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MORALITY BEFORE KNOWLEDGE

Revisiting gold as a stable, safe haven: Trends, insights, and paths to sustainability

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ABSTRACT

Background: Gold has long been regarded as a safe haven asset capable of preserving value during periods of financial instability, geopolitical tension, and economic uncertainty. However, recurring global crises, the emergence of alternative assets, and the growing emphasis on sustainability have renewed debates regarding gold's contemporary relevance and stabilising role. This study aims to revisit and synthesise the scholarly literature on gold as a stable safe haven, with particular attention to its evolving contribution to long-term financial sustainability and systemic resilience. **Methods:** Employing a mixed-methods design, the study combines bibliometric analysis of Scopus-indexed publications with a qualitative narrative literature review. Bibliometric mapping is used to identify publication trends, influential countries and journals, thematic clusters, and temporal evolution, while the literature review provides in-depth interpretation of dominant findings, methodological approaches, and emerging sustainability perspectives. **Findings:** The results indicate that gold remains the most consistently studied and empirically supported safe haven asset, particularly during periods of extreme market stress, pandemics, and heightened geopolitical risk. However, its hedging and safe haven properties are shown to be conditional, varying across market regimes, crisis phases, and regional contexts. The literature further suggests that gold's relevance is increasingly framed within broader sustainability and resilience narratives, emphasising its role in mitigating tail risk rather than delivering constant returns. **Conclusion:** Overall, the study concludes that gold continues to play a central, albeit conditional, role in enhancing portfolio resilience and financial system stability. These findings contribute to a more nuanced understanding of gold's function within sustainable finance and offer insights for researchers, investors, and policymakers concerned with long-term economic resilience. **Novelty/Originality of this article:** This article offers a novel contribution by integrating bibliometric mapping with a comprehensive narrative literature review to systematically trace the evolution of gold safe haven research while explicitly reframing gold's role within long-term financial sustainability and systemic resilience.

KEYWORDS: bibliometric; financial crises; gold; safe haven; sustainability.

1. Introduction

Gold has historically occupied a distinctive position within financial systems as a store of value, medium of wealth preservation, and symbol of economic security. Across centuries, gold has been relied upon during episodes of monetary instability, inflationary pressures, and geopolitical turmoil, reinforcing its reputation as a safe haven asset (Triki & Ben Maatoug, 2021). In modern financial markets, this role has gained renewed attention amid recurring global shocks, including financial crises, pandemics, geopolitical conflicts, and heightened policy uncertainty (Feder-Sempach et al., 2024). As financial systems

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become increasingly complex and interconnected, understanding whether and how gold continues to function as a stabilising asset remains a critical issue for investors, policymakers, and scholars alike.

The global financial landscape over the past two decades has been characterised by frequent systemic disruptions, ranging from the Global Financial Crisis and sovereign debt crises to the COVID-19 pandemic and escalating geopolitical tensions (Salavrakos & Palmadessa, 2023). These events have challenged conventional assumptions regarding asset diversification, portfolio resilience, and risk management. Traditional safe assets, such as government bonds and reserve currencies, have at times exhibited diminished protective capacity due to ultra-low interest rates, inflationary pressures, and fiscal fragility (Grasselli, 2022). In this context, gold has re-emerged as a focal point of academic and practical debate, not only as a crisis hedge but also as a potential contributor to long-term financial stability and sustainability.

Despite an extensive body of literature on gold as a hedge and safe haven, existing studies reveal fragmented and sometimes contradictory findings. While numerous empirical investigations confirm that gold provides protection during periods of extreme market stress, other studies demonstrate that its effectiveness is conditional, time-varying, and sensitive to market regimes, crisis phases, and geographical contexts (Mahmoud, 2025; Raggad & Bouri, 2023; Soltani & Abbes, 2024). Moreover, recent research increasingly compares gold with alternative assets such as cryptocurrencies, commodities, and sustainable investment instruments, raising questions about gold's evolving relevance in contemporary portfolios (Gökgöz et al., 2024). These mixed findings indicate that the role of gold cannot be understood through isolated empirical results, but requires a comprehensive synthesis of research trends, thematic evolution, and emerging sustainability narratives.

In parallel, sustainability has become a central concern in finance, extending beyond environmental considerations to encompass systemic resilience, long-term value preservation, and stability under uncertainty. Within this broader framework, gold's role warrants renewed examination. While gold is often criticised for environmental and extraction-related concerns, it is simultaneously recognised for its durability, recyclability, and ability to mitigate extreme downside risk (Haroon & Hayyat, 2025). Recent scholarship suggests that gold's contribution to sustainability lies less in short-term return optimisation and more in enhancing financial system robustness and portfolio resilience, particularly during systemic shocks (Arestis, 2022; Nekhili et al., 2024). However, the sustainability dimension of gold safe haven research remains underexplored and dispersed across disciplines.

Against this backdrop, this study aims to revisit and synthesise the literature on gold as a stable safe haven through an integrated bibliometric analysis and qualitative literature review. By mapping publication trends, influential contributors, thematic clusters, and temporal evolution, the study provides a structured overview of how scholarly understanding (including recent sustainability-oriented discourse) has developed over time . In doing so, the paper seeks to address two key gaps: first, the lack of an integrated perspective on the evolution of gold safe haven research; and second, the limited conceptualisation of gold's role within sustainability and long-term financial resilience frameworks. The study contributes to the literature by offering a comprehensive, trend-based synthesis that clarifies gold's conditional stabilising role and outlines potential paths toward its integration into sustainable financial systems.

2. Methods

2.1 Research design

This study adopts an integrated bibliometric analysis and qualitative literature review to systematically examine the evolution, thematic structure, and sustainability discourse surrounding gold as a safe haven asset. Bibliometric analysis is employed as a quantitative technique to map the intellectual landscape of gold safe haven research, identify publication trends, influential authors and journals, geographical distribution, and dominant thematic clusters (Donthu et al., 2021). This approach enables an objective and replicable overview of how scholarly interest in gold's safe haven role has developed over time and across disciplines.

To complement this macro-level mapping, a structured qualitative literature review is conducted to interpret the conceptual foundations, empirical findings, and sustainability-related insights emerging from the literature (Gunawan, 2025). By integrating bibliometric techniques with narrative synthesis, the study balances pattern recognition with critical interpretation, making it well-suited to synthesizing a mature yet continuously evolving research domain such as gold safe-haven studies, which span finance, economics, sustainability, and risk management.

2.2 Data source and search strategy

The bibliometric data were obtained from the Scopus database, selected for its comprehensive coverage of high-quality peer-reviewed journals in finance, economics, environmental studies, and interdisciplinary research. Scopus is widely used in bibliometric studies due to its reliable citation metadata, standardized indexing, and compatibility with advanced bibliometric software (Singh et al., 2021). The literature search was conducted using a structured keyword strategy to capture studies examining gold and bullion in a safe-haven context. The search string applied was ("gold" OR "bullion") AND "safe haven". The use of wildcard operators ensured coverage of variations such as gold, golden, bullion market, and related terms, while maintaining conceptual specificity. No restrictions were applied to subject area or publication year, allowing for a comprehensive longitudinal and interdisciplinary assessment of the literature. The search yielded 194 documents, which constituted the initial dataset for analysis.

