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Digital Services Tax: Comparative Analysis of Individual OECD Countries and Potential Risks of Introducing a Digital Tax in Russia

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Abstract

The need to ensure compliance with the fiscal interests of the state requires the transformation of essential approaches to the regulatory regulation of tax relations in the context of the regulation of the tax base taxed in Russia. At the same time, the problems that arise when taxing the activities of digital companies abroad are relevant for Russia. The relevance of the study is due to the fact that digitalization has allowed companies to access a large number of customers around the world without a physical presence in the countries where these customers are located. Thus, there is a discrepancy between the level of physical and economic presence in the market country. Currently, international tax coordination can no longer be identified only with traditional double tax treaties. In the absence of consensus, many jurisdictions have begun to formulate unilateral rules for taxation of the digital economy. Inconsistency of these rules is likely to increase the tax burden of a number of multinational corporations, given that each state seeks to protect its interests. The author discusses national digital taxes introduced in OECD countries. It is proposed to divide these taxes into three groups: income taxes, consumption taxes (VAT for electronic services) and hybrid taxes. Based on a comparative legal analysis of the legislation of the states in which digital taxes have been introduced, possible scenarios for tax regulation in Russia been developed. It is concluded that the introduction of a digital tax in Russia is not appropriate. In addition, in the context of the introduction of various benefits for IT companies increasing the tax burden in the field through the introduction of a new tax does not seem logical.

Keywords
tax law; international taxation; digital economy; digital business models; global profit; digital services tax; VAT for electronic services.

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Introduction

Multinational groups of companies make profits by providing digital services around the world. According to the existing tax agreements, such companies are not obliged to pay the corporate income tax in a given country unless they have declared a physical presence there.

World's largest digital services providers, mainly US corporations like Google, Apple, Amazon, establish their headquarters in low-tax jurisdictions, thus avoiding taxes in the consumer countries and in the countries of origin. It has raised concerns of governments and international organisations due to the clear trends of tax base erosion and profit withdrawal in today's digital world.

The Organisation for Economic Co-operation and Development (OECD), the United Nations Organisation and the European Union have identified the main fiscal challenges of the digital economy. However, the digital tax rules have not been assessed for risks to the tax system and the economy as a whole either at the OECD level or at the level of individual countries. The lack of such an assessment makes further research essential. Moreover, in the absence of international consensus, countries begin to introduce unilateral digital taxes, and most of these countries are members of the OECD.

Issues pertaining to digital company taxation are highly topical in Russia, too. Oftentimes, the federal budget cannot tax the profits of foreign digital corporations from their operations in the Russian market despite the fact that it is Russian users who generate such profits because their data is used in the value chain. The reason for this inability is simple: those companies often are not physically present in Russia. Currently, the Russian tax law does not have any tools for effective taxation of foreign digital companies are only virtually present in this country. Moreover, Russian companies are at a disadvantage as compared to foreign companies because they face a higher tax burden due to the need to pay personal income tax and insurance contributions. All of this raises questions regarding the need for new rules on the taxation of digital companies. Russia is both a digital services consumer and provider owing to the numerous Russian IT companies that are quite competitive at the international level.

The article considers national digital taxes introduced in individual OECD countries and suggests dividing them into three groups: income taxes, consumption taxes (VAT for e-services), and hybrid taxes. The article proposes to look at the experience of France as a digital tax pioneer, Israel as a country with interesting and rather unconventional ways of taxation, and Turkey as a country with a wide range of taxes on digital companies, both direct and indirect. All these countries are OECD members.

The first country to introduce a tax on digital services was France in 2019. Several another countries soon followed suit. To date, more than 20 countries in Europe, Asia, Oceania, and Africa have introduced taxes on digital services. The main reasoning offered by these countries is current international tax rules cannot be applied to an out of date model of the economy.

However, since most of the IT behemoths are US corporations, the US government has branded the digital services tax as discriminatory and proposed sanctions against Austria, India, Italy, Spain, Turkey, and the UK. The retaliatory measures have been suspended, since countries seek consensus on changes to international tax rules in light of the pending final versions of the OECD documents as part of a two-pillar plan for digital economy taxing.

National digital taxes introduced in various OECD countries can be divided them into three groups: income taxes, consumption taxes (VAT for e-services), and hybrid taxes. It has a sense to consider national digital taxes in detail using individual OECD countries as an example.

1. Unilateral Tax Practices in the Taxation of Digital Business Models in OECD States

1.1. Regulatory control of digital services at the OECD and UN level

To present date, taxes on digital services have been introduced in Austria, France, Hungary, Italy, Poland, Portugal, Spain, Turkey, and the UK.

Belgium, the Czech Republic and Slovakia have published proposals for taxes on digital services, while Latvia, Norway and Slovenia have officially announced their intention to introduce such taxes[1].

However, there are many differences in these taxes, resulting in double taxation, lack of legal certainty and distortion of competition. E.g., Austria and Hungary tax only income from online advertising. The tax base in France is much broader, including revenues from the provision of a digital interface, targeted advertising and the transmission of user data collected for advertising purposes. Tax rates range from 1.5% in Poland to 7.5% in Hungary and Turkey (although the tax rate in Hungary has been temporarily reduced to 0%) [Olbert M., Spengel C., Werner A.-C., 2019: 149].

International organisations have repeatedly expressed the view in the past years that the current international tax system fails to reflect the trend towards digitalisation of the economy. These concerns are widely discussed in Russian and foreign tax studies [Kudryashova E.V., 2021: 37–40]; [Becker J., English J., 2019: 161–171]; [Dimitropoulou C., 2019: 268–281]; [Devereux M., Vella J., 2018: 161–171]; [Sinnig J., 2018: 903–915]. Under current international tax rules, multinational corporations usually pay corporate income taxes where they are physically present, rather than where consumers or, in the digital sector, users are located. Thus, the classic rules of territorial and resident taxation are no longer relevant for digital companies.

In context the OECD has developed a two-pillar approach to address the tax challenges arising from the digitalisation of the economy.[2] Pillar One focuses on adapting the international income tax system to new business models by changing the rules for allocating income tax between countries. Pillar Two deals with the global minimum tax: its main idea is a global minimum tax rate of 15%.

