
Trade-off between Unemployment and Inflation: a Bibliometric Review

Riduanul Mustafa¹

¹ Department of Business Administration,
Bangladesh Army International University of Science and technology
Bangladesh

doi: 10.51505/ijebmr.2022.6921

URL: <http://dx.doi.org/10.51505/ijebmr.2022.6921>

Abstract

Unemployment inflation trade-off is one of the most vital and required study in economics due to realizing economic performance and to take appropriate policy. This study analyzed scholarly documents published in Scopus indexed journals through a rigorous bibliometric review for a deeper understanding of this area of the study. The analysis identified most impactful sources, most impactful author and most impactful documents of this area. This study also identified the core themes of the study and also identified most collaborative countries. At the end it has also prescribed future research direction of this area. The study will be helpful for academics, researcher and policymaker for policy implications.

Keywords: unemployment, inflation, phillips curve, bibliometric review

1. Introduction

In macroeconomics unemployment and inflation trade-off analysis is very popular to the researcher to investigate due to its importance in the policy making. A. W. Phillips was the first to propose a trade-off between these two in his famous work(Phillips, 1958). Since then the trade-off between unemployment and inflation is popularly known as Phillips curve. Since then thousands of research have been conducted by the researcher to investigate various dimension of this concept. This concept has been supported and also opposed by researcher time to time. Dornbusch, Fischer, and Startz (2013) termed Phillips curve as the analysis of inflation and unemployment in the short-run or in the long run. (Samuelson & Solow, 1960) supported the relationship between unemployment and inflation from their empirical research. Phillips curve is based on three assumptions. at first, in short run, there is trade-off between inflation and unemployment. The second assumption is aggregate supply shock can break the concept of Phillips curve because it can cause both higher the rate of inflation and unemployment which is also known as stagflation. Finally, in long run there is no significant trade-off between inflation and unemployment. Therefore economists have best interest to identify their relationship; there is a short run trade-off between the rate of inflation and unemployment(McConnell, 2005).

On the other hand Friedman and Schwartz (1970) based on their study opposed the idea of a trade-off relationship between unemployment and inflation. Fair (1978) also opposed the existence of a trade-off between unemployment and inflation and he further stated that his study did not find any exact reason to expect that relationship. Milton Friedman criticized the original Phillips curve as it has assumed anticipated inflation rate is given and there is an effect of expectation of inflation which has been omitted(Friedman & Schwartz, 1970).

Since then there are various studies found on this field and many of them conducted to validate or investigate short-run and long-run trade-off between unemployment and inflation. Various other documents can be found on many other topics related to this field. So this study aims to carry out a systematic literature review on the documents of Unemployment and Inflation trade-off or on Phillips curve. The main objective of this study is:

- 1) To identify the most contributory authors in this field of research.
- 2) To identify the most contributory sources in this field of research.
- 3) To identify the most contributory documents in this field of research.
- 4) To identify the core themes of the documents published in this field.
- 5) To identify the core research gaps in the study and to suggest the future research direction.

Systematic literature review is very useful and popular to investigate the main topics that have been discussed by the researcher if a particular field of knowledge through the documents of the considered database. Basically this review analysis finds out through a very systematic way and using programming, the core themes, most contributory authors, most prominent sources of the topic. This analysis is very beneficial for the researcher to determine their future research area and it is also helpful for the policy maker to understand the core themes. It is also very useful to find out research gap for a particular field of study. In this particular bibliometric study the key aim is to identify the key features of the documents published on unemployment and inflation trade-offs. This trade-off is known as Phillips curve. From this bibliometric review, it would be possible to identify the prolific publishers, authors, and documents in this field of research. The remaining of this paper is presented in additional 4 sections. The methodology of this bibliometric paper is discussed in section 2 followed by bibliometric analysis of the published papers in section 3. Findings and future research directions are presented in section 4 and conclusions are discussed in section 5.

