

Mapping Social Policy in Economics Research: An Analysis of Core Journals

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ABSTRACT

This study reviews the attention core economics journals have paid to the topic of social policy and economic performance based on 1,356 articles published between 1957 and 2020 using bibliometric analysis and data visualisation techniques. This approach allows us, based on the assessment of bibliometric data through co-citation, co-authorship and keywords networks analysis, to identify researchers, countries, institutions and research areas and trends offering useful information that facilitates future research and policy making. The emphasis is on the empirical literature given the theoretical controversies on the sign of the relationship and its usefulness for policy making. The most active country publishing in the core journals is the USA, with Sweden leading in terms of average citations. The top publishing authors and institutions are in the US, and China is the only developing country present. Keywords analysis reveals that the most often used terms reflect common methodological approaches. Retirement issues dominate the research agenda and suggest the need for more studies addressing the economic outcomes of other welfare programs, although recent studies put more emphasis on health, education and labour market issues. This analysis can help researchers to pinpoint relevant studies, identify dominant lines of enquiry and the more recently investigated themes and, 'standing on the shoulders of giants', suggest new approaches to study the overall nexus.

Keywords: Welfare State, Social Policy, Social Expenditure, Economic Performance, Bibliometric Analysis, Core Journals.

INTRODUCTION

Social policy overlaps with other disciplines in the social sciences, including economics. The welfare state and the set of policies that governments use to promote welfare and provide social protection is not a new topic in economics research as far as its consequences for allocative efficiency and macroeconomic performance are concerned.^[1-8] The deepening of some of the key challenges that the welfare state faces, such as globalisation, the fourth industrial revolution, demographic change or immigration, and more recently the COVID-19 pandemics and its foreseen impact on poverty and inequality, claims for a clearer understanding of where we stand in terms of the research on the relationship between social policy and economic performance. Policy decisions aimed at restructuring and rescaling the welfare state should be grounded in scientific research that allows to accommodate the potential impact of those decisions both at the social and the economic level, enabling policy makers to make more informed decisions.^[9-10]

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M. Weir^[11] defines the welfare state as "... a state that is committed to providing basic economic security for its citizens by protecting them from market risks associated with old age, unemployment, accidents, and sickness." The measurement of this wide and complex concept is done most often using social spending,^[12] the main instrument of implementation of social policy. The literature suggests that the welfare state and associated social policy have the potential to influence economic performance, but there is no agreement as to the sign of this effect.^[2,4,13,6] Theoretical arguments pose that a positive effect emerges when the welfare state creates the conditions for economic agents to make decisions that promote growth, such as taking more risks which enhance innovation or investing in physical and human capital. Nevertheless, the need to finance the welfare state introduces distortions in economic decisions that are detrimental to economic performance, for instance working less and with less effort or decreasing savings and in this way investment. A bibliometric analysis of applied studies can provide important guidance since in a context where there is no theoretical agreement on how social policy influences economic performance the issue becomes essentially empirical.

The main objective of this study is to conduct a research synthesis of the relationship between social policy and economic performance based on a descriptive overview that maps and characterizes this field of study in terms of relevant authors,

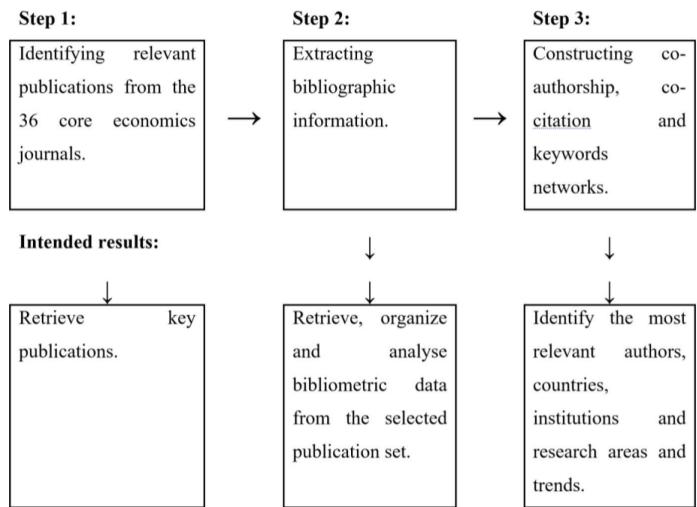
countries, institutions, research areas and trends, by applying social network analysis to bibliometric data. More specifically, our aim is twofold: (i) take stock of the literature in terms of authors' contributions, geographic clusters, institutions and keywords; and (ii) identify the most important research areas and trends within this general topic. Our aim is not to provide a synthesis of the evidence on the relationship between social policy and economic performance regarding the existence of a positive, negative or non-existing nexus based on published empirical studies, which would require other approaches, e.g. meta-regression analysis. Focusing on research published in 36 core economics journals reinforces the importance of economic analysis for policy making since these are likely the journals that influence policy makers the most. Researchers also pay particular attention to top journals.^[14] Besides aiding policy makers in designing better informed social policy from an economic point of view, we believe that this analysis can help researchers to more easily access relevant literature, detect the most often and more recently investigated themes and, 'standing on the shoulders of giants', identify new approaches to the issue under analysis. These results from the fact that our analysis identifies networks of authors, countries, institutions and keywords published in high impact economics journals on the topic of social policy and economic performance. This valuable information may be used to strengthen the evidence from future studies and help to promote scientific-based social policy design.

