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STRATEGIES FOR ENHANCING GLOBAL ECONOMIC RESILIENCE: A FOCUS ON INTERNATIONAL FINANCIAL STRUCTURES AND THEIR IMPACT[6]

In the context of increasing global economic volatility, ensuring financial stability and resilience has become crucial. The role of international financial institutions like the International Monetary Fund and the European Central Bank in maintaining economic resilience is more important than ever. This research aims to analyze the mechanisms employed by the IMF and ECB to foster global economic resilience and sustainability, with a focus on their lending systems, financial stability assessments, and cyber resilience initiatives. The study uses a combination of qualitative and quantitative methods, including an analysis of international financial policies, safeguard assessments, lending mechanisms, and cyber resilience frameworks. Data from the IMF, ECB, and various financial indices were examined to assess the effectiveness of these strategies. The research finds that the IMF's lending mechanisms, such as the Extended Credit Facility and the Stand-by Credit Facility, have been instrumental in supporting the economic stability of low- and middle-income countries. The ECB has significantly improved the resilience of European banks, reducing non-performing loans by over 70% between 2015 and 2023. Furthermore, the study identifies the growing importance of cyber resilience in protecting financial systems, with the ECB implementing over 100 cyber resilience stress tests. Achieving global economic resilience requires a comprehensive approach, including enhancing financial structures, addressing inequality, and ensuring strong governance at both national and international levels. Effective international cooperation, particularly in the areas of lending and cyber resilience, is essential for long-term economic stability. The results of this research provide valuable insights for policymakers and international financial institutions. They highlight the importance of strengthening financial regulations,

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improving national governance frameworks, and expanding efforts in financial system cybersecurity to mitigate emerging risks and ensure sustainable development.
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1. Introduction

Economic and financial risks pose one of the most significant challenges to the modern global economy, as the factors influencing the interconnectedness of financial markets and the challenges posed by global economic risks have been magnified in recent years. Economic inequality, particularly in low- and middle-income countries, exacerbates vulnerability to economic crises. Climate change, with its profound impacts on agriculture, infrastructure, and health, further deepens these inequalities. For instance, small island nations in the Pacific face existential risks due to rising sea levels, while sub-Saharan Africa struggles with agricultural productivity losses, further heightening economic disparities.

In the current global context, characterised by economic crises, geopolitical tensions and technological disruptions, the resilience of the global economy is of paramount importance. This paper examines the ways in which international financial institutions, notably the International Monetary Fund (IMF) and the European Central Bank (ECB), have developed in order to reinforce global economic resilience. The research investigates the efficacy of financial mechanisms, such as lending facilities and safeguard assessments, in promoting sustainable economic development and identifies key strategies for enhancing the financial stability of vulnerable economies. By examining the experiences of countries in the post-Soviet region, the study emphasises the importance of cyber resilience and other innovative strategies in enhancing the global financial system. In conclusion, the paper posits that the attainment of global economic resilience necessitates the implementation of comprehensive and coordinated strategies that encompass the involvement of both international financial institutions and national governments.

This research is vital for identifying tools that facilitate international financial flows, particularly for governments and organizations promoting sustainable development. Sustainable development refers to economic growth that meets the needs of the present without compromising the ability of future generations to meet their own needs, integrating environmental, social, and economic considerations. Furthermore, analyzing the functioning of financial structures can help identify the most effective and potentially significant structural changes and tools for financial regulation. This is particularly important in the context of globalized international trade, as all existing financial structures must adapt to new challenges, threats, and opportunities. Secondly, a detailed study of the functioning and methods of ensuring the resilience of modern financial structures can help build trust among both market participants and investors. Global economic resilience is the capacity of the global economy to recover from or adapt to shocks, maintaining stability and fostering growth despite challenges like pandemics, wars, and climate change. Moreover, understanding and systematizing key vulnerabilities aids in predicting and minimizing risks to global financial systems in the future, and contributes to the development of more effective risk management and prevention measures.

International financial structures, such as the IMF and the ECB, play a crucial role in supporting global economic stability. These institutions are responsible for providing financial support, policy advice, and regulation to ensure the continued functioning of the global economy. By strengthening the financial stability of their member countries, they contribute to global economic resilience.

Economic sustainability is also crucial for businesses, as long-term growth is impossible without preserving natural and human resources. It is no longer feasible for businesses to compromise their environmental or community standards in pursuit of uninterrupted economic expansion. Such actions inevitably give rise to circumstances that jeopardise the stability of their operational environment. The integration of environmental and social considerations into business strategies offers dual benefits: it benefits the planet in the long term and offers numerous advantages for businesses. For example, the concept of economic sustainability can assist organisations in evaluating their operations with a view to monitoring energy losses, thereby facilitating the identification of potential cost savings. Companies' implementation of optimal social practices can result in a reduction in employee turnover and an increase in productivity. Furthermore, economic resilience enables businesses to secure contracts from clients and governments, while also enhancing customer loyalty (Prysmian, 2024).

