

Asia-Pacific and Fiscal Affairs Departments

# Digitalization and Taxation in Asia

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## Glossary

ADS	Automated Digital Service
B2B	Business to Business
B2C	Business to Consumer
BEPS	Base Erosion and Profit Shifting
CbCR	Country by Country Reporting
CIT	Corporate Income Tax
Destination country	Country in which the purchaser is located (same as market country)
DST	Digital Services Tax
EL	Equalization Levy
EU	European Union
FA	Formula Apportionment
FDI	Foreign Direct Investment
G20	The G20 is the international forum that brings together the world's major economies
GDP	Gross Domestic Product
GST	Goods and Services Tax
ICT	Information and Communications Technology
IF	Inclusive Framework
Investment Hub	Generally refer to countries with a high ratio of FDI to GDP. For example, the OECD considers those countries with inward FDI greater than 150 percent of GDP to be an investment hub.
Market country	Country in which the purchaser is located (same as destination country)
IGST	Integrated Goods and Services Tax
MNE	Multinational Enterprise
OECD	Organisation for Economic Cooperation and Development

OIDAR	India is chargeable on supply of Online Information Database Access and Retrieval
PE	Permanent Establishment
Profit shifting	Shifting of where profits are booked for tax purposes, and encompasses base erosion
Rents	Earnings in excess of the normal required return
Residence country	For a corporation (most frequently the location of managerial functions; occasionally the place of incorporation)
Residual profit	Profits in excess of routine
Routine return	Broadly equivalent to normal return, commonly as identified by transfer pricing methods
RP	Residual Profit
RPA	Residual Profit Allocation
Source country	Jurisdiction in which production of goods or services occurs
User participation	Contribution by the user of the product to the business model
VAT	Value-Added Tax

## Executive Summary

Digitalization in Asia is pervasive, unique, and growing. It stands out by its sheer scale, with internet users far exceeding numbers in other regions. This facilitates e-commerce in markets that are large by international standards, supported by innovative payment systems and featuring major corporate players, including a number of large, home-grown, highly digitalized businesses (tech giants) that rival US multinational enterprises (MNEs) in size. Opportunity for future growth exists, as a significant population share remains unconnected.

Digitalization raises new tax challenges and existing rules can be perceived as unfair. Existing income tax systems have been criticized as failing to confer taxing rights on jurisdictions where highly digitalized businesses have a large base of customers that generate value, but where they have no physical presence. Increasingly digitalized businesses may also have relatively more intangible assets (for example, trademark and patents), which are harder to value and easier to relocate, enabling profit shifting under existing rules. This may especially affect smaller, less developed economies. The nexus of digitalization and tax also goes beyond income taxation, raising issues regarding the effective value-added taxation of digital services, property rights over private information, and the use of digital technology in tax design and revenue administration.

Global tax reform proposals will create winners and losers in the region, although the overall revenue impact is likely to be modest. New taxing rights for market countries at the expense of residence countries, along the lines of proposals discussed under Pillar 1 of the OECD-Inclusive Framework (IF) will change the geographic distribution of tax revenue paid by MNEs in Asia. Investment hubs and low-tax jurisdictions are likely to lose revenue as less profit will be shifted towards them. Countries that do not host the headquarters of large MNEs, but have a large user base of their customers, are likely to gain revenue from the reallocation. Results are more ambiguous for countries

that have both a large market and tax residence for large MNEs. For example, the home countries of Asia's tech giants could lose revenue if these firms have to pay more tax in other countries where they are expanding. While the revenue effects are likely to be modest for most countries under current proposals, the rapid pace of digitalization can increase the importance of this revenue reallocation effect over time.

Digitalization is increasing pressure on the century-old international tax framework, which more fundamental reforms could address in the medium term. The reforms currently being considered in the OECD-IF could be a step toward more comprehensive reforms in the future. Systems that are being discussed among tax experts include, for example, formulary apportionment and residual profit allocation. These approaches would cause a much larger reallocation of tax revenue across countries, with the largest losses expected for investment hubs. At the same time, these proposals could deliver considerable simplification and closer alignment of profit attributions to where production and sales take place. Depending on the design, these reforms could also ease the pressure of international tax competition and provide scope for increasing revenue raised from MNEs, including through an increase in CIT rates as desired by countries.

Unilateral tax measures, such as digital services taxes (DSTs), adopted by a number of Asian countries are likely to have small revenue effects. DSTs are simpler in design and implementation than corporate income tax initiatives, but risk introducing distortions of double taxation and trade retaliation. In taxing gross revenue, they are blind to the profitability of the ring-fenced tech giants and therefore less efficient than alternative profit taxation reform options. Countries with domestic tech giants may find a DST less attractive as the income of these firms is already taxed under the existing CIT regime. A relatively narrow gross revenue tax base also results in limited revenue collection—often estimated in the range of 0.01-0.02 percent of GDP, suggesting that the choice to introduce a DST needs to be weighed against other tax reform priorities. That said, revenue from DSTs may have higher buoyancy in the future, given strong growth of digital economic activity, a trend that has been accelerated by the COVID-19 pandemic.

Extending the value added taxes (VAT) to capture e-commerce and digital services more effectively could yield significant short-term revenue and other efficiency gains. Capturing VAT on digitally provided services and e-commerce supplied from abroad will help countries increase revenue unilaterally. Applying VAT consistently on all digital imports also levels the playing field between domestic and foreign suppliers, and between goods and services—thus enhancing efficiency. The expected revenue effects from effectively doing so are greater than from DSTs or the global reform proposal currently under consideration under OECD-IF Pillar 1, in particular when accounting for indirect returns from relying on marketplaces as a third party

information source and as collection agents to expand the VAT base. There is scope to leverage administrative reforms in VAT on digital imports to support both the compliance management of residents and the implementation of corporate tax reforms that shift taxing rights to the market country for non-residents.

For many Asian countries, additional efforts in taxation are necessary to meet their revenue mobilization needs. International tax reform towards greater destination-based income taxation in combination with a global minimum tax (Pillar 2 of the OECD-IF) would ease pressures from international tax competition and allow countries to raise corporate income tax rates if desired. Further revenue mobilization efforts might be required to finance future spending needs. These could focus on broadening the tax base by removing tax holidays, exemptions, and other preferential tax treatments. These are common in developing Asia but are often ineffective and inefficient and could even become redundant under a global minimum tax. Digitalization of tax administrations could further help revenue mobilization by addressing tax evasion and widen the tax base for corporate taxes and VAT. Such comprehensive tax reforms, however, go beyond the scope of this paper.



# Introduction

Digitalization has been impacting countries in Asia and this effect is set to grow in the aftermath of the COVID-19 pandemic. Digitalization has extended well beyond the information communications and technology (ICT) sector, with widespread internet usage underpinning e-commerce, fintech, as well as online financial and other services. In addition to firms selling goods and services through their own websites, online platforms and marketplaces have rapidly emerged that connect firms with consumers and consumers with each other. These business models are supported by cutting edge technologies, including artificial intelligence, machine learning, and big data. Local firms have emerged as major players, particularly in large markets such as China, Japan, and Indonesia, competing with US multinational enterprises (MNEs) operating in the region. The potential for further growth in internet usage and the shift away from in-person activities during the pandemic is likely to fuel the growth of large, digitalized businesses in Asia in coming years, as well as the adoption of digital technologies across the entire economy.

The experience of digitalization varies across Asian countries depending on demographics, geography, and the stage of economic development. G20 economies such as China, Japan and Korea have large ICT sectors, including manufacturing, and well-established, locally headquartered, highly digitalized businesses engaging in e-commerce and online services. India and Indonesia are also rapidly developing markets for e-commerce and online services, with emerging local firms. Advanced services-based economies such as Australia and New Zealand are highly digitalized, although ICT-led manufacturing is less prevalent. Additionally, Asia has city states that are hubs for ICT sector businesses and fintech, such as Singapore. In contrast, developing Asian economies have lower rates of internet connectivity and are less likely to have large, locally headquartered digitalized firms.

The ability of highly digitalized firms to make cross-border sales without a physical presence challenges traditional corporate income tax (CIT) rules. These rules give taxing rights over corporate profits to countries where firms are headquartered and where they have a permanent establishment (for example, factory or storefront). For highly digitalized businesses trading online across borders, this can mean that the countries where sales are made (market countries), or where online users are located have no taxing rights over the firm's income. There are also challenges for countries with taxing rights under existing rules because the assets of highly digitalized firms can be more concentrated in intangibles (for example, intellectual property) compared with other businesses. Intangible assets can be more easily transferred to related members of a corporate group in lower tax jurisdictions, allowing profit to be shifted away from a country with higher tax rates.

Cross-border online sales of goods and services also place pressure on value added tax (VAT) collection. There is broad agreement across countries that VAT should be paid where the final consumer resides (see for example, the OECD's VAT/GST guidelines 2017). This is increasingly difficult to implement in a digitalized economy as VAT collections largely rely on locally registered firms remitting the tax. Enforcing VAT collection on, for example, the purchase of online streaming services from a non-resident supplier is much more challenging.

Multilateral discussions to resolve the challenges of taxing income in an increasingly digitalized economy are conducted under the auspices of the G20/OECD Inclusive Framework (IF). The IF consists of 139 members, including the major Asian economies and many developing countries. Under the so-called Pillar 1, countries are discussing a proposal to provide a new taxing right to market jurisdictions, thus addressing the concern around taxing rights in a digitalized economy.<sup>1</sup>

While awaiting agreement in the IF, some countries have begun implementing digital services taxes (DSTs), which typically tax the receipts of non-resident firms from sales made to their residents. DSTs can take the form of simple withholding taxes on payments (for example, for online advertising), similar to existing taxes on cross-border technical services. Alternatively, they can be in the form of user-based turnover taxes that aim to tax the value created by the ultimate users of digital services in a particular country.

This paper illustrates how digitalization has affected Asian economies and their CIT and VAT systems, analyzing the impact of proposed reforms. It builds on the IMF's policy and analytical work in international taxation and contributes to the policy debate by: (1) giving an overview of trends in digi-

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<sup>1</sup>A second pillar in these discussions deals with the introduction of an effective global minimum tax.

talization in Asia and how this differs from other regions (Chapter 1); (2) discussing the implications of multilateral and unilateral tax policy reforms aimed at taxing the income of companies in an increasingly digitalized economy (Chapter 2); and (3) exploring how best to address VAT challenges in the face of expanding online sales (Chapter 3). It is important to note that the nexus of digitalization and tax go beyond what is discussed in the paper, including issues of property rights over private information and the use of technology in tax design and revenue administration.



## Digitalization in Asia

*This chapter describes the landscape of digitalization in Asia. Digitalization is having a profound impact on Asia's economy, underpinned by widespread internet access. Digitalization extends well beyond the large ICT sector, with high levels of e-commerce and automated digital services. Asia stands out in its large, highly digitalized and locally headquartered tech giants, operating alongside US MNEs. The rapid growth of Asia's homegrown tech giants and the presence of US MNEs highlights the importance of appropriate tax policies for these highly digitalized businesses.*

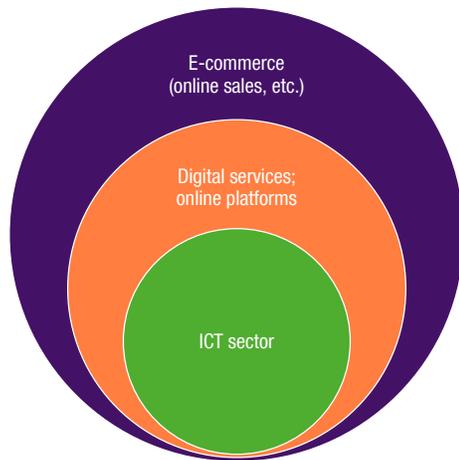
Digitalized economic activity in Asia encompasses both the ICT sector and other types of digitalized businesses.

For the purposes of this paper, the ICT sector is defined to include manufacturing of computers, electronic and optical products, publishing and broadcasting, telecommunications and computer programming, and information services.<sup>1</sup> Beyond the ICT sector, nearly all businesses in the formal economy approach a “digital asymptote” (Figure 1), using digital technology to varying degrees, ranging from the use of digital systems to facilitate online ordering of goods to the provision of purely digital services (for example, online gaming, search, and social media). This paper gives particular attention to large, highly digitalized businesses, referred to as “tech giants.” These tech giants rely heavily on digital technology to carry on business, despite their different business models, ranging from ICT manufacturers and retailers that have built large e-commerce platforms, to online marketplaces that facilitate e-commerce between third parties.

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<sup>1</sup>The ICT sector is measured using industry-level national accounts data and the relevant International Standard Industrial Classification codes (G20 2018, United Nations 2008) for computer programming and information services (Div. 62 63); telecommunications (Div. 61); publishing and broadcasting (Div. 58 60); and manufacturing of computer, electronic, and optical products (Div. 26).

Figure 1. A Digitalized Economy



Source: United Nations Conference on Trade and Development.  
 Note: ICT = information and communications technology.

## Asia's ICT Sector

The ICT sector in Asia is among the world's largest. The sector accounts for more than 12, 7, and 6 percent of total value added in Korea, India, and Japan, respectively (Figure 2, panel 1), comparable in size to most other OECD countries (IMF 2018a, 2018b).<sup>2</sup> China's ICT sector is estimated to be around 5.6 percent of GDP (Herrero and Xu 2018). The employment share of the ICT sector in China's urban areas is already larger than in many OECD countries (Figure 2, panel 2).

Asia's ICT sector has grown rapidly, driven by manufacturing, which has exhibited high labor productivity. The strong growth of the ICT sector's real value added in Korea

and Japan is comparable to that of the United States and Europe (Figure 2, panel 3). China's ICT sector is also estimated to have grown rapidly by about 10 percent per year between 2013 and 2016 (Herrero and Xu 2018). Unlike the United States and Europe, the ICT manufacturing sector in Korea has recorded stronger growth than in ICT services and exhibited high labor productivity (Figure 2, panel 4), potentially reflecting the region's comparative advantage in manufacturing relative to services. MNEs engaging in ICT manufacturing may also provide digital services and engage in e-commerce (for example, Apple, Samsung).

## Digitalization Beyond the ICT Sector

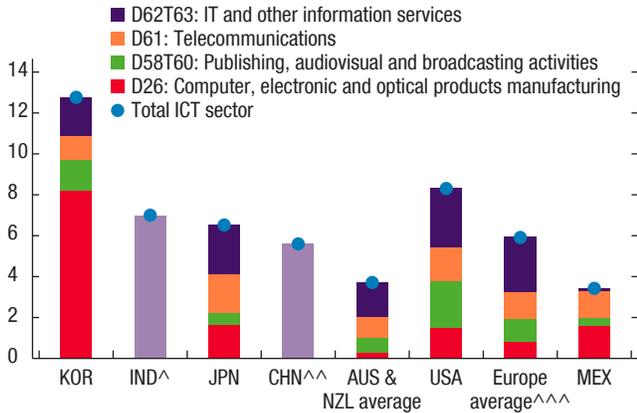
Asia's unrivalled level of internet connectivity, which has underpinned the economy's digitalization beyond the ICT sector, creates enormous scope for future growth. Reflecting their population size, China, India, and Indonesia taken together have more than 2 billion active mobile broadband connections, compared with approximately 500 million in the United States (Figure 3). Japan has more than 200 million connections, while Bangladesh, the Philippines, Thailand, and Vietnam also each have 50–100 million mobile connections. The number of fixed broadband connections is more than three times as large in China as in the United States. Considerable potential

<sup>2</sup>Although fully comparable data are not available, McKinsey Global Institute (2019) estimate that India's ICT sector accounted for around 7 percent of GDP in 2017–18, mainly reflecting IT and digital communications services.

