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Exploring the research area of direct taxation. An empirical analysis based on bibliometric analysis results

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Abstract. *The investigation and exploration of the general fiscal field with emphasis on "direct taxation" through the analysis of the published scientific literature, looking at the conceptual, intellectual, and collaborative structure while highlighting the future research directions is aiming to visualize the prevailing knowledge structure in order to help the future researchers and research clusters. A sample of 557 documents was extract from the Web of Science platform for the 1954 - 2022-time range and a bibliometric analysis was applied as a quantitative technique to investigate the scientific literature. The main questions for which this study could offer an answer are: Are there emerging subfields or topics within direct taxations research? Which authors have made significant contributions to the study of direct taxation? But what are the most influential and frequently cited publications? How has the research on direct taxations evolved over time in terms of publication trends? Is there any geographical concentration of research in this area? Which collaborative partnerships are standing out?*

Keywords: direct taxation, bibliometric analysis, fiscal field, scientific evolution, taxation.

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Introduction

The present article offers an in-depth bibliometric analysis of the subject of direct taxation, a critical component of fiscal policy that has significant impacts on both economic landscapes and societal structures. Numerous causes such as economic growth trajectories, political dynamics, and shifting societal values have affected the evolution and refinement of direct taxing systems, which vary greatly among countries.

The European Union is the result of the European integration process which took start in 1950, after the second Word War (Craig & Burca, 2011). Three pillars, or areas of cooperation, served as the foundation for the European Union. These include the European Communities, the Common Foreign and Security Policy, and the collaboration between the criminal justice system and law enforcement. Direct taxes have seen relatively little convergence of domestic policy among member states so far. The EU Court's examination of the framework agreement served as the main inspiration for the inclusion of member states' tax laws. A bibliometric analysis can be used by the policymakers to better understand the academic landscape surrounding direct taxation. This can inform evidence-based policy decisions and reforms.

The European Union has limited authority to control and intervene in the taxes system. Since the outset, it has been committed to unifying European tax laws relating to VAT (Value-Added Tax) or administrative fees, and it has released guidelines that encourage cooperation between tax authorities. However, subject to the fundamental liberties protected by the Treaty on the Functioning of the European Union, direct taxation remains the unique purview of individual governments. In general, disputes resulting from the efficacy of various member states' budgetary policies on certain member countries can only be resolved inside the official framework of the EU if they reduce competition within the trade union. For instance, the EU Commission has looked into the fiscal practices of companies in many member states during its state assistance investigations (European Commission, 2016, 2017).

Moreover, the ideal taxation has been considered to be one that does not bother any of the economic "actors", impacting the least the market processes, implying that the optimal fiscal source is the one that interfere the least the production of private wealth (Groves, 1964).

According to the Mazars company's study, "Central Eastern European Tax Brochure 2014", the changes in the Central and Eastern European fiscal environment between 2013-2014 are indicating that at a regional level a light reduction tendency of the direct taxation had been registered, concomitant with the attenuation of the VAT. According to the poll, the average share of the profit tax it is now 17%, while the average share of the VAT is around 21%.

A key factor that directly affects a society's tax structure is the level of income in that society. Comparatively to nations with lesser incomes, higher income levels enable a society to put a greater load on direct taxes, such as the personal income tax. Countries with lower incomes in the EU rely more on consumption-based taxes than they do on income taxes, according to Trasberg (2013). The bibliometric approach will allow for an organized, data-driven investigation of these themes' interconnection, uncovering patterns, gaps, and trajectories in direct taxation literature.

There is a link between higher income tax rates and overall greater income levels. In actuality, from a global standpoint, higher income countries rely more on direct taxes than

lower income countries do. NM10 countries' (10 New Member States which joined the European Union on 1 May 2004) income levels are rising, but they haven't moved a larger proportion of the tax burden to income taxes. Instead, they have lightened the tax burden on income. The majority of the NM10 countries have so profited from the adjustments made to EU income taxation (Vermeer et al., 2022).

There are two main interconnected motives for which the direct taxation of the new state members of European Union had been rapidly decreased comparing with other EU countries prior mentioned. Firstly, the new EU members needed to align their indirect tax shares with the European Union standards. This led to a huge increase in terms of VAT and other taxes. The shares on the personal wealth have been reduced in order to compensate the increased fiscal burden in those countries with relatively smaller incomes (The European Commission, 2021). Researchers may discover anew aspects of direct taxation that have gotten little attention or are unexplored by evaluating the current literature. This can help to direct future research priorities.

Welfare states have traditionally been established in Western European nations. In comparison to Latin America, tax receipts as a percentage of the overall economy are higher to support the extensive transfer programs that are common in these systems. The so-called EU-17 had an average ratio of over 40% of GDP in 2008, with Denmark accounting for the greatest percentage at 48% (European Commission, 2011). The tax burden is also different: while France mostly relies on social security contributions and indirect taxes, Denmark earns more than half of its revenues from direct taxes. Fossil fuels are heavily taxed by the majority of nations; since 1995, energy taxes have consistently represented 2% of GDP (European Commission, 2011). High gasoline taxes have been in place for many years and are a typical way for European governments to finance social transfers, despite the fact that one may believe that this is because environmental policies are becoming more and more popular.

On the other hand, the Central and Eastern European countries, which have joined EU in 2004 or 2007, have smaller fiscal burdens comparative with their Western counterparts, many of those countries having their average tax shares less than 30% of GDP. However, these nations are rather counting on the indirect taxation, such as consumption or excise taxes (European Commission, 2011).

The VAT continues to be a major fiscal burden in the Central and Eastern Europe, Romania occupying the third place in the share taxes rank, right after Hungary (27%) and Croatia (25%). The 24% share is keeping Romania on the first place in European Union, with countries that only have a higher VAT: Hungary, Croatia, Denmark (25%) and Sweden (25%) while Luxemburg (15%) and Malta (15%) are on the other side (Mihaila, 2014).

Romania, which now has a lower corporate tax rate (16%) than the rest of the EU, could suffer significantly as a result of an EU-wide unilateral corporate tax rate. International investments are specifically attracted by this lower tax rate. A return to a progressive system and a major hike in tax rates would be required to harmonize with other EU members, which would certainly draw harsh condemnation from the government and investors. Therefore, imposing a single company tax rate at the EU level is not practical, at least not in the current environment (Mitu, 2008).

2017 saw the implementation of a new lump-sum tax in Romania by regulatory bodies. Regardless of their financial status, it was intended to create an annual payment for firms engaged in the tourism and culinary industries. In some circumstances, profit is no longer taken into account in favor of other criteria (Danila & Horga, 2017).

In this context, this research proposes the exploring and investigation of the taxation field especially with emphasis on "direct taxation" through the analysis of the scientific publications, exploring the conceptual, intellectual, and collaborative structure highlighting the future research directions in an attempt to visualize the prevailing knowledge structure in order to help the future researchers and research clusters.

The study aims to give an answer for the next questions: Are there emerging subfields or topics within direct taxations research? Which authors have made significant contributions to the study of direct taxation? But what are the most influential and frequently cited publications? How has the research on direct taxations evolved over time in terms of publication trends? Is there any geographical concentration of research in this area? Which collaborative partnerships stand out?

In synthesizing the insights derived from the bibliometric analysis presented, this study not only charts the evolution of direct taxation within the EU's complex fiscal landscape but also illuminates potential pathways for harmonizing tax policies without undermining the unique economic and social fabrics of individual member states. The nuanced understanding of direct taxation trends and their socioeconomic correlates underscored herein provides policymakers with a robust empirical foundation upon which to deliberate reforms that may foster fiscal equity and growth. Through highlighting the intricacies of direct taxation mechanisms and their varying impacts across EU nations, this research offers a clarion call for tailored, evidence-based policymaking. Such an approach is essential in navigating the fine balance between fiscal autonomy and the broader objectives of EU integration, ensuring that policy interventions are not only responsive to past and present academic discourse but also pragmatic in fostering an equitable and prosperous union for all member states. This study, therefore, serves as a crucial springboard for policy innovation, enabling a reimagined fiscal framework that is informed by historical data, contemporary challenges, and the visionary foresight that underpins the EU's founding principles.

Literature review

As economic theories, social mores, and technological breakthroughs have changed over time, so too has the study of fiscal policy, particularly direct taxes. Direct taxation has a lengthy history that goes back to the early civilizations when kings taxed the people under their dominion. However, the development of economic ideas in the 18th and 19th centuries is where the present notion of direct taxation originated. The fundamentals of taxation were established by academics like Adam Smith and David Ricardo, who placed an emphasis on fairness, effectiveness, and financial capacity.

Tax systems changed during the 20th century as economies grew more intricate and governments looked for ways to pay for public spending. Progressive taxation, in which tax rates rise with income levels, was established in response to the emergence of the welfare state and the need to redress income inequities. Direct taxation developed as a crucial tool for fostering social fairness and income redistribution.

Research on direct taxes has recently widened its scope to include analysis of economic growth and efficiency in addition to revenue generating. Studies have looked at how tax rates affect entrepreneurship, investment choices, and economic behavior. The connection between taxes and economic inequality has also been studied by researchers, who have drawn attention to the possible benefit of progressive taxation in lowering income disparities.

Current fiscal trends, with a focus on direct taxes, reflect ongoing discussions and new obstacles. The rising digitalization of the economy and its effects on tax systems are one prominent development. The taxation of digital services, international trade, and the fight against tax evasion have all been made more difficult by the digital economy. Researchers are looking for novel ways to update tax laws for the digital era while maintaining justice and revenue sufficiency.

The increasing attention being paid to environmental taxation in response to concerns about climate change is another trend. Direct taxation, like carbon pricing and green taxes, has the ability to encourage sustainable behavior and lessen the environmental impact of economic activity, according to policymakers and researchers. Studies are still being conducted to determine the effectiveness and financial effects of environmental taxes, particularly in the process of moving toward a greener economy.

