Sovereign Wealth Fund: A Bibliometric Review

Anisa Syahidah Mujahidah

1SMART Indonesia

This bibliometric study maps out research related to the development of Sovereign Wealth Fund research trends published by leading journals from 2007 to 2022 that have been indexed by Scopus. The analysis is focused on keyword trends, authors and institutions. The data analyzed were 734 research publications. The search term was 'Sovereign Wealth Fund'. Descriptive statistical methods were used, and bibliometric analysis was performed using the VOSViewer application to determine the bibliometric map. The number of articles discussing the theme of the Sovereign Wealth Fund shows an increasing trend from year to year. The most popular keyword used is Sovereign Wealth Fund. The most prolific writer was Dixon A.D. Meanwhile, the country with the most popular authors and the most is the United States. The research provides information for researchers who focus on research in the Sovereign Wealth Fund field. In the end, this theme has the potential to continue to be developed.

Keywords: Bibliometrics; Sovereign Wealth Fund; Vosviewer
INTRODUCTION

In recent years, the global financial markets have seen an increase in the operations of capital-rich sovereign wealth funds (SWFs). As the global economic crisis that began in 2007 worsened, SWF activities exploded, causing their importance in global financial markets to grow even further. They look to be key financial actors in the near future (Das, 2009). Despite the fact that SWFs are a tool for increasing liquidity and allocating financial resources in the international capital market, they have become a subject of controversy. As a result, they became a source of increased financial protectionism in a number of sophisticated industrial nations, particularly the United States (Das, 2009).

A sovereign wealth fund (SWF) is a government-controlled investment vehicle that is often funded by a country's surplus reserves (Affuso et al., 2022). The basic goal of SWFs is to promote long-term prosperity and ensure the well-being of future generations (Urban, 2016). SWFs have grown in size and quantity considerably in recent years. In 2020, there will be 89 SWFs with assets totaling about $8.2 trillion dollars, according to the SWF Institute 1 (Affuso et al., 2022).

The word SWF did not become popular until 2005. They're liquid funds that help finance globalization and diversify. These global financial behemoths have invested in a diverse variety of asset classes. One issue with SWF investments is the response from protectionists and nationalists. With these state-owned investment funds investing more in global private sector company assets, the threat of financial protectionism has grown. Although they are a tool for increasing liquidity and allocating financial resources in the international capital market, they have also sparked a heated debate and threatened to escalate financial protectionism. Both public and private sector policy conclaves are worried about the policy measures required to counteract these serious dangers and promote an open global financial system. SWF activities have risen to the top of the academic agenda in the field of international finance. The expansion of their operations in the fourth quarter of 2007 aroused some legitimate concerns (Das, 2009).

This study aims to identify and map research related to the development of Sovereign Wealth Fund Management research trends published by leading journals. The data analyzed consisted of 734 research publications indexed by Scopus from 2007 to 2022. This data will be processed and analyzed using the VoS viewer application to find out a bibliometric map of research development related to the Sovereign Wealth Fund.

LITERATURE REVIEW

SWFs (Sovereign Wealth Funds) are a subgroup of institutional investors. The source of money distinguishes SWFs from other institutional investors such as pension funds, endowments, and hedge funds. An SWF is a fund whose capital is provided completely by a sovereign state. Specific circumstances that are not common among institutional investors may impact the strategy, goals, and investment decisions of such a fund. Unfortunately, trustworthy data on SWF financial performance is generally poor, if not non-existent (Audy Martínek, 2021).

SWFs have a long history, with the first one being founded in Kuwait in 1953. It is still known as the Kuwait Investment Authority today (Kotter and Lel, 2011). Some economists believe that the Permanent School Fund, founded in 1854 by the state of Texas in the United States, is the forerunner of today's SWFs (Dewenter, 2010). Even yet, only nine SWFs were formally acknowledged by 1980. By 1998, the number had more than quadrupled, and by 2007, it had more than quintupled. The total number of SWFs has reached 79 by March 2020.

Sovereign wealth funds can vary significantly in size, investment strategies, and transparency. Some well-known examples include the Government Pension Fund of Norway (which includes the Government Pension Fund Global and Government Pension Fund Norway) and the Abu Dhabi Investment Authority (ADIA). Each SWF operates under its own set of rules, objectives, and investment strategies, as determined by the government or entity that owns it.

