THE PROPOSED EU DIGITAL SERVICES TAX:
Effects on welfare, growth and revenues

Authors:
Helge Sigurd Næss-Schmidt
Martin H. Thelle
Dr Bruno Basalisco
Dr Palle Sørensen
Bjarke Modvig Lumby

September 2018

Executive summary

In March 2018, the European Commission proposed a Digital Services Tax (DST) as a new tax on revenues resulting from certain digital business activities. Specifically, a 3% tax on: (i) Online advertising revenues, (ii) Seller/buyer fees to transact via online intermediaries/marketplaces and (iii) Revenues from the sale of user data. We have reviewed the evidence base and analytical logic of the proposal.[1] We find that:

1. The rationale for introducing DST does not reflect the evidence that digital firms pay average corporate tax rates
2. The Impact Assessment (IA) for the DST does not fully consider the substantial distortions and costs to EU consumers and firms from this new tax
3. Actual revenues from the proposal are likely to be significantly lower than suggested

Lack of economic justification for the DST

The IA mainly relies on three arguments for the digital tax which we find contrasting with empirical evidence and solid economic reasoning:

Digital companies are not undertaxed: The IA refers to simulations showing a lower theoretical tax rate for digital companies than average firms (effective rate). The calculation is largely driven by digital companies having higher-than-average shares of R&D expenditure, which would equally apply to other industries, such as pharmaceuticals. However, in R&D intensive sectors, firms rely much more on equity financing, which tends to increase the actual effective tax rate - a factor missing in the simulations that the IA refers to. Indeed, recent industry data finds effective tax rates for digitalised companies at a par with traditional companies in the EU.

There is no loss of tax base: The IA stresses that the EU is losing economic activity, and thus tax base, because traditional distribution channels with physical assets and staff are making way for innovative distribution

[1] The study was commissioned by the Computer & Communications Industry Association (CCIA).

models. However, the IA ignores a key effect of innovation, as digital distribution increases productivity across the value chain in the EU, which increases GDP and tax base. Moreover, corporate taxes as a share of GDP has remained remarkably stable in recent decades, despite fall in statutory tax rates and increased digitalisation of the EU economy.

User contributions is not a stable or meaningful tax base: The proposal to tax digital business activities relies on a novel concept that digital users, merely by accessing online platforms, create a taxable economic activity for the nation where the user is located.

However, the IA does not address some of the key questions that have been raised in, e.g., the OECD discussions on potential digital taxes. For example, how to value the user contribution in a consistent and stable manner across a wide array of combinations in which users can interact with digital platforms or how to ringfence the targeted digital activities in a manner that does not create large distortions between different business models?

We argue that value creation, from an income tax perspective, takes place in the country where production, investments and innovation is taking place, not where products are consumed.

Substantial costs to EU consumers and firms

The DST IA ignores the risks to the Digital Single Market (DSM) due to cost increases for EU consumers and SMEs and distortions that hamper digital innovation and a well-functioning EU DSM.

First, the IA assumes that the digitalised companies affected will largely absorb the costs. This is not supported by empirical research on the price effects of comparable tax hikes. Indeed, companies making losses or low margins will have no choice but to pass on costs or risk going out of business. We therefore consider the cascading effects on EU SMEs, consumers and jobs – an important reflection missing in the IA. Due to these effects, the DST will harm EU consumer welfare.

Second, a DST will distort and thus slow the further digitalisation of the EU economy. We present five types of distortions arising from the DST proposal:

1. Digital platforms will lose market shares to non-digital alternatives
2. Platforms above thresholds will lose market shares to platforms below
3. Marketplace users (notably SMEs) will lose market shares to non-intermediated online sellers
4. In serving global markets, EU exporters will lose market shares to non-EU competitors
5. Compliant firms will lose market shares to non-compliant firms, due to enforcement limits

In a nutshell, consumers, firms using platforms and digitalised businesses have options and competition from business models that are outside the scope of the DST. This competition and choice inexorably promotes business models that are not subject to the tax and save consumer costs – the essence of the distortion. These key dynamics is exacerbated for the many digital activities / business models that are (i) low-margin (e.g. retail), or (ii) based on initial ramp-up phases with negative margins (new concepts/ventures).

While it is not in the scope of this study to establish a number for each of the five effects identified, we consider each of them significant enough to warrant a close and detailed assessment before the EU or its member states implement a proposal of this kind. In turn, these effects imply tax revenue leakage and an overestimated DST tax intake.

Revenue estimates are static and optimistic

The Commission estimates total DST revenues at close to €5 billion. However, this is a static calculation, assuming no significant reaction from SMEs and consumers to price increases due to the tax. Neither does the IA take into account the changes in consumer buying patterns due to the five distortions identified in this study.

Accounting for standard dynamic effects, compliance costs and a 10-40% revenue leakage as a result of the five distortions identified in this study, yields a revenue as low as €1.8 billion or up to 59% less than the Commission's estimate. Furthermore, the UK leaving the EU will substantially decrease the above revenue estimate.

Conclusions

Having reviewed the rationale for the DST, its distortive effects, effects on EU consumers and SMEs, as well as forecasted revenue, we find no evidence or economic arguments favouring moving forward with the DST.

In particular, we find that the DST might undermine EU efforts to support the development of the digital economy notably through the EU DSM strategy. The digital business activities singled out in the DST proposal are at the heart of the digital transformation and unlocking of productivity across sectors of the EU economy. EU firms and consumers continue to gain from digital solutions.

It is thus counterintuitive that the EU should impose a tax that affects the entire value chain benefiting from digital activities, notably European firms and consumers, and put at risk Europe's digital transformation.

NO JUSTIFICATION FOR A DIGITAL SERVICE TAX

As motivation for the proposal, the Commission puts forward three main arguments and underlying claims inter alia that:[2]

- *Fairness and level playing field*: Digital companies providing these services pay significantly less in taxes than traditional firms
- *Loss of tax revenues*: The increasing importance of internet based services leads to reduced tax base
- *EU users play a key role in increasing the value of platforms*: Users of platforms are playing a large part in creating the value, and this value creation should be taxed in the users' country of residence

In this section, we conclude that:

- The key arguments are not supported by empirical evidence or consistent with standard economic reasoning underpinning tax policy
- DST conflicts with international efforts for reform of corporate taxation, notable at the OECD level

Digital companies pay average corporate tax rates

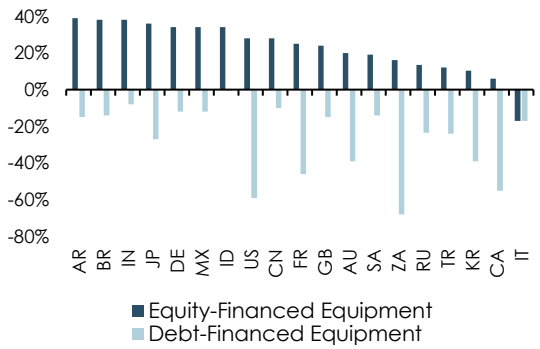
The actual effective tax rate for a given industry in a given country will depend on two key factors. First, naturally the tax system: What is the corporate tax rate, how does the tax system treat different kinds of investments and what is the tax treatment of different kinds of financing (retained earnings, new equity and debt)? Second, the industry: What does it invest in, what is the gross return on investment before return to debt and shareholders and how are investments financed?

In particular, two key structural factors will determine whether digital companies – in practice – pay more or less in average taxes than companies in other industries.

1. Degree of debt bias in global tax systems. Debt bias is the result of widely diffused tax policies. It means that debt-financed investments require a lower gross return than equity-financed investments. Any company can deduct interests from gross earnings before calculating its corporate tax base while no deductions apply to returns paid to its shareholders. Basically, the higher the corporate tax rate, the higher the debt bias.

Numerous international studies have documented the large debt bias in tax systems across the globe. A 2017 study from the US CBO, compared effective tax rates across the G-20 countries. It found that equity-based investments were taxed by orders of magnitude higher than debt financed investment in all G-20 countries for all types of investments, cf. Figure 1.[3] In fact, the marginal effective tax rate on a debt financed investment can be negative because of generous depreciation rules. Similar conclusions are drawn in a study for all EU member states.[4]

Figure 1 Equity is taxed at higher effective tax rates than debt in G20 Countries, 2012



Source: CBO (2017) International Comparisons of Corporate Income Tax Rates, page 24.

