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The Bibliometric Analysis of the Studies on Business Cycles

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Abstract

This study aimed to analyze researches conducted on business cycles in international literature in terms of bibliometric characteristics. The works, including articles, books, book chapters, etc., published in Web of Science, one significant bibliographic database of international literature, were examined in study. On 1 March 2021, 601 open-access publications from 4650 academic publications on Web of Science database were examined based on their "headings." Bibliometric analysis was carried out with "VOSviewer" software. As a result of study, it was determined that the United States was the most publishing country on business cycles concept, the most of studies were in English language, "Federal Reserve System" and "National Bureau of Economic Research" were the most-publishing institutions, CI Plosser and DR Osborn were the most-publishing authors. It was determined that most publications in field took place in journal of "Monetary Economics." Total keywords number of studies was 999. Business Cycle phrase was the most prevalent among keywords. Executing necessary intervention by determining leading indicators of business cycles causing fluctuations in economies, globalization's existence based on business cycle, and simultaneous high trade rate require a commercial synchronization. If synchronized economies have business cycles, they will make optimal decisions in all areas of macroeconomics.

Keywords: *business cycles, bibliometric analysis, real business cycles, web of science*

İş Çevrimleri İle İlgili Araştırmaların Bibliyometrik Analizi
Öz

Bu çalışmanın amacı, uluslararası yazında Web of science veri tabanında iş çevrimleri konusunu ele alan araştırmaları, bibliyometrik özellikleri açısından değerlendirmektir. 1 Mart 2021 tarihinde Web of science veritabanı üzerinde yapılan arama, "başlık" dikkate alınarak 4650 akademik yayından, açık erişimde olan 601 yayın incelenmiştir. Bibliyometrik analizi için "VOSviewer" yazılımından yararlanılmıştır. Çalışma sonucunda iş çevrimleri kavramı üzerine en çok yayın yapan ülkenin Amerika Birleşik Devletleri olduğu saptanmıştır. Araştırmaların büyük çoğunluğunun ingilizce dilinde yazıldığı saptanmıştır. En çok yayın yapan kurumlar "Federal Reserve System" ve "National Bureau of Economic Research"dır. En çok yayın yapan yazarlar "Plosser, C.I" ve "Osborn, D.R"dir. Alanda en fazla yayının "Journal of Monetary Economics"dergisi olduğu tespit edilmiştir. Çalışmaların anahtar kelimelerinin toplamı 999 terimden oluşmaktadır. Anahtar kelimeler içinde de ise en fazla "Businees Cycle" kelimesi yer almıştır. İş çevrimlerinin ekonomilerde dalgalanmalara sebep olan öncü göstergelerinin belirlenmesiyle ekonomiye gerekli müdahalenin yapılması, iş döngüsüne bağlı küreselleşmenin var olması ve yüksek oranda ticaretin eşzamanlı gerçekleşmesi senkronizasyonun varlığına bağlıdır. Senkronize olan ekonomiler iş çevrimlerine sahiplerse, makro ekonominin her alanında optimal karalar alabileceklerdir. Aksi durumda iç talepte istikrarsızlık yaratarak şoklara neden olacaktır.

Anahtar Kelimeler: *iş çevrimleri, bibliyometrik analiz, reel konjonktür, web of science*

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1. Introduction

The economic dimension of globalization is the most outstanding aspect of world trade in the development and growth process. On the other hand, the brutal competition caused by globalization creates macroeconomic instability and causes business cycles, in other words, cyclical fluctuations. Cyclical fluctuations are short-term fluctuations, and today they are defined with the term Business Cycle. Business cycles are based on the Real Business Cycles Theory (RBCT). Countries have the power to affect their economies with their current financial policies. However, they are often not successful in preventing and controlling the social, political, etc. based economic imbalances occurring in other countries' economies by using their international economic relations. Since economies exposed to external factors cannot provide a healthy foresight, repetitive business cycles emerge, especially by showing contraction-collapse-expansion-welfare series in the economy (Ağırkaya, 2020: 1-5). Business cycles have become a focal point due to their importance and increasing interest in them. In this framework, business cycles are significant for the political authority to take and implement the necessary measures in the stages of economic fluctuation against the possibility of economic recession. However, business cycles should also be examined in terms of determining the leading indicators of the economic shrinkage, and the expansion-contraction characteristics, other dimensions of the volatility. Globalization's existence depending on the business cycle, and the simultaneous realization of high-rate trade depends on synchronization. If economies have synchronized (congenial) business cycles, they will make optimal decisions in all areas of the economy (Ağırkaya, 2020: 170).

