







Research Paper on: UNRAVELLING THE GLOBAL CENTRAL BANKS' LOSSES

Commencement Date: July, 2023 Completion Date: October, 2023

A Case Study of The Swiss Central Bank, Central Bank of the Czech Republic, European Central Bank, Federal Reserve of USA, The Central Bank of England, the Central Bank of Zambia and The Central Bank of Ghana

Researcher: Gertrude Korkor Ashia (Exco)

Research, Policy and Advocate (Economy and Governance)

Ghana International Trade & Finance Conference (GITFiC)

P. O. Box Co 2814

Krakue Street, Meridian, Tema - Ghana

Office: +233 30-320-9055

Email: infor@gitfic.com

Abbreviations

CHF - Official currency of Switzerland

ECB – European Central Bank

DDEP – Domestic Debt Exchange Program

Kwacha (K) - the currency of Zambia

SNB- Swiss National Bank

GITFiC - Ghana International Trade & Finance Conference

Abstract

In 2020–2022, a unique confluence of global challenges, including the lingering effects of the COVID-19 pandemic and the geopolitical tensions arising from the Russia–Ukraine war, resulted in significant financial setbacks for central banks worldwide. This research paper delves into a comprehensive case study analysis of several prominent central banks that encountered financial losses on their balance sheets during this tumultuous period. The central banks under examination include the Swiss Central Bank, Central Bank of the Czech Republic, the European Central Bank, the Federal Reserve of the United States, the Central Bank of England, the Central Bank of Zambia, and the Central Bank of Ghana.

These research findings by the Ghana International Trade and Finance Conference (GITFiC) have the potential to contribute to a better understanding of the intricate links between geopolitical events, health problems, and financial stability. This study by the GITFiC intends to draw comparative insights into the variances in financial vulnerabilities and recovery tactics implemented by central banks in response to shared global difficulties by evaluating a varied array of central banks across distinct geopolitical and economic circumstances. Finally, these findings by the GITFiC will shed light on the complexities of central bank management in the face of unexpected external shocks, providing valuable lessons for policymakers, economists, and financial practitioners navigating an increasingly interconnected and uncertain global financial landscape.

This research paper by the GITFiC became necessary due to several public outcries by some sections of citizens across the African continent and the world at large, which we believe are the result of misinformation, a lack of information and proper sensitization and, to a large extent, political expediencies.

There is therefore no doubt that these have culminated in several demonstrations, riots, strikes, calls for dismissals, resignations, etc., all in the quest for the demand for proper accountability, proper governance,

and the rule of law. The GITFIC holds the view that these calls are prudent and legitimate by citizens across the African continent and the world at large; however, the intricacies surrounding such geopolitical negatives are beyond any government and governance structures. These are natural and unnatural occurrences combined and must be admitted as such. The GITFIC will therefore call for a collective supportive approach by all citizens across the African continent and the world at large in resolving this, country specific. All citizens must be part of driving our various economies back to growth, sustainability, and profitability.

Introduction

In 2022, most central banks around the world faced an unexpected and worrying challenge: declaring losses on their balance sheets. Central banks, long regarded as defenders of stability, lenders of last resort and financial prudence, are now under public scrutiny as they manage the complexities of a developing economic landscape. The major role of central banks has been to maintain price stability through monetary policies, promote economic growth, and assure their respective countries' overall financial stability. However, the global economic landscape in 2022 presented an intricate web of challenges ranging from geopolitical tensions and market volatility to inflationary pressures as the world seeks to bounce back from the pandemic and the occurrence of unprecedented events such as the Russia-Ukraine war. These losses were seen as the effects of intervention and the rest of the losses are attributed to market losses on fixed-income portfolios.

For instance, the Central Bank of Ghana deployed its balance sheets as a tool to pursue macroeconomic and financial stability objectives in support of the economy and to prevent inflation from falling far below the target. After the global crisis of the COVID-19 pandemic and the ongoing Russian-Ukraine War, the central banks of several advanced economies used asset purchase programs(APPs) and other domestic feasible programs in trying to salvage the situation, and in the case of Ghana, a domestic debt exchange program by the government was used to achieve their policy aims. In doing so and to pursue their policy objectives, the Central Bank of Ghana took financial positions, which influenced their profits and losses as a by-product. As policy rates are being hiked sharply to fight high inflation across the globe, the Central Bank of Ghana indiciously did the same and incurred a sizeable loss because of its asset-liability composition.