2. Methodology

For the bibliometric analysis this study will use two of the prominent bibliometric software which can visualize and analyze bibliometric information one is VoS viewer and the other one is R package Biblioshiny. Bibliometric analysis is an approach to study scientific contribution (Subramanyam, 1983). This analysis is very essential for sort out influential researcher, journals and This study has consider data from the Scopus database from 2011 to 2011. For the data analysis this study used SALSA approach (Mumu, Tahmid, & Azad, 2020). SALSA stands for Search, Appraisal, Synthesis, Analysis. By using this approach desired data set for the analysis can be obtained. The search process begins with the imposing key words in the database. Key word is very important because it will direct the study towards the desired documents. In this case the study concentrates on the documents that have discussed “unemployment” and “inflation”. The paper has also considered documents on “Phillips curve” as it shows the trade-off between unemployment and inflation. In the second stage to narrow down the search towards more precise documents this study has consider documents that has been published on the field of “Social science” or “Economics, Econometrics, and finance” or “Business, Management, and Accounting”. As document type this study only considered

“Articles” or “Review articles” or “Book chapters” and “English” as a medium of language for the documents. After the filtration this study downloaded a bibliometric file for analysis which contains 648 Documents.

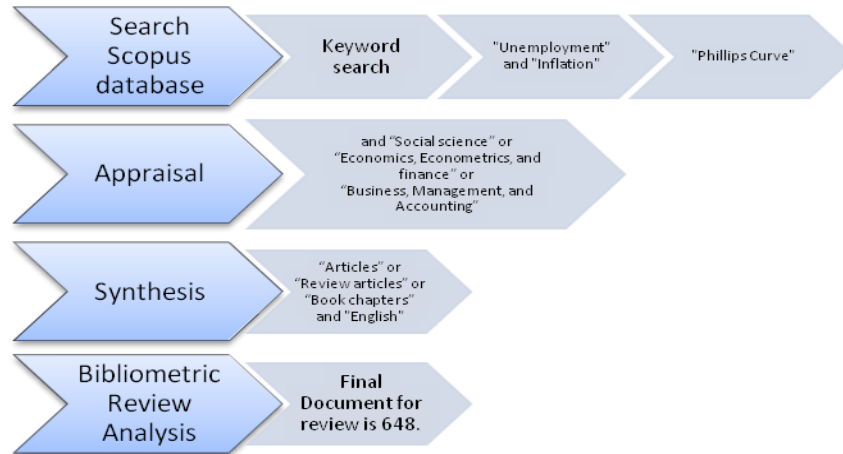


Figure -1 In the analysis this study considered documents from 2011-2020 from 383 sources.

3. Analysis

3.1 Annual Scientific Production:

The bibliometric analysis can be analyzed from two different perspectives. The first sort of analysis will be concentrated on productivity and production analysis(Noyons, Moed, & Luwel, 1999) and the other part is analysis of the bibliometric study on keywords, clusters, themes and various other study. This paper will emphasize on both of the study. Among the documents there are 554 articles,4 articles in press,6 book ,53 book chapter,18 conference paper,12 review paper.

Annual Scientific Production

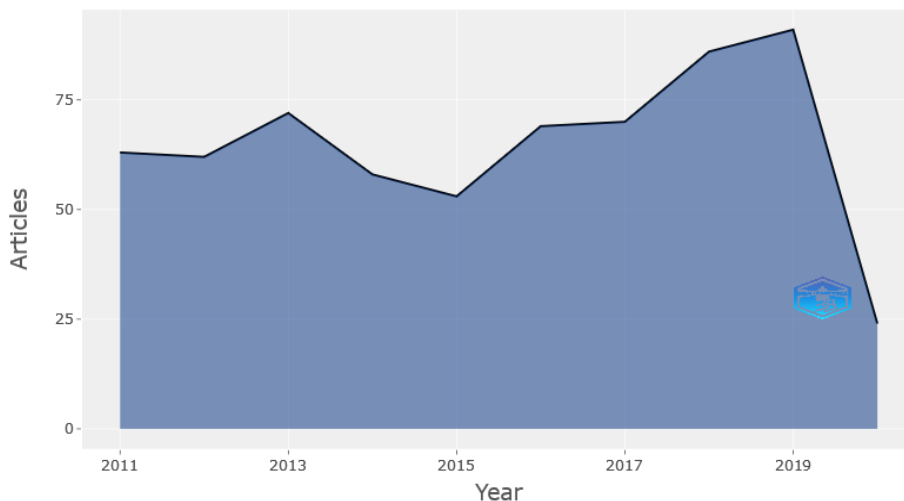


Figure -2

Figure 2 represents the annual scientific production in this area. A good number of publications have been published in this area over the years. More than fifty documents have been published in this area and it was in peak during 2018 in the past decade. A total of 1222 author has been documented by this analysis.