There are not any bibliometric studies examining business cycles in the literature. Therefore, the current research does not include any literature works that utilized bibliometric analysis. The primary purpose of the study is to determine the characteristics of the works focusing on the business cycle in the Web of Science database (WOS) in international literature and to reveal the research topics required to be examined. At the same time, it is aimed to contribute to the literature by compiling international-scale research on business cycles within the framework of the economics discipline. Thus, this study can guide investigations in the field by showing the existing deficiencies.

2. Business Cycle Theory

Business Cycles are self-repetitive processes with circular ups and downs of the welfare level in growing economies (Lucas, 1988: 3-42; Koyuncu, 2017: 70). Empirical suggestions defining periodical fluctuations, in other words, business cycles, are called "stylized facts" (Campbell & Mankiw, 1987: 1). Describing the business cycles, the Real Business Cycles Theory (RBCT) argues that external shocks

cause business cycles, and without them, the economy will be stagnant. RBCT theory includes rational expectations, the neutrality of money, propagation mechanism, and technology assumptions. In this theory, while the sources of propagation mechanisms are explained with the micro-foundations, also continuous co-movements of many variables are attributed to macro-foundations (Stadler, 1994: 1753). The theory argues that cyclical fluctuations are permanent in rational expectations, technology, and the persistence of supply shocks (Bayraktar & Karoğlu, 2016: 144). It explains the neutrality of money and the fact that the change in money supply does not affect real variables through the connection between the output level and the demand for transaction services. It attributes the changes in money demand to the change in money supply while attributing the increase in output to the rise in money demand and interest rate (Bayraktar ve Karaoğlu, 2016: 144). In theory, technological shocks cause fluctuations in two ways. First, during the recession, the marginal product of labor and the actual wage levels are low due to the insufficiency of existing production technology. This situation causes people to decrease their consumption and to have more leisure time, which causes fluctuations. In the second, individuals' desire and technological opportunities exist, but employment, output, and consumption have not developed. In this theory, the decline in welfare is due not to a decrease in technological capacity but a lack of commercial returns (Mankiw, 1989:82-83). In the technology assumption of the real business cycle theory, technological changes affect the production function as supply-side shocks and cause prices to change relatively. Thus, individuals change their labor supply and consumption decisions, causing fluctuations in total production and employment (Snowdon & Vane, 2012: 262). Since macroeconomic fluctuations occur after individuals make decisions, consistent decisions of individuals affect the economy (Stadler, 1994: 1750-1783). Against traditional business cycle theories, RBCT theory seeks optimal answers by using unexpected changes, technological shocks in factor production rather than explaining cyclical fluctuations through aggregate supply and aggregate demand factors. According to the real business cycle theory, the cause of fluctuations in the production function is external shocks. Economic actors determine the effects of consumption and investment on direct shocks on output. According to the theory, cyclical fluctuations also lead to employment fluctuations, as the marginal productivity of the labor force is affected (Alacahan, 2012: 12).

3.Method

The concept of bibliometry was first put forward in 1922 by E. Wyndham Hulme with the idea that the statistical bibliography used did not adequately define the national or general research field. Researcher Pritchard (1969), who first used the concept and application of bibliometry in his article "Statistical Bibliography or Bibliometrics," defined the application method as "the application of statistical and mathematical methods to books, articles, papers and other communication tools" (Pritchard, 1969). The study aimed to determine the researches on business cycles

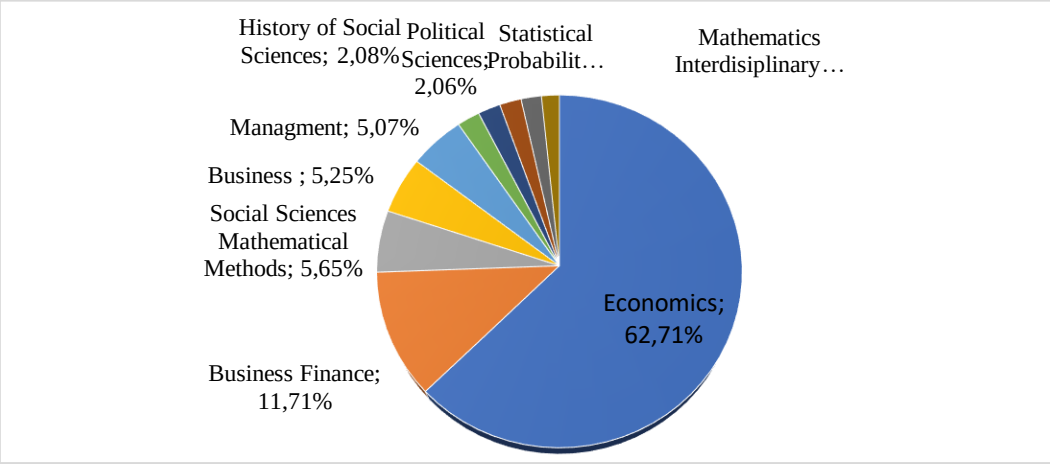
handled by field academics through bibliometric analysis. For this, the works (articles, papers, notes, book chapters, etc.) published between 1975-2021 in the Web of Science, the most comprehensive bibliographic database of international literature, were examined. The Web of Science database, developed by Thomson Reuters, is the first database to allow bibliometric studies with its multidisciplinary character and high availability of references (Sánchez et al., 2017: 8). In this context, to explore publications on business cycles, a search was carried out in the Web of Science database on 1 March 2021 according to "headings." As a result of the investigation, open-access works were found among 4233 academic publications. Authors, publication language, publication year, keywords, document type, institutions, languages, countries, citations, and sources were considered while evaluating the studies on business cycles. The tables regarding research areas, lands, authors, institutions, years, types of publication, languages, and sources were presented in the studies on business cycles. The "VOSviewer" software was used for constructing and visualizing keyword networks, cooperating countries, cooperating institutions, and co-author networks. VOSviewer is a mapping program designed for the visual presentation of bibliometric networks. The program is designed mainly to analyze bibliometric networks focusing on the formal representation of networks (Van Eck & Waltman, 2017: 8). The major limitation of the research is that the data is obtained through the Web of Science. Besides, studies on business cycles were conducted only on the headings of the studies, and other study subjects related to business cycles were not included.