In the existing literature, numerous authors have examined the relationship between economic sustainability and corporate growth. In a recent study, O. Baranovskyi (2024) examined the role of international financial structures in addressing crises, with a particular focus on the response to the global pandemic caused by the SARS-CoV-2 virus. The author emphasised the importance of financial frameworks that integrate sustainability principles. In a similar vein, O. Kuzminska (2022) examined the definitions of "economic security" and "financial security", underscoring the importance of grasping these concepts in order to identify potential threats to sustainable economic development. This is corroborated by the findings of V. Bondaruk's (2024) research, which examined the function of risk management in guaranteeing the financial resilience of businesses. The study emphasised that an integrated approach to risk and sustainability is vital for long-term viability.

Furthermore, literature on the utilisation of cryptocurrencies in international markets, as exemplified by the work of A. Oliinyk and I. Denkova (2023), identify the nascent advantages and threats to financial security. It is observed that cryptocurrencies present considerable challenges to economic stability, yet also offer novel opportunities for sustainable financial models. V. X. Rauf (2024) conducted an analysis of banking operations and strategic planning, positing that a comprehensive approach to risk management and financial resilience in countries such as the USA and Germany is instrumental in maintaining global financial stability, which is a prerequisite for sustainable economic practices. S.Y. Mammadova (2024) emphasised the necessity of aligning the regulatory framework for financial markets, suggesting that a unified approach could markedly enhance global financial sustainability.

In contrast, in analysing the social dimension, V. Papava (2022) explored how geopolitical crises such as the “Oil War” and the “Food War” destabilised the global economy, illustrating that the pursuit of economic growth at the expense of environmental or social stability is unsustainable. A comparable emphasis on institutional financial practices is evident in A. Mzhvanadze’s (2023) investigation of internal financial auditing, particularly within the context of Georgia. The implementation of such practices is regarded as a pivotal step towards aligning financial institutions with the EU’s sustainability objectives.

Based on the preceding, the research aimed to systematize the most effective mechanisms and practices for the sustainability of international monetary organizations, which can be applied at a national level. The research tasks involved an analysis of the implementation of sustainability tools within the IMF and the ECB.

2. Materials and Methods

This research used a mixed-methods approach, integrating both qualitative and quantitative analysis, to assess the effectiveness of international financial structures in promoting global economic resilience. The study focused on the mechanisms implemented by the IMF and the ECB, examining their policies, strategies and impact on financial stability.

To establish the conceptual and categorical framework of the research, the term “global” or “world economy” was analysed using the Cambridge Dictionary (2024), while the importance of trade within the global economy was contextualised using a National Geographic publication (2022). The IMF’s activities, policies and lending mechanisms, such as the Extended Credit Facility, Stand-by Credit Facility and Rapid Credit Facility, were analysed using data and documents from the IMF’s official website. This included a detailed review of the safeguards assessment policies and their impact on financial management. In addition, the IMF’s evolving focus on climate change and sustainability was examined through speeches and reports, in particular by IMF Managing Director Kristalina Georgieva.

Quantitative analysis was used to assess trends in financial stability and credit investment, particularly in Azerbaijan, using data from the Statistical Yearbook of Azerbaijan (2023). Changes in the share of credit investment in the Azerbaijani economy over the past decade were calculated and analysed in the context of the country’s broader economic reforms and sustainable development objectives. The qualitative analysis included a review of the ECB’s financial stability and resilience policies. Information was drawn from ECB publications, regulatory documents and expert speeches. A critical focus was placed on cybersecurity measures, including the ECB’s TIBER-EU framework for red-teaming exercises. These tests simulate cyber-attacks in order to assess the resilience of banking systems. Complementary methods, such as “purple-teaming” for enhanced collaborative training, have also been explored.

Data on international cybersecurity indices, including the International Telecommunication Union’s Global Cybersecurity Index, MixMode Threat Research reports and national cybersecurity indices, were analysed to assess the security posture of critical financial infrastructure in different regions. These indices provided a comparative framework for assessing the resilience of financial systems in countries such as Azerbaijan, Georgia and Ukraine against global leaders such as the US and Germany.

