

# THE FISCAL CHALLENGES OF THE DIGITAL ECONOMY IN THE EUROPEAN UNION: A BIBLIOMETRIC ANALYSIS

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**Abstract:** *The digital age offers new opportunities for innovation and growth. From a fiscal point of view, it creates opportunities for tax administrations to reduce tax evasion. On the other hand, as business models change, there is international pressure on the tax system. The current rules were developed at the beginning of the 20th century for traditional companies that relied on the principle of corporate taxation where value was created. In the case of digital activities, physical presence is no longer a condition for the provision of services. There are two major questions: Where do we tax? In the case of a company with a low or even non-existent physical presence and what do we tax? in the context of a digital business plan based on knowledge, data and intangible assets. The digital economy is a challenge for all tax regimes, as its rapid development has led to the conclusion that international tax rules are not properly adapted. One objective currently pursued at EU level is to adapt Member States' tax systems to optimize them to meet the challenges of the digital era. The aim of this paper is to identify the model and the most effective instruments for charging the digital economy at the level of the European community, as well as the way in which the directives issued by the European Union manage to harmonize the fiscal policies of each member state for charging and regulating the digital economy. In order to achieve that, we performed a bibliometric analysis on the database Web of Science Core Collection, regarding our study research. This study was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) statement.*

**Keywords:** taxation; digital economy; digitalization; digital presence; fiscal policy; bibliometric

**JEL classification:** A13

## Introduction

Although the journey of each tax administration is unique, the research of this topic show that successful digitalisation journeys typically go through three main stages. The first one is regarding the context analysis. This is critical as it helps ensure that the right opportunities and challenges for digitalisation are uncovered depending on a jurisdictions unique circumstances. This analysis will normally encompass factors external to the tax administration like compliance issues or digital adoption in society, as well as factors concerning the internal capability of the tax administration to address the opportunities and challenges. The second stage is the strategy development. Using the context analysis, the administration can develop a digitalisation strategy that will guide the rest of the journey. With a digitalisation strategy describing the overall vision and objectives for digitalisation, deliverables that will contribute to fulfilling the objectives, the timeline along which the deliverables should be realised, and the plan for financing the work, the administration can inspire and motivate stakeholders while also managing expectations about the scope and timing of benefits. The third stage is a successful project delivery. To fulfil the objectives of

the strategy, the administration will need to execute a set of strategy-aligned and coordinated digitalization projects. While successful project results partly hinge on adherence to the digitalization strategy, they also require a foundation of careful project preparation, including scoping, governance and mandate questions; flexible and professional project execution supported by top management; and thorough post-project follow-up of deliverables and benefits.

## **Literature review**

The exponential development of information technologies and artificial intelligence applications generates significant changes in all areas of activity, but especially in the economy. Understanding new working tools and using them responsibly is becoming more difficult if serious efforts are not made from government structures to find solutions to the challenges of these phenomena. The phenomenon of digitalization and digital transformation is a natural consequence of them, producing changes both economically and legally. Digitalization requires new thinking in governance, management and legislation, which must be understood to avoid the pitfalls that any new phenomenon brings with it.

Agrawal, D. R., & Fox, W. F. (2021) establish the fact that the technological changes that induce new consumption patterns promise new challenges for fiscal authorities. Critical challenges for the next decades include limiting administrative and compliance costs of enforcing taxes in a digital world, determining filing thresholds, dealing with online marketplaces and facilitators, and taxing the consumption of digital services from two-sided platforms. With respect to digital services, we discuss whether consumption taxes should be imposed on both monetized platforms and nonmonetized platforms, such as social media, and the mechanisms for doing so.

The research results of [Strauss, H.](#), [Fawcett, T.](#), [Schutte, D.](#) (2020), reflect major discrepancies in the level of response and sophistication of tax administration systems that have been implemented among tax authorities globally. Furthermore, none of the participating tax authorities' tax administration systems currently reflect an optimised tax administration system, as defined, within the digitalised economy.

In the analysis of digitalization as a complex phenomenon and its evolutions, it was established that it produces effects at the economic level, digitalization being present in the analyses of global governance, being in fact the main vehicle through which globalization makes its effects felt at the economic and social level. Digitization has practically encompassed all sectors of economic activity. Differentiation is more related to the degree of penetration and the complexity of the digitization elements present, many of which are now intrinsic to the productive processes at the level of economies. Hence the effects and the sectoral impact is different.