2.3 Inclusion, exclusion criteria, bibliometric analysis tools and indicators

To ensure relevance and analytical consistency, several inclusion and exclusion criteria were applied. First, only documents indexed in Scopus at the time of data collection were considered. Second, the analysis focused on scholarly publications, including journal articles, conference papers, book chapters, and review articles. Third, only publications written in English were included to ensure consistency in interpretation and comparative analysis. Duplicate records and documents with marginal relevance were removed. After screening, the final dataset comprised 194 publications, which were subsequently exported for bibliometric processing.

The bibliometric analysis was conducted using VOSviewer (version 1.6.20), a specialized software for constructing and visualizing bibliometric networks. The primary analytical focus was keyword co-occurrence analysis, which facilitates the identification of dominant research themes, conceptual linkages, and emerging topics within the gold safe haven literature. A minimum threshold of five keyword occurrences was applied to ensure that only substantively recurring and thematically significant terms were included in the network analysis. This threshold balances inclusivity with analytical clarity, reducing noise from idiosyncratic or rarely used keywords. In addition to keyword mapping, descriptive indicators such as annual publication trends, leading authors and journals, contributing countries, and subject area distributions were extracted to provide contextual background and support interpretive analysis.

2.4 Literature review procedure

Following the bibliometric mapping, a structured qualitative literature review was undertaken to synthesize key findings related to gold's role as a safe haven, its performance during financial crises and periods of heightened uncertainty, and its evolving sustainability implications. The review primarily relied on the same Scopus-indexed publications used in the bibliometric analysis to maintain methodological coherence. To enhance contextual depth particularly regarding sustainability narratives, additional complementary sources were identified through targeted searches in Google Scholar using the same keyword combinations. This integrated methodological approach ensures both analytical robustness and conceptual depth in assessing trends, insights, and sustainability pathways in gold safe haven research.

3. Results and Discussion

3.1 Bibliometric findings

Figure 1 illustrates the annual trend in publications on gold as a safe haven from 2010 to 2025. The results reveal a clear long-term upward trajectory, indicating sustained, increasingly intense scholarly interest in gold's safe-haven properties, particularly during periods of heightened economic and financial uncertainty. In the early phase (2010–2012), publication activity was relatively low and stable, with only two publications per year. This period reflects a foundational stage of the literature, in which gold's safe haven role was discussed primarily in response to the aftermath of the Global Financial Crisis, but had not yet developed into a dominant or systematically explored research theme. A moderate increase appears in 2013, with seven publications, suggesting renewed academic attention as global markets continued to experience post-crisis volatility. Between 2014 and 2018, research output fluctuated modestly, ranging between four and eight publications per year. This phase can be interpreted as a consolidation period, during which empirical approaches, methodological refinements, and comparative analyses with other safe haven assets, such as currencies and bonds, began to emerge, albeit without a pronounced surge in volume.

A structural shift becomes evident from 2019 onward, marking the beginning of a rapid expansion in the literature. Publications increased from 10 in 2019 to 22 in 2020 and 21 in 2021, coinciding with escalating global uncertainty driven by trade tensions, the COVID-19 pandemic, and unprecedented monetary policy interventions. This period reflects a renewed emphasis on gold's hedging and diversification role under systemic stress, as well as growing interest in its dynamic safe haven behavior across different market regimes. The peak of scholarly activity occurs in 2022, with 35 publications, representing the highest annual output in the dataset. This surge aligns with intensified geopolitical risks, inflationary pressures, and financial market volatility, reinforcing gold's relevance as a crisis-sensitive asset. Although a slight decline is observed in 2023 (30 publications), the overall level of research remains historically high, indicating that gold safe haven studies have transitioned into a mature and central research stream rather than a crisis-driven anomaly. In 2024, publication output declines more noticeably to 14 studies, which may reflect a temporary normalization of financial conditions or publication lags. However, this decline is followed by a renewed increase in 2025 (21 publications), suggesting that academic interest remains resilient and responsive to evolving debates surrounding gold, including its interaction with sustainability concerns, Environmental, Social, and Governance (ESG) considerations, and its role in long-term portfolio resilience.

Overall, Figure 1 demonstrates that research on gold as a safe haven has evolved from a sporadic and event-driven topic into a well-established and continuously expanding field of inquiry. The pronounced growth after 2019 underscores the strategic importance of gold in contemporary financial research, particularly in the context of systemic risk, crisis transmission, and the search for sustainable stores of value under global uncertainty. Table 1 presents the five most prolific authors and journals contributing to the literature on gold as a safe haven, highlighting the key scholarly actors and publication outlets shaping this research domain. The results indicate a highly concentrated authorship structure, in which a relatively small group of scholars has played a dominant role in advancing the empirical and conceptual understanding of gold's safe-haven properties.