4. Findings

First, the research findings were obtained from summary graphics and tables in the Web of Science database. For this purpose, the Web of Science database was searched according to "titles," and tables were created with the data obtained regarding research areas, countries, authors, institutions, years, publication types, languages, and sources. In addition, a table was created in terms of the author, publications, citations, and journals. The keyword network, collaborating countries, institutions, and co-author networks were obtained by VOSviewer software. The "VOSviewer" software was chosen as the principal program to visualize the findings obtained from the research analysis. Each ring in software-created images shows a filter generated by the researcher according to repetition number, also an element in the filter. These elements can be criteria such as country, institution, author, source, document, etc. The bigger the ring size, the higher the number or frequency of the elements in the image. The most recurrent item forms the grandest ring. Elements are clustered in groups according to their repetition number or frequencies and are shown with a single color. An item can only be in one cluster and cannot join another item's cluster. Lines between items show connections

(relationships). Thicker lines indicate a strong relationship, while thinner lines show a weaker linkage (Van Eck & Waltman, 2019: 13).

Figure 3: Distribution of Business Cycles by Study Areas



Source: Data was compiled from the web of science database (1.3.2021).
Note: All figures of the study were designed by the author

As seen in Figure 3, the distribution of publications related to business cycles by study areas as follows: Economics (3244), Business Finance (605), Social Sciences and Mathematical Methods (291), Business (271), Management (262), History of Social Sciences (107), Political Science (106), International Relations (102), Mathematics Interdisciplinary Applications (96) and Statistical Probability (84).

According to Table 1, the business cycle definition, first made by Arthur Cecil Pigou in 1927 and then by Robert E. Lucas et al. in 1982, has differed in the light of study findings carried out in the following period. Considering all definitions, business cycles can be defined as the broad-based fluctuation of all variables in the macroeconomic field because of the exposure to a series of sequential economic factors and uncertainties.

Table 1: Business Cycle Definitions

Author/s	Publication Year	Business Cycle Definitions
Pigou, Arthur Cecil	1927	The fluctuations in unemployment, employment, national income, and price levels.
Robert E. Lucas	1982	The persistent and external differences of productivity, and fluctuations experienced in the developing process.
Finn E. Kydland and Edward C. Prescott	1982	The fluctuation of GNP around the trend value, or trend deviations in different time series.
Finn E. Kydland and Edward C. Prescott	1982	The stochastic shocks based on the assumption of perfect competition.
Robert G.King. Charles I. Plosser, and Sergio T.Rebelo	1988	The economic fluctuations created by neoclassical factors.
Canova F.	1998	Deviations in the economic process.
Robert G. King Sergio T. Rebelo	2000	Macroeconomic fluctuations in the real sector.
Allan P. Layton and Smith D.	2000	Contraction, rapid growth, slowdown, and sustainable expansion.
Baxter M. and M.A. Koupa	2003	The fluctuations that characterize the regions of the country.
Artis M. Marcellino M. and Proietti T.	2004	A broad-based movement of economic variables in a sequential oscillating fashion.
Artis M. and Okubo T.	2010	Deviations from trends.
Artis M. and Okubo T.	2011	Fluctuations that cause cyclic deviations.
Petre C.	2012	External shocks creating uncertainty in rational expectations, technological choices, and policy rules.
Camacho M. and Leiva-Leon D.	2014	Fluctuations that create a range of different recessions at the macro level.
Beaudry P. Galizia D. Portier F.	2018	The post-explosion core of macroeconomic fluctuations that has no repetition

Source: Compiled from the Web of Science database (1.3.2021).
Note: All tables of the study were designed by the author.

