

International Sanctions and the Iranian Banks: Challenges and Adaptive Strategies

Zahra Sohrabi Abad ^{*}, Amin Jafari ^{}**

DOI: 10.22034/iruns.2025.544248.1184

Received: 2025-08-30

Accepted: 2025-11-19

Abstract

This article examines the scope and effectiveness of international economic sanctions, emphasizing their consequences for the civilian population of targeted countries. Focusing on Iran, the study explores how successive rounds of sanctions—imposed by the United States, the European Union, and the United Nations—have profoundly disrupted the country’s banking sector. Sanctions have constrained international transfers, blocked access to global payment infrastructures, and weakened the enforceability of bank guarantees, thereby undermining both public and private banking operations. Our analysis is expanded to consider adaptive strategies pursued within Iran, including the use of Islamic finance instruments based on profit-and-loss sharing and *qard al-ḥasana* mechanism, as well as emerging reliance on blockchain technologies and cryptocurrency mining. The findings further reveal that, despite being justified as “smart” sanctions, these

^{*} PhD Candidate, Faculty of Law (Civil Law Section), University of Ottawa, Canada.
(Corresponding Author)

zahasohrabiabad@gmail.com

^{**} Associate Professor of Law at Allameh Tabataba’i University and Associate Researcher at the Institute of Judicial Research of Sorbonne University (Institut de Recherche Juridique de la Sorbonne – IRJS)

measures have broad and counterproductive effects, eroding financial stability, harming civilians, and raising questions about the credibility of sanctions as instruments of international policy.

Keywords: International sanctions, Iranian Banks, Islamic Finance, Cryptocurrency, Financial Resilience.

Introduction

Challenges of Sanctions

International sanctions are mechanisms through which states seek to punish or exert control over another state, usually for political purposes.¹ Financial sanctions, in particular, are designed to weaken the targeted country by restricting or disrupting its monetary and financial systems.²

In recent years, beyond the traditional three tiers of sanctions—American, European, and United Nations—targeted or “smart” sanctions have gained prominence. These measures are intended to reduce the adverse humanitarian consequences of broad sanctions by concentrating punitive pressure on political leaders, elites, or institutions within the sanctioned state. However, the effectiveness of such “smart” sanctions has been widely debated. Several scholars argue that when sanctions are applied too broadly, they risk violating

¹ Bruce D. McDONALD III and Vincent REITANO, "Sanction Failure: Economic Growth, Defense Expenditures, and the Islamic Republic of Iran" (2016) *Armed Forces & Society*, Vol. 42, No. 4, 635–654.

² Marco CIPRIANI, Linda S. GOLDBERG, and Gabriele LA SPADA, "Financial Sanctions, SWIFT, and the Architecture of the International Payment System" (2023) *Journal of Economic Perspectives*, Vol. 37, No. 1, 31–52; Chiara ZILIOLI, Régis BISMUTH, and Luc THÉVENOZ, eds., *International Sanctions: Monetary and Financial Law Perspectives*, 1st ed. (Leiden: Brill|Nijhoff, 2024).

human rights and ultimately cause “collateral damage” to the general population of targeted states.³

Iran provides a particularly striking case study, as it has been subject to the full spectrum of sanctions since the Islamic Revolution of 1979. Over the decades, and especially in the context of Iran–U.S. relations, sanctions have become increasingly sophisticated and more narrowly framed, though nearly always justified on political grounds and applied by a variety of international actors. While some commentators describe these measures as “a series of regrettably short-sighted policies,”⁴ the systematic and sustained nature of sanctions has nonetheless produced profound challenges for Iran’s economy.⁵

The consequences of sanctions on Iran have also been underscored internationally. In May 2022, the United Nations Special Rapporteur on the negative impact of unilateral coercive measures conducted an official visit to Iran to assess the effects of such measures on human rights and development. The Rapporteur concluded that unilateral sanctions, secondary sanctions, and widespread practices of over-compliance have had severe adverse effects on the Iranian economy, resulting in widespread violations of human rights and exacerbating humanitarian challenges, particularly during the COVID-19 pandemic. The report further underscored that such measures negatively affect the full spectrum of rights—civil, political, social, cultural, and, in the

³ Jiyoun PARK and Hyun Jin CHOI, "Are Smart Sanctions Smart Enough? An Inquiry into When Leaders Oppress Civilians under UN Targeted Sanctions" (2020) *International Political Science Review*, Vol. 0, No. 0, p 14.

⁴ Sasan FAYAZMANESH, "The Politics of the U.S. Economic Sanctions against Iran" (2003) *Review of Radical Political Economics*, Summer Issue, p 237.

⁵ Davide LAUDATI and M. Hashem PESARAN, "Identifying the Effects of Sanctions on the Iranian Economy Using Newspaper Coverage", arXiv preprint arXiv: 2110.09400 (2021).

present context, economic—including fundamental rights such as the rights to life and development.⁶

Against this backdrop, it is essential to recognize that although sanctions are primarily intended as political or international legal instruments, their economic repercussions are both substantial and enduring. Previous research has shown that sanctions often resemble recessions in their economic impact,⁷ while some scholars suggest that they may be even more damaging to the financial sector than to the political sphere, given the vulnerabilities of banking systems under sustained external pressure.⁸ Indeed, studies have identified as many as forty distinct difficulties arising directly from sanctions, underscoring the need for clearer and fairer decision-making procedures—particularly at the United Nations level—to enhance both the effectiveness and credibility of sanctions as instruments of international policy.⁹

This paper seeks to contribute to this debate by analyzing how sanctions reduce economic activity and generate systemic risks in the Iranian context, with a particular focus on the banking system. Section I discusses the ways in which sanctions restrict conventional banking activities, particularly international transfers and bank guarantees. Section II considers the alternative financial practices adopted by

⁶ United Nations Human Rights Council, *Visit to the Islamic Republic of Iran: Report of the Special Rapporteur on the Negative Impact of Unilateral Coercive Measures on the Enjoyment of Human Rights*, Alena Douhan, UN Doc. A/HRC/51/33/Add.1 (17 August 2022).