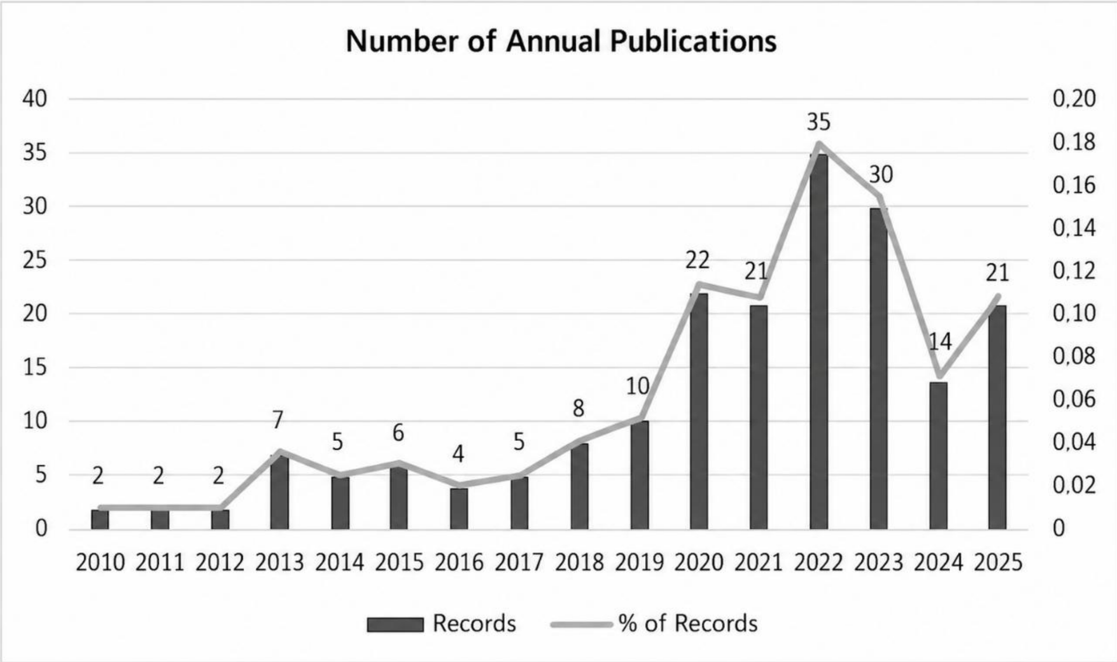


Fig. 1. Trend in the number of publications

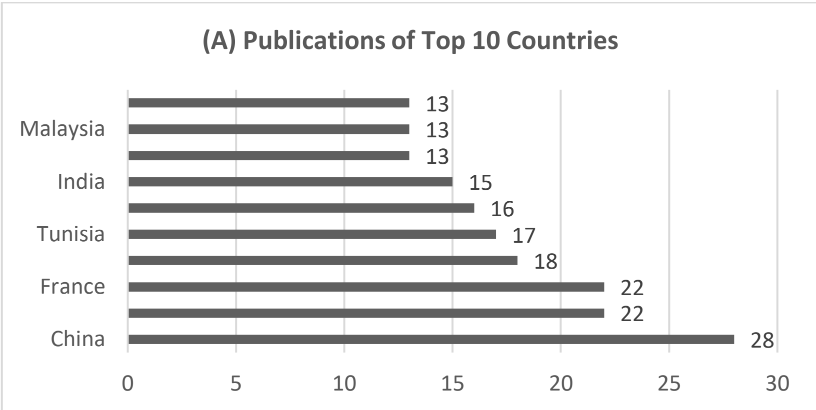
Among individual contributors, Bouri, Elie I. (Lebanon) is the most prolific author, with 13 publications, underscoring his substantial influence on research on safe-haven assets, market connectedness, and crisis-driven financial dynamics. This is followed by Baur, Dirk G. (Australia), with 11 publications, whose foundational work on safe-haven, hedge, and diversification properties of gold has become highly influential and frequently cited. Other notable contributors include Ghazali, Mohd Fahmi (Malaysia), Lean, Hooi Hooi (Malaysia), and Shahzad, Syed Jawad Hussain (New Zealand), each of whom has contributed consistently to empirical investigations of gold's behavior under varying market conditions. The geographical diversity of these authors, spanning the Middle East, Asia-Pacific, and Oceania, reflects the global relevance of gold safe haven research rather than a concentration in a single financial market or region.

Table 1. Top 5 authors and journals

Author (nationality)	Records	Source (Scopus quartile; SCImago journal rank)	Records
Bouri, Elie I. (Lebanon)	13	Resources Policy (Q1; 2.381)	23
Baur, Dirk G. (Australia)	11	Finance Research Letters (Q1; 1.711)	16
Ghazali, Mohd Fahmi (Malaysia)	7	International Review of Financial Analysis (Q1; 2.288)	8
Lean, Hooi Hooi (Malaysia)	6	Economic Modelling (Q1; 1.417)	5
Shahzad, Syed Jawad Hussain (New Zealand)	6	Journal of Commodity Markets (Q1; 0.928)	5

Table 1 further highlights the leading journals disseminating this research, with Resources Policy publishing the most related articles (23 records), followed by Finance Research Letters (16 records). Both journals are Q1-ranked and specialize in commodity and financial market research, reinforcing their centrality as primary outlets for gold safe-haven studies. The remaining journals, International Review of Financial Analysis, Economic Modelling, and Journal of Commodity Markets, also maintain Q1 status, indicating that this research area is consistently published in high-impact, well-regarded venues. Collectively, the concentration of publications within a small set of top-tier journals suggests a well-established and specialized research community centered on gold as a financial safe haven.

In terms of publication outlets, the literature is dominated by high-impact, finance- and resource-oriented journals, all ranked in Scopus Q1. *Resources Policy* leads with 23 publications, highlighting the growing intersection between gold market research, commodity economics, and broader resource sustainability discussions. *Finance Research Letters* follows with 16 publications, reflecting the journal's emphasis on timely, crisis-focused empirical studies. Other prominent outlets include the *International Review of Financial Analysis*, *Economic Modeling*, and the *Journal of Commodity Markets*, each contributing five to eight publications. The presence of these journals, characterized by high SCImago Journal Rank scores, indicates that gold safe-haven research is not only prolific but also widely disseminated through top-tier academic channels. Overall, Table 1 demonstrates that research on gold as a safe haven is driven by a core group of internationally recognized scholars and published predominantly in high-quality Q1 journals, underscoring both the academic maturity and policy relevance of the field. This concentration also suggests that theoretical framing and methodological approaches in gold safe-haven studies are shaped by a relatively cohesive scholarly network, which may contribute to intellectual coherence while highlighting opportunities for broader methodological and regional diversification in future research.



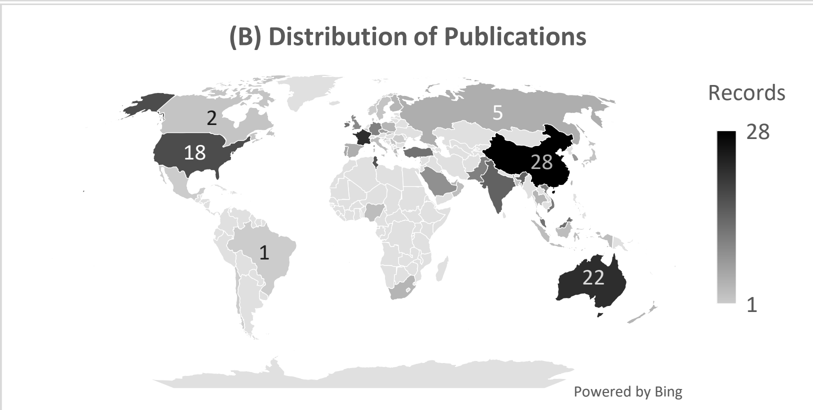


Fig. 2. (A)Research trend based on the author's country; (B)Top 5 Countries (Global Data)

Figure 2 presents the geographical distribution of research on gold as a safe haven based on authors' country affiliations. Panel (A) highlights the top contributing countries, while Panel (B) illustrates the global dispersion of publications, offering insight into both concentration patterns and international reach. As shown in Figure 2A, China emerges as the leading contributor, with 28 publications, indicating strong academic interest in gold's safe-haven properties amid China's expanding financial markets, commodity demand, and exposure to global economic uncertainty. Australia and France follow closely, each contributing 22 publications, reflecting their established research ecosystems in finance, commodities, and macroeconomic risk analysis. Australia's prominent position is particularly notable given its role as a major gold-producing country, which may incentivize scholarly engagement with gold market dynamics and hedging behavior. The United States ranks next with 18 publications, underscoring its continued interest in gold as a diversification and crisis-hedging instrument within global financial portfolios. Other significant contributors include Tunisia (17 publications) and Lebanon (16 publications), suggesting that emerging and middle-income economies, often more exposed to financial instability, inflation, and exchange rate volatility, also place strong academic emphasis on gold's protective role. India (15 publications) and Malaysia, Ireland, and Turkey (each with 13 publications) further illustrate the broad regional engagement with gold safe haven research across Asia, Europe, and the Middle East.

Figure 2B reinforces these findings by illustrating the global distribution of publications, showing that gold safe haven research spans all major regions, including Asia, Europe, North America, the Middle East, and Oceania. While research output is clearly concentrated in a subset of countries with strong financial research capacity or strategic interest in gold, the presence of publications across diverse regions indicates that gold's role as a safe haven is a globally relevant research concern, transcending differences in market development, income level, and economic structure. Overall, Figure 2 demonstrates that research on gold as a safe haven is characterized by both regional concentration and global diffusion. The dominance of countries such as China, Australia, and France highlights the influence of commodity exposure, market size, and research infrastructure, while the broader global spread suggests that gold's function as a hedge against systemic risk, financial crises, and macroeconomic uncertainty resonates across varied economic contexts. This geographical diversity strengthens the generalizability of the literature and underscores the universal relevance of gold in discussions of financial resilience and sustainability.