Table 2 shows that the top three most cited studies between 1975 and 2021 are: "A New Approach To The Economic-Analysis of Nonstationary Time-Series and The Business-Cycle" published by Hamilton JD (1989) in Econometrica, 3613 citations; Hodrick, Rj Prescott, Ec (1997) work published in the Journal of Money Credit and Banking, 2285 citations; Smets, F Wouters, R (2007) study published in the journal American Economic Review, 1471 citations. When the studies are examined, it is noteworthy that the most cited journals are of USA origin.

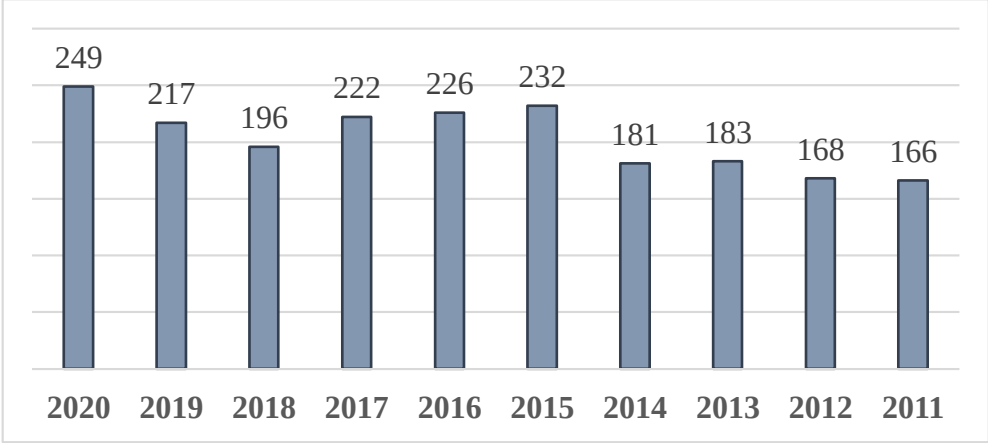
Table 2: Distribution of Studies by Author, Publication, Citation, and Journals

Item No	Publication name	Author (s)	Publication year	Number of Citation	Journal
1	*A New Approach to The Economic-Analysis of Nonstationary Time-Series and The Business-Cycle*	Hamilton J.D	1989	3613	*Econometrica*
2	*Postwar US Business Cycles: An Empirical Investigation*	Hodrick, Rj Prescott, Ec	1997	2285	*Journal of Money Credit and Banking*
3	*Shocks and Frictions in US Business Cycles: A Bayesian DSGE Approach*	Smets, F Wouters, R	2007	1471	*American Economic Review*
4	*Measuring Business Cycles: Approximate Band-Pass Filters for Economic Time Series*	Baxter, M King, Rg	1999	903	*Review of Economics and Statistics*
5	*Indivisible Labor and The Business-Cycle*	Hansen, Gd	1985	876	*Journal of Monetary Economics*
6	*A New Approach to Decomposition of Economic Time-Series into Permanent and Transitory Components with Particular Attention to Measurement of The Business-Cycle*	Beveridge, S Nelson, Cr	1981	809	*Journal of Monetary Economics*
7	*House prices, borrowing constraints, and monetary policy in the business cycle*	Iacoviello, M	2005	765	*American Economic Review*
8	*Monetary-Policy, Business Cycles, and The Behavior of Small Manufacturing Firms*	Gertler, M Gilchrist, S	1994	738	*Quarterly Journal Of Economics*
9	*Production, Growth, and Business Cycles .1. The Basic Neoclassical Model*	King, Rg Plosser, Ci Rebelo, St	1988	738	*Journal of Monetary Economics*
10	Investment, Capacity Utilization, And The Real Business-Cycle	Greenwood, J Hercowitz, Z Huffman, Gw	1988	699	*American Economic Review*

Source: Compiled from the Web of Science database (1.3.2021).

Figure 2 shows that most studies on business cycles were carried out in 2020 (249) and 2019 (217). It is seen that studies on business cycles gain importance, and the number of researches will rise.

Figure 2: Distribution of Studies on Business Cycles by Years



Source: Compiled from the Web of Science database and created by the author (1.3.2021).

Table 3 shows that the most publishing country about business cycles is the USA (1516). England (414), Germany (334), Canada and Italy (209), China (182), France (180), and Spain (176) are among other countries with the highest publication number. These countries with a considerable number of publications are among the powerful states that lead the world economy.