METHODOLOGY AND DATA

Bibliometric analysis is a useful quantitative approach to summarise developments in a particular field of study and is based on the measurement and studying of scientific outputs.^[15, 16] In this study, we use bibliometric analysis and visualization methods to characterize the research on social policy and economic performance published in core economics journals over the past decades. This is an appropriate and useful approach to identify and visualize key researchers, countries and institutions and pinpoint main research themes and trends. We analyse bibliometric data applying social network analysis (SNA) which enables the mapping of current knowledge on a particular area of research by highlighting connections between authors, countries, institutions and topics, among other characteristics.^[17] We use the VOSviewer (Visualisation Of Similarities) software for constructing and visualising bibliometric networks due to its powerful user graphic-interface and mapping visualisation capability.^[18-20] This software allows mapping items and link them by their relatedness generating comprehensive and easy to interpret maps. These features include co-citation analysis (which highlights the relatedness of items based on the number of times they are cited together), co-authorship analysis (accounts for the number of co-authored documents), citation analysis (relates items

according to the number of times they cite each other) and co-occurrence of keywords (analyses the number of documents in which keywords occur together). Philipp Korom^[21] provides additional technical details on the construction of maps by VOSviewer, a process that he describes as consisting of three steps, normalization, mapping, and clustering. Literature related to a specific field of study can be analyzed and synthesized using a range of different methodological approaches that include, among others, systematic literature reviews, narrative bibliographic analyses, meta-analysis, content/text analysis and SNA.^[22] We focus on SNA because it is a useful methodology to find patterns, relationships in networks, and identify gaps that give directions on potential paths for future research, which is not always possible with other statistical and non-statistical approaches. Nevertheless, the SNA implemented in this study has some limitations including the analysis of a single bibliographic database (WoS in our case), the clustering method (its interpretation depends on researchers' view) and the identification of bilateral links (even when there is only a unilateral relationship).

Figure 1 summarizes the processes involved in our approach and the intended results. There are three main steps in the design of our analysis. Step 1 involves identifying the relevant publications from the selected core economics journals (Table 1) with the aim of retrieving bibliographic information on key publications that deal with the topic under analysis. Having gathered a publications dataset, Step 2 next extracts and organizes the relevant bibliographic data for quantitative analysis e.g. author's name, cited references, the document's title, keywords and abstract. Finally, Step 3 corresponds to the construction of co-authorship, co-citation and keywords



Notes: based on Korom (2019). See also Table 1 for the list of 36 core economics journals and Table 3 for the search terms used in step 1.]

Figure 1: Schematic representation of the processes involved and intended results Notes: based on Korom (2019). See also Table 1 for the list of 36 core economics journals and Table 2 for the search terms used in step 1.

Table 1: Scientific influence of the 36 core economics journals.