Additionally, in the wake of the COVID-19 epidemic, questions on tax policy and economic recovery have been more prominent. To assist those impacted by the crisis, governments have put in place temporary tax measures, such as tax credits and deductions. The effectiveness of these actions in boosting economic activity and promoting a quick recovery is being studied.

Numerous studies have been conducted on direct taxes, a key element of fiscal policy. The implications and impacts of direct taxation on economic development, inequality, and general fiscal policy are clarified by a number of important researches.

Comprehensive analysis of tax policy, including direct taxation, is provided in "The Mirrlees Review: Reforming the Tax System for the 21st Century". The analysis highlights the significance of creating a tax system that strikes a balance between efficiency and equity. As essential components, it recommends progressive taxation, effective tax collection, and a decrease in tax evasion and avoidance. To address sustainability issues, the analysis suggests streamlining tax structures, enlarging revenue bases, and investigating environmental levies.

High amounts of direct taxation, particularly on business and household income, can have a negative impact on economic growth, according to research on "Taxation and Economic Growth". It is recommended to encourage long-term economic growth by lowering tax rates on income and investments as well as creating thoughtful tax incentives.

A historical perspective is provided by "Taxing the Rich: A History of Fiscal Fairness in the United States and Europe." (Scheve & Stasavage, 2016). It draws attention to social standards of justice and equity that influence tax policy. One method to lessen income and wealth inequality is to tax the affluent. The study places a strong emphasis on how politics and public opinion affect tax policy. The article "Taxing Top Incomes in a World of Ideas" (Jones, 2019) contends that higher top marginal income tax rates can be defended from the viewpoints of economic efficiency and fairness. It makes the case that progressive taxation can support social harmony and possibly promote creativity and long-term economic success.

Effective tax laws that address income and wealth concentration are regarded as crucial. It is emphasized in "The Role of Taxation in Economic Development" (Kaldor, 1965) that tax policies, including direct taxation, can have an impact on economic development. It influences resource allocation, entrepreneurship, and investment choices. Key considerations include balancing trade-offs between revenue generation and economic growth and aligning tax systems with development objectives.

Overall, the focus of the fiscal field's evolution has shifted from revenue production to embrace larger goals including equity, efficiency, and sustainability, with a focus on direct taxes. Addressing the problems brought on by digitalization, climate change, and economic recovery are the current developments. Research and discussion are ongoing, which helps to improve tax laws, create progressive tax structures, and make sure that taxes serve society objectives.

Data and methodology

Bibliometric methodology (Broadus, 1987; Pritchard, 1969) is the process of applying quantitative techniques to bibliographic data (publications and citations), such as bibliometric analysis or citation and co-citation analysis. Although bibliometrics was first mentioned in 1950 (Wallin, 2005), its development in fields like "business, management, and accounting," "economics, econometrics, and finance," and "social sciences" suggests that it is still a young discipline.

It is worth noting that the materialization of the scientific databases such as Scopus and Web of Science has laid the foundation of the bibliometric analysis and the popularization of it. (Ramos-Rodriguez & Ruz-Navarro, 2004).

Indeed, bibliometric approaches have been highlighted in various fields such as business (Donthu et al., 2021a, b, c), e-commerce (Donthu et al., 2021c), finance (Li et al., 2021), management (Budler et al., 2021; Zupic & Čater, 2015), marketing (Donthu et al., 2020), and human resources (Andersen, 2021). Studies of publication patterns, model construction, and investigations into the conceptual, intellectual, or social framework of a research subject are all examples of bibliometric analysis work.

The research methodology has been structured on three main steps: projection of the study and collecting the data, the analysis and data visualization and interpretation (Zupic & Čater, 2015), and the using of the Bibliomatrix and Biblioshiny packages to display the bibliometric indicators regarding the publications in the research field.

The Web of Science platform was used to extract the data in order to explore the quality of the scientific literature in the studied field. Even if compared to other databases like Scopus, WoS doesn't always index as many journals across different fields, but it still offers a sizable amount of high-quality literature (Ellegaard & Wallin, 2015). In the affiliation filter of the search interrogation the next terms were used as keywords: “direct taxation”, “fiscal pressure”, “fiscal policy”, “European union”, “direct taxes”. The search language is English. Finally, 557 documents have been selected to explore the scientific literature of the direct taxation.

Lastly, to analyze and visualize the documents, the Bibliometrix and Biblioshiny open-source packages were used through the R environment. Scientific publication data can be thoroughly analyzed and processed using Bibliometrix. According to Aria and Cuccurullo (2017), Biblioshiny is an online data analysis platform that incorporates the fundamental algorithm of Bibliometrix. Users of the web application Biblioshiny can conduct pertinent bibliometric analysis and visualizations.

The bibliometric analysis explores the most productive sources and collaborations, the most cited documents, the impact of the authors, the relationship between sources, keywords and authors and the evolution of keywords.

This study examinates the conceptual, intellectual and social structure of the most relevant publications in the field of the direct taxation through two perspectives, applying the network and the cluster analysis.

Using multiple correspondence analysis and network analysis based on keyword co-occurrence, significant research themes are found within conceptual frameworks. In order to map the existing knowledge structure, keyword analysis and word co-occurrence analysis were taken into consideration in the study. According to Feng et al. (2017), this analysis is a systematic and useful strategy for discovering links between study subdomains, monitoring, and evaluating phenomena, and creating a semantic map of the area. When building the overall framework, co-occurrence keyword analysis allows for the direct usage of the text's real content to record contemporaneous interactions (Feng et al., 2017). As a result, it enables the creation of scientific maps based on the terms that appear the most frequently in the text. The conceptual structure and thematic map of the existing research can be accessed by applying a suitable clustering technique (such multiple correspondence analysis, or MCA) to the keywords.

The intellectual structure of the research field is explored based on the network analysis based on co-citations (authors, sources, and papers), while the social structure is explored on the basis of the collaboration network between authors, countries and institutions. The Word cloud analysis is realized based on clustering by coupling.

Citation analysis is used to assess the influence of authors and publications since it is the most common method for determining the value and impact of scientific research (Waltman & Schreiber, 2013). In general, a high number of citations denotes a work's significant influence within a given field of research (Feng et al., 2017). The h-index is another comparable metric in impact analysis that evaluates an author's productivity and influence by combining quality and quantity. An author's h-index is represented by the number of articles they have published that have each been cited at least "h" times (Hirsch, 2010).

Network analysis and the collection of descriptive data are two methods for performing citation analysis. The most popular citation analysis approaches are bibliographic coupling, co-citation analysis, and co-occurrence analysis. We can say that there is bibliographic coupling (Kessler, 1963) if two records cite the same work, but co-citation analysis (Small, 1973) evaluates the most cited papers. The co-occurrence of terms in article abstracts, titles, or keywords is used to map the cognitive structure of the network through time.

Citation analysis of co-word occurrences causes the temporal growth of a scientific theme, where conceptual frameworks are produced through textual discourse. The study does bibliographical coupling analysis in addition to descriptive analysis to evaluate the subject's structure in the journal. According to Kessler (1963), texts that quote the same third document form a bibliographic pair that tackles connected intellectual subjects (Martyn, 1964).

Descriptive analysis and empirical results

The examination of direct taxation in specialized literature implied the analysis of a sample of 557 documents that were taken from the WoS platform and covered the years 1954 through 2022.

The collection of documents was divided into the following six publication categories: articles (450); book reviews (21); article reviews (23); conference papers (59); and editorial

materials (4). Authors in the field used a total of 17,709 references, published in a total of 357 sources, and used 1,430 different keywords. With a collaboration index of 2.41 and 2.2 co-authors per document, Table 2.1 demonstrated the presence of active author collaboration.

Table 1. Main information regarding the documents

Timespan	1954-2022
Sources	357
Documents	557
Timespan	10
Average citations per documents	13.36
Average citations per year per document	1.206
Documents type	
Articles	450
Book reviews	21
Editorial material	4
Proceedings	59
Reviews	23
Document contents	
Keywords Plus (ID)	1823
Authors keywords (DE)	1430
Authors	
Authors	1065
Author Appearances	1225
Authors of single-authored documents	172
Authors of multi-authored documents	893
Authors collaborations	
Documents per Author	0.523
Authors per Document	1.91
Co-Authors per Documents	2.2
Collaboration Index	2.41

Source: authors' own creation.

Regarding the scientific production (fig.1) as an evolution in the last twenty years, it can be said that there is an intensification of the publication in the field starting with the year 2002 and continuing until 2010. Afterwards, a regression is noted which reaches its minimum point in 2018 for that in the last few years the topic will return to the attention of researchers in the context of the pandemic but also of the recent uncertainties related to the war in Ukraine. The annual growth rate of the publication is 3.72% from one year to the next.

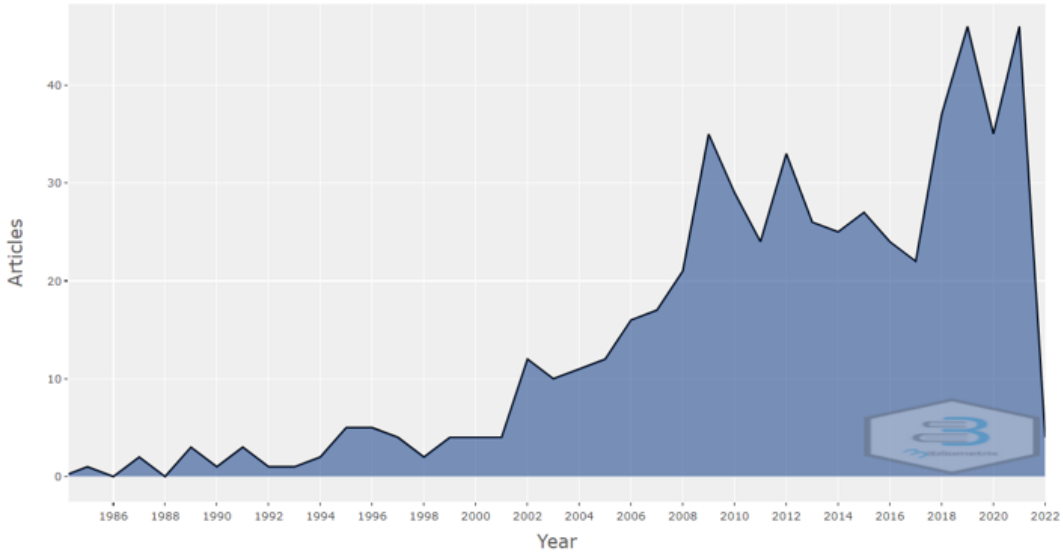


Figure 1. Evolution of the scientific production

Source: authors' own creation.