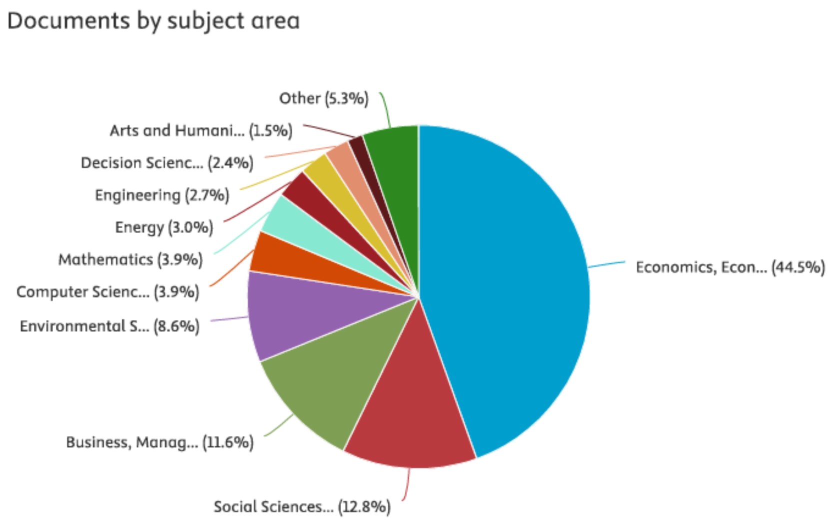


Fig. 3. Documents by subject area

Figure 3 illustrates the distribution of publications on gold as a safe haven across subject areas, highlighting the interdisciplinary nature of the literature while also revealing its dominant intellectual foundations. The results show that research on gold's safe haven properties is overwhelmingly grounded in economics and finance, with *Economics, Econometrics, and Finance* accounting for 44.5% of the total publications. This strong concentration reflects the central role of gold in studies of asset pricing, risk management, portfolio diversification, and macro-financial stability, particularly during periods of crisis and heightened uncertainty. Beyond its economic core, a substantial share of the literature is situated within the *Social Sciences* (12.8%) and *Business, Management, and Accounting* (11.6%). These contributions extend the analysis of gold beyond purely financial metrics to include behavioral finance, institutional dynamics, policy uncertainty, and investment decision-making. The presence of these disciplines indicates growing scholarly interest in understanding gold's safe haven role from broader socio-economic and managerial perspectives, including investor behavior and market sentiment.

Notably, *Environmental Sciences* account for 8.6% of the publications, signaling an emerging shift in the literature toward sustainability-related considerations. This growing representation suggests that research on gold as a safe haven is increasingly engaging with environmental impacts, resource extraction concerns, and the long-term sustainability of gold markets. Such studies reflect a broader reorientation of commodity research toward ESG-related themes, aligning financial resilience with environmental responsibility. Smaller yet meaningful contributions are observed in *Computer Science* and *Mathematics* (each 3.9%), *Energy* (3.0%), *Engineering* (2.7%), and *Decision Sciences* (2.4%). These fields contribute advanced quantitative modeling, computational methods, and systems-based approaches, thereby enhancing empirical rigor and methodological diversity in gold safe-haven research. Meanwhile, *Arts and Humanities* (1.5%) and *Other* subject areas (5.3%) reflect more normative, historical, or interdisciplinary engagements with gold as a cultural, ethical, or symbolic store of value.

Overall, Figure 3 confirms that while gold safe haven research remains firmly anchored in economics and finance, it has evolved into a multidimensional and increasingly interdisciplinary field. The growing participation of environmental, social, and computational disciplines underscores a gradual transition from viewing gold solely as a crisis-hedging asset toward framing it as part of a broader discourse on sustainability, systemic resilience, and long-term value preservation.

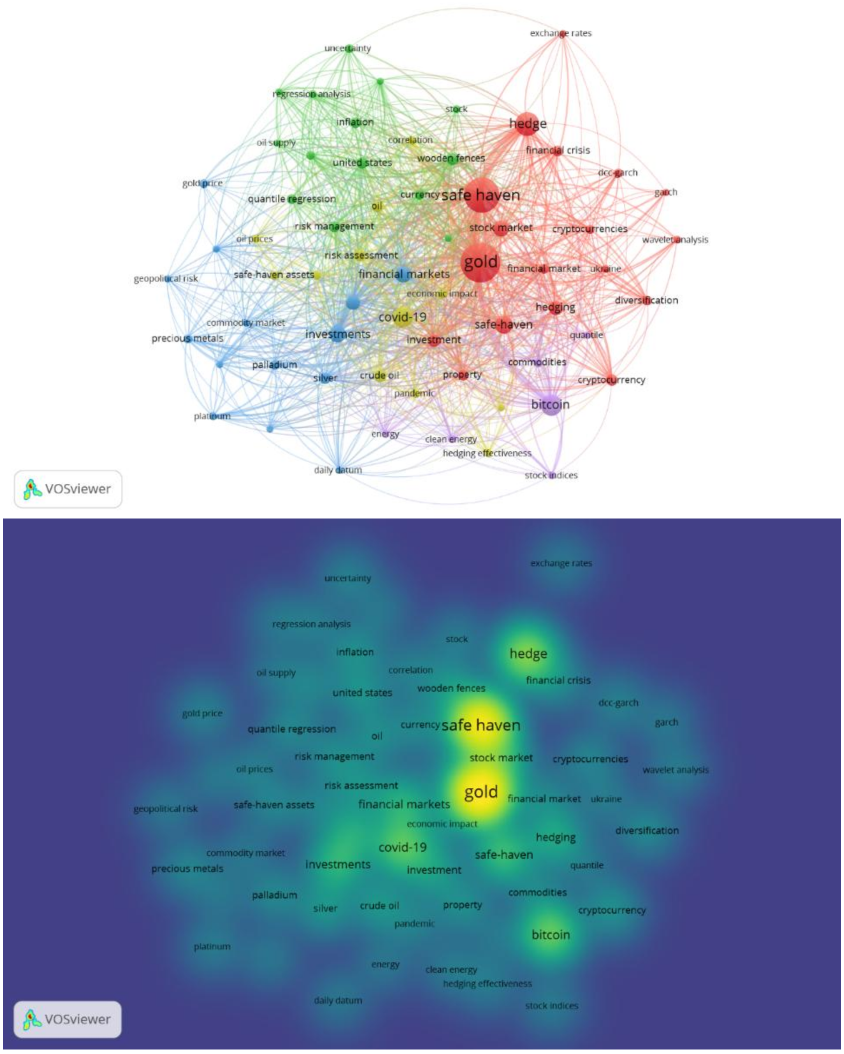


Fig. 4. Research trends based on keywords

Figure 4 presents the keyword co-occurrence network of gold safe haven research generated using VOSviewer, revealing the conceptual structure, dominant themes, and interconnections within the literature. Node size reflects keyword frequency, while link strength indicates the intensity of co-occurrence relationships. The visualization reveals a highly interconnected and mature research field, centered on “gold” and “safe haven,” surrounded by multiple thematic clusters that capture financial, macroeconomic, geopolitical, and comparative asset perspectives. Based on color-coded groupings, the network can be interpreted through five major thematic clusters, each representing a distinct yet interconnected research stream.