After the financial crisis of 2007–2008, SWFs were able to fully utilize their accumulated liquidity, which was critically required by the global financial market. SWFs became stockholders in corporations including Merrill Lynch, Bear Stearns, Morgan Stanley, Citigroup, and even the Nasdaq Stock Market, which was bought by Borse Dubai in September 2007 for 19.99 percent ownership (Jory et al. 2010). The financial markets, academics, regulatory organizations, and politicians could not afford to ignore SWFs' extensive in-vestment activities (Audy Martínek, 2021). Drezner (2008), for example, addressed the financial security and transparency problems associated with SWFs in his article "SWFs and the (In)security of Global Finance". For example, the latest studies related to SWF can be
found at Amar & Lecourt (2023), Murtinu et al., (2023), Chen et al., (2023), Boubakri et al., (2023), and also Kitano & Takaku (2023).

**METHODOLOGY**

This study uses data from publications of papers sourced from various journals with the theme of Sovereign Wealth Fund research. Data collection was carried out by searching for articles indexed by Scopus, the search was carried out by typing the keyword 'Sovereign Wealth Fund'. From the search results, there are 734 articles published from 2007-2022. Data in the form of topics used in the publication of Sovereign Wealth Fund themed papers and analyzed using Microsoft Excel 2016. The trend of publication development on the theme of Islamic Financial Stability was analyzed using VOSViewer software.

The computer program that was introduced was called VOSviewer. VOSviewer is a program developed for creating and viewing bibliometric maps. This program is available free of charge to the bibliometric research community (see www.vosviewer.com). VOSviewer can create author maps or journals based on cocitation data or create keyword maps based on shared incident data. The program offers a viewer that allows bibliometric maps to be examined in detail.

To build the map, VOSviewer uses the VOS mapping technique, where VOS stands for visualization similarity. For previous studies where VOS mapping technique was used. VOSviewer can display maps constructed using appropriate mapping techniques. Therefore, this program can be used to display maps built using the VOS mapping technique and display maps built using multidimensional scaling techniques. VOSviewer runs on many hardware and operating system platforms and can be started directly from the internet.

**RESULTS**

This section describes the number of publications of papers on the theme of the Sovereign Wealth Fund. There were 734 papers published over a 16-year observation period, from 2007 to 2022. Table 1 depicts the distribution of papers per year that varied over the past 16 years with a range of 0 to 95 papers. The most published Sovereign Wealth Fund themed papers were in 2011, 2012, and 2021, with 95, 54 and 55 papers published annually. The minimum number of publications is from 2007, 2008 and 2022, where in that year the number of publications each year was 5, 33, and 15. However, 2022 has not been completed so the data is still dynamic and the results may change.
Bibliometrics Analysis

Bibliometrics is based on the calculation and statistical analysis of scientific outputs in the form of articles, publications, citations, patents, and other more complex indicators. It is an important tool in evaluating research, laboratory and scientist activities, as well as scientific specialization and country performance. The report, after establishing the background for bibliometric development, presents the database from which the bibliometric was created, as well as the main indicators used.

To explore the results of the meta-analysis, in this section a visual mapping chart from 734 journals published by Sovereign wealth funds will be presented. The results of the keyword mapping analysis become the basis for mapping together important or unique terms contained in certain articles. Mapping is a process that enables one to recognize elements of knowledge and their configuration, dynamics, interdependencies, and interactions.

Related to bibliometrics, science mapping is a method of visualizing the field of science. This visualization is done by making a landscape map that can display topics from science (Royani, et al., 2013). The results of network visualization from 734 word map journals with the theme of Sovereign wealth fund can be seen:

Co-Authorship Analysis

1. Co-authorship Authors

Using the VOSViewer software, we found the author's bibliometric mapping as shown in the following figure. The bigger the shape and the brighter the color, it indicates that the author is publishing more and more writings related to Sovereign wealth fund.

Figure 1. Co-authorship Authors

The appearance of the cluster density depends on the level of yellow light brightness. This identifies that the yellow color on the map depends on the number of items associated with other items. This section is useful for getting an idea of the general structure of a bibliometric map by paying attention to which parts of the light are considered important to analyze.