3.2 Most Relevant Source

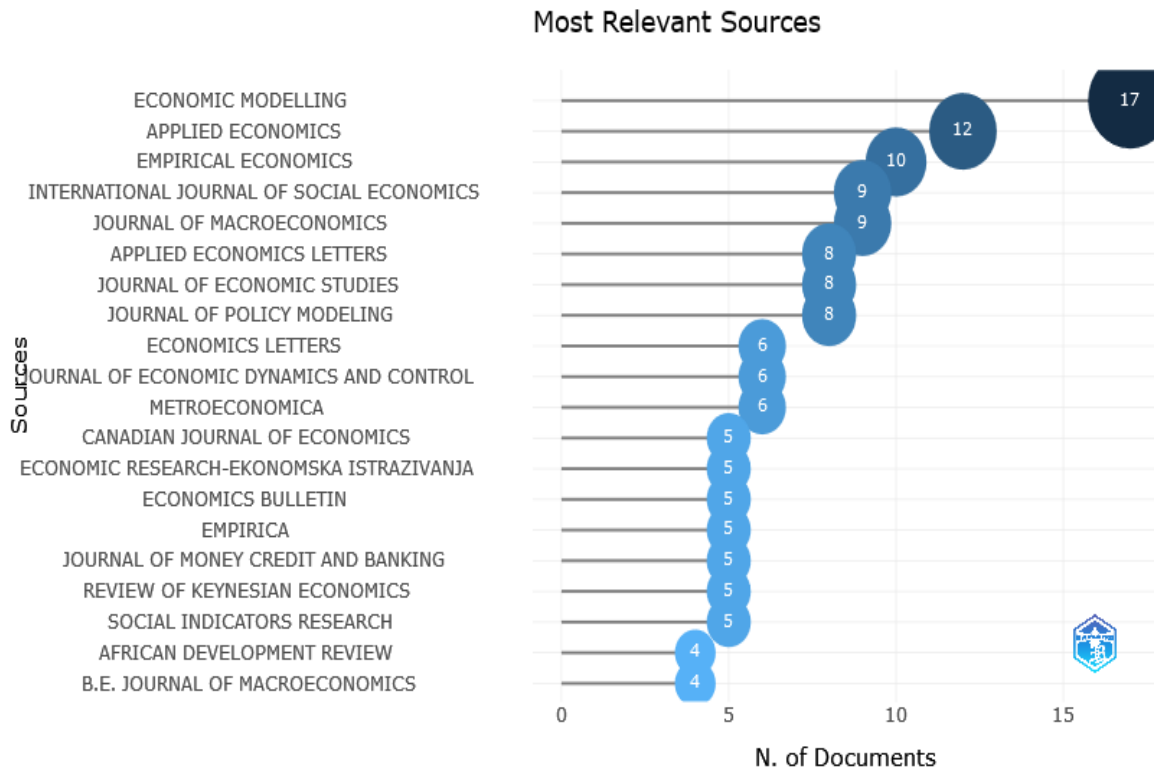


Figure 3

The above figure (Figure -3) is replicating most prominent journals in this field of research. With 17 publications in this area the journal which is most impactful is **Economic modelling**. With 12 publications in this area it is **Applied Economics** which is the second most relevant source found by this study followed by two other very prominent journal **Empirical Economics** and **International Journal of Social Economics**. Applied economics Letters, Journal of economic studies and Journal of policy modelling are also among the top contributing journals with 08 publications during the years considered for the study. But the source impact can be expressed the best with h-index, which refers that n number of document has been cited for n times(Bornmann & Daniel, 2005) whereas a G-index reflects the n number of document has been cited for n² times(Egghe, 2006).