Table 3: Distribution of Studies on Business Cycles by Country

Countries	Number of Publications	Countries	Number of Publications
USA	1516	*Netherlands*	107
UK	414	*Switzerland*	84
Germany	334	*Czechia*	81
Canada	209	*South Korea*	79
Italy	209	*Poland*	63
China	182	*Sweden*	62
France	180	*Turkey*	62
Spain	176	*Austria*	60
Japan	143	*Taiwan*	59
Australia	138	*Belgium*	55

Source: Compiled from the Web of Science database (1.3.2021).

In Table 4, it is seen that the studies on business cycles are usually articles (3415), proceedings paper (500), and book reviews (235), according to the publication type. Among others, the least was correction additions (2).

Table 4:Distribution of Studies on Business Cycles by Publication Type

Publication Type	Number of Publication
Article	3415
Proceedings Paper	500
Book review	235
Chapter of a Book	204
Editorial material	142
Early access	42
Note	42
Review	19
Book	15
Letter	10
Meeting Abstract	10
Correction	6
New item	4
Correction Additions	2

Source: Compiled from the Web of Science database (1.3.2021).

As seen in Table 5, while the "Journal of Monetary Economics" ranks first with 139 academic publications, 104 academic studies on business cycles were published in the "Journal of Economics Dynamics Control." It was determined that there were other journals that publish studies on the business cycle in line with their current publication policies.

Table 5: Distribution of Studies on Business Cycles by Sources

Sources (Journals)	Numbers of Publications
Journal of Monetary Economics	139
Journal of Economics Dynamics Control	104
American Economics Review	82
Review of Economics Dynamics	80
Economics Modelling	75
Applied Economics	74
Economics Letters	73
Journal of Money Credit and Banking	68
Journal of Macroeconomic	63
Macroeconomic Dynamics	63

Source: Compiled from the Web of Science database (1.3.2021).

According to Table 6, Charles I. Plosser from Stanford University in California, USA, Denise R. Osborn from Manchester University in England, and Maximo Camacho, Professor of Economic Indicators and Economic Forecasts, from Murcia University in Spain, are pioneers by producing ten publications each. Apart from these authors, Professor Marianne Baxter from Boston University in the USA and M. Ayhan Köse from the World Bank are among the prominent academicians

producing nine publications each. In addition, it is among the findings that many academicians have presented 8, 7, and 6 studies in the field.

Table 6: Distribution of Studies on Business Cycles by Authors

Author(s)	Numbers of Publications
Charles I. Plosser	10
Osborn, DR	10
Camacho, Maximo	10
Baxter, M	9
Watson, MW	9
Coolen, TF	9
Köse, M, Ayhan	9
Dekimge, Marnik G.	9
Fidrmuc, Jarko	9
Ambler, S	9
Sensier, M	9
Cachanosky, Nicolas	9
King. RG	8
Beaudry, Paul	8
Layton, AP	8
Artis, Michael	8
Wu, Xiaoqin P.	8
Mukoyama, Toshihiko	7
Schefoldi Bertram	7
Prescolt, Ec	7
Stock, Jh	7
Jaimovich, Nir	7
Owyang, Michael.T	7
Narayan, Paresh Kumar	6
Caraiani, Petre	6
Pomenkova, Jitka	6
Lewin, Petr	6
Vasilev, Aleksandar	6
Palasca, Silvia	6
Alcouffe, Alain	6
İkeda, Eri	6

Source: Compiled from the Web of Science database (1.3.2021).

Table 7 shows that the USA National Bureau of Economic Research and the USA Central Bank Federal Reserve System have released the highest number of academic publications on business cycles with a total of 401 publications.

Table 7: Distribution of Studies on Business Cycles by Institutions

Institutions	Numbers of Publications
Federal Reserve System	237
National Bureau of Economic Research	164
University of California System	135
University of London	78
International Momentary Fund	58
Centre For Economic Policy Research UK	56
Centre National De La Recherche	43
Scientifque Cnrs	43
New York University	42
North Western University	41
University of Rochester	39
Harvard University	38

Source: Compiled from the Web of Science database (1.3.2021).

Table 8 shows that English is the most used language with 4086 publications, followed by German with 48 publications, and Czech and French with 20 publications. Fewer studies have been observed in other languages.

Table 8: Distribution of Studies on Business Cycles by Languages

Languages	Numbers of Publications
The English	4086
German	48
Czech	20
French	20
Spanish	16
Swedish	8
Slovak	7
Russian	6
Chinese	5
Turkish	4
Polish	3
Danish	2
Dutch	2
Finnish	2
Italian	2
Portuguese	2

Source: Compiled from the Web of Science database (1.3.2021).