⁷ Elena V. MCLEAN and Taehee WHANG, "Do Sanctions Spell Disaster? Economic Sanctions, Political Institutions, and Technological Safety" (2020) *European Journal of International Relations*, Vol. 26, No. 3, 767 ff.

⁸ Elena V. MCLEAN and Taehee WHANG, "Do Sanctions Spell Disaster? Economic Sanctions, Political Institutions, and Technological Safety" (2020) *European Journal of International Relations*, Vol. 26, No. 3, 767 ff.

⁹ Thomas J. BIERSTEKER, "Targeted Sanctions and Individual Human Rights" (Winter 2009–10) *International Journal*, p 117.

Iranian banks, such as the use of blockchain technologies, cryptocurrencies, and Islamic finance instruments based on profit-and-loss sharing, while also briefly considering managerial responses within the banking sector—namely, governance, compliance, and risk management under conditions of financial isolation. The paper concludes by reflecting on the broader implications of sanctions for financial stability, humanitarian outcomes, and the credibility of sanctions as a policy tool.

I. Constraints On Banking Operations Under Sanctions

Economic sanctions often result in significant restrictions on the financial operations of the targeted country. These measures typically involve freezing assets, blocking financial transactions, and limiting contractual obligations. Such restrictions directly constrain banks' normal activities, undermining their ability to function as financial institutions. The consequences are not confined to the sanctioned banks themselves; they also extend to regional stakeholders and shareholders who depend on the stability and reliability of banking services.¹⁰ In practice, the limitations imposed on banking activity under sanctions are most visible in two critical areas: international payments, particularly bank transfers, and the issuance and enforcement of bank guarantees. Both mechanisms are central to modern financial and commercial exchanges, and their disruption significantly weakens banks' capacity to operate in the international financial system.

¹⁰ Davide FRANCHINI, "When Finance Becomes a Weapon: The Challenge of Central Bank Sanctions under International Law" (2025) *Journal of International Trade Law and Policy*, Vol. 24, No. 1. DOI: 10.1108/JITLP-07-2024-0041.

a) International Payment/ Bank Transfer

Under ordinary circumstances, international payments are conducted through both classical and modern financial instruments, such as bills of exchange, letters of credit, and other guarantees supported by international banking mechanisms.¹¹ In the context of sanctions, however, these channels become severely restricted. Transactions are either blocked entirely or subject to monitoring through financial messaging systems such as SWIFT. Consequently, in the case of Iran, even when it manages to export its products—most notably oil and gas—it faces significant obstacles in transferring the corresponding revenues. The blockage of financial flows generally operates along three axes: international financial messaging, the banking system, and brokerage services.¹²

Efforts have been made to construct alternatives within the banking sector, particularly through the establishment of special purpose vehicles (SPVs). The European Union's INSTEX mechanism, for example, was designed to facilitate trade with Iran despite sanctions. In practice, however, INSTEX failed to deliver the expected outcomes, largely because European states were reluctant to engage with Iran amid heightened political and economic pressure. As a result, its use was effectively limited to humanitarian goods, leaving broader commercial activity outside its scope.¹³

¹¹ Clive M. SCHMITTHOFF, *the Law and Practice of International Trade*, Vol. II, trans. by Behrouz AKHLAGHI (Tehran: Samt Editions, 2011), pp 579 ff.

¹² Mehdi RAZMAHANG, "American Strategies to Smarten Sanctions Against Iran and Providing Solutions of Confrontation: With Emphasis on International Financial and Banking Relations" (2019) *Journal of Foreign Relations*, Vol. 40 (1397 H.SH.), p 20 ff.

¹³ Sascha LOHMANN, *Extraterritorial U.S. Sanctions: Only Domestic Courts Could Effectively Curb the Enforcement of U.S. Law Abroad* (Berlin: Stiftung Wissenschaft und Politik, 2019), online: SWP <https://doi.org/10.18449/2019C05>; Erik KNUDSON, "The Weaponization of the US Financial System: How Can Europe Respond?" Jacques Delors Centre (2020), online: Jacques Delors Centre

Iran has also looked beyond Europe to alternative infrastructures developed by other states. Since 2014, Russia has advanced its own proprietary financial messaging system, the *System for Transfer of Financial Messages* (SPFS), designed as a domestic counterpart to SWIFT. By 2019, eight foreign banks and thirty-four legal entities had joined the system, and its share of internal financial traffic was steadily increasing (Chaudhury, 2019b). Recognizing its own isolation from global networks, Iran sought to benefit from this development and, in 2019, connected its domestic messaging system, SEPAM, to Russia's SPFS. This linkage created a direct banking channel between the two countries and represented a deliberate attempt by Tehran to reduce its dependence on Western-dominated infrastructures.¹⁴

In response to these constraints, the potential of cryptocurrencies has increasingly attracted attention. Digital currencies reduce the cost and time of cross-border transfers and, through blockchain technology, offer a decentralized architecture that circumvents reliance on traditional payment systems such as SWIFT.¹⁵ This technological shift has been associated with the prospect of moving toward cashless societies. Because of their decentralization and quasi-anonymity, cryptocurrencies are particularly relevant in sanctioned environments. Several experts have predicted that digital currencies could eventually displace national currencies in international

<https://www.delorscentre.eu/en/publications/detail/publication/the-weaponisation-of-the-us-financial-system-how-can-europe-respond>.

