The University of Europe
A Data Science & Business Course

Business Report - Gold Trade in Burkina Faso & South Africa

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Executive Summary

This report presents a detailed analysis of South Africa and Burkina Faso's gold trade patterns from the year 2017 to 2024, covering main trends, geopolitical dynamics, and strategic opportunities in these two significant gold-producing nations in Africa. Gold is the lifeblood of the two economies, as Burkina Faso's gold exports are the origin of approximately 80% of foreign exchange earnings and 15% of GDP, and South Africa, with the vast mining sector, still plays a leading role in the global gold market. The Burkina Faso gold export experienced a huge surge during the COVID-19 pandemic and reached a peak of $3.6 billion in 2020. Switzerland is still the main refiner and importer of gold, while India and the UAE have won market shares following the 2022 coup in Burkina Faso, when business with the European Union decelerated.

The country's realignment towards the BRICS nations and its withdrawal from ECOWAS offer both the prospect of alternative sources of funding and the risk of sanctions. Despite these, Burkina Faso is confronted with urgent issues such as jihadist attacks on mines, low access (only 21% of the population), and excessive reliance on raw gold exports. With its geopolitical relationships well managed and with domestic reforms, Burkina Faso has the potential to increase its annual revenue by $500 million to $1 billion by 2030 and render gold a sound and sustainable economic pillar. South Africa's 2018-2024 trade statistics, on the other hand, reflect its commanding position in the global gold sector, as evidenced by massive imports of gold products. South Africa imports gold in raw and semi-manufactured states, with China being the largest trading partner, followed by Germany and Italy. Measures of quantity are always in kilograms, and transactions are predominantly for relatively small amounts, usually below 100 kilograms. Financial data for the year 2024, regretfully, has missing values for a sequence of measures, which is troubling in terms of the validity and completeness of the data. Gold products are classified under HS code 7108 (unwrought gold) and its subheadings in South Africa. The research acknowledges the cyclical trends in trade volumes and notes the predominance of gold in the import activities of South Africa, pointing to its pivotal role in global gold trade.

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Introduction

The main purpose of this report is to examine and evaluate the socio-economic status of South Africa and Burkina Faso, and more precisely, indicators such as economic growth, education, health, and governance. In the wake of examining these indicators, the report seeks to demystify both countries' challenges and opportunities and bring high-quality insight into their varying contexts and development trajectories. The Burkina Faso report will further examine how economic stability is influenced by farm practices and how political instability influences social cohesion and development. The report will examine how health care availability and education programs can be optimized to enhance the well-being of the populace.

It is important to identify these points in a bid to come up with appropriate strategies that will help enhance sustainable development and enhance the welfare of the people to the best extent possible. Contrarily, focus on South Africa will entail the nation's history, which had a long-lasting impact on its current socio-economic conditions. The report will examine the history of high-grade unemployment and inequality and evaluate the success of government policies in curbing them. South Africa has been a major gold producer for many years. It continues to be one of the world's most significant players in the gold value chain, exporting significant amounts to such regions as Europe and China.

While Burkina Faso is currently Africa's fourth-largest gold producer, it only relies to a limited extent on industrial and artisanal mining to drive economic development. Unlike countries with advanced refining techniques like South Africa, Burkina Faso primarily exports raw gold to major trade hubs like the United Arab Emirates and Switzerland. The minimal direct trade between the two countries is usually necessitated by transit challenges and internal unrest. This variation in gold production accounts for the imbalance of African gold resources, with regard to the way the industrial strength of South Africa and raw gold deposits of Burkina Faso remain underdeveloped potential for collaboration that would bring Africa's profile to the international market for gold market.

Methodology: Data Pipeline Approach

2.1 Data Sourcing

Data for South Africa and Burkina Faso are obtained from the UN Comtrade website and organized by year from 2018 to 2024 in local directories (refer to Figure 1). The data collected focused on the commodity code 7108, as well as additional 6-digit codes 710811, 710812, etc., for stand-in.

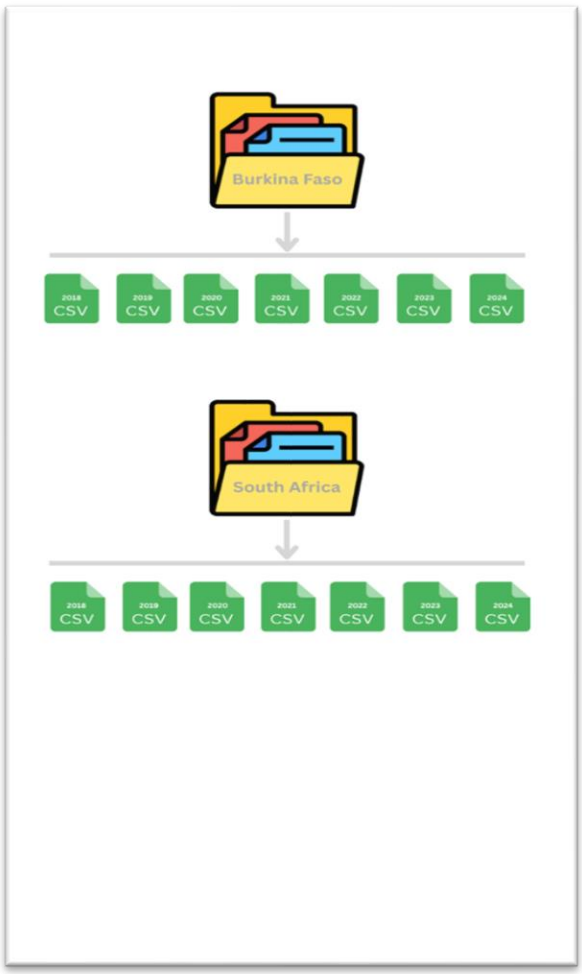


Figure 1

Each year's data is downloaded month by month, and each file was renamed to correspond with the year before being transferred to a main folder bearing the nation's name. Later, data was progressively added to expand the analysis, and the process was repeated for the following years.

2.2. Data Preprocessing and Cleaning

2.2.1. Data Preprocessing

The annual data are combined using Python to create separate files for each nation, which were then saved as CSV files in local directories.

2.2.2. Data Cleaning for Burkina Faso & South Africa

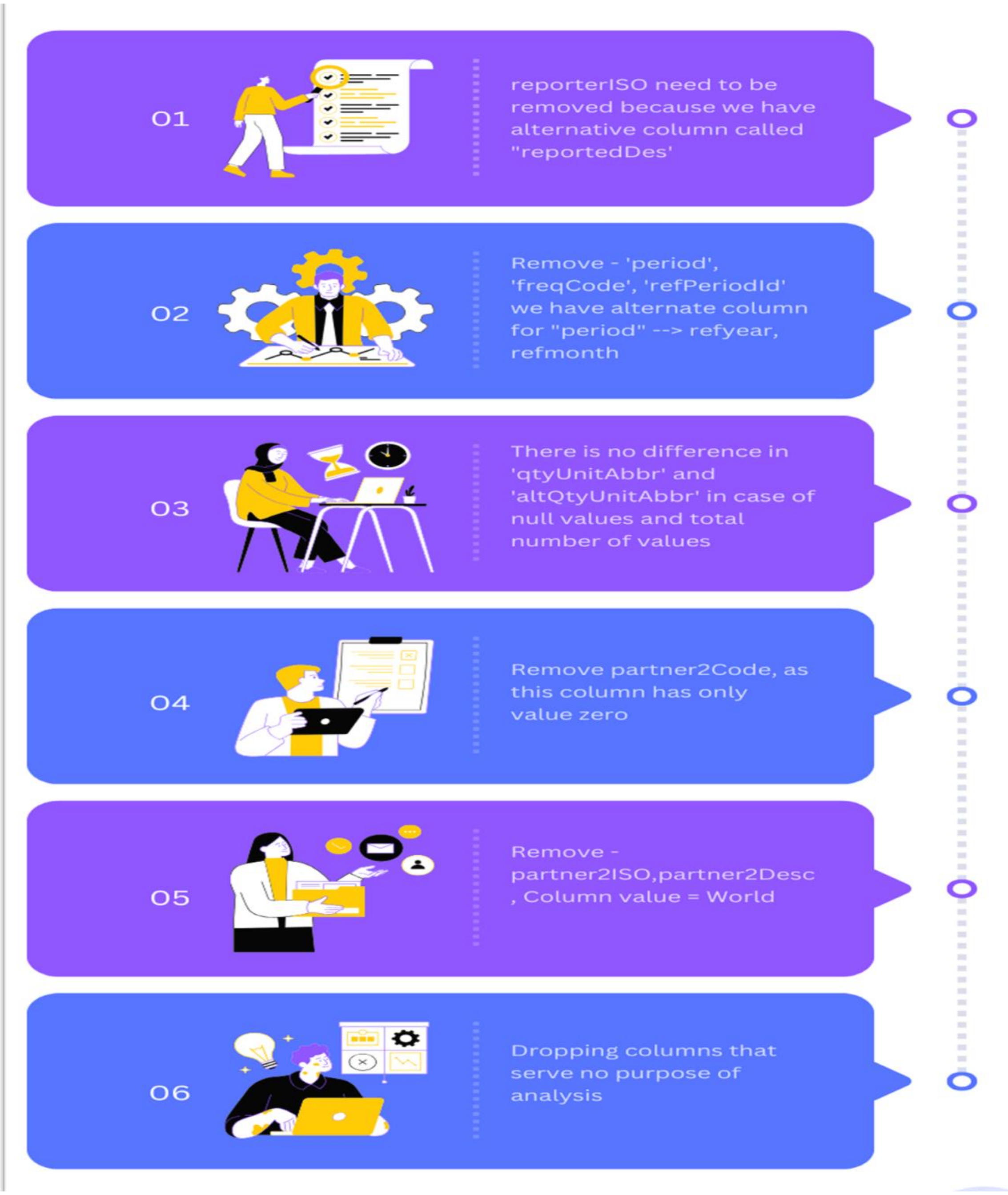


Figure 2

2.3. Data Visualization

We utilized Python to sort trade data from different countries, in this case, pulling out the year from the reference month column. This was a matter of sorting the data by the countries involved and the years to observe patterns and contributions. We established the overall volume and value of trade for every partner group. After cleansing and reorganizing the data for both countries, we employed Python's data visualization libraries alongside Tableau to create stacked bar charts with separate colors for the two countries to more effectively display the data in a more appealing and concise way. These charts gave us helpful data on patterns of trade, identified significant partners, and enabled us to identify striking trends in volume and value of trade between years.