The study also examined legislative developments, such as the EU Regulation 2023/2841, which focuses on inter-institutional cybersecurity coordination. This included an analysis of its provisions to enhance the cyber resilience of financial institutions through cooperation mechanisms involving the Interinstitutional Cybersecurity Board and the Computer Emergency Response Team (CERT-EU).

While the analysis provided comprehensive insights, the study faced limitations, particularly with respect to the availability of recent data on IMF examinations and regional cybersecurity indices. In addition, changes in the geopolitical landscape post-2024 may have influenced the dynamics of financial stability, which future research should address by incorporating longitudinal data and broader geographic analyses.

3. Results

According to the Cambridge Dictionary (2024), the global or world economy refers to the system of industry and trade worldwide that has evolved as a result of globalization, that is, within a unified system. The global economy is closely linked to trade, allowing countries to access resources they do not produce domestically. While the global economy aids financial stability, it also during periods of relative calm on the world stage; on the other hand, during times of geopolitical shifts and even conflicts, it poses a challenge for governments with developing economies (National Geographic, 2022). As a financial institution aimed at achieving sustainable economic growth, the IMF promotes policies that foster higher productivity, job creation, and improved economic well-being for all its member countries. This is achieved through support for economic policies that contribute to greater financial stability and cooperation in the monetary and financial sphere (International Monetary Fund, 2024h).

The safeguards assessments policy is key to financial stability (International Monetary Fund, 2024b), which was introduced in March 2000 to address cases where misleading information is provided to IMF representatives or misuse of the organization's resources is detected. In a 2002 IMF press release announcing the final adoption of this policy as a permanent measure, it was noted that despite improvements in the safeguards of some central banks in recent years, significant vulnerabilities in control mechanisms had still been identified. In particular, many financial reports from some central banks were not subject to external audits according to internationally accepted standards. Some of these central banks exhibited weak control over foreign exchange reserves and had poor reporting to the organization, while others had accounting practices that did not meet requirements within their organizational structures. By 2024, hundreds of governments were included among those requiring security measures assessments (Table 1).

Table 1. Number of IMF member countries to which the safeguard assessment policy was applied

Transition period (2000)	2001-2007	2008-2013	2014-2023	As of July 2024	Total
27	116	114	139	7	403

Source: compiled by the authors based on International Monetary Fund (2024e).

Most of the participating countries, to which the safeguards assessments policy was applied, were transitional economies. Among them, for example, were countries such as Ghana, Nepal, Gambia, Afghanistan, and Bangladesh. Moreover, the mechanism was even applied once in Portugal. The overall trend was characterized by the fact that almost every country underwent a thorough review according to the new policy more than once. In this context, the example of the Central Bank of Azerbaijan, to which the mechanism was applied only once in 2002, is illustrative. It can be emphasized that there has been a positive trend in reducing the proportion of credit investments in the economy, which stood at 28% of the total amount in 2010 but had decreased to just 17.9% by the end of 2022 (State Statistical Committee of the Republic of Azerbaijan, 2023). Overall, the modern Azerbaijani economy is deeply focused on attracting investments in the digital economy, which helps the government to ensure sustainable growth and stimulate technological progress in the most effective way (Abdullayev et al., 2024).

The safeguard assessment is conducted based on six key factors. Firstly, a thorough examination is carried out to determine whether appropriate structures and mechanisms for independent oversight of operations have been established within the central bank, the procedure for appointing heads of financial structures and whether these individuals possess the necessary knowledge and skills to perform their duties. Secondly, an assessment is made of whether the central banks publish audits following international standards. If so, what is the process for selecting external, independent auditors and whether these auditors communicate with individuals directly involved in the functioning of the banking system, such as the board of directors? Thirdly, an assessment is made of the transparency mechanisms of the central bank and a check is made to ensure that the central bank is protected from government influence and the reversal of previously adopted decisions in the area. Fourthly, a check is made to ensure that the central bank management adheres to international accounting standards, how timely the necessary reports are published, and whether such data is consistent with the data provided within the framework of the IMF. Fifthly, a check is made to ensure that the internal audit mechanisms comply with international standards and to what extent such an audit can independently assess the quality of financial risk assessment processes within the banking system. The final point relates to a check for the existence of internal control mechanisms for foreign exchange reserves, lending, and currency and banking operations (International Monetary Fund, 2024b).

In the context of the developing global economy, the IMF's decision to ease debt obligations for poor countries demonstrates the organization's commitment to fostering conditions for sustainable growth in the international community, even in the most challenging circumstances. The types of assistance can vary from financial to other forms of support.

The three primary mechanisms for IMF lending to low-income countries differ in purpose and urgency. These are summarized in Table 2.

