Inclusive Framework, has been a process of continuous liaison with stakeholders. Leading up to the preparation of this

Interim Report, a Request for Input on the tax challenges raised by digitalisation was issued in September 2017, which saw more than 50 submissions received from academics, civil society, from businesses directly as well as professional services firms.²⁰ To explore these issues in more detail with stakeholders, a public consultation was held on 1 November 2017 in California, bringing together a selection of commentators to discuss these issues in the presence of members of the TFDE. This event was attended by more than 100 participants, and was also streamed live.²¹

1.5. The Interim Report on the tax challenges arising from digitalisation

25. This Interim Report reflects the recent work of the TFDE and overall, the progress made by the Inclusive Framework since the 2015 Action 1 Report in considering the tax issues raised by digitalisation, and taking into account the latest developments.

26. It first provides an in-depth analysis of value creation across different digitalised business models, focusing on the main characteristics of digital markets and processes of value creation. The analysis is complemented by case studies with the aim of identifying the key factors that are prevalent in more highly digitalised businesses (Chapter 2). It then describes the current progress in the implementation of the BEPS package, with a focus on specific measures relevant to digitalisation and the resulting impact on the behaviour of highly digitalised businesses (Chapter 3). It also provides an overview of recent tax policy developments that are potentially relevant to digitalisation, with a focus on measures enacted by countries that seek to address aspects of the broader tax challenges identified in the 2015 Action 1 Report (Chapter 4).

27. The Report then offers a description of the challenges identified with respect to the continuing effectiveness of international tax standards in light of the issues raised by the digitalisation of the economy, drawing from the analysis set out in Chapter 2. It provides a sense of direction that reflects the commitment of the Inclusive Framework members to work towards a consensus-based, global solution on these matters (Chapter 5). The Report goes on to recognise that there is no consensus on the merits of, or need for, interim measures, and that a number of countries consider that an interim measure will give rise to risks and adverse consequences irrespective of any limits on the design of such a measure. Those countries that are in favour of the introduction of interim measures consider that there is a strong imperative to act pending a consensus on a global solution, and have identified a number of considerations which could limit the potential for divergence and mitigate the possible adverse effects of such measures (Chapter 6).

28. Finally, it looks beyond the impact of digitalisation on the international tax rules to consider how digitalisation is changing other parts of the tax system in important and sometimes dramatic ways, providing both new opportunities and new risks for policymakers and tax administrations (Chapter 7). Directions for the future work of the Inclusive Framework to address the tax challenges raised by digitalisation are set out in the final chapter of the report (Chapter 8).

29. This Interim Report outlines a number of areas where there are clear differences of view held by countries, including over the need for future reform of the international tax system. These differences are presented in order to identify the points of divergence and lay the groundwork for future work on the development of a consensus-based solution that bridges these different positions as part of the Inclusive Framework's delivery of its 2020 Final Report.

Notes

¹ OECD (2015)

² OECD (2001)

³ Further information about the OECD Going Digital project is available online at <http://www.oecd.org/going-digital/>

⁴ OECD (2015)

⁵ OECD (2017a)

⁶ One exabyte is equal to 10¹⁸ bytes

⁷ One zettabyte is equivalent to a trillion gigabytes, with a trillion being 1 000 billion).

⁸ International Data Corporation (2014)

⁹ Gartner (2017), Gartner Newsroom website, <https://www.gartner.com/newsroom/id/3598917> (accessed 12 February 2018).

¹⁰ Cryptocurrency Market Capitalizations website; <https://coinmarketcap.com/> (accessed 12 February 2018).

¹¹ OECD (2017b)

¹² OECD (2017b). Data for Hungary, Iceland and Luxembourg are not available. Denmark does not have a Central/federal data portal and therefore are not displayed in the Index. Detailed methodology and underlying data available in the publication annex online.

¹³ Further information about the OECD's *Going Digital* project can be found online at the *Going Digital* website: <http://www.oecd.org/going-digital/> (accessed 12 February 2018)

¹⁴ References in this report to “country” or “countries” should be read as a reference to “country or jurisdiction” and “countries and jurisdictions”, respectively.

¹⁵ OECD (2001)

¹⁶ OECD (2005)

¹⁷ OECD (2015) *Executive Summary*, p.11.

¹⁸ OECD (2017d)

¹⁹ Information on the Task Force on the Digital Economy and its mandate can be found online in the Online Guide to OECD Intergovernmental Activity available at <https://oecdgroups.oecd.org/default.aspx>

²⁰ The submissions received as well as the Request for Input are available online at <http://www.oecd.org/tax/beps/public-comments-received-on-the-tax-challenges-of-digitalisation.htm> (accessed 12 February 2018)

²¹ The recording of the public consultation held on 1 November 2017 is available online at <http://www.oecd.org/tax/beps/public-consultation-on-tax-challenges-of-digitalisation-1-november-2017.htm> (accessed 12 February 2018)

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