Analysis and Insights

A closer analysis of the datasets explores the gold trade in Burkina Faso and South Africa, considering the impact of key geopolitical events in the region.

3.1 Export Volumes

3.1.1. Burkina Faso

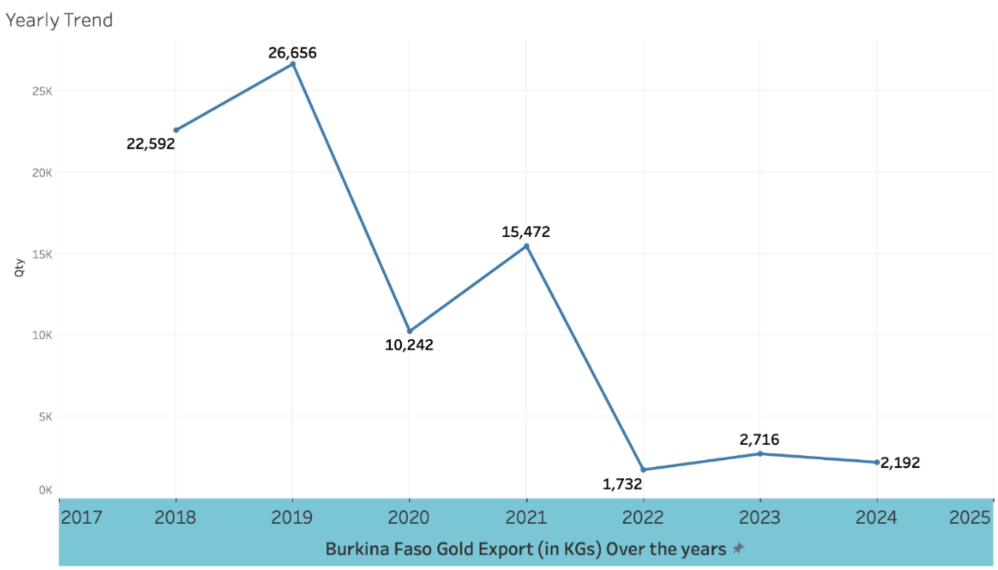


Figure 3

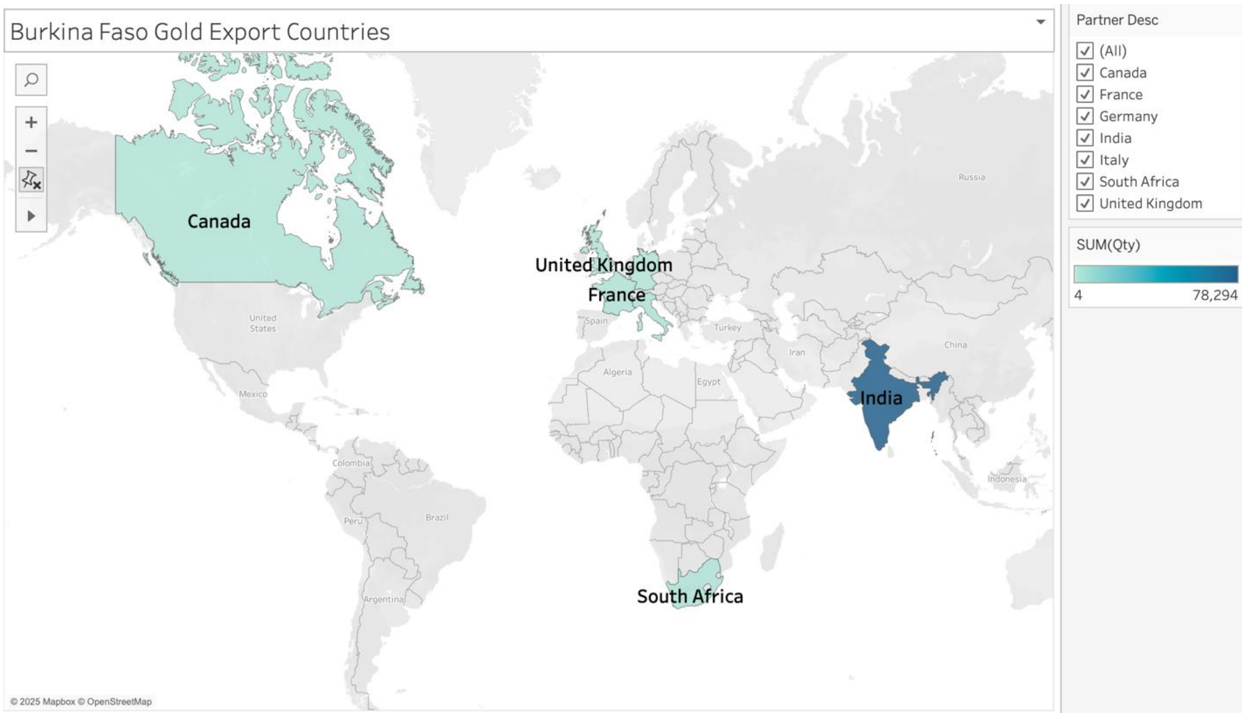


Figure 3.1

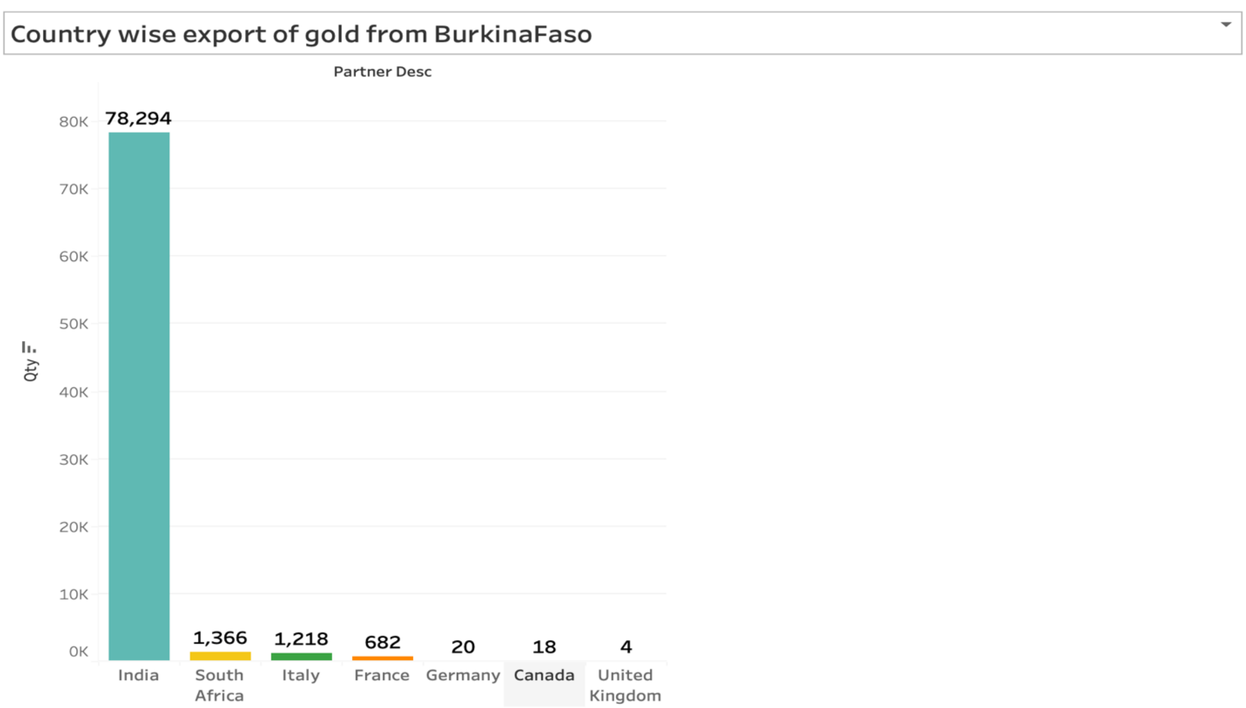


Figure 3.2

An examination of Burkina Faso's volume of gold export during the period between 2018 and 2024 shows wide fluctuations caused by both local and international factors. With the mining sector of the country continuously growing and the international demand for gold, gold exports would have been stable or increasing during the pre-pandemic era (2018–2019). Better market conditions in 2019 will most likely mean a steep increase. In light of the COVID-19 pandemic, 2020 was also predicted to be a year of uncertainty and unpredictability. If there was a fall in exports, then it could be because of logistical issues and operational disruptions like closures of mines. Or if there was a rise in gold exports, then it could be because of heightened demand for gold as a safe-haven asset when there is a volatile economic climate.