Figure 2. Asia's ICT Sector

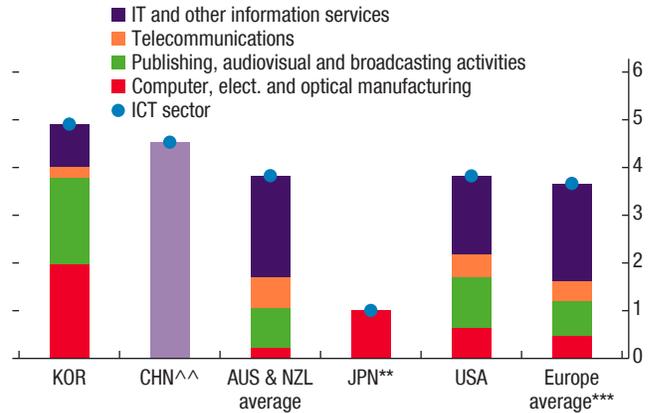
1. Value Added of ICT Sector

(Percent of total, 2017, or latest year available)



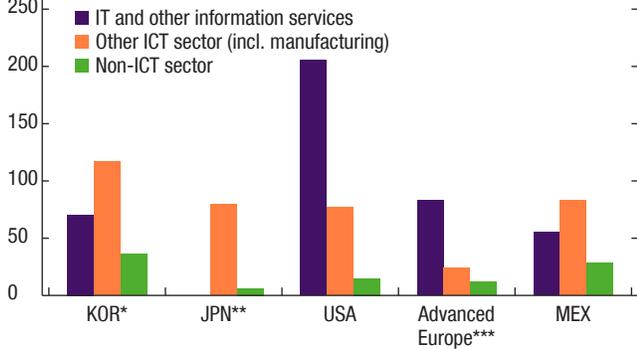
2. Employment in ICT Sector

(Percent of total, 2017, or latest available)



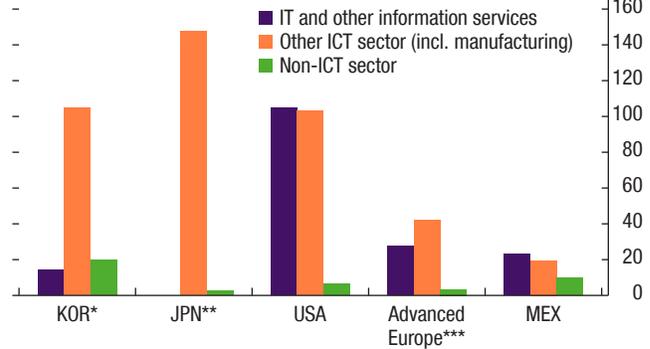
3. Real Value Added Growth of ICT Sector, 2005–2017

(In percent change)



4. Labor Productivity Growth of ICT Sector, 2005–2017

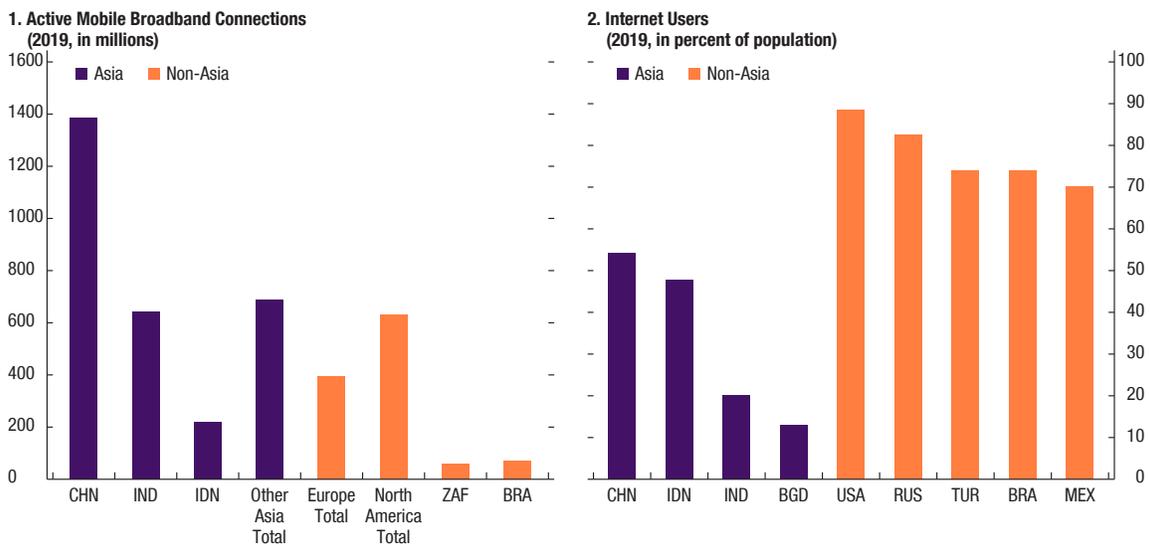
(In percent change)



Sources: OECD Structural Analysis Database (STAN, 2020 ed.); McKinsey Global Institute<sup>^</sup>; and Herrero and Xu (2018).<sup>^^</sup>  
 Note: In panel 1, <sup>^</sup>2017–18 estimate, incl. IT & digital comms. services; electronics manufacturing. Breakdown unavailable.  
<sup>^^</sup>2016 estimate, incl. electronic manufacturing, IT & telecommunications services. Breakdown unavailable.  
<sup>^^^</sup>Europe incl. FRA, DEU, ITA and UK.  
 In panel 2, <sup>^^</sup>estimate for 2010 in urban areas only. Breakdown unavailable.  
<sup>\*\*</sup>Data for computer, elect. and optical manufacturing only.  
<sup>\*\*\*</sup>Europe incl. FRA, DEU, ITA and UK.  
 In panel 3, \*data for KOR are for 2005–2015 and sourced from the 2018 update of the STAN database.  
<sup>\*\*</sup>Data on the ICT sector in JPN include only ICT manufacturing.  
<sup>\*\*\*</sup>Advanced Europe incl. FRA, DEU, ITA and UK.  
 In panel 4, \*data for KOR are for 2005–2015 and sourced from the 2018 update of the STAN database.  
<sup>\*\*</sup>Data on the ICT sector in JPN are missing except for ICT manufacturing.  
<sup>\*\*\*</sup>Advanced Europe incl. FRA, DEU, ITA and UK.

appears possible for further growth, particularly in China, Indonesia, and South Asia, where the number of internet users as a share of the population remains well below the level in the United States, as well as in other major emerging market economies.

Figure 3. Internet Access in Asia

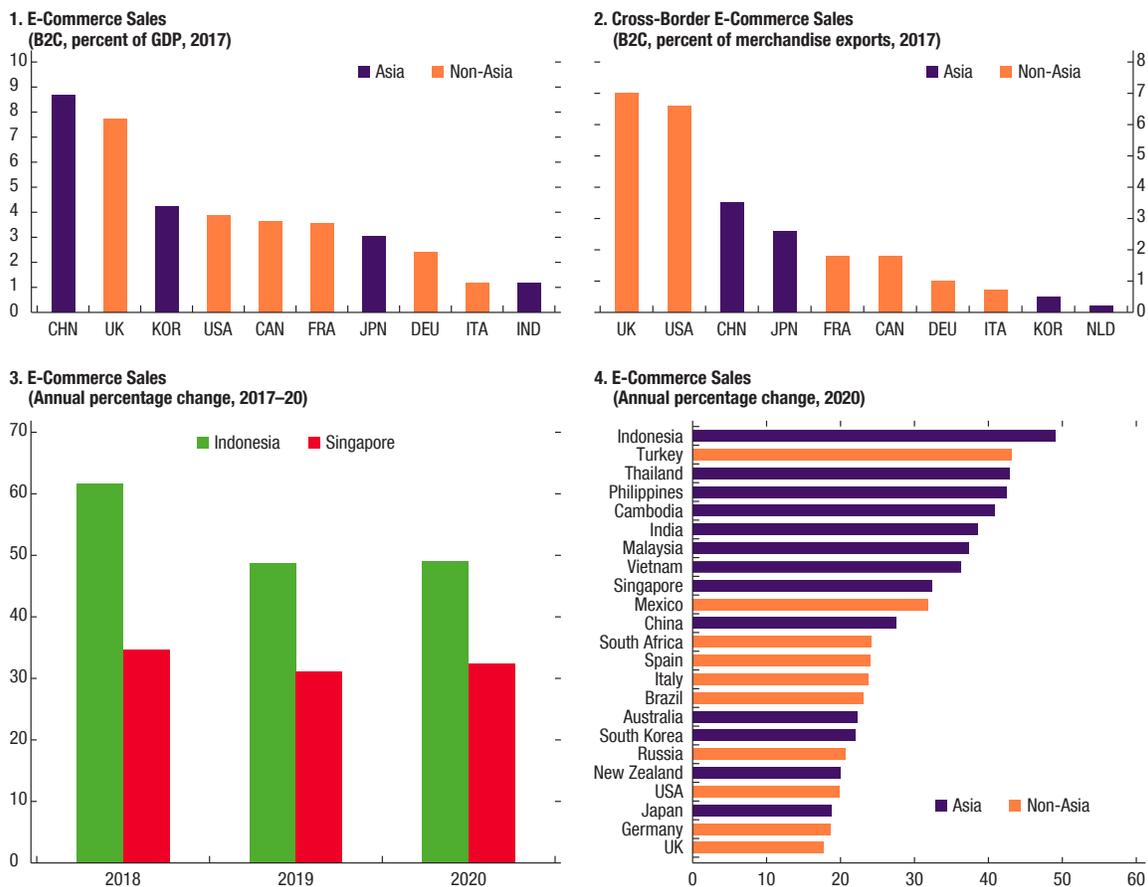


Source: International Telecommunications Union.

Online sales are more common in some Asian economies than in other regions, including e-commerce exports. Business-to-consumer (B2C) e-commerce in China and Korea is larger than in the United States, while in Japan it is of similar size to other G7 economies (Figure 4, panel 1). Cross-border e-commerce is also substantial, with B2C e-commerce exports in China and Japan exceeding those in some G7 economies (Figure 4, panel 2). These trends have continued during the pandemic. For instance, in 2020 alone, e-commerce sales grew by 30–50 percent in Indonesia and Singapore, some of the fastest growth rates even in comparison to other advanced economies (Figure 4, panels 3 and 4).

Large and highly digitalized businesses—tech giants—thrive beyond the ICT sector. Firms providing e-commerce and fintech services are closest to the digital asymptote in ICT, finance, other professional services, wholesale, and retail trade (Sedik 2018). Public companies from China (Alibaba, JD, Meituan), Japan (Rakuten), and Singapore (Sea Limited) are among the largest in Asia’s e-commerce space (Figure 5) (Hvistendahl 2019, EcommerceDB 2019). Private companies including Korea’s Coupang and Indonesia’s Go-Jek are also important players. These local firms generate levels of revenue in Asia similar to large US firms, including Amazon, Walmart, and their local subsidiaries.

Figure 4. E-Commerce in Asia

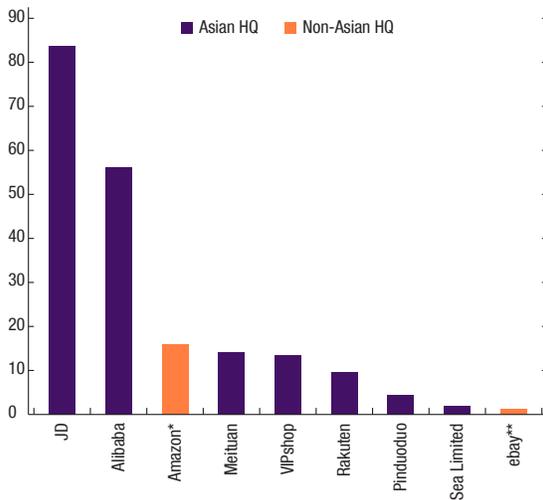


Sources: Statista; United Nations Conference on Trade and Development; and IMF staff calculations.

## How Is Digitalization in Asia Different?

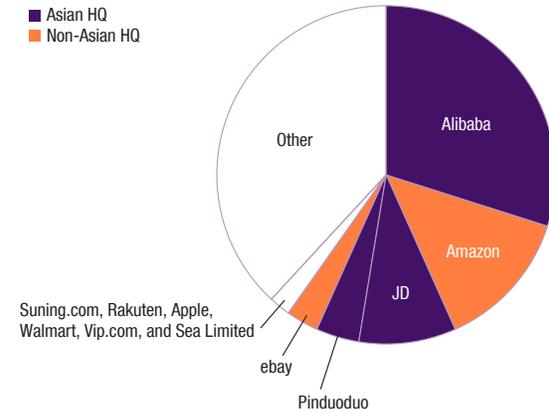
Asia stands out from other regions in having home-grown tech giants that rival US MNEs in size. China has several of the largest e-commerce companies in the world, both measured in terms of market share or total sales. For instance, China’s Alibaba Group and JD.com have about 38 percent of global e-commerce market share by merchandise volume (Figure 6), although the total value of Alibaba’s transactions is smaller than that of Amazon (Box 1). Alibaba operates China’s most-visited online marketplaces, Taobao (consumer to consumer [C2C]) and TMall (business to consumer [B2C]), while JD.com’s marketplace has a large in-house delivery network. Japan’s Rakuten and Singapore’s Sea Group (trading as subsidiary Shopee) are other major players in e-commerce. Asia is also home to some of the world’s largest providers of digital services other than e-commerce, such as China’s Tencent

**Figure 5. Asian Sales of E-Commerce Companies (Public)**  
(Revenue, FY 2019, US\$ billions)



Source: Pitchbook Data Inc. Data have not been reviewed by PitchBook analysts.  
\*Japan only.  
\*\*Republic of Korea only.

**Figure 6. Global Market Share: E-Commerce Companies (Public)**  
(Percent of total, by gross merchandise volume, 2019)



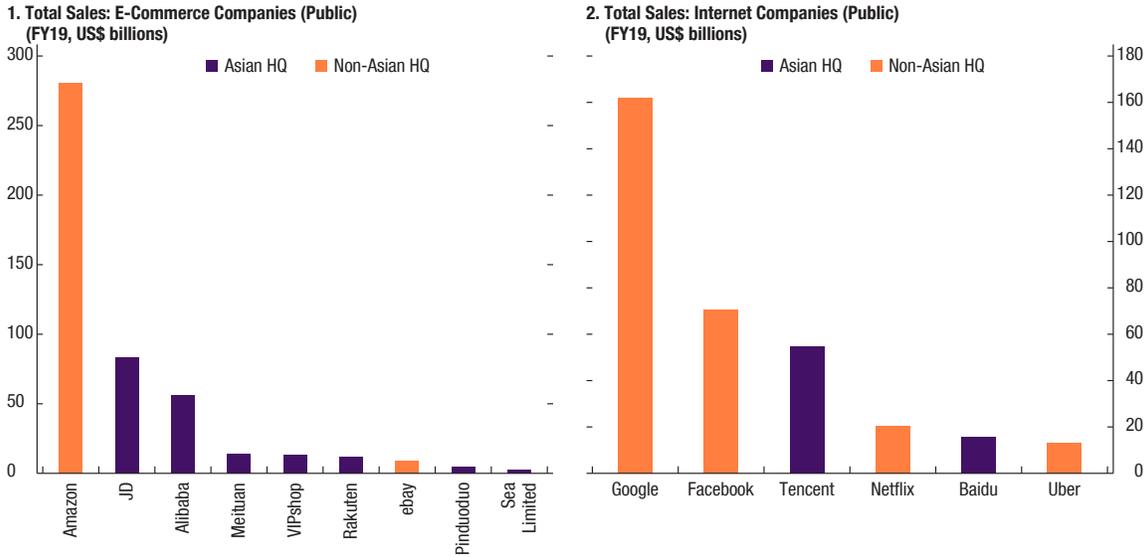
Sources: Statista; and Activate.

(operating the WeChat communications, social media, and payment platform) and Baidu (China’s largest internet search engine) (Figure 7).

Unlike US MNEs, available evidence suggests that Asia’s homegrown tech giants operate mainly within their domestic markets. While large US tech giants generate the majority of their revenue outside the United States (Figure 8, panel 1), major e-commerce providers such as Japan’s Rakuten derive the bulk of their income from the Japanese market (Figure 8, panel 2). This also appears to be the case for China’s e-commerce giants. Expansion beyond domestic markets is occurring, sometimes through joint ventures and acquisitions of foreign firms. High profile examples include Alibaba’s purchase of Singapore’s Lazard Group e-commerce firm, recent acquisitions by Singapore’s Sea Group, facilitating expansion into fintech, as well as acquisitions in recent years by Indonesia’s Gojek to expand its range of online products.

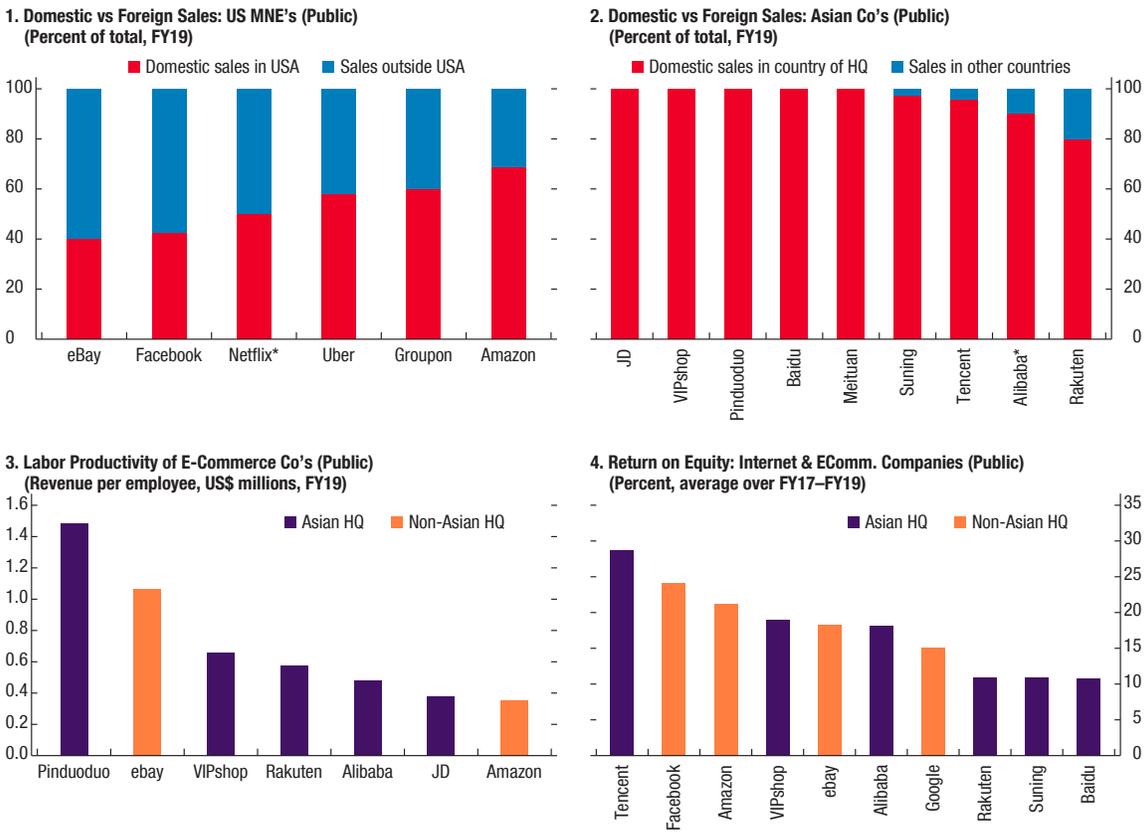
Asia’s homegrown tech giants appear to rely on intangible assets as much as MNEs in the United States, and their profitability is comparable. Firms that derive value from intangible assets, such as intellectual property, can be more difficult to tax since it is easier to shift these assets across borders to lower tax jurisdictions. Intangible assets are also difficult to value for the purposes of transfer pricing, whereby transactions within corporate groups, including between subsidiaries and parent companies, are valued for tax purposes. Using revenue per employee as a proxy for the degree of intangibility, it appears that some of the Asian tech giants eclipse large US MNEs such as

Figure 7. Turnover of Asia's Tech Giants



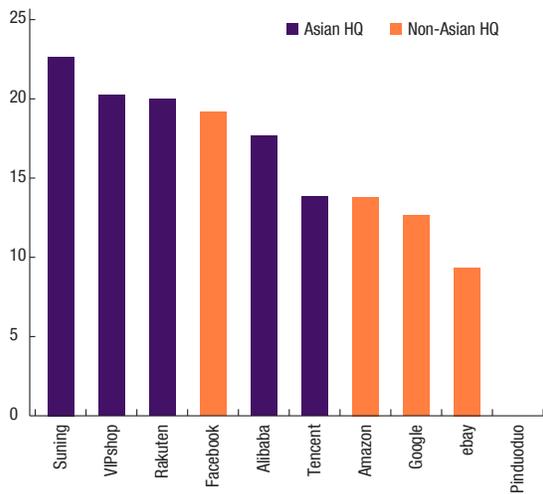
Source: Pitchbook Data Inc. Data have not been reviewed by PitchBook analysts.