As the OECD Secretary-General report of 11.07.2022 notes, global minimum tax rules for the Pillar Two are ready for implementation, and key rules for the first pillar have been made available for public consultation. The new target date envisages completion by the first half of 2023.[3]

[1] Digital Tax Update: Digital Services Taxes in Europe. Available at: URL: https://taxfoundation.org/digital-tax-europe-2020/ (accessed: 10.01.2023)

[2] Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy. 08.10.2021. Available at: URL: https://www.oecd.org/tax/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.pdf (accessed: 10.01.2023)

[3] OECD Secretary-General Tax Report to G20 Finance Ministers and Central Bank Governors. July 2022. Available at: URL: www.oecd.org/g20/topics/international-taxation/

On 11.07.2022 the OECD Secretariat has published a progress report on Amount A of Pillar One.[4] The report indicates that Amount A rules will not come into force in 2023, as planned under the OECD/G20 BEPS Inclusive Framework,[5] as more work needs to be done. Amount A is a new tax rule that applies to a portion of the residual profits of large and highly profitable enterprises in favour of jurisdictions in which goods or services are supplied or consumers are located (market jurisdictions). This rule operates as an overlay to the existing profit allocation rules, and includes a mechanism to reconcile the respective different profit allocation systems and prevent double taxation. The rules for Amount A are detailed in the OECD statement of 08.10.2021.[6]

Using comparative method in the study does not lead the author to the opinion legislation of OECD states or of states in the OECD Inclusive Platform on BEPS should be standardised. As K. Zweigert and H. Kötz noted, 'in a political-legal sense, the aim of unification is to strive, as far as possible, to eliminate or mitigate differences in national legal systems on the basis of universally recognised principles of law' [Zweigert K., Kötz H., 2000: 42]. In the case of digital taxes, the opposite is rather the case: under the OECD two-pillar approach, the condition for member states is that no new taxes on digital services or other similar measures are introduced from 8.10.2021 until the end of 2023 or until the Multilateral Convention (MLC) comes into force. Under the MLC, all countries that sign up to it will have to abolish all taxes on digital services and adopt similar measures, and to commit not to introduce such measures in the future.

Since digital taxes mainly affect US corporations, which perceive the taxes as discriminatory, the US has responded to the policy with tariff threats. As the case of France has shown, there is a high risk of international tensions when a digital tax is unilaterally introduced. In July 2020 the US

oecd-secretary-general-tax-report-g20-finance-ministers-indonesia-july-2022.pdf (accessed: 10.01.2023)

[4] Progress Report on Amount A of Pillar One, Two-Pillar Solution to the Tax Challenges of the Digitalisation of the Economy, OECD/G20 Base Erosion and Profit Shifting Project. OECD, Paris, 2022. Available at: URL: https://www.oecd.org/tax/beps/progress-report-on-amount-aof-pillar-one-july-2022.pdf (accessed: 16.12.2022)

[5] Working within the OECD/G20 BEPS Inclusive Framework, 141 countries and jurisdictions collaborate on 15 measures to combat tax evasion, improve the consistency of international tax rules and ensure a more transparent tax environment.

[6] Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy…

government announced a decision to impose 25% duties on French handbags and cosmetics, but did not do so. In January 2021 it was announced that the introduction of the duties would be postponed[7]. The duties have never been introduced. In October 2021 Austria, France, Italy, Spain, the UK and the US set out a plan to abolish digital services taxes and retaliatory tariff threats once Pillar One rules are in place.[8] In November 2021 Turkey agreed to the same terms.[9]

Digital services taxes have generally been regarded as a temporary measure. In 2021 the European Commission launched an initiative to introduce a digital levy in the EU, but the initiative has not yet been developed, either.[10]

At the same time the UN has added specific provisions on income from automated digital services to the UN Model Double Tax Convention (Article 12B), which will apply to the treaty parties that agree to its inclusion.[11]

Thus, about half of the European OECD countries have either announced or already introduced digital taxes. To date, countries that apply digital services taxes have not yet abolished them.

1.2. VAT on E-services

The progress of digital technology has changed the way goods and services are provided and received. Today, it is often online platform, not local service provider that is party to the contract.[12] In 2019 the OECD has pub-

[7] US suspends tariffs on French goods in digital tax dispute. Available at: URL: https://www.france24.com/en/live-news/20210107-us-suspends-tariffs-on-french-goods-in-digital-tax-dispute (accessed: 10.08.2022); Macron backs down on digital tax following Trump's tariff threats. Available at: URL: https://www.euractiv.com/section/global-europe/news/macron-backs-down-on-digital-tax-following-trumps-tariff-threats (accessed: 10.01.2023)

[8] Joint Statement from the United States, Austria, France, Italy, Spain, and the United Kingdom. Regarding a Compromise on a Transitional Approach to Existing Unilateral Measures During the Interim Period Before Pillar 1 is in Effect. Oct. 21, 2021. Available at: URL: https://home.treasury.gov/news/press-releases/jy0419 (accessed: 10.01.2023)

[9] Ibid.

[10] A fair & competitive digital economy — digital levy. Available at: URL: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12836-A-fair-competitive-digital-economy-digital-levy_en (accessed: 10.01.2023)

[11] UN Model Double Taxation Convention between Developed and Developing Countries: 2017 Update. Available at: URL: https://doi.org/10.18356/cc8f6035-(accessed: 10.01. 2023)

[12] 2021 Global Guide to VAT on Digital Services.pdf. Available at: URL: https://www.dlapiper.com/~/media/files/insights/publications/2021/12/2021-global-guide-to-vat-on-digital-services.pdf (accessed: 10.01.2023)

lished a report on the role of digital platforms in the collection of VAT and sales tax on online trade (2019 OECD report)[13].

E-commerce is becoming a subject of regulation not only at the national level, but also at the supranational one. The EU e-commerce package came into force on 1.10.2021, introduces new VAT rules in EU cover distance sales of goods and cross-border services[14]. The purpose of these rules is to simplify VAT obligations for taxpayers effecting cross-border sales of goods or online services to end consumers, and to ensure that VAT is correctly paid to the EU member state that is the destination country. The European Commission has published a clarification on the new rules on e-commerce with VAT.[15] The new rules should apply in particular to small and medium-sized enterprises, suppliers or electronic interfaces involved in e-commerce.