Geringer, S. (2020) shows in her research the fact that so far, there has been no consensus regarding the fair taxation of the digital economy at the international and EU level. As European policymakers have begun to experience noticeable amounts of pressure to act, several EU countries have pushed forward and introduced unilateral measures to ensure they receive a fair share of the tax revenues pie. However, it is unclear whether national digital taxes can overcome the tax challenges stemming from the increasing digitalization of the economy.

Schon, W., (2019) said that over the years, a number of approaches have been discussed, including far-reaching proposals to fully or partially re-allocate taxing rights to market countries. In recent months, three options have emerged at the level of the Inclusive Framework/OECD: international taxation on the basis of significant market presence, taxation according to the value of user contributions and profit allocation to marketing intangibles.

The most apparent effect of digitalization is an overall increase in economic efficiency, although it is very important to take into account its different territorial impact at EU level, depending on the degree of development of the economies of the member countries, their productive specialization, and the technological capacity. In general, smaller economies are increasingly marginalised value-added chains being affected by significant losses in skilled labour. The leap that these economies are making from a structure oriented towards the primary sectors directly to the economy centered on tertiary sectors, is making them vulnerable, vulnerable, this leads to an increase in the volatility of the economic cycle and a lower resistance to shocks that are freely propagated on the EU market, including, and especially as a result of the trading facilities of the factors of production, based on digital technologies.

Following the analysis performed on a case, Pohrebniak S., (2022), said that the levels of digitalization and its legal regulation in different countries are significantly different. According to the degree and success of digitalization, four groups can be distinguished: leaders who are slowing down, promising, and lagging. The peculiarity of those slowing down is that these are states with mature digital systems, but a low rate of further development, which are ready to sacrifice growth rates in the name of responsible, inclusive, and high-quality development.

Digitalization has a clear effect on the forms and patterns of organisation of economies and companies operating within the EU, with greater possibilities to decentralize their activities and at the same time organize more efficiently and create a digital strategy .

### **Taxation of the digital economy**

The main source of the deficiencies of the digital economy taxation is that tax rules are created for companies with a physical presence, which is often the basis of the right to tax a company's profits exercised by a state. In the case of digital companies, they create surplus value from the online environment without having a physical presence in the source state. The effect is not taxing their profits or possibly not taxing them in the right state. This has led to the EU's intention to introduce a fair charging system for all companies, regardless of their size or whether they are active in the digital economy or not. Moreover, another feature is that the revenues generated by these digital enterprises are mainly from intangible assets that are difficult to assess, which also leads to their non-taxation. The current socio-economic context calls for particular attention to be paid to digitalization and the growth of its related economic performance.

In the context of insufficient digital legislation, the EU discussed the creation of necessary measures to build a successful digital economy:

- Taxation of EU-wide profits from the digital economy;
- Developing plans for digital innovation to enable Europe to cope with development and become a digital leader;
- The need to change tax rules at EU level and adapt their tax systems to ensure that digitally generated profits in the European Union are taxed where value is created;
- The need to create an efficient and fair tax system for the digital age, leading to the fair payment of taxes by companies and ensuring conditions for action at EU level in line with those adopted by the OECD and other international partners;
- Agree on a tax policy response to the challenges of direct taxation of the digital economy at EU level, as well as the need to adopt a unanimously accepted definition of the permanent establishment and the associated transfer pricing and profit allocation rules;
- Highlighting the principle of fiscal neutrality, according to which fiscal policy choices and tax rules should provide for a similar treatment for comparable situations, at member state level the importance of different data, including user data, for value creation by the digital economy in generating profits, and the need to consider and

assess the role of data in the context of transfer pricing and profit attribution rules, is reiterated.

The EU discussed how digitalisation affects the areas of the tax system, providing tax authorities with new tools materialized by improving services to taxpayers, increasing the efficiency of tax collection and detecting tax evasion, concluding an interim report, among the measures pursued being:

- A coherent and concurrent review of the rules of nexus (where we charge) and profit allocation, fundamental concepts of the allocation of tax rights between jurisdictions and the determination of the relevant share of the profits of the multinational enterprise that will be subject to taxation in a given jurisdiction;
- The adoption of a provisional measure in the form of an excise duty applied by the state in which certain electronic services are provided on the gross consideration paid for the provision of these services (proposal which is opposed by some states);
- Follow up on the progress made in implementing european directives with observed effects in the case of multinational companies that have reorganized themselves from a tax point of view to better align with their economic operations.