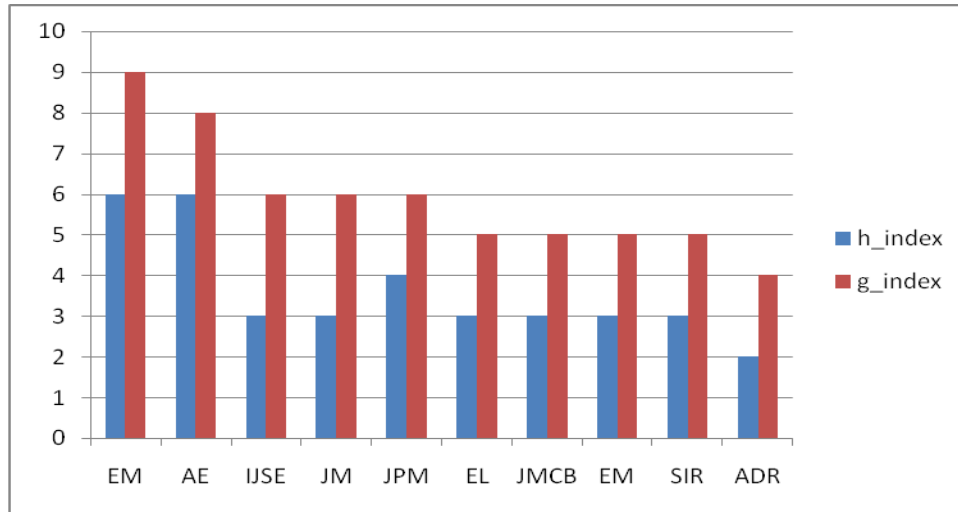


Figure 4

The figure above (figure -4) is representing the sources indexing for the top ten journals in this area. Economic modelling (EM) is in the top with both the g-index (9) and h-index (6).The next journal with g-index of 6 and h-index of 8 is Applied Economics. International Journal of Social Economics, Journal of Macroeconomics and Journal of Policy modelling is in the next most impactful spots with g-index of 6 followed by Economics Letters, Journal of Money, Credit and Banking, Econometrica and Social indicator research all of them have g-index of 5 and h-index of 3.Americal Development Review is also is in the list with g-index of 4 and h-index of 2.

3.3 Most Impactful Authors

After the journal impacts this study, this study has studied most impactful authors in this field.

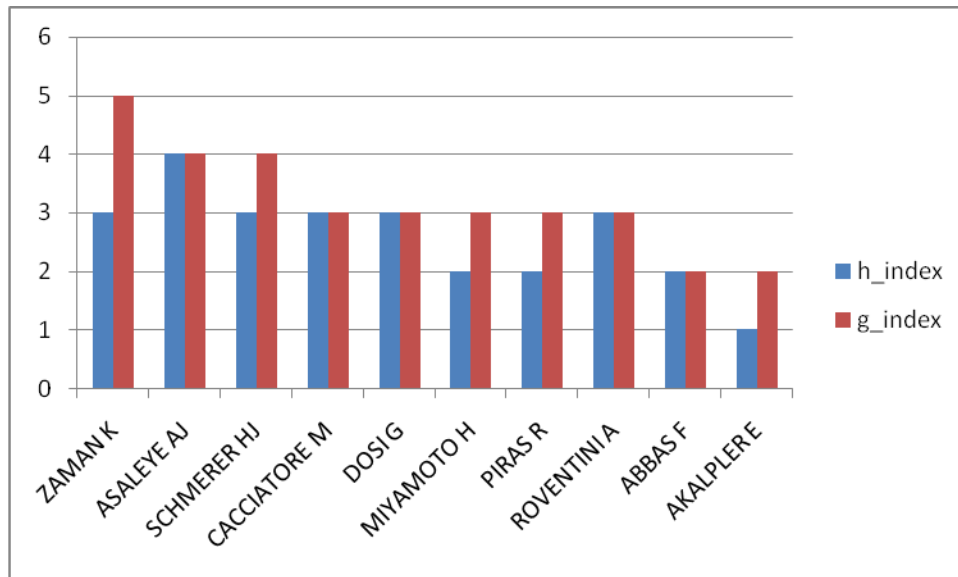


Figure-5

The figure above representing the most impactful authors in this field of research. Starting from the left Dr. Zaman has been the most impactful author in this area with a g-index of 5 and h-index of 3. Dr. Asaleye from Bowen university has been identified as another impactful author with both the h-index and g-score of 4. Dr. Schmerer from University of Hagen is another impactful author of this macroeconomic area with g-index of 4 and h-index of 3 followed by Dr. Cacciatore from HEC Montreal and Dr. Dosi from science policy research unit.