The Central Bank of Ghana can underscore its continued ability to achieve policy objectives by clearly explaining the reasons for the losses and highlighting the overall benefits of its policy measures.

The Swiss Central Bank, the Central Bank of the Czech Republic, the European Central Bank (ECB), the Federal Reserve of the USA, the Bank of England, and the Central Bank of Zambia can directly impact Ghana's economy and monetary/fiscal framework through various channels.

Global Economic Interconnectedness: Changes in the monetary policies of major central banks, such as the ECB, Federal Reserve, and Bank of England, can affect global economic conditions. Given that Ghana is part of the global economy, shifts in international interest rates, exchange rates, and capital flows can influence Ghana's economic performance.

Currency Exchange Rates: The Swiss Franc, Euro, US Dollar, British Pound, and Zambian Kwacha are major global currencies. Fluctuations in these currencies can impact the exchange rates with Ghana's currency, affecting trade balances, inflation, and overall economic stability.

Commodity Prices: The central banks of commodity-exporting countries, like Zambia, can influence global commodity prices. As Ghana is a commodity exporter (e.g., gold, cocoa), changes in prices due to central bank policies in Zambia can affect Ghana's export earnings and trade balance.

Interest Rates and Capital Flows: The policies of major central banks influence global interest rates and capital flows. Changes in interest rates can affect borrowing costs for Ghana, impacting its fiscal policies and debt management. Capital flows can also impact Ghana's financial markets and exchange rates.

International Financial Stability: Actions taken by central banks in Switzerland, the Czech Republic, and the Eurozone can influence global financial stability. Economic and financial stability in these regions can have spillover effects on Ghana's financial markets and investor confidence.

In summary, the interconnectedness of the global economy means that the policies and actions of major central banks can have ripple effects on Ghana's economy and monetary/fiscal framework through channels such as exchange rates, interest rates, commodity prices, and international financial stability.

The relationships are complex and multifaceted, reflecting the interdependence of economies in the modern world.

The Case Study of Switzerland

The global economy of Switzerland experienced a slowdown in their economy. The Central Bank's assets of CHF 1,057 Billion in 2021 were reduced to CHF 881 Billion. It is important to note that investments globally are exposed to currency risk, as was the case of Switzerland. The Bank's 2022 annual report stated that the losses on investments were due to fast-declining share prices and rising interest rates. The Swiss National Bank (SNB) stated that the increases in energy prices that pushed inflation to a very high rate also weakened purchasing power and demand.

The GDP growth rate of the Swiss economy was around 2.11% in 2022, lower than the 3.9% rate in 2021. The Swiss Central Bank posted its biggest loss ever, reporting a loss of 132 billion Swiss Francs (\$ 143 billion) in the 2022 financial year against the 26 francs billion profit it made in 2021, which equates to an 18 percent gross domestic product of 744.5 billion Swiss Francs. These losses occurred in bond and stock portfolios due to a large market downturn. With another CHF1 billion in losses on positions held in Swiss francs, SNB made a small valuation gain of CHF400 million on its gold holdings.

The Central Bank of Switzerland (SNB, tightened its monetary policy to ensure price stability. The SNB's monetary policy was implemented by charging negative interest rates on bank deposits and those of other financial participants. The rates stood at -0.75% until June 2022 and then moved to -0.25% in September 2022. The use of negative interest rates means that commercial banks and other financial institutions are charged a fee for holding excess reserves at the central bank.

This is mostly done to encourage commercial banks and financial institutions to lend money to businesses and reduce hoarding. This objective was implemented to stimulate borrowing, spending, and investment that had been drastically reduced due to the COVID-19 pandemic.

The SNB raised its monetary policy to 0.5, thus entering into positive territory. Positive policy rates are used to manage inflation and prevent excessive price increases to ensure price stability. The positive monetary policy of SNB consisted of remuneration of sight deposits that commercial banks and other financial participants held at the Central Bank of Switzerland. This was done to stimulate the money market rates, which led to excess liquidity that, in the short term, recorded lower inflation due to weak demand. The SNB later increased its policy rate to 1.0% in December 2022. Growth slowed in 2022 to 2.1 percent and should decline to 0.8 percent in 2023, with risks on the downside. Inflation was 2.9 percent in March and may remain

above 2 percent until 2024, due to wage pressures and rent increases. The current account surplus is expected to moderate to 7.8 percent of GDP in 2023 (global slowdown, normalization of merchanting trade). The focus of fiscal policy has shifted to offsetting extraordinary outlays while addressing medium-term spending needs within the debt brake rule. Monetary policy is focused on reducing inflation.