The debt bias is relevant because R&D intensive industries such as digital companies tend to rely much more on equity than other industries. The equity share is above 90% for software-based firms against for example

[2] Note that the Commission's own regulatory scrutiny board has also criticised of the Commission's proposals, as it: "Does not show the urgency for the EU to act, before global progress is achieved at the OECD/G20 level" and "insufficient" analysis of impact and proportionality, see European Commission, SEC(2018) 162 final. Similar concerns were voiced in ECIPE (2018) Five Questions about the Digital Services Tax to Pierre Moscovici

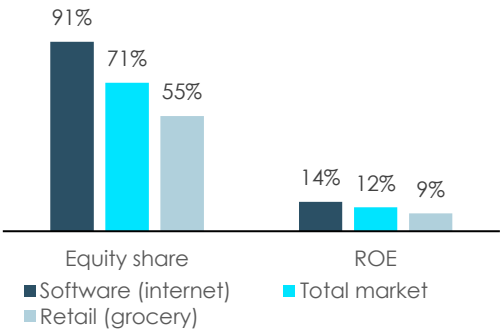
[3] See CBO (2017) International Comparisons of Corporate Income Tax Rates, page 23-24.

[4] See e.g. ZEW (2016) Effective tax levels using the Devereux/Griffith methodology.

55% for retail, see Figure 2. The higher equity shares reflect the higher risk and volatility of earnings from the industry which is also reflected in higher average returns. For software-based companies, returns are on average 14% against 9% for classical retail industries. cf. Figure 2. A key factor is the high spending on R&D that have low collateral value as well as high risks and hence needs to be financed by equity.[5]

2. Tax treatment of R&D expenditure. In most, if not all countries, firms can deduct wage costs related to R&D spending fully from the tax base when they occur rather than being considered an investment to be depreciated over a long period.[6] As digital companies have significantly larger shares of R&D spending than average companies, they benefit more. As discussed below, some countries have other specific instruments to favour the creation and production of innovative products.

Figure 2 Digital businesses relies more heavily on equity and have higher returns, 2018

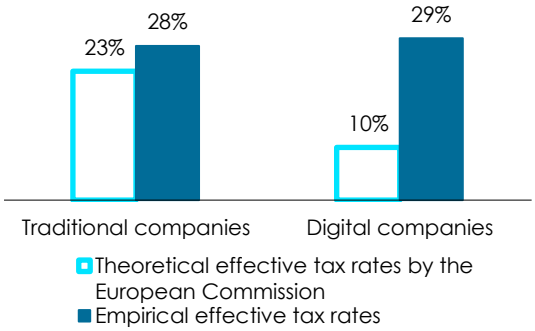


Note: Data from western Europe. ROE: Return on equity. Total market is without financials.
Source: Damodaran Online Database

Hence, two factors are pulling in the opposite directions across global tax systems with regard to the effective corporate tax rates for companies in sectors with features similar to digital versus other industries: (1) debt bias and (2) R&D-investment deductions.

A recent study suggests that the two factors as well as other factors may be netting out. The study is based on actual industry data from traditional, less digital or non-digital European companies and digital MNEs over the period 2012 to 2016. It estimated the effective corporate tax rate to 29% for digital companies and 28% for traditional companies, see Figure 3.

Figure 3 Theoretical effective tax rates in the Commission's impact assessment not in line with empirical effective tax rates



Note: Empirical effective tax rate calculated as total tax payments divided by earnings before interest and taxes (EBIT).
Source: ECIPE (2018) Digital Companies and Their Fair Share of Taxes: Myths and Misconceptions and Impact Assessment page 18

The results contradict the simulation-based comparison made in the IA which showed that digital companies paid less than traditional companies in other industries.

The empirical evidence captures the effects of both the debt bias and R&D expenditure deductions, which pull the effective tax rate comparison in opposite directions. By contrast, the simulation used in the IA ignore the debt bias by assuming that all industries have the same

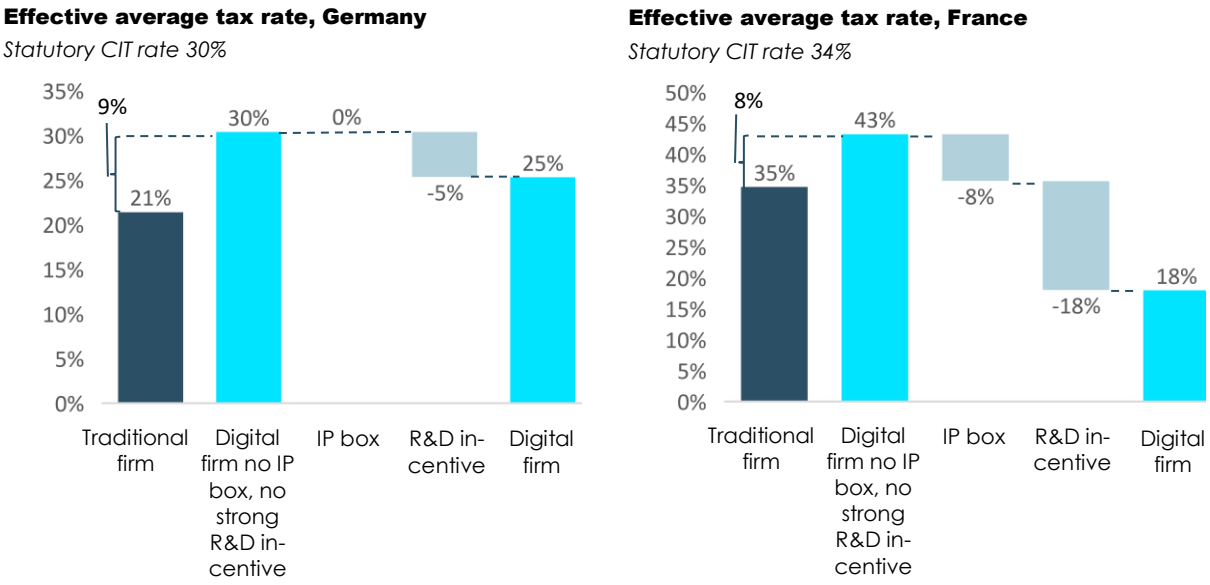
[5] Hall et al. (2015) Financing constraints, R&D investments and innovative performances: new empirical evidence at the firm level for Europe, page 183.
[6] See European Commission (2018) Impact Assessment accompanying the documents: "Proposal for a Council Directive laying down rules relating to the corporate taxation of a significant digital presence" and "Proposal for a Council Directive on the common system of a digital services tax on revenues resulting from the provision of certain digital services", SWD(2018) 81 final/2, page 18. (IA henceforth)

share of equity financing (and same rates of return). As Figure 2 shows, that assumption is far from reality.[7] Hence, the figures referred to in the IA underestimate the effective tax rates for industries with above average shares of equity financing such as digital (or e.g. pharma) companies.[8] In other words, the simulations in the DST IA merely show that R&D tax deductions reduce effective tax rates for R&D-intensive sectors. However, the DST proposal is not aimed at changing R&D tax policy; those simulations are thus not supportive evidence for the DST.

A comparison between the German and French tax systems illustrates the importance of these opposing factors. Our comparison is based on the same method used in the IA, i.e. a theoretical calculation based on stylised tax parameters. However, we include the importance of differences in debt ratios and rates of returns for different industries.

In *Germany*, a digital company faces a higher effective tax rate of 25% against 21% for a traditional company cf. figure 4. In the absence of accelerated R&D depreciation allowances it would have been 30%.

Figure 4 Theoretical effective average tax rates for digital and traditional businesses in Germany and France in 2017



Source: Copenhagen Economics based on the Griffith / Devereux methodology, PwC & ZEW (2017) and OECD database

[7] The underlying PwC & ZEW (2017) Digital Tax Index, assumes that financing shares for all industries equals 55% for retained earnings, 10% for new equity and 35% for debt. Moreover, for the same reasons the study was not meant to provide a source for comparing effective corporate taxes across industries but to compare the same industries across countries, notably the digital industry. This aim was also highlighted by the authors behind the report, who have also underlined that the report cannot be used to compare effective rates of taxation across industries.

[8] The IA on page 18 explicitly acknowledges that it is the favourable treatment of R&D expenditure that is the background for the below average tax rates for digital companies to a certain extent.

In *France,* the digital company pays only 18% in effective average tax rate against 35% for a traditional firm. The drivers are the use of IP-boxes in the French tax system[9] – which are not used in Germany – and strong R&D tax incentives. In the absence of these two instruments, digital companies in France would face an effective rate of 43%.