The European Council proposed a directive laying down rules for the taxation of companies in the event of a substantial digital presence, introducing the notion of substantial digital presence for the purpose of establishing the existence of a permanent establishment and criteria for determining the fingerprint, such as revenues from the provision of digital services, by the number of users of such services or by the number of contracts for a digital service. Thus, profits attributable to a substantial digital presence in a Member State are determined on the basis of a functional analysis and will be imposed in it under the national corporate tax framework. To this end, the economically significant activities carried out by the substantial digital presence relevant to the development, improvement, maintenance, protection and exploitation of the company's intangible assets must be identified, such as: collection, storage, processing, analysis, use and sale of user-level data; collection, storage, processing and display of user-generated content; the sale of online advertising space; making third-party content available on a digital market; the provision of any other digital service not listed above. These provisions apply to entities resident in the EU or in a third country, in the latter case a double taxation convention with provisions similar to those in the Directive relating to significant presence and attributable profits is mandatory. Another proposal of the European Council was regarding a Digital Services tax (DST) Directive as a simple interim solution for taxing digital activities in the EU. FDI constitutes a tax on revenue from the provision of certain digital services. The specific objective is to adopt a measure that is easy to implement, to be applied on a temporary basis, pending the establishment of a comprehensive solution. It is aligned with the general objectives, which envisage, protecting the integrity of the Single market ensures its good functioning, ensuring social fairness and a level playing field for all companies operating in the EU and tackling aggressive tax planning by closing gaps that currently exist in EU Member State rules that allow digital companies to circumvent taxation in countries in they are doing business and creating value.

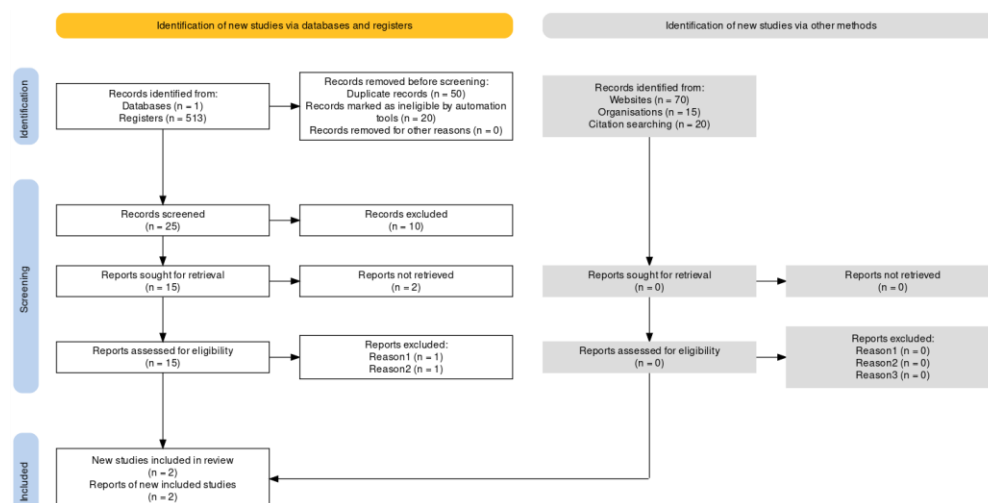
With regard to the concept of digital permanent establishment, a second variant developed, but this time, by the European Commission, which takes into account precisely the problems related to the implementation of a long-term European approach, i.e. the short-term one, has been established as an alternative; this implies a tax on income/turnover where the value is created, it is intended that this tax is due only by groups with global turnover above a certain ceiling (750 million euros, currently proposed) and they have their digital footprint translated into revenues in the EU worth 10-20 million euros. The digital fingerprint will be used to calculate the tax rights for each Member State. Basically, depending on certain information that will be requested from companies, this information will consist, in the case of activities in which data about users is used or through the virtual advertising space (e.g. facebook, google, twitter, instagram, etc.), statistical - geographical information relating to those who

use the information, or, for services provided for a fee on different digital platforms/markets (brokerage services such as airbnb, uber), tax will be paid in the countries where those who pay for the services are resident. Turnover taxation has clear disadvantages for certain categories of companies, usually those with low margins, lost or in development through investments. The changes are very broad and tend to extend European attributions in the area of indirect taxes in the area of direct taxes. After all, if the direction will be taxation through the short-term option, member States should position themselves according to their own interests and express a point of view on the Commission's technical proposal to analyse the implications beyond fiscal policy intentions already taken at EU level.