Keyword co-occurrence analysis identifies five major thematic clusters within the literature on gold as a safe-haven asset. Cluster 1 (Red) forms the core of the network, dominated by keywords such as gold, safe-haven, hedge, financial crisis, diversification, hedging, stock market, and financial markets, representing the foundational literature that empirically investigates gold's ability to preserve value and reduce downside risk during periods of financial turmoil; studies in this cluster primarily examine gold's behavior during systemic shocks, including stock market crashes, currency crises, and episodes of extreme volatility, and methodologically rely heavily on time-varying correlation models, quantile-based approaches, and crisis-period subsample analysis to distinguish between hedge, safe haven, and diversifier properties, with the strong connectivity between gold, hedge, and financial crisis highlighting the central role of crisis sensitivity in defining gold's safe-haven status, reflecting a mature and well-established research agenda that continues to expand as new sources of uncertainty emerge.

Cluster 2 (Green) centers on keywords such as uncertainty, inflation, exchange rates, oil, economic impact, United States, correlation, and regression analysis, capturing research that links gold's safe-haven function to macroeconomic fundamentals and policy-driven uncertainty; studies within this stream analyze how inflationary pressures, exchange rate movements, oil price shocks, and monetary policy uncertainty influence gold demand and price dynamics, with the presence of United States reflecting the dominance of US macroeconomic indicators as global reference points, while oil and oil supply signal the interaction between energy markets and gold as an inflation hedge, emphasizing that gold's safe-haven role is not only crisis-driven but also structurally tied to macroeconomic instability and policy uncertainty, reinforcing its relevance as a long-term store of value.

Cluster 3 (Blue) is characterized by keywords such as precious metals, silver, platinum, palladium, commodity market, geopolitical risk, investments, and risk management, representing a comparative and cross-commodity research stream that situates gold within the broader universe of precious metals and commodities; research in this cluster evaluates whether gold outperforms alternative metals as a safe haven and explores diversification benefits across commodity portfolios, with the inclusion of geopolitical risk highlighting growing scholarly attention to geopolitical tensions, wars, and political instability as drivers of safe-haven demand, reflecting a shift toward multi-asset and portfolio-level analysis that recognizes gold's safe-haven role is often assessed relative to, rather than in isolation from, other tangible assets.

Cluster 4 (Yellow) revolves around keywords such as COVID-19, pandemic, crude oil, energy, property, economic impact, and investments, capturing event-driven research, particularly studies examining gold's behavior during global disruptions that simultaneously affect financial markets and the real economy; the prominence of COVID-19 underscores a surge in research assessing gold's performance during unprecedented global uncertainty, supply chain disruptions, and synchronized market crashes, with studies in this cluster often analyzing cross-market spillovers between gold, energy, and real assets, highlighting gold's role as a stabilizing asset amid real-sector shocks and reflecting an expansion of the safe-haven concept beyond financial crises to include global systemic events with broad economic implications.

Cluster 5 (Purple) is defined by keywords such as bitcoin, cryptocurrency, cryptocurrencies, hedging effectiveness, and stock indices, representing a new and rapidly growing research frontier that compares gold with digital assets as alternative safe havens; studies in this stream investigate whether cryptocurrencies, particularly Bitcoin, can substitute or complement gold in times of market stress, with the close linkage between bitcoin and hedging effectiveness reflecting ongoing debates about volatility, speculative behavior, and regime-dependent performance, signaling a conceptual broadening of safe-haven research where gold's traditional dominance is increasingly challenged by technologically driven financial innovations.

Taken together, Figure 4 reveals that gold safe haven research is highly integrated yet thematically diverse. The literature has evolved from a narrow focus on crisis hedging toward a multidimensional framework encompassing macroeconomic uncertainty, geopolitical risk, pandemic shocks, sustainability-relevant commodity dynamics, and competition from digital assets. The dense interconnections among clusters indicate that contemporary studies increasingly adopt cross-market, multi-risk, and time-varying perspectives, reflecting the complexity of modern financial systems. Overall, the keyword network underscores that gold remains the central benchmark safe haven asset, while also highlighting emerging debates that challenge, refine, and extend its role in an evolving and increasingly sustainability-oriented financial landscape.

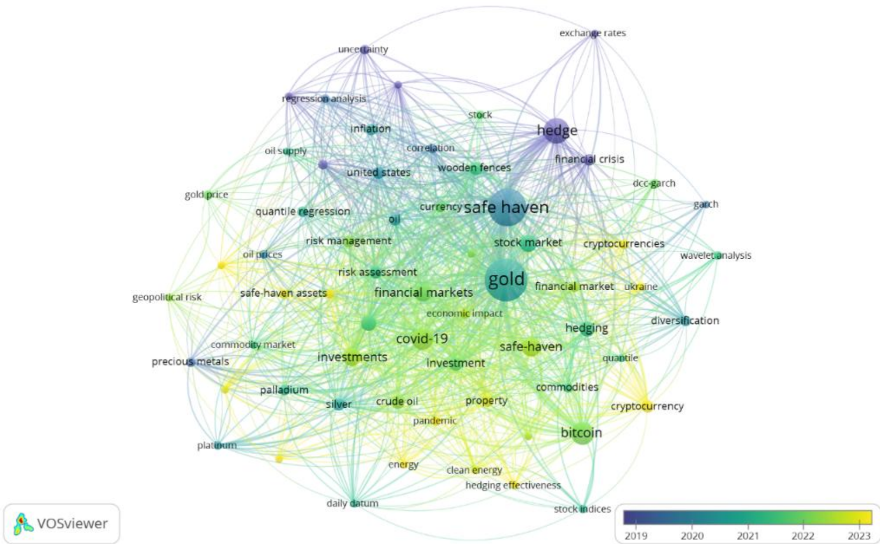


Fig. 5. Temporal trends based on keywords

Figure 5 illustrates the temporal evolution of research themes in the gold safe haven literature based on keyword occurrence over time, as visualized using the overlay function in VOSviewer. In this figure, the color gradient represents the average publication year of each keyword, ranging from earlier studies (darker blue tones) to more recent research emphases (green to yellow tones). This visualization reveals a clear chronological progression in research focus, reflecting how scholarly attention has adapted to evolving economic conditions, financial crises, and emerging systemic risks.

In the early stage of the literature (approximately 2010–2015), dominant keywords appear in darker blue shades and include hedge, financial crisis, exchange rates, inflation, regression analysis, and uncertainty. This phase reflects foundational efforts to define gold's role as a hedge and safe haven, both conceptually and empirically, largely motivated by the aftermath of the Global Financial Crisis. Research during this period focused on establishing baseline relationships between gold and traditional financial variables, employing conventional econometric techniques to test stability, correlation, and hedging effectiveness during market stress. The middle phase (around 2016–2019) is characterized by keywords shown in blue–green tones, such as safe haven, financial markets, stock market, quantile regression, risk management, and safe-haven assets. This period marks a methodological and conceptual consolidation, where scholars increasingly adopted nonlinear, tail-risk, and regime-dependent approaches to capture the conditional nature of gold's safe haven properties. The emphasis shifted from static correlations to time-varying and distribution-sensitive analyses, reflecting a more nuanced understanding of how gold behaves across different market states.