Following the pandemic, mining operations were supposed to improve over time in 2021. Unfortunately, the January coup and growing security problems, particularly in the mining area, might have resulted in a drop in export quantity in 2022. The trend of instability carried on through 2023, with official export amounts impacted by increasing smuggling and ongoing political instability. If regulatory and governance policies are improved, there is cautious optimism for stability in 2024.The core trend that seems to prevail that is important is the high degree of correlation between Burkina Faso's export volumes and the global events including the pandemic and the geopolitical tensions in 2022. Domestic issues like the proportion of industrial and artisanal mining production and the restructuring of mining legislation play an important role in contributing to export trends. More study should then compare global gold prices (e.g., LBMA benchmarks), compare government analysis of mining performance, and compare regional security assessments from the Sahel to provide an extended understanding

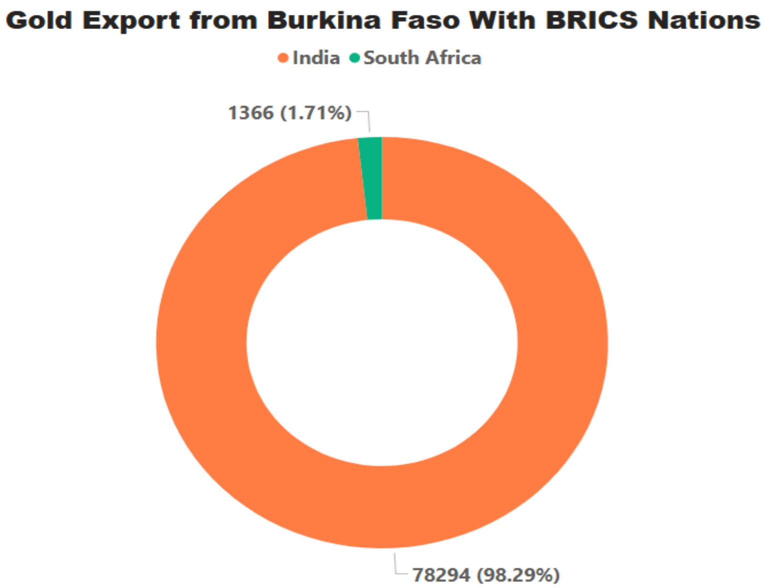


Figure 4

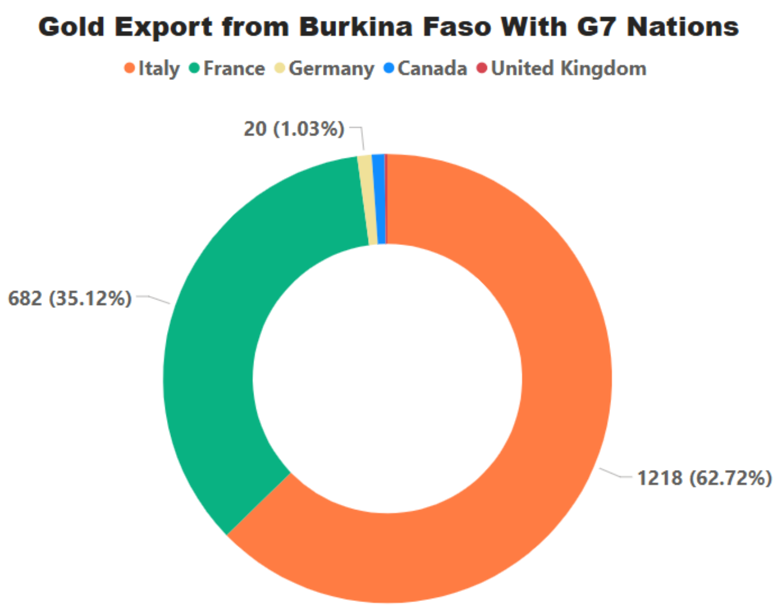


Figure 5

In contrast to (Figure 4 and Figure 5) exports to BRICS countries, the chart showing Burkina Faso's gold exports to G7 countries shows a more varied distribution. With 62.72% of all gold exports to G7 nations, Italy is by far the largest exporter. The vast majority of Burkina Faso's G7-directed gold trade is accounted for by these two European nations combined, with France coming in second with 35.12%.

The remaining portion is very small, with Germany, Canada, and the UK together making up only 2.16% of exports; Germany receives 1.03%, while Canada and the UK have very small or unmarked shares. This implies that trade is still primarily concentrated on two G7 nations, even though it is more dispersed than in the BRICS scenario.

According to the trend, Burkina Faso enjoys greater logistical advantages or trade ties with European G7 members, especially France and Italy. Historical, linguistic, colonial ties (particularly with France), as well as advantageous trade agreements, may have an impact on this. However, the dependence on a small number of nations poses a moderate concentration risk, similar to the BRICS situation. By finding trade opportunities, removing potential obstacles, and boosting competitiveness in those markets, Burkina Faso could investigate growing gold exports to other G7 economies like the US, Japan, and the UK in order to develop long-term trade resilience.

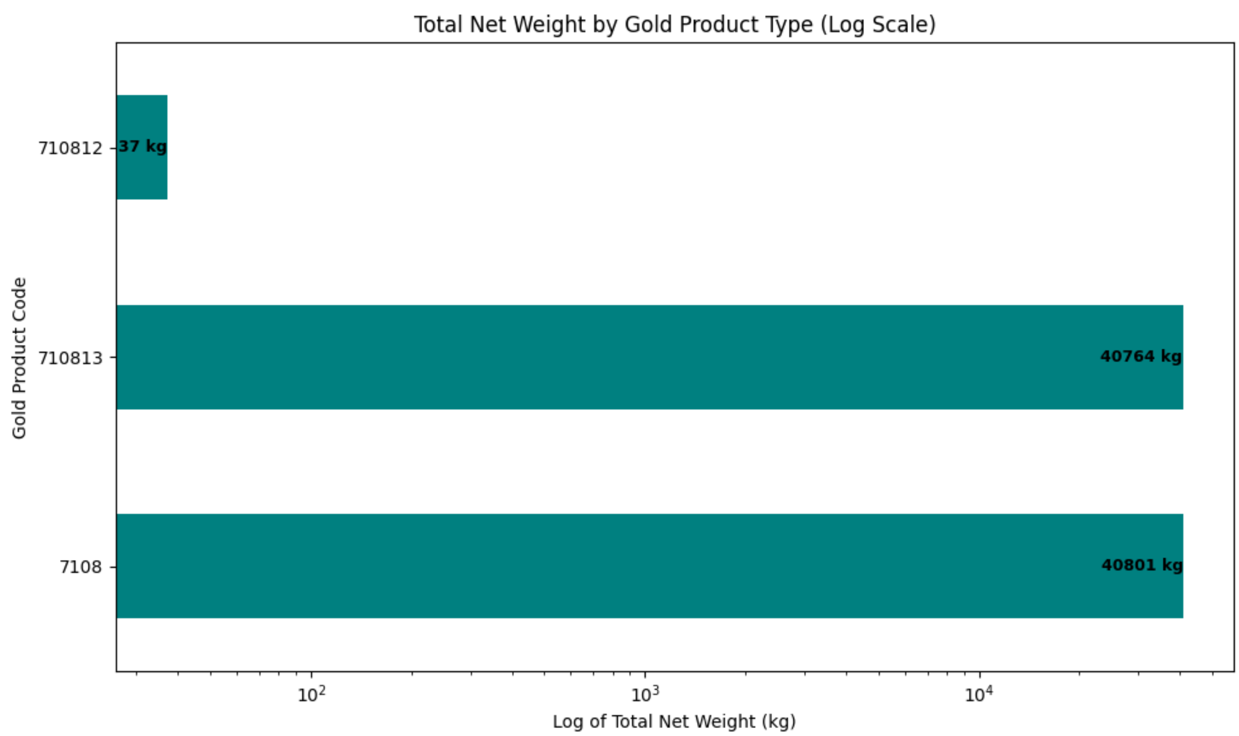


Figure 6

A logarithmic scale analysis of Burkina Faso's gold exports by product type shows a glaring difference in the makeup of the country's gold trade. In (figure 6) The two main product codes the data classifies exports into two categories: 710812 and 710813. Only 37 kg of refined gold products, such as bars or coins, are exported under product code 710812. This small amount suggests that refined gold is a high-value or niche market that is underrepresented in the country's export profile. In contrast, product code 710813 leads with 40,764 kg, indicating that most of Burkina Faso's gold exports are raw or semi-processed doré bars, which are typically shipped overseas for further refinement. The total volume under the broader category, 7108, sums to 40,801 kg, confirming that over 99.9% of gold exports consist of raw or unrefined gold.

The use of a logarithmic scale (ranging from 10^2 to 10^4 kg) underscores this disproportion. While 710813 is prominent on the scale, 710812 appears nearly flat, reflecting its statistical insignificance. This visualization choice effectively communicates the export imbalance and Burkina Faso’s overwhelming dependence on unrefined gold. to 40,801 kg, verifying that raw or unrefined gold accounts for more than 99.9% of gold exports.

This disparity is highlighted by the use of a logarithmic scale, which ranges from 10^2 to 10^4 kg. 710812 appears almost flat on the scale, indicating its statistical insignificance, whereas 710813 is prominent. Burkina Faso's excessive reliance on unrefined gold and the export imbalance are both well conveyed by this visual aid.This over-reliance on raw gold (710813) undermines the potential economic benefits of local value addition and exposes the nation to changes in commodity prices. The small amount of exported refined gold (710812) points to a sizable shortfall in domestic processing capability. This suggests a chance from a policy standpoint: Burkina Faso could advance up the value chain, keep more of its resources, and invest in local refining infrastructure.