¹⁴ D. R. CHAUDHURY, "India-Russia-China Explore Alternative to SWIFT Payment Mechanism" *The Economic Times* (14 November 2019), online: The Economic Times <https://economictimes.indiatimes.com/news/economy/foreign-trade/india-russia-china-explore-alternative-to-swift-payment-mechanism/articleshow/72048472.cms>.

¹⁵ Kian JAHANBIN, Hossein REZAIE, Fereydoun ELYASI, and Fereshteh RAHMANIAN, "International Currency Transfer Using the Blockchain", 7th International Conference on Economics, Management and Accounting with Value Creation Approach (Shiraz, 20 June 2018).

transactions.¹⁶ Reflecting this trend, states such as Russia, China, and Kyrgyzstan have already taken steps to regulate cryptocurrencies within their financial systems.¹⁷ Such developments suggest the emergence of an alternative international monetary order less dependent on the U.S. dollar and more conducive to the economic autonomy of sanctioned states. In this context, Bitcoin has been described as a form of “shadow money,” capable of facilitating cross-border payments when conventional financial mechanisms are unavailable.¹⁸

For Iran, the appeal of cryptocurrencies lies not only in the possibility of mitigating the effects of sanctions but also in their potential to strengthen its economic position within the region. While some studies underline the promise of cryptocurrencies as a means of escaping the most restrictive aspects of sanctions,¹⁹ others caution that their effectiveness depends upon the development of adequate compliance and regulatory frameworks. Nevertheless, the defining

¹⁶ John KOETSIER, "National Cryptocurrencies? All Currencies Will Be Digitized, Cryptocurrency Expert Says" *Forbes* (1 December 2017), online: Forbes <https://www.forbes.com/sites/johnkoetsier/2017/12/01/national-cryptocurrencies-all-currencies-will-be-digitized-cryptocurrency-expert-says/amp/>.

¹⁷ Jahanbin et al. *supra* note 15.

¹⁸ Moritz HÜTTEN and Matthias THIEMANN, "Moneys at the Margins: From Political Experiment to Cashless Societies" in Malcolm CAMPBELL-VERDUYN, ed., *Bitcoin and Beyond: Cryptocurrencies, Blockchains, and Global Governance* (London: Routledge, Taylor & Francis Group, 2018), p 42.

¹⁹ "Using Cryptocurrency to Evade Sanctions Creates New Risks" *Law360* (20 April 2021), online: Law360 <https://www.law360.com/articles/1376481/using-cryptocurrency-to-evade-sanctions-creates-new-risks>; Robert A. SCHWINGER, "Cryptocurrency Offers No Escape from International Sanctions" *Law.com* (8 March 2021), online: Law.com <https://www.law.com/newyorklawjournal/2021/03/08/cryptocurrency-offers-no-escape-from-international-sanctions>; Andrew JACOBSON, "Economic Sanctions: Challenges Confronting the Cryptocurrency Industry" *International Bar Association* (2021), online: IBA <https://www.ibanet.org/article/BDF997FB-EB79-498A-88F5-C6CEACF7DDD9>; Alejandro LEÁÑEZ, "Sanctions in the Cryptocurrency Space: Current Trends and OFAC's Best Practices for Compliance" *Association of Certified Sanctions Specialists (ACSS)* (28 February 2021), online: ACSS <https://sanctionsassociation.org/sanctions-in-the-cryptocurrency-space-current-trends-and-ofacs-best-practices-for-compliance/>.

characteristics of digital currencies—borderless circulation, anonymity, independence from state authority, and convertibility—render them a potentially valuable instrument for navigating restrictive financial environments.²⁰

A further advantage is the opportunity for Iran to sustain its export activities without the persistent concern of how payments will be received.²¹ Bitcoin, in particular, makes such transactions feasible, despite having originated as a project with strong anti-state and anti-establishment connotations. Today, it is increasingly integrated into global financial systems.²² For Iran to capitalize on this potential, however, it is essential that national banking regulators formally recognize cryptocurrencies as legitimate financial instruments. Such recognition would not only promote adoption among domestic users but also reduce reliance on conventional bank guarantees, thereby enhancing resilience under sanctions.

b) International Bank Guarantees

Bank guarantees operate under rules established through mutual trust and consensus in international banking. These rules are codified by the International Chamber of Commerce (ICC) under the *Uniform Rules for Demand Guarantees (URDG)*. A demand guarantee is an instrument by which a bank, acting as issuer, undertakes a primary obligation to pay the beneficiary on first demand if the obligor fails to fulfill its contractual duties. The key advantage of such guarantees lies

²⁰ Adam KLAUDER, "Rising Risk: Recent Developments in Cryptocurrency Sanctions and Enforcement: Sanction 2021" *International Comparative Legal Guides* (5 November 2020), online: ICLG <https://iclg.com/practice-areas/sanctions/3-rising-risk-recent-developments-in-cryptocurrency-sanctions-and-enforcement>.

²¹ Tom ROBINSON, "How Iran Uses Bitcoin Mining to Evade Sanctions and 'Export' Millions of Barrels of Oil" *Elliptic* (21 May 2021), online: Elliptic <https://www.elliptic.co/blog/how-iran-uses-bitcoin-mining-to-evade-sanctions>.