Journal	ABS 2018	JCR rank 2018	JIF 2018	5-year IF	Position in economics category of WoS	Quartile WoS 2018	Citation per item 2018
American Economic Review	4*	8	4.097	7.048	25/363	Q1	527.0
Brookings Papers on Economic Activity	3	7	5.655	5.779	9/363	Q1	492.0
Canadian Journal of Economics	3	134	0.703	1.05	285/363	Q3	43.9
Econometric Theory	4	89	1.238	1.427	179/363	Q2	61.5
Econometrica	4*	6	4.281	6.723	20/363	Q1	551.5
Economic Journal	4	21	2.926	3.864	52/363	Q1	115.4
Economic Theory	3	114	0.961	1.135	236/363	Q3	31.9
Economic Inquiry	3	106	1.265	1.582	171/363	Q2	29.2
Economics Letters	3	160	0.876	1.082	245/363	Q3	21.8
European Economic Review	3	62	1.711	2.018	128/363	Q2	54.8
Games and Economic Behaviour	3	94	1.004	1.285	225/363	Q3	31.0
International Economic Review	4	58	1.451	2.402	154/363	Q2	63.1
Journal of Applied Econometrics	3	43	2.053	2.994	94/363	Q2	85.7
Journal of Business and Economic Statistics	4	35	2.716	3.164	59/363	Q1	105.0
Journal of Development Economics	3	34	2.855	3.996	53/363	Q1	69.9
Journal of Econometrics	4	42	1.949	2.668	102/363	Q2	142.3
Journal of Economic Dynamics and Control	3	110	1.502	1.819	148/363	Q2	36.8
Journal of Economic History	3	1	1.683	1.877	130/363	Q2	81.2
Journal of Economic Literature	4	1	5.41	8.722	10/363	Q1	437.2
Journal of Economic Perspectives	4	4	6.451	9.932	4/363	Q1	294.9
Journal of Economic Theory	4	81	1.181	1.458	191/363	Q3	59.6
Journal of Financial Economics	4*	3	4.693	7.976	15/363	Q1	289.2
Journal of Health Economics	3	26	3.352	3.959	42/363	Q1	77.6
Journal of Human Resources	3	25	3.857	6.5	27/363	Q1	166.3
Journal of International Economics	4	30	2.216	3.376	77/363	Q1	83.4
Journal of Labour Economics	4	23	4.452	5.192	17/363	Q1	125.6
Journal of Law and Economics	3	59	1.185	2.219	187/363	Q3	264.2
Journal of Monetary Economics	4	37	2.444	3.975	66/363	Q1	143.5
Journal of Political Economy	4*	5	6.342	7.083	5/363	Q1	390.8
Journal of Public Economics	3	40	1.773	2.938	121/363	Q2	77.9
Oxford Bulletin of Economics and Statistics	3	66	0.989	1.735	228/363	Q3	62.0
Quarterly Journal of Economics	4*	2	11.78	14.15	1/363	Q1	712.5
Rand Journal of Economics	4	47	1.634	2.395	135/363	Q2	158.2
Review of Economic Studies	4*	10	4.767	6.541	14/363	Q1	207.2
Review of Economics and Statistics	4	14	3.636	5.662	35/363	Q1	231.1
Scandinavian Journal of Economics	3	111	1.132	1.812	200/363	Q3	43.3

Notes: JCR rank 2018 = Journal Citation Report; 5-year IF = citations in 2018 to items published between 2013 and 2017 divided by the number of citable items between 2013 and 2017.

networks with the bibliometric data gathered in the previous step using VoS. The main result from this last step is pinpointing the most relevant (number of publications and citations) authors, countries, institutions and research areas and trends.

Due to their potential more influential role in policy making, we perform bibliometric analysis for core economics journals

selected based on the respective high scientific influence (see Table 1). In this list the inclusion of the “Blue Ribbon Eight” journals is mandatory given its stability in rankings of academic journals in economics^[23] and its wide scientific recognition.^[24] Since the search restricted to these journals resulted in scarce information, we added relevant journals from

other established rankings. Art Diamond^[25] identified a set of core economics journals, known as the Diamond list, based on citations data from the Social Sciences Citation Index. This approach has been criticised for its arbitrary weighting criteria. M. Burton and E. Phimister^[26] reassessed the original Diamond list by applying different ranking techniques, such as Data Envelopment Analysis (DEA). More recent influential studies^[27-29] propose a new set of core journals. We take as a starting point the “Blue Ribbon Eight” and consider the number of times (at least two) each of the journals in the top 50 of each ranking is mentioned in the other rankings to select our list of core journals in economics, which resulted in the selection of 36 journals. Table 1 summarises the scientific influence of the former journals as reflected by several key rankings and metrics, such as the Web of Science (WoS) impact factor, and the Association of Business Schools Academic Journal Quality Guide (ABS 2018). Twenty-eight of these journals are located on the top half of the ranking of a total of 363 journals in the subject area of Economics in the WoS, thus located in the first or second quartiles. The journal impact factor (JIF) 2018 shows that the average citation of an article published in the selected journals between 2016 and 2017 received in 2018 ranged from 0.703 citations, on average, to 11.78 citations. The ABS ranking classifies journals into four categories (lowest impact -1 to highest impact - 4) plus a journal of distinction category (4*). From the 36 journals in our bibliometric analysis, seventeen are classified in category 3, thirteen in category 4 and six are in the category 4*, including four “Blue Ribbon” journals.

The articles were collected from the WoS database considered one of the most complete bibliographic data sources that provides the meta data on research outputs that is needed for bibliometric analysis, including title, authors, abstract, keywords, references, citations, as well as a longer time span.^[30,31,21,32,33] Our main objective is to give an overview of research on the relationship between social policy and economic performance from an applied perspective in terms of publication and citation activity, prominent authors, countries and institutions publishing research on the topic and research areas and trends. We thus performed our search of the 36 journals using keywords associated with public social expenditure, its synonyms, and dimensions, and simultaneously references to their economic impact and the applied nature of the studies. Hence, our search included three main groups of terms/keywords: Welfare State, Economy and Empiric. For the first group, we selected the strict and generic way to obtain the set of articles of interest and in the cases of articles that do not mention this group in a generic way we decided to look for references to the main components of social spending. As far as the economy group is concerned, since the reference to economic performance can be done using quite diverse terms we tried to apply a broad set of associated words with a loose check with the support of

the operator NEAR. For the last group, we decided to apply the set of words that most commonly appear in studies of an empirical nature. To restrict our search to those three groups we included the “AND” particle as a separator between each main terms/keywords group. To widen our search, we applied these keywords in a non-exclusive way within each subgroup (separated by the “OR” particle) and in different fields of the selected articles (title, abstract and keywords). See Table 2 for a summary of this search and the specific terms/words used.