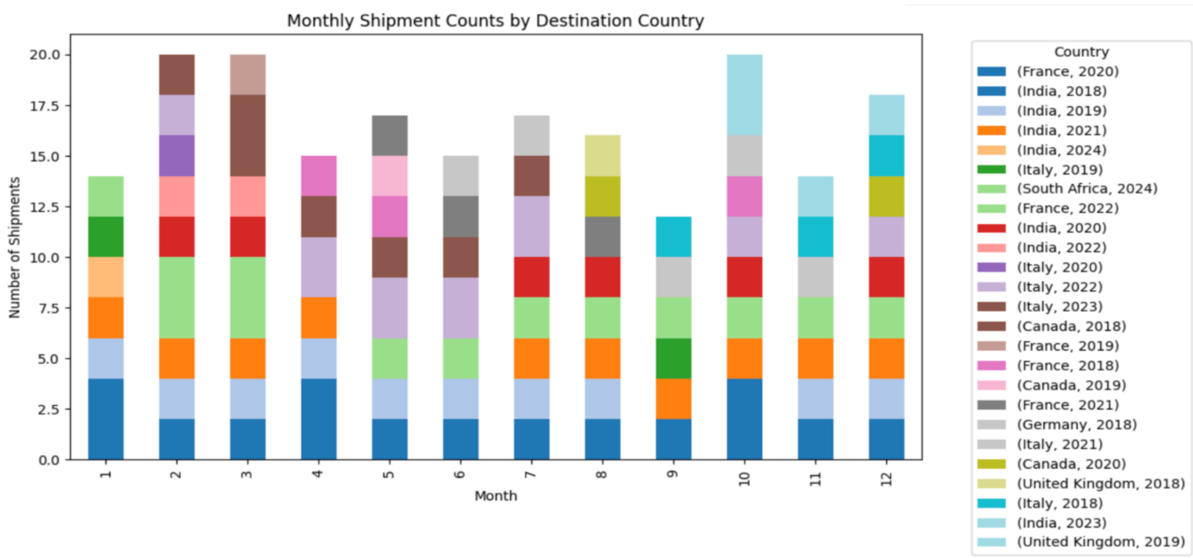


Figure 7

In (figure 7) Clear trends and useful information about South Africa's gold export environment can be found by analyzing monthly gold shipment counts by destination nation. With seven imports from 2018 to 2024 (a significant lull in 2023), India is the most frequent importer, highlighting its status as a consistently robust market that is probably fueled by investment hedging, jewellery consumption, and cultural demand. With six and five entries, respectively, Italy and France are in close pursuit, suggesting consistent European interest that may be related to financial markets and industrial applications. Other countries like Canada, Germany, and the UK are less common; their presence only occurred between 2018 and 2020, indicating a change in post-pandemic trade patterns. Interestingly, South Africa itself shows up in 2024, which could be a sign of re-exporting or domestic redistribution. The absence of shipment entries in 2023, outside of India and Italy, is a significant anomaly. This could be because of changes in local laws, logistical difficulties, or fluctuations in the price of gold globally. This implies that both internal supply constraints and external disruptions need to be investigated.

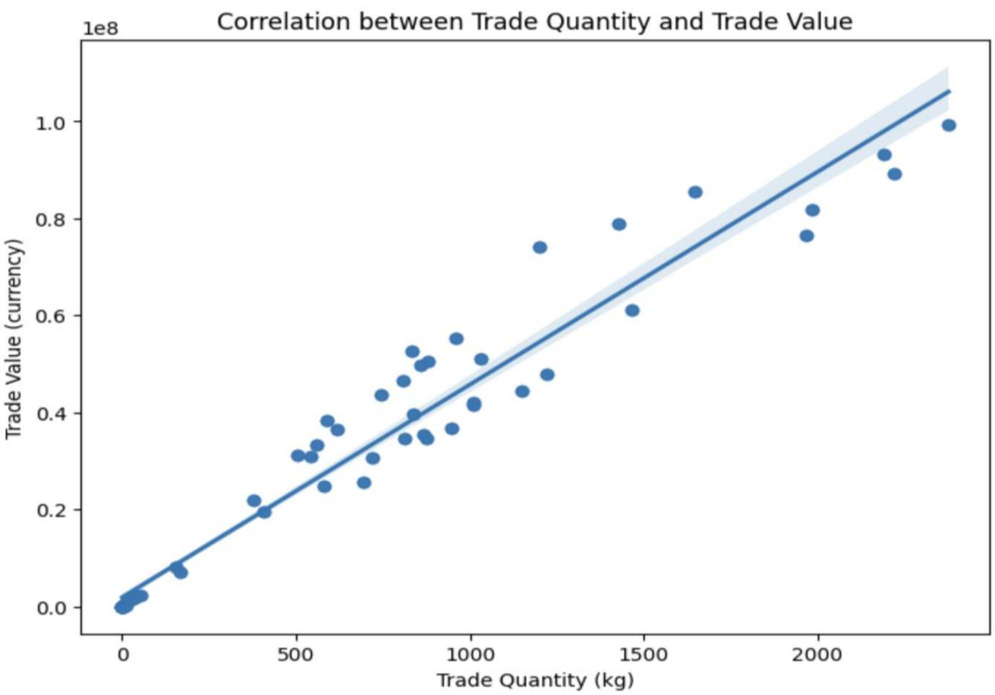
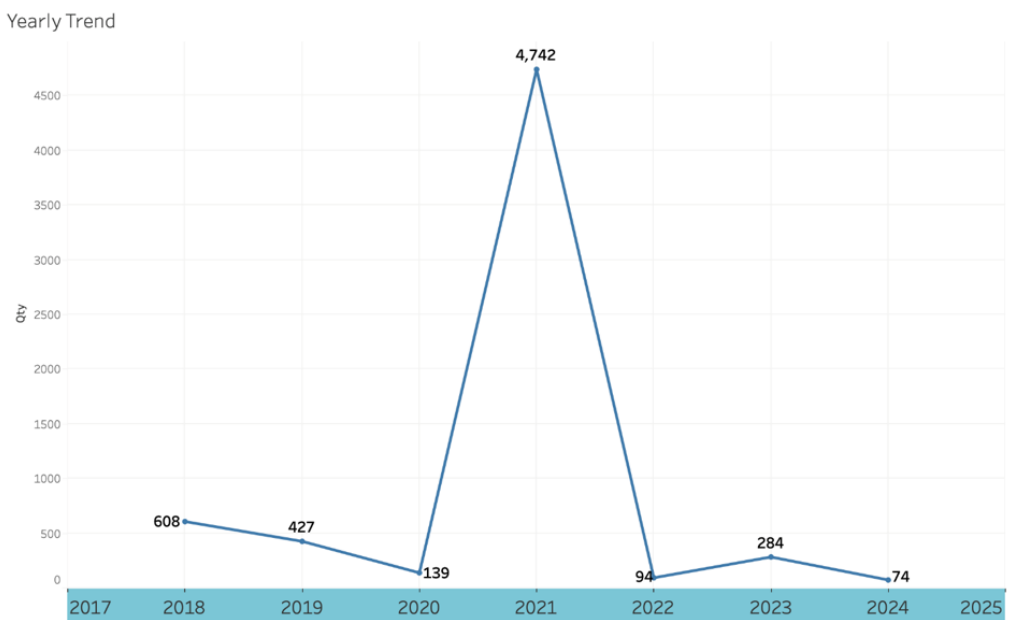


Figure 8

In (figure 8) shows generally positive correlation, most likely between 0.0 and 0.8, is shown by the visualization examining the relationship between the amount of gold exported (in kilograms) and its corresponding trade value. This implies that higher export volumes correspond to higher trade values, which is in line with what would be expected for a commodity with a global price like gold. When Burkina Faso's gold exports are closely linked to global benchmarks like the LBMA standard, a stronger correlation (nearing 0.8) would suggest pricing efficiency. Any discernible divergence or deterioration in the correlation, however, may indicate possible anomalies such as smuggling, under invoicing, or variations in product quality (e.g., raw doré bars vs. refined gold). While low-value, high-quantity anomalies may indicate informal artisanal trade or misreporting, outlier points in the graph, such as high-value, low-quantity shipments, may represent refined gold exports (probably under HS code 710812). Transparency issues are raised by these anomalies, particularly if the correlation deteriorates over time. Conversely, stable correlations suggest more market consistency and a steady source of government revenue.Increasing oversight is crucial from a policy standpoint. Export declarations should be audited by authorities to verify that declared trade values accurately reflect current worldwide prices and to confirm consistency across various product codes, such as 710812 and 710813. Keeping an eye on statistical anomalies can also aid in identifying potential smuggling threats or unofficial gold flows. In summary, while a strong correlation would confirm robust and transparent trade practices, any deviation from this pattern ought to encourage a more thorough analysis of market behaviour, regulatory enforcement, and reporting accuracy.