²² Hütten and Thiemann, *supra* note 18, p 25.

in their autonomy: they are independent from the underlying contract and function solely in accordance with their own terms.²³

Under normal conditions, this structure ensures stability and predictability. However, in the context of sanctions, the effectiveness of guarantees is significantly undermined. Because sanctions often prevent the performance of the underlying contract, the associated guarantees are rendered ineffective. For example, if an Iranian entity signs a contract with a foreign contractor, the latter may invoke sanctions as a justification for non-performance. In such cases, Iranian parties are left with little recourse, as the contractor's bank is likely to refuse to honor the guarantee. Consequently, the guarantee's protective function collapses.²⁴

²⁵At the theoretical level, international guarantees are governed by the *principle of independence*. This principle obliges the guarantor bank to pay the beneficiary upon demand, irrespective of disputes concerning the underlying contract. Yet, exceptions to this principle exist, most notably in cases of fraud or manifest abuse. In such instances, most scholars agree that judicial intervention is required to suspend payment.²⁶ Nevertheless, sanctions fundamentally distort this principle by creating legal grounds for banks to refuse payment even when no fraud is involved.

The disruptive impact of sanctions is also embedded in international legal instruments. For instance, Article 10(3) of the Council Decision of 26 July 2010 called on EU Member States to

²³ Schmitthoff, *supra* note 11.

²⁵ "The Impact of Sanctions on Force Majeure as a Bank Guarantee" (2017) 5:18 *qj* 209 EP – 230.

²⁶ Roger McCORMICK, *Legal Risk in the Financial Markets* (Oxford: Oxford University Press, 2005); United Nations, *Convention on Independent Guarantees and Stand-by Letters of Credit* (New York: United Nations, 1995).

limit financial support for trade with Iran, especially in sensitive sectors related to nuclear activities. Similarly, Article 38 of Council Regulation (EU) No. 267/2012 explicitly prohibits honoring claims connected to contracts affected by sanctions, including demands under guarantees. Although the Regulation preserves a right to judicial review, in practice, it greatly restricts the enforceability of guarantees involving Iranian parties.²⁷

In response to these challenges, scholars and practitioners have proposed various solutions. Some highlight the flexibility within URDG 758, such as Article 4,²⁸ which, under certain conditions, permits the transfer of the beneficiary's rights.²⁹ Others point to Article 10 of the UN Convention on Independent Guarantees and Stand-by Letters of Credit, which similarly recognizes such transfers. Moreover, bilateral investment treaties have been suggested as a means of safeguarding obligations.³⁰ However, the overall impact of sanctions far exceeds the scope of these legal mechanisms. As a result, the rules on international guarantees cannot, in practice, preserve their effectiveness during periods of sanctions.

²⁷ Council Regulation (EU) No. 267/2012 of 23 March 2012 Concerning Restrictive Measures Against Iran and Repealing Regulation (EU) No. 961/2010, art. 38.

("This Article is without prejudice to the right of the persons, entities and bodies referred to in paragraph 1 to judicial review ...").

²⁸ International Chamber of Commerce (ICC), Uniform Rules for Demand Guarantees (URDG 758), art. 33.

("The Beneficiary's right to make a demand under a Guarantee is not assignable unless expressly stated ...").

²⁹ UN Convention on Independent Guarantees and Stand-by Letters of Credit, art. 10.

("Unless otherwise stipulated in the undertaking ... the beneficiary may assign to another person any proceeds ...").

³⁰ Mohammad SOLTANI and Saeedeh RAMEZANI NEJAD, "The Impact of Economic Sanctions on the Payment of International Bank Guarantees" (2018) *Iranian Journal of Trade Studies*, Vol. 32, No. 2, 101–125.; Sedigheh FAHIMI and Mahmoud BAGHERI, "EU Sanctions Regarding Banking Guarantees" (2019) *Comparative Law Quarterly*, Vol. 3, No. 4, pp 130–136.

Ultimately, the paralysis of bank guarantees under sanctions underscores the vulnerability of international financial law to geopolitical pressures. Thus, while legal instruments provide partial remedies, they cannot overcome the political justifications that underpin the suspension of guarantees. Consequently, some commentators argue that sanctioned states may find greater security by cultivating stable political and commercial relations with sympathetic partners rather than relying exclusively on international guarantee law.³¹

II. Alternative Bank Strategies In The Face Of Sanctions

As sanctions tighten, governments and individuals are increasingly driven to develop backup strategies and alternative mechanisms to sustain economic activity.³² While Iranian banks operate within the framework of an Islamic financial system that provides certain indigenous alternatives—serving, to some extent, as a short-term protective shield against sanctions—they must also explore innovative mechanisms to mitigate these constraints. State-owned banks in Iran can, at least in part, draw on government budgets to maintain liquidity and stability. By contrast, private banks lack such direct state support and must therefore seek alternative means of raising funds, sustaining credit, and ensuring long-term resilience.³³ In this context, our analysis distinguishes between two major domains of adaptation: (A)

³¹ Razmahang, *supra* note 12.

³² Bryan R. EARLY *Busted Sanctions: Explaining Why Economic Sanctions Fail* (Stanford: Stanford University Press, 2015).

³³ Amin JAFARI, Zahra SOHRABI ABAD, and Zahra GHAZINEZHAD, "Structural and Functional Differences Between State-Owned and Private Banks in Iran" (2020) *Opole Studies in Administration and Law (Opolskie Studia Administracyjno-Prawne)*, Vol. 18, No. 2, 51–74.

rethinking of Islamic financial instruments, and (B) expansion of blockchain-based systems and cryptocurrencies.

a) Rethinking the Islamic Financial System as Short-Term Pathways Strategies

Sanctions have not only imposed immediate economic constraints but also reshaped the institutional landscape of the Iranian banking sector. One notable outcome has been the rise of semi-military banks, restructured to consolidate their financial and organizational capacity in response to international restrictions.³⁴ Alongside these structural transformations, a range of initiatives has emerged to empower Iranian banks operating within Islamic financial frameworks more broadly. For analytical clarity, these adaptations may be divided into two categories: (1) operational banking activities and (2) banking management practices.