The final search of relevant articles published in the 36 core journals in economics over the period 1957-2020 was performed on the 16th of September of 2020 and retrieved 1,356 articles.

RESULTS AND DISCUSSION

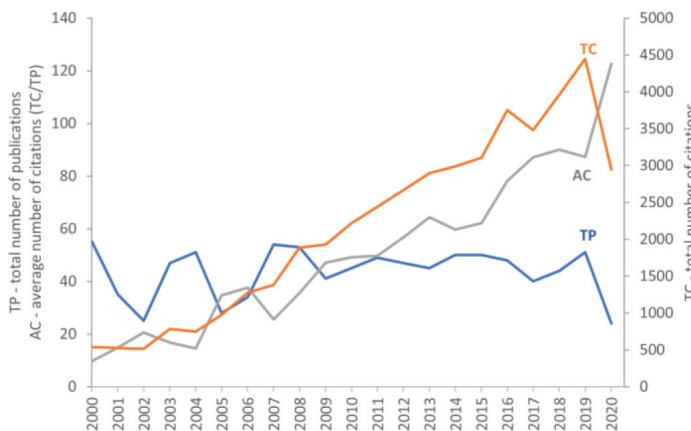
The current study was designed to examine the attention core economics journals have paid to the topic of social policy and economic performance between 1957 and 2020 in terms of: (1) growth of literature as far as publication and citation activity is concerned; (2) core authors/researchers in the field (co-citation analysis); (3) prominent institutions and countries engaged in the research (co-authorship analysis); and (4) prominent research areas and trends (keywords networks). This valuable information may be used to strengthen the evidence from future studies on the topic and to help to promote scientific-based social policy design.

Publication and citation activity

The attention devoted by the selected journals to the topic is presented in Figure 2, containing annual data on the number of publications and citations. Figure 2 provides information only for the sub-period 2000-20 due to the higher relevance of the information for this period corresponding to a total of 916 articles or 68% of our database. The number of publications shows some fluctuations over time, with a maximum of 55 articles published in the year 2000 and minimum of 24 articles published in the year 2020 (not surprising due to the existence of publication time lags), followed closely by 25 publications in the year 2002. From 2007 onwards the number of annual publications is usually forty or higher, which could be related to the onset of the 2007-08 financial crisis and the Great Recession that ensued. This raised concerns on the ability of significant parts of the population to recover from economic hardships and the role that social policy could play as a buffer, but also on the need for welfare state retrenchment resulting from the need for fiscal consolidation in many European countries^[7,34,35]. The deepening over the course of the new millennium of the challenges posed to the welfare state by globalisation, population ageing, migration flows or artificial intelligence (AI) and automation^[36-38] can also have contributed to the steady interest on the welfare state and

Table 2: Search terms for the identification of relevant publications.

Main terms/keywords group	Boolean operator relative to the next main terms/keywords group	Search terms and boolean operators within each main group
Welfare State		"Social expenditure*" OR "government transfer*" OR "Welfare State" OR "Social Security" OR "Social protection" OR "education expenditure" OR "education spending" OR "health expenditure" OR "health spending" OR "Public spending" OR "Government size" OR "social spending" OR "pension expenditure" OR "old-age retirement income"
	NEAR/3	
Economy		"growth" OR "GDP" OR "per capita income" OR "economic performance" OR "economic activity" OR "economic impact"
	AND	
Empiric		"Empiric*" OR "applied" OR "estimate*" OR "regression"

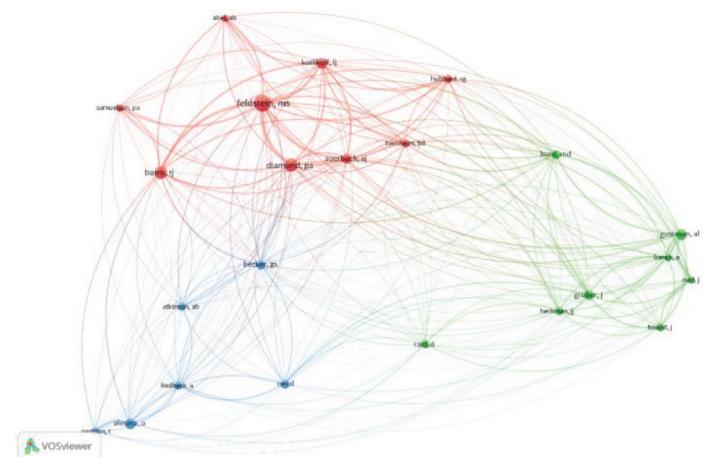
**Figure 2:** Annual publication and citation activity (2000-2020).

social policy, as reflected in the most recent behaviour of the number of publications and especially citations. TC (total citations) reveals a positive trend, an indication that the impact of the selected publications in the scientific community is becoming stronger and a sign of the increasing importance and awareness to the topic. Average annual citations (AC) also show an overall positive trend in line with the behaviour of TC.