Most productive sources

If the most productive sources are analyzed, through different perspectives, it can be observed that: from the perspective of the visibility level, given by the H and G indexes, the most prolific journals are: International Tax and Public Finance, Journal of Public Economics and Journal of International Economics. The same ranking is realized based on the total number of citations (fig. 2).

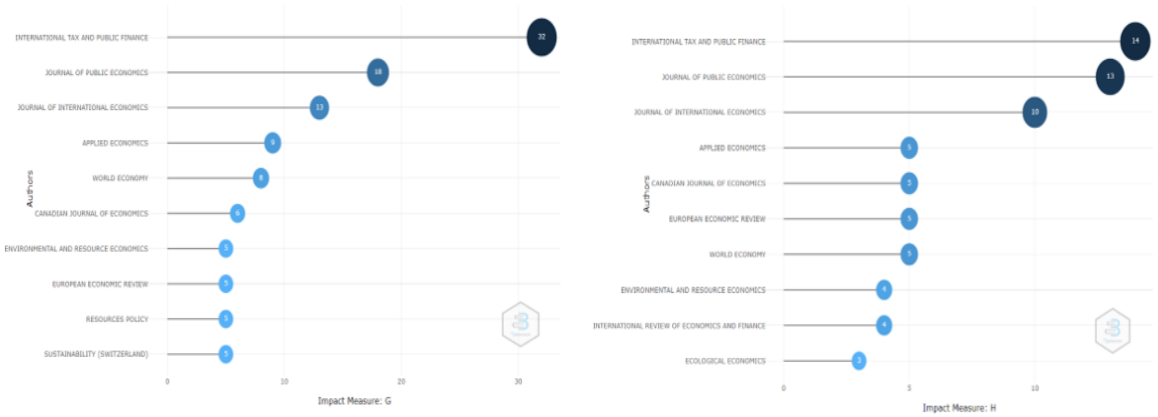


Figure 2. Most relevant journals

Source: authors' own creation.

Most productive journals

Regarding the most productive journals, it can be observed that the top positions are occupied by technical journals in the field, most likely Core Economics, among which the following can be mentioned: International Tax and Public Finance, a Springer publication, came in at 259/376 in Core Economics in 2020 with an impact factor of 1.34, and Journal of Public Economics, another publication in Core Economics, came in at 90/476 with an impact factor of 3.11, placing it in the Q1 zone. With an impact factor of 3.373 in 2020, ranking

84/376 in Core Economics, and an AIS (Article Influence Score) of 3.49, Journal of International Economics, likewise from the Core Economics sector, is in third place. Applied Economics, a Core Economics journal with a ranking of 183/376 and an impact factor (2020) of 1.831, comes in at number four with an AIS (2020) of 0.437.

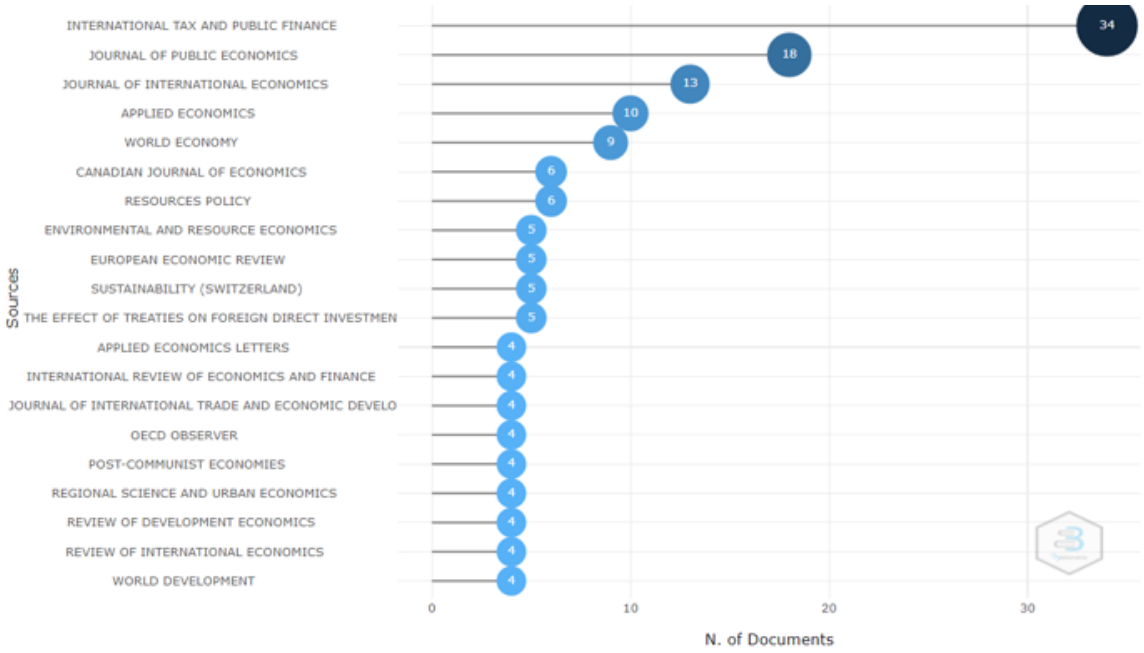


Figure 3. Most relevant sources

Source: authors' own creation.

Research has also been published in World Economy, a Core Economics journal that ranks 83/110 in the business/finance category and has an AIS (Article Influence Score) of 0.559. World Economy has an impact factor of 1.45 in 2020. The Canadian Journal of Economics, Applied Economics Letters, Post-Communist Economics, and even World Development are further periodicals that have articles on this subject. It is significant to note that the field is unique, with the majority of articles occurring in academic journals that focus on Core Economics. From the analysis of the trends shown in Fig.4, while there were more publications in the Journal of Applied Economics in the early years, beginning in 2003, there has been an increase in the number of publications in International Tax and Public Finance, which has emerged as a strongly upward trend in the field of taxation in the past ten years.

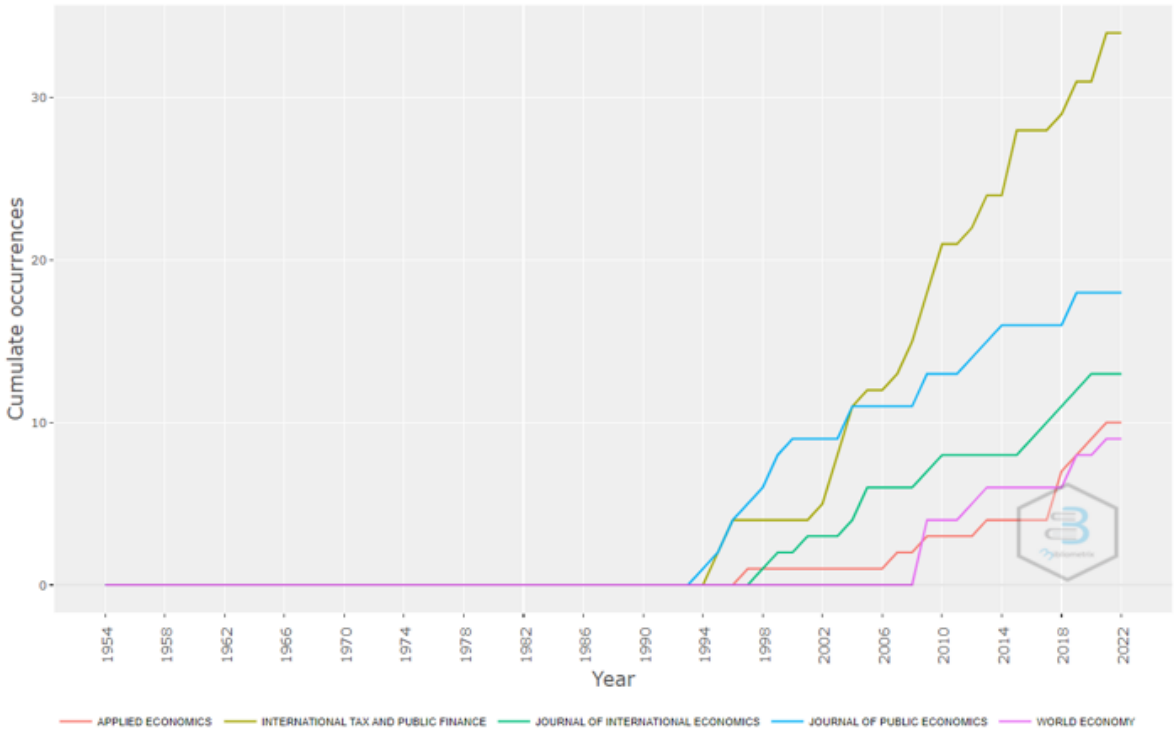


Figure 4. Evolution of most relevant sources

Source: authors' own creation.

Most cited documents

Table 2 presents the list of the most important documents presented in descending order according to the total number of citations. From the point of view of the total number of citations, the work of De Mooij and Ederveen (2003) entitled "Taxation and foreign direct investment: a synthesis of empirical research" published in international tax and public finance occupies the first place. The paper provides a review of the empirical literature on the impact of taxes paid by companies on the allocation of foreign direct investments and compares the results of 25 empirical studies calculating the elasticity of the tax rate under the assumption of a uniform distribution. By performing a meta-analysis, the paper aims to explain this variation through the differences between the characteristics of the highlighted studies. Systematic differences are found between the studies in terms of the type of foreign capital data used and the type of tax rates adopted. No systematic differences could be proven in the responsiveness of investors from countries with tax credits compared to those from tax-exempt countries.