3.4 Most Impactful Sources

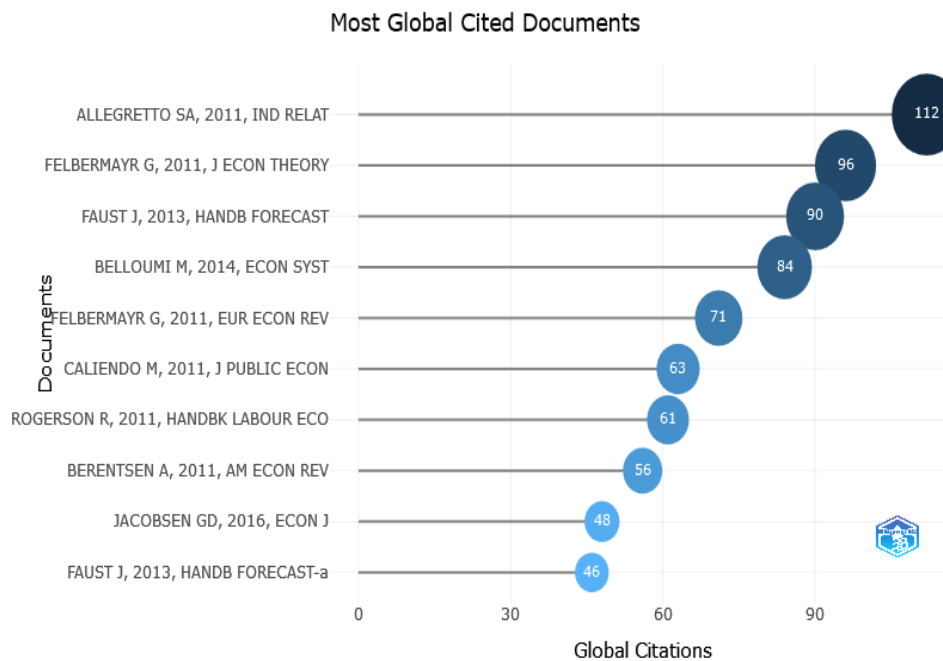


Figure - 6

This study has also investigated about the most cited documents in this area for the said period. With 112 citations “Do Minimum Wages Really Reduce Teen Employment? Accounting for Heterogeneity and Selectivity in State Panel Data” (Allegretto, Dube, & Reich, 2011) is the most cited document in this area where the study reveals that traditional estimates has for finding minimum wage rate become bias and not robust in few cases. Another most cited document titles “Globalization and labor market outcomes: Wage bargaining, search frictions, and firm heterogeneity”(Felbermayr, Prat, & Schmerer, 2011a) showed that labor market outcomes are influenced by selection effect of trade. Recent development of inflation forecasting has been discussed in the documents “Forecasting Inflation”(Faust & Wright, 2013). An econometric application for finding association between the variables has been discussed in “The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model”(Belloumi, 2014). Authors in “Trade and unemployment: What do the data say?”(Felbermayr, Prat, & Schmerer, 2011b) showed a robust association between trade openness and lower structural rate of unemployment. “Start-up subsidies for the unemployed: Long-term evidence and effect heterogeneity”(Caliendo & Künn, 2011) showed that most of the

person related in labor market are getting high labor income after 5 years of start-up. The next top cited document has analyzed various models in the document “Search in Macroeconomic Models of the Labor Market”(Rogerson & Shimer, 2011). In the document “Inflation and Unemployment in the Long Run”(Berentsen, Menzio, & Wright, 2011) researcher has investigated the long run association and found a low frequency positive inflation between inflation and unemployment. In the article "The economic aftermath of resource booms: evidence from boomtowns in the American West"(Jacobsen & Parker, 2016)researcher has discussed oil-boom and bust-cycle in the 1970s and 1980s.