It will be recalled that the introduction of a one-stop shop (‘OSS’) as the point of contact for documentation, reporting and payment is at the heart of the European VAT reform. The OSS is designed to develop a Mini-OSS (MOSS) procedure, simplify intra-Union trade and unify taxation according to the destination country principle for a delivery value of EUR 10,000. Until this threshold is reached, taxes are imposed in the country of origin. The purpose of this threshold is to support microbusinesses.

The idea behind the OSS is that the supplier must withhold VAT from EU customers at the time of sale. However, the supplier will only need to register once. This should eliminate the need to register and declare VAT in each EU member state that will be the destination country. OSS allows

[13] The Role of Digital Platforms in the Collection of VAT/GST on Online Sales. OECD. 2019. Available at: URL: www.oecd.org/tax/consumption/the-role-of-digital-platforms-in-the-collection-of-vat-gst-on-online-sales.pdf (accessed: 10.01.2023)

[14] EU Council Directive 2017/2455 of 05.12.2017 amending Directive 2006/112/EC and Directive 2009/132/EC as regards certain value added tax obligations for supplies of services and distance sales of goods / OJ L 348, 29.12.2017; Council Directive (EU) 2019/1995 of 21 November 2019 amending Directive 2006/112/EC as regards provisions relating to distance sales of goods and certain domestic supplies of goods / OJ L 310, 02.12.2019; Council Implementing Regulation (EU) 2019/2026 of 21.11.2019 amending Implementing Regulation (EU) No 282/2011 as regards supplies of goods or services facilitated by electronic interfaces and the special schemes for taxable persons supplying services to non-taxable persons, making distance sales of goods and certain domestic supplies of goods / OJ L 313, 04.12.2019.

[15] Explanatory Notes on VAT e-commerce rules. Available at: URL: https://ec.europa.eu/taxation_customs/sites/taxation/files/vatecommerceexplanatory_28102020_en.pdf (accessed: 10.01.2023)

taxpayers to declare their transactions falling under the scheme in a special VAT return and to send this VAT return to one tax authority only.

The MOSS rules previously covered only telecommunications, broadcasting and e-services, but from 2021 have been extended under the OSS to all types of cross-border B2C services. Usually, in cases involving B2B customers, VAT is levied through a reverse charge mechanism as recommended by the International VAT/GST Guidelines of the OECD[16]. While this mechanism works well in the B2B context, it is not as effective in the B2C sector. This makes it more difficult to collect VAT that is also becoming increasingly important due to the increase in online B2C transactions.

The procedure is intended for taxpayers who are registered in an EU member state and provide services to consumers (individuals) in EU member states in which they are not established; carry out remote sales of goods within the EU; or provide an electronic interface through which they support the supply of goods within the member state by an unidentified taxable person and are therefore treated as if they were supplying goods themselves.

Also, the procedure is intended for taxpayers who are not registered in the EU and who have a warehouse in the EU from which goods are supplied to individuals in other EU member states.

1.3. VAT Collection on Digital Platforms

As regards sales via digital platforms, many jurisdictions have already introduced provisions that hold digital platforms responsible for calculating, collecting and remitting VAT. According to their approach, two operations are performed with the VAT: first, the seller sells the goods on a VAT-exempt B2B marketplace, and second, the marketplace sells the goods to the consumer applying the VAT rate of the consumer's country of residence.

Online platforms must therefore keep records of deliveries and services. The records must be sufficiently detailed to enable the tax authorities of the EU member state in which these goods and services are subject to taxation to determine whether VAT has been correctly paid. The digital platform may have a 'sole' responsibility for collecting and paying VAT, or it may have this responsibility on behalf of the respective supplier who uses the platform to make online sales.

[16] International VAT/GST Guidelines, Paris: OECD, 2017.

Many EU members of the OECD, proceeding from the optional rule set out in Article 205 of the Council Directive on the Common System of Value Added Tax ('VAT Directive'),[17] have for many years applied such rules in their national legislation, often referred to as 'third-party liability'.

Because of development of the platform economy, VAT solidarity rules are becoming increasingly relevant. The issue of how to apply VAT to the platform economy is currently on the agenda of the OECD, the EU and individual states around the world. The 2019 OECD report looks at different levels of integration of online platforms into VAT compliance and collection: full VAT liability regimes, joint and several liability regimes, information sharing obligations and training obligations for suppliers selling on the platform.

The report notes: "Jurisdictions may wish to consider introducing joint and several liability (JSL) provisions in legislation as a means to help to support compliance for the collection of VAT/GST on online sales." These provisions may apply to digital platforms in cases where a platform has no liability for the VAT on online sales that were carried out through its platform. Such JSL is generally not considered to be a primary tool in securing the collection of VAT on online sales, as either a platform or an underlying supplier will have statutory liability for the VAT. However, such a provision can be useful as a tool to support tax authorities in cases of non-compliance and indeed can deter non-compliant behaviour."[18].

The OECD proposes two variations in applying JSL. Under variation 1, the digital platform is held jointly and severally liable for the future undeclared VAT of the underlying suppliers, once the tax authority had spotted cases of non-compliance, has reported these cases to the digital platform and the latter did not take appropriate action within a specified number of days. Such action by the digital platform typically consists of securing compliance from the underlying supplier or removing the supplier from its platform. Under variation 2, the digital platform may be held jointly and severally liable for the past undeclared VAT of underlying suppliers not registered for VAT purposes[19].

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17 Council Directive 2006/112/EC of 28.11.2006 on the common system of value added tax / OJ L 347. 11.12.2006.

18 The Role of Digital Platforms in the Collection of VAT/GST on Online Sales. Paris: OECD, 2019.

19 Ibid. P. 162.

At EU level, these different levels of online platform integration into the VAT compliance and collection process have been implemented in parallel (each for a different supply). The rule on taxable persons who facilitate (full liability regime) has come into force for certain supplies of goods through an online platform since 01.07.2021 (new Article 14a of the VAT Directive). In similar fashion, starting from that date, online platforms are to keep certain records of the supply of goods and services to a non-taxable person (new Article 242a of the VAT Directive).