Figure 3: The Most Searched Keywords Related to Studies on Business Cycles

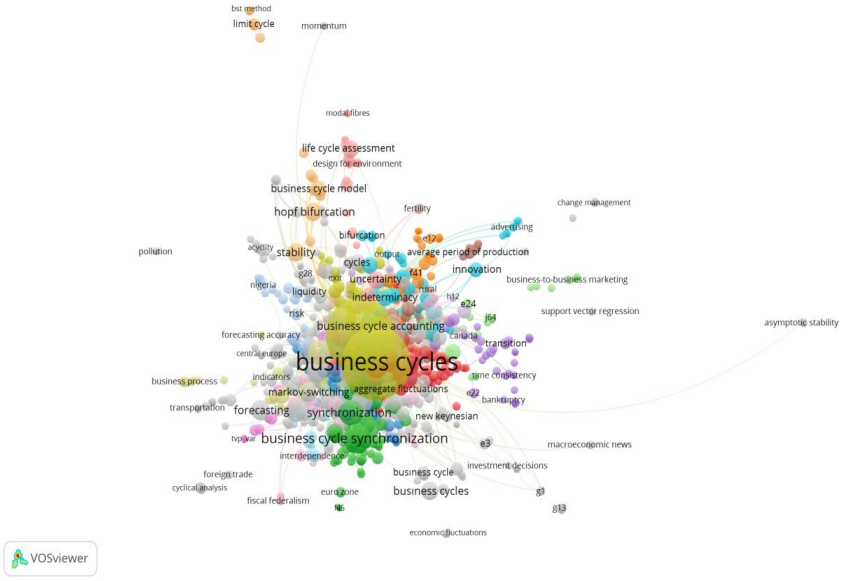


Figure 3, where the results are shown, includes 993 of 999 connections in total. The outstanding words are Business Cycle, Business Cycle synchronization, Markov-switching, indeterminacy, and forecasting.

Figure 4: The Countries Cooperating in the Studies on Business Cycles

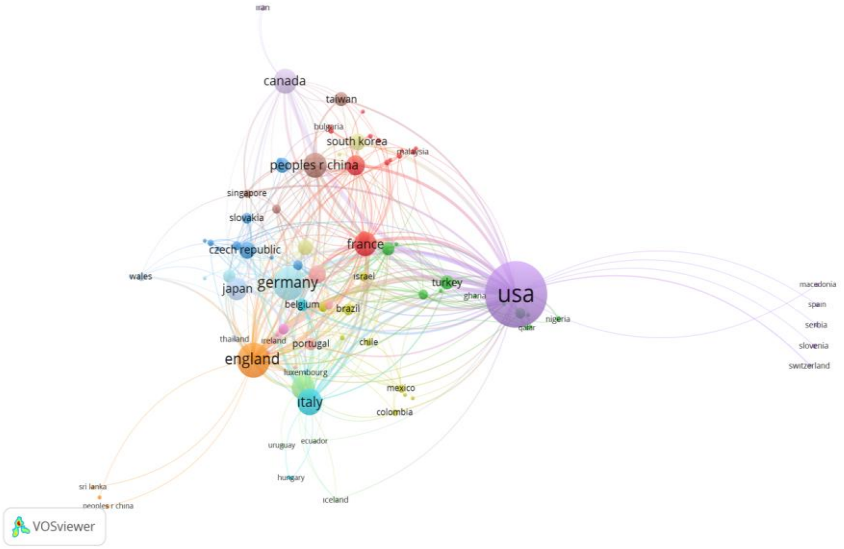
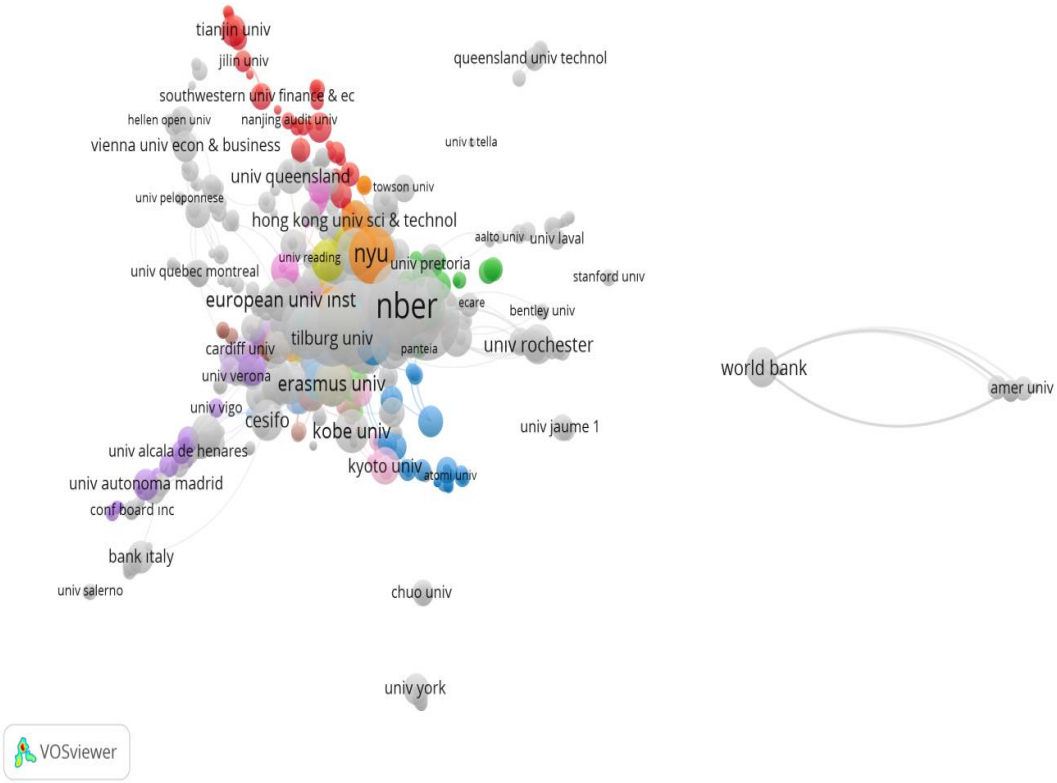