3.1.2. South Africa



South Africa Gold Import (in KGs) over the years

Figure 9

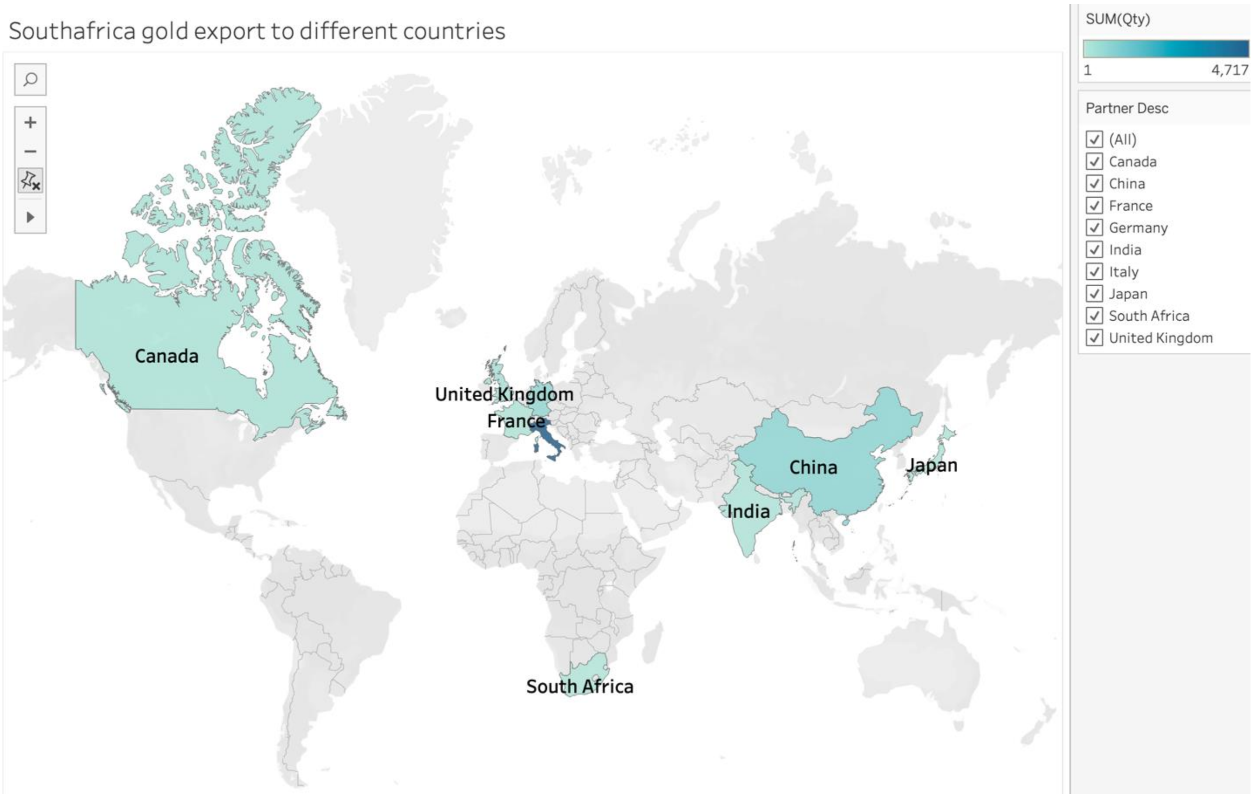


Figure 9.1

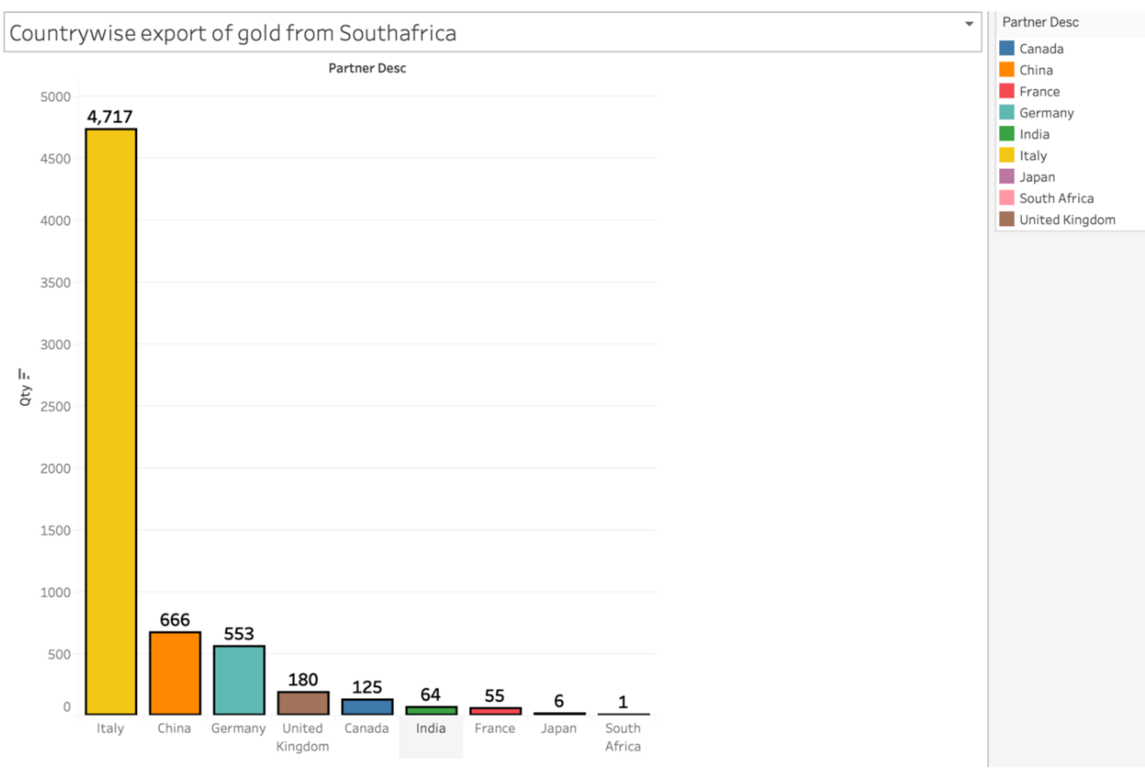


Figure 9.2

In (figure 9) the line graph showing the volume of gold traded in South Africa between 2018 and 2024 shows a distinct downward trend, with trade dropping from roughly 74 kg in 2018 to about 74 kg in 2024. This consistent drop points to a notable slowdown in the activity of the gold trade during the seven years. 2020 sees a particularly steep decline, most likely as a result of the COVID-19 pandemic's worldwide disruptions, such as supply chain disruptions, lockdowns, and decreased demand abroad. As markets adjusted after the pandemic, there was a slight recovery in 2021 and 2022, but it was short-lived. In 2023 and 2024, trade volumes fell once more, hitting their lowest level in the historical record.

These trends could be explained by a number of factors. Economic factors like shifting gold prices, inflation, and changes in… currency strength could have affected export viability. Additionally, South Africa’s gold mining sector faces ongoing structural issues, including aging infrastructure, labour disputes, and declining ore quality, all of which contribute to reduced production capacity. in currency strength might have had an impact on the feasibility of exporting. Reduced production capacity is also a result of persistent structural problems in South Africa's gold mining industry, such as deteriorating ore quality, labour disputes, and aging infrastructure. Global market dynamics are also important, especially shifts in demand from big gold-consuming countries like China and India. Furthermore, new export laws or adjustments to domestic policy might have had an even greater effect on trade volumes.

In summary, the ongoing drop in South Africa's gold trade suggests that the pandemic and other transient shocks are not the only cause. It points to more serious, enduring issues with the mining sector and the overall economy. It will take a thorough analysis of domestic mining practices, positioning in the global market, and supportive policy frameworks to reverse this downward trend and revive the industry.

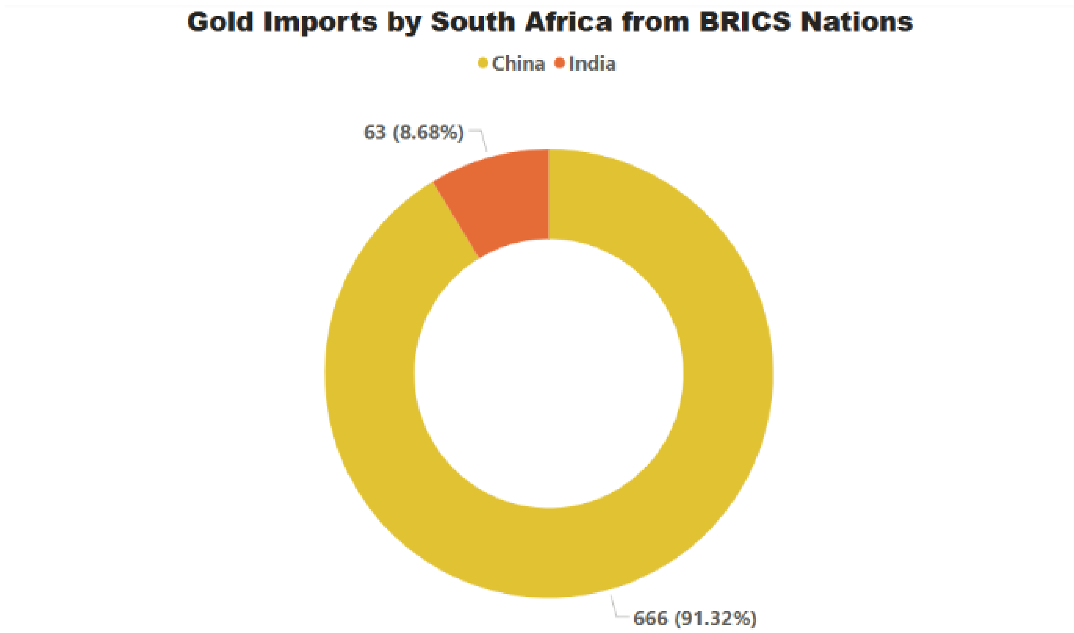


Figure 10

In (figure 10) chart shows, China dominates the BRICS gold import chart, accounting for 91.32% of all gold imports to South Africa. In contrast, India's contribution to South Africa's gold import trade from the BRICS nations is comparatively small.