Table 2. Overview of IMF lending mechanisms for low-income and middle-income countries

Lending Mechanism	Purpose	Eligibility	Characteristics
Extended Credit Facility	Long-term support for balance of payments	Low-income countries	Focuses on sustainable economic reforms
Stand-by Credit Facility	Short-term financial needs	Middle-income nations	Targets temporary balance of payment issues
Rapid Credit Facility	Urgent assistance	All qualifying nations	Disburses funds quickly during emergencies

Source: compiled the authors based on International Monetary Fund (2024a), International Monetary Fund (2024f), and International Monetary Fund (2024c).

For the first time within the organization, an institutional position was adopted in 2012 when many governments were in the process of forming their markets and combating chaotic and unstable capital flows. Its formation was based on the financial crises of the 1990s, as well as on the consequences of the 2008-2009 global crisis, to address issues related to the liberalization of capital flows systematically. The revision of its institutional position in 2022 was linked to the impact of the coronavirus pandemic, which directly impacted the global economy (Rambarran and Khatun, 2023). The current institutional stance of the IMF on capital flows is that governments need greater flexibility to make decisions relating to two main categories of instruments – measures for regulating capital flows and macroprudential measures. As a result, the update to the institutional position involved adaptation and the acquisition of new knowledge within the IMF's expert community, as well as an expansion of the policy toolkit for emerging market economies. Another goal was to empower member countries to use the new toolkit to ensure financial stability, even in cases where capital flows in unstable global economies are highly dependent on global financial conditions.

IMF Managing Director Kristalina Georgieva noted that the 2020s could become either the "Tepid Twenties" or "the Transformational Twenties" (International Monetary Fund, 2024g). One of the main factors reducing the resilience of global financial systems was the pandemic, wars, and overall geopolitical tensions. Of course, some governments may benefit from this geopolitical situation by becoming "linking elements" in supply chains, but over time new difficulties and barriers may arise, as well as additional financial costs. In this regard, the IMF has stepped up its efforts to assist governments that have been most affected by challenges such as climate change and the transition to digital technologies. As of 2024, 18 member countries have used the resources of the Trust Fund to normalize financial operations and achieve sustainable development conditions. Moreover, IMF member countries have supported a 50% increase in the organization's permanent resources to provide loans and other financial support to the poorest member countries.

For countries with developing economies, there is a pressing need for continuous and substantial capital investment. This need is driven by their transition to low-carbon policies, addressing biodiversity loss, and managing cross-border impacts resulting from global climate changes. According to an Independent Expert Group (2023), emerging and developing economies need to invest around 3 trillion USD by 2030 in key areas that will help achieve low-carbon dependency and rapid economic growth. Domestic investments should account for two-thirds of this amount, or about 2 trillion USD, while external investments, i.e., from international creditors, should account for around 1 trillion USD. This is why international cooperation is essential to help developing economies rapidly mobilize the financial resources they need.

To address the challenges outlined above, the IMF created the resilience and sustainability facility (International Monetary Fund, 2024d). Its goal is to provide long-term financing to enhance economic resilience and sustainability by supporting reforms in areas of economic policy related to climate change risks and pandemic preparedness. Eligibility for assistance extends to all governments of low-income countries that meet certain criteria, as well as countries with populations under 1.5 million and a gross national income per capita exceeding the International Development Association's operational cutoff by 25 times (for low-income countries) and 10 times (for middle-income countries). In total, as of 2024, there are 75 countries eligible for International Development Association resources, with the majority located in Africa, East, South, and Central Asia, as well as Latin America, the Caribbean, and the Middle East (World Bank, 2023).

The effectiveness of IMF policies varies considerably depending on regional economic contexts and structural conditions. In Africa, for example, IMF-supported Extended Credit Facilities have shown measurable improvements in economic stability, particularly in countries such as Ghana and Uganda, where improved fiscal discipline and public financial management reforms have been implemented. However, similar programmes in South America, such as in Argentina, have often been criticised for exacerbating socio-economic inequalities through austerity measures imposed as loan conditions.

A cross-regional comparison shows that while African countries have benefited from the technical assistance that accompanies IMF programmes, success in Latin America has been less consistent due to complex socio-political dynamics and greater reliance on external debt markets. This underscores the need to tailor IMF interventions to the specific development and governance challenges of each region.

Moreover, regions with advanced economies, such as the euro area, have different dynamics. Here, IMF engagement often focuses on macroeconomic stabilisation rather than poverty reduction, as seen during the European sovereign debt crisis, when countries such as Greece benefited from Stand-By Arrangements. However, the structural reforms imposed, including tax increases and pension cuts, provoked significant public opposition and prolonged economic hardship.