In conclusion, the theoretical effective tax rates used in the Commission's IA are contradicted by empirical evidence. The methodology used in the IA will underestimate effective corporate taxes for digital companies. Moreover, the use of very strong R&D incentives and IP-boxes are only applied in some EU-countries. For Germany, our calculation shows that digital companies face a higher effective rate than traditional companies because the debt bias in the tax system dominates the benefits from R&D tax benefits.

This implies that the DST risks creating over-taxation/double taxation of the digitalising economy even if the DST was to be made fully deductible as a cost in the corporate income tax base.

Average corporate tax rates and welfare

While there is no solid evidence that digital companies in practice pay below-average corporate tax rates, a full discussion about potential under-taxation should include a wider consideration of economic efficiency.

A well-designed corporate tax system should aim to align private and social objectives, i.e. private investors should have incentives to pursue the level and structure of investments that maximises total welfare for society.

As a consequence, a number of studies and international bodies have recommended a favourable treatment of investments in R&D.[10] Such benefits, open to all firms having R&D related expenditure, could strengthen innovation in industries where market failures such as spill-over effects from private R&D expenditures justify preferential tax treatment.[11] ICT and pharma industries are typical large beneficiaries of such instruments.

The point is that comparisons of average effective tax rates across industries cannot be used without qualifications to evaluate economic efficiency. The question is whether any difference is intended and results from tax policies designed to improve welfare by accounting for positive externalities, for example wider socio-economic benefits of private R&D activity. This could then be one basis of a tax policy aiming to align private returns from R&D spending with the full social returns.

Digitisation is increasing, not reducing, the EU corporate tax base

Productivity from innovations and new technologies has been the driver of economic growth for centuries. From 1870 to 1970, economic growth was powered by electricity, urban sanitation, chemicals/pharmaceuticals, the internal combustion engine and modern communication.[12]

In the 1990s and early 2000s it was the personal computer and ICT investment driving much of the economic growth.[13]

Today, we are in the middle of a digital transformation, with 40 per cent of the world population now connected to networks, up from 4 per cent in 1995. The transformation is at a relatively early stage with a range of new technologies still to come. Economists are still grappling how best to understand and fully measure how the digitisation of our economies is translating into productivity growth.[14]

While we are yet to fully measure the productivity impact of the ongoing digitisation, there are certainly fur-

[9] An IP-box allow a lower tax rate for income from revenues related to exploitation of intellectual property rights.

[10] See e.g. CPB Netherlands Bureau for Economic Policy Analysis et al. (2015) A study on R&D tax incentives: Final report, page 95-96

[11] Institute for Fiscal Studies (2011) Tax by design, page 32-33

[12] See Gordon (2016) The Rise and fall of American Growth. Gordon was included in the 2016 Bloomberg list of the nation's most influential thinkers

[13] See for example Jorgenson (2001) Information Technology and the U.S. Economy or with a European perspective and van Ark, Inklaar and McGuckin (2003) The Contribution of ICT Producing and Using Industries to Productivity Growth: A Comparison of Canada, Europe and the United States, page 56-63.

[14] See for example the OECD material for the 2017 ministerial meeting in Paris. "Going Digital: Making the transformation work for growth and well-being".

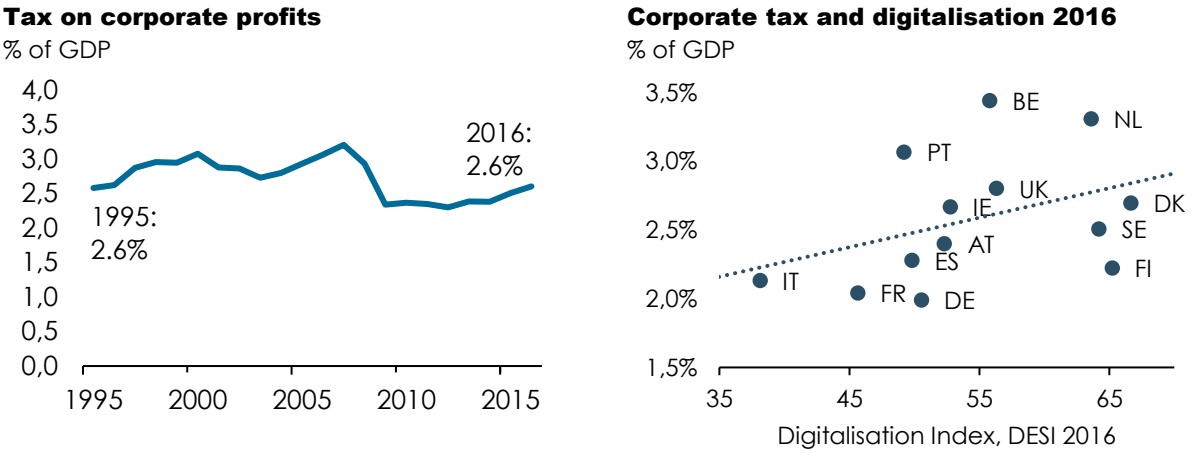
Figure 5 No negative correlation between national digitisation and corporate tax revenues

Claim: Digitalisation of the EU economy is eroding the corporate tax base

➔ No, tax on corporate profits stable over the past two decades

Claim: Corporate tax revenue is lower where digitisation is most intense

➔ No, no negative correlation inside EU. On the contrary, mild positive link



Source: European Commission and OECD

ther productivity gains to be expected. Higher productivity growth will lead to higher long-term GDP, and this will over time increase the tax base.

Focusing solely on corporate profit tax across the EU28 since the mid-1990s there are no clear indications of corporate tax base erosion at the aggregate level during the period of digitalisation, cf. Figure 5.[15] Despite ongoing digitisation of the economy, taxes on corporate profits as a share of GDP have remained almost constant for decades (even in a period of decline in statutory tax rates).

Looking across EU member states there is no clear evidence to suggest that corporate tax income as a percentage of GDP should be shrinking as the digitisation process advances. On the contrary, our analysis of corporate taxation and digitisation – as measured by the European Commission's digitisation index[16] – suggests, if anything, a positive relationship (correlation) between digitisation and corporate taxes, see Figure 5.

In conclusion, the EU or individual member states are not losing corporate tax revenue due to digitisation. Just as elsewhere, the EU benefits from digitisation, which raises productivity and the tax base, for both EU and non-EU countries. Neither issues of under-taxation

[15] Furthermore, overall tax revenues as share of GDP have increased substantially from 2004-2016, according to DG TAXUD (2018) Taxation Trends in the European Union.

[16] Digital Economy and Society Index (DESI) is a composite index that summarises relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness. See more at: https://ec.europa.eu/digital-single-market/en/desi

nor loss of tax revenues suggest a need for a special new tax on digital services.

User contributions as a new tax base?

But what about the idea that value is created by consumers in EU and this user contribution should be taxed in the residence country of the user?

It starts from the premise that consumers create value to the platforms when using them. Digital firms collect a wealth of data that can be used to, e.g., attain more targeted marketing efforts than traditional marketing. In its recent interim report on "Tax challenges arising from digitalisation", the OECD describes a wide range of types of user value creation across business models and industries.[17]

The idea of defining user contributions to digital platforms as a tax base is controversial also among EU member states. We note at least three key arguments against using user contributions as a tax base:

How to measure the value: Consumers' interactions with online platforms varies from simple purchases of products to substantive contributions in the form of reviews, detailed data contributions, e.g. in the form of personal information etc. However, there will never be a simple, stable relationship between the time and effort a user is spending on any given platform and the use he or she provides to the platform owner in terms of increasing its value.

Ring-fencing the digital economy is difficult: Consumer data has been used in the advertising industry for many decades. Supermarkets use loyalty cards and scanner data to increase sales. Advertising firms use sophisticated user data to improve the effectiveness of ads whether online or offline on TV, radio, print. The smart use of marketing data collected from users is not new and remains a central part of running an advertisement business or any consumer-facing business.[18]

Thus there is no specific logic to a supplementary tax focused on a specific set of digital solutions because they are (like other online or offline activities) using data from users.[19] Indeed, traditionally value creation happens at the place of innovation and production and not at the place of consumption.[20] The same argument would also suggest that traditional media firms, advertising firms, supermarkets and many more should be levied a special user tax per reader or per purchase because they collect data from users to improve business performance. Yet this is not what the Commission proposes.

Reverse causation: The ability to attract users is primarily dependent on the quality of the service i.e. the ability of providers to offer digital services that are valued by users.[21] That is irrespective of whether the platform is provided free of charge, based on subscription-based media (whether digital pay-walls or traditional print media) or online marketplaces that allow firms to sell products for a fee. Obviously, all these firms track consumer behaviour to improve performance of the digital service they provide. But all well-run commercial firms have a keen focus on consumer preferences e.g. using surveys to assess satisfaction with performance.

