

A Bibliometric Analysis of the Literature on Optimum Currency Areas and Monetary Integration

Ntombiyesibini Matonana
Nelson Mandela University, South Africa
s215336348@mandela.ac.za

Andrew Phiri
Nelson Mandela University, South Africa
phiricandrew@gmail.com

Our study presents a pioneering bibliometric analysis of optimum currency areas literature and monetary integration, utilising 9,228 research outputs published between 1960 and 2022. We employ the biblioshiny function in R-studio to comprehensively analyse this data. Our findings reveal a growing body of literature on optimum currency areas, with increased author productivity. Remarkably, influential authors, despite their lower research volume, receive extensive citations and publish in prestigious journals such as *The Quarterly Journal of Economics* and *The American Economic Review*. Additionally, our analysis exposes a lack of representation from non-European/American institutions, as well as an underrepresentation of female and non-White researchers. We propose future research directions to address these gaps. Notably, our study is the first to conduct a bibliometric analysis on optimum currency areas and monetary integration, highlighting its originality.

Keywords: optimum currency areas, monetary integration, bibliometric analysis, biblioshiny package

JEL Classification: F31, F45, G15

Received 2023/10/22 · Revised 2022/02/21 · Accepted 2024/03/09

Published online 2024/12/30 © Authors



<https://doi.org/10.26493/1854-6935.22.349-371>

Introduction

Monetary unions are considered the ultimate form of regional integration for a group of neighbouring countries with strong cultural, geopolitical and trade ties. This, in many cases, was a result of cooperation, revolution, and violent force as in the case of monetary boards during colonial times in Africa (Perker Willis 1901; Sylla 2021). Although there has been increased attention on monetary unions in the modern era,

history shows that both scholarship and debates on unions are of historic record, although the area was less specialised as it rested within the broader political economy debates. In the twentieth century, several unions faced dissolution whilst others arose, particularly post-World War II era, when several states which were previously under colonial rule achieved their independence. The debate in this era mostly emerged because of the discourse over the relative merits of fixed versus flexible exchange rates and evolved to include the conditions under which nations should peg their exchange rate regimes and follow a common monetary policy, and the costs and benefits of partaking in such an arrangement (Friedman 1953; Meade 1957).

Robert Mundell's (1961) renowned contribution gave birth to the term 'optimum currency area', introducing a theory that identifies the criterion by which countries can optimise efficiency whilst benefiting from an internal and external balance within a monetary union. This further enticed scholarship on the question of currency areas, with prominent papers by McKinnon (1963), Kenen (1969), Giavazzi and Pagano (1988), Tavlas (1993), Broz (2005), Kunroo, Sofi, and Azad (2016) and many more. Since its inception, the framework of optimum currency areas (OCA) has been utilised to evaluate the costs and benefits of relinquishing monetary autonomy for participation in a currency union and extensively examined and debated within the literature of economics and finance. Notably, the OCA has been applied to various regional common currency arrangements such as the Eurozone, East Caribbean Currency Union, CFA Franc Zone, and SACU Common Monetary area and is currently being considered for adoption by other blocs such as the Cooperation Council for the Arab States of the Gulf (GCC), the Bolivarian Alliance for the Americas (ALBA) and the African Economic Community (AEC).

Over the past six decades, a considerable body of literature has emerged examining the qualifications necessary for countries to share a common currency. Whilst some of these studies have reviewed developments in the OCA literature (Ishiyama 1975; Lafrance and St-Amant 1999; Kunroo 2015; Asongu, Nwachukwu, and Tchamyou 2017), no previous studies have performed formal bibliometric analysis on the subject. This is surprising since bibliometric analysis is a more robust method of probing into the intellectual structure of a topic compared to traditional methods of reviewing the literature (Donthu et al. 2021). By relying on quantitative techniques, bibliometric analysis not only documents the trends

and progress in research performance on a particular subject, but also highlights potential biases in publication records among researchers of different races, genders, and institutions (Dehdarirad, Villarroya, and Barrios 2015; Deem, Case, and Nokkala 2022). Moreover, bibliometric studies have been found to encourage international collaborative research efforts, which has implications for knowledge spillover effects (Bernal, Carree, and Lokshin 2022; Nie et al. 2022).

This study contributes to the existing literature by conducting a bibliometric analysis of scientific research on OCA and monetary integration. We provide a comprehensive overview of research produced by the academic community on these themes to trace the development of the research area over time. Our analysis aims to provide insights into the current research landscape on the topic. Specifically, we seek to identify the leading authors, their contributions to the literature, the most frequently cited papers, the keywords used in the publications, the temporal distribution of research output, the leading journals publishing on this topic, and the dominant institutions in terms of research activity. The findings of this study are used to discern lacunae in the existing literature and thereby pave the way for the formulation of future research agendas on the topic.

The rest of our study is organised as follows. The next section describes the bibliometric methods. The third section presents the search results and the data overview. The fourth section presents our results and we conclude the study in the fifth section.

Methodology

Bibliometric analysis is a research method that employs bibliographic data to evaluate research performance and provide insights beyond those obtained from traditional literature review methods. This approach involves analysing large volumes of scientific metadata to identify emerging areas and trends in a given research field. By analysing bibliographic data, bibliometric analysis offers a means of identifying, analysing, and organising key elements of research topics, thereby revealing patterns within the subject area.

The process of bibliometric analysis entails mining textual data from past publications to identify potential correlations and connections between publications, resulting in a deeper understanding of the structure and dynamics of research fields (Pritchard 1969; Wittig 1978). By examining the relative impact of different publications, authors, and institu-

tions within a field of study, this method facilitates the identification of research gaps and areas for future exploration.

To analyse textual data, we use the biblioshiny function of the bibliometrix package in R-studio software, which provides a robust platform for conducting bibliometric analysis and is increasingly becoming a standard tool in the field of scientometrics (Aria and Cuccurullo 2017).

Search Results and Data Overview

In order to conduct a thorough bibliometric analysis, a broad range of bibliometric techniques and extensive data from 1960 to 2022 were utilised. The bibliographic search was narrowed to include titles, keywords, and abstracts of publications related to optimum currency areas, using both Scopus and Web of Science (WoS). The research outputs that were retrieved were constrained to selected fields of study, such as economics, econometrics, business, international relations, business finance, and social science, in order to exclude irrelevant literature while still capturing papers with relevant keywords. As Scopus and WoS have different data formats, the bibliometric dataset was first processed through R Studio software to eliminate duplicate documents from the two databases. The data obtained from the two databases were then transformed into bibliometric data through the software, merged, standardised, and cleaned to identify duplicate documents, leaving 9,228 documents using 3,335 keywords plus and 11,250 author keywords.