The second most cited article is the study published by Hines (1996) entitled "Taxes and the Location of Foreign Direct Investment in America" which compares the distribution among US states of investments from countries that grant foreign tax credits with investments from all other countries. The ability to apply foreign tax credits against home country tax liabilities reduces the investor's incentive to avoid high-tax foreign locations. State income tax differences of 1 percent are associated with differences of 9–11 percent between the investment shares of foreign tax credit investors and the investment shares of

all others, suggesting that state taxes significantly influence the pattern of foreign direct investment in the United States.

The third article is Haufler's (1999) study entitled "Country size and tax competition for foreign direct investment" which analyzes the tax competition between two countries of unequal size, trying to attract a foreign monopolist. When national governments have only a lump sum (subsidy) per profit available, but face identical exogenous transportation costs for imports, then both countries will be willing to provide a subsidy to the firm. At the same time, the firm prefers to be located in the larger market where it will be able to charge a higher producer price. In equilibrium, the large country receives the investment and may even levy a positive tax, if the difference in the size of the national markets is large enough. The corporate tax paid in equilibrium increases further if countries are given an additional instrument, either a tariff or a consumption tax.

Table 2. Most important documents in regards of fiscal field

Document	Total citation number	Citations per year	Normalized number of citations
DE MOOIJ RA, 2003, INT TAX PUBLIC FINANC	261	13.05	8.2857
HINES JR. JR, 1996, AM ECON REV	248	9.1852	3.6047
HAUFLER A, 1999, J PUBLIC ECON	197	8.2083	2.9294
COLE MA, 2006, SCAND J ECON	196	11.5294	9.5319
DHARMAPALA D, 2009, J PUBLIC ECON	185	13.2143	7.5291
TORGLER B, 2005, EUR J POLIT ECON	154	8.5556	5.1333
BLONIGEN BA, 2004, INT TAX PUBLIC FINANC	135	7.1053	3.5357
FELD LP, 2011, J ECON SURV	112	9.3333	4.4725
HONG Q, 2010, EUR ECON REV	111	8.5385	8.4711
DHARMAPALA D, 2008, OXF REV ECON POLICY	97	6.4667	7.1725
DESAI MA, 2004, J PUBLIC ECON	96	5.0526	2.5143
BNASSY-QUR A, 2005, INT TAX PUBLIC FINANC	95	5.2778	3.1667
ZEE HH, 2002, WORLD DEV	84	4	4.1311
POPESCU GH, 2014, SUSTAINABILITY	78	8.6667	8.5903
RAZIN A, 1998, J INT ECON	77	3.08	1.4951

Source: authors' own creation.

Most prolific authors

According to the number of publications, the most prolific authors in the field of taxation are Davies, RB, Wooton, I, Hines, JR., Azmar, C., Becker, J., Egger, P., Haufler, A., and Jansk, P. and Wamser, G as well as Weichenrieder AJ.

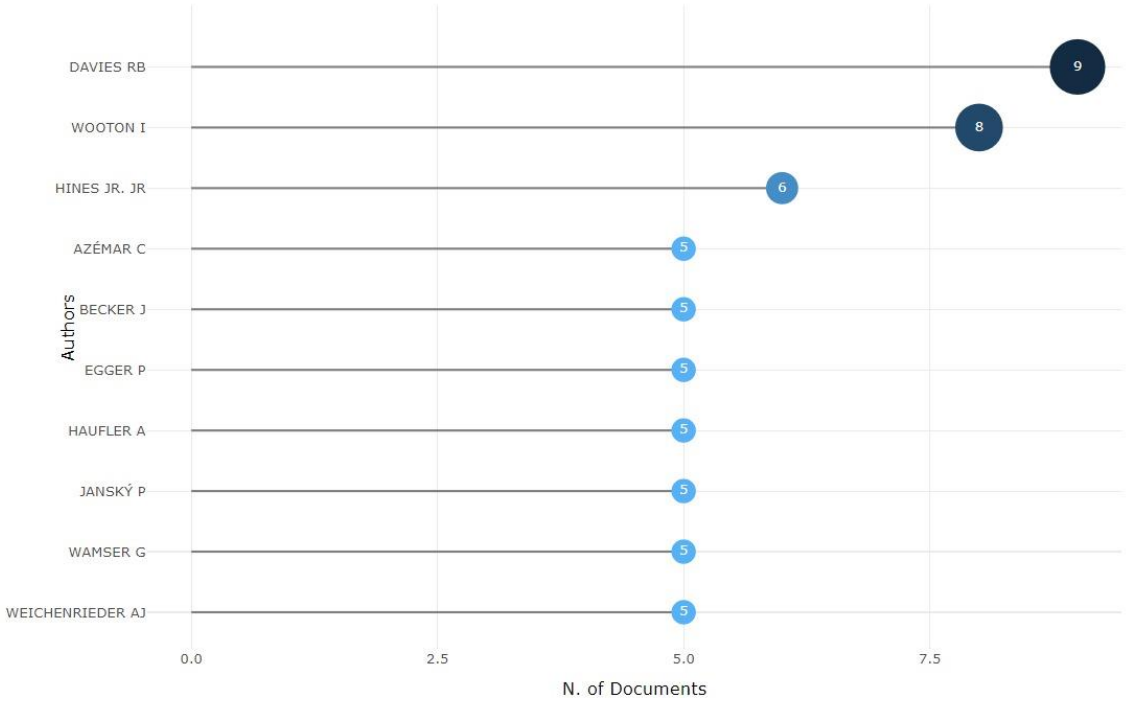


Figure 2. Most relevant authors by the documents number

Source: authors' own creation.

Table 3. Most relevant authors by the documents number

Element	h_index	g_index	m_index	TC	NP	PY_start
DAVIES RB	6	9	0.316	287	9	2004
EGGER P	5	5	0.294	110	5	2006
HAUFLER A	5	5	0.185	267	5	1996
WAMSER G	5	5	0.357	65	5	2009
WEICHENRIEDER AJ	5	5	0.227	144	5	2001
WOOTON I	5	7	0.208	258	7	1999
BECKER J	4	5	0.308	74	5	2010
DESAI MA	4	4	0.167	151	4	1999
DHARMAPALA D	4	4	0.267	309	4	2008
KONRAD KA	4	4	0.235	74	4	2006
AZMAR C	3	5	0.188	43	5	2007
BARRY F	3	4	0.231	25	4	2010
BELLAK C	3	3	0.188	121	3	2007
DE MOOIJ RA	3	3	0.15	306	3	2003
DEVEREUX MP	3	3	0.107	134	3	1995
HEARSON M	3	3	0.6	35	3	2018
JANSK P	3	4	0.75	28	4	2019
KESSING SG	3	4	0.176	58	4	2006
KOTSOGIANNIS C	3	3	0.176	55	3	2006
LEIBRECHT M	3	3	0.188	121	3	2007

Source: authors' own creation.

The Sankey diagram and the evolution diagram of the keywords "word growth" (fig. 6-7) highlight the terms that recorded the highest growth rate in articles published in the

field of taxation, especially direct taxation, such as "direct foreign investment", "tax competition", or "multinational enterprise".

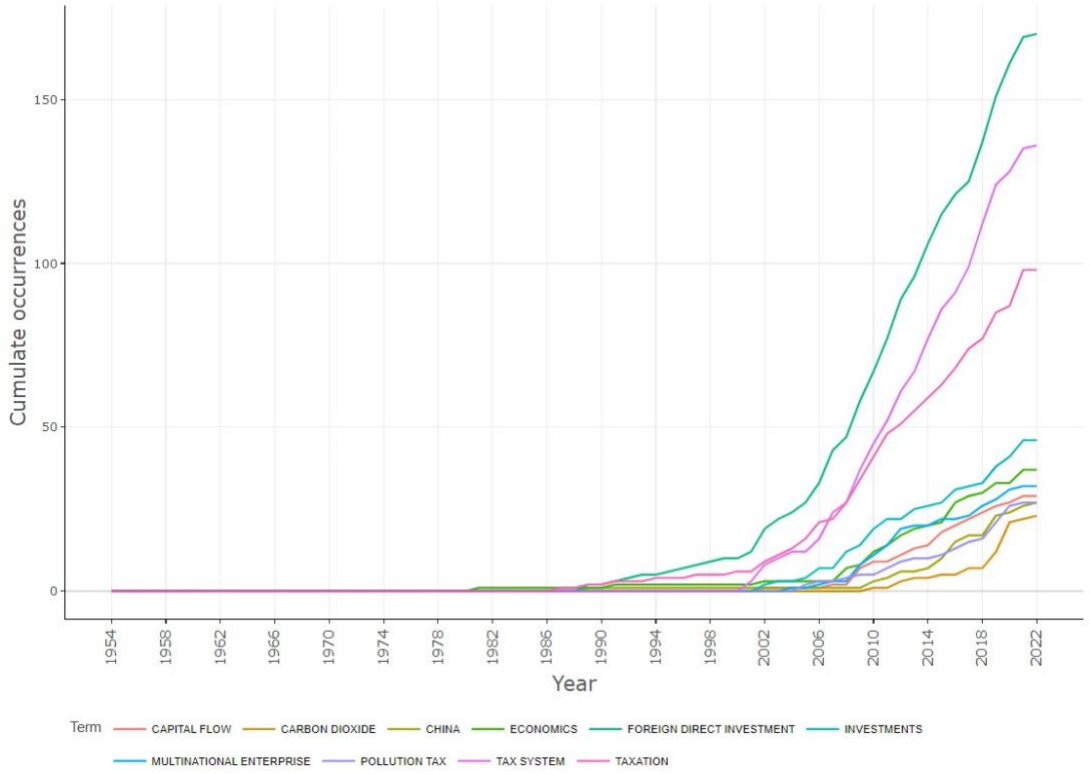


Figure 3. Evolution of most frequent keywords

Source: authors' own creation.