Figure 8. Sales, Productivity, and Profits of Asia's Tech Giants



Sources: Statista; and Pitchbook Data Inc. Data have not been reviewed by PitchBook analysts.  
 Note: MNEs = multinational enterprises.  
 In panel 1, \*Sales in both USA and Canada.  
 In panel 2, \*E-commerce sales only, 2019.

**Figure 9. Income Tax Expensed**  
 (Percent of pretax income, average during FY18–FY19)



Source: Pitchbook Data Inc. Data have not been reviewed by PitchBook analysts.

Amazon on this metric (Figure 8) and are broadly as profitable, when judged by return on equity in recent years.

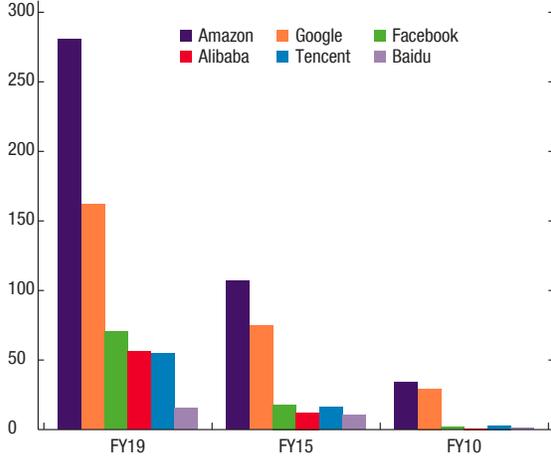
Some of Asia’s largest home-grown tech giants also appear to have income tax rates comparable to those of US MNEs. Figure 9 shows tax rates computed as income tax expensed in a financial year, as a percent of pretax income, for a selection of large Asian and US tech giants. Although this may not capture tax paid precisely, it indicates that tax outcomes for Asia’s tech giants can be similar to large US digitalized companies.

The rapid growth of Asia’s homegrown tech giants and the presence of US MNEs highlights the importance of appropriate tax policies for these highly digitalized businesses.

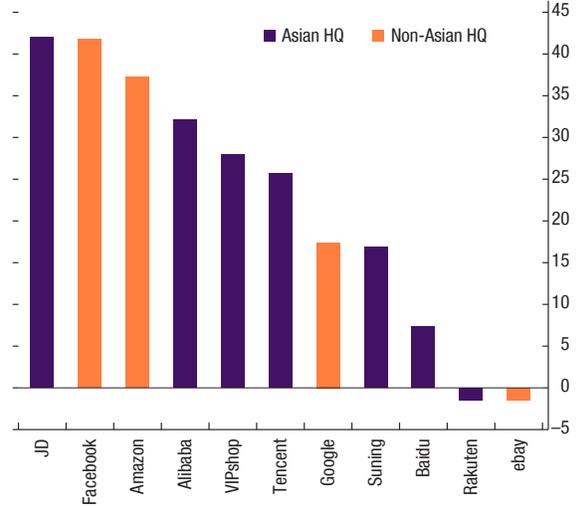
Asian e-commerce and internet giants Alibaba, JD, and Baidu have emerged as major players only in the last 10 years, rivalling the turnover of Amazon, Google, and Facebook (Figure 10, panel 1). Asian giants have also recorded solid growth in recent years (Figure 10, panel 2), comparable to large US MNEs. With continued expansion, revenue collection from both local and foreign tech giants will become increasingly important and appropriate tax policies will need to be in place to ensure that revenue is distributed across countries in a manner that is perceived to be fair.

Figure 10. Growth of Asia's Tech Giants

1. Sales of Internet Companies (Public)  
(FY10, FY15 and FY19, US\$ billions)



2. Profit Growth: Internet Companies (Public)  
(Percent, average during FY15–FY19)



Source: Pitchbook Data Inc. Data have not been reviewed by PitchBook analysts.

**Box 1. Amazon and Alibaba—Comparison between an American and Asian Tech Giant**

Alibaba is a Chinese tech giant with websites that serve as platforms for other sellers, while Amazon has become an integrated retailer. Beginning in the late 1990s, Amazon and Alibaba both developed comprehensive e-commerce websites (Laubscher 2018, Xu 2016). Alibaba’s websites have traditionally been a platform for third party sellers, without marketing Alibaba’s own products or providing delivery services (Box Table 1.1). Amazon invested in an extensive delivery network for its goods and services, as well as selling its own products via its website. The two tech giants have converged more recently in some business decisions, as Alibaba jointly founded Cainiao Network in 2013, as a platform for businesses offering delivery services. Both Amazon and Alibaba have also recently acquired traditional retail outlets, in Whole Foods (Amazon) and Hema Fresh (Alibaba).

Amazon has significantly higher turnover and is more profitable. Although Alibaba facilitates a higher volume of merchandise trade, Amazon has significantly higher revenue and larger profits. This may reflect Amazon’s diversification, as the share of Amazon’s revenue contributed by online e-commerce has declined from 65 percent to about 50 percent between 2016 and 2019, as its cloud computing services (AWS) and other businesses have grown rapidly. E-commerce continues to account for more than 80 percent of Alibaba’s revenue (PitchBook Data, Inc).

Alibaba is an intangible business with significant potential to expand internationally similar to Amazon. Alibaba has less than a quarter of Amazon’s employees, given the absence of an integrated retail and delivery network. This reflects a less tangible business model with significant scope to increase use of its online platforms by foreign buyers

**Box Table 1.1. Comparison between an American and Asian Tech Giant**

	Amazon	Alibaba
Founded	1995	1999
Subsidiaries	Amazon.com (B2C). AWS for cloud computing. Wholefoods traditional retail.	TMall (B2C) and Taobao (C2C). Cainiao Network: delivery co platform. Hema Fresh traditional retail
Foreign operations	Localized versions of Amazon.com operate in 20 countries.	Alibaba.com (B2B) Aliexpress (B2C) Lazard for e-commerce in SE Asia.
Revenue FY19	US\$ 280.5 billion	US\$ 56.1 billion
Foreign Revenue FY19	31%	10.1%
Gross Profit FY19	US\$ 74.7 billion	US\$ 25.3 billion
ROE (FY17-19 avge)	21.2%	18.1%
Profit growth (FY15-19 avge)	37.2 %	32.1 %
Employees (2019)	798,000	116,519
Income tax expense (% pretax income, FY18-19 avge)	17.7%	13.8%

Source: PitchBook Data Inc. Data have not been reviewed by PitchBook analysts.

**Box 1. Amazon and Alibaba (continued)**

and sellers. Progress has been limited so far, with most revenue generated by its Chinese websites, unlike Amazon's websites in multiple countries.

Alibaba's tax obligations appear to be similar to those of Amazon in recent years. Alibaba's income tax expense (percent of pretax income) was 17.7 percent on average during FY2018 and FY2019, compared to 13.8 percent for Amazon. Although an imperfect measure of income tax paid, these figures do not suggest that either company enjoys a significant tax advantage over the other.



## Income Tax for Highly Digitalized Businesses in Asia—Challenges and a Way Forward

*This chapter focuses on the international tax challenges stemming from a highly digitalized economy, rather than domestic tax challenges related to profit shifting. Under the proposed multilateral solution by the OECD Inclusive Framework, investment hubs, including those in Asia, would lose revenue, while those with a large user base or high-income consumers will likely gain. Other multilateral policy alternatives go farther, calling for a complete replacement of the existing CIT regime. While highly digitalized businesses are not explicitly targeted by the OECD proposals, they remain some of the most affected. In the interim, some countries in the region have introduced a DST on the receipts of non-resident firms from the sale of services to residents. These taxes raise low levels of revenue, suggesting that the choice to introduce a DST needs to be weighed against other reform priorities.*

### Challenges of Taxing Digitalized Businesses in Asia

The existing approach to taxing highly digitalized businesses operating internationally has been perceived as unfair by governments and civil society organizations. The view held by many governments is that their citizenry is remotely contributing to the rents generated by digital service providers from other countries. First, increasingly sophisticated technology has facilitated a large surge in both business to business (B2B) and business to consumer (B2C) remote cross-jurisdictional sales/exports, challenging the concept of a permanent establishment (PE) which requires a physical presence to generate taxing rights for income taxes. Second, many governments claim that information collected by companies on the personal preferences and habits of the customer or “user” as they consume digital services—which is then processed and monetized through personalized advertising and product development—is contributing significantly to the profits of these companies, without adequate compensation to the users. Highly digitalized businesses may also

have relatively more intangible assets, which are harder to value and easier to relocate (Beer and Loeprick 2015), enabling profit shifting under existing transfer pricing rules.

The impact of international tax policy reforms in Asia could differ from other regions, given the unique landscape of digitalized businesses. Reducing the importance of physical presence in determining a company's income tax liability could increase the ability of Asian countries to tax foreign MNEs operating in Asia with few tangible assets. However, the home countries of Asia's tech giants could also lose revenue if these firms have to pay more tax in other countries where they are expanding. The consequences for revenue collection could be non-trivial, given that home-grown tech giants are growing rapidly and face similar implicit tax rates to US MNEs. Some Asian countries are also turning to DSTs—withholding taxes or user-based turnover taxes on digital activities—as a unilateral means of taxing tech giants and other highly digitalized businesses. This paper first discusses multilateral tax reform proposals and implications for the region before turning to digital services taxes in Asia, potential trade-offs, and economic implications.

### Multilateral Reform

The OECD-led IF has proposed multilateral reform as a solution for taxing an increasingly digitalized economy. The first pillar of the policy proposal seeks to adapt the international corporate tax system to new digitized business models, by reallocating part of residual profit to market (or “destination”) countries. It would establish new taxing rights without requiring a physical presence (new “nexus”). This reflects a fundamental shift from existing norms by going beyond the arm's length principle and moving toward formulary methods when reallocating profits to the new nexus, thereby addressing some of the challenges in taxing digitalized businesses. Notably, this new taxing right would be overlaid on top of the existing system of international taxation.<sup>1</sup>

The following are key elements of Pillar 1:

- *A new taxing right for market jurisdictions* over a share of residual profit calculated at a consolidated MNE group (or segment) level (“Amount

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<sup>1</sup>Some countries consider the DSTs discussed in the following section, merely as an interim solution until international agreement is achieved. Indeed, countries such as Belgium, Czech Republic and Hungary have delayed the implementation of their DSTs, anticipating agreement on a multilateral solution can be reached by mid-2021.

A”). Specifically, a portion (perhaps 20 percent)<sup>2</sup> of the “residual profit”—earnings in excess of “routine profits”—of MNEs with group revenues above EUR 750 million (USD 850 million), that are engaged in automated digital services or consumer-facing business would be allocated to market (or “destination”) countries. Routine profit equates broadly to profits that would be earned by an entity undertaking that activity on an outsourced basis. There are different ways of calculating routine profits, but for this purpose it is likely to be defined as some percentage (perhaps 10 percent) of revenue from unrelated party sales; the residual is any profit above this.<sup>3</sup>

- *A (separate) fixed return for certain baseline marketing and distribution activities* taking place physically in a market jurisdiction, in line with the existing arm’s length principle (“Amount B”). This does not create a new taxing right, rather it secures a taxing right that already exists. It presents a simplification of existing rules and may help effective implementation of taxing rights, wherein rules to ensure a minimum return to activities are currently not well enforced, such as in developing Asian countries.
- *Processes to improve tax certainty* aimed at dispute prevention and resolution.

The second pillar introduces minimum taxation of inbound and outbound investment. Pillar 2 applies more broadly and does not have a special treatment for digital businesses and is not covered in this paper. However, some countries (including the US)<sup>4</sup> see Pillar 1 and Pillar 2 as a package, with acceptance of Pillar 1 predicated on acceptance of Pillar 2. Notably, by placing a floor on the CIT rate, Pillar 2 is expected to raise more revenue than Pillar 1. Broader revenue implications of Pillar 1 for Asia are discussed below and extend beyond the digital economy.

### **Implications of Amount A for Asia**

MNEs headquartered in the Asia-Pacific region generate a significant share of the global residual profit covered by “Amount A.” Table 1 reports on the share of residual profits by country of headquarter for MNE groups with annual revenue larger than EUR 750 million (USD 850 million). The size and distribution of residual profits are reported separately for all industries, ICT industries, and online retailers. Although these classifications do not directly map to the definition of consumer-facing businesses and automated

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<sup>2</sup>The OECD-IF argues that not all the residual is generated by the market jurisdiction (for example, some reflects risk-taking by the MNE), hence only a portion of the residual profit is reallocated.

<sup>3</sup>For economists, routine returns may resemble a normal return on investment and “residual” profits, resemble rents (earnings in excess of the minimum required by the investor).

<sup>4</sup>For instance, the Made in America Tax Plan would bring the international minimum tax provisions (GILTI and BEAT) closer in line with the OECD-IF’s Pillar 2 proposal. The plan envisages a higher minimum tax rate of 21 percent compared to the OECD-IF.

**Table 1. Residual Profit by Headquarter Jurisdiction, 2017**

All industries (2017)			ICT industry (2017)		
Country	Share of Global RP (%)	Mean RP/EBT (%)	Country	Share of Global RP (%)	Mean RP/EBT (%)
United States	33.1	18.0	United States	53.3	24.4
China	12.1	13.1	Hong Kong SAR	7.6	29.6
United Kingdom	8.0	11.0	China	6.7	23.2
Hong Kong SAR	5.9	32.1	Japan	6.6	11.6
South Korea	4.0	8.7	India	3.2	43.2
Japan	3.9	5.1	Germany	2.3	20.9
France	3.5	9.5	Canada	2.0	35.3
Germany	2.9	7.5	Netherlands	1.4	9.6
Canada	2.1	17.7	Australia	1.2	26.9
Russia	2.0	25.1	Spain	1.2	16.1
Other Asia Pacific	5.9	14.5	Other Asia-Pacific	5.7	18.8
Rest of the World	16.7	12.9	Rest of the World	8.8	12.9
<b>Total</b>	<b>1,457</b>	<b>USD billions</b>	<b>Total</b>	<b>236</b>	<b>USD billions</b>

Online Retailers (2017)		
Country	Share of Global RP (%)	Mean RP/EBT (%)
United States	65.1	10.1
Japan	26.8	2.9
China	8.1	7.4
<b>Total</b>	<b>1.45</b>	<b>USD billions</b>

Sources: S&P Capital IQ and IMF staff estimates.

Note: EBT = earnings before tax; RP = residual profit.

digital services, they are nonetheless indicative.<sup>5</sup> Assuming that routine profits are 10 percent of revenue (that is, a 10 percent profitability threshold), global residual profit across all industries is USD 1.5 trillion. MNEs headquartered in the US account for the bulk of residual profits (33 percent), but a sizeable share (32 percent) are earned by MNEs headquartered in Asia-Pacific, with China, Hong Kong SAR, Korea, and Japan playing a prominent role. Narrowing the scope to the ICT industry shrinks the size of residual profits but maintains the importance of MNEs headquartered in Asia-Pacific.

The ICT sector is relatively profitable compared with other industry sectors, disproportionately contributing to residual profit. The ICT sector is one of the most profitable industries as measured by the return to total assets, and its residual profit as a share of total profit also ranks high compared to other sectors (Table 2). Although the sector falls within the narrow scope of “Amount A,” even without this ringfencing, the high level of profitability means that firms in the sector are more likely to be included in the tax base. The sector accounts for about 16 percent of the global residual profits, which is similar to the level of the financial and real estate sector, but with a con-

<sup>5</sup>The definition of consumer-facing business is not yet finalized.

**Table 2. Residual Profit and Other Descriptive Statistics by Sector, 2017**

Industry Sector	Number of Companies	mean EBT/Assets (%)	median EBT/Assets (%)	mean RP/EBT (%)	Share of Global RP (%)
Agriculture, Forestry and Fishing	25	8.3	8.3	12.6	0.2
Construction	298	5.6	4.7	5.2	1.0
Finance, Insurance and Real Estate	899	4.6	3.1	17.9	16.3
Manufacturing	2694	8.3	6.7	12.4	42.8
Retail Trade	608	8.1	6.2	3.7	2.1
Services	719	8.0	6.2	15.0	14.0
Transportation, Communications and Utilities	1160	5.9	4.5	20.2	20.3
Wholesale Trade	697	6.2	4.5	2.8	2.6
ICT	501	8.3	6.3	19.4	16.2

Sources: S&P Capital; and IMF staff estimates.

\*ICT has overlaps with other sectors, so the sum of the share of Global RP is not 100 percent.

Note: EBT = earnings before tax; RP = residual profit.