Table 1 displays the primary information regarding the collection of data used for bibliometric analysis from the years 1960 to 2022. Of the total 9,228 documents utilised, 7,086 comprise articles, 970 are book chapters, 381 are reviews, 273 are books, 178 are conference papers and the remaining 341 comprise other document types. Based on the results presented in table 1, it is evident that journal articles are the most frequently cited documents, accounting for 76.8% of the total corpus. On the other hand, the least cited documents include retracted and corrected submissions, art exhibit reviews, and news items which together constitute less than one percent of the total corpus. These findings highlight the reliability and validity of the analysis since the majority of references used come from documents published in scientific journals. Before 1960, the average annual growth rate was 2.42%, which increased to 9.78% after 1960, indicating a surge in publications. The average age of the documents provides insights into the temporal distribution of schol-

TABLE 1 Main information about the dataset

Category	Description	Results
General	Timespan	1960–2022
	Sources (Journals, Books, etc.)	2,288
	Documents	9,228
	Annual Growth Rate %	9.78
	Document Average Age	13.4
	Average citations per doc.	11.37
	References	313,063
Document contents	Keywords Plus (ID)	3,335
	Author Keywords (DE)	11,250
Authors	Authors	10,418
	Authors of single-authored docs	3,226
AUTHOR COLLABORATION		
Author collaboration	Single-authored docs	4,606
	Co-Authors per doc.	1.77
	International co-authorships %	1.05
Document types	Article	7,086
	Article; proceedings paper	50
	Book	273
	Book chapter	970
	Book review	148
	Conference paper	178
	Correction	3
	Editorial	42
	Editorial material	37
	Erratum	2
	Meeting abstract	4
	News item	3
	Note	40
	Review	380
	Short survey	7

NOTE Biblioshiny based on wos and Scopus dataset

arly works. The average age of 13.4 indicates that the dataset contains relatively recent documents.

Furthermore, a more in-depth examination of the data reveals that the majority of the publications are authored by a single researcher, and international co-authorship is extremely low, accounting for only 1.05% of the total corpus, indicating that the topic is mostly studied within national boundaries. The dataset has a high proportion of single-authored documents of 49.91%. Despite the existence of 10,419 authors who have written on this topic, the results confirm the assumption that the im-

pact of international collaboration is dependent, in part, on the leading country or institution in the collaboration. Moed (2005) notes that when a high research output and high citation country collaborates with a low research output and low citation country and the former provides the primary author or leading research group, 67% of collaboration pairs produced bi-lateral international collaboration (BIC) papers with an average citation impact above the mean citation impact of NIC papers. However, this percentage drops to 43% when a low-impact country leads.

Empirical Analysis by Output Publications

ANNUAL SCIENTIFIC PRODUCTION

Figure 1 presents the annual publication growth during the analysed period and indicates an increase in research activity from the late 1970s. This was the period when the debate on the advantages and disadvantages of exchange rate pegs leading to currency unions began, giving rise to the theoretical foundations of the optimum currency areas (OCA) theory. According to Crane (1970), the introduction of a new paradigm into literature initially lacks social organisation until it becomes widely adopted, knowledge on the topic progresses, new collaborators emerge, and eventually, anomalies arise. Our analysis provides evidence of this phenomenon, as we observed a marked increase in publications until the early 1990s when the European Economic and Monetary Union (EMU) gained momentum, leading up to its establishment in 1999. This trend was observed again in the late 2010s due to the sovereign debt crisis in the Eurozone. Some papers analysed the establishment process of the EMU, while others assessed the benefits and constraints of the currency union on individual member states. Additionally, a growing number of papers questioned the OCA theory's underpinnings and the EMU's efficiency, focusing on Greece's economic issues. This foreshadowed a period of several adjustments which lessened the severity of the crisis in 2018. This explains the decline in research output on this topic from 2018 onwards, as this is the period when the crisis stabilised.

TOP PRODUCTIVE COUNTRIES AND INSTITUTIONS

Figure 2 illustrates the geographical distribution of countries that have contributed to the research on OCA. The majority of scholarly output is concentrated in North America and Europe, whereas Africa has the

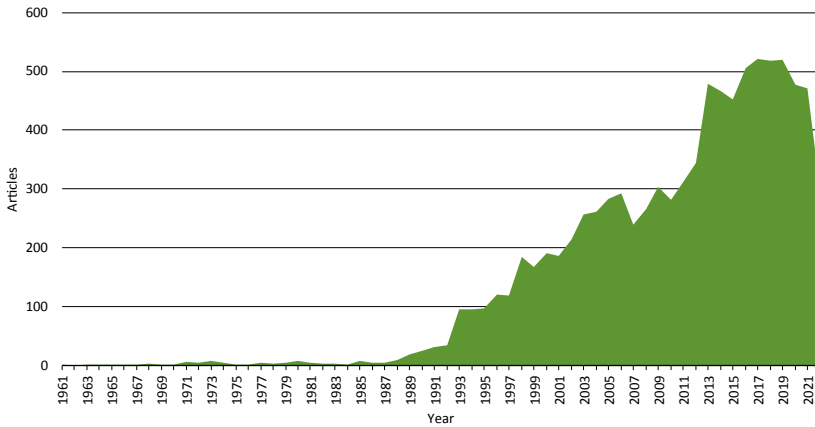


FIGURE 1 Annual Scientific Publication (created with Biblioshiny, based on WOS and Scopus Dataset)

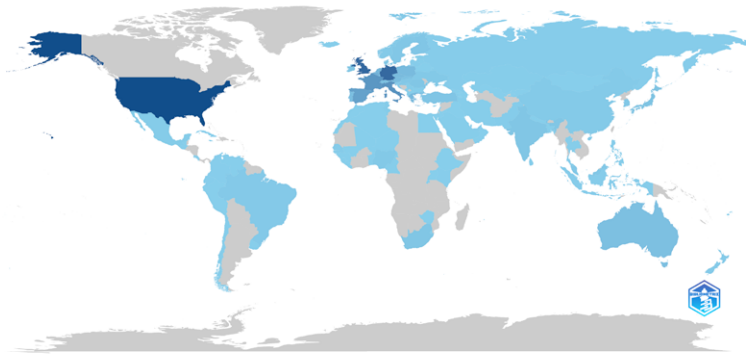


FIGURE 2 Country-Specific Production (created with Biblioshiny, based on WOS and Scopus Dataset)

lowest number of scholarly contributions.