According to the IMF, the growth rate for Switzerland slowed in 2022 to 2.1 percent and should decline to 0.8 percent in 2023, with risks on the downside. Inflation was 2.9 percent in March and may remain above 2 percent until 2024, due to wage pressures and rent increases. The current account surplus is expected to moderate to 7.8 percent of GDP in 2023 (global slowdown, normalization of merchanting trade). The focus of fiscal policy has shifted to offsetting extraordinary outlays while addressing medium-term spending needs within the debt brake rule. Monetary policy is focused on reducing inflation.

In the IMF's recommendation to the country, the authorities should implement agile, data-dependent measures to address near-term challenges and take action to tackle longer-term structural issues. The expansionary stance for 2023, with a continued surplus, is appropriate given the slowing economy and underlying factors. If downside risks materialize, automatic stabilizers should operate, and if needed, targeted, time-bound, non-distortionary support should be considered. A clear plan is needed to address longer-term spending needs. Tax reforms should not lead to overall revenue losses. The response to higher inflation has been appropriate and should remain data-driven, including further rate hikes if needed. If facing depreciation pressures, the SNB could continue to reduce FX holdings; it should refrain from FXIs to curb appreciation unless due to excessive market volatility. The SNB should continue to review its investment strategy and maintain safeguards while enhancing monetary policy communications.

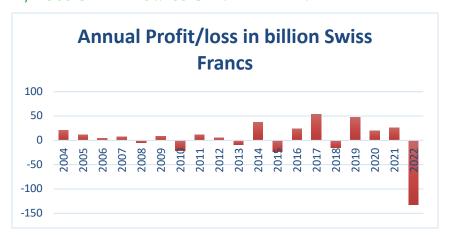
Credit Suisse is a major Swiss multinational financial services company headquartered in Zurich, Switzerland. It is one of the largest and most prominent banks in the country, with a significant global presence. Credit Suisse operates in various segments, including private banking, investment banking, and asset management. Over the years, Credit Suisse has had successes and challenges. One notable event that significantly affected the bank was a series of financial and legal issues in the late 2010s and early 2020s. The bank faced allegations and legal scrutiny related to tax evasion, money laundering, and compliance failures.

One major incident involved a scandal related to the bank's involvement with supply chain finance firm Greensill Capital. Credit Suisse was implicated in a fund that invested in debt issued by Greensill, and when the firm faced financial difficulties, it had repercussions for the bank. The fallout from this and other incidents led to financial losses, reputational damage, and regulatory challenges for Credit Suisse.

The impact on the Swiss bank included financial penalties, leadership changes, and a reassessment of risk management practices. The incidents also raised broader questions about the governance and risk management frameworks within the bank and prompted a reevaluation of its business strategies.

Credit Suisse, as a major Swiss bank, faced challenges and negative consequences due to financial and legal issues, affecting its financial performance and reputation. The events highlighted the importance of robust risk management and compliance practices in the banking industry. Credit Suisse challenges led to a state-facilitated acquisition by UBS. Otherwise, financial sector buffers remain strong, but risks have increased. Pension reforms and EU dialogue progressed. Challenges are ageing and skill gaps, energy security, green transition, and geo-economic fragmentation. The impact of Credit Suisse on Swiss finances was more indirect, as Credit Suisse is just one player in the broader Swiss financial system. However, events involving major banks can influence investor confidence in the overall stability of the Swiss financial sector. Such incidents may lead to increased regulatory scrutiny and calls for improvements in risk management across the industry.