1) Operational banking activities in the sanctions context

(a) Profit-and-Loss Sharing (PLS) mechanism as a potential shield and *qard al-ḥasana* as a substitute for foreign Investment: The profit-and-loss sharing (PLS) banking system appears particularly well suited to mitigating the disruptive effects of financial crises. A growing body of scholarship has examined the performance of Islamic finance during periods of global instability—most notably the 2008 financial crisis and, more recently, the COVID-19 pandemic—emphasizing the role of risk-sharing mechanisms and ethical finance principles in shaping adaptive responses. Following the Great Recession, many policymakers and regulators, in fact, called for closer attention to the comparative advantages of Islamic banks in risk management, operational efficiency, and systemic stability. Empirical

³⁴ McDonald and Reitano, *supra* note 1, p 649.

findings indicate that Islamic banks with stronger capital buffers and more robust risk management frameworks exhibited greater resilience, maintaining both profitability and stability under stress conditions.

Put differently, the objectives of Islamic financial law require Islamic banks to prioritize financing instruments based on equity participation, profit- and loss-sharing, and other risk-sharing mechanisms—often associated with relatively illiquid investments—rather than relying primarily on debt- or sale-based financing models. This structural distinction means that Islamic banks are less exposed to heightened complexity in balancing their assets and liabilities, since liquidity risk is shared between the client and the bank. Although such risk-sharing is not necessarily favorable to the client, as it requires them to bear part of the risk themselves, it can, to some extent, shield banks affected by sanctions. Consequently, by reinforcing the principle of profit- and loss-sharing, Iranian banks may be better positioned to withstand the adverse effects of sanctions, compared both to conventional banks and to hybrid institutions operating through “Islamic windows. However, the challenge is compounded by the fact that the range of risk management tools available to Islamic banks is constrained by adherence to the principles and parameters of Islamic finance. As liquidity risk constitutes a critical dimension of financial stability, its implications for Islamic banks are therefore significantly different from those for conventional or hybrid banking systems.³⁵ In the Iranian context, equity-based contracts such as *mushāraka* and *muḍāraba* provide a protective shield for banks by distributing risk between parties rather than concentrating it on

³⁵ Sabri MOHAMMAD, Mehmet ASUTAY, Rob DIXON, and Elena PLATONOVA, "Liquidity Risk Exposure and Its Determinants in the Banking Sector: A Comparative Analysis Between Islamic, Conventional and Hybrid Banks" (2020) *Journal of International Financial Markets, Institutions and Money*, Vol. 66, 101196.

borrowers. When applied genuinely—without resorting to interest-simulating practices such as pre-fixed profit guarantees—PLS arrangements reduce the likelihood of systemic instability and enhance the resilience of the banking sector under sanctions and external shocks.³⁶

In parallel, *qarḍ al-hasana* has long functioned as an indigenous instrument for mobilizing dispersed domestic resources, particularly when access to foreign credit lines is restricted. Several studies suggest that *qarḍ al-hasana* loans can act as domestic equivalents of microfinance and even foreign direct investment (FDI) by channeling household savings into productive activities and supporting small- and medium-sized enterprises (SMEs). In this way, they have helped sustain employment and local economic activity during sanction periods.³⁷ In other words, this mechanism could be structured as a national instrument to support the country against the effects of sanctions.

(b) Credit card services: Another operational adaptation has been the development of credit card services. Despite their global importance in facilitating consumer payments, credit cards in Iran face a dual set of challenges: theological restrictions rooted in Islamic prohibitions on interest, and structural barriers created by international sanctions. On the one hand, designing Shariah-compliant credit cards requires contractual innovations such as *murābaḥa* or *ijāra*, which

³⁶ Suleman ULEMAN, Hylmun Mohd Thas THAKER, Hafiza FATIMA, M. Ishaq BHATTI, and C. W. H. CHEONG, "Resilience of Islamic Financial Institutions Amid Economic Disruptions: Lessons from the COVID-19 Pandemic" in Farhad TAGHIZADEH-HESARY, Hylmun Mohd Thas THAKER, M. Ishaq BHATTI, and A. ALLAH PITCHAY, eds., *Islamic Financial Markets and Institutions*, Contributions to Economics (Singapore: Springer, 2025). DOI: 10.1007/978-981-96-8650-6_8.

³⁷ Akbar MOJTAHED and Ahmad HASSANZADEH, "The Evaluation of Qard-al-Hasan as a Microfinance Approach in Poverty Alleviation Programs (Case Study of Iran)" (2009) *Journal of Money and Economy*, Vol. 5, No. 2, 1–32.

avoid interest-bearing debt. On the other hand, sanctions have excluded Iranian banks from global payment networks such as Visa and MasterCard, preventing them from issuing internationally functional credit cards. Nonetheless, scholars argue that domestic versions of credit cards could be expanded within Iran's internal banking infrastructure, thereby promoting financial inclusion and stimulating consumer demand even in the absence of global connectivity.³⁸

Taken together, these operational strategies demonstrate how Iranian banks navigate sanctions by utilizing Islamic financial instruments such as *qard al-hasanah* while simultaneously experimenting with localized adaptations of modern banking services, including credit cards. Both approaches, however, face notable limitations: although *qard al-hasanah* is rooted in Iranian religious tradition, its effectiveness heavily relies on cultural and social participation, which is challenged by evolving modern societal tendencies, whereas the development of credit cards—as a modern, internationally recognized banking tool—remains constrained by regulatory, technological, and global barriers.