Figure 3 provides a summary of the top 14 countries with the highest number of research papers. As observed, European and North American countries dominate the top spots. However, the ratio of single-country publications to multi-country publications indicates that cross-country collaborative efforts among researchers are infrequent.

Additionally, table 2 presents the research output of the top 15 institutions. Notably, American (University of California, Harvard University, Indiana University) and British (University of Cambridge, University of London, University of Oxford) institutions occupy top positions in the list, including prestigious institutions such as the University

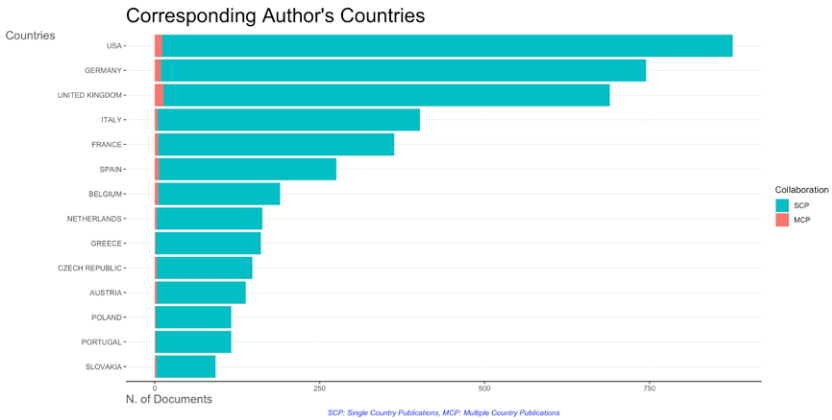


FIGURE 3 Top 14 Productive Countries (created with Biblioshiny, based on WOS and Scopus Dataset)

of Oxford, Harvard University, and the University of Cambridge, which are ranked in the top 3 institutions according to the Times Higher Education rankings (https://www.timeshighereducation.com/world-university-rankings/2023/world-ranking#!/page/0/length/100/sort_by/rank/sort_order/asc/cols/stats). Overall, these findings indicate that advanced economies and institutions are the primary contributors to research on OCA, highlighting the substantial production gap between industrialised and developing nations.

TABLE 2 Most Relevant Affiliations

Affiliations	Country	No. of Articles
University of California	USA	104
European University Institute	Italy	63
Research Institute	USA	59
University of Cambridge	UK	58
Harvard University	USA	53
University of London	UK	48
University of Amsterdam	Netherlands	47
Indiana University	USA	46
Tilburg University	Netherlands	42
Athens University of Economics and Business	Greece	41
University of Oxford	UK	40
University of Bonn	Germany	39
University of Duisburg-Essen	Germany	39

NOTE Author's own compilation from biblioshiny analysis

TOP PRODUCTIVE AUTHORS

In table 3, we present a summary of the most prolific authors who have researched OCA and monetary integration. Our analysis reveals that the majority of authors on the list are European males affiliated with either European or North American institutions. Notably, Amy Verdun is the sole female representative on the list.

Figure 4 depicts the productivity of the top authors over time, indicating a minimal number of publications before 1990. The blue dots

TABLE 3 Top Productive Authors (created with Biblioshiny, based on WOS and Scopus Dataset)

Author/ Nationality	Institution	Ethnicity and gender	No. of documents
Paul De Grauwe/ Belgian	London School of Economics (UK)	WM	44
Ansgar Belke †/ German	University of Duisburg-Essen (Germany)	WM	40
Barry Eichengreen/ American	University of California (US)	WM	40
Daniel Gros/ German	University of Chicago (US)	WM	31
Amy Verdun/ Dutch	University of Victoria (Canada)	WF	30
Luis Gil-Alana/ Spanish	University of Navarra (Spain)	WM	28
Bas van Aarle/ Dutch	University of Leuven (Belgium)	WM	26
Guglielmo Caporale/ Italian	Brunel University (UK)	WM	24
Andrew Hallett †/ British	George Mason University (US)	WM	23
Carsten Hefeker/ German	University of Siegen (Germany)	WM	23
Paul Masson/ Canadian	University of Toronto (Canada)	WM	22
Simon Sosvilla-Rivero/ Spanish	Complutense University of Madrid (Spain)	WM	22
Jürgen von Hagen/ German	University of Bonn (Germany)	WM	22
Philip Arestis/ Cypriot	University of Cambridge (UK)	WM	21
Tamim Bayoumi/ American	Peterson Institute for International Economics (US)	WM	21

NOTE Author's own compilation. '†' indicates that the author is deceased. WM – White Male, WF – White Female.

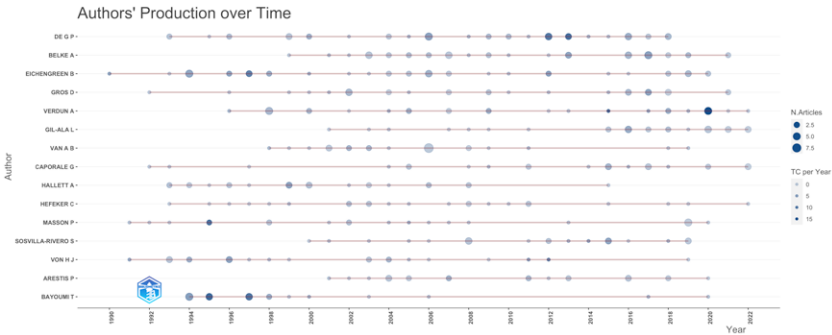


FIGURE 4 Authors' Production over Time (created with Biblioshiny, based on WOS and Scopus Dataset)

represent the number of documents published by these authors. The bigger the circle, the more articles published by the author in that year; the darker the intensity of the dot, the more citations an author has received in that respective year. Robert Mundell's 1961 single publication is the most cited, with an average citation of 181.42 for 1961, Amy Verdun is second with an average of 15.2 citations for 2020 and 11.9 for 2015, Paul De Grauwe has 11.5 citations for 2013 and 10.5 for 2012, and David Howarth has 10.5 citations for 2013 and 10.2 for 2020. Overall, we observe an improvement in research productivity among the top authors over time. A further exploration into authors' publications in relation to citation is provided in table 3. Nevertheless, our findings also highlight a severe underrepresentation of female authors, researchers of different ethnicities, and those affiliated with non-European institutions. These disparities suggest that there is still much work to be done to promote diversity and inclusivity in academic research.

TOP PRODUCTIVE JOURNALS

Figure 5 illustrates the top productive journals that have published research outputs on OCA and monetary unions. Notably, only two of the top 15 publishing outlets for research on the subject, namely the *Journal of International Economics* and the *European Economic Review*, are listed among the top 100 ranked economic journals listed under IDEAS/RePEC aggregated rankings of economic-related journals (<https://ideas.repec.org/top/top.journals.all.html>), as well as in the extended rankings of economic journals, presented in *Mixon and Upadhyaya (2022)*. This indicates that the majority of the top journals that publish research on OCA and monetary unions are not among the most widely recognised economic journals.