Research mapping analysis

Co-citation analysis

Figure 3 contains the results of the analysis of the relatedness of authors by the number of times they are cited together.

**Figure 3:** Co-citations by authors (minimum number of citations: 100).

Authors had to be cited together at least 100 times to be included in our analysis; 21 authors fulfil this criterion, ranging between 480 and 101 citations. The circle/node size represents the total number of citations and the different colours stand for clusters corresponding to authors with higher association. Nodes are connected (by curved lines) if two authors co-authored at least one article together. Thicker lines indicate stronger collaborations.

The scientific community captured by the co-citation analysis is centred on a nucleus of researchers from academia, affiliated mostly with institutions located in the USA, and international economic organizations such as the OECD. Indeed, our results show that Martin Feldstein (1939–2019), with 480 citations, Peter Diamond (Massachusetts Institute of Technology – MIT, USA), who received the Nobel Memorial Prize in Economic Sciences in 2010, with 309 citations, and Robert Barro (Harvard University, USA), with 285 citations, are the most cited authors. This over-representation of researchers based in the USA might bias the definition of research priorities on the link between social policy and economic performance resulting in a focus on issues that afflict mostly high-income countries such as the USA and ignoring more pressing problems for developing countries. Indeed Figure 3 identifies three main clusters of authors, differentiated by the colours blue, green or red, associated with three main research topics that are particularly important for high-income countries, population ageing, (consolidation of) public finances and health. The authors in the red cluster focus their work on social security issues with Martin Feldstein and Peter Diamond appearing as the most cited authors. In terms of linkage analysis, this cluster records the most powerful connection within its group and this strength causes spill overs to other clusters since all authors have connections with the remaining authors outside the cluster; the exceptions are Paul Samuelson, Robert Barro and Andrew Abel. It is interesting to note that

for Robert Barro, despite not having linkages with every author in this network, he records the greatest link strength outside his cluster with Gary Becker. This could result from the fact that albeit he is not as versatile as other authors he manages to be more consistent in terms of co-citation. This cluster also seems to be the most influential one (more central). The blue cluster includes authors who publish mainly in the topics of overall public finances and economic performance issues and highlights Alberto Alesina (Harvard University, USA), with 216 citations, and the Organisation for Economic Co-operation and Development (OECD), that produces a lot of data and research on social expenditure and the economy, with 154 citations, as the most cited authors/organisations. In terms of link strength, only the OECD and Gary Becker were able to keep connections with the remaining authors outside their cluster with Gary Becker recording the strongest linkages (see above). The green cluster includes authors that focus on labour market and health issues. The most cited authors are Alan Gustman (Dartmouth College, USA), with 191 citations, Jonathan Gruber (MIT, USA), with 187 citations, and Michael Hurd (Rand Corporation, USA), with 154 citations. Link strength with remaining authors outside this cluster are more diverse for Jonathan Gruber and David Card (University of California, USA), with Jonathan Gruber maintaining the highest link strength (with Martin Feldstein) together with Michael Hurd (with Douglas Bernheim, Stanford University, USA).

Given the contribution of (international) research collaborations to the advancement of knowledge by enabling more effective and efficient scientific efforts, our results suggest that the identified US based researchers can play a leading role in promoting research on the link between social policy and economic performance that better caters the needs of developing countries. Multi-country teams of researchers, including those most experienced based in the USA, can help to enhance the design and implementation of studies that provide more reliable results for developing countries.

Co-authorship analysis

Figure 4 maps co-authorship between countries according to the primary affiliation of each author. We set the minimum number of documents produced in each country at 10 with 19 countries fulfilling this criterion. The size of each node depends on the number of publications. The different colours are defined by the average level of citations according to the legend on the right bottom of Figure 4, e.g. yellow for 50 citations or more. The connecting lines indicate the collaborations between countries with thicker lines corresponding to stronger collaborations.