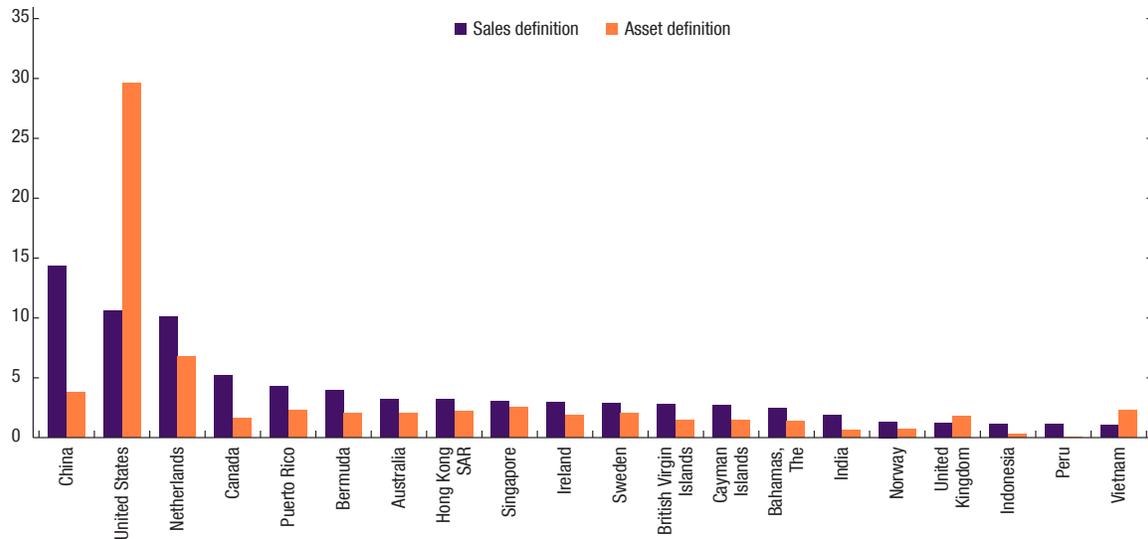
siderably smaller number of companies. The average return on assets in the sector is twice as large as in the financial sector. The median rate of return ratio indicates divergence of profitability within the ICT group.

Under the current system of international taxation, residual profits across all industries are reported mainly in large economies and investment hubs. Figure 11 shows the location of residual profit for MNEs headquartered in 25 economies (including Australia, China, India, Indonesia, Japan, Singapore, and the United States) for all sectors, not just highly digitalized firms.<sup>6</sup> Together, these MNEs account for 71 percent of total global residual profit. With a profitability threshold based on revenue (that is, the current definition of residual profit under Amount A), about 44 percent of the residual profit from these MNEs are declared in China and the United States, followed by the Netherlands, Canada, and Puerto Rico. Other Asia-Pacific economies with a sizeable share of residual profit include Australia, Hong Kong SAR, and Singapore. Regionally, Europe has the largest share of residual profit (35 percent) followed by Asia Pacific (31 percent) and the Americas (29 percent).<sup>7</sup> The presence of investment hubs potentially reflects the extent of profit shifting that occurs under the current regime. That said, these results should be interpreted with caution, as the profit measure available can include income from equity investment in affiliates (for example, dividends from subsidiaries) that are not subject to tax in the home country under current rules, and not subject to redistribution under Pillar 1.

<sup>6</sup>However, as noted above using consolidated data, digital firms account for a sizeable share of residual profits, with the ICT sector alone responsible for 16 percent of total residual profits. Hence the analysis presented here should be viewed as illustrative. Indeed, digital firms are deemed to have greater opportunities for profit shifting, given the importance of intangibles in their production process

<sup>7</sup>Although the share of residual profit is evenly shared across the three continents, affiliates located in Asia tend to be more profitable than their counterparts in other regions, earning a return on tangible assets of 17 percent. The median affiliate in Europe earns a 15 percent return, and those in the Americas and Middle East earn a return of 8.5 percent. The lowest returns are observed in Africa, with a return on assets of only 4 percent.

**Figure 11. Top 20 Locations of Residual Profit**  
(Percent of total)



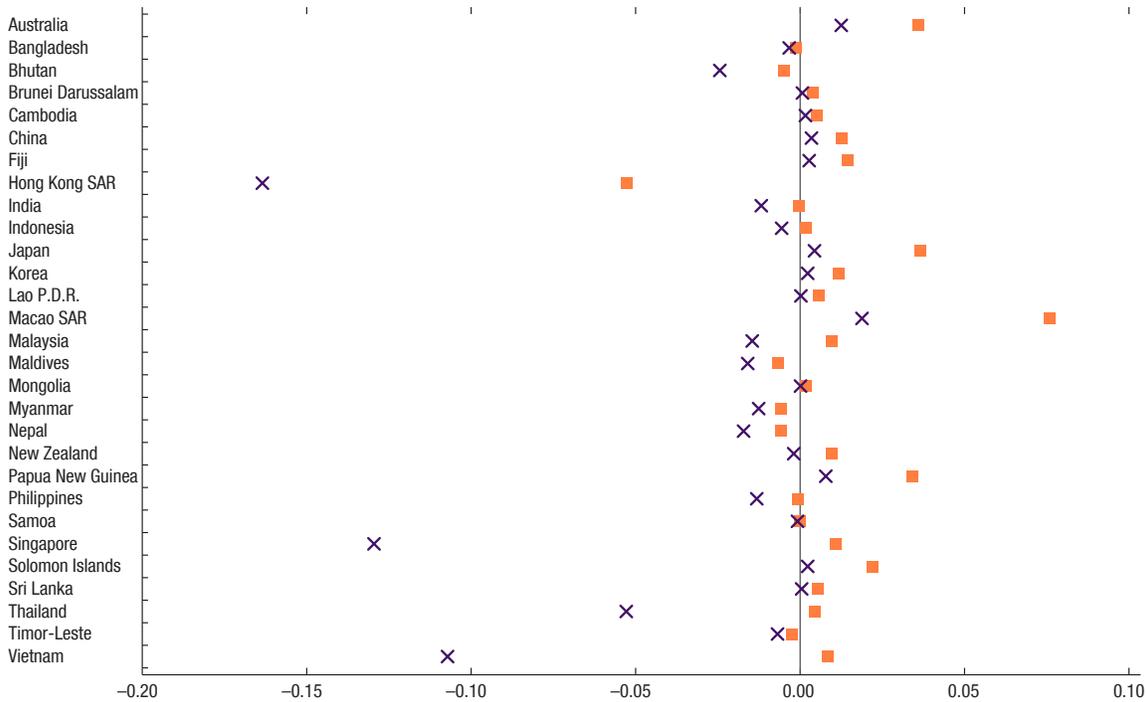
Source: OECD country by country reports for 2016; and IMF staff estimates.

The location of residual profits is sensitive to the precise method of calculation. Using a profitability threshold based on returns to tangible assets (in this case 10 percent of their value), the United States emerges as the top location for residual profits while China accounts for only 4 percent of residual profit. This reflects the importance of tangible assets in the creation of profit for China (for example, manufacturing) compared to the United States.

The global revenue effect of Amount A is small, increasing CIT revenue by about 0.5 percent (OECD 2020a), but implications for individual jurisdictions can be significant. The revenue increase is driven by the reallocation from jurisdictions with low taxes toward jurisdictions with higher taxes. However, only a proportion of the residual profit will be reallocated. Using a profitability threshold of 10 percent of unrelated party sales and assuming only 20 percent is available for reallocation, then the pool of residual profits to be reallocated is estimated to be relatively small at USD 98 billion, limiting the size of the revenue increase (OECD 2020). For individual jurisdictions, the impact on tax revenues depends on their current share of residual profit relative to their share of sales. The OECD estimates that low-income countries would increase their CIT revenue by approximately 1 percent (or 0.02 percent of GDP) and middle-income countries by 0.5 percent (0.02 percent of GDP).<sup>8</sup> The revenue impact for high-income countries show

<sup>8</sup>Results are presented in OECD (2020a) as the percentage change in CIT revenue. IMF staff converted this change in CIT revenue into percentage points of GDP for ease of comparison with the other results presented in this paper.

**Figure 12. Potential Revenue Effects of Pillar 1, Amount A**  
(Percent of GDP)



Sources: OECD Country by Country Reports for 2016; and IMF staff estimates.

Note: The range reflects assumptions regarding the profitability threshold (10 percent or 20 percent of unrelated party sales) and share of residual profit to be reallocated (10 percent or 20 percent). Increasing (decreasing) the share of residual profit to be reallocated results in a proportional increase (decrease). Increasing the threshold reduces the size of the potential pool of profits to be reallocated, but for some countries this results in an increase in the revenue gain. This is because it is assumed that each jurisdiction's 'contribution' to the pool to be reallocated is in proportion to the jurisdiction's current share of residual profit. So, with a higher profitability threshold, the residual profit becomes more concentrated in select countries.

greater variability, they could lose or gain a small amount of revenue. Investment hubs unequivocally lose revenue, by as much as 3.9 percent of current CIT revenue (0.2 percent of GDP).

Under an expanded scope, which includes firms in all industries, investment hubs and developing economies in the Asia Pacific region could lose revenue (Figure 12). Discussions surrounding the scope of Amount A are ongoing, with a possibility that the scope would be based on a size threshold, rather than type of business activity.<sup>9</sup> In this case, the estimates presented here could be closer to the expected impact. The range reflects assumptions regarding

<sup>9</sup>The top 100 largest MNE groups by revenue have revenue greater than USD 67 billion, with an average revenue of USD 127 billion, and an average residual of USD 1.7 billion. The headquarters of these MNE groups are dispersed equally across Asia, Europe, and the Americas. The average size, in terms of revenue, in each region is similar, but the average MNE group headquartered in the Americas have more than twice the residual profit (USD 3.4 billion) of the average Asian MNE (USD 1.6 billion). The average residual profit of European is the lowest at USD 305 million.

the profitability threshold (10 percent or 20 percent of unrelated party sales) and share of residual profit to be reallocated (10 percent or 20 percent). For instance, with a 10 percent profitability threshold and with 20 percent of residual profits reallocated, Vietnam could lose about 0.11 percent of GDP in revenue, driven by the profit reallocation of Japanese MNEs. Whereas with a higher profitability threshold, revenue effects are minimal. Similarly, emerging economies such as India, Indonesia, and Malaysia could lose about 0.01 percent of GDP in revenue or have a modest revenue gain. In contrast, high-income countries such as Australia, Japan, and Korea, as well as large markets such as China, gain revenue under the range of assumptions considered here. Singapore and Hong Kong SAR could lose about 0.15 percent of GDP in revenue. It is unsurprising that revenue losses are projected in these investment hubs since they currently account for a disproportionate share of residual profit compared to their market share.<sup>10</sup> Distributional effects differ with the current proposal where the relative size of the in-scope sectors deviates from the relative size of all MNEs. Annex 1 provides an overview of the methodology used to develop these estimates.

## Digital Services Taxes

The use of unilateral measures to tax digital services is linked to wider global discussions on expanding market (or “source”) country taxing rights. In a context wherein direct taxation of profits is difficult, digital services taxes— analogous to royalties imposed on the extraction of resource-rich countries— allow countries to share in the rents of highly digitalized businesses. Data, often proclaimed as the oil of the 21st century, have been a key driver for new economic activity in recent decades. Such an analogy can be expanded to the tax realm—if data on a country’s citizens are viewed as a collective national asset, then just as the rents from natural resource extraction are taxed in the host country in which they are located, the same could be argued for personal data (IMF 2019, Aslam and Shah 2020). And, just as in the extractive industries (Cui 2018, 2019; IMF 2019), a royalty instrument (a tax on turnover) can substitute when direct taxation of rents is difficult, especially where hard-to-value intangibles play a large role or capacity is limited to monitor cost-based profit shifting. Current DSTs, including in Asia (Table 3) take on the flavor of (highly targeted) user-based royalties (Aslam and Shah 2020).

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<sup>10</sup>For these estimates, residual profit is defined as profit above 10 percent of unrelated party sales. Only 20 percent of this residual is reallocated based on the share of destination sales in each jurisdiction. The estimates assume that this reallocation is “funded” by countries relinquishing the residual profit to which they currently have taxing rights.

**Table 3. Digital Services Taxes in Asia**

Country	Status	Date	Name	Rate (%)	Scope	Threshold	Payment Obligation
India	Implemented	April 2020	EL	2	Revenues received by non-residents for online provision or facilitation of sales of goods and services to the Indian market, advertising targeted at Indian users, and sale of data collected from Indian users	Companies generating India-based digital services revenue > INR 20 million in a financial year	Paid by non-resident e-commerce operators.
India	Implemented	March 2016	EL	6	Revenues received by non-residents for online advertising services supplied to Indian residents	Aggregate payments to nonresident > INR 100,000 in a financial year	Charged and withheld by resident payors
Malaysia	Implemented	May 2019	WHT	6	All income from e-commerce transactions deemed to be derived in Malaysia	Companies generating revenue from consumers in Malaysia >500,000 RMB/year	Paid by nonresident digital service providers
Indonesia	Primary Law Enacted	March 2020	ETT	Not Specified	Revenue received by non-residents from e-commerce sales to Indonesian consumers, when the digital PE cannot be applied due to the provision of a tax treaty	The digital PE conditions will be met by exceeding thresholds for (i) group consolidated gross turnover; (ii) sales in Indonesia; and (iii) active digital media users in Indonesia	Paid by nonresident digital service providers
Vietnam	Under Discussion	January 2021	WHT	Variable	Revenues received by non-resident e-commerce businesses for the supply of services to residents	Not specified	Collected and withheld by financial institutions
New Zealand	Under Discussion	June 2019	DST	3	New Zealand-source revenue received by intermediation platforms, social media platforms, content sharing sites and search engines	Businesses with a global consolidated annual turnover of at least €750m, and annual revenues attributable to New Zealand of at least NZ\$3.5m (USD 2.3m).	Paid by nonresident digital service providers

Sources: KPMG (2021); Avalara; and IMF reports.

Note: DST = digital services tax; EL = equalization levy; ETT = electronic transaction tax; WH = withholding tax.

DSTs essentially attempt to overcome the “PE problem,” whereby a lack of physical presence precludes governments from staking a claim to corporate profits on a source basis. Since bilateral tax treaties preclude countries from unilaterally adjusting taxing rights, countries have started to look for alternatives outside the purview of income taxation. The key measures employed can be categorized as follows:

- Withholding taxes on payments to non-residents for digital services. These are levies on payments to non-residents for digital services and are similar in concept to existing withholding taxes on cross-border technical services (for example, accounting, management, and subcontractor services). While initially such taxes focused on B2B payments for online advertising, they have since expanded in-scope to cover other digital services as well as some B2C transactions (typically relying on financial institutions as withholding agents). These withholding tax obligations have been justified as an

attempt to equalize (income tax) treatment on non-residents vis-a-vis resident service providers in a world with increasing cross border remote sales. Tax rates on payments in scope vary widely at relatively high levels of 5 to 15 percent globally.

- User-based taxes: DSTs typically apply to both residents and non-resident companies, but their high global turnover and domestic revenue threshold means that they in effect target a few large foreign MNEs.<sup>11</sup> An increasing number of countries globally are opting for broader user-based DSTs, motivated by the desire to capture some of the value being generated by their citizens for highly digitalized businesses. Such DSTs target revenue generated through interaction with users in their jurisdiction from a range of digital services (whether for a payment or through the provision of a free service).<sup>12</sup> Such DSTs are levied on a gross basis at relatively low rates, ranging from 1.5 to 7.5 percent on revenues from the sale of the digital services in scope.
- Digital Permanent Establishment: A number of countries have proceeded with the expansion of domestic rules to establish a taxing right for virtual permanent establishments. A taxable permanent establishment to which income tax obligations apply is deemed to exist when an MNE's activities exceed a global turnover and local sales and user thresholds.<sup>13</sup> However, few countries have clearly articulated rules for revenue attribution to such virtual PEs, and many countries will be constrained in applying a revised PE definition, due to existing tax treaties.

Several countries in the region (Table 3) have begun to adopt measures that target income from digital activities generated in their jurisdiction by non-residents. Larger middle-income countries without home-grown tech giants appear to have been first-movers in the region. Countries that are home to tech MNEs, primarily China, Japan, and Korea, have, thus far, shown little interest in enacting DSTs. DSTs implemented to date or under consideration differ significantly in terms of design (rates, scope, threshold, and nature of payment obligation). For instance, Indonesia introduced a rule to establish a taxing right for virtual permanent establishments in 2020. A user-based DST has been implemented in India, with the new Equalization

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<sup>11</sup>High global revenue thresholds result in common DSTs, effectively capturing mainly important US MNEs, which has been argued to create de facto discrimination (see Hufbauer and Lu 2018, and USTR 2021). The effective targeting of US MNEs by DSTs, however, is a consequence of their market dominance and may be temporary (Avi Yonah 2020).

<sup>12</sup>This type of tax is typified by the 2018 European Commission draft directive for the taxation of digital services, versions of which have subsequently been unilaterally introduced by EU members. The proposed DST, which has since served as a model for a number of EU members states, imposes a 3 percent levy on revenues from certain specified digital activities, which users have “co-created.”

<sup>13</sup>In cases where a double tax treaty does not allow for the creation of a virtual PE, an “electronic transaction tax” is supposed to be applied, though this measure is not yet effective/specified.

Levy in 2020 (Box 2). Similarly, while DSTs commonly target advertising and intermediary services, in the case of India, they also cover the provision of digital content and the sale of goods.

### **Assessment of DSTs: Potential Trade-offs and Impacts**

DSTs introduced to date in the region and elsewhere reflect large differences in design and create potential trade-offs. Their broader economic and welfare impact depends on market structures and the role of automated digital service (ADS) providers (Table 4). For instance, while digitalization is an economywide phenomenon, recent country proposals and reforms have singled out specific digital activities as the subject of taxation. This approach of “ring-fencing” risks driving an inefficient wedge between “digital” and “non-digital” activities. Moreover, in choosing revenues over profits as the base, these taxes are less likely to tax only the pure economic rent and therefore risk distorting production or disincentivizing investment.<sup>14</sup> The level of taxation must therefore be calibrated accordingly. There is also a risk of pass-through of the tax burden to consumers, particularly in a monopolistic setting.

Withholding taxes targeting B2B payments to non-residents are easy to implement, but also to avoid. Typically, governments require the purchaser of a service or, in some cases, financial intermediaries, to remit the taxation on the payment made to the nonresident service provider. While this implies a narrow focus on selected transactions, these withholding taxes have the appeal of being easy to introduce and administer and as such are the most widespread to date. Examples include the initial Indian Equalization Levy introduced in 2016, as well as more recent withholding requirements on payments for specific digital services in Malaysia and Vietnam. However, while simple to design and administer, such taxes can potentially be avoided. For example, if a resident company sets up an offshore related entity to make the payments to the non-resident service provider, it may be possible to avoid withholding taxes altogether.<sup>15</sup>

DSTs based on user contribution have both a broader scope and greater associated revenue potential but entail more complex design issues and administrative requirements. Centering the design of a DST on user contri-

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<sup>14</sup>Rents—that is, earnings in excess of normal required returns—are an attractive tax base because they can be taxed without distorting a company’s behavior. However, taxing rents is difficult in practice, since some costs are hard to observe and provide deductions for and many sources of rent are not location specific; therefore, taxing them risks driving them elsewhere.