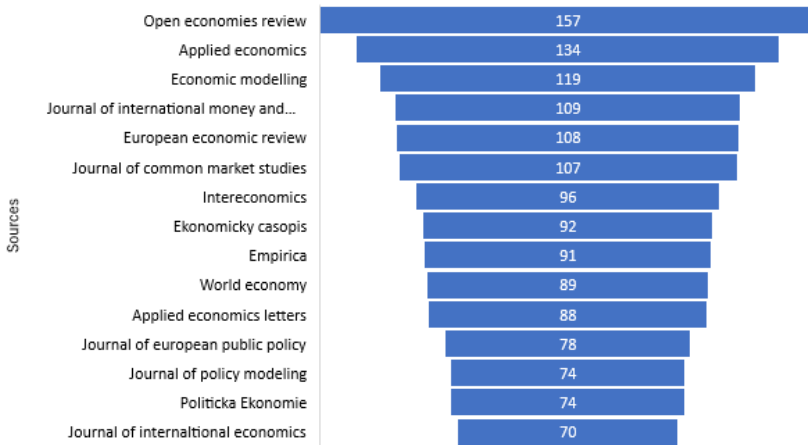


FIGURE 5 Most Productive Sources (created with Biblioshiny, based on WOS and Scopus Dataset)

However, it is interesting to note that most of these journals, such as the *Journal of International Economics*, *Journal of Policy Modeling*, *Journal of European Public Policy*, *World Economy*, *European Economic Review*, *Journal of International Money and Finance*, *Economic Modelling* and *Applied Economics* are listed as A-ranked according to the Australian Business Dean Council (ABDC) ranking list of journals (<https://abdc.edu.au/abdc-journal-quality-list/>). In contrast, only a few journals on this list are either C-ranked journals, such as *Intereconomics* and *Empirica* or do not feature on the ABDC ranking list, such as the *Journal of International Economics* and *Ekonomicky časopis*.

Therefore, this suggests that while the top journals publishing research on OCA and monetary unions may not be among the most prestigious economic journals, they are highly regarded within their own field, as demonstrated by their A-ranked status according to the ABDC ranking list of journals.

TOP CITED ARTICLES

Citations are a widely accepted measure of academic achievement, defined as ‘...discrete units of publication acknowledgement...’ (Cranford 2020). In this regard, citations imply a greater influence of research compared to the number of outputs produced.

Table 4 identifies the top 15 publications with the highest number of citations on the topic. Interestingly, only three of the most productive

TABLE 4 Top cited articles

Author(s)	Year	Article name	Journal name	No. of citations
Robert Mundell	1961	A theory of Optimum Currency Areas	<i>The American Economic Review</i>	11,002
Ronald McKinnon	1963	Optimum currency areas	<i>The American Economic Review</i>	5,266
Jeffrey Frankel and Andrew Rose	1998	The endogeneity of the optimum currency criteria	<i>The Economic Journal</i>	4,942
Andrew Rose, Ben Lockwood and Danny Quah	2000	One money, one market: The effect of common currencies on trade	<i>Economic Policy</i>	3,686
Tamim Bayoumi and Barry Eichengreen	1992	Shocking aspects of the European Monetary Unification	<i>NBER Working Paper Series</i>	2,152
Jeffrey Frankel and Andrew Rose	2002	An estimate of the effect of common currencies on trade and income	<i>The Quarterly Journal of Economics</i>	1,873
Francesco Giavazzi and Marco Pagano	1988	The advantage of tying one's hands: EMS discipline and central bank credibility	<i>European Economic Review</i>	1,311
Jeffrey Frankel and Katharine Rockett	1988	International macroeconomic policy coordination when policymakers do not agree on the true model	<i>The American Economic Review</i>	1,290
Maurice Obstfeld and Alan Taylor	2002	Globalization and capital markets	<i>NBER Working Paper Series</i>	915
Alberto Alesina and Robert Barro	2002	Currency Unions	<i>The Quarterly Journal of Economics</i>	914
George Tavlas	1993	The 'New' Theory of Optimum Currency Areas	<i>The World Economy</i>	882
Barry Eichengreen	1991	Is Europe an optimum currency area?	<i>NBER Working Paper Series</i>	881
Tamim Bayoumi and Barry Eichengreen	1997	Even closer to heaven? An optimum-currency-area index for European countries	<i>European Economic Review</i>	866
Andrew Rose and Charles Engel	2002	Currency Unions and international integration	<i>Journal of Money, Credit and Banking</i>	757
Francesco Paolo Mongelli	2002	"New views" on the optimum currency area theory: What is EMU telling us?	<i>ECB Working Paper Series</i>	667
Yoshihide Ishiyama	1975	The theory of optimum currency areas: A survey	<i>IMF Staff Papers</i>	661
Paul Krugman	2012	Revenge of the Optimum Currency Area	<i>NBER Macroeconomics Annual 2012</i>	434

NOTE Author's own compilation

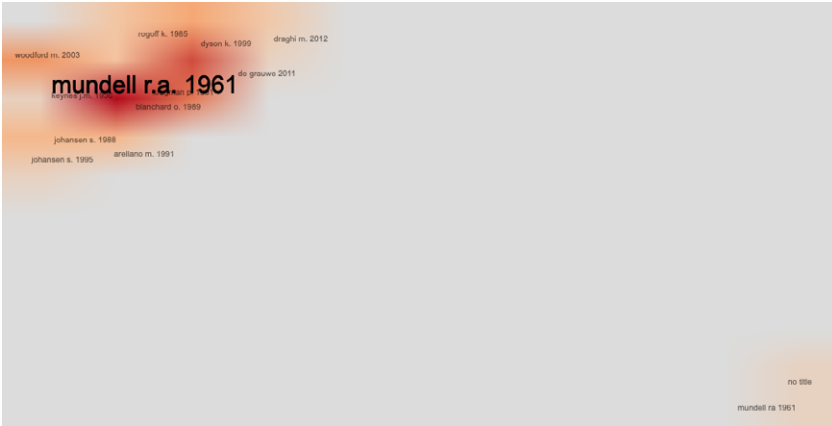


FIGURE 6 Co-Citation Network (created with Biblioshiny, based on WOS and Scopus Dataset)

authors listed in table 2 (Paul De Grauwe, Barry Eichengreen, and Ansgar Belke) have contributed to the most influential articles listed in table 3. This implies that an author's influence is not necessarily related to the number of articles they publish, and the two are often mutually exclusive. However, the demographic makeup of the top influential authors is similar to that of the most productive authors, with a majority being White males from European and North American institutions, resulting in an underrepresentation of women and non-White researchers from other regions. Figure 6 presents the co-citation network, and the intensity of the density shows the strength of the citation of the specific author.