In this topic developed countries hold the leading position. Three countries are the main contributors: the USA (693

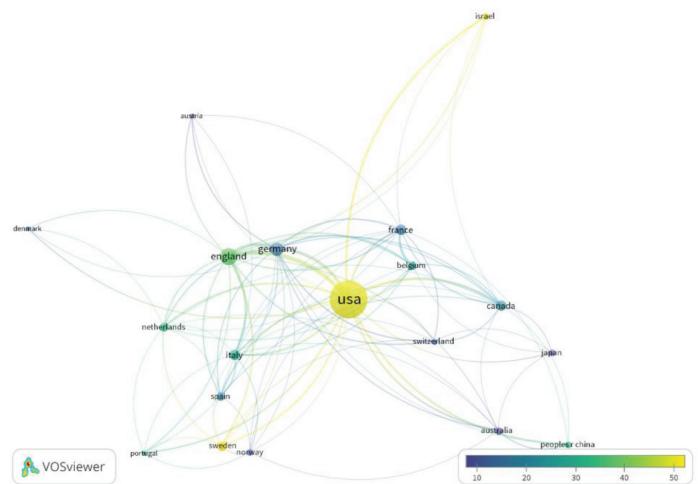


Figure 4: Co-authorship by countries (minimum number of documents: 10).

articles), England (138) and Germany (93). These countries also tend to work more with each other, generating a stronger bond (and probably more publications) as reflected in the thicker lines connecting them. As for average citations, the top countries are Sweden with 51.47 citations per published article (despite having low scientific production/outputs) and the USA comes second with 48.18 citations. The location of the USA in the top positions is not surprising and is common to most research areas.^[14] Sweden's position at the top confirms the long-standing interest on welfare state related issues in the Nordic countries. Germany is the country of birth of the conservative corporatist or Bismarckian welfare state regime and England is the landmark of the liberal welfare regime. It is thus not surprising that issues related to the welfare state and social policy raise particular interest in all these countries. The only countries not located in North America or Europe that appear in this ranking are Australia (31 articles), China (21), Israel (23) and Japan (21), and only China belongs to the group of developing economies. Since a multitude of developing countries are also suffering from increasing inequality and other important social and economic challenges (globalisation, automation and AI, deindustrialisation) that can leave a significant part of their population facing economic hardships and social exclusion, this result suggests that developed countries should support the developing regions in social policy and economic performance related research in order to better address those challenges on a global scale.

Figure 5 presents the co-authorship between institutions according to the primary affiliation of each author. We set the minimum number of documents produced in each institution at 6: 87 institutions fulfil this criterion. The size of each node/circle depends on the number of publications. The colours correspond to the average level of citations as defined in the legend placed at the bottom right. The connecting lines

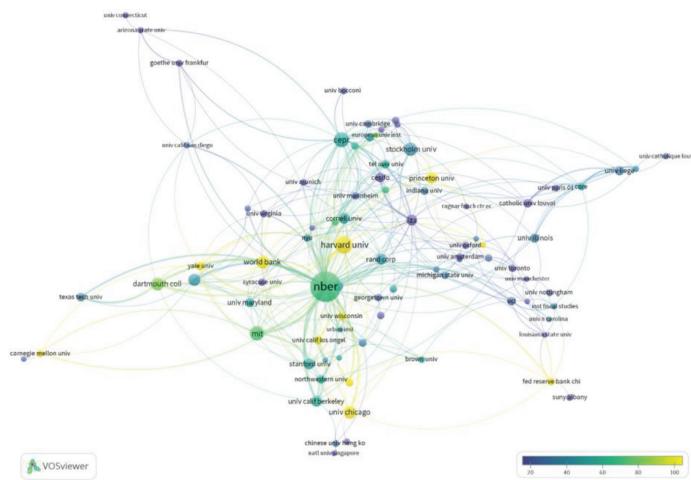


Figure 5: Co-authorship by institutions (minimum number of documents: 6).

indicate collaborations between institutions with thicker lines correspond to stronger collaborations. We can see that there is a notorious presence of the National Bureau of Economic Research (NBER) with 153 documents (13% of publications) followed, at a long distance, by Harvard University, the Centre for Economic Policy Research (CEPR) and the Massachusetts Institute of Technology (MIT) with 50, 37 and 34 documents, respectively. This set of institutions tend to work more closely together which is probably what keeps them as top publishers. Interestingly, when we do the same analysis to every other institution it becomes clear that NBER is always their strongest connection. Additionally, in the top twenty positions in terms of number of articles published (14 or more articles) only four non-US institutions appear: CEPR, UK, the University of Stockholm, Sweden, the Institute of Labour Economics (IZA), Germany and the Centre for Economic Studies (CESifo), Germany.