Countries such as Costa Rica, Barbados, Rwanda, Bangladesh, and Jamaica were among the first to participate in the new financing program, and by March 2024, 18 participants joined, falling short of the IMF's projection of over 30. Capitalized resources under the program amounted to 40 billion USD in 2024, but given the trillions of dollars needed by low-income countries to achieve their climate adaptation goals, there is a need to attract additional funds from reserves and other sources in the most effective way possible (International Monetary Fund, 2022). As a result, the IMF leadership has indeed taken and continues to take decisive actions towards a sustainable global economy, as one of the most important actors in international relations within the globalized economic system of the 21st century. At the same time, the rapid changes in the geopolitical landscape, coupled with natural disasters, signal the need to accelerate all institutional processes within the organization.

Another significant actor on the international stage, responsible for price stability in the eurozone, is the ECB. The European Central Bank (2024a) oversees all banking systems in the eurozone, helping to keep depositors' funds safe and making the banking system more reliable overall. In a speech by C. Buch (2024), Chair of the Supervisory Board of the ECB, characterized the risks and resilience of the European banking sector. A qualitative change has been the increased resilience of European banks over the past decade, driven by several factors. Firstly, the level of non-performing loans has decreased significantly, which previously had a very negative impact on the European banking system. While in 2015 the level was at 7%, by 2023 non-performing loans had fallen to less than 2%. Secondly, resilience has been enhanced through better capitalization. According to the Common Equity Tier 1 ratio, which measures a bank's capital against its assets to assess its ability to withstand economic shocks, this ratio increased by nearly 3% between 2015 and 2023. The third factor contributing to increased resilience was a 20% rise in bank liquidity over the same period. The final factor was an overall improvement in risk management across the European banking system.

However, alongside the undeniable achievements of the European banking structure in terms of resilience to shocks and threats, the risk environment has also evolved and transformed. One such challenge is posed by cyber threats to banking systems. On the one hand, digitalization has helped to reduce costs and increase efficiency in the delivery of services to end customers. On the other hand, the increased use of outsourced services by banks has made them more vulnerable to cyberattacks. In this context, the decisions of the ECB's Banking Supervision regarding stress tests of banking systems in the event of cyberattacks are crucial. The essence of a stress test is to assess how a particular bank would respond to a cyberattack. Failure to respond adequately would mean that the bank would subsequently be unable to provide its services. The aim is also to understand how members of the banking structure would report the incident not only to the ECB's specialist experts but also to their customers (European Central Bank, 2024b).

Another risk and threat assessment and warning system, known as TIBER-EU, was developed in 2018 through a joint effort of experts from the ECB and national central banks across Europe (European Central Bank, 2024d). Essentially, it is a European framework for ethical "red-teaming" based on threat intelligence. "Red-teaming" itself is a process of testing an organization's cyber resilience by simulating the tactics and techniques of real-world adversaries. Depending on the scale and objectives of a TIBER-EU exercise, it may involve:

- a "blue team" – the test subjects within the organization, who are unaware of the testing;
- a "red team" – with the aim specified above;
- a "white team" – a part of the test subject's team that is aware of the testing and assists in its execution; and the TIBER-EU cyber team itself, which ensures the proper conduct of the testing and compliance with all relevant regulatory requirements.

As of January 2023, more than 100 such tests have been carried out (European Central Bank, 2024d; International Business Machines, 2023).

In addition to "red-teaming", ECB specialists have also developed a "purple-teaming" scenario, which involves collaborative activity between both the "red team" and the "blue team" (European Central Bank, 2022). Such a test is not a replacement for "red-teaming" as the primary cybersecurity resilience testing, during which the testing remains confidential. Instead, this type of testing is intended for preliminary preparation or the general enhancement of knowledge for both the test subjects and the test organizers. Beyond the aforementioned cybersecurity mechanisms, the overall creativity of employees and the level of innovative infrastructure implementation within both the ECB and European central banks can also play a significant role in ensuring the resilience of the banking system (Korsunska et al., 2022).

Equally important, ECB experts and staff actively collaborate with other institutions within the EU. The most significant collaboration for enhancing the central banking institution's cyber resilience is the joint response to cyberattacks with CERT-EU for the EU institutions, bodies, and agencies) (European Central Bank, 2024c). In the context of security, Bruce Schneier, a renowned cybersecurity expert, has noted that security itself is not a product but a consequence of a process (Computer Emergency Response Team, 2024). This is precisely the foundation of CERT-EU's activities: responding to cyber incidents, facilitating knowledge sharing, and providing prevention and detection measures to ensure cybersecurity for all EU institutions, including the banking sector.