ANNUAL PROFIT/LOSS OF THE SWISS CENTRAL BANK



Source: Swiss National Bank

The Case Study of the Czech Republic

According to the Czech Central Bank's 2022 annual report, the economy of the Czech Republic was greatly affected by the Russia-Ukraine war. The country experienced a shallow economic recession in the second half of 2022, mainly due to its energy crisis and market deterioration. The National Bank of the Czech Republic also recorded a 411.1 billion crown (\$18.4 billion) loss on their balance sheets in 2022, according to Reuters and other research agencies. They listed the main causes of the losses as significant increases in imported raw materials, especially fuel prices, due to the Russia-Ukraine war. Another cause was production problems that affected exporters in the country due to the COVID-19 pandemic. Czech banks had their foreign portfolio losses and value decrease in fixed interest bonds and stock portfolios but had greater interest yields when their central bank's policy rate increased, which of course resulted in a hike in lending to commercial banks, which equally triggered an increase in commercial banks' lending to the general public.

High-rising global energy prices and global supply chain problems led to an alarming rise in inflation in the country, with an average inflation rate of 15.1% in 2022. The increasing inflationary pressures increased interest rates from 3.25% to 7% in 2022, according to the Central Bank's board. The Russia-Ukraine war led to a bank run by Sberbank CZ (the Russian majority state-owned bank) in Switzerland, which resulted in the Central Bank of the Czech Republic revoking its license. Sberbank has been unable to meet clients' obligations since February 2022. The conflict in Russia and Ukraine and the Sberbank CZ bank run led to extraordinary money circulation in the system in March 2022 since the Central Bank of the Czech Republic had to issue CZK 45 billion to commercial banks. According to the Central Bank's new governor, they overindulged and used debt to resolve the high-rising inflation in the long run.

The Case of the European Central Bank

During the year 2022, the European Central Bank (ECB) faced a financial setback that stemmed from the consequences of increasing interest rates. The resurgence of inflation and elevated interest rates introduce another layer of complexity. As inflation returned and rates increased, central banks like the ECB needed to navigate a delicate balance between ensuring economic stability and managing their own financial health.

This situation led the ECB to take specific actions in response to the changing economic landscape. One significant step taken by the ECB was to write down the value of certain bonds. This devaluation was likely a

strategic move to align the values of these bonds with the evolving market conditions, reflecting the shift in interest rates, according to research agencies. Furthermore, the ECB found itself allocating substantial amounts of euros to address balances that had accumulated over the course of a decade marked by monetary expansion.

This accumulation of balances was attributed to the practice of "money printing," where central banks create new money to stimulate economic growth and manage various economic challenges. However, as interest rates rose exponentially, these accumulating balances needed to be treated in a way that was consistent with the evolving monetary environment. The requirement to allocate billions of euros to manage these balances underlines the complexities and sensitivity of central banks' actions in responding to changing economic situations.

Most of the losses were revealed to have come from write-downs in the European Central Bank's relatively small own funds and U.S. dollar portfolio and from the interest it paid to the central banks of Eurozone member countries.

The Case Study of the Federal Reserve of USA

The fourth case scenario is the US bond market. This is the world's largest bond market and it recorded its worst market in 2022. To solve the constant rise in inflation, the US Federal Reserve hiked its policy rate by 4%, causing the US Treasury market to record losses. The bond market declined by 12.5% in 2022, which is the worst in history. According to the Official Monetary and Financial Institutions Forum (OMFIF), the unusual losses of the reserve are mainly due to sharp rises in interest rates. Just like the rest of the world, the United States of America was also greatly impacted by COVID-19 and the Russia-Ukraine war.

The war, which led to spikes in energy and food prices, is one of the factors that have significantly influenced the high inflation rates the world's economy is currently facing. Grocery prices increased very rapidly at a pace of 10%, especially in the case of the commodity prices of wheat and corn, which were mostly exported from Russia and Ukraine. This was coupled with high wage growth, high transportation costs of food, high fuel costs, and supply chain bottlenecks. The FED issued a press release with a declaration of its losses for the first time in 107 years.

Also, in 2022, the U.S. Treasury market experienced an unprecedented annual loss, driven by inflationary forces that led the Federal Reserve to raise its overnight benchmark rate by over four percentage points. The U.S. bond market index saw a significant decline of 12.5% throughout the year, marking its most substantial decrease in recorded history. That had accrued a net loss weekly since September 2022.

Due to the rising inflation, the FED raised interest rates seven times in 2022 to combat the inflation; hence, the FED's fund rate moved from a range of 0.0–0.025% to a range of 4.25% - 4.5%. The net income of the USA fell to \$58.4 billion dollars from \$107.4 billion dollars in 2021. This decline was attributed to an increase in the cost of variable-rate liabilities. Consumer price inflation also rose from 5.8% in December 2021 to 6.3% in April 2022.