From the map, it is possible to interpret the authors who have published the most. In general, each researcher has different tendencies. Some writers are indexed as a single author, others co-author with other
researchers so that multiple clusters appear which are indicated with different densities. However, the authors with a fairly large density indicate that they publish more research on the theme of Sovereign wealth fund than those with a lower density, so this result can be used as a reference for future researchers.

Based on these results, the bigger and brighter the name of the author, the more papers he publishes. The author of the most published publications related to the theme of Sovereign wealth fund based on bibliometric mapping, namely Dixon.

2. Co-authorship Institution (Co-citation)

In bibliometric analysis, the author's institution can be seen from which institution they come from. Through these results, we were able to interpret the institutions that wrote the most publications.

Based on the following figure, the cluster of institutions that are visible with glowing circles shows how productive these institutions are in contributing to publishing papers with the theme of Sovereign wealth funds. The largest number of institutions is calculated from the number of publications and the number of links to other institutions, where an author can write many papers in different journals.

The most popular institutions are calculated based on the number of publications and the number of links to other institutions, where a paper writer can write many papers in different journals. The ranking of the most famous institutions shown by the results of bibliometric mapping is the University of Oxford, United Kingdom.

3. Co-authorship Country

Furthermore, the mapping visualization of journal publishers is illustrated in the bibliometric image of the journal source below. Based on the picture, it can be seen that several clusters of countries that appear to publish the most articles with the theme of Sovereign wealth fund.
Based on the picture above, the larger the circle of the publishing country, the more papers that country publishes. Seen that the United States has the brightest light. This means that the United States publishes the most Sovereign wealth fund-themed papers compared to other countries.

**Co-occurrence Analysis**

Furthermore, the bibliometric results will be displayed based on the sub-themes, namely all keywords, author keywords, and index keywords. VOSViewer can also find bibliometric mapping of the most widely used keywords in sovereign wealth fund themes related to Islamic economics. The bibliometric mapping of the keywords used can be seen in the image below. Keywords that have a larger form indicate that the word is used more in journals related to SWFs.
This data can be used to find out the trend of keywords in the last few years. The bibliometric analysis shows several keywords that are widely used in the research paper that is the object of research. The more keywords that appear, the wider the circle indication will be. While the line relationship between keywords shows how much they are related to other keywords.

Based on the results of the analysis using VOSviewer on keywords with the theme of Sovereign wealth fund, there are many clusters and are interrelated with other keywords. Keywords that have the same color indicate a very close relationship. The most widely used keyword in journals with the theme of Sovereign wealth fund is Sovereign wealth fund.

1. Co-occurrence Authors Key Word

VOSViewer can also find bibliometric mapping of keywords most used by authors in the theme of sovereign wealth funds related to Islamic economics. The bibliometric mapping of the keywords used can be seen in the image below. Keywords that have a larger form indicate that the word is used more by authors in journals related to sovereign wealth funds.

![Figure 5. Co-occurrence author Keyword](image)

Based on the results of the analysis using VOSviewer on keywords that are widely used by authors in journals with the theme of Sovereign wealth funds, there are many clusters and are interrelated with other keywords. Keywords that have the same color indicate a very close relationship. The keyword most used by the author is Sovereign wealth fund.

2. Co-occurrence Index

Then, this study also obtained results in the form of an index that is often used by the author and is interrelated in the theme of sovereign wealth funds related to Islamic economics as shown in the image below. Index that has the same color indicates a very close relationship.
Based on the results obtained, keywords that have a larger form indicate that the more often the words in the index are used. In the word index paper with the theme of Sovereign wealth funds related to Islamic economics, there are several words that are used the most, namely sovereignty.