3.5 Bibliographic Coupling:

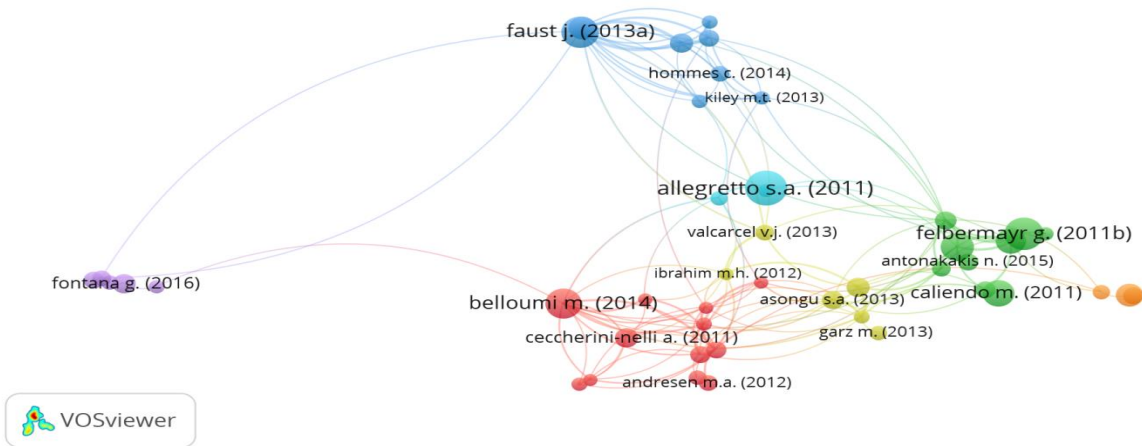


Figure-7: Bibliographic Coupling

The one of the best way to understand the themes of documents for a particular field is to analyze bibliographic coupling. Bibliographic coupling occurs when two documents cited a third documents(Kessler, 1963). It is an indication that these two documents might be related. The coupling analysis revealed six core themes in this study. The main theme in the analysis has been represented in red colour. The documents related in this field have basically discussed the economic sectors and growth. Among the documents “The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model”(Belloumi, 2014) is mostly cited and highly linked with other documents. Other documents includes “Economic factors and suicide rates: associations over time in four countries”(Ceccherini-Nelli & Priebe, 2011) and “An exploration of dynamic relationship between tourist arrivals, inflation, unemployment and crime rates in Malaysia”(Tang, 2011)is heavily linked with other documents. Another interesting document is “Macroeconomic consequences of terrorism in Pakistan”(Malik & Zaman, 2013).

The second theme of the study coloured in green has discussed the various aspects, models and theories of labor market. This theme is mainly focus with labor market. The documents includes “Globalization and labor market outcomes: Wage bargaining, search frictions, and firm heterogeneity”(Felbermayr et al., 2011a), “Trade and unemployment: what do the data

say?”(Felbermayr et al., 2011b) and “search in macroeconomic model for the labor market”(Rogerson & Shimer, 2011). All those documents have discussed the labor market more precisely.

The third theme in this study has been representing in yellow colour has basically discussed the impact of role of macroeconomic variable on macroeconomic performance. Variable such as oil-price, population growth has direct impact on the macroeconomic performances. The documents of these themes are:“Disaggregated consumer prices and oil price pass-through: evidence from Malaysia”(Ibrahim & Said, 2012), “Changes in the oil price-inflation pass-through” (Valcarcel & Wohar, 2013), “How Would Population Growth Affect Investment in the Future? Asymmetric Panel Causality Evidence for Africa” (Asongu, 2013)and “Migration and labor markets in OECD countries: a panel co-integration approach”(Damette & Fromentin, 2013).

The document in the fourth theme coloured in green has discussed issues by using **panel data**.

The fifth colour theme coloured in purple in the analysis has discussed various other issues and models related to **economic growth**. Such as “Wage Formation, Investment Behaviour and Growth Regimes: An Agent-Based Analysis”(Napoletano, Dosi, Fagiolo, & Roventini, 2012) and “Cyclical growth in a Goodwin–Kalecki–Marx model” and “Towards post-Keynesian ecological macroeconomics”(Sasaki, 2013).

The other documents in this study studied economic booms and recessions in the documents “The Economic Aftermath of Resource Booms: Evidence from Boomtowns in the American West”(Jacobsen & Parker, 2016) and “**The fundamentals of the Portuguese crisis**”(Andrade & Duarte, 2011).