Thus, all industries aim to reduce costs and attract more users irrespective of remuneration models. Firms are primarily successful in attracting many users by offering a high level of service based on large investments in infrastructure and development of products. In this respect digital services are no different from production of cars or computer games. In all these cases, the products create value to society only when being used but that does not lead us to suggest that driving a car or playing a game should be seen a taxable income generating activity to be compared with the efforts of the company providing the product or the service.

The upshot is that the corporate tax base should be linked to the place where innovation and investments in

---

[17] See OECD (2018) Tax challenges arising from digitalization – interim report, from page 34 and onwards.

[18] E.g. OECD (2015) Addressing the Tax Challenges of the Digital Economy, Action 1 - Final Report, noted: "[… The report] notes that because the digital economy is increasingly becoming the economy itself, it would not be feasible to ring-fence the digital economy from the rest of the economy for tax purposes".

[19] See e.g. Devereux and Vella (2017) Implications of digitalisation for international corporate tax reform and OECD (2018) Tax challenges arising from digitalization – interim report, page 178.

[20] Consumption is taxed by its own set of taxes e.g. VAT.

[21] See Nylén and Holmström (2015) Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation, page 58.

platforms for users are being created not where they are consumed.

In conclusion, there is no consensus internationally among governments or experts about the idea of defining users contributing data to certain selected digital services as a new taxable activity. Moreover, measuring the value of the user contribution risks being based on arbitrary and distortive criteria.

Counterproductive in the context of global tax policy efforts (OECD, US)

The proposal for a DST should be seen in the context of recent advances in international corporate taxation, most noticeably the efforts made by the OECD in the so-called Base Erosion and Profit Shifting (BEPS) actions, the US tax reform and the EU Anti-Tax Avoidance Directive (ATAD). These policies will arguably limit the historical scope of artificial profit shifting, better aligning the Corporate Income Tax (CIT) payments of companies with the location of value creation. However, the actual impact is yet to be analysed in detail.

Beyond the already implemented policies, the DST seems to be in direct conflict with the efforts made in BEPS action 1, addressing the tax challenges of the digitised economy. Recently, the OECD interim report pointed out that there is no consensus regarding the merits of interim measures such as the DST. The report also points out the many downsides of these measures, e.g. increased cost of capital, reducing incentive to invest with a resulting negative effect on growth, potential over-taxation, and a likelihood that the cost of administration will far exceed the amount of revenue raised.[22] An EU DST may risk making an international consensus based solution less likely.

While the US tax reform adopted in 2017 is not directly linked to proposals for taxing the digital sector, we find that some of the arguments for advancing the DST would be mitigated by the US tax reform. This is because for many decades, US companies have had incentives to place retained earnings in low tax jurisdictions, due to a combination of:

- High formal US corporate tax rate
- Weak Controlled Foreign Corporation (CFC) rules
- No US taxation of foreign profits until repatriated to the US

Depending on the tax compliance design by each MNE, this could lead to "low" final taxation of corporate income, as retained earnings, in principle, might never be formally repatriated.

The new US reform, based on a much lower statutory rate, the introduction of CFC-like elements and US taxation on foreign profits on an accrual (not repatriation) basis will all logically put a brake on these incentives.[23]

Finally, the IA suggests that a digital tax can mitigate the risks of losing tax base in a world where global trade is increasingly being driven by products and services based on intangible assets sold by firms with global scale.[24] In the absence of strong enforcement of the OECD based transfer pricing principles, firms will have an incentive to set internal prices in cross-border transactions so that taxable income is reported in low tax countries.

However, the proposal has not factored in the impact of the recent BEPS initiative which updated the transfer pricing rules, as well as other international tax rules, to deal with tax avoidance.

DST WILL SLOW DOWN THE DIGITISATION OF THE EU ECONOMY

The European Digital Single Market (DSM) is intended to ensure Europe's position as a world leader in the digitised economy and to help European companies across all sectors to grow globally.[25] The Digital Single Market initiative is addressing fragmentation and barriers that do not exist in the physical Single Market. Bringing

[22] See OECD (2018) tax challenges arising from digitalisation, interim report, page 178-179.

[23] See e.g. ZEW (2018) Analysis of US Corporate Tax Reform Proposals and their Effects for Europe and Germany, which provide an overview of the effects of the US tax reform adopted in December 2017.

[24] See IA page 13-14.

[25] See European Commission (2015) A Digital Single Market Strategy for Europe, COM(2015) 192.

down these barriers within Europe is estimated to add an additional €415 billion to the European GDP.[26]

Furthermore, the Commission sees online platforms as drivers of innovation and growth in the digitised economy as they *"play an important role in the development of the online world and create new market opportunities, notably for SMEs."* [27]

Our conclusions are that the DST would work counter to the development of the DSM and reduce growth and welfare in the EU. We base our conclusions on two key effects:

- General distorting effects of the DST
- Distortions arising from the specific design of the proposed DST

General distorting effects of the DST

Indirect taxes should, according to economic theory, be aimed at minimising distortions to consumer and producer choice. Hence, the overwhelming recommendation from state-of-the-art literature is to go for a rate structure that does not change the relative prices of goods and services consumed by firms and producers. A single rate VAT system is a good example. The most valid exemption from this principle is when activities create positive or negative externalities.[28]

As a consequence, it seems clear that a DST will reduce welfare. We have not seen any studies suggesting that digital services are "overconsumed" in general or leading to negative externalities, neither that digital companies are undertaxed, prompting a need for a "corrective/equalisation" tax on certain digital services. The DST also suffers from being a tax on revenue and not value added. This implies that the tax distorts competition and hinders the free movement of goods and services.[29]

It is likely that a main contribution to the welfare loss is coming from a slower uptake among SMEs of digital platforms. This hampers their productivity and reduces the number of start-ups, innovation and employment benefits, as these companies typically create new jobs.[30] We have highlighted examples of how important digital distribution channels are for SMEs in the box below.

More generally, we find the DST to conflict with the EU's own aim of achieving an EU Digital Single Market fully integrated in an open global economic system.[31]

Online platforms are important enablers for European SMEs

- **82% of SME** respondents to a recent Eurobarometer survey on online platforms use **search engines** to promote products and/or services online
- **42%** of SME respondents use **online marketplaces** to sell their products and services
- **90%** of respondents to the Commission's fact-finding on platform-to-business trading practices use online social media platforms for business purposes

Source: European Commission[32]

[26] See European Commission (2015) A Digital Single Market Strategy for Europe – Analysis and Evidence, SWD(2015) 100.
[27] See European Commission (2017) Mid-Term Review on the implementation of the Digital Single Market Strategy A Connected Digital Single Market for All, SWD/2017/155, (Mid-Term review, henceforth), page 7.
[28] See e.g. the very comprehensive Mirrlees review in Institute for Fiscal Studies (2010) Dimensions of Tax Design and Institute for Fiscal Studies (2011) Tax by design. The principle are also underlined in two major studies for DG TAXUD (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union and DG TAXUD (2010) A retrospective evaluation of elements of the EU VAT system and in Aslam and Shah (2017) Taxation and the Peer-to-Peer Economy, see page 19.
[29] In European Commission (2018) Fair Taxation: Commission proposes final technical measures to create a future fraud-proof EU VAT system, press release, it is stated that: "The common Value Added Tax (VAT) system plays an important role in Europe's Single Market. It replaced turnover taxes which distorted competition and hindered the free movement of goods…"
[30] See European Commission (2016) Europe's next leaders: the Start-up and Scale-up Initiative, COM/2016/0733, page 2.
[31] See Mid-term review, page 22.
[32] See European Commission (2017) Commission Staff Working Document accompanying the document: "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Com-

Distortions arising from the design features of the DST

A digital services tax would imply a fundamental shift in the taxation principle from a "physical presence" to a "digital presence".[33] In the Commission's preferred option, a carefully selected subset of digital firms should face an additional tax of 3% of the gross revenue on top of the corporate tax they already pay in EU member states.[34] The revenue tax would be limited to digital advertisement, intermediary platforms with sales above a pre-defined threshold and revenues from the sale of user data.

Such a change would be fundamental for firms with sales above the thresholds. For such digital firms established e.g. in Spain, advertising space to Spanish users would face an extra tax increase of 3 percentage points, while firms outside the scope would not. For the same firm with physical presence in Spain, sales to other EU member states (e.g. German users) would face an extra tax equivalent to a tariff of 3%, while a small competitor outside the scope of the DST would not face this tax. A digital services firm established outside the EU, e.g. in Canada, would face a tax with a similar effect as a 3% tariff on its digital activity in the EU, while firms outside the scope of the DST would not.

