

EMERGING RISKS OF DIGITAL DATA AND INFORMAL FINANCIAL CHANNELS IN TERRORIST FINANCING: IMPLICATIONS FOR CENTRAL ASIA AND UZBEKISTAN

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Annotation. *This article looks at the growing risks of terrorist financing linked to digital technologies and informal financial channels, focusing on Central Asia and Uzbekistan.*

Today, terrorist networks are increasingly using tools such as cryptocurrencies, online platforms, and informal systems like hawala, which offer speed, flexibility, and a certain level of anonymity. The study explores the main challenges connected with these developments, including gaps in regulation, limited technological capacity, and the difficulty of tracking financial activities that combine both formal and informal methods. It also considers Uzbekistan's recent efforts to strengthen its AML/CFT system in response to these new threats.

The article concludes that addressing these risks requires not only stronger legal measures but also better technology and closer cooperation between countries.

Abstract. *The rapid growth of digital technologies and the continued use of informal financial systems have significantly changed the landscape of terrorist financing. In regions such as Central Asia, these developments create both opportunities and risks, as financial activities become faster, more accessible, and increasingly difficult to monitor. This article explores how digital tools, including cryptocurrencies and online platforms, as well as informal systems like hawala, are being used in terrorist financing.*

The study focuses on identifying key vulnerabilities, such as anonymity, weak regulatory frameworks, and the growing use of hybrid financial models that combine formal and informal channels. Using a qualitative approach, the article draws on international standards, academic research, and regional practices to better understand these challenges.

Special attention is given to Uzbekistan, where recent reforms have strengthened the national AML/CFT system, but new risks continue to emerge alongside digitalization. The findings show that while financial innovation improves efficiency, it also complicates detection and control mechanisms.

The article concludes that effectively addressing these risks requires a balanced approach that combines stronger legal regulation, improved technological capacity, and closer regional and international cooperation.

Keywords: *Terrorist financing, digital finance, cryptocurrencies, informal financial systems, hawala, Central Asia, Uzbekistan, AML/CFT, financial security, illicit financial flows, cyber-enabled crime, financial regulation.*

Introduction

Terrorist financing has evolved significantly in recent years, driven by rapid technological advancements and globalization. Traditional methods of transferring funds are increasingly being replaced or supplemented by digital and informal financial channels, which offer speed, accessibility, and, in many cases, anonymity.

Digital technologies, including cryptocurrencies and online payment platforms, have transformed the financial landscape.

While these innovations provide economic benefits, they also create new risks, particularly in the context of illicit financial activities. Terrorist groups and criminal networks have begun to exploit these technologies to move funds across borders with minimal oversight.

At the same time, informal financial systems such as hawala continue to play a significant role in many regions, including Central Asia. These systems operate outside formal banking structures and rely on trust-based networks, making them difficult to regulate and monitor.

For Central Asian countries, these challenges are particularly relevant. The region's strategic location, combined with developing regulatory frameworks and increasing digitalization, creates vulnerabilities that can be exploited by transnational actors.

Uzbekistan, in particular, has made progress in strengthening its AML/CFT framework, but the rapid evolution of digital and informal financial channels presents new challenges that require adaptive and coordinated responses.

Literature review

In recent years, the study of terrorist financing has expanded significantly, especially in relation to digital technologies and informal financial systems. Researchers increasingly agree that terrorist financing is not limited to traditional methods but is evolving through a combination of old and new financial tools.¹

A number of studies highlight that while digital financial technologies such as cryptocurrencies attract significant attention, traditional systems still remain dominant. For example, recent empirical research shows that only a small proportion of terrorist financing cases involve advanced financial technologies, while the majority still rely on conventional methods such as banking systems, money transfers, and informal networks like hawala.² This suggests that emerging technologies are not replacing traditional systems but rather complementing them.

At the same time, informal financial systems, particularly hawala, continue to play a crucial role. Scholars emphasize that hawala remains attractive due to its speed, low cost, and reliance on trust-based networks, but these same features make it highly vulnerable to misuse for money laundering and terrorist financing³. Further research confirms that even in countries with strong regulatory frameworks, hawala systems can be used to bypass compliance mechanisms, and the likelihood of detecting such transactions is often considered low by practitioners.⁴

Another important issue discussed in the literature is the difficulty of detecting and monitoring informal financial flows. Studies show that the hidden and fragmented nature of hawala transactions makes them extremely difficult for financial intelligence units to trace and investigate.⁵ This creates significant challenges for law enforcement agencies, particularly in regions where informal systems are widely used.