A pronounced thematic shift emerges in the post-2019 period, represented by green to yellow tones, with keywords such as COVID-19, pandemic, geopolitical risk, bitcoin, cryptocurrency, commodities, energy, crude oil, and hedging effectiveness. This phase reflects the literature's response to unprecedented global shocks, including the COVID-19 pandemic, escalating geopolitical tensions, and heightened financial market interconnectedness. Gold is increasingly examined alongside other assets, both traditional commodities and digital currencies, within multi-asset frameworks that assess relative safe haven performance under extreme uncertainty. More recent keywords, particularly those highlighted in lighter green and yellow shades (2021–2023), indicate a growing scholarly focus on cross-market spillovers, systemic resilience, and long-term stability. The appearance of terms such as clean energy, economic impact, and broader commodity interactions suggests an emerging integration of gold safe haven research with sustainability-related considerations. While sustainability is not yet a dominant keyword cluster, its indirect presence signals a gradual shift toward evaluating gold's role within broader discussions of resource sustainability, energy transition, and resilient investment strategies.

Overall, Figure 5 demonstrates that gold safe haven research has evolved from crisis-driven and econometrically focused studies toward a broader, more integrative research agenda that incorporates pandemic risk, geopolitical uncertainty, digital asset competition, and sustainability-relevant themes. This temporal progression highlights the increasing maturity of the literature and underscores a growing recognition that gold's safe haven role must be understood not only in short-term crisis contexts, but also in relation to long-term systemic resilience and sustainable financial systems.

3.2 Literature review findings

3.2.1 Role of gold in economic stability

Gold has long occupied a central position in discussions of economic stability due to its historical role as a store of value, hedge against inflation, and safe-haven asset during periods of financial turmoil. Classical and modern financial theories alike recognize gold as a unique asset whose value is not directly tied to the cash flows, creditworthiness, or policy frameworks that govern financial securities. As a result, gold is frequently perceived as a stabilizing anchor in portfolios and, more broadly, as a buffer against systemic economic shocks. The contemporary literature, however, reveals that gold's stabilizing role is increasingly conditional, time-varying, and context-dependent, rather than universal or permanent.

A substantial body of empirical research confirms that gold generally performs well during periods of heightened uncertainty, market stress, and macroeconomic disruptions. Large-scale reviews and bibliometric analyses, such as those by Anas et al. (2025), identify gold as the most consistently studied and empirically supported safe-haven asset across multiple crises, including financial crashes, pandemics, and geopolitical conflicts. Numerous studies document gold's ability to protect portfolios against extreme downside risks, particularly during equity market downturns (Kumar & Padakandla, 2022; Widjaja et al., 2024; Zhang et al., 2025). From a macro-financial perspective, this behavior contributes to economic stability by mitigating wealth destruction, preserving investor confidence, and reducing the amplification of financial shocks through portfolio rebalancing mechanisms.

However, recent literature increasingly challenges the notion of gold as an unconditional or permanent safe haven. Several studies highlight that gold's hedging and safe-haven properties are episodic, varying across crises, asset classes, regions, and time horizons. For instance, Faraj et al. (2025) and Moji et al. (2024) show that periods of heightened gold market volatility can weaken or even reverse its traditional negative correlation with equity markets. Similarly, evidence from COVID-19 and the Russia–Ukraine war suggests that gold often shifts from being a safe haven to merely a diversifier once markets partially recover or when uncertainty becomes prolonged rather than acute (Velip et al., 2025; Vieira et al., 2023). These findings imply that gold contributes to economic stability primarily during acute systemic stress, rather than during extended periods of elevated volatility.

The interaction between gold and macroeconomic fundamentals further refines its stabilizing role. Several studies demonstrate that gold's effectiveness is closely linked to inflation dynamics, monetary policy uncertainty, and geopolitical risk. Research using regime-switching, quantile-based, and nonlinear models shows that gold is more likely to function as a hedge or safe haven during periods of high inflation uncertainty, elevated geopolitical tensions, or policy ambiguity (Cheng et al., 2025; Ghazali et al., 2022; Karahan, 2025). In this context, gold acts as a stabilizer by absorbing uncertainty shocks and offering protection against currency depreciation and policy-driven volatility, particularly in economies with significant gold reserves or strong cultural preferences for gold ownership (Ming et al., 2023; Zhang et al., 2025).

At the household and real-economy level, gold also plays a stabilizing role beyond financial markets. Evidence from emerging economies, such as India and parts of Asia, shows that households increase gold purchases during crises as a form of precautionary saving, while also using gold as collateral to smooth consumption during economic distress (Baur et al., 2025). This dual role as both a buffer asset and a liquidity source highlights gold's contribution to economic resilience, particularly in contexts where access to formal financial systems is limited. Nevertheless, this behavior also underscores a paradox: while gold accumulation may stabilize households, large-scale liquidation during severe shocks can transmit stress back into financial markets.

The rise of cryptocurrencies and alternative assets has further reshaped the discourse on gold's role in economic stability. A growing comparative literature contrasts gold with Bitcoin, green bonds, and other emerging instruments. While some studies suggest that cryptocurrencies may temporarily attract safe-haven flows, the consensus remains that gold exhibits greater consistency, lower tail risk, and stronger crisis-time performance (BenSaïda, 2025; Chang et al., 2025; Nguyen et al., 2024). Importantly, research on gold-backed digital assets and Islamic financial instruments indicates that gold continues to underpin financial stability even in technologically evolving markets, particularly when ethical, religious, or sustainability considerations are relevant (Ali et al., 2022; Maouchi et al., 2024).

Recent empirical advances further reinforce the argument that gold's stabilising role is best understood through a regime-dependent and shock-specific lens. A growing strand of literature explicitly incorporates geopolitical risk into the analysis, demonstrating that gold responds positively to heightened geopolitical tensions, particularly during episodes of violent conflict and systemic uncertainty. (Selmi et al., 2022) construct a composite geopolitical risk indicator and show that both gold and Bitcoin exhibit safe-haven behaviour when geopolitical risk is elevated, although gold's response is more stable and consistent across regimes. Complementary evidence from Baur & Smales (2020) and Chiang (2021) confirms that gold serves as a hedge against geopolitical threats and policy uncertainty, while stocks and bonds tend to respond negatively. These findings highlight gold's unique capacity to absorb non-economic shocks, reinforcing its role as a macro-stabiliser in environments characterised by political instability and global insecurity.

The COVID-19 pandemic has generated an especially rich body of evidence on gold's crisis-time behaviour, revealing both its strengths and its limitations. A broad consensus emerges that gold acted as a hedge and, in many cases, a safe haven during the initial phase of the pandemic, when uncertainty and market fear peaked (Akhtaruzzaman et al., 2021; Kinateder et al., 2021; Salisu et al., 2021). However, several studies document a weakening or temporary loss of safe-haven properties during later phases, particularly as extraordinary fiscal and monetary interventions altered market dynamics (Chemkha et al., 2021; Lahiani et al., 2021). This phase-dependent behaviour supports the view that gold contributes most effectively to economic stability at the onset of acute crises, rather than throughout prolonged recovery periods.

Comparative analyses between gold and Bitcoin further clarify gold's stabilising advantage. While Bitcoin has occasionally exhibited diversification or weak safe-haven properties, especially against specific assets or in narrowly defined regimes, most studies conclude that Bitcoin's high volatility, liquidity constraints, and instability undermine its reliability as a systemic stabiliser (Hussain Shahzad et al., 2020; Kristoufek, 2020; Smales, 2019). By contrast, gold consistently outperforms Bitcoin in terms of hedging effectiveness, tail-risk protection, and portfolio stability across developed and emerging markets (Belhadj & Ben Hamad, 2021; Naeem et al., 2020; Shehzad et al., 2021). This divergence reinforces gold's role as a benchmark safe-haven asset, even as digital alternatives gain prominence.