Since digital firms within the proposed scope are not under-taxed from the outset – as shown in section 1 – a DST would work counter to the ambitions stated for the Digital Single Market. It would add an additional tax on a narrowly selected subset of digital firms, which may well be amongst the very drivers of the desired productivity improvements, e.g. digital platforms.

The Commission's impact assessment does not analyse these impacts and lacks compelling evidence to conclude that *"there is hardly any impact at the macro-level"*.[35]

While the Commission fails to provide a comprehensive assessment of the economic impacts of the proposed DST, it is aware of the potential negative impacts. Indeed, the stated motivation for preferring a narrow scope of the digital services tax (i.e. imposing the tax only on a selective subset of digital firms), is revealingly: *"The narrow scope has the lowest risk of taxing too heavily services that play a key role for the development of the digital single market."*[36]

The IA also illustrates that the Commission is seeking ways to tax activities with limited local presence in the EU. The Commission argues to leave platforms offering digital content outside the scope of the tax, and writes: *"online platforms offering digital content will often target this content based on an analysis of user data, but they may also use very substantial 'traditional' inputs to create content (for example, producing a movie) or tailor their services requiring local staff (for example, digital business-to-business solutions)."* [37]

This is again showing that the Commission is seeking to tax services that are believed to have limited local presence in the EU.

Finally, the Commission's IA acknowledges the negative distortions that a digital services tax will have on the economy, when saying that *"the narrow scope is also expected to have the best economic impact, notably as*

---

mittee of the Regions on the Mid-Term Review on the implementation of the Digital Single Market Strategy A Connected Digital Single Market for All", SWD(2017) 155 final, page 22.

[33] It is worth noting that the EU Expert group on digital taxation concluded "It has been argued that one of the key components in the digital economy, i.e. the collection, processing and monetising of data, must be reflected in the definition of a taxable nexus …. The Group has extensively considered this question and has come to the conclusion that there is currently no valid justification for such a fundamental change specifically for digital activities. There is no convincing argument why the collection of data via electronic means in a country should in itself create a taxable presence in that country. Deficiencies in the interpretation and application of the existing nexus provisions will be addressed under the G20/OECD BEPS project and the Group supports these efforts. Revenue concerns of the country where digital services and products are consumed should be adequately addressed via the VAT system", see European Commission (2014) Commission expert group on taxation of the digital economy, page 47.

[34] See IA appendix 12 where the Commission describe how an interim solution should work in practice by apportioning advertising revenue or user fees on online platforms e.g. according to the "*number of times an advertisement has been displayed*".

[35] See IA page 39. The Commission presents a simplified analysis of a long-term Common Consolidated Corporate Tax Base (CCCTB) solution in appendix 10 of the IA, but has no economic impact assessments of the proposed interim solution.

[36] See IA page 64.

[37] See IA page 65.

it minimises additional distortions, while still having broadly the same revenue potential as the mixed scope." [38] Here the Commission reveals its definition of "best economic impact" as the option which creates the least negative impact (distortions) while still yielding a high tax revenue. As will be shown in section 3, the tax revenue estimates are likely to be much lower than claimed.

Not only would the general idea of a digital service tax run counter to the Commission's own analysis of the benefits and drivers of the Digital Single Market, but the DST proposal will also add a number of further complications and specific distortions from the DST:

Distortion 1: Digital vs non-digital service
Distortion 2: Above vs below threshold
Distortion 3: Third-party vs own sales
Distortion 4: EU exporters vs non-EU competitors
Distortion 5: Compliant vs non-compliant

See figure 6 for an overview.

Distortion 1: Digital vs non-digital service

As mentioned, the specific EU proposal for a digital services tax takes a narrow and selective approach to defining "digital presence" and hence defines some firms as "digital" and thereby taxable, while others are not. However, because the digital economy is increasingly becoming the economy itself, such ring-fencing for tax purposes, as proposed by the Commission, seem unfeasible and arbitrary.[39]

Furthermore, a distortion is created between large firms with sales above the thresholds using one specific digital business model (e.g. online platform) and large firms with sales above the thresholds using another business model for approaching the same market, e.g. more traditional media company seeking to convince advertisers to place ads on their site.

In this case, two firms would be competing for the same business (e.g. advertising revenue) using two different approaches (one within scope and the other outside scope), and one would face a 3% additional tax and the other none. This will introduce a distortion and will other things being equal, unduly reduce the speed of the digital growth of the company using one specific digital approach.

This distortion could also lead to less digital consumption, as consumers chose "physical" alternatives that are not DST liable, e.g. CD's instead of streaming.

Distortion 2: Above vs below threshold

Another additional distortion would occur between digital firms with the same business models, but where one firm has revenue above the threshold whereas another firm would be below. This could be two competing platforms both with more than €750 million in global revenue, but one having above €50 million in EU digital revenue, and the other having less than €50 million in EU digital revenue.

In this case, the firm with *most* activity in the EU would face a 3% tax on all sales in the EU, while the otherwise similar firm with *less* activity in the EU would not be facing any additional taxes. This clearly creates an adverse incentive and will be signalling to global firms that they will be penalised if they grow successful in the EU (i.e. grow above the threshold of €50 million). It is also worth noting that businesses that grow to this threshold will have negative pressure put on their valuations given the additional tax and compliance burdens associated with reaching the threshold.

For home grown EU digital firms, this will also give a perverse incentive not to grow beyond the threshold and unduly put disadvantage on digital companies aiming to grow their business predominantly in Europe.

[38] See IA page 65.

[39] OECD (2015) Addressing the Tax Challenges of the Digital Economy, Action 1 - Final Report

Figure 6 Five distortions created by the digital services tax

Source: Copenhagen Economics

All in all, the proposed "narrow scope" with such thresholds would – in our view – create a number of unintended and negative impacts that run directly counter to the aims of the digital single market. It will reduce the incentive to invest and build innovative EU firms within the areas covered by the DST. This is further unfortunate, as this is an area that is otherwise incentivised with EU funding for R&D.[40]

Distortion 3: Third-party vs own sales

The EU proposal would also impact mixed business models, i.e. firms that are both selling own products via a website and making the platform available for third-party sellers. In this case, the sales of own products via the website would be out of the scope of the DST (they would not qualify as taxable revenues), while sales by third parties would be covered by the DST.

This will distort the competition between own products and sales of third party products, and it will play to the disadvantage of third-party sellers, which are often SMEs.[41] This could generate an insourcing bias for the platforms as they would have a counterproductive incentive to insource some of the products currently sold by third-party sellers.[42]

Distortion 4: EU exporter vs non-EU competitors

The fourth distortion relates to EU exporters vs non-EU competitors. Here, a distortion is created between an EU exporter using online platforms to export goods and services to non-EU buyers compared to a non-EU user selling similar goods and services to the same non-EU buyers and using the same online platform. In this case, the EU firm would face the additional costs passed through by the online platform to the users as a result of the DST, while the non-EU firm would not face any additional tax. This clearly creates a competitive distortion.

This distortion will also hit SMEs disproportionately, as online market places facilitate exports by even the smallest retailers. The online market places and digital advertising reduce trade costs for SMEs and at the same time provide them with a global presence and reach previously reserved to large (multinational) retailers.[43] This enables SME retailers to benefit in the same way from internationalisation (larger market, larger customer pool, less dependent on domestic economy) as larger exporting retailers. However, the introduction of the DST would put EU exporters at a competitive disadvantage potentially disrupting SMEs from reaping the full benefits of online market places.

Distortion 5: Compliant vs non-compliant

To the extent that the DST cannot be enforced against non-compliant businesses it will add a further distortion. Ultimately, non-compliant companies would potentially gain a competitive advantage that pushes profits and market shares towards these companies.

Despite this concern the DST proposal and the accompanying IA contain no assessment of the magnitude of this risk nor any enforcement mechanisms to ensure compliance. This is especially relevant for non-EU businesses which do not have physical presence in the EU and may therefore be more difficult to enforce against as e.g. auditing is challenging.

Furthermore, experience from VAT suggests that non-compliance issues are indeed substantial and can expose member states to unacceptable and damaging levels of VAT fraud.[44] This suggests that non-compliance issues will also be relevant with respect to the DST. Hence adding a distortion.

All in all, these distortions would – individually and combined – have a range of negative economic impacts on the speed of digital development in the EU and none

---

[40] Over the next three years, Horizon 2020 plans for an additional EUR 300 million for activities related to digital innovation hubs, which is essential to support local startups and innovation. EUR 300 million has been specifically planned for the development of next generation of digital industrial platforms, in particular through new reference architecture models leading to smart factories and services.