The Sankey diagram (fig. 7) highlights the relationship between: sources (journals, conferences), keywords, and authors. The height of the rectangles provides information about the relationships that occur between these elements. The analysis correlates the research topics with the journals in which they published most often. Thus, seven authors centered around the words "foreign direct investment" and "tax competition" (Davies, RB, Wooton, I, Hines, JR., Jansk, P., Azmar, C., Dharmapala, D., Becker, J.) in four journals (International Tax and Public Finance, Journal of Public Economics, Canadian Journal of Economics, World Economy).

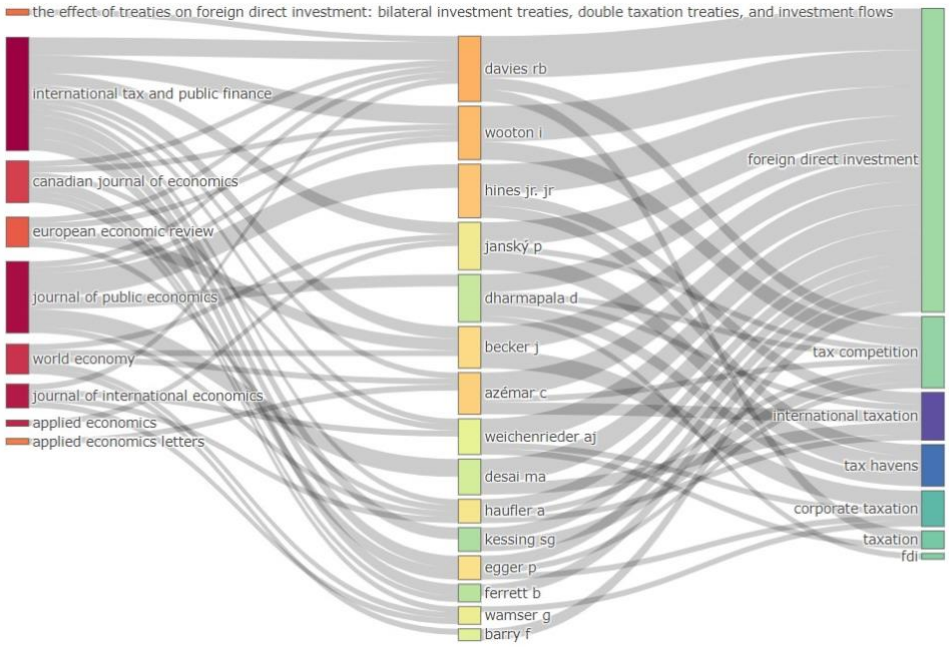


Figure 4. Sankey diagram

Source*:* authors' own creation.

Most frequent keywords used within the documents

The analysis of the most frequent keywords in the abstracts of the publications based on the word cloud highlights the main topics and research trends based on the information provided by the abstracts of the scientific publications. Figure 8 displays the 50 most frequent keywords found in the abstract of publications in the field and the most frequent combinations of words are: "foreign direct investment", "tax system", "multinational enterprise", "capital flow", "pollution tax", "tax incentives".



Figure 5. Most frequent keyword

Source: authors' own creation.

The current research perspectives of the authors in the field can be analyzed by means of bibliographic coupling. The grouping of papers by coupling reveals the existence of three clusters: the green one has as its main subjects "foreign direct investment", "the taxation system" and "agro-environmental policy", the blue one focuses on papers dealing with "environmental management", in while the red one focuses mainly on "economic development" (fig. 9).

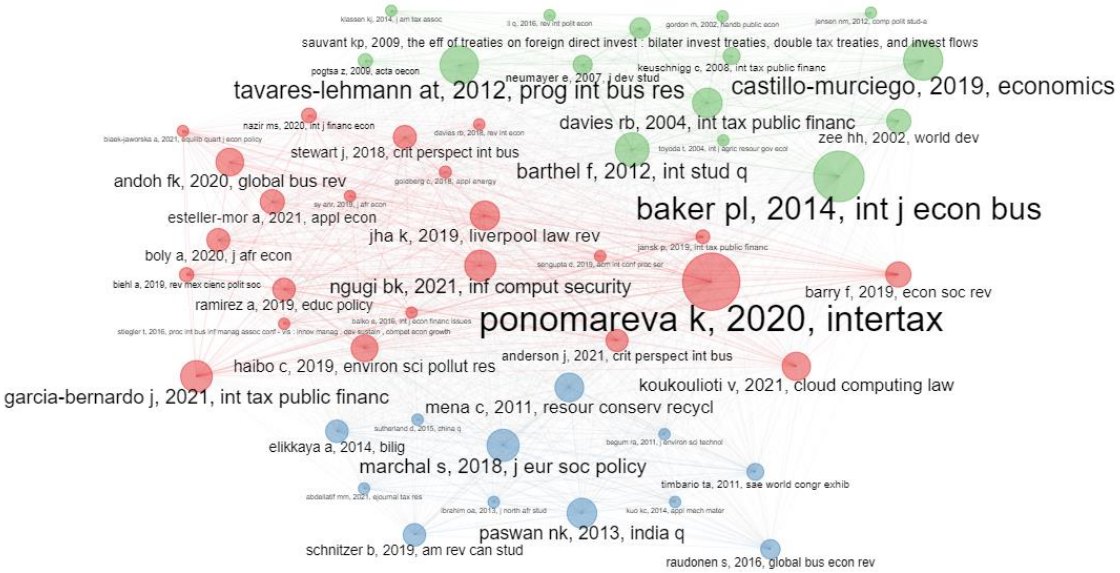


Figure 6. Paper's clustering by coupling

Source: authors' own creation.

In the case of authors, four groups of authors were identified (figure 10):

- The blue one - consisting of the authors Mittermaier, F., Haufler, A., Wooton, I., and Ferrett, B. who use terms such as "foreign direct investment", "competition" "taxation system".
- The green cluster - formed by Wamser, G., Becker, JR., Keuschnigg, C., is labeled by the following words: "multinational enterprises", "tax system".
- In the orange group there are papers identified by labels such as "foreign direct investment", "tax rate" in relation to authors such as: Garcia-Bernardo, J., Jansk, P., and Barry, F.
- The brown cluster consists of authors such as Davies, RB., Egger, P., Loretz, S., identified with the following words: "foreign direct investment", "taxation system" and "industrial investment".

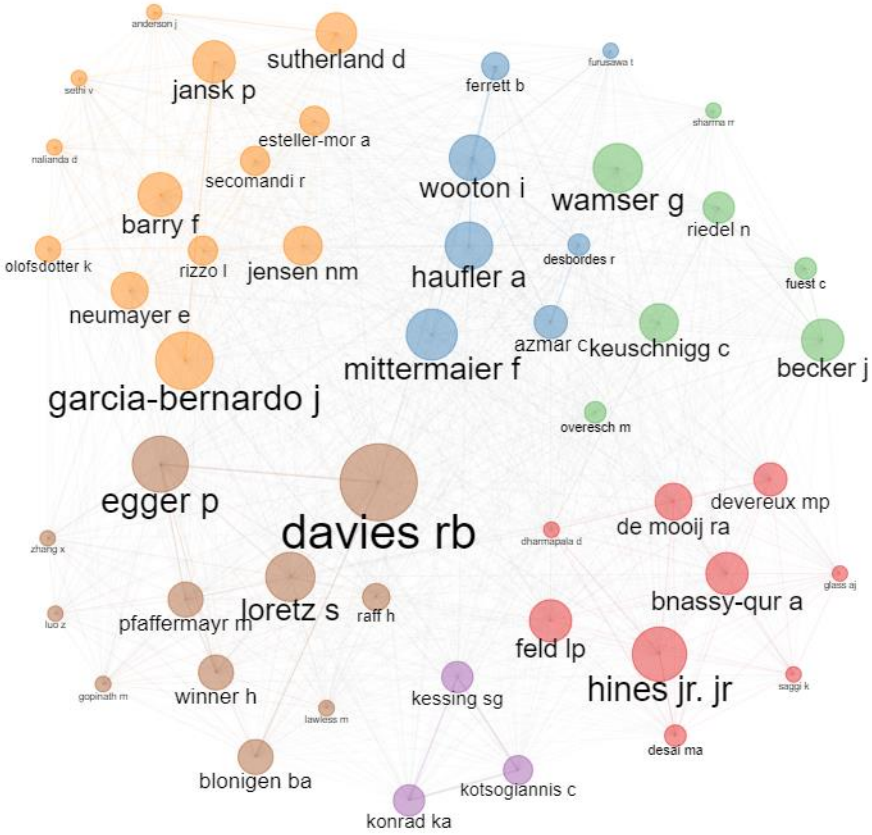


Figure 7. Author's clustering by coupling

Source: authors' own creation.

Regarding the sources, 2 clusters are being formed (figure 11):

- The blue cluster in which Journals such as Applied Economics, World Economy, Journal of Development Studies as well as the Review of International Political Economy are noted, in which papers have been published regarding the taxation system from the perspective of foreign direct investments.
- the red cluster in which International Tax and Public Finance, the Journal of Public Economics and the Canadian Journal of Economics stand out, in which there are quite a few paper works dealing with fiscal competition and the taxation system.