Moreover, at the state level, Iran has sought to expand its engagement with global Islamic finance, most notably through attempts to enter the international *sukuk* market. These initiatives suggest that even under the weight of sanctions, Iran is selectively adopting aspects of global capitalist Islamic finance as part of its broader strategy to secure resilience and international legitimacy.³⁹

³⁸ Rasoul KHANSARI, "Opportunities and Challenges of Using International Credit Cards in Iran", 26th Annual Conference on Monetary and Foreign Exchange Policies (Tehran: Monetary and Banking Research Institute, 24–25 May 2006).

³⁹ Ryan CALDER, *The Paradox of Islamic Finance: How Shariah Scholars Reconcile Religion and Capitalism* (Princeton: Princeton University Press, 2024).

2) *Banking management in the sanctions context*

As monetary institutions, banks are responsible not only for generating profits but also for safeguarding stability through sound internal governance systems. Achieving this requires the adoption of comprehensive management tools inspired by international standards, particularly those developed by the Basel Committee on Banking Supervision and the Bank for International Settlements. Basel guidelines emphasize corporate governance, risk management, and regulatory oversight—elements that have become increasingly important for Iranian banks operating under the pressures of international sanctions.⁴⁰

(a) Risk management: Sanctions have profoundly reshaped Iran's banking sector, forcing institutions to reconsider their management structures in order to preserve resilience and credibility.⁴¹ One crucial area of adaptation lies in strengthening risk management practices. By developing systems for credit assessment, liquidity monitoring, and stress testing, Iranian banks have sought to shield themselves from shocks stemming from currency volatility and restricted access to global financial markets. These measures are intended to ensure solvency and prevent crises of confidence even in the absence of foreign credit lines.⁴²

(b) Anti-money laundering (AML): Alongside risk management, banks have also been compelled to reinforce their anti-money

⁴⁰ Basel Committee on Banking Supervision, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems* (Basel: Bank for International Settlements, 2011); Bank for International Settlements (BIS), *Annual Economic Report 2018* (Basel: BIS, 2018).

⁴¹ Saeed GHASSEMINNEJAD and Mohammad R. JAHAN-PARVAR, "The Impact of Financial Sanctions: The Case of Iran 2011–2016", *International Finance Discussion Papers* No. 1281 (2020). DOI: 10.17016/IFDP.2020.1281.

⁴² Zahra ASADI and Kazem YAVARI, "The Effect of Banking Sanctions on Financial Instability of Iranian Banks" (2022) *Quarterly Journal of Quantitative Economics*, Vol. 18, No. 4.

laundering frameworks. Although AML standards are often regarded as technical compliance mechanisms, in the Iranian context they have broader implications: they help preserve institutional credibility, reduce exposure to reputational risks, and prepare the ground for possible reintegration into international markets once sanctions are lifted. FATF, for instance, has repeatedly emphasized the centrality of effective AML and counter-terrorist financing regimes as preconditions for financial sector credibility (FATF, 2020). Iran officially passed its first comprehensive AML law in 2008, revised in 2015, and subsequently introduced a Countering the Financing of Terrorism (CFT) law in 2019. These reforms were partly in response to FATF's repeated criticisms and blacklisting of Iran as a high-risk jurisdiction (FATF, 2020).⁴³

(c) Compliance: Equally important is the evolving role of compliance. In global financial systems, compliance departments reassure investors and regulators that strategic decisions adhere to accepted norms of transparency and governance. Under sanctions, however, the effectiveness of compliance is diminished. With few international counterparts willing to engage, Iranian banks are unable to demonstrate their adherence to global standards, limiting their ability to rebuild correspondent relationships or attract foreign investment.⁴⁴

Despite this, compliance remains indispensable domestically, as it ensures that the strategic decisions of boards and executives align with national regulations and legal requirements.

⁴³ Financial Action Task Force (FATF), *Mutual Evaluation Report of the Islamic Republic of Iran* (Paris: FATF, 2020).

⁴⁴ Nader HABIBI, "The Iranian Banking System under Sanctions: Adaptive Strategies and Structural Weaknesses" (2019) *Middle East Economic Review*, Vol. 41, No. 2, 121–145.

Yet, compliance also exposes Iranian banks to new dilemmas. On the one hand, national authorities have encouraged the exploration of blockchain-based financial instruments and digital currencies as potential mechanisms to circumvent sanctions. On the other hand, international frameworks such as FATF classify these very instruments as high-risk, subject to strict oversight and, in some cases, outright prohibition. This paradox illustrates a deeper structural problem: sanctions not only undermine the daily operations of the banking sector but also distort its internal governance mechanisms, compelling banks to adopt strategies that may secure short-term resilience while jeopardizing long-term credibility in the global financial system.

b) Cryptocurrencies as Mid-Term Pathways and Strategies

The longer sanctions persist and the more restrictive they become, the stronger the incentive for individuals and governments under pressure to experiment with alternative avenues for conducting international financial transactions. In this regard, digital currencies and cryptocurrencies have attracted attention as potential means of easing the constraints of sanctions.⁴⁵ Iran has also explored this area to ease some of the economic pressure. Yet these initiatives remain limited in scope, face significant regulatory and technical obstacles, and have so far offered only modest relief from the broader impact of sanctions.⁴⁶

⁴⁵ Summer WRIGHT, "The Evolution of Sanctions Evasion: How Cryptocurrency Is the New Game in Evading Sanctions and How to Stop It" (2023) *International Journal of Law, Ethics and Technology*, No. 1, 1–25.

⁴⁶ Thomas ERDBRINK, "How Bitcoin Could Help Iran Undermine U.S. Sanctions" *New York Times* (29 January 2019), online: NYT <https://www.nytimes.com/2019/01/29/world/middleeast/bitcoin-iran-sanctions.html>.