Table 1. Summary

<table>
<thead>
<tr>
<th>Rank</th>
<th>Keyword by Occurrence</th>
<th>Authors</th>
<th>An institution with The Highest Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Sovereign Wealth Fund</td>
<td>Megginson W.I</td>
<td>UAE University, United Arab Emirates</td>
</tr>
<tr>
<td>3.</td>
<td>Sovereignty</td>
<td>Grira J.</td>
<td>Australian National University</td>
</tr>
<tr>
<td>4.</td>
<td>China</td>
<td>Wood G.</td>
<td>University of Oklahoma, United</td>
</tr>
<tr>
<td>5.</td>
<td>Corporate Governance</td>
<td>Lecourt C.</td>
<td>North Carolina State University</td>
</tr>
<tr>
<td>6.</td>
<td>Norway</td>
<td>Ismail A.G</td>
<td>Primakov National Research Institution</td>
</tr>
<tr>
<td>7.</td>
<td>Financial Crisis</td>
<td>Braunstein J.</td>
<td>International Monetary Fund, United States</td>
</tr>
<tr>
<td>8.</td>
<td>Global Economy</td>
<td>Wu F.</td>
<td>London School of Economics, United</td>
</tr>
</tbody>
</table>

The results of the research above show a bibliometric analysis using the VOS Viewer application of Scopus indexed journal articles with the theme Sovereign Wealth Fund. Research related to the Sovereign Wealth Fund has been an interesting discussion among researchers since 2007 and continues to grow throughout the world so that researchers in the Sovereign Wealth Fund field have begun to produce various scientific studies in developing research related to the Sovereign Wealth Fund. The development of...
literature on the Sovereign Wealth Fund also continues to develop to this day.

Based on the results of the analysis above, it was found that research with the theme of the Sovereign Wealth Fund has been published by various journals and by many authors, resulting in various topics. Then related to the most used keywords in the most popular Sovereign Wealth Fund-themed articles, including 'Sovereign Wealth Funds, Sovereign Wealth Fund, and Sovereignty' and others. This keyword that often appears from all the data researched articles, mostly focuses on the topic of the monetary system, then is then associated with the topic of Islamic Economics.

A sovereign wealth fund (SWF) is a state-owned investment fund consisting of financial assets such as stocks, bonds, real estate, precious metals, or other investments. These funds are primarily established by governments, central banks, or other state entities to manage and invest surplus reserves or revenues generated from sources such as oil and natural resources, trade surpluses, or other government-owned enterprises.

The main objectives of sovereign wealth funds often include: Stabilization of government revenues (Elbadawi et al., 2017). SWFs can help stabilize a country’s economy by mitigating the impact of volatile commodity prices or unpredictable revenue streams. Long-term wealth creation (Chwieroth, 2014). They aim to grow and diversify assets over the long term, aiming to generate returns and wealth for future generations or for specific strategic purposes. Diversification of assets (Elkharoof et al., 2010): These funds often invest in various asset classes across different regions to spread risk and optimize returns. However, these funds sometimes face scrutiny regarding transparency, governance, and their potential impact on global financial markets due to their massive size and influence.

CONCLUSION

This study tries to examine and map research related to the development of research trends themed Sovereign Wealth Fund published by leading journals. The data analyzed consisted of 734 Scopus indexed research publications from 2007 to 2022. The results showed that there had been quite a number of papers published on this theme in recent years, especially in 2011 there were more than 90 published studies.

Visualization of bibliometric mapping found that the author published the most popular publications related to the Sovereign Wealth Fund theme, namely Dixon A.D. The most popular institution is calculated based on the number of publications and the number of links to other institutions, indicated by the results of bibliometric mapping, is the University of Oxford, United Kingdom. Furthermore, the bibliometric results show that the United States publishes the most Sovereign Wealth Fund-themed papers compared to other countries.

Visual mapping analysis also found a bibliometric mapping of the most widely used keywords in the Sovereign Wealth Fund theme. This research is a basic reference to see how the graphical visualization of the development of research trends with the theme of the role of the Sovereign Wealth Fund in published scientific research, so that it can still be developed by experts. Further research recommendations can refer to the most popular keywords that still have the opportunity to be discussed in more depth. Suggestions for further research is to do a complete bibliometric analysis by using more elements studied or using other types of software tools, for example Biblioshiny (Antonio, 2023; Puspita, 2022; Maulida & Rusydiana, 2022; Maulida & Ali, 2023) to produce more comprehensive results.

REFERENCES


Royani, Yupi; Mulni A. Bachtar; Kamariah Tambunan; Tupan; and Sugiharto. 2013. Mapping of Scientific Papers of LPNK: Case Study of LIPI and BPPT (2004-2008).