In addition to informal systems, the role of digital finance is becoming increasingly important. Recent research on financial technologies suggests that innovations such as blockchain, artificial intelligence, and big data are transforming financial systems, but at the same time, they introduce new risks and complexities. These technologies can improve financial monitoring, yet they also create new opportunities for anonymity and cross-border financial flows that are harder to control.

Scholars also point out that terrorist financing is becoming more adaptive and flexible.

¹ International Monetary Fund, *Countering the Financing of Terrorism: Good practices to enhance effectiveness*.

² Jofre, M., et al., "Terrorist Financing and New Technologies" *Studies in conflict & Terrorism*

³ El Qorchi, M., "Hawala", IMF Occasional paper.

⁴ Passas, N., "Informal Value Transfer Systems and Criminal Organizations," *Crime, Law and Social Change*, 2006.

⁵ Rahman, A., "Hawala and Underground Financing," *Journal of Financial Crime*, 2020.

Instead of relying on a single method, criminal networks increasingly use hybrid models that combine formal banking systems, digital platforms, and informal channels, making detection more complex.⁶ This shift reflects a broader trend in financial crime, where actors continuously adjust their strategies in response to regulatory pressure.

Despite the growing body of global research, studies focusing specifically on Central Asia remain limited. However, existing literature suggests that the region faces particular vulnerabilities due to developing financial systems, increasing digitalization, and cross-border economic activity. In this context, countries like Uzbekistan are actively reforming their AML/CFT frameworks, but the rapid evolution of financial technologies and informal practices continues to pose new challenges⁷.

Overall, the literature shows that combating terrorist financing today requires a comprehensive approach that goes beyond traditional regulatory measures. It must combine legal frameworks, technological innovation, and international cooperation to effectively address both digital and informal financial risks.⁸

Methodology

This study adopts a qualitative research approach to better understand the emerging risks of digital data and informal financial channels in terrorist financing, particularly in the context of Central Asia and Uzbekistan. Instead of relying on numerical data alone, the research focuses on analyzing systems, patterns, and institutional practices that shape financial monitoring and control.

The research is based on several complementary methods. First, a legal and regulatory analysis is conducted to examine existing AML/CFT frameworks, including national legislation in Uzbekistan and relevant international standards. This helps to understand how digital financial activities and informal systems are currently regulated, and where gaps still exist.

Second, the study uses a comparative approach, looking at practices across Central Asian countries. By comparing different regulatory and institutional models, the research identifies common challenges, as well as areas where cooperation is either effective or limited.

Third, a case study of Uzbekistan is included to provide a more detailed and practical perspective. This part focuses on recent reforms, institutional developments, and the country's efforts to respond to new risks related to digital finance and informal financial systems.

In addition, the research draws on secondary sources, including international reports, academic studies, and policy documents. These materials help to connect theoretical discussions with real-world practices and provide a broader understanding of global and regional trends.

Overall, this methodological approach allows the study to move beyond general descriptions and offer a more grounded analysis of how terrorist financing is evolving. It also makes it possible to identify practical challenges and suggest realistic policy recommendations.

Analysis and discussion

1. Digital Financial Technologies and New Risks

In recent years, digital financial technologies have changed the way financial transactions are conducted across the world. Tools such as cryptocurrencies, online payment systems, and digital platforms allow users to transfer money quickly and across borders with minimal cost.

⁶ Levi, M., "Combating the Financing of Terrorism," *British Journal of Criminology*, 2010.

⁷ World Bank, *Financial Intelligence Units Working with Law Enforcement Authorities*, 2019.

⁸ United Nations Office on Drugs and Crime (UNODC), *Global Study on Organized Crime*, 2021

While these developments bring clear economic benefits, they also create new risks in the context of terrorist financing.

One of the main concerns is the level of anonymity provided by some digital tools. In many cases, identifying the real individuals behind transactions becomes difficult, especially when advanced techniques are used to hide transaction trails. This makes it challenging for financial intelligence units and law enforcement agencies to track suspicious activities.