Countries such as Venezuela, North Korea, Sudan, and China—either facing U.S. sanctions directly or seeking to reduce their dependence on the dollar-centered international order—have increasingly experimented with blockchain technologies and cryptocurrencies. Although the specific approaches of these states vary, they are all shaped by the pressures of U.S. unilateralism, which has compelled them to explore alternative financial infrastructures.⁴⁷ One important dimension of this trend has been the use of cyber operations to generate income by stealing cryptocurrencies. State-controlled hacking capabilities have enabled the direct targeting of cryptocurrency exchanges, with South Korean platforms frequently falling victim to such attacks. For example, millions of dollars' worth of Bitcoin and other digital assets have been appropriated in this way, and the intensity of these operations has only increased as sanctions have tightened.⁴⁸ Botnets and malware have also demonstrated how digital tools can be deployed not only to extract ransoms payable in cryptocurrencies but also to hijack computing power for unauthorized mining.⁴⁹

In parallel with these illicit methods, sanctioned states have also invested in more formalized activities such as cryptocurrency mining. This approach, which depends on advanced technological infrastructure and access to low-cost energy, has been most actively pursued in Russia. Leveraging its abundant natural resources, Russian

⁴⁷ D. R. KONOWICZ, *The New Game: Cryptocurrency Challenges US Economic Sanctions* (Newport, RI: Naval War College, 2018), p 7.

⁴⁸ Jeremy WAGSTAFF and Jack SMITH, "Multi-Stage Cyber Attacks Net North Korea Millions in Virtual Currencies: Researchers" *Reuters* (2017), online: Reuters <https://www.reuters.com>.

⁴⁹ Alex HERN and Samuel GIBBS, "What Is WannaCry Ransomware and Why Is It Attacking Global Computers?" *The Guardian* (12 May 2017), online: Guardian <https://www.theguardian.com/technology/2017/may/12/nhs-ransomware-cyber-attack-what-is-wanacrypt0r-20>.

energy conglomerates have even negotiated to provide inexpensive electricity to large-scale Bitcoin mining operations. By contrast, this option remains largely unavailable to countries such as North Korea and Sudan, which lack both the requisite hardware and the reliable energy inputs needed to exploit this method effectively.⁵⁰ Iran has also adopted cryptocurrency mining as part of its broader economic strategy in recent years.⁵¹ The availability of abundant, subsidized energy has facilitated the emergence of a sizeable and fast-growing industry, even attracting foreign operators to establish mining farms within the country. In 2019, Iran became one of the first states to formally recognize crypto mining as a legal industry, and since then, policymakers have emphasized regulation as a means of generating revenue and integrating the activity into the national economy. In practice, mining functions as a mechanism for transforming domestic energy resources into tradable digital assets, thereby opening alternative pathways for trade and financial transactions under external constraints.⁵²

Nevertheless, this strategy has also generated a number of domestic challenges. Since late 2024, Iran has experienced widespread electricity shortages, with unauthorized mining operations identified as a contributing factor. Large-scale unlicensed farms have been discovered, prompting calls for stricter enforcement and judicial

⁵⁰ Emily FLITTER and David YAFFE-BELLANY, "Russia Could Use Cryptocurrency to Blunt the Force of U.S. Sanctions" *New York Times* (24 February 2022), online: NYT <https://www.nytimes.com/2022/02/23/business/russia-sanctions-cryptocurrency.html>.

⁵¹ Cabinet of Ministers of the Islamic Republic of Iran, By-Law on the Mining and Exchange of Crypto-Assets, No. 59368H (28 August 2022): [In August 2022, the Cabinet of Ministers of the Islamic Republic of Iran approved the *By-Law on the Mining and Exchange of Crypto-Assets*.] ; "Iran Closer to Own Digital Money as Sanctions Loom" *PressTV* (25 July 2018), online: PressTV <https://www.presstv.ir/Detail/2018/07/25/569249/Iran-closer-to-own-digital-money-as-sanctions-loom>.

⁵² Robinson, *supra* note 21.

intervention. Although crypto mining was legalized in 2019, the state has periodically restricted or suspended the activity, particularly during periods of peak demand. Licensed operators, facing relatively high tariffs, have at times struggled to remain competitive, encouraging the growth of underground mining. In response, the government has introduced measures, including incentives for citizens to report unauthorized operations.⁵³

Taken together, cryptocurrency mining in Iran functions as a double-edged policy instrument: it provides opportunities to diversify revenue streams and develop alternative financial mechanisms amid sanctions, yet it also poses significant risks to energy stability and regulatory oversight. Given this energy shortage, a critical question arises: how much does Iran actually gain from cryptocurrency activities at the cost of electricity scarcity? The long-term success of this strategy will ultimately depend on balancing its economic benefits with policymakers' capacity to manage its structural challenges.

Beyond mining, attention has turned toward the issuance of national digital currencies. Venezuela's attempt to create a petroleum-backed cryptocurrency is one example, though its practical utility has been questioned given the country's weak financial infrastructure.⁵⁴ Russia, however, has taken more systematic steps in this direction. In 2017, the Russian government announced its intention to develop a state-backed cryptocurrency known as the *CryptoRuble*. This initiative marked a departure from models such as Venezuela's, insofar as the currency would be issued directly by the state rather than mined through cryptographic algorithms, as is the case with decentralized

⁵³ Silvia BOLTUC, "Crypto Under Control: The Geopolitical Drivers of Iran's New Regulation" (5 February 2025) *Persian Files*, Vol. 30, No. 1, online: *SpecialEurasia*.