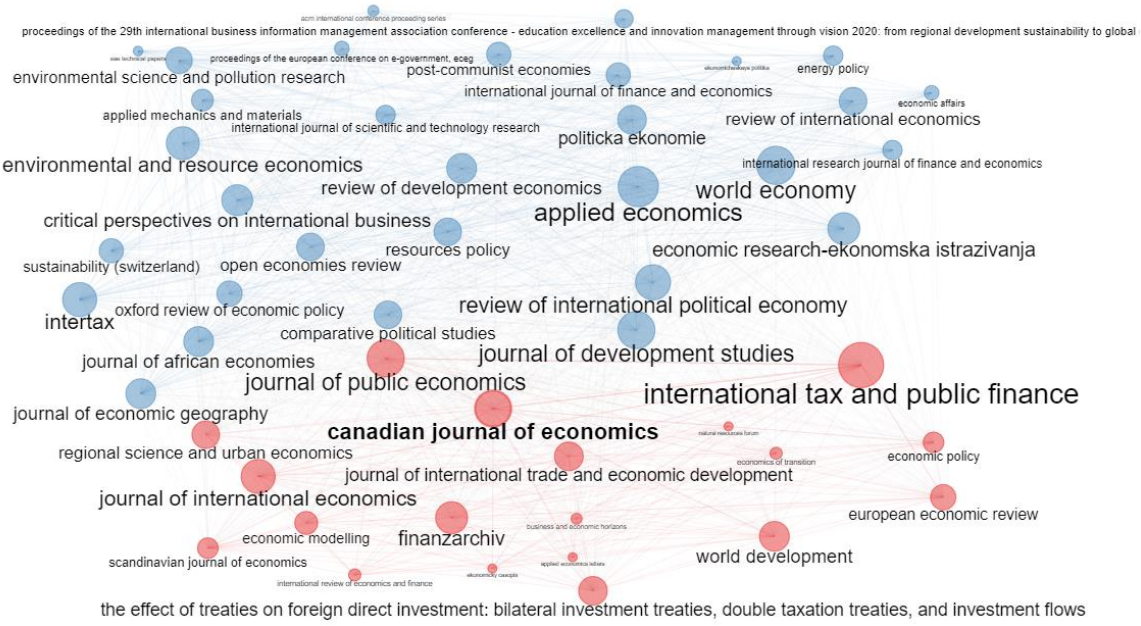


Figure 8. Source's clustering by coupling

Source: authors' own creation.

Conceptual structure

The conceptual structure of the taxation field can be explored with the help of network analysis based on the simultaneous occurrence of keywords (keyword co-occurrence) and multiple correspondence analysis (MCA), which illustrate the major research themes but also the evolution of the main topics analyzed within the field.

The map of the conceptual structure of the main research topics addressed revealed the existence of three distinct clusters of topics: the blue cluster is exclusively dedicated to the analysis of the taxation system, direct and indirect taxation and VAT, while the green cluster deals with topics such as profit tax (corporate income tax), tax evasion, tax havens, profit transfer. The largest theme cluster is the red one and includes tax evasion, tax burden, tax policy, direct taxation, indirect taxation, developing countries, multinational companies, transfer prices, gravity models.

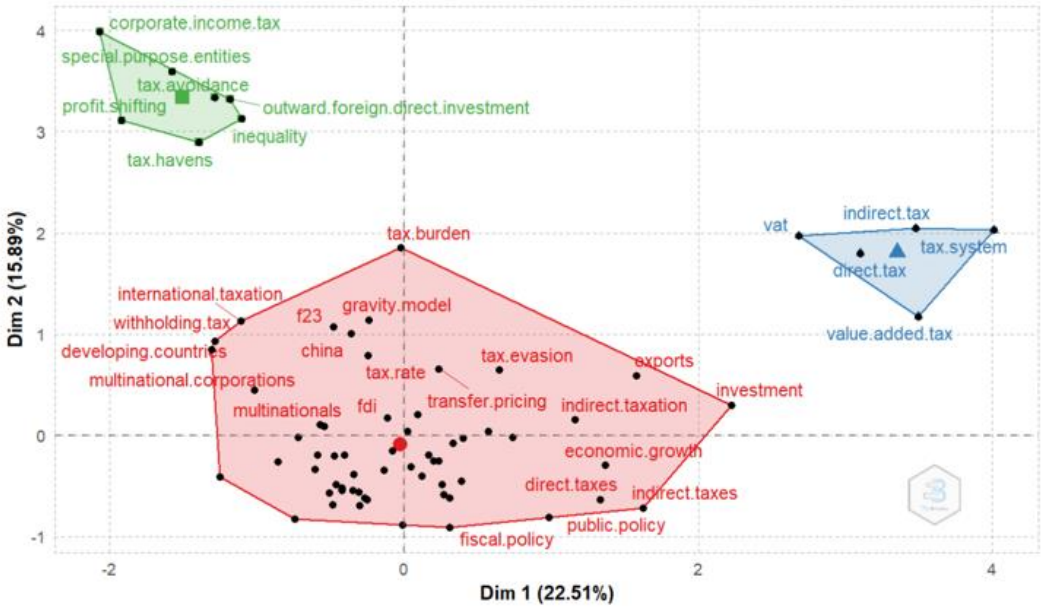


Figure 9. Conceptual structure map - MCA method

Source: authors' own creation.

As well as the evolution of the themes developed and analyzed in the last decade in the field of taxation in general, it is possible to observe the attention given to the analysis of foreign direct investments, fiscal competition, taxation of companies, especially in 2012, in order to subsequently move to tax havens and the taxation of companies in 2017. In recent years, profit transfer has been increasingly analyzed (fig. 13).

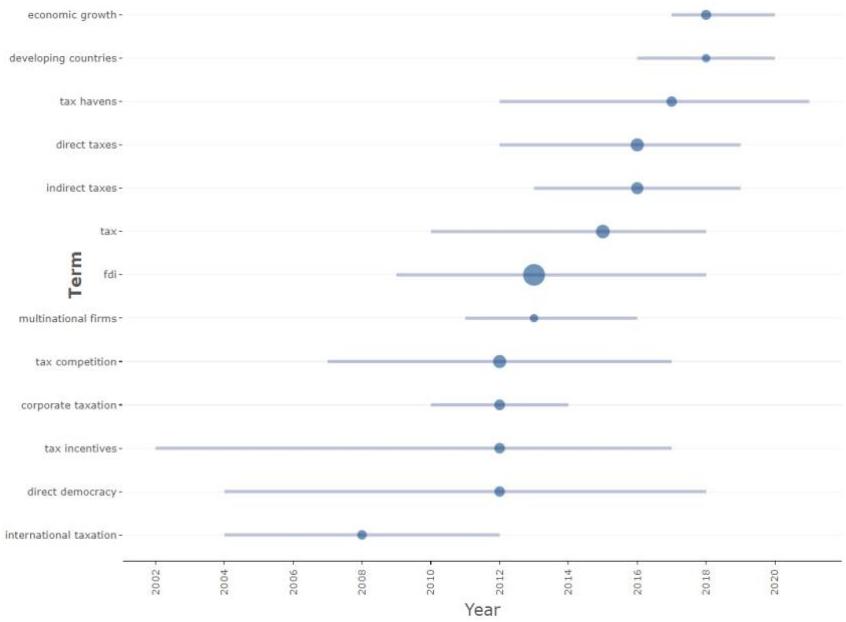


Figure 10. Most common topics

Source: authors' own creation.

Highlighting the main theme clusters based on the analysis of the co-occurrences of keywords

The network analysis on the co-occurrences of keywords presented in fig.14, highlights the number of occurrences of keywords by the size of the circles, while the similarity of topics is represented by the distance between the elements of individual pairs. In the analysis, three different colors were highlighted, signaling five individual clusters, the focal points of the network being foreign direct investment, direct and indirect taxation, and fiscal competition and profit transfer.

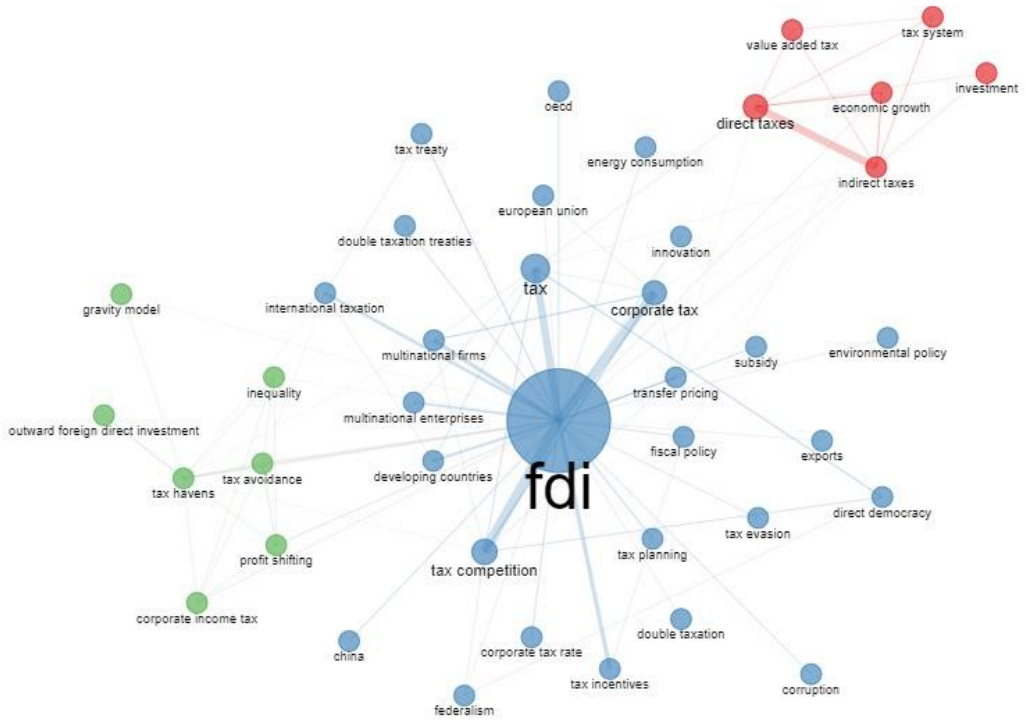


Figure 11. Co-occurrence network analysis on keywords

Source: authors' own creation.

Exploration of the intellectual, structure base on the co-citation analysis

Figures 15-17 are showing the co-citation analysis, with each circle representing an author/article or journal with at least one author in the field of taxation. The size of the circle shows us the number of citations (the larger it is, the more citations the author has). Instead, the proximity of the circles indicates a close relationship between the co-cited documents.