At the same time, the decentralized nature of many digital systems means that they often operate outside traditional regulatory frameworks. As a result, existing control mechanisms may not be fully effective, particularly in countries where digital regulation is still developing. For Central Asian states, including Uzbekistan, this creates a situation where technological progress is faster than regulatory adaptation.

2. Informal Financial Systems and Their Persistent Role

Despite the growth of digital finance, informal financial systems such as hawala continue to play a major role in facilitating financial transactions. These systems are especially common in regions where access to formal banking services is limited or where trust in formal institutions is relatively low.

Hawala operates on the basis of trust and personal networks rather than formal documentation. This makes it highly efficient, but at the same time, it creates serious challenges for monitoring and control. Transactions are often not recorded in official systems, making it difficult for authorities to detect suspicious activities.

From a practical perspective, this means that even strong legal frameworks may not be enough if informal systems remain outside regulatory oversight. In Central Asia, where cross-border movement of people and goods is common, such systems can easily be used to transfer funds without detection.

3. The Rise of Hybrid Financial Models

An important trend identified in recent research is the increasing use of hybrid financial models. Instead of relying on a single channel, individuals and networks often combine different methods, including formal banking systems, digital platforms, and informal networks.

This combination makes detection significantly more difficult. For example, funds may initially move through formal banking channels, then be converted into digital assets, and later transferred through informal systems. Each stage may fall under different regulatory regimes, creating gaps that can be exploited.

For financial intelligence units, this creates a more complex analytical environment. It is no longer sufficient to monitor only one type of transaction. Instead, a more integrated and flexible approach is required, combining financial analysis, digital tools, and cross-border cooperation.

4. Regional Challenges in Central Asia

Central Asian countries face a number of shared challenges in responding to these emerging risks. First, there are differences in legal and regulatory frameworks, which make cross-border cooperation more complicated. Even when countries are willing to cooperate, legal inconsistencies can slow down information exchange.

Second, technological capacity remains uneven across the region. Some institutions may lack the tools and expertise needed to effectively monitor digital financial activities. This creates vulnerabilities that can be exploited by criminal networks.

Third, coordination between institutions is not always efficient. Financial intelligence units, law enforcement agencies, and regulatory bodies may not always share information in a timely or effective manner.

These challenges highlight that the problem is not only technical but also institutional.

Strengthening cooperation requires both better systems and stronger relationships between institutions.

5. Uzbekistan's Response to Emerging Risks

Uzbekistan has taken several steps to improve its ability to combat terrorist financing. In recent years, the country has introduced reforms aimed at strengthening its AML/CFT framework, improving financial monitoring systems, and increasing transparency.

Particular attention has been given to aligning national regulations with international standards. This includes efforts to regulate digital financial activities and improve oversight mechanisms. At the same time, Uzbekistan has increased its participation in regional and international cooperation initiatives.

However, as digital technologies and informal systems continue to evolve, new challenges are constantly emerging. This means that reforms cannot be static. Instead, there is a need for continuous adaptation, investment in technology, and development of human capacity.

6. Practical Implications and Recommendations

The analysis shows that addressing the risks of digital and informal financial channels requires a balanced and comprehensive approach.

First, legal frameworks need to be updated to reflect the realities of digital finance.

Regulations should cover not only traditional banking but also cryptocurrencies and online platforms.

Second, technological capacity must be strengthened. Financial intelligence units need modern analytical tools to track complex and cross-border financial flows.

Third, greater attention should be given to informal financial systems. While it may not be possible to fully eliminate them, better monitoring and integration into formal systems can reduce risks.

Finally, regional cooperation is essential. Since financial flows often cross borders, no country can address these challenges alone. Stronger partnerships and information-sharing mechanisms are key to improving overall effectiveness.

Conclusion

The emergence of digital and informal financial channels has significantly transformed the landscape of terrorist financing. While these systems offer efficiency and accessibility, they also create new vulnerabilities that can be exploited by criminal networks.

For Central Asia and Uzbekistan, addressing these challenges requires a comprehensive approach that combines legal, technological, and institutional measures. Strengthening cooperation and adapting to technological changes will be essential for ensuring long-term financial security.

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