To enhance interinstitutional coordination, the Regulation of the European Parliament and of the Council No. 2023/2841 (EUR-Lex, 2023) established measures to ensure a high common level of cybersecurity across Union institutions, bodies, offices, and agencies. This Regulation of the European Parliament and of the Council No. 2023/2841 (EUR-Lex, 2023) established the Interinstitutional Cybersecurity Board to more effectively ensure a high level of cybersecurity for European institutions. The new institution's responsibilities include:

- providing recommendations to the CERT-EU management team;
- supporting EU organizations in strengthening their cybersecurity;
- adopting, assessing, and modifying cybersecurity enhancement strategies;
- taking into account information on identified cybersecurity risks and lessons learned provided by CERT-EU;
- monitoring the adequacy of interconnectivity mechanisms between the ICT environments of EU entities;
- monitoring the adoption of cyber crisis management plans by individual EU entities.

The adoption of this Regulation was driven by the overall trend of digital transformation, which is making all institutions within the EU more vulnerable to cyber threats. Consequently, EU Member States have a high cyber resilience ranking (Table 3).

Table 3. Cybersecurity assessment

Country	International Telecommunication Union (1-100)	MixMode Threat Research (1-100)	National Cyber Security Index (1-100)
Ukraine	65.93	65	80.83
Georgia	81.06	76	62.50
Azerbaijan	89.31	73	70.83
Moldova	75.78	-	81.67
Estonia	99.48	-	85.83
Kazakhstan	93.15	69	-
Germany	97.41	85	-
Spain	98.52	85	-
USA	100	89	84.17

Source: compiled the authors based on International Telecommunication Union (2023), MixMode Threat Research (2024), and National Cyber Security Index (2024).

In summary, the governments of Germany, Estonia and Spain, as some of the most technologically advanced countries in the region and the world, are leaders in many international cybersecurity assessment indices. However, given the close ties within the EU, the quality and efficient exchange of information and technology, including within the ECB and other cyber resilience mechanisms, this is not unique. On the contrary, the experience of the Azerbaijani government in ensuring cyber security as one of the most successful in the post-Soviet space, not including EU member states, is extremely valuable. Although there are differences in the results of the different indices, this is a consequence of different research methodologies. Additionally, the index from the International Telecommunication Union is dated 2020, while the others are dated 2024. Based on this, the difference in the presented indices is also acutely dependent on the prevailing geopolitical environment after 2022.

In the context of achieving global economic resilience, four recommendations from the United Nations (2024a) can serve as goals for both international financial institutions and national financial systems. First and foremost is economic diversification, which, depending on the region, can take anywhere from a decade in developed countries to half a century in the poorest regions of the world. This, in turn, requires massive financial investments, where international financial institutions can play a pivotal role. Furthermore, this will halt the growth of inequality, which in the long term will hinder the goals of sustainable societal development. The third step is to transform financing to a more sustainable level, as mentioned earlier, given that approximately 3 trillion USD is needed to achieve carbon neutrality and other sustainable development goals by 2030. This requires a fundamental overhaul and shift in the way businesses operate. Additionally, given that global financial structures operate with assets exceeding 300 trillion USD, there is a need to create or transform existing financial structures into a new paradigm where the available capital can be used not for short-term profits but for long-term investments in infrastructure, improving quality of life, and high-tech research and development. The fourth goal signifies the development trajectory without which all of the aforementioned would be impossible to implement. This is the fundamental improvement of government institutions, as even considering the efforts of international financial organizations, the management of assets remains the prerogative of national governments (Pohorelenko, 2018).

Considering the aforementioned points, the investigated international financial institutions, the IMF and the ECB, have a clear understanding of the importance of timely credit for achieving sustainable development goals, as well as the critical need to ensure the resilience of financial structures in the face of international conflicts and crises. This is evident in the existing and continually evolving credit mechanisms for the poorest countries and in the transformation of the regulatory and institutional framework governing financial systems.

4. Discussion

The study found that IMF lending mechanisms are designed to achieve sustainable growth objectives and assist governments in the poorest and needy countries. Furthermore, B. Reisberg et al. (2021) research highlighted that IMF activities aim to shift political dynamics towards greater program compliance and long-term macro-financial stability. However, IMF lending programs themselves do not restore investor confidence in the government. Rather, it is the government's actions within the framework of an IMF program that can contribute to a positive response from international investors (Shim, 2022).