<sup>15</sup>ATAF (2020) proposes a hybrid approach that would deal with abuse risks by determining the DST charge as the higher amount between the direct payments made and a country’s share in apportioned global segment revenue of a company in scope (for instance, the share of a country’s advertising views in global total advertising views).

**Table 4. The Economic Impact of DSTs**

Issues...	...and opportunities
<b>Taxing rights and revenue</b>	
Introduction of (unilateral) DSTs risks international double taxation if not creditable against corporate income tax payable in-home jurisdictions.	International tax rules aimed at profit are particularly hard to apply to providers of automated digital services operating two-sided platforms (Schindler and Schjelderup 2010). DSTs allow countries to capture uncompensated value generated by a country's citizens, and to share in the rents from digitalized businesses, while taxation of profits is difficult. <sup>1</sup>
<b>Efficiency and social welfare</b>	
When taxing some activities on a gross rather than a net basis distortion may result. Taxation of loss makers risks disrupting innovative business development/disincentivizing investment in these sectors. It is common for developers of ADS to initially have and use aggressive pricing strategies to gain market share/user participation.	In practice, production decisions of ADS service providers may not be influenced at the margin; for profitable businesses taxing revenue is not significantly different from profit-based taxation where the marginal cost of providing additional services is minimal, as is arguably the case for many ADS (Cui and Hashimzade 2019; Koethenbueger 2020). In the context of heavily concentrated market power, which is typical for two-sided digital platforms, taxation may have positive welfare effects (Kind and others 2008).
By targeting only some activities an inefficient wedge may be driven between activities in and out of scope (Aslam and Shah 2020).	To the extent that the levy reduces any tax-induced comparative advantage that foreign suppliers may enjoy over domestic suppliers, equalizing the tax treatment could ease production inefficiencies.
If the burden of tax is passed onto customers, increases in the cost of advertising opportunities on platforms may lead business to revert to less efficient marketing strategies.	Incidence effects are complex in two-sided markets (IMF 2019). Firms may aim to shift some burden to the untaxed side: a tax on advertising creates an incentive to raise the price charged (or reduce the subsidy provided) to users; the price of advertising services may even fall. <sup>2</sup> Cui and Hashimzade (2019) show that when the marginal cost is non-zero, the incidence of a tax on platform revenue will fall on both the platform and the advertisers/producers, but the effect on consumers is ambiguous.

<sup>1</sup>As noted by Wei Cui (2021), concerns of potential double taxation of DSTs are also mitigated by the expectation of the economic incidence primarily falling on consumers.

<sup>2</sup>On tax incidence in two-sided markets, see also Bourreau and others (2018) and Kind and others (2008).

butions requires clear rules to determine the location of the user and methods for determining the tax base. Without any direct measure of user value, DSTs tend to approximate the user contribution of a country based on sales revenues. User based DSTs tend to include revenue thresholds to determine in scope businesses. High thresholds may result in targeting a few international firms and risk retaliation, while too low a threshold may deter entry by smaller firms.<sup>16</sup> Moreover, since the tax is payable by the non-resident MNE, the introduction of a DST comes with requirements for registration and regular filing of returns and payment of tax due, which entails collection challenges.

The modified Indian Equalization Levy introduced in 2020 is the broadest user-based DST adopted globally to date, but the incidence can be difficult to assess. The Indian approach builds on the European model,<sup>17</sup> but expands its scope to cover all (B2B and B2C) digital sales of its own goods, content

<sup>16</sup>Potentially contributing to further market concentration in the tech sector.

<sup>17</sup>In 2018 the EU Commission proposed a DST of 3 percent on the gross revenue from activities relying on user participation such as selling online advertising space and intermediary activities that allow users to interact and sell goods and services.

provision, cloud, software, financial and education services. It also explicitly excludes Indian residents from the scope of the tax, rather than opting for a high global turnover threshold. However, the incidence of the levy is hard to assess. Where service providers charge consumers directly, some of the tax may be passed on, depending on market conditions including the substitutability of digital and non-digital providers. MNEs operating with a business model of providing free services and generating revenue from selling advertising opportunities can potentially share the tax burden with third party advertisers. In addition to the new rate of 2 percent on activities in scope of its new DST, India also maintains a higher 6 percent rate on B2B payments received by nonresidents for advertising services provided in India. To the extent that this tax reduces any tax-induced comparative advantage that foreign suppliers may enjoy over domestic suppliers, equalizing the tax treatment may ease production inefficiencies. However, if the tax is passed on to customers, the tax might arguably perpetuate production inefficiencies by targeting a business input (advertising expenses) that may be of particular importance for smaller firms benefitting from targeted cost-effective online advertising opportunities

### **The Potential DST Tax Base in Asia**

Although widely touted as an important source of revenue, understanding the potential tax base of the DST in Asia is important for determining revenue potential. The region is highly populous, constituting a sizeable user base, but with lower value per user than Europe and the Americas. Whether taxing rights are determined based on the value of its users has an impact on revenue potential. For digital businesses, the value of users is correlated with their purchasing power, propensity to spend, and activity on the platform. For instance, user data from Facebook indicates that the Asian region constitutes a sizeable and rapidly growing user base, albeit with relatively low value associated with each user of the platform (Figure 13).<sup>18</sup>

Surveys suggest that digital sales are sizeable for the region, although heavily concentrated in a small number of countries.<sup>19</sup> The scale of China's digital activity dwarfs the rest of the region. However, even without China, the

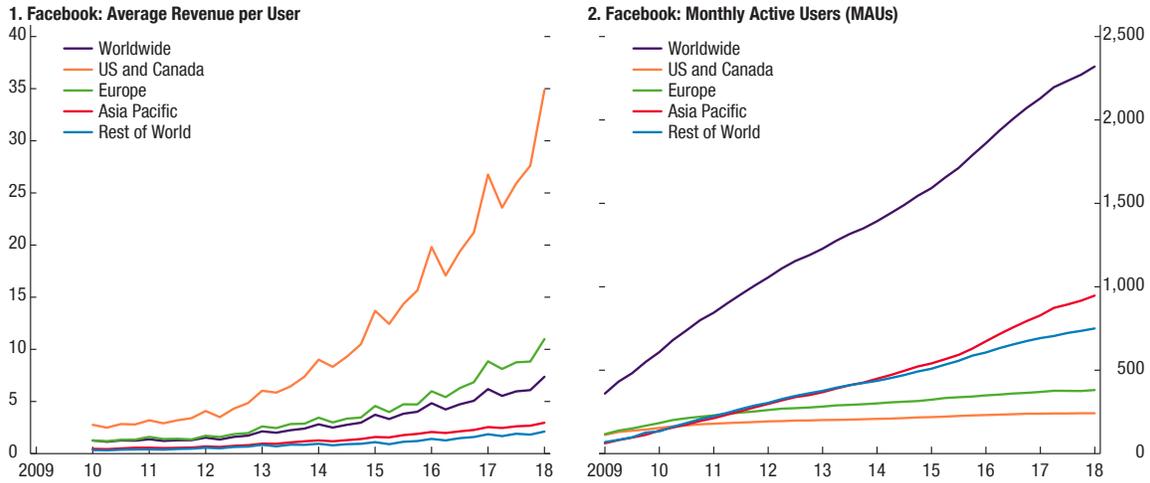
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<sup>18</sup>And the potential Asian user base and revenue is much larger, as Facebook is not (yet) operating in China.

<sup>19</sup>The Statista surveys cover market participants as well as consumers—for India, Indonesia, Thailand, and Vietnam. Reported results for the other economies are extrapolated using indicators of purchasing power of consumers and digital maturity in the economy. E-commerce includes sale physical goods via a digital channel (from all types of devices) to a private end user (B2C) with cross-border purchases attributed to the country of the buyer. E-services capture sales of services and digital goods (event ticket reservation, dating, food delivery, etc.) with an online checkout process. Digital media captures spending on audiovisual media contents and applications distributed online. Digital advertising captures advertisement spending for online channels. (Statista 2020).

**Figure 13. Facebook: Active Users and Average Revenue Per User**

*Asia accounts for a large share of Facebook's of users, but revenue per user is significantly below world average.*



Source: Facebook (2020).

regional DST base is comparable to Europe and the Americas (Figure 4). Larger, middle- and high-income economies dominate (Figure 14), in particular Australia, India, Indonesia, Japan, Korea, and Singapore. For small, low-income countries in the region (Brunei, Myanmar), however, the tax base remains negligible.

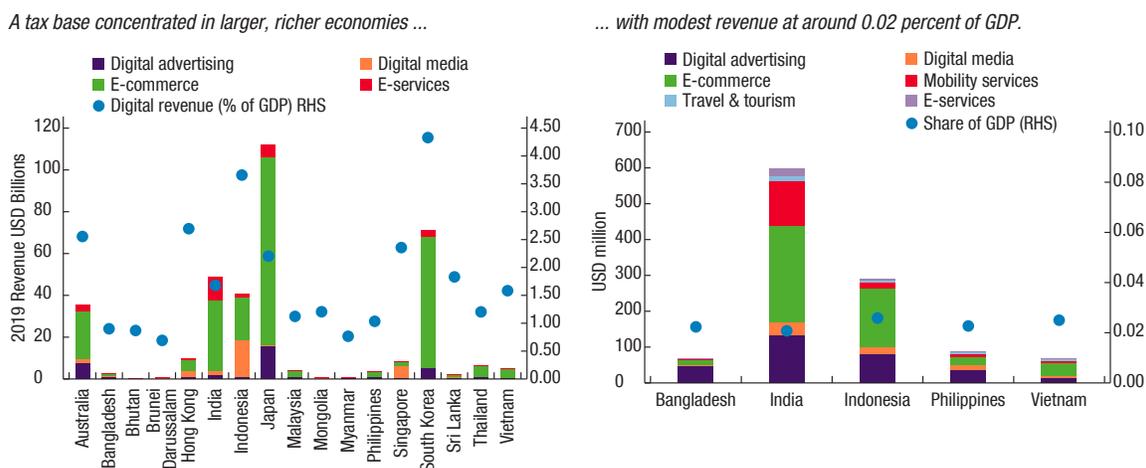
At present, applying a DST is expected to yield relatively low revenues. For example, the initial Indian Equalization Levy introduced in 2016 and applied on payments for advertisement services, resulted in collections of about 0.02 percent of GDP from 2016–2020.<sup>20</sup> Estimates of the revenue potential for DSTs in the region drawing on Statista’s consumer and market surveys suggest equally limited revenue potential, even with a wide scope of digital services covered.<sup>21</sup> For example, in Bangladesh, India, Indonesia, the Philippines and Vietnam, the application of a DST resembling India’s current Equalization Levy, would have yielded revenue of about 0.02 percent of GDP in 2019. This corresponds to an equally modest expectation for DST revenues in the EU and the United Kingdom.<sup>22</sup> The revenue potential of a

<sup>20</sup>See <https://www.avalara.com/in/en/blog/2020/09/india-digital-tax-or-equalisation-levy-a-timeline.html>.

<sup>21</sup>Assuming that 40 percent of the e-commerce, 70 percent of digital media, 100 percent of digital advertising, 10 percent of e-services, online tourism and online mobility revenues estimated by Statista are in scope and applying the rates of the Indian DST (2 percent on gross revenue in scope, 6 percent on gross advertising revenue).

<sup>22</sup>The European Commission has estimated annual revenue yield from its DST for member states of EUR 5 billion (<0.01 percent of EU GDP). France expects to collect EUR 400 million from the DST in 2020 (0.02 percent of GDP). The United Kingdom estimates that its DST will raise GBP 275 million (0.01 percent of GDP) in 2020–21 rising to GBP 440 million (0.02 percent of GDP) in 2023–24. USTR (2021) finds an

**Figure 14. Survey-Based Estimates of the Tax Base and Revenue Potential in 2019**



Source: Statista (2020).

withholding tax resembling the 2016 version of the Indian Equalization Levy is even smaller, amounting to about a fifth of the DST’s potential.

However, given the current low base, revenue is likely to have high buoyancy in the future (Figure 10, Chapter 1). Moreover, the pandemic and associated lockdown measures are accelerating the development of digital economic activity, including transactions and sales of digital goods and services. This trend would likely have a bearing on future revenue potential.

### Future Directions and Implications

The future role of DSTs in Asia is unclear. Global trends, the uncertainty of ongoing international negotiations, and the experience of countries in the region following India’s lead in introducing withholding taxes resembling the initial equalization levy, suggest that DSTs may become more widespread.<sup>23</sup> The implementation of DSTs could also be facilitated by ongoing efforts in several countries to effectively capture VAT on digital goods and services supplied from abroad as these require similar investments into administrative infrastructure and compliance management of nonresidents (see Chapter 3).

equally moderate tax revenue potential when assessing tax liabilities for US firms as a result from the Indian DST: in aggregate, the 86 US firms that are likely in scope of the Indian DST “may face tax payments in excess of USD 30 million per year.”

<sup>23</sup>By January 2021, more than 30 countries had enacted, held public consultations on policy proposals, or announced their intention to introduce unilateral direct tax measures aimed at digital services, see KPMG (2021).

The approach to DSTs in the region has been varied. Adoption in the region to date has varied depending on whether or not countries have home-grown tech giants. Similarly, investments in a DST are unlikely to become a priority for low-income countries with limited digital activities. However, in the future, as the global economy recovers, specifically targeting important revenue sources could become relevant for some low-income countries. This is particularly likely to be the case for commissions for online facilitation of hospitality services for economies heavily dependent on tourism.<sup>24</sup>

The immediate impact of a proliferation of DSTs in the region and beyond would likely be limited for Asian technology MNEs. While sizeable, Asian MNEs appear to earn the bulk of their returns in their home/residence countries. For instance, Chinese MNEs make 87 percent of their sales domestically, while Korean and Japanese MNEs derive 65 and 61 percent of their revenue from the domestic market, respectively (Figure 15).

In the short term, taxpayers under DSTs would primarily be US MNEs, potentially exacerbating the potential for retaliatory trade measures. On average, 25 percent of profits earned by foreign MNEs are made by US MNEs (Figure 15). For countries such as Bangladesh, India, Indonesia, the Philippines, Singapore, and Vietnam, US MNEs dominate, accounting for more than 50 percent of profits earned by foreign MNEs. DSTs, however, open the door to retaliatory trade measures. For instance, the United States Trade Representative (USTR) estimates that more than 70 percent of digital service companies subject to the Indian DST are US based and classified the tax as discriminatory (USTR 2021). This classification allows for the imposition of duties on Indian goods as part of a potential package of retaliatory measures against countries operating DSTs.<sup>25</sup>

Regional and bilateral coordination of DSTs could help reduce collection costs and trade tensions. DSTs expand taxing rights over digital services provided by nonresidents to market countries. Available information and initial country experiences suggest that while the immediate revenue potential is small, implementation of these taxes results in non-negligible administrative and compliance costs. Regional coordination of central design features, including on the scope of the rules, key definitions, as well as registration, reporting and payment obligations could thus help ensure that compliance costs associated with DSTs do not become barriers to market entry.<sup>26</sup> More-

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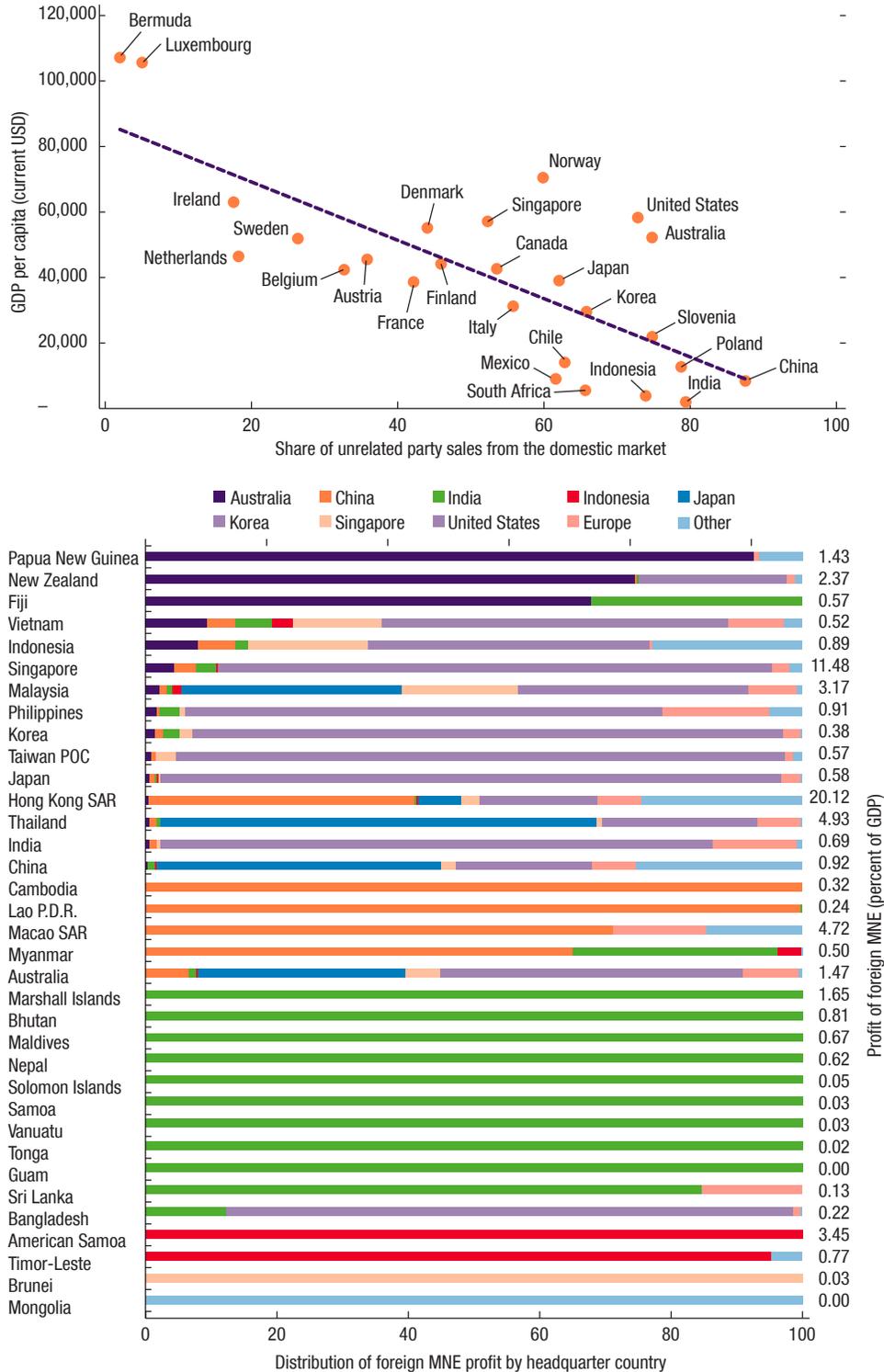
<sup>24</sup>For instance, Malaysia expanded the scope of its tourism tax charged per room per night in 2020 to cover accommodation booked through online platforms and will impose the tax on resident and nonresident digital platform service providers from July 2021.