It is worth noting that the top cited articles have been published in high-impact outlets such as *The Quarterly Journal of Economics*, *The American Economic Review*, and *NBER Working Paper Series*, which are ranked among the top 5 economic journals and working papers (Mixon and Upadhyaya 2022). Furthermore, most of these studies offer new 'perspectives' or 'theories' on the debate about OCA theory, supported by empirical evidence. However, these influential papers primarily focus on currency unions in relation to the Euro area, with little attention given to other monetary unions around the world.

KEYWORD ANALYSIS

Selecting appropriate keywords is crucial for researchers to gain readership and citations for their published works, as it enhances the visibility of their research (Nagpal and Petersen 2021). Figure 7a depicts the top 30

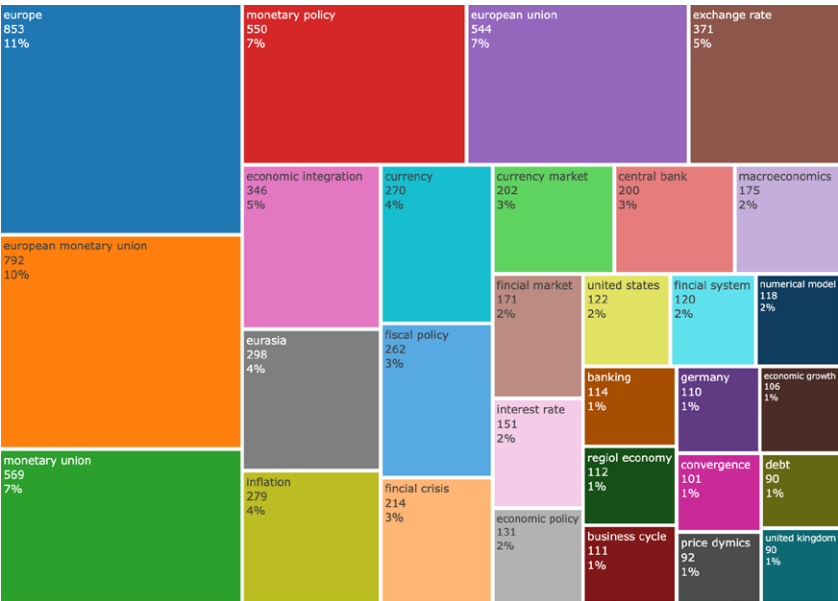


FIGURE 7A Word TreeMap

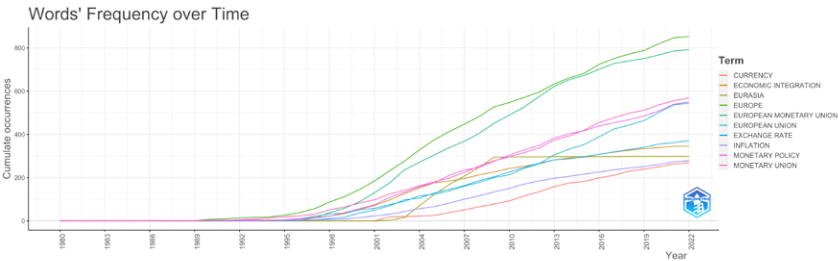


FIGURE 7B Word Frequency over Time (created with Biblioshiny, based on WOS and Scopus Dataset)

keywords used by authors. The size of each block represents the frequency of use of the respective keyword with European monetary union, Europe, monetary union, European union, monetary policy, and economic integration being the most frequently used keywords, as indicated by their larger size and percentages. Figure 7b shows the frequency of use of these words over time from 1980.

Figure 8 presents the three-field plot (i.e. Sankey plot) of the co-relationship between the top keywords, top productive authors and top cited literature. Note that within each of the three elements of the diagram (keywords, authors and cited references), each entity (node) is represent-

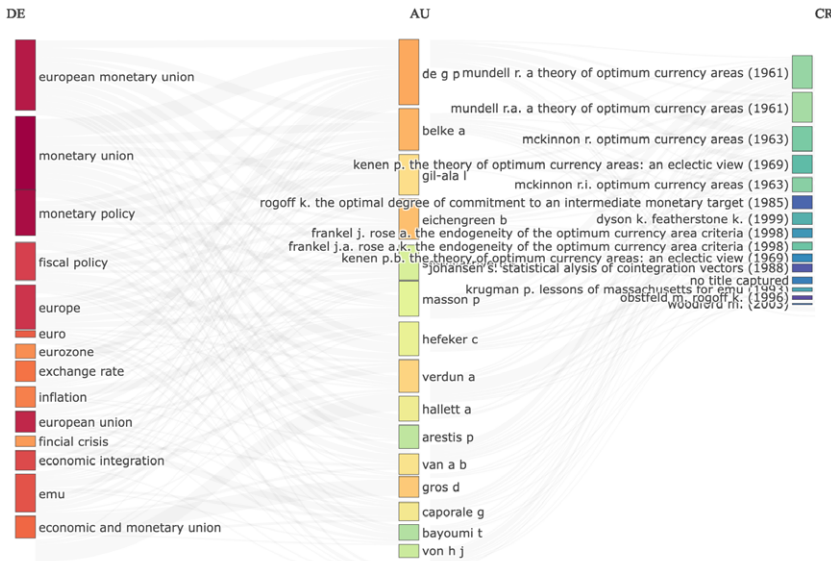


FIGURE 8 Author's Keywords (DE = keywords, AU = authors, CR = references; created with Biblioshiny, based on WOS and Scopus Dataset)

ed by a 'box' and the height of the box measures the strength of influence of the entity against other entities under the same element (i.e. longer (shorter) boxes indicate stronger (weaker) influence) whilst the colour of the boxes measures the influence of an entity against other entities found in different elements (i.e. darker (lighter) shades of colour indicate stronger (weaker) levels of influence). Under the 'keyword element', monetary union and EMU are the most popular keywords used by the most productive authors. Under the 'author' element, Paul De Grauwe, Luis Gil-Alana, Ansgar Belke and Barry Eichengreen are the most influential authors whose research has the strongest influence on the popularity of keywords used in the literature, whilst the pioneering papers by Mundell (1961), McKinnon (1963) and Kenen (1969) are the most influential citations used the most by researchers.