At a more granular level, sectoral and industry-based analyses reveal that gold's stabilising effects are heterogeneous rather than universal. Studies focusing on stock market sectors, energy markets, and clean energy indices show that gold's hedge and safe-haven properties vary across industries and crisis types (Buccioli & Kokholm, 2022; Elie et al., 2019; Pisedtasalasai, 2021). In particular, gold tends to provide stronger protection against equity and oil market shocks than against inflation or bond market stress, where results are more mixed (Carpantier, 2021; Ghazali et al., 2021). This heterogeneity suggests that gold enhances economic stability most effectively when deployed strategically within diversified portfolios, rather than as a standalone solution.

Evidence from emerging and developing markets further nuances the discussion. While gold is widely documented as a hedge and safe haven in advanced economies, findings for emerging markets are less consistent and often contingent on local market structures, currency regimes, and cultural factors (Bulut & Rizvanoghlu, 2020; Gürgün & Ünalmış, 2014; Yeom et al., 2021). In India and parts of Asia, gold's cultural and institutional embeddedness strengthens its stabilising role, whereas in other markets gold functions primarily as a diversifier rather than a reliable safe haven (Ghazali et al., 2020; Robiyanto, 2018). These patterns highlight the importance of contextualising gold's economic role rather than assuming uniform global behaviour.

Finally, long-horizon and historical analyses provide strong evidence that gold's stabilising function is not a recent phenomenon, but an enduring characteristic shaped by investor psychology, institutional memory, and systemic uncertainty. Studies spanning centuries of data show that global crises reliably predict gold returns and that gold retains its hedge properties over long periods, even as its short-term correlations fluctuate (Baur & Lucey, 2010; Boubaker et al., 2020). Central bank behaviour further reinforces this role: empirical evidence shows that official gold reserves increase in response to rising global risk, underscoring gold's function as a strategic buffer within the international monetary system (Gopalakrishnan & Mohapatra, 2018).

Taken together, this expanded literature confirms and deepens the conclusion that gold contributes to economic stability as a conditional, adaptive, and historically resilient stabiliser. Its effectiveness is strongest during extreme uncertainty, geopolitical stress, and systemic shocks, while its role weakens or transforms during tranquil or policy-dominated periods. Rather than diminishing gold's relevance, this conditionality underscores its continued importance within modern financial systems where stability is increasingly achieved not through single assets, but through dynamic, context-aware risk management frameworks in which gold remains a central pillar.

3.2.2 Gold, safe haven, and paths to sustainability

Gold has long occupied a unique position in financial systems as a store of value, hedge against uncertainty, and safe-haven asset during periods of economic and political distress. Classical and contemporary studies alike recognise gold's distinctive characteristics such as physical scarcity, historical monetary role, and global acceptability, which differentiate it from financial securities whose value depends on institutional credibility and cash-flow expectations (Baur & Lucey, 2010; Baur & McDermott, 2010). In the context of increasingly frequent financial crises, geopolitical tensions, and sustainability concerns, the literature has progressively reframed gold's role from a static refuge toward a dynamic stabilising asset embedded within broader risk-management and sustainability frameworks.

A large empirical literature confirms that gold generally functions as a hedge on average and as a safe haven during episodes of extreme market stress, particularly equity market crashes (Baur & Lucey, 2010; Beckmann et al., 2015). However, more recent research consistently demonstrates that these properties are conditional rather than universal, varying across markets, time horizons, asset classes, and crisis types. Regime-switching, quantile-based, copula, and wavelet approaches show that gold's negative or weak correlation with risky assets tends to emerge primarily in lower-tail events (when stock returns are severely negative) rather than in normal market conditions (Chkili, 2017; Jambotkar & Guntur, 2021; Manohar & Raju, 2020; Ming et al., 2020). This conditionality is particularly evident in emerging markets, where gold often acts as a hedge or weak safe haven, but not consistently as a strong safe haven (Bulut & Rizvanoghlu, 2020; Mohd Fahmi Ghazali et al., 2018; Robiyanto, 2018). Differences in market depth, currency regimes, and investor behaviour help explain why gold's stabilising role is stronger in developed markets such as the United States and Europe than in many emerging economies (Gürgün & Ünalmış, 2014; Yeom et al., 2021). These findings challenge simplistic narratives of gold as an always-reliable refuge and instead position it as a state-dependent stabiliser.

Periods of acute crisis provide particularly strong evidence of gold's stabilising role. Extensive analyses of the Global Financial Crisis (GFC) and the COVID-19 pandemic show that gold served as a safe haven during the initial shock phase, when uncertainty, fear, and liquidity demand were highest (Akhtaruzzaman et al., 2021; Kinateder et al., 2021; Salisu et al., 2021). However, several studies document a weakening of this role during later phases of the pandemic, as extraordinary fiscal and monetary interventions altered correlations and investor behaviour (Chemkha et al., 2021; Lahiani et al., 2021). This phase-dependent behaviour underscores that gold contributes most to stability during shock absorption, rather than during prolonged recovery or policy-dominated periods. Beyond financial crises, a growing strand of literature explicitly incorporates geopolitical risk into the analysis. Studies show that gold responds positively to heightened geopolitical threats and conflicts, often more consistently than other assets (Baur & Smales, 2020; Chiang, 2021). Selmi et al. (2022) Demonstrate that both gold and Bitcoin react positively to composite geopolitical risk indices during high-risk regimes, but gold's response is more stable across different categories of geopolitical shocks. These findings reinforce gold's role as a hedge against non-economic uncertainty, strengthening its relevance in an era of rising geopolitical fragmentation.

The emergence of cryptocurrencies, particularly Bitcoin, has reignited debates over the future of safe-haven assets. While some studies find that Bitcoin can act as a diversifier or weak safe haven in specific contexts, the overwhelming consensus is that Bitcoin's high volatility, limited liquidity, and unstable correlations undermine its reliability as a systemic stabiliser (Shahzad et al., 2020; Kristoufek, 2020; Smales, 2019). Comparative studies consistently show that gold outperforms Bitcoin in terms of hedging effectiveness, downside risk protection, and portfolio stability, especially during extreme market stress (Belhadj & Hamad, 2021; Naeem et al., 2020; Shehzad et al., 2021). Similarly, comparisons with bonds, currencies, and other commodities reveal that gold retains a unique position. While government bonds and the US dollar often serve as safe havens, their effectiveness can deteriorate during sovereign risk episodes or inflationary environments (Pisedtasalasai, 2021; Wen & Cheng, 2018). Precious metals such as silver or platinum occasionally outperform gold in specific contexts, but gold remains the most consistently studied and widely applicable safe-haven asset across markets and crises (Ali et al., 2020; Li & Lucey, 2017).