A substantial portion of U.S. interest-rate strategists predicted that in 2023, Treasuries will continue their recent upward momentum, resulting in reduced yields and a more pronounced curve slope during the latter half of the year. This projection hinges on the premise that labour-market dynamics may weaken and inflationary pressures could continue to recede.

The Case Study of United Kingdom

The United Kingdom taxpayers also took their first-ever loss on their bond stockpile from the Bank of England in September 2022, with a loss of GBP156 million (\$174 million) due to rising borrowing costs, according to Bloomberg and other research agencies.

As part of its functions, the Bank of England holds a considerable number of government bonds. These bonds are essentially debt issued by the government, and they are purchased by investors, including organizations such as central banks. The value of these bonds is determined by a variety of factors, one of which is the economy's current interest rates, often known as borrowing costs. Borrowing costs increased in September 2022, indicating that interest rates in the economy were rising.

Changes in economic conditions, inflation expectations, or central bank policy can all contribute to this. When borrowing costs rise, so do the interest rates provided by new bonds on the market. The market value of existing bonds has an inverse relationship to interest rates. When new bonds with greater interest rates become available, investors find the value of older bonds with lower interest rates less appealing.

This is because new bonds provide better yields to investors. As a result, the prices of current bonds fall, potentially resulting in losses for bondholders. In the case of the Bank of England, their bond stockpile experienced a decrease in value due to the rise in borrowing costs. This led to a financial loss.

The Case Study of Zambia

In 2020, Zambia marked a significant milestone as the first pandemic-era sovereign default, grappling with a debt load exceeding 120% of its gross domestic product (GDP). The country successfully entered into a staff-level deal for a three-year extended credit facility totaling \$1.4 billion with the IMF in December.

The country experienced very high inflationary pressures in 2021, moving from 16.4% in December 2020 to a peak of 24.6% in June 2021. The Zambia Kwacha also faced a massive depreciation of about 49% with K13.08/USD in 2019 now moving to K19.56 in September 2020. The Bank of Zambia attributed this depreciation to a disruption in international trade and low economic growth due to the aftermath of the COVID-19 pandemic.

The Kwacha recovered strongly in 2021 after an allocation of 937.6 million SDR (Special Drawing Rights) by the International Monetary Fund (IMF) in August 2021 according to the Bank of Zambia's 2021 report. This IMF intervention resulted in a balance of payments surplus of US\$1.5 billion (8.2 per cent of GDP) in 2021 compared to the deficit of \$ 0.4 billion that was recorded in 2020.

The Australian Central Bank also found itself in a similar situation in 2022 when its reserve bank recorded a loss of 37 billion Australian dollars. As of the end of June 2021, Zambia's overall public debt stood at a value of approximately USD 26.44 billion, excluding any interest arrears, and USD 26.96 billion when factoring in interest arrears.

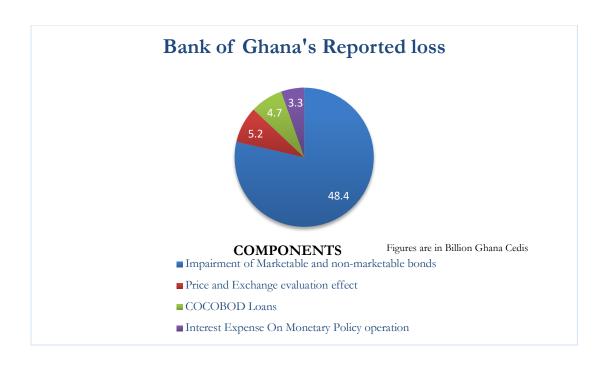
The International Monetary Fund's Extended Credit Facility and Special Drawing Rights allocation increased international reserves from 2.4 months of import cover in 2021 to 3.6 months in 2022. Zambia is still in a severe debt crisis, with debt exceeding 104% of GDP. Due to company recoveries, the banking sector's performance improved in 2021 and 2022, with the nonperforming loans ratio rising from 9.0% in 2021 to 6.1% in 2022. In 2021, credit to the private sector was 8.9% of GDP, rising to 9.2% in 2022.