CONCEPTUAL STRUCTURE AND CLUSTERING

A clustering analysis performs a coupling network analysis. Mapping and clustering techniques have a similar objective, which is to provide insight into the structure of a network, and the two types of techniques are often used together in bibliometric and scientometric analyses (Waltman, van Eck, and Noyons 2010). In figure 9 (and figure 10, supplement-

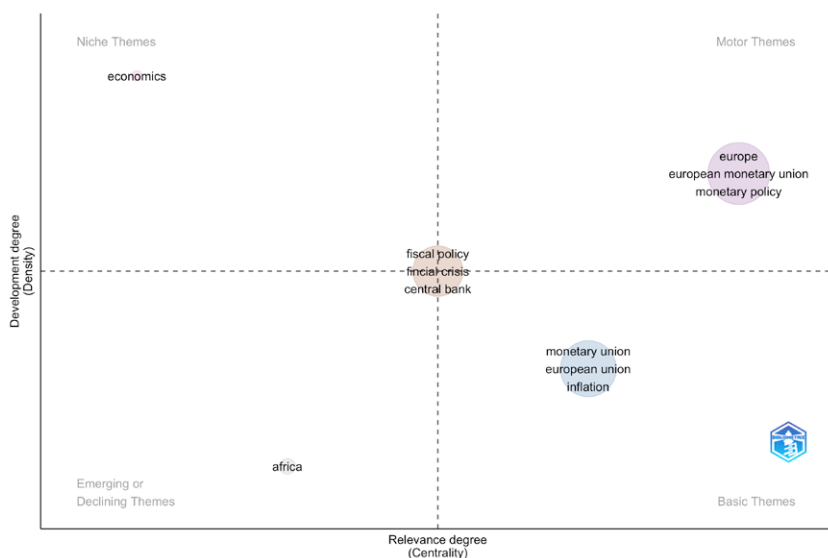


FIGURE 9 Thematic Map (created with Biblioshiny, based on WOS and Scopus Dataset)

tary), the upper left quadrant represents very specialised niche themes, the lower left quadrant represents emerging or declining themes, the upper right quadrant represents driving or motor themes, and the lower right quadrant represents basic themes, all represented according to their rank of centrality and density. Centrality measures the importance of the themes, and density measures the development of the themes. The size of the cluster is dependent on the number of times the theme has occurred. Notably, the themes Europe, European monetary union, and monetary policy appear in the motor themes quadrant, indicating that they are important pillars in the field of study. The themes monetary union, European Union, and inflation in the basic themes quadrant are weakly developed but frequently researched, niche themes are highly developed, and emerging or declining themes are marginal in the research field. These correlate with the keywords presented in figures 7a and 7b. The theme 'Africa' is emerging due to low productivity levels among African authors in this area, and yet have been receiving increasing attention in the research field.

In figure 11, the coupling map formed two clusters of documents with three labels per cluster identified by authors' keywords with the impact measure of global citation score and labelling by Keywords Plus. The

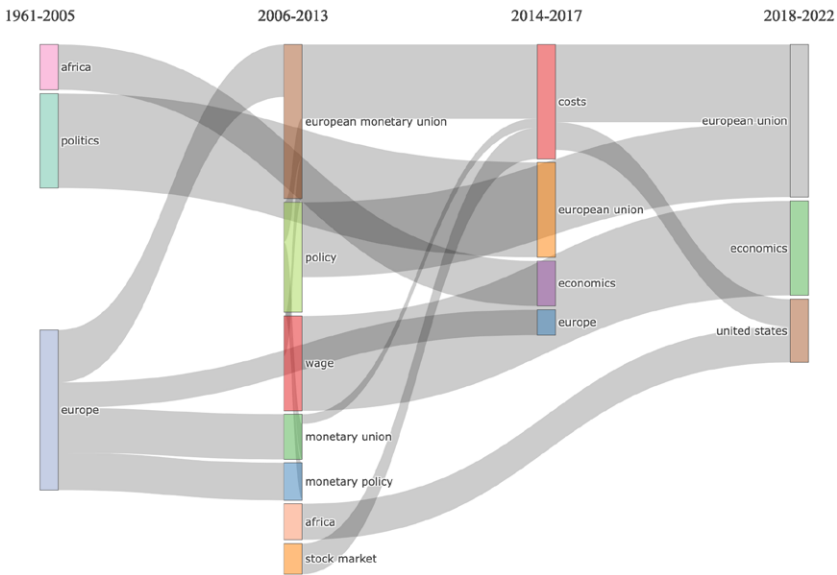


FIGURE 10 Thematic Evolution (created with Biblioshiny, based on WOS and Scopus Dataset)

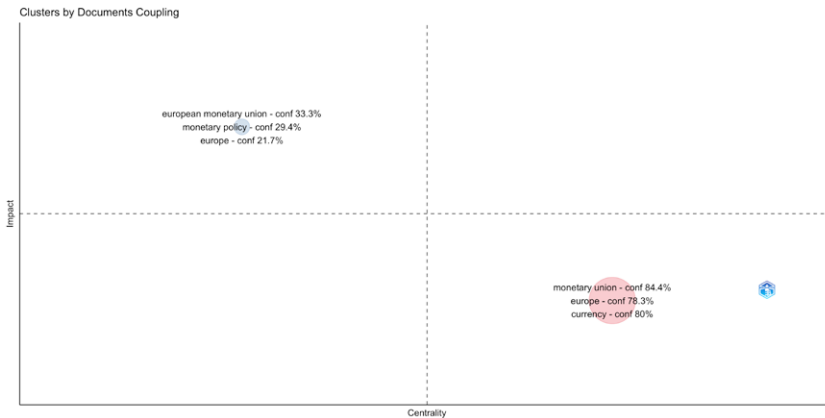


FIGURE 11 Clustering by Coupling (created with Biblioshiny, based on WOS and Scopus Dataset)

monetary union–currency–Europe cluster had the greatest impact and highest centrality. Figure 12 presents the keyword co-occurrence network. The density represents the strength of the co-occurrence of the core concepts, including Europe, European monetary union, and monetary union.