And finally, some EU member states, including Austria[20], Germany[21] and the UK[22] (while it was still in EU) have unilaterally introduced the JSL rules for VAT based on Article 205 of the VAT Directive. Under that norm online platform operators are liable for payment of VAT on the supplies they effect if they have failed to exercise due diligence with respect to VAT compliance by the underlying supplier selling goods or services via this platform. The scope and operation of the rules on joint and several liability varies considerably among the member states. [Spies K., 2022: 8]. In 2019 the European Commission initiated legal proceedings against Germany, arguing that German rules for online platforms prevent EU businesses from freely accessing the German market and thus violate EU law.

The Court of Justice of the European Union (hereinafter the Court) has settled disputes relating to Article 205 of the VAT Directive (or its predecessor Article 21 of the Sixth Directive) four times[23]. Finally, in May 2021 the Court delivered its judgment in the ALTI case. The Bulgarian Court asked the ECJ whether Article 205 of the VAT Directive permits EU member states to provide that, in addition to the supplier, the recipient of a purely domestic supply is another "person liable for the payment of VAT" and can be held liable not only for third party VAT obligations, but also in the event of a third party default. Contrary to the opinion of J. Kokott, Advo-

[20] Österreich: Bundesgesetz über die Besteuerung der Umsätze (Umsatzsteuergesetz 1994), zuletzt geändert durch das Bundesgesetz BGBl I 663/1994, 819/1994. NR: GP XVIII RV 1715 AB 1823 S. 172. BR: AB 4861.

[21] Deutschland: Umsatzsteuergesetz. 21.02.2005. Available at: URL: https://www.gesetze-im-internet.de/ustg_1980/BJNR119530979.html (accessed: 10.01. 2023)

[22] UK: Value Added Tax Act, An Act to consolidate the enactments relating to value added tax, including enactments relating to VAT tribunals. Art. 77B (9). 1994. Available at: URL: https://www.legislation.gov.uk/ukpga/1994/23/contents (accessed: 10.01. 2023)

[23] CJEU. 13.03.2014. C-107/13, FIRIN, EU: C: 2014:151; CJEU. 11.05.2006, C-384/04, Federation of Technological Industries, EU: C: 2006: 309; CJEU, 21.12. 2011, C-499/10, Vlaamse Oliemaatschappij NV, EU:C: 2011: 871; CJEU, 26.03 2015, C-499/13.

cate General of the Court of Justice of the European Union[24], the EU Court reached the following conclusion. The law requiring the person jointly liable to pay late payment interest on that amount in addition to VAT does not contravene Article 205 of the VAT Directive[25].

Uniform rules on platforms will probably be applied together with the rules on JSL adopted by individual states. It is possible to admit that if all states introduce their own national liability regimes, the burden on platforms will become excessively high. According to European researchers, there may be sufficient grounds for introducing JSL based on the social responsibility model applied by individual states, as this model is based on collaboration with platforms. That said, it must be clear which platforms can be held liable for which transactions and in what circumstances [Janssen A., 2021: 231–239].

In is also important to clarify when and for what platforms are liable, and prevent them, to the extent possible, from inadvertently falling under the scope of national liability rules. If a platform fails to act within the specified period of time and receives a formal notification, the researchers believe it would be justified to hold the platform liable for unpaid VAT.

However, even when platforms are willing to contribute to the combat against VAT fraud, they should not carry such a huge burden as long as there is no regulation of the above problem at EU level [Lamensch M., 2015: 13]; [Merkx M., 2019: 84].

2. Digital Tax Experience of Individual OECD Countries

Before raising the question of the need for a digital tax in Russia, it is worth considering the models introduced in other countries, most of which are members of the OECD. Since most national digital taxes have been developed along the EU model, it us useful to study the experience of France pioneered the digital tax, as well as examples of Israel and Turkey, whose experience is rather specific.

It has a sense to look at the experience of these countries in introducing national tax measures to tax digital business models and companies with a significant economic presence in the country.

[24] Opinion of AG Kokott, 14.01.2021, C-4/20, ALTI, EU: C: 2021:12.

[25] C-4/20 — ALTI. Judgment of the Court (First Chamber) of 20.05. 2021 "ALTI" OOD v Direktor na Direktsia "Obzhalvane i danachno-osiguritelna praktika" Plovdiv pri Tsentralno upravlenie na Natsionalnata agentsia za prihodite / SPS Garant.

2.1. Digital Economy Taxation: French Experience

The French government in 2020 has imposed a 3% tax on digital services[26]. The law is retroactive and applies to the relevant relations after 01.01.2019. Taxpayers are French and foreign companies with annual income from taxable services in excess of EUR750 M of global income and EUR25 M received in France. In addition, such companies must calculate a portion of their income from taxable services deemed to have been rendered in France.

The tax is levied on two types of digital services provided in France.

1. An interface that enables users to interact with others (mediation services).

In March 2020 the French tax administration issued Guidelines for calculating the tax on digital services.[27] According to this document, the first category of digital mediation services includes interfaces that allow users to carry out transactions, i.e. deliver goods or provide services. The second category is online services through which users interact with each other without being able to conduct transactions through the digital interface itself (e.g. social networks and online games).

The definition mentioned, however, excludes some services — e.g., when a company operating through a website sells goods or services that it owns. For example, Amazon, which sells books from its own warehouse, would not fall under the digital tax. And, vice versa, if a small production company sells books through this platform, then such a service from Amazon acting as an intermediary would fall under the digital services tax.

2. Services to advertisers for placing targeted advertising messages on a digital interface based on user data collected and generated in coordination with such an interface. Advertising services on the digital interface that do not focus on user data are exempt from tax.

The services of an Internet platform are linked to the location of its users. If a user has been in France during the tax year, the service will also be deemed to have been rendered in France. User location is determined by the IP-address.

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[26] BILL n° 2019-759 of 24.07.2019 on the creation of a tax on digital services (1). Available at: URL: https://www.legifrance.gouv.fr (accessed: 10.01.2023)

[27] Digital Services Tax in France. Available at: URL: https://www.twobirds.com/en/insights/2019/global/digital-services-tax-in-france (accessed: 10.01.2023)

The tax does not apply to platforms that do not focus on collecting user data. Digital content, communication services and payment services are not taxed.