When analysing average citations the top positions are occupied by Carnegie Mellon University with 153.5 citations per published article followed by the University of Wisconsin (149.18 average citations) and the University of Chicago (144 average citations). Again, all the top institutions are in the US, with CEPR and the University of Stockholm as the only non-US based institutions in the top 20 positions. At the bottom of this list are the Ragnar Frisch Centre for Economic Research (3.33), the National University of Singapore (6.67) and the University of Connecticut (6.86). Institutions located at the bottom of this list have no connections with any of the top publishers and those placed at the top of the average citations list have their strongest connections with at least two of the top publishers identified before. All the institutions located at the top of the average citations ranking are far from being at the top of the list of published documents. It thus appears that institutions that had a greater research impact are not necessarily those that are more productive. Nevertheless, this

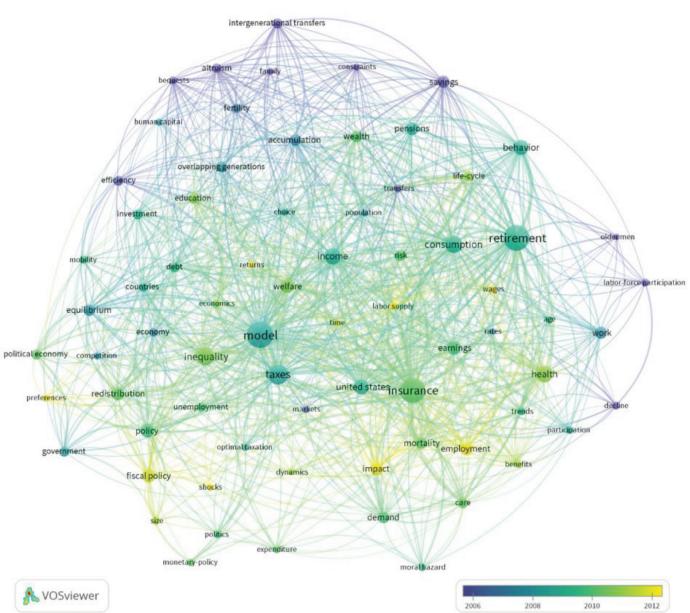


Figure 6: Co-occurrence of all keywords (minimum number of occurrences: 15).

does not mean that being productive is not important since the NBER, the MIT, CEPR and Harvard University also record high levels of average citations and these four institutions present, among those located at the top of the citation list, some of the strongest connections.

Keywords networks

Keywords or main terms co-occurrences are patent in Figure 6, where the node size depends on the number of occurrences of the respective term, curved lines connect terms (nodes) that occur together and the different colours identify clusters according to average keyword per year scores, i.e. the average publication year of the documents in which a keyword occurs¹. The colours used represent the time-varying keyword occurrences from 2006 (in dark purple) to 2012 (in yellow), the time interval VOSviewer identifies as the most important for the terms selected as most relevant. VOSviewer identifies the set of years for which each term appears and, for the most relevant ones, also identifies the average year for which those terms had the greatest impact (appear the most). For example, documents that included the term ‘family’, located in the top area of the map and in the dark purple cluster, on average appeared around the year 2006, while documents including the term ‘employment’, located in the bottom-right area of the map and in the yellow cluster, on average appeared around the year 2012. The analysis was performed based on the terms extracted from the meta-data fields title, abstract and keywords of the retrieved publications; 77 terms met the

¹ From these keywords search we excluded the terms/expressions used for the selection of the articles (see Table 2) since the search algorithm would provide biased results around those terms.

threshold of a minimum of 15 occurrences. Some labels may not be visible in Figure 5 to avoid overlapping labels.

Ten keywords stand out: 'model' (143 occurrences), 'retirement' (138), 'insurance' (130), 'taxes' (89), 'inequality' (74), 'consumption' (71), 'income' (68), 'health' (66), 'united states' (59) and 'behaviour' (57). Some top terms are not very precise in terms of research directions but reflect common approaches adopted in different economics research areas. The importance of the node 'model' is common to many fields in economics that include mathematical and/or econometric modelling to achieve clearer reasoning^[14]. It is also an indication of the importance attributed to constructing adequate theoretical framework for understanding the relationship between social policy and economic performance, with studies on the topic developed around both theory and practice. Other more general use terms that reflect common approaches and concerns are 'fiscal policy', 'policy', 'government', 'political economy' and 'impact'. Social policy comprises instruments of fiscal policy that can be used as a buffer against shocks and as a means of structural reforms and these roles deserve further investigation. The term 'impact' reveals that it is important to assess qualitatively and quantitatively how social policy affects economic performance since governments must decide how to distribute scarce resources among different public spending areas and need to prioritise across welfare programs.^[39] This assessment is especially important in the aftermath of the sovereign debt crises, and austerity measures that ensued, preventing an increase in public expenditure in many countries. Notice also that the only country that appears in Figure 6 is the United States. This finding suggests that core journals publish mainly articles that focus on the United States case, which is probably related to data availability issues, but is also the predominant location of the institutions of origin of the authors. It also suggests the need for more country specific and cross-country studies that reveal other realities, on the one hand, and that allow for generalisations, overcoming specificities of the US economy.