[41] See Copenhagen Economics (2016) Economic effects of online marketplace bans.

[42] Furthermore, this appears to conflict with the European Commission's platform to business proposal which seeks to safeguard a level playing field between platforms and the SMEs using them, see European Commission (2018) Proposal for a Regulation on promoting fairness and transparency for business users of online intermediation services, COM(2018) 238 final.

[43] See WTO (2016) World Trade Report 2016. Levelling the trading field for SMEs, page 54.

[44] See European Commission (2017) Fact Sheet - Questions and Answers on VAT reform in the EU.

of these impacts have been properly addressed in the Commission's IA.

In our view, both the general idea of a DST, and indeed the specific EU proposal would have several negative impacts on the European economy, and, in our assessment, impact the uptake of the newest digital technologies and this will slow down digital transition and lead to slower productivity growth. Slower productivity growth *will* lead to slower GDP growth in the EU if a DST is implemented in any of its current proposed forms (see also Figure 7).

REVENUE ESTIMATES TOO OPTIMISTIC

The proposal contains an estimate of total revenues in the order of €4.7 billion. However, this estimate is based on a static calculation, assuming no significant reaction from consumers to higher prices and not accounting for the impact on other sources of tax revenue. Neither does it take into account the effects on consumer behaviour from the introduction of the five distortions outlined above.

In this section, we find that the revenue estimate in the Commission's IA is too optimistic. First, we account for standard dynamics effects and estimate the revenue impact and, secondly, we have identified other sources of revenue leakage that will reduce the revenue even further.

Standard dynamic effects can reduce revenues

We have estimated the potential net tax revenue accounting for four effects:

1) Decrease in corporate tax base
2) Lower demand for digital services
3) Lower demand for other goods and services
4) Compliance costs for national tax authorities

1) Decrease in corporate tax base

The Commission expects member states to make the DST deductible as a cost in the corporate tax base to alleviate double taxation issues.[45] Accounting for the deductibility of the DST will lower the revenue impact by up to €1.1 billion. Even if some companies do not yield a profit today, most member states allow for losses to be carried forward.

However, if member states do not make the DST deductible as a cost in the corporate tax base, the tax will be even more distortionary and result in further double taxation issues.[46] Ultimately having an even larger negative impact on the EU economy.

2) Lower demand for digital services

A new tax on digital services will be passed through to customers to some degree, as found in section 2.[47] Higher prices implies less consumption of digital services by companies and households. This will reduce the revenue of the companies liable for the DST and thereby reduce the revenue from the tax. We find that lower demand can reduce the revenue from DST directly by between €0.1-0.2 billion with a 33% and 100% pass-through rate of the cost increase respectively.[48]

3) Lower demand for other goods and services

Higher prices for digital services also have a negative impact on all other sectors using digital services as an input. Based on an input/output model we have calculated the impact on tax revenue more broadly as a consequence of a price increase in digital services. €0.1-0.3 billion from declines in VAT, corporate income tax, dividend tax and wage tax revenues.[49]

---

[45] See European Commission (2018) Proposal for a COUNCIL DIRECTIVE on the common system of a digital services tax on revenues resulting from the provision of certain digital services, COM(2018) 148 final, page 20.

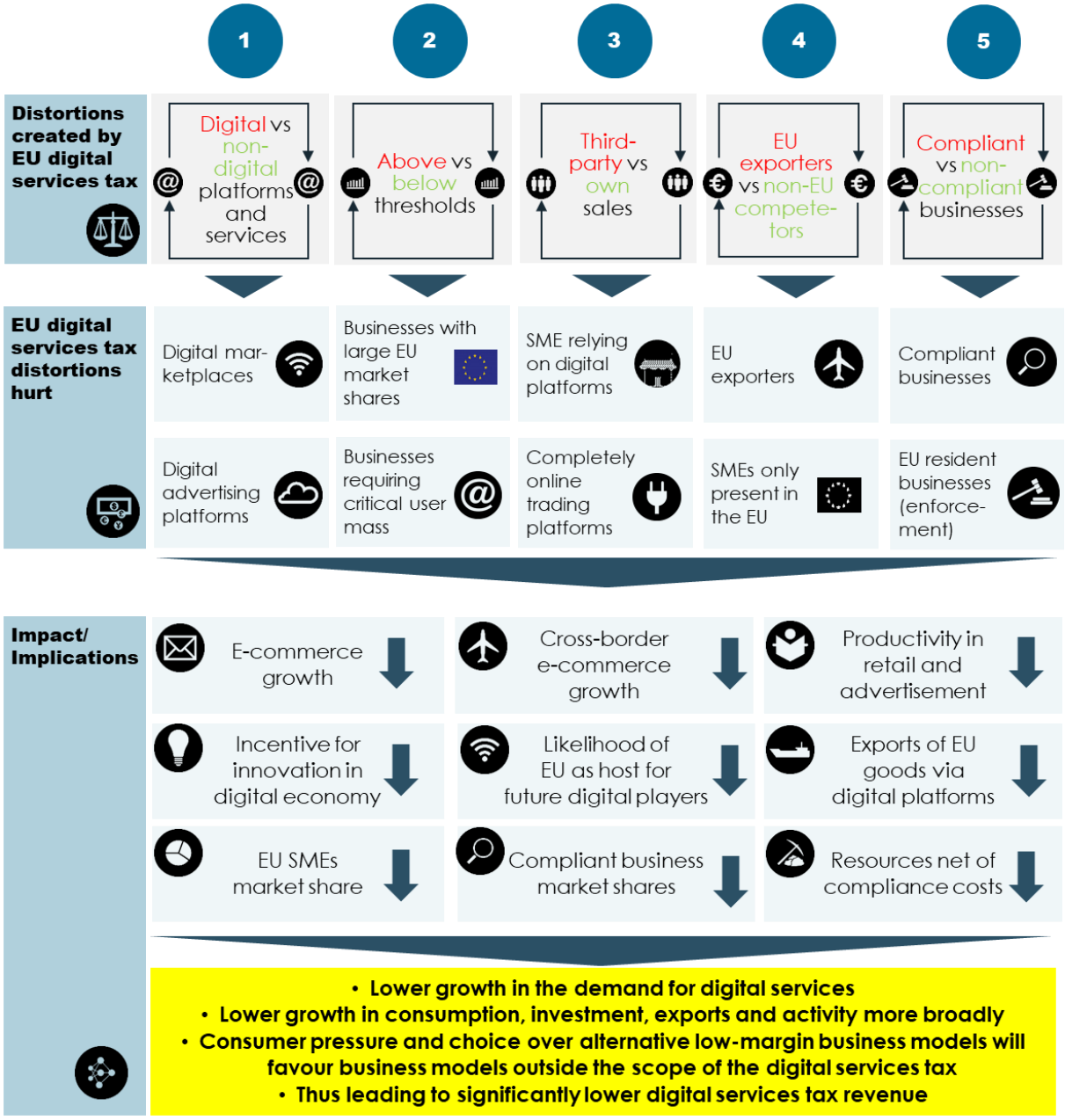
[46] Given the fact that there is little evidence of under taxation of the digitalised economy, the DST, even if deductible as a cost, will result in over taxation.

[47] The commission references a pass through of only 33-50% based on two studies on VAT, see European Commission (2012) – Economic Study on Publications on all Physical Means of Support and Electronic Publications in the context of VAT, p. 98 and Benedek et al. (2015) Estimating VAT Pass Through, p.16. The DST is not comparable to VAT, as argued above, and generally economy theory suggests a pass through up to 100% in the long run, see DG TAXUD (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union.

[48] We have used a demand elasticity of -1.5 as referenced in the IA, page 102.

[49] The calculation is based on an assumed income elasticity of -1 and export elasticity of -5.

Figure 7 Distortions, effects and implications of the proposed EU DST



Source: Copenhagen Economics

4) Compliance costs for national tax authorities

The compliance costs for national tax authorities rises as a result of having to set up a new system (one-stop-shop) to handle the new tax and distribute it to other member states combined with new audit mechanisms to ensure compliance.