Thus, the tax base will depend on what proportion of the payments are linked to France, the type of service, and the type of platform.

The reporting rules and digital tax compliance system has been established along the lines of VAT.

If the taxpayer is not established in the EU or a state party to the Agreement on the European Economic Area that has concluded with France an agreement on administrative assistance to combat tax fraud and tax evasion and a mutual assistance agreement on the collection of taxes, then this taxpayer will appoint a representative that is established in France and subject to VAT. The representative is obliged to carry out the formalities on behalf of the represented and to pay the tax.

The company or responsible group member pays the tax in two instalments: in April and in October. When calculating the revenues covered by the digital tax, companies can exclude the amounts that went to VAT.

The collection period for the digital services tax is six years (three years for VAT). The digital services tax will be deducted from the French corporate income tax base. Moreover, a consolidated group of taxpayers may be formed. Then, one company must be designated as the responsible taxpayer on behalf of all group members.

2.2. Digital Economy Taxation: Israeli Experience

Israel is one of the most interesting countries in terms of analysing the digital taxation experience. Israel uses a substantial economic presence model and the so-called digital factors approach (in OECD terminology). This model focuses on the local presence of a company in a particular state to determine whether the company focuses on providing a certain service or product to the residents of that state, and hence on creating there value attributable to the state. Digital factors can be: a local domain name, local digital platform (including the national language, local promotions and discounts, prices in local currency, etc.).

In 2019 the Israel Tax Authority (ITA) and the Ministry of Finance announced they were considering introducing a tax on digital services. The idea was to set the tax rate between 3% and 5% of the turnover of companies providing digital services, following the example of the DST in France[28]. This tax was intended as a response to digital companies' failure to cooperate with the Israel Tax Authority regarding the application of Circular Letter No. 4/2016.

Circular Letter No. 4/2016 sets out the position of the Israel Tax Authority regarding the charging of income from the provision of digital services to a permanent establishment in Israel. The letter uses the concept of substantial economic presence for the purpose of taxing permanent establishments.

In terms of VAT, Circular Letter No. 4/2016 requires foreign providers of digital services to Israeli customers to register in Israel for VAT purposes if one of the following conditions is met:

a foreign company forms a permanent establishment for income tax purposes;

a foreign company has a subsidiary or employees in Israel, a rented office in Israel or a branch office in Israel;

company's business activities are supported by a representative in Israel or an Israeli subsidiary.

But on 22.06. 2021 Ministry of Finance announced Israel supports the OECD two-pillar approach.[29]

To date, there is both a direct tax for companies that have formed a digital permanent establishment in Israel and a VAT on electronic services.

Corporate income tax (on substantial economic presence) is levied on non-resident Israeli legal entities with a permanent establishment in Israel that provide digital services and/or sell goods to Israeli resident consumers via the Internet.

The object of taxation is the sale of goods and provision of digital services to Israeli resident consumers via the Internet by a non-resident with a permanent establishment in Israel.

A permanent establishment may be deemed to be located in Israel if:

a foreign company operates in Israel;

[28] Israel Preparing Digital Services Tax Modelled off Pending French Proposal. Available at: URL: https://tax.thomsonreuters.com/blog/israel-preparing-digital-services-tax-modelled-off-pending-french-proposal/ (accessed: 10.01.2023)

[29] Israel Digital Taxation Monitor. Tax Research Platform. IBFD. Available at: URL: https://research.ibfd.org/#/doc?url=/collections/dtm/html/dtm_il.html (accessed: 10.01.2023)

a foreign company directly contacts clients in Israel to provide services or connect them with clients in Israel (e.g., through a website in Hebrew);

representatives of a foreign company in Israel are involved in identifying Israeli customers, marketing and/or information gathering; or

a foreign company has authorised its Israeli representative to carry out local transactions that are binding on that foreign company.

The business profits derived from Israel form the tax base; they are attributed to the permanent establishment of Israel on the basis of transfer pricing principles. Taxpayers may deduct expenses related to turnover received from Israel in accordance with general corporate income tax rules.

The tax rate is 23%.[30]

The value-added tax / turnover tax for electronic services is essentially a classic VAT which regards digital services provided to Israeli resident consumers in Israel via the Internet as the tax object.

Taxpayers are non-residents providing digital services in Israel to consumers residing in Israel who conduct business operations through the Internet, subject to one on more of the following additional conditions (including but not limited to):

if the activities of the non-resident dealer constitute a permanent establishment in Israel for corporate tax purposes;

if there are real business processes in Israel (a branch office, employees and rented offices in Israel, etc.)

if a non-resident provides services jointly or with the assistance and/or co-operation of a representative in Israel and if the non-resident has a significant economic presence in Israel.

The tax base is the turnover generated in Israel from digital services provided in that country. The tax base is 17%.

As with the taxation of a permanent establishment, the taxpayer must be registered in Israel. A non-registered foreign entity carrying out operations in Israel must register within 30 days of commencing operations there.[31]

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[30] Tax Circular 4/2016; Income Tax Ordinance. New version of 1961). Israel — Digital Taxation Monitor. Tax Research Platform…

[31] Tax Circular 4/2016; Value Added Tax registration regulations — 1976; Value Added Tax law, 1975. Source: Israel. Digital Taxation Monitor. Tax Research Platform. IBID. Available at: URL: https://research.ibfd.org/#/doc?url=/collections/dtm/html/dtm_il.html (accessed: 10.01.2023)

2.3. Digital Economy Taxation: Turkey's Experience

Turkey introduced the tax on digital services in 2020.[32] The law is retroactive; it applies to any operations beginning on 01.03.2020. The tax is levied on the turnover of digital services at a rate of 7.5% of the gross income derived from digital services during the tax period (one month).

Since its introduction, the digital services tax in Turkey has raised criticism, mainly due to its broad and undefined scope as well as its high rate.

The lack of compensation mechanisms or any exemptions for intra-group transactions also triggered discussions (hence, the tax can be levied twice on intra-group intermediary structures whose revenues exceed the thresholds: at the reseller level and at the supplier level); the lack of a group registration mechanism and exemptions in cases where two or more different national digital taxes apply to the same transaction.