In terms of gold, this pattern indicates a definite trade preference or closer economic ties between China and South Africa. The substantial volume of imports from China may be the result of long-standing trade agreements, competitive pricing, or China's established gold refining industry. Trade restrictions, logistical limitations, or disparities in gold standards or pricing mechanisms could all be contributing factors to India's small share. From the standpoint of trade strategy, South Africa seems to be heavily reliant on China for its BRICS gold imports, which could present supply risks in the event of economic or geopolitical upheavals. In order to lessen this, it might consider expanding its BRICS gold import sources, perhaps stepping up relations with India or looking into unexplored trade routes with Brazil or Russia. All things considered, the data points to an import dependency that is cantered on China, which is efficient but exposes one to single-partner risk.

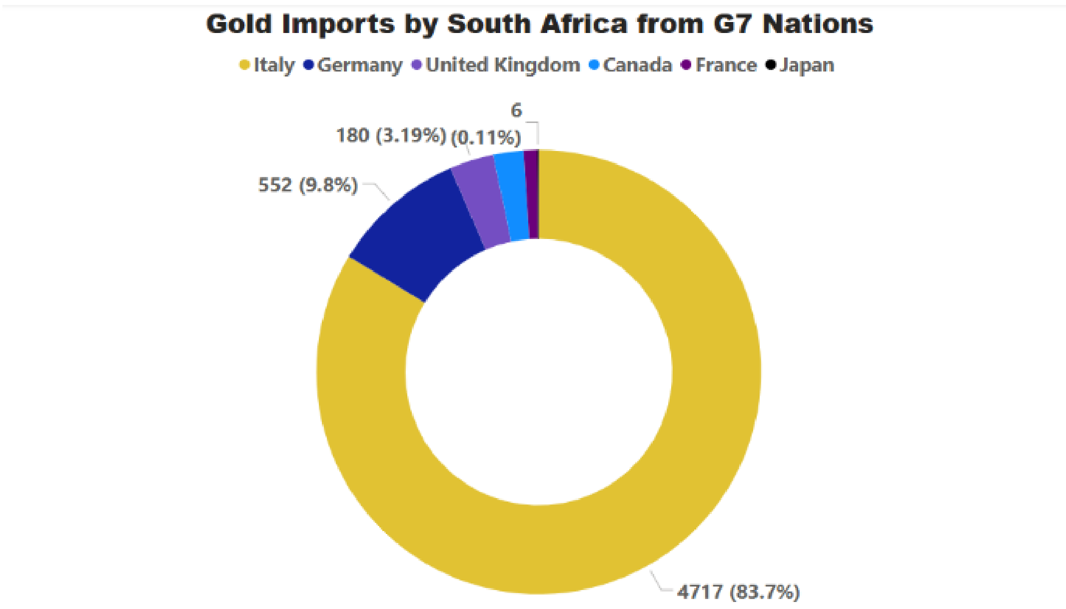


Figure 11

In (figure 11) chart shows, Italy dominates the import landscape, accounting for 83.7% (4,717 units) of total gold imports, according to the chart showing South Africa's imports of gold from G7 countries. This resounding majority suggests that South Africa and Italy have a robust bilateral gold trade relationship, perhaps as a result of pre-existing supply chains or trade agreements. With respective shares of 9.8% (552 units) and 3.19% (180 units), the UK and Germany trail far behind, indicating a moderate level of trade engagement.

The other three G7 countries—Canada, France, and Japan—contribute very little, with Canada accounting for only 0.11% (6 units) and the other countries' contributions being so negligible that they are hardly discernible on the graph. A possible supply chain risk is presented by this strong reliance on Italy, underscoring the necessity diversification in order to lessen economic susceptibility. To build a more resilient and balanced import portfolio, South Africa could gain from enhancing trade ties with underrepresented G7 nations.

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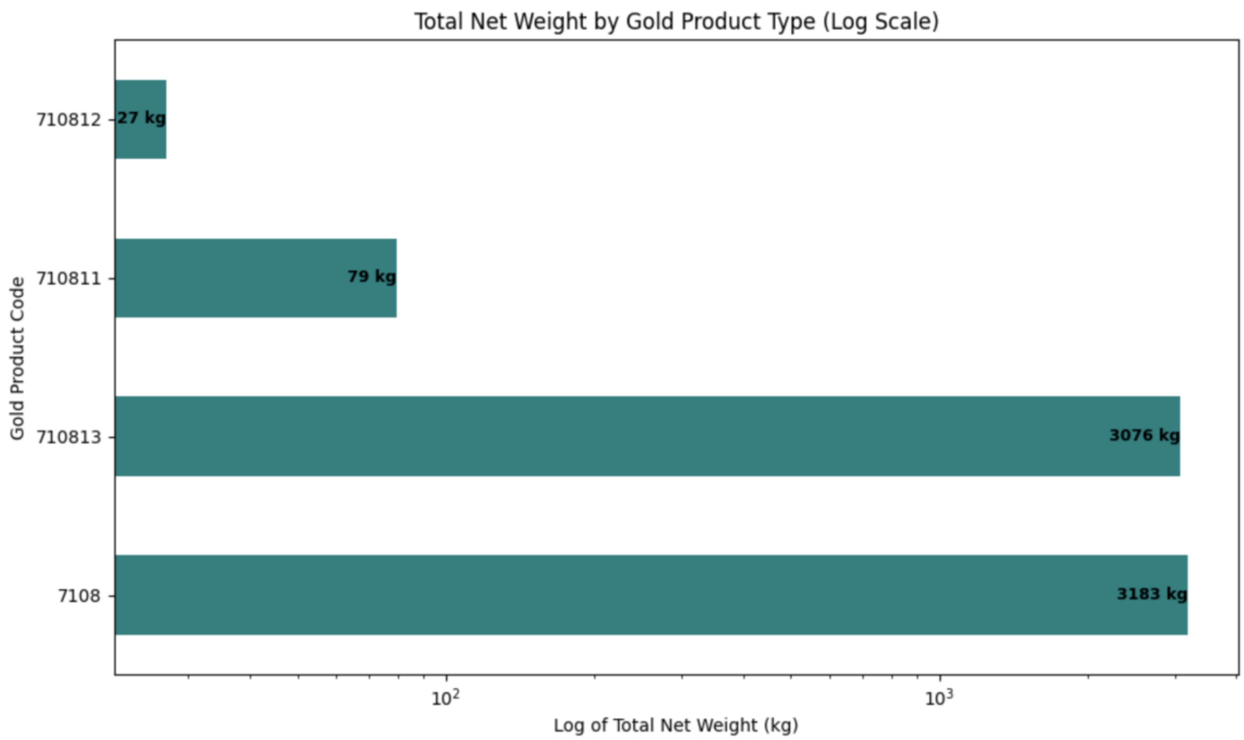

Figure 12

A logarithmic analysis of South Africa's gold product trade data shows a highly concentrated export structure that is dominated by raw or semi-processed gold. In (figure 12) shows Approximately 99% of the total exported weight is made up of product codes 710813 and 7108, which together account for the majority of the trade volume (3,076 kg and 3,183 kg, respectively). On the other hand, 710811 (79 kg) and 710812 (27 kg), which most likely represent refined gold forms like coins, investment bars, or jewellery, only make a small contribution. Exports of raw gold are 40–100 times greater than those of processed or semi-manufactured gold, as demonstrated by the use of a log scale.

With little involvement in downstream or value-added segments, this export pattern suggests that South Africa's gold trade is primarily concentrated on bulk, low-value products.

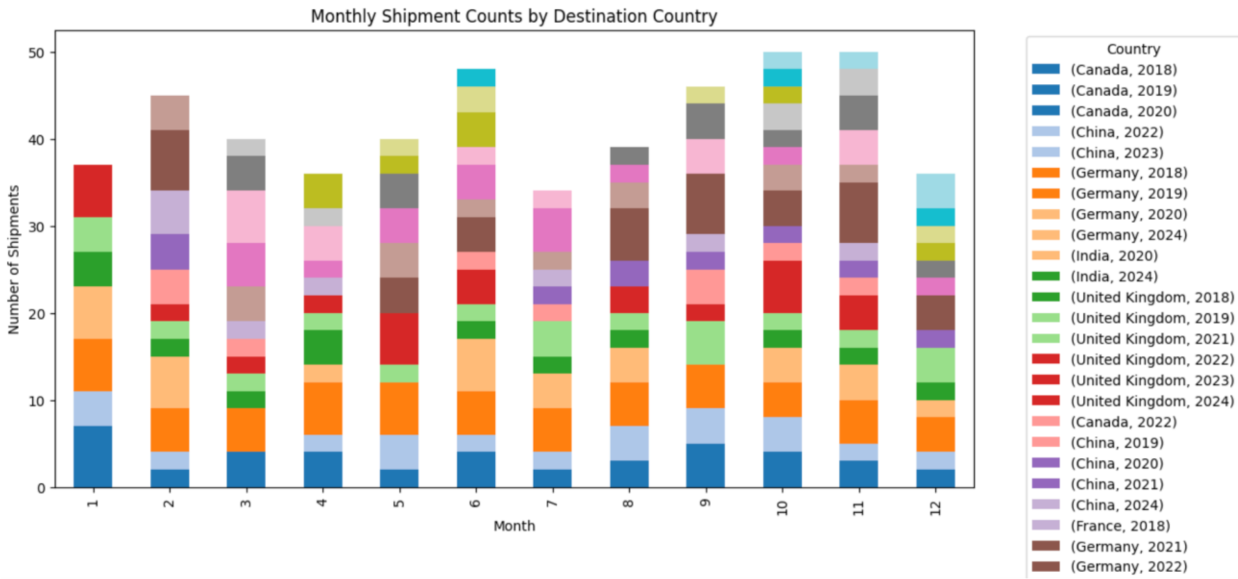

Figure 13

According to (figure 13) Significant variations in trade activity are shown by the bar graph that shows monthly gold shipment counts to different destination nations between 2018 and 2024, highlighting both stable and changing markets. With bars that differ in height across months and nations—some months exhibiting peaks in shipments—the data generally shows demand.