A study shows that the annual costs for having a (mini) One-Stop-Shop (OSS) amounts to between €56-84 million for the whole EU.[50] In addition, each tax authority will have implementation costs, which amounts to €280-420 million.[51] These costs are, however, likely underestimated due to the DST being a more complex tax to handle and audit (e.g. checking that all users/clicks are real can be an almost insurmountable task).[52]

More fundamental revenue leakage could lead to even lower revenue

On top of the dynamic effects, the tax revenue estimates are sensitive to revenue leakage resulting from the five distortions outlined in section 2. The five distortions will likely result in driving down the expected revenue from DST, see also Figure 8:

1) Digital platforms will lose market shares to non-digital alternatives
2) Platforms above thresholds will lose market shares to platforms below
3) Business users (notably SMEs) will lose market shares to online platforms with mixed business model
4) EU exporters will lose market shares to non-EU competitors
5) Compliant businesses will lose market shares to non-compliant businesses

These distortions will drive down revenue even further, especially in the long-run[53] where a 3% DST is equivalent to a 20% CIT rate increase for a business with a mark-up of 15%.[54] I.e. a significant difference in corporate taxes will have a significant impact on the sector in general and result in significant revenue leakage, as DST liable firms have a significant competitive disadvantage.

1) Digital platforms will lose market shares to non-digital alternatives

Users using online intermediaries and businesses using digital advertisement will have a tax induced incentive to move to non-digital alternatives. Hence, as the non-digital alternatives are not liable for the DST, revenue will be reduced.

2) Platforms above thresholds will lose market shares to platforms below

Users using digital advertising and online intermediaries can avoid costs associated with the DST simply by choosing a provider below the revenue thresholds. By moving to smaller platforms, buyers of digital services such as online advertisement can avoid the tax altogether. This will also result in additional revenue leakage.

3) Business users (notably SMEs) will lose market shares to online platforms with mixed business model

The DST will play to the disadvantage of third-party sellers, which are often SMEs. This could generate an insourcing bias for the platforms as they would have a counterproductive incentive to insource some of the products currently sold by third-party sellers. In sum, this would result in further revenue leakage, as own sales on digital platforms are outside the scope of the DST.

---

[50] See Deloitte (2016), VAT Aspects of cross-border ecommerce - Options for modernisation, Final report – Lot 3, page 118-119.

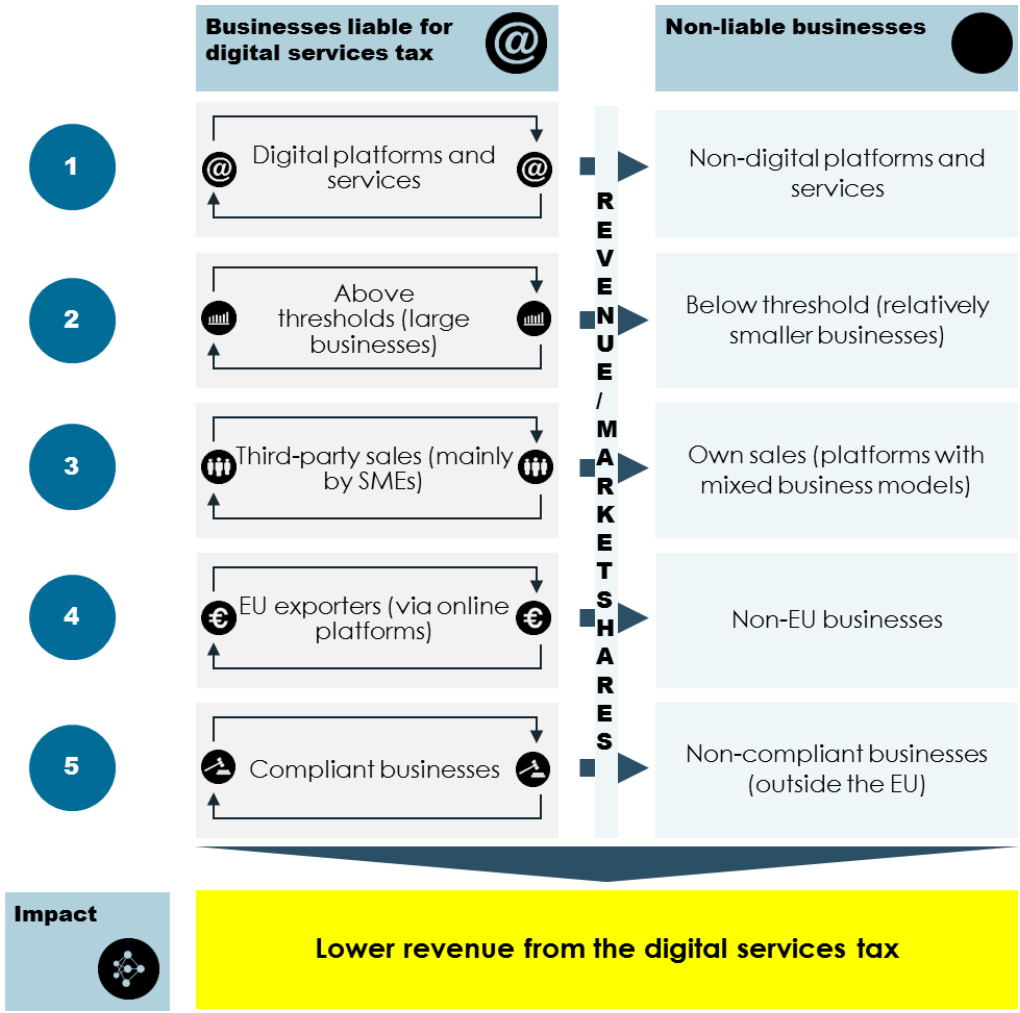
[51] See Deloitte (2016), VAT Aspects of cross-border ecommerce - Options for modernisation Final report – Lot 3, page 119 using the 1:3 rule.

[52] These estimates are not accounting for the fact that DST liable businesses will also experience significant compliance costs. These compliance costs are wasted resources that depress economic activity and ultimately also lowers tax revenue. According to OECD (2018) Tax challenges arising from digitalization - interim report, compliance costs risk outweighing the collected revenue of interim measures such as the DST.

[53] Even though the DST is labeled as an interim measure, there is no sunset clause in the Commission's proposal. Furthermore, the long-term solution (CCCTB) has not made much progress since it was first proposed in 2011.

[54] According to the Commission, a mark-up of 15% is the median for a selection of companies with digital activities, see IA page 71. Note, if the DST is deductible as a cost the effective rate is still significant but lower.

Figure 8 Distortions will result in lower revenue from the digital services tax (Illustration)



Source: Copenhagen Economics

4) EU exporters will lose market shares to non-EU competitors

Another source of leakage is that EU exporters selling goods and services to non-EU buyers via online intermediaries will lose market shares to non-EU competitors. Ultimately resulting in additional revenue leakage. Since the proposed DST would only apply to transactions where at least one of the users is located in the EU, this would give a competitive advantage for non-EU competitors when selling to non-EU users.

5) Compliant businesses will lose market shares to non-compliant businesses

Experience from VAT compliance suggests that non-compliance issues are indeed relevant. This creates another source of revenue leakage, as non-compliant can exploit the un-level playing field to gain market shares.

All in all, these five distortions will cause additional revenue leakage resulting in even lower revenue for member states.

Overall the revenue is likely significantly lower than estimated by the Commission

The Commission estimate of €4.7 billion is too optimistic. Accounting first of all for standard dynamic effects and compliance costs suggest a revenue of approximately €3.1-3.4 billion, see Figure 9. Furthermore, accounting for both dynamic effects, compliance costs and a revenue leakage of 20% suggest a revenue of only €2.5-2.7 billion. If the revenue leakage reaches 40%, the revenue will be as little as €1.8-2.0 billion. That is 59% lower than the Commission estimate.