Authors co-citation analysis

The analysis of co-citations between the authors reveals three main groups in which the authors Devereux, Hines and Grossman stand out as focal points and their connections with the group of authors in their sub-network. On the clusters, among the most relevant authors in the red cluster, we can mention Hines, Desai, Grubert and Slemrod, in the green cluster Devereux, Davies, Maekusen and Wilson, while in the blue cluster, we can mention Grossman, Anderson and Lee as the most representative authors.

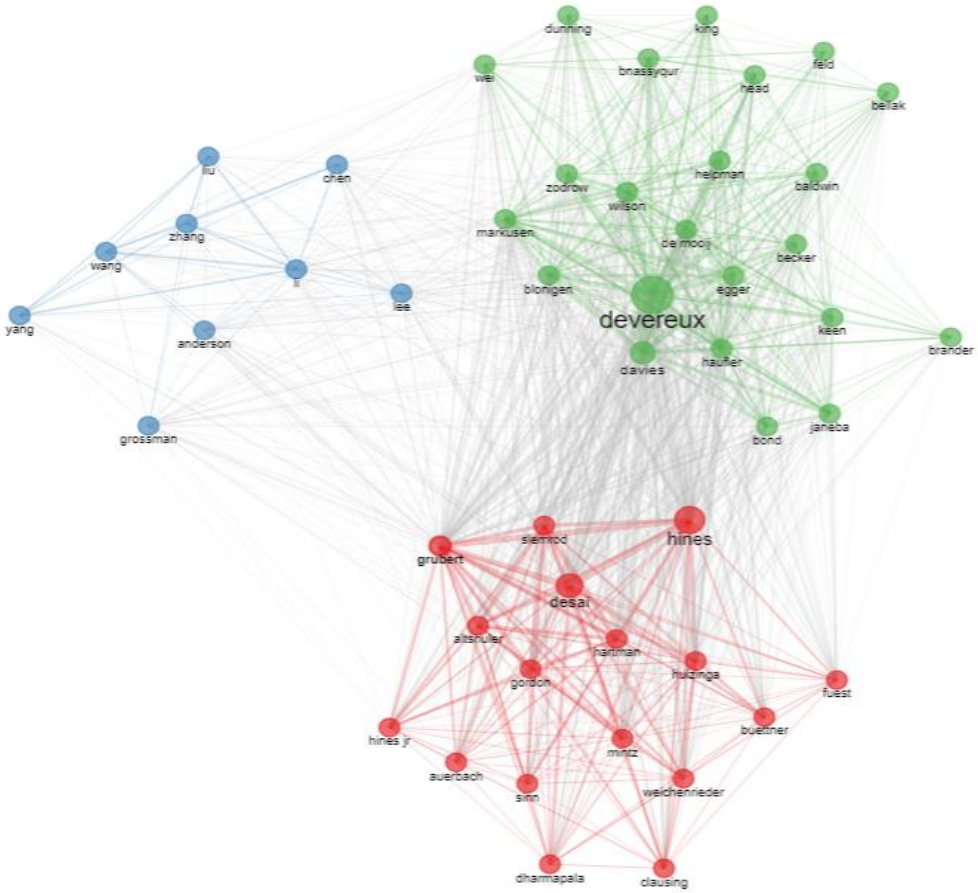


Figure 12. Co-citation network analysis on authors

Source: authors' own creation.

Documents co-citation analysis

The analysis of co-citations between articles (publications) reveals the existence of three main groups with primary paper works, Haufler, A. (1999), Wilson, J.D. (1999), Dagan, T. (2000), Blonigen, B.A. (2005), Markusen, J.R. (2002) and Davies, R.B. (2003) as well as De Mooij, R.A. (2003), Devereux, M.P. (1998, 2002, 2003) and their links to publications in their sub-network.

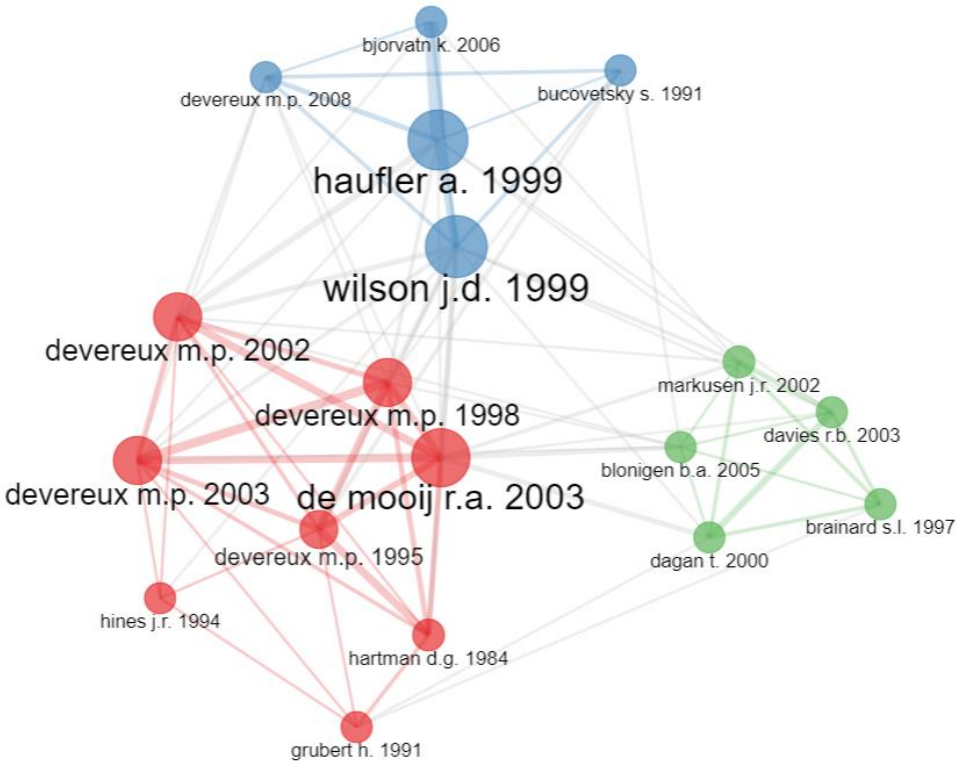


Figure 13. Co-citation network analysis on documents

Source: authors' own creation.

Sources co-citation analysis

Analyzing co-citations in journals allowed the identification of two clusters of journals:

- the red cluster consisting of: Journal of Public Economics, American Economic Review, International Tax and Public Finance, Journal of International Economics.
- the blue cluster that includes Econometrica, Journal of Political Economy, Journal of Development Economics, World Development, Applied Economics.

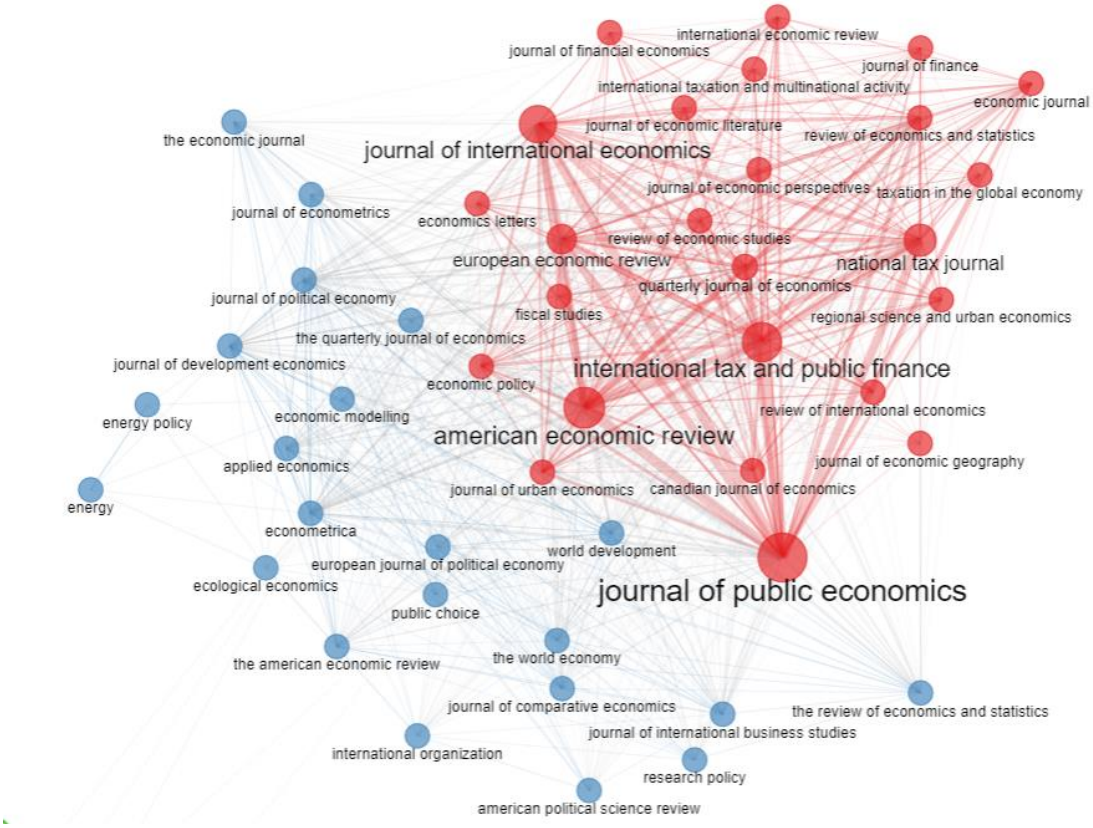


Figure 14. Co-citation network analysis on journals

Source: authors' own creation.

Exploitation of the social structure of the taxation field based on the analysis of the collaboration network of authors, institutions and countries

Regarding the social structure, it will be explored through the collaboration network of authors, institutions and countries, in terms of the most relevant affiliations from the perspective of published articles and the total number of citations. The most relevant affiliations in terms of number of articles are with Strathclyde University, Xiamen University, Munich University, Chinese University or Harvard University.