Country Collaboration:

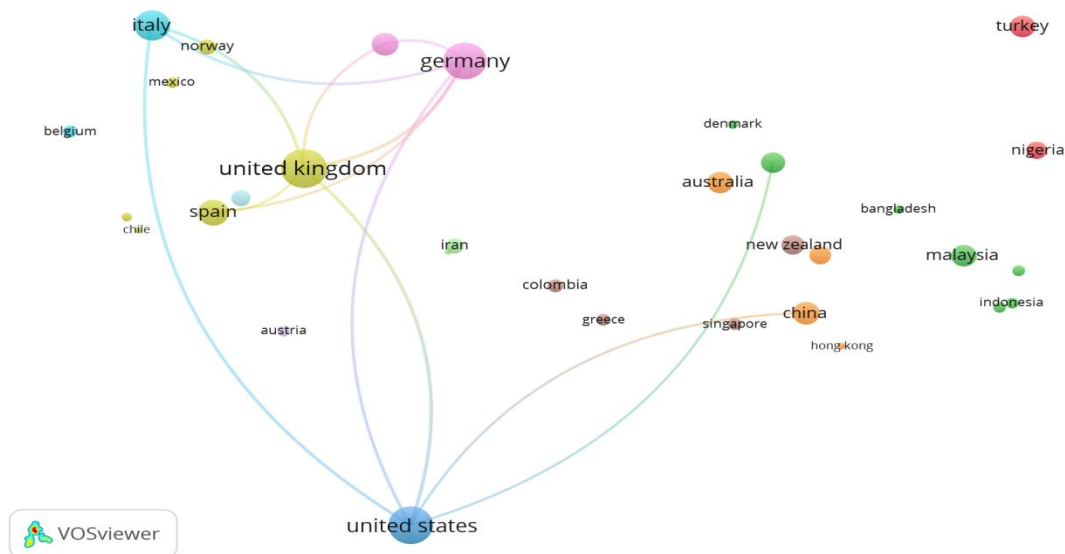


Figure-8

From figure -8 it is clearly evident that it is United Kingdom, United States of America and Germany from where the most number of collaboration has been recorded. All of those country produced document with collaboration with other countries. Again their number of document is also high which can be realized from the size of the nodes for each country. Spain, Italy, China has also contributed in this area of research.

4. Findings and Conclusion:

The above analysis has given a broad idea of the documents published so far in the area of unemployment and inflation. As a very common, popular and important area this area has got plenty of research document over the years. Among them there are documents which got more attention than other. In the introduction part this documents has aimed at few question and the analysis part has given answer of all the questions. This study documented that each year more than 50 documents has been published in this area over the years. Economic modelling, applied economics and empirical economics have been identified as most impactful source. On the other hand, as most impactful author Dr. zaman, Dr. Asaleye and Dr. Schmerer has been identified. In the quest for the most impactful source Economic Modelling, Applied Economics, Empirical economics and International Journal of Social Economics has been identified. As most impactful documents “Do Minimum Wages Really Reduce Teen Employment? Accounting for Heterogeneity and Selectivity in State Panel Data”, “Globalization and labor market outcomes: Wage bargaining, search frictions, and firm heterogeneity” and “Forecasting Inflation” has been sorted as the most impactful source. This study has also identified some core themes of the documents based on which the research of this area has documented through bibliographic coupling. They are Economic sectors and growth, Labor market, Role of macroeconomic variable on macroeconomic performance, Panel data, Economic growth and finally economic booms & recessions. This study also found lack of sources in some of the themes where future research can be directed such as Economic boom and recession also on labor market. UK, USA and Germany has been identified as most collaborating countries. As this study were limited with only Scopus databases for the years 2011-2020. This study recommend to further study from more databases and by incorporating many more years to have more deeper understanding of this area of study.

References:

- Allegretto, S. A., Dube, A., & Reich, M. (2011). Do minimum wages really reduce teen employment? Accounting for heterogeneity and selectivity in state panel data. *Industrial Relations: A Journal of Economy and Society*, 50(2), 205-240.
- Andrade, J. S., & Duarte, A. (2011). The fundamentals of the Portuguese crisis. *Panaeconomicus*, 58(2), 195-218.
- Asongu, S. A. (2013). How would population growth affect investment in the future? Asymmetric panel causality evidence for Africa. *African Development Review*, 25(1), 14-29.
- Belloumi, M. (2014). The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model. *Economic Systems*, 38(2), 269-287.