The unclear scope of the digital services tax has already been the subject of two court cases resulting in the first victories of taxpayers[33].

The first case concerned a dispute over what should be understood as sales carried out in a digital environment. The issue at hand was how to interpret Article 1/1-b of the Law on Digital Services which dealt with sales of digital content and in the context of which sales must be considered to be 'on a digital medium.'

The claim was lodged by the Turkish subsidiary of a leading global software developer, which operates as a distributor for software licensing and sales of the group's cloud services in Turkey. The taxpayer argued that sales to end-users should not fall under section 1/1-b of the Law because these sales are not made on a 'digital medium' as Law requires.

According to the taxpayer, the Law only targets sales made in virtual shops without human intervention. This argument relies on the legal definition of a digital medium under Article 2 of the Law: all types of media in which online activities take place without any physical contact.

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[32] Turkey: Law No. 7194 on the Digital Service Tax and Amendments on Certain Laws and the Decree No. 375.

[33] Turkey: Digital Services Tax (DST). New precedential court victories released! — Global Compliance News. Available at: URL: https://www.globalcompliancenews.com/2022/03/13/turkey-digital-services-tax-dst-new-precedential-court-victories-released280222/#:~:text=Turkey%27s%207.5%25%20DST%20covers%20digital,services%20and%20digital%20platform%20services (accessed: 10.01. 2023)

The dispute concerned complex software products used by large enterprises and public sector organisations that cannot be implemented on a 'click and buy' basis. These sales required personal interaction between the sales and technical support staff to identify the client's needs.

In August 2021 the Tax Court of First Instance ruled in favour of the taxpayer. Its arguments were as follows: The activities of the taxpayer cannot be considered to be carried out in a digital environment because most of them depend on activities carried out in a real life (e.g., long meetings with clients to determine their needs, face-to-face training sessions and negotiations on sales contracts), even if the software /service is provided online.

The second digital services tax claim was lodged by a non-resident software company. The claim dealt with whether the granting of the right to resell software or cloud services falls within the scope of the digital services tax. In the taxpayer's opinion, the granting of the right to resell products to a distributor under a distribution agreement should not fall within the scope of the Law on Digital Services, since the disputed sales are not made on a digital medium as the Law requires.

In December 2021 the Court of First Instance ruled that the disputed sales were not made on digital media. In view of the fact that the parties agreed on the wording and signed the distribution agreement, the distributor may not sell the products directly to end users in Turkey, nor use or store keys, codes, licence files, account information or passwords without the client's consent[34].

On 22.11.2021 the US and Turkey have reached an agreement on the transition from a national digital services tax to a multilateral solution agreed within the OECD Inclusive Framework. The joint statement states that Turkey will levy a digital services tax until such time as the OECD Pillar One rules come into effect, and the Turkish digital tax liability accrued by US companies during the transition period will be offset against future income taxes accrued under Pillar One. The US, in their turn, will lift additional tariffs on Turkish goods[35].

[34] Turkey Expands Scope of Provisions on Partial Withholding VAT — Tax Research Platform–IBFD. Available at: URL: https://research.ibfd.org/#/doc?url=/linkresolver/static/tns_2021-02-22_tr_1%23tns_2021-02-22_tr_1 (accessed: 10.01.2023)

[35] Joint Statement from the United States and Turkey Regarding a Compromise on a Transitional Approach to Existing Unilateral Measures During the Interim Period Before Pillar 1 Is in Effect. 22.11.2021. Available at: URL: https://home.treasury.gov/news/press-releases/jy0500 (accessed: 10.01.2023)

In addition, Turkey has introduced VAT on electronic services in 2018. 19.12. 2018 President of Turkey has issued Decree No. 476 introducing 15% tax on Internet advertising service providers or intermediaries[36].

The above-mentioned digital taxes are presented in a table.

Table 1 **Digital services taxation in Turkey**

Tax components	**Description of tax component**
	Income and revenue taxes: tax on digital services
Taxable item	Provision of the following digital services: all online advertising services (including ad monitoring and performance measurement services, services related to user data transmission and management, and technical services related to the presentation of advertisements); sales of audio, video or any digital content in a digital environment; any services provided in a digital environment, which allow such content to be listened to, viewed and/or played in a digital environment; audio, video or any digital content recorded or used in electronic devices; provision and management of services in a digital environment that allow users to interact with each other (including services performed to enable or facilitate sales of goods or services between users); intermediary services performed in a digital environment related to the above-mentioned services
Taxpayers	Resident and non-resident corporations and individuals with worldwide turnover from taxable services exceeding EUR 750 million and turnover from taxable services in Turkey exceeding 20 million lira
Tax base	Turnover resulting from taxable services provided in Turkey. Some exceptions to the tax base are allowed, including turnover resulting from the following services services subject to a 'treasury duty' and a communication tax; sale of products developed in R&D centres; payment services. The turnover resulting from mobile electronic communication services, banking services, and electronic payment services is exempt from this tax

[36] Presidential Decision 476. Source: Turkey Clarifies Obligation to Provide Information on Internet Advertisements for Tax Purposes — Tax Research Platform — IBFD. Available at: URL: https://research.ibfd.org/#/doc?url=/linkresolver/static/tns_2022-05-31_tr_1%23tns_2022-05-31_tr_1 (accessed: 10.01.2023)

Tax components	Description of tax component
Tax rate	7.5%
Procedure and method of tax payment	Taxpayers must file their tax returns electronically and pay the tax by the end of the month following the tax period. Moreover, the Ministry of Finance is authorised to hold payers or intermediaries liable for withholding tax on digital services payments if the taxpayer has no residence, legal entity, legal headquarters or business centre in Turkey.
Registration requirements	Taxpayers must register at https://digitalservice.gib.gov.tr in the first declaration period
The statute that governs the payment of this tax	Law No. 7194 on digital services tax and amendments to certain laws (Law No. 7194 on the Digital services Tax and Amendments on Certain Laws and the Decree No. 375 General Communiqué on Implementation of Digital Services Tax)
Income Tax	
Taxable item	Advertising services provided through the Internet
Taxpayers	Residents and non-residents providing advertising services and Internet advertising intermediaries
Tax base	Income derived from Internet advertising or intermediary services
Tax rate	15% for resident and non-resident individuals as well as non-resident advertising service companies and Internet advertising intermediaries; 0% for resident advertising service companies and Internet advertising intermediaries
Procedure and method of tax payment	The tax is levied on payments made to taxpayers
Registration requirements	None
Additional information	The tax rate is 0% on payments made to resident intermediaries (companies) for the provision of Internet advertising services. Such resident intermediaries must then withhold a tax at the rate of 15% on payments made to resident individuals or non-resident Internet advertising service providers. Intermediary service providers, social media providers and hosting providers acting as intermediaries in the publication of advertisements for the purchase, sale or rental of movable and immovable property, goods and services must submit reports on their