Other keywords highlight research on specific social policies, in particular retirement. The concern with this topic seems a natural one given population ageing and the challenges it poses to the welfare state and public finances sustainability and is thus likely to remain an important topic in the research agenda, at least for developed countries. Within different social policies it is interesting to notice that 'health', 'employment' (45 occurrences) and 'education' (30) appear in the top half of the ranking and 'human capital' (18) is also part of the list. Both health and education spending are classified as social investment, i.e. 'policies designed to strengthen people's skills and capacities and support them to participate fully in employment and social life' as opposed to social security/protection that focus on providing protection against risks

such as unemployment, sickness, incapacity, death, or old age. Some authors argue that because of globalisation, deindustrialisation and automation and AI, social policy should change its focus from social security to social investment.^[40,41] Further research on the topic of social investment and economic performance could derive important implications for sustaining economic growth since human capital is a fundamental driver of growth and is mainly accumulated through investments in health and education.^[42-44] Labour market related interventions (unemployment benefits and active labour market policies) and their economic consequences are other welfare programs that seem to have attracted some attention in core journals, reflected in the frequent use of the terms 'employment', 'work' (39 occurrences), 'unemployment' (25), 'labour supply' (20) or 'labour-force participation' (19). The complementarity or substitutability between the two types of labour market interventions is a source of controversy in economics research and, despite the attention already devoted to these topics, still needs further investigation. The word 'family' (25) also appears on the list but other welfare programs such as housing, incapacity related benefits or survivors' pensions are absent.

Figure 6 shows not only the structure of the social policy-economic performance analysis in economics research but also the time dynamics of this research. Cluster analysis gives us information on how the most important keywords changed over the years and allows for interesting conclusions. Around the year 2006, researchers' biggest concern lied on accumulation and family issues – main keywords: 'intergenerational transfers', 'overlapping generations', 'family', 'retirement', 'older men' and 'labour force participation'. Around the year 2008, the focus kept on retirement issues but also moved to human capital and government decisions – main keywords: 'retirement', 'pensions', 'human capital', 'government', 'model' and 'taxes'. In 2010, the focus revolves around education, health and social inclusion issues – main keywords: 'care', 'health', 'welfare', 'inequality', 'redistribution' and 'education'. In 2012, the focus changed to the labour market impact of the welfare state – main keywords: 'labour supply', 'impact', 'wages', 'employment', 'shocks' and 'returns'. The concern with retirement issues over most of the period seems a natural one given population ageing and the problems it poses to pensions financing systems. The move to human capital accumulation issues is in line with the previously discussed change in focus from social protection to social investment. In 2012, the harsh unemployment effects of the 2007-08 financial and economic crisis were visible and economics research accompanied the global concerns through the analysis of the role played by social policy. In sum, the research agenda changed slightly over time since 2006 until 2012 but results suggest an overlap between the dominant lines of enquiry and the most recent research agenda.

CONCLUSION

This study presents a portrait of the economics research on the relationship between social policy and economic performance by applying bibliometric analysis to 1,356 articles published in 36 core journals in economics between 1957 and 2020. Using literature mapping clustering tools based on the bibliometric analysis of the data collected allowed for a quantitative assessment and mapping of the research panorama, including the identification of the main themes, authors, countries and institutions in terms of quantity and relevance (average citations).

Research on the topic published in the core journals remained relatively stable over the period 2000–20 that includes the majority of publications (68%) for the whole period under analysis (1957–2020). After a drop in the early years of the 21st century, the 2007–8 financial crisis and the associated Great Recession seem to have picked researchers and journals interest on the topic once again. The USA ranked first in the number of publications, followed by England and Germany, while Sweden is located at the top in terms of citations per published article. China is the only developing country that appears in the country ranking, suggesting the need for developed countries to support the developing regions in social policy and economic performance related research. The network of main keywords shows that the literature addresses the topic from different perspectives, but one key common element is the use of mathematical and/or econometric modelling. It also reveals that interest in publications on the theme in the core journals could be enhanced by research in the following topics: assess qualitatively and quantitatively how social policy affects economic performance due to the need to prioritise across welfare programs and public expenditure in general; country specific and cross-country studies that overcome the excessive focus on the US economy; examine how the change of focus of social policy from social security to social investment can impact economic performance; investigate further the economic impact of the varied welfare programs and their mechanisms of transmission since some schemes have been overlooked.

Although our review of the economics research on social policy is limited to 36 core journals in economics, we believe that it represents a useful roadmap for future research and policy making. In any case, there are likely other journals in economics that would deserve an in-depth analysis, namely those with a more applied scope and narrower subject coverage more directly related to welfare issues. The relationship between social policy and economic performance and related social outcomes has also raised a lot of interest among other social sciences, so it would be interesting to extend our database beyond the economics category. Directions for future research include also the application of alternative research synthesis approaches for evaluating and using scientific evidence on

social policy and economic performance such as meta-regression analysis. This statistical technique analyses the results of quantitative studies to provide a more precise identification of the sign of effect of social policy on economic performance.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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