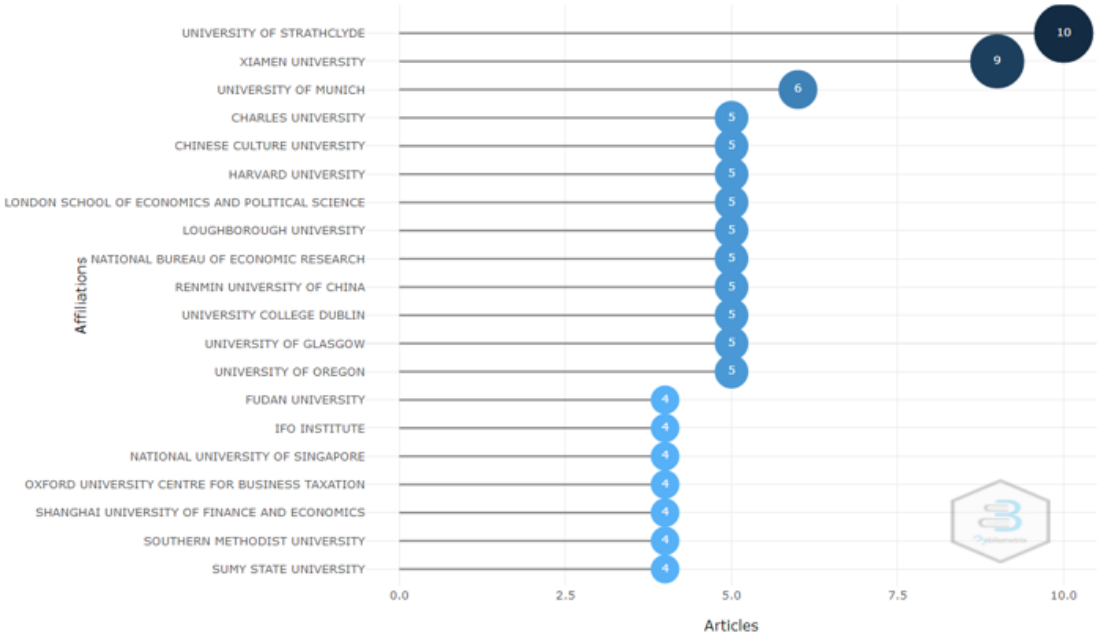


Figure 15. Most relevant affiliations

Source: authors' own creation.

Regarding the ranking of the most productive countries (Table 4) according to the number of citations, we can mention the United States, the United Kingdom, Germany, Italy, China, and France.

Table 4. Most productive countries

Country	Total citations	Average citations per paper
USA	2130	25.976
UNITED KINGDOM	887	26.879
GERMANY	885	27.656
NETHERLANDS	492	54.667
CHINA	297	7.244
FRANCE	251	25.1
SWITZERLAND	240	21.818
AUSTRALIA	143	14.3
AUSTRIA	124	24.8
HONG KONG	111	22.2
ROMANIA	107	26.75
NORWAY	67	33.5
CROATIA	65	16.25
CZECH REPUBLIC	42	3.818
JAPAN	41	3.727
ITALY	39	5.571
NEW ZEALAND	38	12.667
TURKEY	38	7.6
INDIA	35	3.5
IRELAND	35	5.833

Source: authors' own creation.

Figure 19 shows the main collaborations between researchers in the field. Within this analysis, several groups of authors and networks were found, as follows:

- Green group -Kotsogiannis, Kessing and Konrad.
- Blue group - Wooton, Haufler and Ferrett.
- Red group– Hines, Desai and Dharmapala.
- Orange group -Azmar and Desbordes.
- Brown group -Becker, Fuest and Riedel.
- Pink group -Bellak and Leibrecht.
- Turquoise group - Bettendorf and De Mooij.

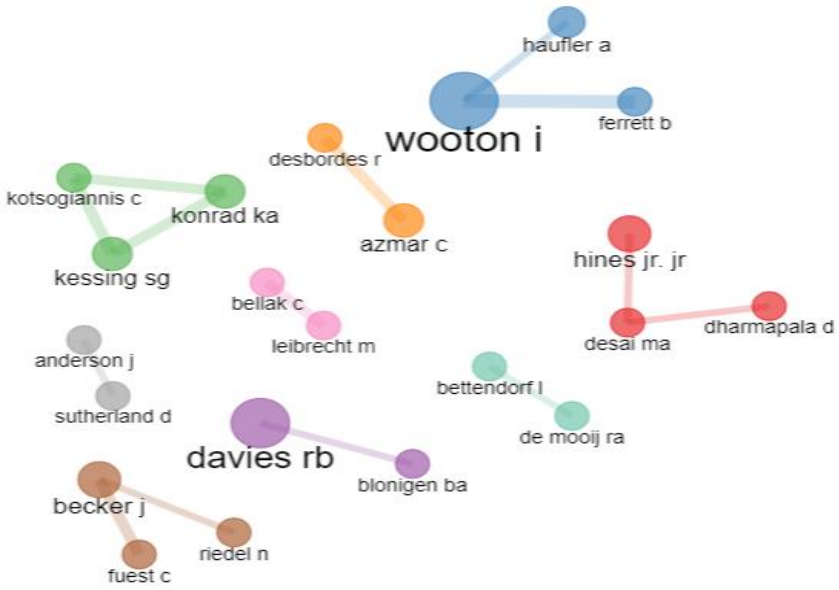


Figure 16. Authors collaboration network

Source: authors' own creation.



Figure 17. Institution collaboration network

Source: authors' own creation.

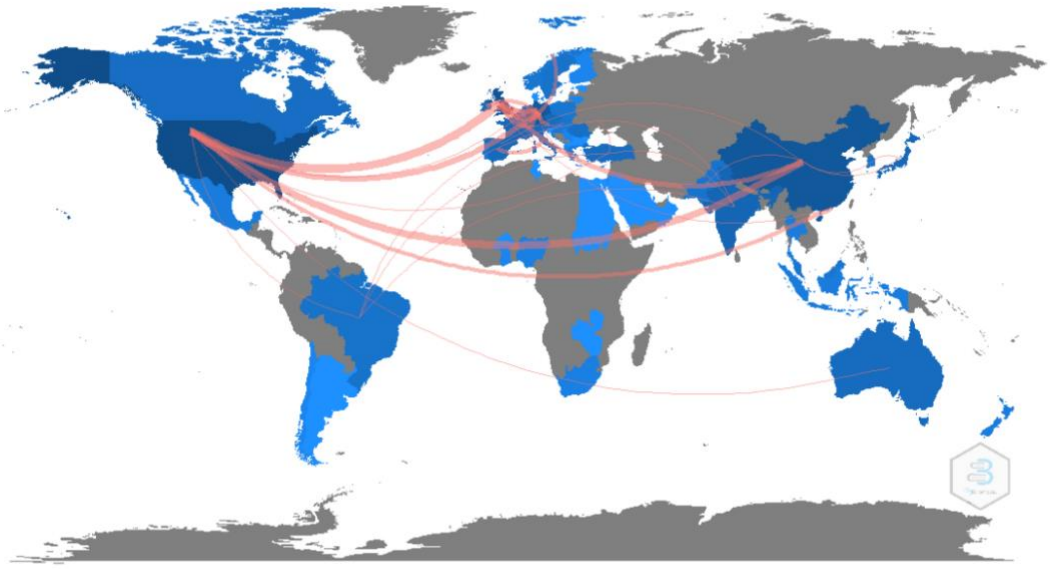


Figure 18. Countries collaboration network

Source: authors' own creation.

Conclusion

The empirical results of the bibliometric analysis have shown that: the concentration of research outputs in prominent journals such as International Tax and Public Finance, and the Journal of Public Economics reflects a strong academic interest in the interplay between taxation and economic factors like foreign direct investment (FDI) and public finance. The seminal works by De Mooij and Ederveen (2003), Hines (1996), and Haufler (1999) have set a foundation for understanding the relationship between tax policies and FDI, indicating that tax incentives are significant determinants of investment flows. The prominence of authors like Davies, Wooton, Hines, and their peers suggests a continuity of scholarship in key areas such as fiscal competition and investment, which is critical for ongoing policy discussions.

The keyword analysis revealing terms such as "tax competition," "income tax," and "host country" highlights recurring themes in the literature that are central to understanding the dynamics of taxation in a globalized economy. The conceptual mapping into distinct clusters elucidates the breadth of the field, encompassing the mechanics of taxation systems, corporate behaviors like evasion and profit shifting, and the unique challenges faced by developing countries.

The findings underscore the need for policymakers to consider the delicate balance between attracting FDI and maintaining a fair tax system. The influence of tax policies on investment decisions implies that governments must craft strategies that are competitive yet do not unduly compromise tax revenues. For EU member states, particularly new entrants with emerging economies, the research suggests a need for careful alignment of direct taxation with broader EU standards while accounting for domestic economic contexts.

The variation in focus and expertise among prolific authors and institutions could be utilized by policymakers to form specialized think tanks or advisory panels. These groups can assist in developing nuanced tax policies that cater to diverse economic landscapes,

balancing the need for FDI against the risks of tax competition that may lead to a "race to the bottom."

While this bibliometric analysis sheds light on the significant contours of direct taxation research, its limitations must be acknowledged. Principally, its reliance on specific, high-impact journals may overlook vital contributions from a broader spectrum of publications, potentially excluding innovative and emergent scholarship. Furthermore, the use of citation counts as a metric of influence fails to differentiate between the various contexts in which works are cited, such as for criticism or debate, rather than endorsement of the content. Additionally, the study's snapshot nature may not capture the rapid evolution of tax policy in response to global economic fluctuations or recent events, nor fully represent the diversity of perspectives, particularly from researchers in developing economies or non-Western institutions, thus narrowing the perceived scope of the field.

Future research should aim to address these limitations by expanding the scope of journals and disciplines examined, incorporating a qualitative assessment of citation context, and considering more recent data to capture the latest trends in tax policy and research.

Acknowledgments

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