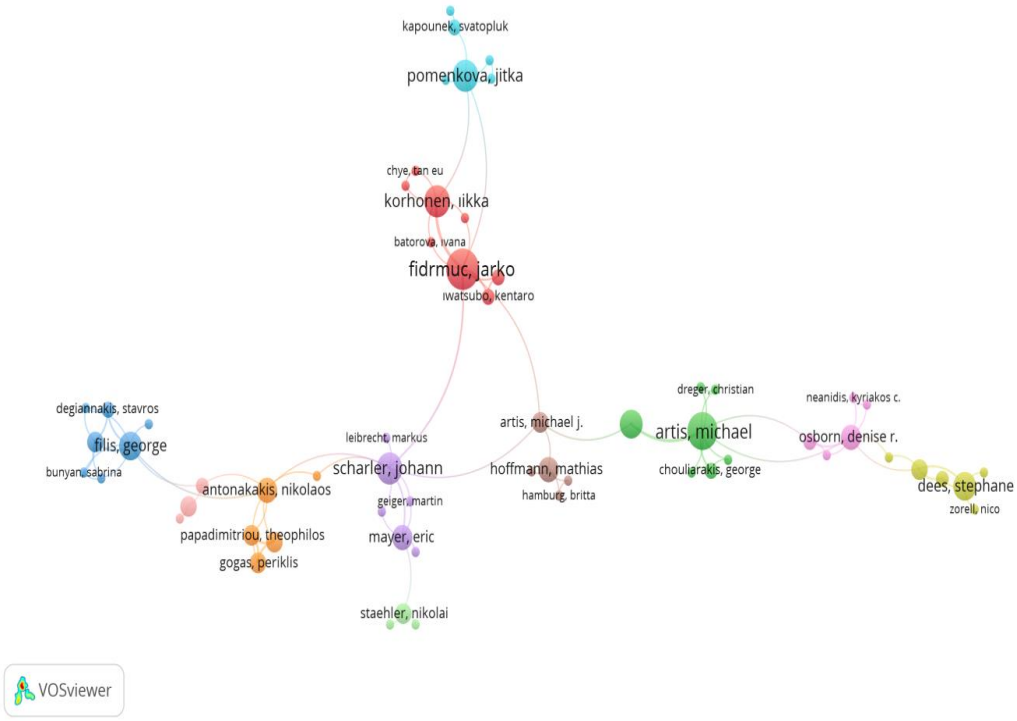
Figure 4 shows a total of 112 countries, 91 of which are in cooperation. Nine countries have no connection. In the studies on business cycles, the most collaborating countries are in different colors. The USA and Canada are shown in one group, Italy, Germany, Japan, Czechia in one group, and France and China in another group. The UK and Turkey are not included in any group. In this institution-based map, frequent cooperation within other country groups is not observed.

Figure 5: The Institutions Cooperating in the Studies on Business Cycles



And, Figure 5 exhibits 1295 institutions in collaboration on the business cycle, from a total of 2372 institutions. The most collaborative institutions are shown in different colors. The USA National Bureau of Economic Research, New York University, Hong Kong University of Science and Technology, European University Institute, and Netherlands-based Tilburg University are observed as the institutions presenting most studies on the map.