## Bibliometric benchmarks in shaping the fiscal challenges of the digital economy

The paper also points out the main techniques correlated to bibliometric analysis, namely: citation analysis, co-citation analysis, bibliographic coupling, co-word analysis, co-authoring analysis, total publications, total publications, number of authors contributing to the research, publications with sole author, publications made in partnership, number of active years per publication, total number of citations, media citation. The theoretical aspects related to taxation are harmoniously complemented by the bibliometric analysis of its challenges in the digital economy. The fundamental objective of this bibliometric analysis on the concept of taxation in the digital economy was to map the phenomenon in order to outline an overview of it in order to highlight the research flows and its historical development.

In relation to the annual scientific production, the rate of growth of research interest shows a positive trend with the passage of time. One of the most relevant sources of publication of documents related to the aspect of tax research in the digital economy is the Web of Science Core Collection. This study was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) statement.



**Figure 1: PRISMA Bibliometric Analysis on database Web of Science Core Collection**  
Source: Data processed with [https://estech.shinyapps.io/prisma\\_flowdiagram/](https://estech.shinyapps.io/prisma_flowdiagram/)

## Study search

To identify the 20 top-cited systematic review/meta-analysis studies in the field of the fiscal challenges of the digital economy, we performed a search of the Web of Science Core Collection on April 12th, 2024. The search strategy was as follows: the fiscal challenges of the digital economy, or digital economy, or fiscal challenges, or systematic review, or meta-

analysis. The search results were ranked by the number of citations, and the 20 top-cited studies were identified according to the number of citations.

### **Inclusion and exclusion criteria**

We included all studies that were systematic reviews or meta-analyses pertaining to the fiscal challenges of the digital economy. We excluded studies that were corrections of previous studies and studies that only mentioned terms related to the fiscal challenges of the digital economy but did not concentrate our theme.

### **Data extraction and analysis**

The following information was collected: number of total citations, number of citations in 2024, average citations per year, corresponding author's institution and country, journal, publication year, and number of references. If a corresponding author had more than one institution, the first institution was selected for analysis.

### **Results**

The main characteristics of the 20 top-cited studies are shown in the study. The number of citations of the 20 top-cited studies varied from 7 to 487, with a total citation count 3250. The 20 top-cited systematic reviews/meta-analyses were published between 2001 and 2024. The year with the most studies was 2022, with 49 studies. Most of the studies had between two and six authors, studies with two authors were the most common. The 20 top-cited studies came from 10 countries (Russia, China, Spain, England, Germany, Romania, Brazil, France, USA, India), Russia had the most top-cited studies.

Bibliometric analyses enable readers to gain insight into the history and development of a specific specialty. Identifying the classic citations could help us catch the emerging themes and future trends for a particular discipline. From 2001 to the present, the field of digital economy has been developing for nearly twenty five years, but we did not find any bibliometric analyses in the field of the fiscal challenges of the digital economy. As systematic reviews/analyses always aim to synthesise data of the latest, high-quality original studies that are similar to provide more reliable results and are always regularly updated, we performed this study to identify the 20 top-cited systematic reviews/meta-analyses and to analyse the main characteristics of them.

### **Limitations**

This study has several limitations. First, we only included studies from the Web of Science Core Collection, so there may be some that we were missed. Thus, the results of this study should be carefully interpreted. Second, many factors may affect the number of citations for a given study, such as number of years since publication, journal of publication, original language, institution and the reputation of the author. Furthermore, we did not analyse self-citations and citations in lectures and textbooks.

### **Conclusion**

In conclusion, this study is the first bibliometric study to identify the 20 top-cited systematic reviews/meta-analyses in the field of the fiscal challenges of the digital economy. This study analyses the main characteristics of the most cited studies. Since systematic reviews/meta-analyses always synthesise and analyse a series of similar and latest original studies, we

analysed the most-cited systematic reviews/meta-analyses that might have a stronger impact on future practice and research work.

The European tax system needs tax reform to address the digitalisation of the European economy. Unilateral measures raise problems in terms of their compatibility with national laws, but also with European rules on the avoidance of double taxation. Their existence can have adverse consequences in the sense that they can generate a variety of rules in the context of a European Single market.

A reinterpretation of the classic concept of permanent establishment is needed to make a real link between where digital profits are earned and where they are taxed.

In defining, the main focus of the study was to identify how modern paradigms affect the field of digital economy, thus generating changes with a remarkable impact on taxation. Thus, the aspects dealt with in the work are summarized in the importance and role of reflecting the indispensability of digital technologies in the economic and business environment as well as in the fiscal one.

Following the study carried out in relation to the data collected and used in the analysis of the approached subject, it was found that, taking into account the EU strategy for the digital single market, that it paved the way for closer digital harmonisation between the EU member states. Launched in 2015, it aims to contribute to the economic growth of competition, innovation and investment.

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