⁵⁴ Jeffrey GOGO, "Venezuela to Start Using Cryptocurrency in Global Trade in Efforts to Fend Off U.S. Sanctions" *Bitcoin.com* (1 October 2020).

currencies like Bitcoin. In this respect, the *CryptoRuble* was conceived as a form of digital fiat money, formally pegged to the value of the conventional ruble. An additional and significant feature of the proposal was the government's stated capacity to ensure a degree of user anonymity. Russian authorities made clear that the overarching purpose of the project was to provide a mechanism by which the state could settle accounts with international counterparties while circumventing sanctions constraints.⁵⁵

Iran's development of a central bank digital currency (CBDC), the *Crypto-Rial*, marks a significant step in its financial strategy under sanctions. First proposed by the Central Bank of Iran (CBI) in 2018, the project advanced in 2021 through the *Borna* platform on Hyperledger Fabric, and entered trial implementation in early 2023.⁵⁶ In January 2025, the Supreme Council of Cyberspace issued the *National Crypto-Asset By-Law*, designating the CBI as the sole authority for issuance, licensing, and supervision of digital currencies. The *Crypto-Rial* is intended to enhance financial transparency, reduce the costs of currency issuance, and strengthen anti-money laundering and tax enforcement. While policymakers also envision its potential to facilitate digital trade and cross-border cooperation, the initiative faces

⁵⁵ Jake RUDNITSKY, "Vladimir Putin Aide Eyes Cryptocurrencies to Beat Sanctions, Russia Newswire Says" *Sydney Morning Herald* (13 December 2017, 7:04 AM), online: SMH <https://www.smh.com.au/world/vladimir-putin-aide-eyes-cryptocurrencies-to-beat-sanctions-russian-newswire-says-20171213-h03jju.html>.; Adam GARRIE, "In Blow to US Dollar, BRICS Consider 'Sanctions-Proof' Cryptocurrency" *Mint Press News* (2017).

⁵⁶ Saeid MAHMOODI, Seyed Ahmad JALAEI, Zahra SADEGHI, and Ali SHAKIBAI, "Investigating the Effects of Issuing National Digital Currency on Iran's Monetary Policies Using the System Dynamics Method" (2024) *Quarterly Journal of Economic Research*, Vol. 24, No. 1, p 5, online: QJER <http://ecor.modares.ac.ir/article-18-65783-fa.html>; "Iranian Cryptocurrency's Features Revealed" *IBENA* (2018), online: [IBENA https://www.ibena.ir/en/news/90482/iranian-cryptocurrencys-features-revealed](https://www.ibena.ir/en/news/90482/iranian-cryptocurrencys-features-revealed).

notable obstacles, including limited technological infrastructure and persistent doubts about public trust in state-backed digital money.⁵⁷

Similarly, within the BRICS framework, policymakers have discussed the possibility of a multilateral cryptocurrency backed by a basket of commodities and currencies, intended to reduce reliance on the U.S. dollar and facilitate intra-bloc trade.⁵⁸

Taken together, these developments reveal how sanctioned states are not merely passive victims of external economic coercion but active innovators in the search for alternative financial architectures. Cryptocurrencies, whether through mining, national issuance, regional cooperation, or domestic adoption, constitute an increasingly important component of this adaptive strategy. While significant challenges remain—not least the problem of large-scale conversion into fiat currencies—the Iranian experience suggests that blockchain technologies may, over time, reconfigure the boundaries of financial sovereignty under sanctions.

Conclusion

This study has shown that international sanctions exert significant and often disproportionate effects on the banking system, constraining both public and private institutions and undermining their capacity to function as central actors in the economy. As a result, sanctions rarely

⁵⁷ Supreme Council of Cyberspace of the Islamic Republic of Iran, National Crypto-Asset By-Law (نظامنامه رمزارز), Resolution No. 107875 (9 January 2025); Amir RAHMANI and Saeedeh BABAJANI MOHAMMAD, "The Impact of Digital Currencies on Iran's Economy: Opportunities and Challenges" (2021) *Journal of Intelligent Knowledge Discovery and Processing*, Vol. 1, No. 1, 28–41, online: SID <https://sid.ir/paper/1025542/fa>; Maziar MOTAMEDI, "Why Is Iran Turning to a New 'Digital Rial'?" (20 September 2022) *Al Jazeera*, online: *Al Jazeera*; Reza MIRZAKHANI and Meysam DOAEI, "Strategies and Challenges of Using Cryptocurrencies in the Capital Market: A Jurisprudential-Legal Perspective" (2024) *Islamic Economics and Banking Quarterly*, No. 45 (Winter 2024), 7–28.

⁵⁸ Zongyuan Zoe LIU and Mihaela PAPA, *Can BRICS De-Dollarize the Global Financial System?* (Cambridge: Cambridge University Press, 2022). DOI: 10.1017/9781009324561.

achieve their stated objectives; instead, they weaken financial intermediation, distort institutional performance, and impose the highest costs on ordinary citizens rather than on political elites.

The implications extend beyond domestic economic hardship. By isolating targeted states, sanctions hinder international cooperation in essential areas such as combating terrorism, money laundering, and other forms of transnational crime. Effective responses to these global challenges require the participation of all countries; exclusionary measures risk fragmenting the regulatory landscape and diminishing the credibility of sanctions as instruments of international policy.

Furthermore, the turn to alternative mechanisms—most notably blockchain technologies and cryptocurrency transfers—illustrates both the adaptive capacity of sanctioned states and the unintended consequences of restrictive measures. While these innovations provide mid-term relief, they also generate risks of regulatory arbitrage and complicate global efforts to maintain financial integrity. Taken together, these findings underscore the need for more inclusive and cooperative approaches to international finance, rather than reliance on sanctions that ultimately exacerbate economic vulnerability and erode global trust.