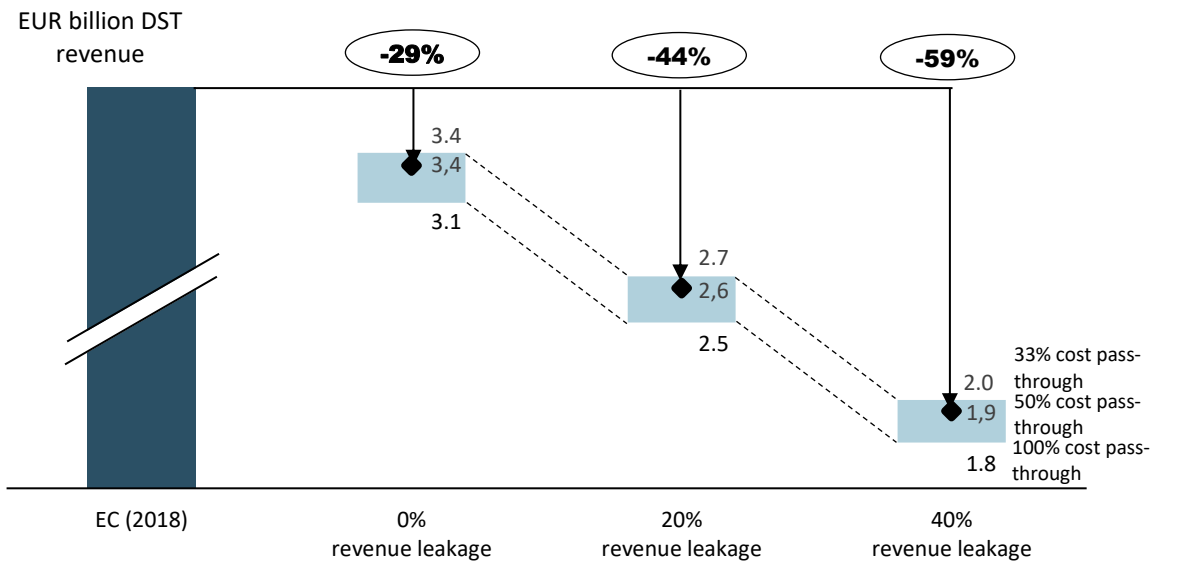
While no study including the IA has analysed the extent to which distortions will result in revenue leakage, our assessment is that the combined effects of multiple distortions are likely to be considerable, especially in the long run. The basic logic is that a 3% revenue tax creates a significant wedge in effective tax rates for business within vs outside the scope of the DST. Furthermore, the DST can have detrimental effects on business models operating with low margins and having an extended period of losses to reach critical user mass and generate profits. This suggests high rather than low revenue leakage.

We would also highlight that these outcomes are not accounting for any retaliation measures that non-EU countries will potentially introduce as a response to the EU DST. Such measures would further depress the revenue from the DST.[55]

In addition, when the UK leaves the EU revenue is even lower

On top of the dynamic effects and revenue leakage, when the UK leaves the EU, the Commission estimates that the revenue will drop by approximately 30% or about EUR 1 bn. This is driven by a disproportionately large share of revenue from digital services coming from the UK.

Figure 9 EU tax revenue from introducing Digital Services Tax significantly lower than estimated



Source: Copenhagen Economics based on the Commission's IA and own calculations

[55] A recent study, Hufbauer and Lu (2018) The European Union's Proposed Digital Services Tax: A De Facto Tariff, suggests that the European DST is "De Facto Discrimination" and that retaliation is not unlikely, see page 8 and 10.

CONCLUSIONS

The European Commission as well as several member states have either proposed or already implemented new instruments to tax economic activities linked to digital platforms.

We find that there is an urgent need to review the rationale for these policies. On closer examination, the arguments put forward as justifications are not supported by robust data or tax policy analysis. This is certainly the case with respect to the claimed under-taxation of digital companies and stated risks of losing steadily more tax base as digital business models grow in importance.

Moreover, we also find that the potential adverse effects have not been examined in any depth. We find it more than likely that digital taxes will slow the digitalisation of the European economy, with SMEs being disproportionately hit. The proposed design of the instruments targeting a subset of activities and only firms with turnovers above thresholds will also lead to potentially significant distortions.

We have also noted that there is limited consensus either within the EU or in the wider international community on the rationale and need for putting new specific instruments in place to tax certain digital activities.

As a consequence, we find no merits for using the DST as a basis for EU discussions on taxation of digital services and we suggest that the EU focuses on the negotiations taking place at the OECD level.

LITERATURE

- Aslam and Shah (2017) Taxation and the Peer-to-Peer Economy
- Benedek et al. (2015) Estimating VAT Pass Through
- CBO (2017) International Comparisons of Corporate Income Tax Rates
- Copenhagen Economics (2016) Economic effects of online marketplace bans
- CPB Netherlands Bureau for Economic Policy Analysis et al. (2015) A study on R&D tax incentives: Final report
- Damodaran Online, Accessed 13th June 2018
- Deloitte (2016) VAT Aspects of cross-border ecommerce - Options for modernisation
- Devereux and Vella (2017) Implications of digitalisation for international corporate tax reform
- DG TAXUD (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union
- DG TAXUD (2010) A retrospective evaluation of elements of the EU VAT system
- DG TAXUD (2018) Taxation Trends in the European Union
- ECIPE (2018) Digital Companies and Their Fair Share of Taxes: Myths and Misconceptions
- ECIPE (2018) Five Questions about the Digital Services Tax to Pierre Moscovici
- European Commission (2012) Economic Study on Publications on all Physical Means of Support and Electronic Publications in the context of VAT
- European Commission (2014) Commission expert group on taxation of the digital economy
- European Commission (2015) A Digital Single Market Strategy for Europe - Analysis and Evidence, SWD(2015) 100
- European Commission (2015) A Digital Single Market Strategy for Europe, COM(2015) 192
- European Commission (2016) Europe's next leaders: the Start-up and Scale-up Initiative, COM(2016) 733
- European Commission (2017) Fact Sheet - Questions and Answers on VAT reform in the EU
- European Commission (2017) Mid-Term Review on the implementation of the Digital Single Market Strategy A Connected Digital Single Market for All, SWD/2017/155
- European Commission (2017) Commission Staff Working Document accompanying the document: "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Mid-Term Review on the implementation of the Digital Single Market Strategy A Connected Digital Single Market for All", SWD(2017) 155 final, page 22.
- European Commission (2018) Proposal for a Regulation on promoting fairness and transparency for business users of online intermediation services, COM(2018) 238 final.
- European Commission (2018) Impact Assessment accompanying the documents: "Proposal for a Council Directive laying down rules relating to the corporate taxation of a significant digital presence" and "Proposal for a Council Directive on the common system of a digital services tax on revenues resulting from the provision of certain digital services", SWD(2018) 81 final/2
- European Commission (2018) Fair Taxation: Commission proposes final technical measures to create a future fraud-proof EU VAT system
- European Commission (2018) Regulatory scrutiny board opinion, SEC(2018) 162 final
- European Commission (2018) Proposal for a COUNCIL DIRECTIVE on the common system of a digital services tax on revenues resulting from the provision of certain digital services, COM(2018) 148 final
- Gordon (2016) The Rise and Fall of American Growth
- Hall et al. (2015) Financing constraints, R&D investments and innovative performances: new empirical evidence at the firm level for Europe
- Hufbauer and Lu (2018) The European Union's Proposed Digital Services Tax: A De Facto Tariff
- Institute for Fiscal Studies (2010) Dimensions of Tax Design, The Mirrlees Review
- Institute for Fiscal Studies (2011) Tax by design, The Mirrlees Review
- Jorgenson (2001) Information Technology and the U.S. Economy
- Nylén and Holmström (2015) Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation
- OECD (2015) Addressing the Tax Challenges of the Digital Econ-omy, Action 1 - Final Report
- OECD (2018) Tax challenges arising from digitalization - interim report
- PwC & ZEW (2017) Digital Tax Index
- van Ark, Inklaar and McGuckin (2003) The Contribution of ICT Producing and Using Industries to Productivity Growth: A Comparison of Canada, Europe and the United States
- WTO (2016) World Trade Report 2016 Levelling the trading field for SMEs
- ZEW (2016) Effective tax levels using the Devereux/Griffith methodology
- ZEW (2018) Analysis of US Corporate Tax Reform Proposals and their Effects for Europe and Germany

Contact for this study:
Partner, Helge Sigurd Næss-Schmidt
sns@copenhageneconomics.com

About Copenhagen Economics

Copenhagen Economics is the leading economic consultancy in the Nordic region. Our economists provide advice and analyses in the fields of competition, regulation, international trade and impact assessment.

We solve complex problems for clients in the areas of

We provide hard facts and clear stories, enabling our clients and their stakeholders to make superior decisions based on sound analysis.

We advise companies, authorities and policy makers when market meets regulation and conflicts arise. We help our private sector clients handle conflict cases and guide them on How to prosper through regulatory management. We help our public sector clients evaluate and devise new regulation.

Founded in 2000, the firm is based in offices in Brussels, Copenhagen, Stockholm and Helsinki

- Is partner-owned
- counts more than 80 employees, mostly with Ph.D. or M.Sc. in Economics
- includes Economists from various nationalities / languages: Danish, Dutch, English, Finnish, French, German, Hungarian, Italian, Lithuanian, Norwegian, Portuguese, Spanish, Swedish
- and operates across the world.

Global Competition Review (CGR) lists Copenhagen Economics as one of the top 20 economic consultancies in the world.

www.copenhageneconomics.com