Tax components	Description of tax component
	transactions within one month from the end of the relevant calendar year (Communiqué No. 538/2022).
The statute that governs the payment of this tax	Article 94 of the Personal Income Tax Law; Articles 15, 30 of the Corporate Income Tax Law; Presidential Decree No. 476; Communiqué No. 538/2022
Value-added tax / Turnover tax	
Taxable item	B2B: cross-border provision of services by non-resident entrepreneurs; B2C: cross-border supply of services by non-resident entrepreneurs without a permanent establishment in Turkey
Taxpayers	Non-resident entrepreneurs
Tax base	Total amount of remuneration received; VAT not included
Tax rate	18% For commercial advertising, partial withholding of a 30% VAT
Procedure and method of tax payment	For B2B transactions: in accordance with the general rule (reverse chargeback mechanism). For B2C transactions: if the supplier has a permanent establishment in Turkey — in accordance with the general rule; If the service provider is a non-resident, has no legal entity in Turkey and provides electronic services, such a provider must be registered for VAT purposes
Registration requirements	For B2B transactions, there is no need for registration for non-resident suppliers, as the reverse chargeback mechanism applies. For B2C transactions: If the supplier has a permanent establishment in Turkey, the VAT return is filed according to the general rule. If the service provider is a non-resident, has no legal entity in Turkey and provides electronic services, such a provider must be registered for VAT purposes In addition, invoices and related documents must be issued and retained for 5 years.
The statute that governs the payment of this tax	Law No. 3065 on value-added tax (Law No. 3065 on Value Added Tax)

Source: compiled by the author on basis of data: Turkey Expands Scope of Provisions on Partial Withholding VAT — Tax Research Platform — IBID. Available at: URL: https://research.ibfd.org/#/doc?url=/linkresolver/static/tns_2021-02-22_tr_1%23tns_2021-02-22_tr_1 (accessed: 10.01. 2023)

Thus, the experience of Israel and Turkey shows that the legislator does not take a consistent stance on the taxation of digital services and digital companies, taxing these companies with both special types of corporate tax and VAT on electronic services.

In addition, one may conclude that the more digitally advanced countries have set lower rates (for comparison: 3% in France and Italy, and 7.5% in Turkey). The reason for this is there are only consumers of digital services in developing countries, and the companies that provide such services are exclusively foreign companies, so their taxation has a purely fiscal purpose: to generate additional revenue from foreign companies for the state budget. We see no additional regulatory target for the development of domestic IT companies here.

Conclusion

To ensure the state's fiscal interests are respected requires a transformation of the substantive approaches to the regulatory control of tax relations in context of of the Russian tax base regulation. As A.I. Lukashov notes, digitalisation of any process will attain the best possible results if the state of the digitalisation object is optimal [Lukashov A.I., 2021: 68]. The issues arising from the taxation of digital companies' activities abroad are also characteristic and relevant for Russia.

For years, countries have adopted solutions from unilateral to bilateral to multilateral, to reduce or eliminate problem of double taxation in cross-border transactions. As new business models emerge, gaps in bilateral agreements only increase and pre-existing differences are exacerbated.

The stated objective of the OECD is to resolve outstanding technical issues and reach an agreement so as to implement the new approach by 2024. While this timeline seems ambitious, it should be borne in mind that in the absence of action on Pillar One of the OECD, more and more countries are moving towards a unilateral solution—in particular, the use of digital services taxes.

Both at the UN and OECD level, active efforts are underway to develop new concepts and methods on profit taxation in context of globalisation. Considering fact OECD approach is revolutionary, a more conservative UN approach to tax reform may end up being more realistic as an international consensus for implementation by a wide range of countries.

The matter with digital tax laws is quite controversial. National digital taxes can deter the digital transformation of traditional businesses and impair the country's attractiveness as a business location. Moreover, they could provoke retaliatory measures, such as tariffs and sanctions aimed at harming businesses in other countries.

As an analysis of national laws shows, lack of international cooperation on a common definition of digital goods and services has led to confusion and uncertainty, especially for foreign companies. It has effectively become the responsibility of foreign suppliers to determine how jurisdictions define digital goods and services. Therefore foreign suppliers should familiarise themselves with consumption tax legislation in each country of supply to ensure compliance. As a result of uncertainty, foreign suppliers could cease to supply consumers in jurisdictions with onerous consumption tax rules altogether. It could have a negative impact on international trade and the economic development of states.

Three types of unilateral approaches to fair taxation of the digital economy (digital services taxes, VAT on electronic services, and national concepts of digital permanent establishment) can lead to double or multiple taxation and violation of the existing double taxation treaty ('DTT') provisions.

It is widely believed digital services tax contravenes principle of avoiding double taxation because it is applied to revenue and not to income. By their legal nature, digital services taxes in general are close to turnover taxes.

The digital services tax was designed so that it would not fall within the scope of the DTT. Meanwhile, if we take corporate taxation into account, the picture is likely to be as follows. Profits will be taxed firstly as "income" under the digital tax and secondly as "income" under the corporate income tax of the country where the company pays that tax. The reason for it is country of the company's residence will not exclude income related to the digital permanent establishment from its base or provide a deduction for any amount paid.

The foreign experience shows there is a trend towards countries adopting their own digital taxes. However, there is no harmonisation in the field. It results in double taxation cannot be remedied through acting international treaties and national legislation. Furthermore, this approach leads to lower transparency and certainty for business, distorting both international and local competition.

This experience can also be used in Russia. However, a dialogue with IT corporations can only begin if they establish an office in Russia, what is unlikely in the changing international environment. Otherwise, there will be an inequality between Russian and foreign digital companies, with Russian companies, whose profits are taxed, finding themselves in a worse position.