- Berentsen, A., Menzio, G., & Wright, R. (2011). Inflation and unemployment in the long run. *American Economic Review*, 101(1), 371-398.
- Bornmann, L., & Daniel, H.-D. (2005). Does the h-index for ranking of scientists really work? *Scientometrics*, 65(3), 391-392.
- Caliendo, M., & Künn, S. (2011). Start-up subsidies for the unemployed: Long-term evidence and effect heterogeneity. *Journal of Public Economics*, 95(3-4), 311-331.
- Ceccherini-Nelli, A., & Priebe, S. (2011). Economic factors and suicide rates: associations over time in four countries. *Social Psychiatry and Psychiatric Epidemiology*, 46(10), 975-982.
- Damette, O., & Fromentin, V. (2013). Migration and labour markets in OECD countries: a panel cointegration approach. *Applied Economics*, 45(16), 2295-2304.
- Dornbusch, R., Fischer, S., & Startz, R. (2013). *Macroeconomía*: Bookman Editora.
- Egghe, L. (2006). Theory and practise of the g-index. *Scientometrics*, 69(1), 131-152.
- Fair, R. C. (1978). Inflation and unemployment in a macroeconomic model. *After the Phillips Curve: Persistence of High Inflation and High Unemployment*, 164-200.
- Faust, J., & Wright, J. H. (2013). Forecasting inflation *Handbook of economic forecasting* (Vol. 2, pp. 2-56): Elsevier.
- Felbermayr, G., Prat, J., & Schmerer, H.-J. (2011a). Globalization and labor market outcomes: Wage bargaining, search frictions, and firm heterogeneity. *Journal of Economic theory*, 146(1), 39-73.
- Felbermayr, G., Prat, J., & Schmerer, H.-J. (2011b). Trade and unemployment: What do the data say? *European Economic Review*, 55(6), 741-758.
- Friedman, M., & Schwartz, A. J. (1970). *Monetary statistics of the United States: Estimates, sources, methods*: New York: National Bureau of Economic Research.
- Ibrahim, M. H., & Said, R. (2012). Disaggregated consumer prices and oil price pass-through: evidence from Malaysia. *China agricultural economic review*.
- Jacobsen, G. D., & Parker, D. P. (2016). The economic aftermath of resource booms: evidence from boomtowns in the American West. *The Economic Journal*, 126(593), 1092-1128.
- Kessler, M. M. (1963). Bibliographic coupling between scientific papers. *American documentation*, 14(1), 10-25.
- Malik, Z., & Zaman, K. (2013). Macroeconomic consequences of terrorism in Pakistan. *Journal of Policy Modeling*, 35(6), 1103-1123.
- McConnell, B. (2005). *Economics: Principles, Problems and Policies* (16th ed.): McGraw-Hill.
- Mumu, J. R., Tahmid, T., & Azad, M. A. K. (2020). Job satisfaction and intention to quit: A bibliometric review of work-family conflict and research agenda. *Applied Nursing Research*, 151334.
- Napoletano, M., Dosi, G., Fagiolo, G., & Roventini, A. (2012). Wage formation, investment behavior and growth regimes: An agent-based analysis. *Revue de l'OFCE*(5), 235-261.

- Noyons, E. C., Moed, H. F., & Luwel, M. (1999). Combining mapping and citation analysis for evaluative bibliometric purposes: A bibliometric study. *Journal of the American society for Information Science*, 50(2), 115-131.
- Phillips, A. W. (1958). The relation between unemployment and the rate of change of money wage rates in the United Kingdom, 1861-1957. *economica*, 25(100), 283-299.
- Rogerson, R., & Shimer, R. (2011). Search in macroeconomic models of the labor market *Handbook of labor economics* (Vol. 4, pp. 619-700): Elsevier.
- Samuelson, P. A., & Solow, R. M. (1960). Analytical aspects of anti-inflation policy. *The American Economic Review*, 50(2), 177-194.
- Sasaki, H. (2013). Cyclical growth in a Goodwin–Kalecki–Marx model. *Journal of Economics*, 108(2), 145-171.
- Subramanyam, K. (1983). Bibliometric studies of research collaboration: A review. *Journal of information Science*, 6(1), 33-38.
- Tang, C. F. (2011). An exploration of dynamic relationship between tourist arrivals, inflation, unemployment and crime rates in Malaysia. *International Journal of Social Economics*.
- Valcarcel, V. J., & Wohar, M. E. (2013). Changes in the oil price-inflation pass-through. *Journal of Economics and Business*, 68, 24-42.