Canada dominated early on, with frequent shipments from 2018 to 2020, according to country-specific trends. But the total lack of bars in 2021 and 2023, with a slight resurgence in 2022, suggests a steep drop or a change in the focus of trade. On the other hand, bars started to appear in China in 2019 and continued to grow through 2021–2023, and then into 2024, indicating that the country is a growing market.

This pattern points to rising trade volume and significance, perhaps as a result of changing policies or improved two-way ties. From 2018 to 2022, Germany's presence was comparatively constant; it vanished in 2023 but reappeared in 2024. The sparse bars, which indicate irregular or contract-specific trade, only show India in 2020 and 2024. The UK, on the other hand, stands out with constant bars throughout the timeline, indicating a steady and expanding partnership. From 2021 onward, the bars are noticeably higher, which may be related to trade realignments following Brexit.

In contrast to the 2021–2024 phase, which shifts toward concentration in China and the UK, the 2018–2020 period exhibits broader participation from nations like Canada, Germany, the UK, and France. Interestingly, 2024's bars show Germany's return to the scene along with ongoing activity from China and the UK, while nations like India continue to be erratic.

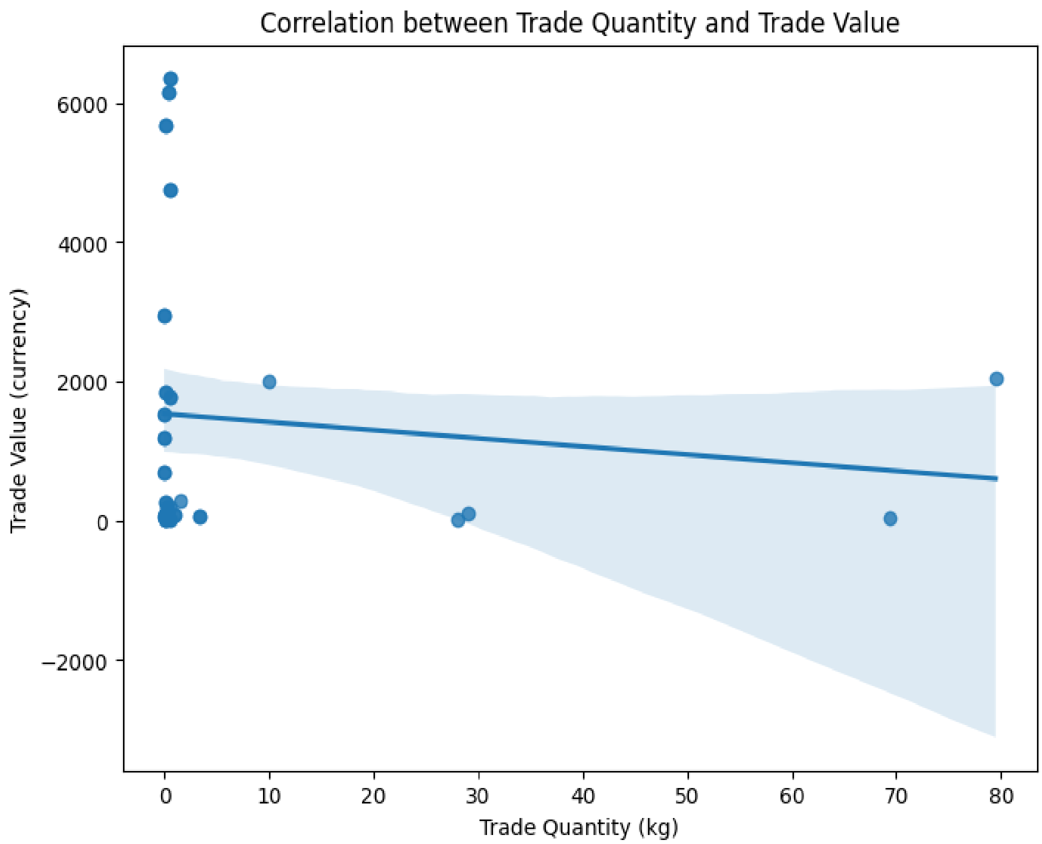

Figure 14

The direction of trend between the volume of gold imported (in kg) and trade value is upward as shown in (figure 14), with increasing volume of gold imported (in kg) translating to increasing trade value. This is the way economics is supposed to work—greater gold sold, greater returns. The trend is not linear since the trend of the graph flattens as quantity increases (i.e., 60–80 kg), showing diminishing returns. These are likely due to such causes as bulk buyer discounts by the lot, inferior or un-reprocessed gold in quantity lots, or unit price lowered by saturation of the market. For example, low-value, high-volume transactions could be for the export of crude gold, and high-value, low-volume transactions.

Strategically, this trend supports the necessity for balancing volume of trade with value-added practices. As much as volume-led low-value exports can bring consistent cash flow—more so to industrial buyers or central banks—high-value low-volume exports are the rule to maximize profit margins in investment or high-end marketplaces. With higher quantity levels (over 50 kg), the exporter will need to negotiate better terms of price or modify their product mix in a manner as to compensate for dwindling per-unit returns.

To gain optimal trade outcomes, it is advisable to cleanse the dataset by defining the used currency (USD), intervals of time (daily, monthly, annually), and marking outliers with certain HS codes (710811 or 7108) so that analysis can be more precise. Optimization of the ratio of high-quality gold products and testing of market segmentation techniques—both targeting volume-oriented industrial buyers and high-margin niche purchasers—can help South Africa optimize gold trade revenues.

In short, while the gold value for exchange increases with quantity, the flatness of the curve implies that volume alone will no longer be adequate to ensure profit. This necessitates the move towards diversified products and clever market concentration to enhance revenue resilience and maximize value capture in gold exports.

3.2. Challenges and Risks

As Burkina Faso and South Africa respond to the evolving reality of gold trading globally in 2025, both countries also witness various challenges apart from their infrastructural and economic limitations. Global political influence by Western nations, China, and Russia, combined with domestic political instability, has introduced immense complexity into the gold mining sector. Chemical limitations, such as the price of chemicals, availability of electricity, and availability of water, limit their ability to expand operations competitively and sustainably.

3.2.1. Burkina Faso

3.2.1.1. Strategic Resource Limitations

Burkina Faso's efforts to nationalize and centralize gold refining have explained the necessity for specialist chemicals like cyanide. Even though domestic production is scant, Burkina Faso remains strongly dependent on foreign sources, largely Western Europe and Asia. Upset in international supply channels or shifts in diplomatic allegiances (e.g., sanctions or trade embargoes) would greatly affect the country's refining capability.

Side by side with this, Burkina Faso's low electrification rate (around 22%) remains a limitation to industrialization. Without immediate investment in power lines, the country's ambition to expand refining capacity may be a pipe dream. Periodic droughts have, in addition, made water employed in industrial processes scarce, not only undermining the efficiency of mining operations but also stoking conflict between local communities over distribution.

3.2.1.2. Western influence and dependence on trade

Historically, Burkina Faso's gold has had a monopoly of importation by European Union countries such as France and Switzerland. Political occurrences—military coups and anti-French feelings—have stretched these relationships, however. French withdrawal of military forces and diplomatic coldness have reduced European domination but left an atomized investment landscape with shattered institutional confidence. Efforts to recover sovereignty of gold via nationalization have been opposed by Western firms, adding legal framework complexity and deterring new investment.

3.2.1.3. China and Russia's Growing Role

In a calculated reorientation, Burkina Faso has developed improved relations with China and Russia, both politically and economically. Backed by security matters by Russia and investment in infrastructure by China have filled the gap left by the West. However, with increased dependence comes new threats:

- Lack of transparency in bilateral deals
- Dispute over resource-for-infrastructure transactions

3.2.1.4. Political and Security Tensions

Burkina Faso is unstable politically. Extension of the military regime until 2029 and perpetual power struggles between members of the junta render long-term planning challenging. Ongoing terrorist attacks—especially in the Sahel region—subject mining activity to persistent attack, undermine the security of staff, and destroy critical infrastructure. Such attacks also deter foreign investment and further isolate Burkina Faso in the international gold supply chain.

3.2.2. South Africa

3.2.2.1 Energy and Water Deficits

South Africa's mining sector continues to endure chronic electricity shortages, with a record load shedding in 2024. The state-owned Eskom cannot keep up, and the mining houses are left with costly and environmentally unattractive diesel alternatives. The energy crisis is limiting output, increasing costs, and eroding competitiveness. Water shortages have also become a threat to operations, particularly for gold-bearing provinces like Gauteng and North West. The majority of mines are faced with use curbs due to declining reservoir levels and tighter environmental control of acid mine water and chemical effluent, further cutting back production.

3.2.2.2. West's Impact and Legacy Extractive

South African mining has roots in historical associations with Western multinationals and money markets. While these offered money and economies of scale, they reinforced entrenched disparities and unbalanced control of resources, arousing public anger. Decentralization calls for greater economic justice, has led to policy transformation toward resource nationalism and Black Economic Empowerment (BEE) resolutions. These have created uncertainty among foreign investors, particularly from the EU and North America.

3.2.2.3. Chinese and Russian Interests in Mining

China and Russia have increased investment in South Africa's mining and infrastructure sectors:

- Chinese investors are investing in rare earth, processing plants, and railroads.
- Russian diplomatic channels have been expanded with non-Western financing options.