<sup>25</sup>Similar to tariffs announced following an investigation of France's DST. These were announced in July 2020, scheduled to go into effect in January 2021 (but have been temporarily suspended).

<sup>26</sup>The African Tax Administration Forum (ATAF) for instance proposed model legislation for Digital Services Taxes to its member states.

**Figure 15. MNE Activities at Home and Abroad and the Destination of Asian MNE Profits**

Chinese, Indian, and Indonesian MNEs make most of their sales at home... while US MNEs account for an important share of profits earned by foreign MNEs in Asia.



Sources: IMF, *World Economic Outlook*, and OECD country by country reports.  
 Note: MNEs = multinational enterprises.

over, the proposed introduction of a new article into the UN Model Tax Convention to deal with income from ADS could allow for bilateral coordination of DSTs. The proposal builds on the existing tax treaty framework guiding international tax rules and could eventually contribute to lowering the risk of retaliatory tariffs between source/market and residence countries of digital service providers.

## Alternative Policy Options

Other policy options for taxing profits in an increasingly digitalized economy are more far reaching. The scope of these alternative options is wider than digital businesses, given the difficulties and inefficiencies associated with ringfencing digital business. Digitalization will continue and pervade the economy, making ringfencing irrelevant in the future. In addition, other sectors exhibit similar challenges, for example, pharmaceutical companies also rely on hard-to-value intangibles. Importantly, unlike Pillar 1, these alternative policies reform the entire existing international taxation architecture, rather than acting as an addition to existing norms. Following is a discussion of two policy alternatives that could potentially address the key concerns with the taxation of multinational profits in an increasingly digitalized economy: formulary apportionment and residual profit allocation.<sup>27,28</sup> While digital businesses are not explicitly targeted, their tax treatment is likely to be markedly different under these two alternative reform options since their business models enable a significant disconnect between where profits are currently booked and the location of factors of production or sales.

### Formulary Apportionment

Formulary apportionment (FA) can address many of the challenges faced by the current requirement to consider each affiliate of an MNE group as a separate entity (and hence the need to value intra-group transactions). Under this approach, the revenue of the MNE group is consolidated across all affiliates and then allocated across countries based on each country's share of the allocation factor or key. The allocation key can be supply-based (assets, employment, or payroll) or demand-based (sales, user value). Each country can then

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<sup>27</sup>Other policy alternatives, such as a destination-based cash-flow tax, are discussed in IMF (2019) and Auerbach and others (2017).

<sup>28</sup>These alternatives, initially proposed by tax practitioners and academics, have gained traction with policy makers (for example, the G24's proposal for fractional apportionment), outlined in the Intergovernmental Group of 24's submission to the OECD on possible solutions to the tax challenges of digitalization. India was the first to propose such a solution, which was then endorsed by other members.

apply its own tax rate or credits to the apportioned base.<sup>29</sup> Elements of FA are included in Pillar 1, namely, the consolidation of profits to compute the residual profit and the apportionment of this profit using a formula (in the case of Pillar 1, the apportionment key is sales). However, under FA, all the MNE's consolidated profit is subject to apportionment rather than just a proportion of residual profit. By calculating the tax base at a consolidated level, FA eliminates the issues associated with arm's-length pricing, which holds the prospect of significant simplification and removes profit shifting.<sup>30</sup> The inclusion of demand-based factors in the formula, such as sales, can potentially improve the perceived "fairness" of taxing rights, as is envisaged under Amount A of Pillar 1.

At the global level, introducing FA can lead to a loss in CIT revenue, if CIT rates remain unchanged. By allowing MNEs to consolidate profits and losses across subsidiaries, FA leads to a loss in the aggregate tax base. The revenue loss from FA is partially offset by a reallocation of the tax base from low-tax to high-tax countries, as profit shifting is mitigated. That said, the global revenue loss is based on existing CIT rates and can potentially be recouped through an increase in those tax rates—although the scope and desirability of this will differ across countries and will also depend on the allocation formula. The scope for higher rates is more likely, for instance, if allocation is based on destination sales, as the intensity of tax competition will be reduced.

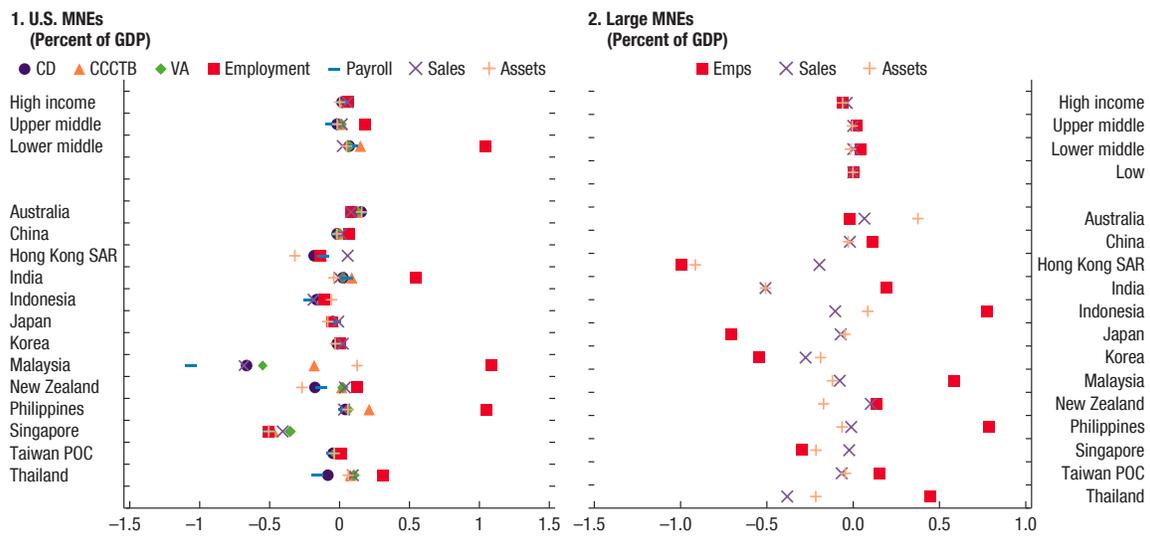
High-income countries in the Asia-Pacific stand to benefit from a sales-based apportionment, while developing countries benefit from employment-based apportionment (see Annex 2 for a full set of results). This is broadly consistent with what is observed globally (Figures 16 and 17). Two data sets are used for the analysis. The first, from the US Bureau of Economic Analysis, provides a detailed snapshot of the operation of US MNEs, allowing the revenue effects under a wide range of apportionment formulas to be considered; this dataset is used despite its narrow focus on US MNEs. The second is based on country-by-country reports which cover large MNEs from 25 countries with broader coverage of developing countries. High-income countries such as Australia and New Zealand gain revenue under a sales-based formula applied to US MNEs, as well as non-US MNEs. Similarly, developing countries such as India, Malaysia, and the Philippines gain revenue from an employment-based formula. Hong Kong SAR and Singapore, prominent investment hubs, lose revenue from moving to FA. Singapore loses regardless

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<sup>29</sup>FA is commonly used to distribute CIT revenue at the subnational level, for instance, in countries such as Canada, Germany, Japan and the United States. The European Commission has proposed such an approach for the EU, in the form of the 'Common Consolidated Tax Base', wherein the weights are a composite of sales, assets, employment, payroll, and data.

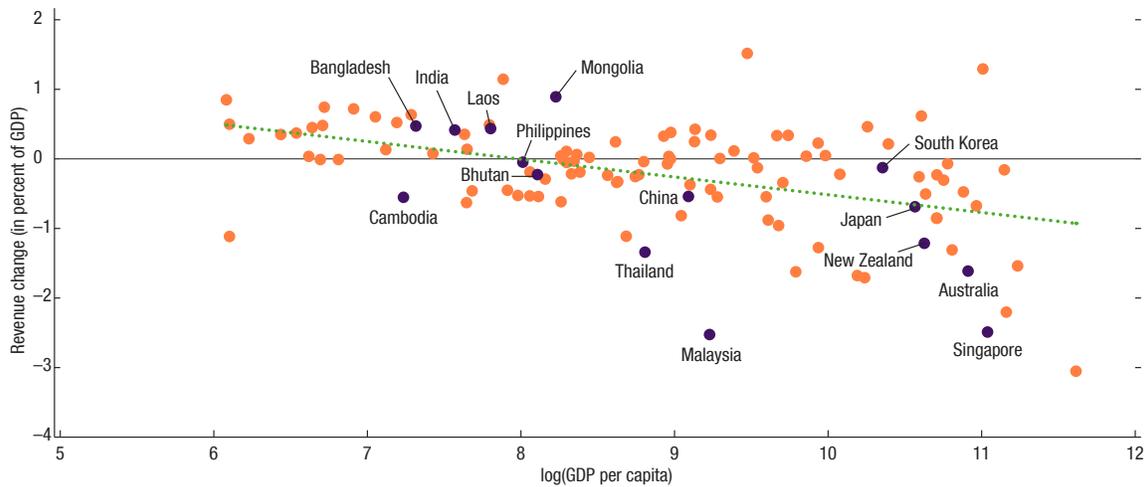
<sup>30</sup>See de Mooij and others (2019) for a detailed discussion of the benefits and drawbacks of formulaary apportionment.

Figure 16. Change in Income Tax Revenue from Applying FA



Sources: CbCR for 2016; OECD; US Bureau of Economic Analysis; and de Mooij and others (2019).  
 Note: The Common Consolidated Corporate Tax Base (CCCTB) is a weighting based on assets, sales, employment and payroll, this estimate excludes the data factor. VA stands for value added and is based on the reported series from the BEA. The Cobb Douglas (CD) weighting is based on assets and payroll, an alternate measure of value added. Income brackets follow the World Bank definition and refer to the median country in the income group.

Figure 17. Total CIT Revenue Effects from Destination-Based RPA



Source: Beer and others (2020).

of the apportionment factor and under both data sources, while Hong Kong SAR loses revenue under all but one apportionment factor. Revenue effects under FA are larger than for Amount A because FA reallocates the entirety of an MNE's group profit, rather than a proportion of it.

Under FA, firms at either end of the digitalization spectrum face the same treatment, but there would be significant changes to the taxation of highly digitalized firms compared to others.<sup>31</sup> Firms would pay part of their tax where consumers, or factors of production, are located. For highly digitalized firms, the ability to make cross-border sales without physical presence means a significant disconnect exists between where taxes are currently paid and the location of consumers. FA does not allocate taxing rights to the location of intangibles, driving the disconnect between the current distribution of taxes and those under FA even further for digitalized firms.

### **Residual Profit Allocation**

The Inclusive Framework Pillar 1 proposal belongs to a wider family of schemes that treat routine and residual profits differently for tax purposes. The schemes have in common that the taxing right of a routine return would be allocated to jurisdictions where production takes place. The excess of a group's earnings over its total routine profits, the residual, would then be allocated based on some formulaic approach. The OECD-IF Pillar 1 computes routine returns as a percent of sales and suggests redistributing a share of the resulting global residual. However, other proposals exist, and routine returns could be computed as a fixed percentage of tangible asset stocks, cost of goods sold, or by retaining traditional transfer pricing methods for functions within a group that are believed to be "routine." An important difference between these proposals and the OECD-IF Pillar 1 approach is that the latter would retain current arrangements and subject large companies, where turnover exceeds a certain threshold, to a residual profit allocation (RPA) scheme. Countries would thus need to surrender taxing rights of large companies' excess profits to avoid double taxation. In contrast, an RPA scheme that replaces current arrangements could yield significant simplification gains by assigning taxing rights over the routine component and allowing residuals to be negative.<sup>32</sup>

The revenue impact from introducing an RPA scheme is likely to be sizeable, especially for Asia.<sup>33</sup> Assuming that routine returns amount to 10 percent of tangible asset stocks,<sup>34</sup> micro data suggest the global residual could amount to USD 3 trillion—much more than the residual profit that is considered in the OECD-IF's blueprint—and half of this amount is currently declared in 16 Asian economies. This design of the RPA would have a disproportionate

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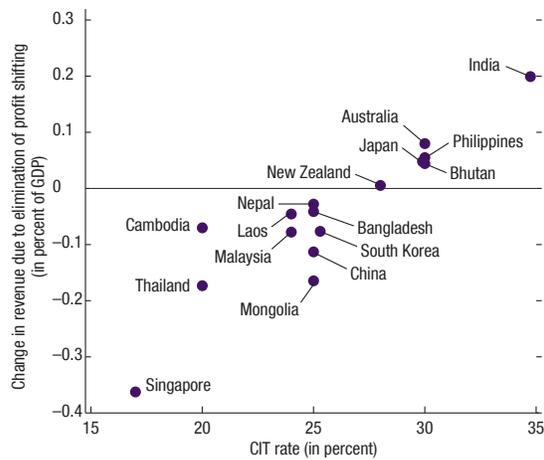
<sup>31</sup>FA regimes generally have special treatment only for the extractives and financial sectors.

<sup>32</sup>A discussion of negative residuals can be found in Beer and others (2020).

<sup>33</sup>The following analysis is based on Beer and others (2020).

<sup>34</sup>Routine profits correspond broadly to a normal return on investment. Commonly, a return to tangible assets is chosen at a level which is sufficiently high to encompass a return to all assets (including intangibles).

**Figure 18. Partial CIT Revenue Effects—from Elimination of Profit Shifting**



Source: Beer and others (2020).

effect on highly digitalized firms, and others which have a heavy reliance on intangible assets, since their return on tangible assets will be elevated. For these firms, it represents a fundamental change to where they pay tax. Less tax will be paid where intangibles are located, and more tax will be paid in market countries. Figure 17 illustrates revenue effects from introducing an RPA mechanism that allocates the taxing right of residual profit in proportion to destination-based sales, which is believed to be an efficient apportionment factor given its unresponsiveness to corporate tax rate differentials. It shows that five Asian economies, with relatively low average income (Bangladesh, India, Laos, and Mongolia) would tend to benefit from such a reallocation scheme, while many others, including Australia, Malaysia, and Singapore, would tend to lose. Revenue losses are largest in Singapore, where the decline in corporate revenues could exceed 55 percent of current CIT collections (2.5 percent of GDP).

Revenues are impacted because of the elimination of profit shifting. Although transfer pricing rules aim to ensure a reasonable allocation of profits across the subsidiaries of an MNE group, considerable leeway exists in determining where residual profits end up in practice. RPA schemes, in contrast, depart from the presumption that subsidiaries are independent entities for which a fair remuneration can be established and use information on consolidated returns, with allocation of the residual based on FA. Figure 18 provides illustrative revenue estimates from eliminating profit shifting, which are very sensitive to the underlying assumptions. Overall, CIT rates in Asia are comparatively low, and many countries could lose if reported profits were no longer relocated for tax reasons. However, revenue effects vary widely and while Singapore could lose up to 7.5 percent of current CIT collections (0.4 percent of GDP), India would stand to gain 5 percent (0.2 percent of GDP).

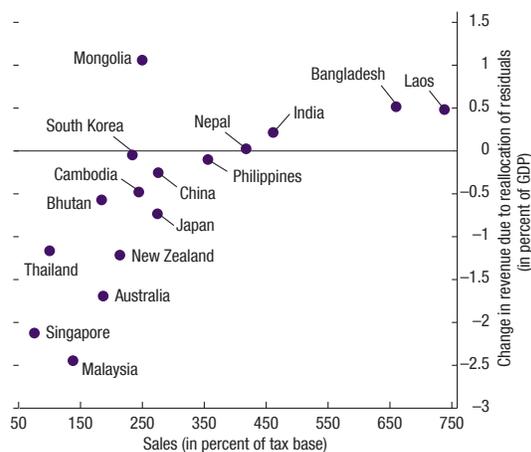
The revenue impact also reflects the relocation of excess profits. Figure 19 illustrates the revenue effect from reallocating residual returns once profit shifting has been eliminated. The reallocation would increase revenues in countries with large destination-based sales, which is positively correlated with trade deficits, and reduce revenues in high-income countries and investment hubs. For instance, Laos would gain about 30 percent of cur-

rent revenues (0.5 percent of GDP) while Singapore could lose about 50 percent (2.1 percent of GDP).

Under a destination-based RPA scheme, countries would have scope to increase taxes on corporations. Destination-based RPA schemes could address some of the challenges of taxing highly digitalized firms, as well as broader challenges with profit shifting and tax competition. By shifting taxing rights to countries where consumers are located

(‘market’ countries), countries have scope to tax their share of profit at a relatively higher rate than under the current system, without inducing adverse effects, since MNEs that wish to access their market have little choice but to pay the tax.<sup>35</sup> For countries that tend to lose revenue from RPA, such higher tax rates could partly offset loss in revenue, although further revenue mobilization efforts might sometimes be needed too. If a global minimum tax is implemented as well, countries could enjoy further revenue gains. This might also hold for low-tax jurisdictions, which are the likely losers of RPA, since they could raise their tax rates up to at least the global minimum, without affecting MNEs. The success of this strategy would rely on the jurisdiction’s ability to attract and retain foreign investment, based on its broader (non-tax) comparative advantages.