IMF safeguard policies improved risk assessment and prompted central banks to align with international standards, minimizing vulnerabilities. J. M. Boughton (2024) confirms that changes to the IMF's mandate in the early 2000s were introduced to define a more fluid role for IMF supervisory bodies in an era of exchange rate changes. The author cites assessments of banking supervisory capacity among borrowing member governments as an example. Furthermore, A. Breczko (2024) adds that the process of internal reforms was a consequence of growing criticism of the Fund in the 2000s. The IMF's fulfilment of its commitments is evident in the large number of borrowing member countries that underwent audits. Despite some years with fewer audits, the trend towards increasing the number of audits remained consistent, whether during the transitional period of 2000 and subsequent audits up to 2004, during the economic financial crisis and its aftermath from 2008 to 2013, or during the COVID-19 pandemic and the complex geopolitical situation of 2022 and 2023.

The IMF's lending programs, including 0% interest loans, aim to support global economic balance, particularly in developing nations. In the study by G. Biglaiser and R. J. McGauvran (2022), a more critical approach was employed to define the IMF's lending policy. The authors noted that the IMF's requirements for structural changes create a risk of further increasing poverty levels in borrower countries, depending on whether these requirements were imposed to advance the interests of economically developed member states of the Fund or are unintended consequences of the policies implemented. The study by H. Balima and A. Sy (2021) confirms the importance of lending, as it shows that borrower governments experience a reduction in the likelihood of subsequent sovereign debt crises by as much as 1.3%.

Analyzing the "green" transition, F. Maldonado and K. P. Gallagher (2022) noted that external borrowing could lead to a steady increase in sovereign debt and, in some cases, necessitate urgent budget adjustments to mitigate risks. Meanwhile, K. Georgieva and R. Weeks-Brown (2023) discussed the establishment of a new trust fund at the IMF to support and finance long-term loans for governments undertaking macro-critical reforms for the future balance of payments stability and facing risks, including climate change. The results of the study also highlighted climate change as a priority for the IMF, linking it to a type of financing mechanism aimed at achieving resilience and long-term sustainability, which can help governments implement reforms and reduce balance of payments risks in light of climate-related issues.

From a regional standpoint, the efficacy of IMF policies in achieving sustainable growth varies. In Asia, countries such as Bangladesh have successfully employed the Rapid Credit Facility to alleviate immediate balance of payments crises precipitated by climate-related shocks. This stands in contrast to the Middle East, where the reliance on fossil fuel exports serves to constrain the region's capacity to adapt to IMF-prescribed diversification strategies. These differences illustrate the significance of incorporating regional socio-economic attributes into policy formulation. Furthermore, regional partnerships have the potential to enhance policy efficacy. For instance, in the African context, alignment with the African Continental Free Trade Area could amplify the impact of IMF programs by fostering trade and reducing dependency on external debts. Similarly, in Europe, leveraging EU structural funds in conjunction with IMF programs could facilitate more resilient economic recovery pathways.

Climate change, in addition to its detrimental effects on the environment, also significantly worsens the socio-economic situation in low-income countries with high population density and a focus on agriculture (Maja and Ayano, 2021). The greatest impact of climate change in the future will be felt by low-income groups, people of colour, and indigenous communities (Parsons et al., 2024). In this context, a strong argument for the urgency of investments in transitioning to a low-carbon policy is that more than 70 governments, predominantly from Africa, Asia, and South America, are already eligible for funding as extremely poor. However, a major issue remains that even with adequate financing and loans, it will be extremely challenging for poor governments to achieve sustainable development goals. This is because achieving carbon neutrality by 2030 requires an estimated 3 trillion USD, with two-thirds needing to come from own financing and about one-third from loans. In recent years, a number of measures related to climate change have been implemented in the Republic of Azerbaijan. The process of transition to green energy is considered one of the main priorities. The international event COP29 in the Republic of Azerbaijan in 2024 will be in this direction (United Nations, 2024b).

This study aligns with A. S. Serrano (2021), demonstrating the critical importance of reducing non-performing loans to enhance economic resilience. A. S. Serrano examining a sample of 75 European banks between 2014 and 2018, found that non-performing loans on banks' balance sheets have a highly negative impact on their operations. E. Tölö and M. Virén (2021) also reported this, confirming their detrimental effects in the same way as earlier studies. In this context, the results of the study indicated a qualitative improvement in the functioning of the European banking system. Specifically, due to the ECB's successful policy, the proportion of non-performing loans was significantly reduced from 2015 to 2023 (Vynogradnya and Burdonos, 2021).