Figure 6: Co-Author Network for Studies on Business Cycles



Out of 6063 authors who have worked on this subject since 1975, 61 authors having connections and working with other co-authors are presented in Figure 6. While Michael J. Artis has eight articles, eight links, and two sets, Jarko Fidrmuc has nine papers, eight links, and one set. While Johann Scharler has six documents, 78 links, and five clusters, Denise Osborn has four studies, seven links, and nine clusters. Jitka Pomenkova has six articles, six connections, and six sets, and George Filis has five documents, eight correlations, and three collections.

4. Results

Bibliometric studies are significant in determining the current status of disciplines and providing researchers with comprehensive information on relevant or different methods. Through bibliometric studies, researchers get information about the development course of the related subject and can see its deficiencies. The current study aimed to determine the academic studies on business cycles by using bibliometric analysis. In the study, the VOSviewer software was utilized to evaluate the academic publications obtained from the Web of Science database on 1 March

2021. The findings from 601 open-access publications conducted on business cycles showed that most studies were in the Economics, Business Finance, Social Sciences & Mathematical Methods branches. Arthur Cecil Pigou made the first business cycle definition in 1927. Over time, many studies defined business cycles in different ways. Paul Beaudry, Dana Galizia, and Franck Portie made one of the last definitions on the matter in 2018. In light of the previous definitions in the literature, the current study has developed a new definition regarding the concept. The studies on the business cycle were examined considering their citation numbers, publication types, and journal names in which they were published. In terms of citation numbers, JD Hamilton's study of "New Approach to the Economic-Analysis of Nonstationary Time-Series, and the Business-Cycle," published in 1989 in the Econometrica journal, was seen to take first place with 3613 citations, RJ Hodrick and EC Prescott received 2285 citations for their work published in the Journal of Money Credit and Banking in 1997, F Smets and R Wouters received 1471 citations for their work published in the journal American Economic Review in 2007. These three studies have become the most cited studies among all. Besides, it was noteworthy that the most cited journals were of USA origin. For the business cycle studies by years, 2020 with 249 works and 2019 with 217 were the most productive years. This finding suggested that studies on this field gain importance and will gradually increase in the future. As country-based, it was detected that the USA, Germany, and Canada were the most publishing countries, respectively. It is noteworthy that these countries are forceful countries that lead the world economy. Referring to the publication type on the business cycles, while Articles, Proceedings Papers, and Book Reviews were at the highest number, Correction Addition studies were at the lowest number. As to the studies on business cycles according to the journals they were published, it was determined that the journals named "Journal of Monetary Economics" and "Journal of Economics Dynamics Control" were the most publishing journals in the field with 139 academic publications. Regarding the authors, it was determined that Stanford University academician Charles I. Plosser, University of Manchester academician Denise R. Osborn, and professor Maximo Camacho from Murcia University in Spain were the most productive authors in the field. From the perspective of the institutions, the US central bank "Federal Reserve System" and the USA National Bureau of Economic Research were the institutions with the highest number of academic publications. The most widely used languages in the studies were English, German, Czech, and French. The most used keywords were "Business Cycle," "Business Cycle Synchronization," "Markov-Switching," "Indeterminacy and Forecasting." These keywords had been used in 993 studies according to the visual data introduced by VOSviewer software. Another finding obtained from the VOSviewer software was that regarding the country-cooperation in business cycles, 91 out of 112 countries cooperated, but nine countries had no connection. The most collaborating countries are shown in different colors in the figure where the United States of America and Canada are in a group, Italy, Germany, Japan, the Czech Republic are in a group, France and China are in a group. The findings also showed that The UK

and Turkey had no connection for the studies on the business cycle, and cooperation between other country groups was not very frequent. In institutional collaboration, 1295 out of 2372 institutions were determined to collaborate. Among these, the National Bureau of Economic Research, New York University, Hong Kong University of Science and Technology were the most cooperative top-three institutions. Within the co-author network, Michael J. Artis, Jarko Fidrmuc, Johann Scharler, Denise R. Osborn, and George Filis, etc., were the most cooperated authors.

Regular repetition of the bibliometric analysis results and this method's application over different databases will contribute to the current follow-up and development of business cycles. On the other hand, developing this study and examining the business cycle studies published in different fields will contribute to the inter-disciplinary difference observations. This study is significant because it is the first study in the bibliometric analysis of business cycles in the international literature. We desire it will guide the researchers and will be supported by more studies. Although there are many studies on business cycles using different analysis techniques, we wish this work will be a pioneer since there is no study in which "bibliometric" analysis of business cycles has been performed. It is suggested that countries should collaborate more on business cycles, expand the study fields and increase the studies on "New Item" and "Correction Addition" items.

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