**Figure 19. Partial CIT Revenue Effects—from Reallocation of Residual Earnings**



Source: Beer and others (2020).

<sup>35</sup>There could be an incentive to sell to a third-party distributor located in a low-cost jurisdiction. Sourcing rules could be introduced to mitigate this new form of tax avoidance.

**Box 2. India's Equalization Levy***The 2016 Levy*

In 2016, India introduced an equalization levy in the form of a withholding tax on payments by domestic businesses (Indian residents or Indian PEs of nonresidents) to nonresident entities for online advertising services, at a rate of 6 percent. The tax applies to any nonresident receiving payments from Indian residents of more than INR 100,000 (approximately USD 1,500) in a financial year. For this version of the levy, the burden of compliance is placed on the domestic recipient of services, with the Indian purchaser of the digital advertising services being responsible for withholding and remitting the digital advertising tax to the Indian government. This levy resulted in collections of INR 7 billion, about USD 100 million (<0.01 percent of GDP and 0.06 percent of total tax revenues), in FY2017–18.

*The 2020 Levy*

In March 2020, the Indian government introduced a new levy applying a 2 percent charge on revenue generated by nonresident companies from a range of digital services offered in India.

*In-scope Activities.* The companies subject to the DST must pay the tax on revenue they derive from “e-commerce supply or services,” including the sale of online goods and services (including through platforms) to any person who is resident in India or who uses an Indian internet protocol address. It also applies to any nonresident who is purchasing advertising services targeted at Indian residents, or selling data collected from Indian residents or users with an Indian IP address. The broad scope of activities effectively captures a wide range of services, including those that are not captured under other DSTs, such as the supply of digital content, the sale of goods and services electronically, and cloud services.

With respect to B2B online advertising payments, the 2016 advertising levy still remains in place. The 2016 levy taxes any payment made by a resident to a non-resident for online advertising, regardless of the location of the recipient or viewer of the advertisement, and the 2020 levy does not apply to payments already taxed under the 2016 levy. However, the 2020 levy extends the scope of India's taxing rights to cover payments between two nonresidents if the advertising services are targeted at Indian users. As noted in USTR (2021), “if an Indian company were to pay Google (a US company) to advertise on Google's search engine, that revenue would be subject to the 2016 digital advertising tax, and therefore not subject to the DST. However, if Airbnb (a US company) were to pay Google to advertise to Indian users on Google's search engine, that revenue would be subject to the DST.”

**Box 2. India's Equalization Levy (continued)**

*Companies in-scope.* The tax is payable only by nonresident e-commerce operators, specifically excluding all Indian companies or nonresidents with a PE in India. In addition, the tax applies only to companies above the threshold of Rs20 million (approximately US\$270,000) in India-based digital services revenue.

*Administration.* Unlike the original levy on advertising, the nonresident e-commerce operator is responsible for charging and paying.



## Digital Services, Digitally Delivered Goods, and VAT

*Changes in business models and consumption patterns due to digitalization pose challenges for the VAT, but the policy concerns differ from those discussed previously for the CIT. Adopting and implementing a framework for effectively levying VAT on the import of digitally delivered services and goods can improve general compliance and revenue collection, including for other taxes, and help ensure a level playing field for domestic businesses.*

The value-added tax on digital transactions does not involve any fundamental rethink of taxing rights, but rather the development of a mechanism to give effect to the destination principle in the case of digital transactions. The VAT is a tax on consumption imposed commonly on the destination principle,<sup>1</sup> which means that the taxing right is commonly located at destination or the place of consumption. It is often harder for services than for goods to determine the place of consumption, and the digital economy is exacerbating the challenge of effectively imposing the taxing right in the case of cross-border supplies of digital products that do not pass through any border control.

Challenges for VAT or sales tax design and collection arise in relation to intangible services and some categories of goods/services supplied online and/or with their supply facilitated by platform intermediaries. They include the following:

- Digital services provided directly to final customers/consumers, such as movies, music, and accounting services provided by multinational firms. Such digital services pose challenges as there is no physical trace of the transaction at the border, and sellers often do not have a domestic pres-

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<sup>1</sup>As provided for in the OECD (2017) VAT guidelines. A major reform along these lines was introduced in the EU in 2015 to ensure taxation at destination on intra-EU supplies, which previously was based on origin (the location of the supplier). See Dale and Vincent (2017).

ence. While non-registered businesses and final consumers are sometimes theoretically required to self-assess VAT, this tends to be an unenforceable obligation in practice.<sup>2</sup>

- Imported services provided to businesses. B2B supplies provided by non-residents are commonly subject to a VAT reverse charge whereby the domestic business is required to account for the VAT on the imported service. It can then take an input tax credit (for the self-billed VAT) when calculating its VAT liability.
- Goods supplied by foreign-based online sellers. E-commerce makes it easier for foreign companies without a domestic presence to supply goods to consumers. Currently, it is common for countries to provide a general de minimis exemption threshold for low-value consignments, allowing for tax-free supplies. Volumes of these transactions have increased as a result of digitalization and bringing such transactions into the tax net can be difficult where goods are imported as personal items.<sup>3</sup>

Adopting and implementing a framework for effectively levying VAT on the import of digitally delivered services and goods helps ensure a level playing field for domestic businesses. Resident businesses with a total turnover exceeding the VAT threshold and selling online directly to resident consumers are required to register and charge VAT on their sales. Local sellers of goods and services that use digital platforms to access consumers are similarly required to register and remit VAT. With some evidence of e-commerce activities being particularly beneficial for the productivity of small firms in Asia (Kinda 2019), several countries pursue an explicit and ambitious agenda for the digital transition, including the promotion of digital entrepreneurship, aimed at encouraging these activities. Levelling the VAT playing field for domestic providers of digital services and goods, by ensuring that their non-resident competitors are liable for the same VAT, can eliminate distortions and contribute to supporting local digital entrepreneurship.<sup>4</sup>

## Digital Services in Asia

VAT reform is important due to the rapid growth in digitally delivered services in Asia. Over the last decade, these more than doubled and now account for almost half of all service trade in Asia (Figure 20). Although an

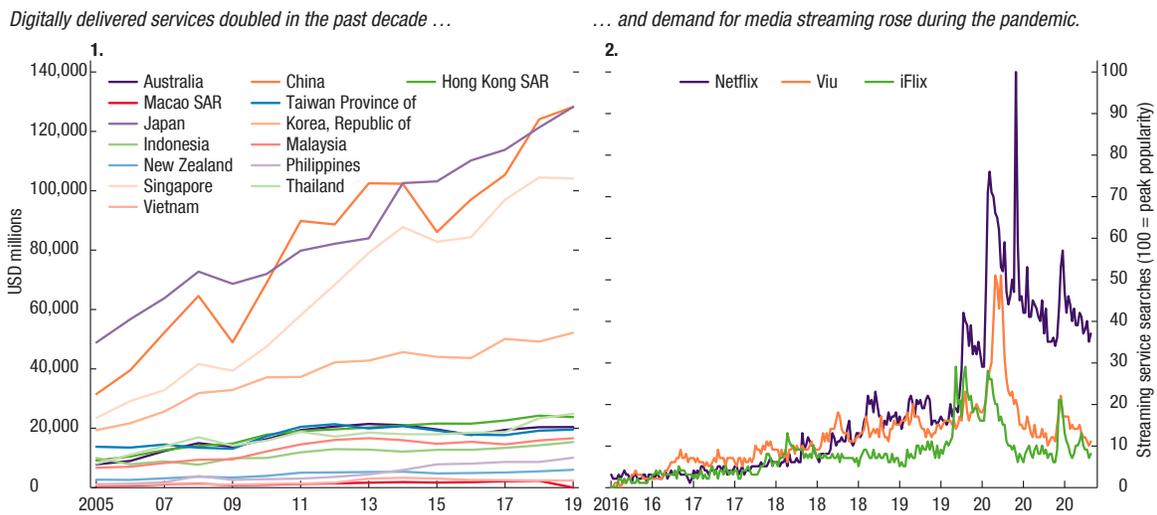
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<sup>2</sup>Requiring the individual consumers to register and fulfill the necessary steps to remit VAT on a one-off purchase on the internet is challenging (see Box 4).

<sup>3</sup>Without an agent or bill of entry that would help identify VAT and customs duty payments due and the responsible taxpayer.

<sup>4</sup>Levelling the playing field is preferable to pursuing this objective with new tax incentives for digital startups. In Vietnam, for instance, in 2020 incentives aimed at innovative startups were introduced, including a reduction of the corporate tax rate to 10 percent for 30 years (Decree No.94/2020/ND-CP).

**Figure 20. Increase in Digitally Delivered Services and Demand for Digital Media**



Sources: United Nations Conference on Trade and Development; and Google Trends.  
 Note: Streaming example for Indonesia.

important part of these activities is related to business-to-business transactions and does not translate into additional VAT revenue, a non-negligible share is linked to supplies made to final consumers. And supplies of some digitally delivered services to consumers have been strongly affected by social distancing measures introduced as part of the COVID-19 policy response, with notable increases in demand for the remote supply of digital entertainment services, for example (Figure 20).

## Policy Options and Country Practices

Emerging country practices can provide guidance on policy reforms and administrative arrangements to ensure effective VAT collection on digital services. Arrangements have been implemented by more than 60 countries, including a growing number in Asia (Table 5) for both e-services and low-value imported goods. The emerging international norm is to allocate taxing rights under the VAT to the jurisdiction in which consumption occurs based on the vendor collection model (see below).<sup>5</sup>

<sup>5</sup>The customer's location is commonly determined by a combination of the information on the customer's payment profile (credit card information, bank account details), residence (billing address or home address), and their internet access (the internet protocol of the device used or the country code of their SIM card [if transaction made through a mobile device], location of the consumer's fixed landline). Most countries require two pieces of nonconflicting information to make this determination.

Table 5. VAT on Digital Services—Approaches in Asia-Pacific

Country/ year of adoption	Threshold	Scope of Services	Collection Method	Reverse Charge for B2B
<b>Australia (2017)</b>	AUS\$75,000	Intangible supplies, anything other than goods or real property	Vendor Collection Model	Yes
<b>Bangladesh (2019)</b>	BDT 30 million	Streaming or download media and web-based services	Collection by local payment provider	Yes
<b>India (2017)</b>	No threshold for nonresidents For Indian residents: INR-10 lakh in annual sales	A service is mediated over the internet or an electronic network and the nature of which renders their supply essentially automated and involving minimal human intervention, and impossible to ensure in the absence of information technology  Includes streaming/downloads of music, e-books, films; cloud-based or downloadable software; membership fees to online sites, dating portals; online gambling services; online advertising	Vendor Collection Model	Yes
<b>Indonesia (2020)</b>	Annual revenue 600m IDR, or 50m monthly revenue; and 12,000 users annually/1000 users monthly	Foreign digital service providers and intermediaries included on a government list	Vendor Collection Model	Yes
<b>Japan (2015)</b>	JYP 10 million per annum	E-books, streaming media, apps, cloud-based services and online gaming, services that post online ads; voice and data telephony services are excluded	Vendor Collection Model	Yes
<b>Singapore (2020)</b>	Global annual turnover of at least SGD 1 million, making B2C supplies of digital services to non-GST registered customers in Singapore exceeding \$100,000	Supplies of downloadable digital content, subscription-based media, software programs, electronic data management services, support services performed via electronic means to arrange or facilitate transactions, which may not be digital in nature (for example, service or booking fee charged to the suppliers or customers)	Vendor Collection Model	Yes
<b>Thailand (September 2021)</b>	THB 1.8m (more than €60,000) per annum	A service that includes incorporeal property delivered through the internet or other electronic means, where the service is, in essence, performed automatically, and where the service cannot be performed without information technology; focus on streaming services and online games	Vendor Collection Model	Yes
<b>Vietnam (2020)</b>	None	Download or streaming media, apps, e-books and online journals, e-learning, software-as-a-service provisions, gaming, and online gambling	Collection by local payment provider	Yes

Sources: KPMG (2021); Avalara; and IMF reports.

The usual first step is to update VAT legislation to ensure coverage of remote supplies directly to consumers. Activities covered by such legislation can either be broadly or specifically defined. The OECD VAT Guidelines set out principles that apply broadly to all internationally traded services and intangibles which should be taxed according to the rules of the jurisdiction of consumption, removing the need to define a specific subcategory of

digital services that should be in scope. Australia takes this approach: its tax legislation applies broadly to the “sale of imported services and digital products” and specifies that intangible supplies are “anything other than goods or real property.” The legislation includes digital services, but also applies more widely to activities such as consulting services.<sup>6</sup> Other countries such as Japan have taken the approach of setting out more definitive lists of activities in their legislation, covering the provision of audio-visual content, cloud computing and advertising. Many countries are updating and revising their approaches as international practice crystallizes,<sup>7</sup> including on the treatment of intermediary fees (Box 3).

Some countries decided initially to list companies in scope rather than activities, which brings its own challenges. This approach has been taken by Indonesia<sup>8</sup> through the periodic publication of company lists. The targets were initially the largest companies providing digital services. Indonesia then gradually expanded the list to include more companies.<sup>9</sup> While the idea of targeting just a few large players initially may help address concerns on administrative burdens created by the new rules, it comes with its own challenges of needing to identify relevant companies and creates distortions between included and excluded suppliers. A self-assessment approach seems more viable in the long-run. Increasing adoption of similar rules globally and initial country experience suggests that perceived reputational costs associated with non-compliance tend to be large enough to ensure registration and constructive engagement with major companies.

Imported services provided to registered VAT payers are usually subject to reverse charge rules or, where this is not the case, countries are in the process of implementing such rules. For example, Singapore implemented reverse charge regimes for B2B supplies of imported services. Issues can, however, arise regarding the treatment of large entities (government entities, financial and education institutions, and so forth) that make exempt VAT supplies. Where the recipient uses imported services wholly or partly to make exempt supplies, there is an incentive to source services, such as virtual learning offer-

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<sup>6</sup>The EU broadly defines the nature of in-scope digital or electronically supplied services to be covered under new VAT legislation. The EU VAT Directive, specifies electronically supplied services to mean “services delivered over the internet or an electronic network and the nature of which renders their supply essentially automated and involving minimum human intervention, and impossible to ensure in the absence of information technology.” A list of examples is provided in the accompanying VAT regulation, along with selected exclusions.

<sup>7</sup>In some cases, exemptions are explicitly carved out for example, online gaming (Norway), professional services provided over email (EU), and the provision of education and health services through digital means, areas that are typically zero-rated in domestic legislation in these countries.

<sup>8</sup>Other examples outside the region include Argentina and Costa Rica.

<sup>9</sup>The Indonesian Directorate General of Taxation issued the first list in July 2020. This included companies in the spotlight of the digital tax debate, namely Amazon, Google, Netflix, and Spotify. Four subsequent lists were published between July and November, bringing the total number of in scope businesses to 46.

ings, from abroad to limit unrecoverable input VAT. An extension of reverse charge rules to cover these entities can help prevent the bias.

The most common administrative approach to implement these legal changes is the vendor collection model (Brondolo and Konza 2021).<sup>10</sup> Under this model, in line with the OECD guidelines, the liability of payment of the tax by and large rests with the nonresident provider of the service, who is required to register. Countries rely on voluntary compliance through a simplified registration process for nonresident providers with activity above a mandatory registration threshold.<sup>11</sup> This typically requires issuing guidance on making payments for the VAT due through a simplified online registration and compliance process.<sup>12</sup> Modelling these on approaches introduced by other countries is advisable to minimize compliance costs for large digital providers.

Several countries are planning on making marketplaces fully liable for VAT collection on low-value consignments. In the EU and the United Kingdom, the decision to remove the low-value goods exemption threshold has been accompanied with guidelines making marketplaces the deemed supplier for low value imported goods facilitated by them.<sup>13</sup> The same requirement could allow countries in Asia to reduce or abolish their exemption threshold for low-value imported goods without incurring unmanageable collection costs.

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<sup>10</sup>There are some exceptions. In Argentina, Azerbaijan, and Bangladesh, for example, the liability falls not on the non-resident supplier but on the local payment provider. Where that is the case, specification of transactions for which payment providers need to withhold VAT is required, likely narrowing the scope of covered supplies in practice. While this approach can thereby help address compliance management challenges, it is unlikely to be a desirable long-term solution in most countries. A hybrid approach is pursued in Costa Rica, where the government does allow voluntary compliance by companies on the in-scope list, but if they do not comply, the payment is withheld by card issuers (for example, Visa, MasterCard).

<sup>11</sup>Thresholds for cross-border digital services for VAT registration are typically at the same level or below the domestic requirement for mandatory registration. Some countries do not include a threshold, even if one exists in domestic legislation (for example, Moldova), or a modified lower threshold may apply. As part of its general rules, Indonesia provides for a second threshold related to customer traffic levels, which is used in conjunction with the monetary threshold—the threshold is reached if the amount of traffic or access in Indonesia exceeds 12,000 users annually or 1,000 users monthly. As discussed above, currently, however, registration requirements are in practice limited to companies directly referenced in regularly published official lists.

<sup>12</sup>No input credits can be claimed by foreign registrants in the simplified registration process. Consequently, abuse risks are less of a concern than with regular registrants. If a foreign service provider wants to claim input tax credits for supplies made in another country, the usual requirement is to establish a place of business in the country and to go through the regular registration process.

<sup>13</sup>From July (January) 2021, the EU (and United Kingdom), require platforms to withhold and remit VAT on low-value parcels on behalf of sellers.