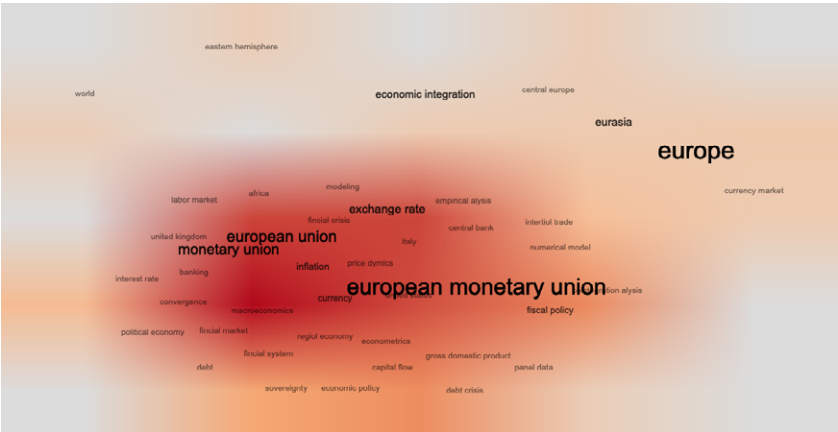


FIGURE 12 Co-Occurrence Network (created with Biblioshiny, based on WOS and Scopus Dataset)

COLLABORATION ANALYSIS

Figure 13 presents a network diagram showing the collaboration efforts among authors. The thickness of the links indicates the number of co-authored documents. The colours indicate different communities of authors. The figure shows the most productive and collaborative authors in the dataset and the patterns and characteristics of the co-authorship among them. Barry Eichengreen, Ansgar Belke, Bas van Aarle, Paul De Grauwe, Daniel Gros, Luis Gil-Alana, and Amy Verdun have the most collaborations. Figure 14 shows the geographical visualisation of the co-authorship of the documents by country. We observe that the USA and the UK lead with 11 collaborative partnerships, followed by the USA and Germany with 7 collaborative partnerships, the UK and Italy, Germany and Belgium with 5 collaborations, the UK and Spain, and Macedonia and North Macedonia with 4 collaborations. Again, we note that most collaborations occur between industrialised economies with no recorded collaborations among African countries featuring in the top-ranking collaborations.

Conclusions and Agendas for Future Research

In this study, we present a bibliometric analysis of literature on Optimal Currency Areas (OCA) and monetary unions from 1960 to 2022, with the aim of identifying the patterns of publications over time, the most productive countries, institutions, and authors, and the most influential articles and keywords used by researchers. Our observations reveal that

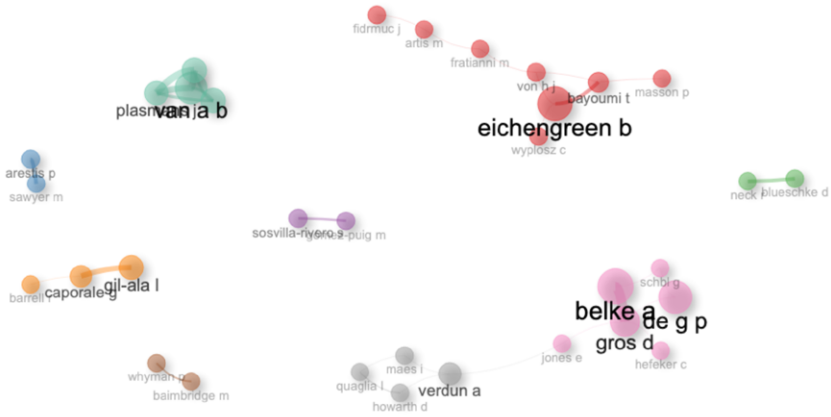


FIGURE 13 Collaboration Network (created with Biblioshiny, based on WOS and Scopus Dataset)

the literature on OCA has experienced steady growth over time, with authors becoming increasingly productive. However, we note that the most influential authors are those who contribute novel perspectives and theories to the OCA debate, supported by empirical evidence. Notably, authors who publish such contributions in high-impact journals such as *The Quarterly Journal of Economics* and *The American Economic Review* receive many citations despite their low productivity.

Moreover, our analysis indicates that most of the theoretical and empirical research on OCA has been concentrated among European and North American institutions/authors, with a focus on the Euro area mon-

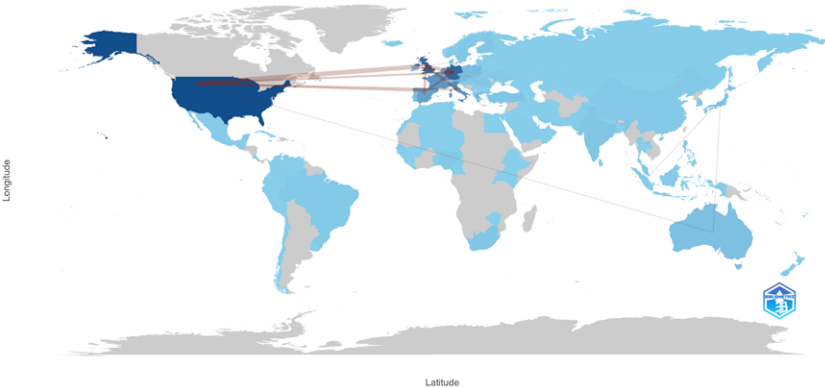


FIGURE 14 Country Collaboration Map (created with Biblioshiny, based on WOS and Scopus Dataset)

etary integration. Furthermore, we highlight an underrepresentation of non-European/American institutions/authors and female researchers in the published material.

Although this study provided several findings in terms of monetary unions, there are clear limitations that further studies can explore. While the bibliometric analysis points out which articles and authors are the most cited, it does not provide the reasons for which these articles or authors are considered as such or whether they are influential in the topic of currency unions and currency integration. Robert Mundell may be a highly cited author due to coining and popularising the concept of optimum currency areas, but his citation by other authors could be for various reasons such as reinforcing criteria for currency areas, discussing the flaws in his methodology, or simple acknowledgement as a contributor in the topic, all reasons that a bibliometric analysis does not delve into. Furthermore, there is a clear gap in research on African monetary unions and African scholar representation in this area. The highlighted lack of collaboration with African scholars on research in this area could result in policy flaws due to the reliance on international research that does not consider Africa-specific challenges when exploring monetary policies in Africa.

In light of these observations, we propose several agendas for future research. Firstly, we emphasise the need for more impactful and inclusive research on currency unions outside the Euro area, with a focus on publishing high-quality work in top-ranked journals. We also suggest that research conducted on currency areas should incorporate novel theoretical perspectives that challenge conventional thinking. For instance, several new debates arose concerning the optimality of monetary unions during the Euro debt crisis of 2010 and similarly, the more recent COVID-19 crisis as well as the introduction of digital currencies by Central Banks may present an opportunity to re-evaluate the OCA theory. Finally, we recommend that future research should prioritise collaborations between Western and non-Western institutions to ensure greater inclusion of non-White and female researchers in the publication of articles.