The Case Study of Ghana

Similarly, the Bank of Ghana also recorded losses of GHS 60.81 billion, in contrast with the GHS 1.23 billion profit recorded in 2021. The financing of Ghana's fiscal debt was the major contributor to the BOG's high expenses and overruns. This started even before the launch of the DDEP. Partly also attributed the loss to the COVID-19 pandemic and the Russia-Ukraine war, which resulted in persistent and broadening inflation pressures, volatile commodity prices, and an economic slowdown in China, causing a series of negative supply shocks and tight financial conditions. The concerns against BOG are about its low rating on its core functions related to dwindling import cover and reductions in foreign reserves.

Furthermore, there was a sum of GH¢6.12 billion marked as losses on loans and advances to quasi-government and financial entities, along with a net exchange deficit of GH¢5.27 billion resulting from the depreciation of the domestic currency. The Bank of Ghana effectively offered fiscal assistance to the government by absorbing a significant percentage of the losses incurred through the debt exchange program. This was to enable the government to better control its debt burden, which is especially important in times of economic difficulty.

The willingness of the Bank of Ghana to shoulder losses demonstrates a commitment to stabilizing the financial system and assisting the government in addressing economic issues. This can have a favorable impact on market confidence and investor sentiment, both of which are critical for preserving macroeconomic stability. This, we at the Ghana International Trade and Finance Conference believe, will bring short-term relief to the government and contribute to broader economic stability. Concrete measures aimed at recuperating and establishing favorable equity involve the preservation of earnings to facilitate capital recovery and abstaining from funding the fiscal budget of the Ghanaian government. Substantive progress has already been initiated, evident through the endorsement of a Memorandum of Understanding between the Bank of Ghana and the Ministry of Finance on April 26, 2023, outlining a commitment to cease budgetary financing.



GITFiCs Recommendation

As inflation and interest rates rise, central banks must deal with the economic and financial consequences of their policies, as well as problems concerning cost distribution and potential long-term sustainability.

Per our research and analysis, undoubtedly, there are trends in all the countries understudied by the Ghana International Trade & Finance Conference – GITFiC for the purpose of this paper, namely: 1. the Russia-Ukraine war; 2. the COVID-19 pandemic; 3. central banks borrowing from their various governments; 4. central banks coming to aid their various governments; 5. central banks, through their various finance or Treasury ministries, taking austerity measures to remedy the effects of the global situation, etcetera. These and a few other factors and indices accounted for mass losses by these central banks globally, of which Ghana was not exempted.

Conclusion

Global economic shocks such as the aftermath of the pandemic and the Russia-Ukraine war, which led to outrageous increases in energy prices, inflation, and exchange rates, led the Ghanaian government to opt for a domestic debt restructuring.

The Bank of Ghana, in their mandate to ensure the stability of the financial sector, absorbed 50% of this DDEP program which has led to the bank recording negatives on their balance sheets. Hence, the losses recorded are not indicative of mismanagement but rather a testament to the profound impact of worldwide challenges.

The loss incurred by the country's central bank was not an isolated incident but rather a reflection of a greater world economic situation. In addition, central banks' principal goal is to fulfil their policy responsibilities, which include ensuring price and financial stability.

Central banks are not typically profit-oriented in the same way as commercial banks or businesses; hence, in their process of fulfilling their mandate, they can incur losses. The Bank of Ghana served as the loss absorber for the entire debt exchange program, a key requirement that allowed the Government of Ghana to meet the threshold for the approval of the IMF program. It is important to note that the current trend of most central banks' recorded losses is not a new phenomenon to receive backlash from citizens.

A recorded loss in the books of the Central Bank of Ghana does not mean it is in a state of insolvency. Ultimately, losses and negative equity do not directly affect the ability of central banks to operate effectively. In normal times and in crises, central banks should be judged exclusively on whether they fulfil their mandates or not. **END**

REFERENCES

African Development Bank Group. (n.d.). Zambia Economic Outlook. Retrieved from https://www.afdb.org/en/countries/southern-africa/zambia/zambia-economic-outlook

BNN Network. (n.d.). Bank of Ghana Reports Significant Losses for Fiscal Year 2022. Retrieved from https://www.bnn.network/bank-of-ghana-reports-significant-losses-for-fiscal-year-2022