Though these arrangements introduce new finance and political influence, they are untransparent and at risk of incompatibility with South Africa's environmental or labour standards. There is increased civil society opposition to what counts as "neo-extractive" practice under new flags.

3.2.2.4. Social Unrest and Governance Fragility

Continued labor unrest, youth unemployment, and grassroots protests plague the South African mining climate. Granting of mining concessions and bickering at the level of corruption in the ANC government also contribute to the risk. Unless these pressures are resolved, they will further result in regulatory overextension, policy surprises, and further investor confidence.

3.2.2.5. Strategic Implications

To stay competitive and offset geopolitics remaking itself, both South Africa and Burkina Faso must:

- Diversify the allegiances not to over-rely on any one bloc (West, Russia, or China).
- Invest in strategic infrastructure: electricity, water, and chemical supply chains.
- Institutionalize transparency to attract long-term investors.
- Counter socio-political instability that disintegrates business and undoes reputational integrity.

In this modern multipolar world, resource sovereignty without operational capability can become more of a hindrance than a help. Upgrading infrastructure, reform at home, and strategic diplomacy are the three pillars for sustainable gold sector growth in both countries.

Recommendations

For Burkina Faso and South Africa to be able to surmount their challenges, they need to have concrete plans for policy enhancement, trade promotion, infrastructure development, economic diversification, and attracting investment inflows.

4.1. Burkina Faso

4.1.1. Strategic Resource Security

In order to balance Burkina Faso's high reliance on foreign suppliers of specialty chemicals like cyanide, the nation is recommended to embark on a preemptive multi-faceted initiative. This means sourcing diversification by entering into agreements with more countries and geographical regions of chemical suppliers, so that it is less reliant on a small set of core markets (Western Europe and Asia) and less vulnerable to geopolitical flux or supply chain disruptions. Second, in the long run, Burkina Faso should look into the feasibility of developing local production capacity for such strategic chemicals. Either through government-driven projects or foreign direct investment in its chemical sector, founded on a conscientious assessment of local resources for raw materials, power availability, and skilled manpower. Second, investment in R&D via alternative, less toxic, or local reagents for gold processing would also reduce the application of conventional chemicals.

Investment in R&D for local alternative reagents can also reduce reliance.

4.1.2. Power and Water Infrastructure

Accelerating low electricity access (22%) is a high priority for industrialization, especially gold refining. Burkina Faso needs to invest in power infrastructure immediately, prioritizing diversified energy sources with very high priority for solar and wind energy to increase supply and improve energy security. National grid extension for electricity is also required for secure supply to refining activities.

Amid water shortage, both residential settlements and industrial activities need a sustainable, multi-disciplinary water management strategy. This involves practicing water-efficient use in the mining/refining, promoting recycling, and investing in adaptable water infrastructure like dams and harvesting systems.

4.1.3. Diversify International Partnerships

Burkina Faso should actively diversify its gold trade and investment relationships with the world outside the traditional Western markets. Active courting of non-traditional partners from Asia, the Middle East, and other African nations can create alternative off-take and investment streams. Meanwhile, the government must also make its institutional framework more robust, with well-defined legal and regulatory procedures for nationalization, to instill confidence and bring in new, reputable investors.

4.1.4. Enhance Governance in New Partnerships

Though new alliances, particularly with China and Russia, are a welcome development, Burkina Faso must enhance governance, transparency, and due diligence on all contracts. To assist in alleviating such threats as non-transparent bilateral agreements and secret mining concessions, the government should:

- Institute Strong Transparency Mechanisms: Mandate public disclosure of all agreements, loan conditions, and mining concession data, subject to review by an independent
- Strengthen National Negotiation Capacity: Invest in building capacity to negotiate complex international contracts, in line with national interests and debt sustainability.
- Implement Firm Procurement and Anti-Corruption Policies: Adopt and enforce ruthlessly competitive, transparent procurement procedures for all concessions and projects.

Diversify Engagement: Broaden economic engagement beyond extractive models, in pursuit of technology transfer and value addition.

4.1.5. Security Stabilization and Political Stability

In order to address the political instability and insecurity shock to its gold sector, Burkina Faso must prioritize stringent security stabilization and create greater political inclusivity. Security entails heightened counterterrorist operations and greater protection of mining sites and miners. Concurrently, the transition government must invest in institutionalizing transparent, credible, and inclusive political change processes for enhancing a more stable environment for long-term projection and investment. Showing the commitment to national dialogue and providing direction for a stable government.

4.2. South Africa

4.2.1. South Africa's water and energy limitations in the mining industry

To address the energy crisis, South Africa must provide high priority and speed up private sector investment in power generation, especially for the mining industry. What is meant by this is speeding up the approval of projects with renewable energy sources such as solar, battery storage, and wind power so that mines are able to produce electricity on site. Especially critical among these is also to allow such mines to be in a position to sell any excess power they generate back into the national grid, for the benefit of the overall energy supply. In the meantime, the state power utility Eskom must make a drastic change of operations, quickly update its infrastructure and moving to renewable sources of supply to deliver safe, affordable, and secure electricity.

In the case of water shortages, mining operations are urged to implement latest water treatment and recycling technologies. It aims to develop "closed-loop systems," significantly reducing their need for new water and purifying any water that has come into contact with the mine to a very high standard before it is safely returned to the environment. It also includes the search and utilization of alternative water supplies, such as treated municipal wastewater, and more intense conservation and combined water management practices in all mining activities.

4.2.2. Facilitating equity and investor confidence for the South African mining sector

The South African mining sector needs to be in a position to attract foreign investment while sharing its fruits with all its citizens. That is similar to the government providing clear and predictable policies (no policy surprises!) on investment and Black Economic Empowerment (BEE). BEE is meant to correct past injustices, but its implementation needs to be open and genuinely broad-based, with priority given to community development, skills transfer, and development of local enterprise, not a privileged elite group of super-wealthy individuals. Open dialogue with foreign investors and stable policies will instill confidence, proving that an equitable and balanced mining industry works out in the longer term for everyone.

4.2.3. Strategic Engagement and Protection Standards

Managing Russian and Chinese Interests in the South African Mining Sector South Africa, as growing numbers of nations like Russia and China express interest in its mining sector, needs to have a smart strategy in engaging in order to obtain tangible economic benefit without sacrificing its values. This package involves giving top priority to complete transparency in the form of open foreign contracts and strict conditions are laid down for compliance with South African labor and environmental law, improved company social responsibility policies. To prevent corruption and "backroom deals," there must be effective anti-corruption measures such as a publicly available and transparent mining license system and oversight by independent monitors. Furthermore, South Africa must use such partnerships to maximize local value addition and skills transfer, including by mandating local content in projects, promoting local mineral processing (beneficiation), and collaborating with investors to provide training in rare earth processing, rail development, and sophisticated mining technologies. Although diversification of sources of investment enhances South Africa's bargaining power, strong regulation and successive enforcement will be needed to secure equitable deals guaranteeing well-balanced, sustainable development with minimal exploitative "neo-extractive" industries.

4.2.4. Social Unrest and Power Consolidation in South Africa's Mining Industry

South Africa can significantly reduce social unrest, youth unemployment, and poor governance by prioritizing three aspects: openness, citizen engagement, and empowering citizens with skills. One important step to take first is to stop corruption in the granting of mining licenses. This involves opening the system and making it online where all data on licenses can be viewed by the public and no manual alterations can be effected. Independent auditors with genuine investigating authority must be able to follow up on all corruption cases to instill confidence in investors and members of the public. To solve the labour issues and youth unemployment, South Africa needs inclusive growth in which mines truly collaborate with governments and societies. They need to co-design and implement Social and Labour Plans (SLPs) that go beyond compliance, with a focus on tangible benefits like injecting money into local economies, skills development for jobs, and apprenticeships for young people. Finally, open dialogue among management, unions, and communities, perhaps with the assistance of a neutral facilitator, can defuse tensions and create a safer atmosphere for everyone.

Conclusion

Burkina Faso's gold sector is at a crossroads, facing enormous potential and some significant challenges on the horizon in the next few years. Despite its resilience in the face of political and security turbulence, the long-term success of this sector in the future rests on the incorporation of strategic reforms. The realignment to BRICS and Middle Eastern alignments opens up new markets but must be carefully managed to preclude dependence on new trends. Burkina Faso's priorities are to expand refining capacities domestically, enhance security of mining, and build energy infrastructure. By succeeding at the crossroads of geopolitical blocs and driving regional value addition, the nation has the chance to convert its gold reserves into long-term economic growth. The coming five years will be instrumental in determining whether gold will be able to galvanize growth or remain a source of risk.

On the other hand, South Africa's gold trade is also a complex importer and processor one, with most engaging in transactions with counterparts such as China, Germany, and Italy. The dominance of small-scale imports of unwrought and semi-manufactured gold suggests specialization in industrial end-uses rather than large-scale trade. However, resultant gaps in 2024 statistics, most egregiously the absence of monetary values, raise consistency of reporting issues and constrain trend analysis precision. This history highlights South Africa's strategic role in the global value chain of gold, where its refining capability remains critical amidst modern sophistication. Securing its trading base by resolving data quality issues as well as expanding into regional processing opportunities will be the key. As digital and ESG dynamics shape the gold market, South Africa must maintain a sharp watching trade brief to protect its long-established place in this vital sector. Generally, the numbers refer to the continued significance of gold in both economies and the necessity for responsive adaptability amid an evolving trade landscape.

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APPENDICES

APPENDIX A: Group Members

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