References

- Alesina, A., and R. Barro. 2002. 'Currency Unions.' *The Quarterly Journal of Economics* 117 (2): 409-436.
- Aria, A., and C. Cuccurullo. 2017. 'Bibliometrix: An R-tool for comprehensive science mapping analysis.' *Journal of Informetrics* 11 (4): 959-975.

- Asongu, S., J. C. Nwachukwu, and V. Tchamyou. 2017. 'A literature survey on proposed African monetary unions.' *Journal of Economic Surveys* 31 (3): 878-902.
- Bayoumi, T., and B. Eichengreen. 1992. 'Shocking Aspects of European Monetary Unification.' NBER Working Paper 3949.
- Bayoumi, T., and B. Eichengreen. 1977. 'Even closer to heaven? An optimum-currency-area index for European countries.' *European Economic Review* 41 (3-5): 761-770.
- Bernal, P., M. Carree, and B. Lokshin. 2022. 'Knowledge spillovers, R&D partnerships and innovation performance.' *Technovation* 115.
- Broz, T. 2005. 'The theory of optimum currency areas: A literature review.' *Privredna kretanja i ekonomska politika* 15 (104): 52-78.
- Crane, D. 1970. 'The nature of scientific communication and influence.' *International Social Science Journal* 22 (1): 28-41.
- Cranford, S. 2020. 'C.R.E.A.M: Citations rule everything around me.' *Matter* 2 (6): 1343-1347.
- Deem, R., J. M. Case, and T. Nokkala. 2022. 'Researching inequality in higher education: tracing changing conceptions and approaches over fifty years.' *Higher Education* 84: 1245-1265.
- Dehdarirad, T., A. Villarroja, and M. Barrios. 2015. 'Research on women in science and higher education: a bibliometric analysis.' *Scientometrics* 103 (3): 795-812.
- Donthu N., S. Kumar, D. Pattnaik, and W. M. Lim. 2021. 'A bibliometric retrospection of marketing from the lens of psychology: Insights from Psychology & Marketing.' *Psychology & Marketing* 38 (5): 834-865.
- Eichengreen, B. 1991. 'Is Europe an optimum currency area?' NBER Working Paper 3579.
- Frankel, J. A., and K. E. Rockett. 1988. 'International macroeconomic policy coordination when policymakers do not agree on the true model.' *The American Economic Review* 78 (3): 318-340.
- Frankel, J. A., and A. K. Rose. 1998. 'The Endogeneity of the Optimum Currency Area Criteria.' *The Economic Journal* 108 (449): 1009-1025.
- Frankel, J. A., and A. K. Rose. 2002. 'An Estimate of the Effect of Common Currencies on Trade and Income.' *The Quarterly Journal of Economics* 117 (2): 437-466.
- Friedman, M. 1953. 'The case for flexible exchange rates.' In *Essays in positive economics*, edited by M. Friedman, 157-203. Chicago: University of Chicago Press.
- Giavazzi, F., and M. Pagano. 1988. 'The advantage of tying one's hands: EMS discipline and central bank credibility.' *European Economic Review* 32 (5): 1055-1075.
- Ishiyama, Y. 1975. 'The theory of optimum currency areas: A survey.' *IMF Staff Papers* 22 (2): 344-383.

- Kenen, P. B. 1969. 'The theory of optimum currency areas: An eclectic view.' In *Monetary problems of the international economy*, edited by R. Mundell and A. Swoboda, 41-60. Chicago: University of Chicago Press.
- Krugman, P. R. 2012. 'Revenge of Optimum Currency Area.' *NBER Macroeconomics Annual* 27: 439-448.
- Kunroo, M. H. 2015. 'Theory of Optimum currency areas: A literature survey.' *Review of Market Integration* 7 (2): 87-116.
- Kunroo, M. H., I. A. Sofi, and N. A. Azad. 2016. 'Trade implications of the Euro in EMU countries: a panel gravity analysis.' *Empirica* 43 (2): 391-413.
- Lafrance, R., and P. St-Amant. 1999. 'Optimum currency areas: A review of the recent literature.' Bank of Canada Working Paper 16.
- McKinnon, R. 1963. 'Optimum currency areas.' *The American Economic Review* 53 (4): 717-725.
- Meade, J. E. 1957. 'The balance of payments problems of a European Free Trade Area.' *The Economic Journal* 67 (267): 379-396.
- Mixon, F., and K. Upadhyaya. 2022. 'Top to bottom: An expanded ranking of economics journals.' *Applied Economics Letters* 29 (3): 226-237.
- Moed, H. F. 2005. *Citation Analysis in Research Evaluation*. Dordrecht: Springer.
- Mongelli, F. P. 2002. "'New views" on the optimum currency area theory: What is EMU telling us?' ECB Working Paper 138.
- Mundell, R. 1961. 'A theory of optimum currency areas.' *The American Economic Review* 51 (4): 657-665.
- Nagpal, M., and J. A. Petersen. 2021. 'Keyword selection strategies in search engine optimization: How relevant is relevance?' *Journal of Retailing* 97 (4): 746-763.
- Nie, L., H. Gong, D. Zhao, X. Lai, and M. Chang. 2022. 'Heterogenous knowledge spillover channels in universities and green technology innovation in local firms: Stimulating quantity or quality?' *Frontiers in Psychology* 13.
- Obstfeld, M., and A. M. Taylor. 2002. 'Globalization and capital markets.' NBER Working Paper 8846.
- Parker Willis, H. 1901. *History of the Latin Monetary Union; a study of international monetary action*. Chicago: University of Chicago Press.
- Pritchard, A. 1969. 'Statistical bibliography or bibliometrics?' *Journal of Documentation* 25 (4): 348-349.
- Rose, A. K., B. Lockwood, and D. Quah. 2000. 'One Money, One Market: The Effect of Common Currencies on Trade.' *Economic Policy* 15 (30): 9-45.
- Rose, A. K., and C. Engel. 2002. 'Currency Unions and international integration.' *Journal of Money, Credit and Banking* 34 (4): 1067-1089.

- Sylla, N. S. 2021. 'Fighting monetary colonialism in francophone Africa: Samir Amin's contribution.' *Review of African Political Economy* 48 (167): 32-49.
- Tavlas, G. 1993. 'The 'New' Theory of Optimum Currency areas.' *The World Economy* 16 (6): 663-685.
- Waltman, L., N. J. van Eck, and E. C. M. Noyons. 2010. 'A unified approach to mapping and clustering of bibliometric networks.' *Journal of Informetrics* 4 (4): 629-635.
- Wittig, G. 1978. 'Statistical bibliography – A historical footnote.' *Journal of Documentation* 34 (3): 240-241.