## Revenue Potential

Estimates suggest that the direct short-term revenue potential of including imported digital services aimed at final consumers and purchases of goods online ranges between 0.02 and 0.11 percent of GDP. When Australia introduced its GST on digital services in 2017, it was expected to generate AUD 350 million (0.02 percent of GDP) over two years.<sup>14</sup> In Thailand the expectation is to raise about THB3 billion (0.017 percent of GDP) from the implementation of a 7 percent VAT on nonresident service providers in 2021.<sup>15</sup> Estimates based on survey data suggest that charging VAT on remotely delivered digital services and some goods to customers could directly increase overall VAT revenue by between 0.04 and 0.11 percent of GDP in Bangladesh, India, Indonesia, the Philippines, and Vietnam (Figure 21).<sup>16</sup>

This initial revenue gain can become larger through indirect effects. Governments can realize potential additional benefits from including digital services and e-commerce in the VAT net by (1) using the large amount of information held by digital platforms to enhance compliance with VAT, other taxes, and other taxpayers and (2) using the platforms as tax collection agents. Options for this include requesting information collected by digital marketplaces on the income of suppliers operating through their platforms. This information can then inform compliance management, for example, in the tourism sector and of mobility services. This can significantly contribute to revenues.<sup>17</sup> Introducing reporting obligations to obtain information on consumption and income generated via digital platforms can thus produce important additional benefits for governments.<sup>18</sup>

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<sup>14</sup>Australia introduced 10 percent GST on cross-border sales of services and digital products imported by Australian consumers on July 1, 2017, following enactment of Tax and Superannuation Laws Amendment Bill 2016. The budget initially estimated revenue collection of A\$150 million during the first year (FY2017–18), followed by A\$200 million in FY2018–19.

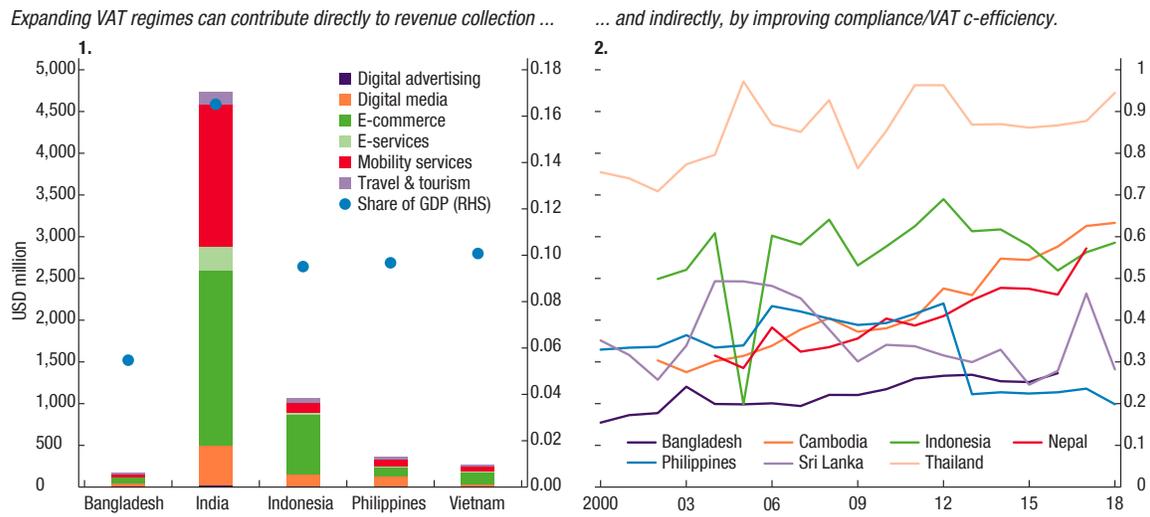
<sup>15</sup><https://www.avalara.com/vatlive/en/vat-news/thailand-vat-on-digital-services-near.html>.

<sup>16</sup>Applying the standard VAT rate and assuming that 100 percent of transactions of digital media content, 10 percent of all e-commerce transactions, 5 percent of digital advertising, and 15 percent of e-services, mobility and travel services captured by Statista are provided by unregistered remote suppliers to final consumers and/or unregistered registered entities. For details on the Statista survey see also discussion in section 2 on Digital Services Taxes.

<sup>17</sup>In Croatia, for instance, a compliance management campaign launched in 2018 drew on a comparison of domestic tax returns with digital platform data regarding hotel and lodging accommodation sold on behalf of Croatian suppliers. About 40 percent of Croatian vendors using the platforms covered in the campaign either did not register or declared significantly less income for tax purposes than they received from platform-facilitated sales (World Bank 2021).

<sup>18</sup>Recent guidance provided by OECD (2020b) on model reporting rules for platform operators provide a useful reference framework. See also OECD (2019) on the different approaches to leveraging the prominent role of digital platforms for the collection of VAT.

Figure 21. Survey-Based Estimates of Direct VAT Revenue Potential and VAT Efficiency in Asia



Sources: Statista; and Tax Policy Assessment Framework.  
 Note: Statista estimates are for 2019.

There is also potential to rely on platforms to widen the VAT net for domestic activities. Canada, for instance, announced revisions to VAT rules for accommodation/hospitality services facilitated by marketplaces/platform providers. They include both a requirement for marketplaces to report information on the property owner or suppliers using their platforms to the revenue services from 2022. In addition, there is a requirement to collect tax on supplies made through their platforms by all nonregistered domestic suppliers, including those considered to be small suppliers below the current VAT registration threshold.<sup>19</sup> This practice has also been adopted in India where platforms are required to remit GST to the government for suppliers whose turnover is below GST registration thresholds (Box 4). This practice is not common but may evolve and become more widespread in the coming years as it is a particularly attractive option for countries in the region with large compliance gaps driving low VAT efficiency (Figure 21). Relatedly, it would be an effective means to mitigate potential negative impacts on VAT revenue from the growth of small suppliers in the sharing economy.<sup>20</sup>

<sup>19</sup>Fall Economic Statement, 2020, Annex 4  
<https://www.budget.gc.ca/fes-eea/2020/report-rapport/anx4-en.html>.

<sup>20</sup>Through the use of P2P platforms, increasingly efficient small businesses may better compete with and displace larger incumbents. If the rise of the sharing economy means that incumbents are being displaced and replacement P2P activity remains below tax thresholds, governments risk losing revenue as income and profits are dispersed across many smaller businesses instead of concentrated in large profitable companies (Aslam and Shah 2017).

### **Box 3. Ensuring Taxation of Intermediary Fees**

Some of the largest peer-to-peer platforms operating in Asia include Alibaba and DiDi Chuxing in China, Ola in India, Grab in Indonesia, and some US platforms that operate across the region: Airbnb, Amazon, BlaBlaCar, and Uber. One area that often requires clarification is the approach to intermediation services provided by such platforms.

In the context of goods or services provided through a digital marketplace/intermediary, it is necessary to distinguish between the consideration for payment of the underlying good or service and the fee associated with the use of the digital platform.

In terms of commission/intermediary fees, some marketplaces charge service fees only to sellers, which would commonly apply reverse charge rules in a cross-border context. Sometimes fees are, however, charged to both sellers and consumers. For example, in the case of Airbnb, both hosts and guests are charged fees. The guest's service fees should be subject to VAT, but it is not always clear who gets to tax this fee. Given the importance of tourism activity for many countries in Asia, clear guidance that the service fee needs to be remitted based on the place of consumption of the underlying good can help ensure that the fee is not allocated to the country where a guest normally resides.

The VAT treatment of the underlying good/service (for example, provision of rental accommodation), a taxi ride, or the sale of a physical good through a digital platform would usually be dealt with under existing domestic legislation, with the seller of the physical good/service liable to register and remit VAT, subject to domestic registration thresholds and a credit provided for the VAT paid on a fee for using the platform. In the case of accommodation rental services through platforms such as Airbnb, similarly, the liability for payment of VAT on the accommodation lies with the host, if they meet VAT registration thresholds.

Significant controversy remains as to the VAT liability of ride-sharing companies, with Uber being at the center of a number of national court challenges. Since Uber classifies itself as an intermediation service provider, the company considers itself to be simply a service provider to drivers, who are self-employed individuals; Uber does not book their income as its own. Since most drivers would not earn enough income through the app per year to meet VAT registration thresholds, limited VAT is collected in most countries from Uber drivers. However, this might change due to a recent court challenge in the United Kingdom, which defined Uber drivers as workers.<sup>1</sup> If Uber is classified as a transportation company with employed drivers, its entire turnover from the provision of services would be subject to VAT. Legislation is evolving in this area, and we may see changes and differentiated treatment depending on the type of platform in future.

<sup>1</sup>See <https://www.supremecourt.uk/cases/docs/uksc-2019-0029-judgment.pdf> for judgement details.

**Box 4. GST Compliance Mechanism for Supply of Digital Services by MNEs in the Case of India**

Integrated Goods and Services Tax (IGST) in India is chargeable on supply of Online Information Database Access and Retrieval (OIDAR) services to any person in India, whether registered or not, if the supplier of the services is located in India, including, MNEs with a physical presence in India.

OIDAR services are defined as “services whose delivery is mediated by information technology over the internet or an electronic network and the nature of which renders their supply essentially automated and involving minimal human intervention and impossible to ensure in the absence of information technology and includes electronic services such as: (1) advertising on the internet; (2) providing cloud services; (3) provision of e-books, movie, music, software and other intangibles through telecommunication networks or internet; (4) providing data or information, retrievable or otherwise, to any person in electronic form through a computer network; (5) online supplies of digital content (movies, television shows, music and the like); (6) digital data storage; and (7) online gaming.” Since the place of supply determines the taxable jurisdiction under any VAT-type consumption tax, the place of supply of OIDAR services is defined to be the location of the recipient of services.

OIDAR services supplied by MNEs located outside India, to any registered entity in India is taxable under the reverse charge mechanism. However, where the services are directly provided to the consumers by MNEs with no physical presence in India, it is not practicable to require the individual consumers to register and fulfill the necessary compliances under the IGST for a one-off purchase on the internet. Therefore, the statutory burden for payment of IGST is cast upon such MNEs and a special compliance regime established to enable them to fulfill their compliance obligations and minimize the risk of revenue leakage.

In case the OIDAR B2C services are arranged or facilitated by an intermediary located outside India, the intermediary is treated as the supplier of the said service, except when the intermediary satisfies the following conditions:

1. The invoice issued by the intermediary clearly identifies the nature of the service and its supplier in the foreign jurisdiction.
2. The intermediary neither collects or processes payment in any manner nor is responsible for the payment between the service recipient and the supplier of such services.
3. The intermediary involved in the supply does not authorize delivery.

**Box 4. GST Compliance Mechanism for Supply of Digital Services by MNEs (continued)**

4. The general terms and conditions of the supply are not set by the intermediary involved in the supply but by the supplier of services.

The special compliance regime comprises: (1) a simplified registration scheme; and (2) a simplified reporting and payment system.<sup>1</sup> Typically, in cases where the OIDAR service provider and receiver are both located in India, the general registration rules apply. However, where the service provider is located outside India but provides OIDAR services B2C, the MNE service provider is required to obtain registration through a representative in India or directly, under the simplified registration scheme.

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<sup>1</sup>Every registered OIDAR service provider providing B2C services from a place outside India to a person in India is required to file a return in Form GSTR-5A on or before the 20th day of the month succeeding the calendar month or part thereof in which the service is provided. The simplified form calls for minimal information with a view to minimizing the cost of compliance. Toward this objective, such service providers are also exempted from filing annual returns. Similarly, they have also been allowed to remit the payment of tax through the SWIFT mode. However, other categories of OIDAR service providers (like those supplying OIDAR services from India) are required to file (1) regular monthly returns (GSTR 1, 2, 3, or 3B) prescribed for general categories of registered persons and (2) annual returns.



## Annex 1. Methodology

### Pillar 1, Amount A

Revenue estimates are derived using data in country by country reports (CbCR). In 2017, more than 60 tax jurisdictions have required large MNEs headquartered in their jurisdictions to report on their income, taxes paid, and other indicators of economic activity such as employment, assets, and sales by origin (for both related and unrelated parties) on a country by country basis. Of these, 25 countries have publicly released their CbCRs on an aggregate basis.

Estimating sales by destination begins with sales by origin for each parent-country and affiliate-pair from the CbCR data (say, sales of US MNE affiliate located in Mexico). Then the export share is applied to determine the component that is exported and the component that is sold domestically in Mexico. The export share is taken either from the OECD Analytical Activities of MNEs database (differentiating between exports by domestic MNEs and foreign MNEs) or from the country's national accounts. For the exported component, the bilateral trade matrix, from the World Bank's World Integrated Trade Solution, of the producing country (that is, Mexico), is used to approximate the destination of these exports. These exports are then summed by destination country. The exports are then added to the domestic sales made by a US MNE affiliate in that country (if any). For example, Mexican exports to Nicaragua would be added to any US MNE affiliate sales made directly in Nicaragua.

To estimate the revenue effects of Amount A, the authors first aggregate the global profits and losses of MNEs by headquarter country. Sales to unrelated parties are also aggregated by MNE headquarter country. Aggregate routine profit is then defined as 10 percent of aggregate unrelated party sales. The difference between profit and routine profit is defined to be the residual.

A portion (20 percent) of the residual is then allocated to each jurisdiction based on that jurisdiction's share of sales by destination for that MNE headquarter country. For example, India's share of US MNEs residual profit is determined by its share of US MNE sales.

Since Amount A is a reallocation of the tax base, jurisdictions must also relinquish part of their taxing right. That is, each jurisdiction is assumed to "contribute" to the pool of residual profit to be reallocated. This contribution is in proportion to the jurisdiction's current share of residual profit. In practice, each group can nominate the affiliate(s) and hence jurisdiction(s) that will pay the new tax liability under Amount A.

For each jurisdiction, the tax base under Amount A is the difference between their allocation of residual profit under sales by destination and their current allocation of the residual. To estimate tax revenue effects, the authors assume that the statutory CIT rate is applied to this tax base.

The total change in revenue for a jurisdiction is the sum of revenue changes across each headquarter country included in the dataset (that is, 25 countries).

## **Formulary Apportionment**

Revenue estimates are derived using data from published country by country reports, as well as data from the US Bureau of Economic Analysis (BEA) on the activities of US MNEs.

### **US Bureau of Economic Analysis**

The BEA publishes annual data on the aggregate finances and operations of US-based MNEs, with separate statistics for US parent companies and their foreign affiliates in 199 countries. For majority-owned affiliates in 52 countries, there is detailed information on the foreign income tax paid, the profit they report, and the level of fixed assets in each country. It is data on these affiliates that are used for this analysis.

Regarding information on sales, the BEA provides information on sales by origin as well as partial data on sales by destination. Specifically, for each country where an affiliate is located, it reports goods and services supplied to unaffiliated persons in either the United States, the host country, or other foreign countries. For about 10 percent of sales to unaffiliated persons, the destination country is not specified in the BEA data. However, in the benchmark survey years, data are provided on the destination region (that is, Can-

ada, Europe, Latin America and Other Western Hemisphere, Africa, Middle East, and Asia-Pacific) for these sales. To allocate sales to countries within each region specified by the BEA, data on bilateral exports is used.

To estimate the revenue effects of formulary apportionment, profits and losses declared in each jurisdiction are first aggregated to determine the tax base at the global level. This is then apportioned to each jurisdiction using its share of the factor under consideration. For example, under the employment factor, India's share of global US MNE profit is determined by its share of total employment by US MNEs. The tax rate applied to this tax base is either the Effective Tax Rate (ETR) calculated from the data, or where the ETR is an outlier, the statutory tax rate for that country is used.

### **Country by Country Reports**

The same CbCR data set used to estimate the revenue effects under Amount A is also used to estimate the revenue effects of FA.

To estimate the revenue effects of formulary apportionment, profits and losses declared in each jurisdiction are aggregated by MNE headquarter country to determine the tax base. This is then apportioned to each jurisdiction using its share of the factor under consideration, by MNE headquarter country. For example, India's share of a Chinese MNEs profit is determined by its share of Chinese MNE sales. The tax rate applied to this tax base is either the ETR calculated from the data on profit-making firms, or where the ETR is an outlier, the statutory tax rate for that country is used.



## **Annex 2. Detailed Formulary Apportionment Results**

This annex shows the revenue effects of formulary apportionment for individual economies. The table on the next page presents the change in CIT revenue collected from MNEs if there is global adoption of formulary apportionment (percent of GDP). The results are presented based on various apportionment factors, using the CbCR data set. For example, the Employment column shows the change in total CIT revenue from MNEs, if the share of employees in each economy is used to allocate the consolidated profit of the MNE.

**Annex Table 2.1. Detailed Formulary Apportionment Results**

	Sales	Employment	Asset
Australia	0.07	-0.02	0.38
Bangladesh	0.00	-0.04	-0.02
Bhutan	-0.07	-0.11	-0.13
Brunei Darussalam	0.04	0.01	0.02
Cambodia	0.09	0.05	0.02
China	-0.02	0.11	-0.03
Fiji	0.04	0.43	0.25
Hong Kong SAR	-0.20	-1.00	-0.91
India	-0.51	0.19	-0.51
Indonesia	-0.10	0.77	0.08
Japan	-0.07	-0.70	-0.05
Korea	-0.28	-0.54	-0.19
Lao P.D.R.	0.05	0.10	0.06
Macao SAR	0.48	-0.05	0.05
Malaysia	-0.08	0.58	-0.12
Maldives	-0.19	-0.21	-0.12
Marshall Islands	0.00	0.00	0.00
Mongolia	-0.04	0.08	0.15
Myanmar	0.05	0.02	0.03
Nepal	-0.08	-0.15	-0.15
New Zealand	0.10	0.14	-0.17
Papua New Guinea	0.20	0.19	1.95
Philippines	-0.01	0.79	-0.06
Samoa	0.00	-0.01	-0.01
Singapore	-0.02	-0.30	-0.22
Solomon Islands	0.36	0.29	0.14
Sri Lanka	0.06	0.05	-0.03
Taiwan Province of China	-0.07	0.15	-0.05
Thailand	-0.38	0.44	-0.22
Timor-Leste	-0.04	-0.04	-0.07
Tonga	0.00	-0.01	-0.01
Vanuatu	0.00	0.00	0.00
Vietnam	-1.87	-1.85	-2.75
Median	-0.01	0.01	-0.03
Mean	-0.08	-0.02	-0.08

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