The argument for choosing to unilaterally introduce a temporary digital tax for foreign companies in Russia could be to ensure that Russia's fiscal interests must be protected.

However, statistics for countries such as France, the UK and Italy show that revenues from the digital services tax are not always substantial. For comparison, it is necessary to look at data used by national governments in planning introduction of their respective taxes.

The French example shows the costs of developing and then managing the new tax can in the current context exceed the amounts collected. The French digital services tax was expected to add EUR 400 to 650 to the total tax revenues in 2019. For comparison, total tax revenues in France in 2016 were EUR 1,013,100[37]. In 2019, the total tax revenues in France reached EUR 1,145,006. The digital services tax paid to the budget in 2019 was only EUR 375 M[38]. In Austria, the case is the opposite. The Austrian Ministry of Finance supposed annual revenues from digital services tax would range from EUR 25 M in the year 2020 to EUR 34 M in 2023[39]. The total tax revenues in Austria in 2016 were EUR 149,200[40]. Hence, revenues from the digital tax amounted to 0.02% of the total of 2016. In 2020, the tax brought EUR 56.5 M to the Austrian budget significantly exceeded expectations[41].

In addition, should a digital services tax be introduced and the OECD Pillar One mechanisms be not adopted, the main risk would be the creation of significant barriers to business, as such a tax would not be recognized for accounting purposes by countries sharing the OECD approach.

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37 OECD. Revenue Statistics 2018. Available at: URL: https://read.oecd-ilibrary.org/taxation/revenue-statistics-2018_rev_stats-2018-en (accessed: 10.01.2023)

38 Digital Services Tax in France. Available at: URL: https://www.twobirds.com/en/insights/2019/global/digital-services-tax-in-france (accessed: 10.01.2023)

39 Preamble and effects-oriented result assessment to Draft of Digital Tax Act 2020. Available at: URL: https://www.parlament.gv.at/PAKT/VHG/XXVI/ME/ME_00132/fname_746835.pdf (accessed: 10.01.2023)

40 International VAT/GST Guidelines. Paris: OECD, 2017.

41 Digitalsteuer bringt Österreich 57 Mio. €. Available at: URL: https://www.medienkraft.at/digitalsteuer-oesterreich/ (accessed: 10.01.2023)

The situation with the digital tax carries other risks for Russia, too.

First, the introduction of a digital tax in Russia in current context will not have the necessary effect for the state budget: number of multinational IT corporations offices is not high, and considering the changing international situation the chances it will grow are weak. Moreover, statistics on other countries show that revenues from the digital services tax are insignificant, and the costs to implement it oftentimes exceed the fiscal effects.

Secondly, such taxation can result in inequalities between Russian and foreign companies. And Russian companies whose profits are taxed would be worse off.

Thirdly, a higher tax burden could deter the digital transformation of traditional businesses, weakening the country's attractiveness as a business location or provoking retaliation against Russia IT businesses abroad. Also, it is unclear how the burden from the digital tax will be distributed since it is quite clear that, by its legal nature, this is an indirect tax. Users who will carry the tax burden are the disadvantaged party here.

Thus the best way to develop taxation of digital services in Russia is to apply the current VAT mechanisms to electronic services and pay attention to the international processes underway as part of the discussions of the OECD two-pillar approach and the update of the UN Model Tax Convention.

References

1. Becker J., English J. (2019) Taxing where value is created: what's 'user involvement' got to do with it? *Intertax*, vol. 47, no. 2, pp. 161–171.

2. Devereux M., Vella J. (2018) Implications of digitalizing international corporate tax reform. *Intertax*, vol. 46, no. 6/7, pp. 161–171.

3. Dimitropoulou C. (2019) The proposed EU digital services tax: an anti-protectionist appraisal under EU primary law. *Intertax*, vol. 47, no. 3, pp. 268–281.

4. Geringer S. (2021) National digital taxes — lessons from Europe. South African Journal of Accounting Research, vol. 35, pp. 1–19.

5. Hidien J. (2019) Die französische Digitalsteuer — (k) ein Vorbild? The French digital tax — a/no benchmark? *Internationale Steuer Rundschau*, no.7, S. 268–273.

6. Janssen A. (2021) Problematic combination of EU Hharmonized and domestic legislation regarding VAT Platform Liability. *International VAT Monitor*, vol. 32, no. 5, pp. 231–239.

7. Kudryashova E.V. (2021) Digital taxes or a new architecture of international taxation? *Nalogi*=Taxes, no. 3, pp. 37–40 (in Russ.)

8. Lamensch M. (2015) European value added tax in the digital era: a critical analysis and proposals for reform. Books IBFD. 446 p.

9. Lukashov A.I. (2021) Directions of increasing public administration efficiency in context of digitalization. *Finansovyi zhurnal*=Financial Journal, no. 3, pp. 67–75 (in Russ.)

10. Merkx M., Verbaan N. (2019) Technology: A key to solve VAT fraud? *EC Tax Review*, vol. 28, no. 6, pp. 300–306.

11. Milogolov N.S., Ponomareva K.A. (2021) International cooperation of tax administrations in taxing digital business models: myth or reality? *Nalogi*=Taxes, no. 3, p. 29–33 (in Russ.)

12. Olbert M., Spengel C., Werner A.-C. (2019) Measuring and interpreting countries' tax attractiveness for investments in digital business models. *Intertax*, vol. 47, no. 2, pp. 148–160.

13. Sinnig J. (2018) Die steuerrechtlichen Herausforderungen der digitalen Wirtschaft — Was passiert in Europa? Tagungsband Herbstakademie 2017: Gestaltung digitaler Veränderungsprozesse durch Recht 899. J. Taeger (ed.). Oldenburg: OIWIR, s. 903–915.

14. Spies K. (2022) Joint and several liability rules in EU VAT Law. In: Kofler G. et al. (eds.). CJEU — Recent developments value added tax. Vienna: Linde, pp. 1–10.

15. Zweigert K., Kötz H. (2000) An introduction to comparative law. Moscow: Miezhdunarodnye otnoshenia, 480 p. (in Russ,)

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