Benzinga. (n.d.). Dragged By Inflation, Treasuries Reportedly Register Biggest Annual Loss In 2022 - iShares Core U.S. Aggregate Bond ETF (ARCA:AGG), Vanguard Total Bond Market ETF (NASDAQ:BND). Retrieved from https://www.benzinga.com/markets/bonds/22/01/24070915/dragged-by-inflation-treasuries-reportedly-register-biggest-annual-loss-in-2022

Bloomberg. (2022, October 21). UK taxpayers take first-ever loss from BOE QE holdings. https://www.bloomberg.com/news/articles/2022-10-21/uk-taxpayers-take-first-ever-loss-from-boe-qe-holdings#xj4y7vzkg

Citinewsroom. (2023, August). Gh¢60bn loss: We've not been reckless - BoG fights back. https://citinewsroom.com/2023/08/gh%C2%A260bn-loss-weve-not-been-reckless-bog-fights-back/

Czech Daily. (n.d.). Czech National Bank reports record loss of CZK 411.9 billion in 2022. Retrieved from https://czechdaily.cz/czech-national-bank-reports-record-loss-of-czk-411-9-billion-in-2022/

European Central Bank. (2023). Investor relations: ECB profits and losses. https://www.ecb.europa.eu/pub/ire/html/ecb.ire202306~d334007ede.en.html

European Parliament. (2023). Motion for a European Parliament resolution on the annual report on the implementation of the common foreign and security policy. https://www.europarl.europa.eu/doceo/document/A-9-2023-0022 EN.html

Fortune. (2022, December 31). Treasury market's record annual loss in 2022 was its worst year ever; 2023 forecast. https://fortune.com/2022/12/31/treasury-market-record-annual-loss-2022-worst-year-ever-2023-forecast/

Graphic Online. (n.d.). GH¢60bn loss: We took half of debt haircut - Bank of Ghana. Retrieved from https://www.graphic.com.gh/news/general-news/gh-60-billion-loss-we-took-half-of-debt-haircut-bank-of-ghana.html

Kitco News. (2023, June 27). Global central banks post losses on reserves in 2022, no quick recovery seen: survey. https://www.kitco.com/news/2023-06-27/Global-central-banks-post-losses-on-reserves-in-2022-no-quick-recovery-seen-survey.html

NBC News. (2023, January 9). Swiss National Bank posts record \$143 billion loss. https://nbc.com/2023/01/09/swiss-national-bank-posts-record-143-billion-loss.html#:~:text=The%20Swiss%20National%20Bank%20expects%20a%20%24143%20billion,payout%20to%20the%20Swiss%20government%20and%20member%20states.

Peterson Institute for International Economics. (n.d.). Central banks are incurring losses, but critics' concerns are overblown. https://www.piie.com/blogs/realtime-economics/central-banks-are-incurring-losses-critics-concerns-are-overblown

Reuters. (2023, February 23). ECB posts loss as it pays price for its own rate hikes. <a href="https://www.reuters.com/markets/europe/ecb-posts-loss-it-pays-price-its-own-rate-hikes-2023-02-23/#:~:text=FRANKFURT%2C%20Feb%2023%20%28Reuters%29%20-%20The%20European%20Central,a%20decade%20of%20money-printing%2C%20its%20annual%20accounts%20showed.

Reuters. (2023, June 27). Global central banks post losses on reserves in 2022, no quick recovery seen: survey. https://www.reuters.com/markets/global-central-banks-post-losses-reserves-2022-no-quick-recovery-seen-survey-2023-06-27/

Seeking Alpha. (n.d.). Fed Update: The Losses Keep Rolling In. Retrieved from https://seekingalpha.com/article/4567695-fed-update-the-losses-keep-rolling-in

The Conversation. (2023). Global economy 2023: Why central banks face an epic battle against inflation amid political obstacles. https://theconversation.com/global-economy-2023-why-central-banks-face-an-epic-battle-against-inflation-amid-political-obstacles-197088

Yahoo Search. (n.d.). Swiss central bank record loss 2022 report. Retrieved from https://search.yahoo.com/search?fr=mcafee&type=E210US739G0&p=Swiss+central+bank+record+loss+2022+report

ZIPAR. (n.d.). Redeeming the falling Kwacha. Retrieved from https://zipar.org.zm/2022/07/redeeming-the-falling-kwacha/