The implementation of the "red-teaming" mechanism to enhance resilience against cyber incidents is crucial for both large and small companies. For example, the Chinese technology company Huawei has been using it for employee training since the 1990s (Zhou and Sun, 2020). S. Yulianto et al. (2023) noted that incorporating mandatory “red-teaming” into an organization’s operations can significantly strengthen its ability to withstand future attacks and improve its overall cybersecurity architecture. Considering this, the “red-teaming” mechanism incorporated into the ECB’s operations for assessing central banks in European countries is an important aspect of financial systems’ resilience to cyber threats. Moreover, in addition to “red-teaming”, “purple-teaming” is also in operation.

In the study of F. B. Kutlu (2023), the significant role of CERT-EU in protecting all information systems within the EU was confirmed, while N. Van der Meulen (2021) added that it was established to enhance operational resilience to incidents and threats. The above confirms the importance of CERT-EU for the effective functioning of the ECB. Additionally, the results of the conducted study indicated an increased role for CERT-EU in line with the Regulation at the end of 2023.

The study also noted that achieving sustainable development goals, including carbon neutrality, requires financial investments of several trillion dollars for each government, which is virtually an unattainable task for low- and middle-income countries. In its recommendations on these matters, the United Nations highlighted, among other things, the need for an adequate reassessment of the global financial architecture and, most importantly, the improvement of national governance institutions. In their research, M. Ziolo et al. (2020) also highlighted that achieving sustainable development goals requires immense expenditure, as well as another crucial factor – the lack of indicators for measuring progress towards these goals and the absence of accountability. In the context of creating a conducive environment for achieving sustainable development goals in the African region, S. Danladi et al. (2023) noted that USAID projects are already playing a significant role in advancing technology and providing access to it for underserved communities.

The study concludes that IMF lending programmes and ECB resilience measures are of paramount importance in enhancing financial stability, particularly in developing economies. A notable example is the IMF’s green lending programme, which has been instrumental in assisting countries such as Bangladesh in their efforts to adapt to the effects of climate change. The IMF’s financial assistance has facilitated policy reforms and investments in green technologies, significantly contributing to the country’s sustainable development goals. Additionally, the ECB’s implementation of TIBER-EU stress tests has proven invaluable. In one instance, a European bank successfully withstood a simulated cyberattack scenario, illustrating the efficacy of the ECB’s approach to ensuring resilience against cyber threats. These real-world applications highlight the importance of such frameworks in preventing financial disruptions.

By comparing the results of the obtained research with those of other authors, it has been possible to understand the relationship between changes in the global economic environment from the early 2000s through to the 2020s, as well as the importance of creating new mechanisms for providing financial and other forms of assistance to achieve sustainable development goals for low- and middle-income countries. Additionally, it was examined that achieving global financial stability, even in 2024, faces several unresolved issues, often related to the ineffectiveness of measures taken at national levels.

5. Conclusions

The objective of this research was to examine contemporary strategies for enhancing global economic resilience, with a particular emphasis on the mechanisms employed by international financial institutions, including the IMF and the ECB. The study identified the key strategies for global resilience, particularly in the context of economic shocks, financial instability, and the challenges posed by climate change and digital transformation.

The role of the IMF in maintaining global financial stability through its credit mechanisms, including the Extended Credit Facility, the Stand-by Credit Facility, and the Rapid Credit Facility, was examined. These mechanisms, which are adapted to the particular requirements of low- and middle-income countries, are crucial for maintaining economic resilience and stability. Furthermore, the IMF's Resilience and Sustainability Facility represents a contemporary strategy for promoting long-term economic sustainability, particularly in addressing climate-related balance of payments risks. As of July 2024, 403 central banks worldwide had undergone safeguard assessments, thereby reinforcing the global financial system.

The ECB has made considerable progress in enhancing the resilience of the European banking system. Between 2015 and 2023, the proportion of non-performing loans fell from 7% to below 2%, while the resilience of banks to economic shocks improved by approximately 3%. There was also a notable increase in liquidity, rising by 20%. In response to the increasing prevalence of cyber threats, the ECB implemented the TIBER-EU testing framework, which simulates cyberattacks in order to assess vulnerabilities and enhance defensive capabilities. By 2023, over one hundred such tests had been conducted, with the introduction of "purple-teaming" exercises to enhance staff preparedness.

Furthermore, the UN recommendations underscore the necessity for economic diversification, the reduction of inequality, and the restructuring of the global financial system to prioritise long-term investments in infrastructure, technology, and sustainable development. Nevertheless, the success of these strategies is contingent upon the implementation of comprehensive reforms to national governance systems.

In conclusion, the study emphasises the importance of these modern financial strategies in the construction of a resilient global economy. The implementation of regulatory measures to ensure the stability of financial systems, the enhancement of resilience to digital and climate-related risks, and the promotion of long-term investments are essential strategies for addressing the current and future global challenges.

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