The relationship between gold and inflation is more contested. Contrary to popular belief, multiple studies show that gold does not consistently hedge inflation over all periods and markets (Carpantier, 2021; Ghazali et al., 2021). Instead, gold's inflation-hedging properties appear episodic, often linked to inflation uncertainty rather than inflation levels themselves (Baur et al., 2020; Beckmann et al., 2018). Long-horizon analyses further reveal that gold's real price is not as stable as traditionally assumed, with weaker and slower mean reversion than many other commodities (Carpantier, 2021). These findings suggest that gold's contribution to sustainability lies less in preserving constant purchasing power and more in mitigating extreme downside risks.

From a portfolio and systemic perspective, gold contributes to sustainability by reducing tail risk, dampening volatility spillovers, and enhancing resilience during systemic shocks. Studies employing VaR, CoVaR, and extreme-risk spillover frameworks show that gold consistently exhibits negative extreme-risk transmission with equities and currencies, particularly during crises (Ma et al., 2020; Nguyen et al., 2020). Sectoral and asset-pair analyses further confirm that combining gold with equities, oil, or currencies improves risk-adjusted returns and hedging effectiveness, albeit at higher hedging costs during crises (Salisu et al., 2021; Yousaf et al., 2022). At the institutional level, evidence on central bank behaviour reinforces gold's sustainability role. Empirical studies show that central banks systematically increase gold reserves in response to rising global risk, reflecting gold's function as a strategic buffer within international reserves (Gopalakrishnan & Mohapatra, 2018). This behaviour underscores gold's continued relevance for macroeconomic and financial sustainability, particularly in periods of heightened global uncertainty.

Overall, the literature converges on a nuanced conclusion: gold is neither an obsolete relic nor an infallible refuge. Instead, it functions as a conditional, adaptive, and historically resilient stabiliser whose value emerges most clearly during periods of extreme uncertainty, geopolitical stress, and systemic disruption. Its effectiveness varies across markets, crises, and time horizons, but its role in reducing tail risk and supporting portfolio and system-level resilience remains robust. In the context of sustainable finance, gold's contribution lies not in guaranteeing constant returns or inflation protection, but in enhancing financial system robustness, preserving confidence during crises, and complementing diversified, adaptive risk-management strategies. As financial systems confront climate risks, geopolitical fragmentation, and recurrent crises, gold's evolving role suggests that sustainability is best achieved not through single safe-haven assets, but through dynamic portfolios and policy frameworks in which gold continues to play a central, albeit conditional, role.

3.2.3 Implication for Indonesia

The findings of this study carry important implications for Indonesia, particularly given the country's exposure to global financial volatility, commodity price fluctuations, and recurring external shocks. As an emerging economy with a relatively open capital market, Indonesia remains vulnerable to sudden capital outflows, exchange rate pressures, and global risk sentiment. The literature reviewed in this study consistently demonstrates that gold functions as a conditional safe haven, providing its strongest stabilising benefits during periods of acute systemic stress. For Indonesia, this implies that gold should be viewed as a strategic buffer asset rather than a constant return generator, capable of enhancing macro-financial resilience during crises such as global market crashes, pandemics, or geopolitical disruptions that transmit volatility to domestic markets.

From a policy and institutional perspective, the results reinforce the relevance of gold in Indonesia's reserve management and financial stability framework. Bank Indonesia's continued holding of gold as part of its international reserves can be interpreted as consistent with global central bank behaviour documented in the literature, where gold serves as a hedge against global uncertainty, currency risk, and erosion of confidence in fiat assets. In periods of heightened global risk or monetary policy divergence among major economies, gold holdings may contribute to stabilising reserve portfolios and reinforcing market confidence. However, the conditional nature of gold's effectiveness also suggests that reserve diversification strategies should remain dynamic, combining gold with other instruments rather than relying on it as a standalone safeguard.

At the market and investor level, the findings have direct implications for Indonesian institutional and retail investors. Empirical evidence indicates that gold provides the greatest protection during sharp market downturns, but its hedging benefits weaken during prolonged recovery or policy-driven market phases. For Indonesian pension funds, insurance companies, and Islamic financial institutions, gold may therefore serve as a crisis-contingent allocation, enhancing portfolio resilience when equity and currency markets are under severe stress. For households, where gold ownership is culturally embedded and often used as a store of value or collateral, the results suggest that gold continues to play a role in financial resilience, but expectations should be managed carefully. Gold accumulation supports precautionary savings and shock absorption, yet excessive concentration may expose households to price volatility when crises subside.

Finally, the study offers implications for Indonesia's sustainability and long-term financial resilience agenda. While gold is frequently criticised for environmental and extraction-related concerns, the literature increasingly frames its contribution to sustainability in terms of systemic resilience rather than short-term financial performance. For Indonesia, this implies a need to reconcile gold's financial stabilising role with responsible mining practices, recycling initiatives, and ESG-oriented governance within the domestic gold ecosystem. Moreover, as Indonesia advances sustainable finance, Islamic finance, and green investment frameworks, gold's role may be most effective when positioned as a complementary stabilising asset within diversified, sustainability-aware portfolios. In this sense, gold contributes to Indonesia's financial sustainability not by guaranteeing steady returns, but by strengthening resilience against extreme shocks, preserving confidence during crises, and supporting a more robust and adaptive financial system.

Fig. 6. Summary of gold as a safe haven and paths to sustainability

4. Conclusions

This study revisits gold's role as a stable safe haven asset through an integrated bibliometric analysis and qualitative literature review, providing a comprehensive synthesis of research trends, thematic structures, and evolving debates. The findings demonstrate that gold remains the central benchmark safe-haven asset in the academic literature, particularly during periods of acute systemic stress, such as financial crises, pandemics, and heightened geopolitical risk. However, the evidence consistently indicates that gold's safe haven and hedging properties are conditional rather than universal, varying across market regimes, crisis phases, asset classes, and geographical contexts. Rather than undermining gold's relevance, this conditionality highlights its adaptive role as a stabiliser that absorbs extreme uncertainty and mitigates tail risk when traditional assets fail to do so. From a broader perspective, the study reveals a gradual shift in gold safe haven research toward multidimensional and sustainability-oriented considerations. While economics and finance remain the dominant foundations of the literature, increasing engagement from environmental sciences, social sciences, and interdisciplinary studies signals an emerging recognition of gold's role in long-term financial resilience. Gold's contribution to sustainability is therefore best understood not as a guarantee of constant returns or inflation protection, but as a mechanism for enhancing systemic robustness, preserving confidence during crises, and supporting diversified, adaptive risk-management strategies.

The findings carry important implications for both theory and practice. For researchers, the results highlight the need to move beyond binary classifications of gold as either a safe haven or not, and instead adopt regime-dependent, crisis-specific, and sustainability-aware analytical frameworks. Future studies may benefit from integrating gold safe haven analysis with ESG considerations, climate-related risks, and long-horizon systemic resilience perspectives. Methodologically, expanding the use of nonlinear, tail-risk, and cross-asset spillover models can further refine understanding of gold's stabilising role. For investors and policymakers, the study suggests that gold should be viewed as a strategic, complementary asset rather than a standalone solution to risk management. Its greatest value emerges during extreme uncertainty, where it can reduce downside risk and stabilise portfolios, but its effectiveness diminishes in prolonged or policy-dominated market conditions. Policymakers, particularly central banks, may continue to recognise gold as a strategic reserve asset that enhances macro-financial stability under global uncertainty. Ultimately, achieving sustainability in modern financial systems requires dynamic and diversified approaches, within which gold continues to play a central but conditional role in supporting long-term financial resilience.

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