

FORENSIC ACCOUNTING AS A RESPONSE TO MODERN INNOVATIONS AND ECONOMIC UNCERTAINTY

Divna Maksimović

Secondary School of Economics Bijeljina, Public Institution, Republic of Srpska, BiH
divna.maksimovic@gmail.com
ORCID: 0009-0004-5938-7892

Abstract: *The contemporary business environment is characterized by rapid innovations and increasing economic uncertainty, further amplified by political instability. Economic shocks in the energy market are particularly pronounced. The current global oil crisis of 2026 has caused a significant rise in oil prices and disrupted supply chains, increasing the risk of financial fraud. In this context, forensic accounting has become a key tool for fraud detection, cost control, and the optimization of risk management processes. The integration of digital tools, including AI and Big Data analytics, further enhances organizations' ability to respond promptly to volatile market conditions. This paper examines the connection between crises, innovations, and financial fraud, and also discusses the impact of modern technologies and digitalization on fraud risk, as well as the need for global regulation and employee training as essential elements for maintaining business continuity*

Key words: *uncertainty, innovations, oil, financial fraud, forensic accounting, digital tools*

JEL classification: M41, O31, D81

1. INTRODUCTION

The modern business environment is characterized by rapid technological innovations, increased economic uncertainty, and complex geopolitical risks. Political crises, fluctuations in energy prices, and disruptions in global supply chains have become everyday realities for modern economies (Guellim et al., 2024). Particularly significant is the global oil and energy crisis of 2026, caused by the conflict in Iran and the disruption of traffic through the Strait of Hormuz, which led to the largest disruption in oil supply and global energy markets in history (IEA, 2026).

Previous major energy shocks — in 1973, 1979, and 2022 — have now, according to IEA estimates, been surpassed in scale and impact on the global economy. The increase in oil prices to \$90–\$100 per barrel directly affects the liquidity and profitability of companies worldwide (Times of India, 2026).

This paper aims to analyze the role of forensic accounting as a response to these modern challenges, with particular emphasis on its methods and practical application during periods of innovation and growing uncertainty.

1.1. RESEARCH PROBLEM AND SUBJECT

The subject of this research is to highlight the importance of forensic accounting in conditions of economic uncertainty as well as continuous innovation. Special attention is given to forensic accounting due to the increasing complexity of the business environment characterized by rapid technological innovations (e.g., digitalization, cryptocurrencies, automation of financial processes) and pronounced economic uncertainty (crises, inflation, market instability).

As a result, there is a need for the development and application of forensic accounting as a specialized approach that combines accounting, auditing, and investigative techniques to detect and prove irregularities.

The subject of the research is the role, importance, and application of forensic accounting as a mechanism for detecting and preventing financial irregularities in modern conditions.

1.2. RESEARCH OBJECTIVES

The research objectives are aligned with the defined problem and subject of the study.

- **Scientific objective:** to theoretically and empirically examine the role and capabilities of forensic accounting in

identifying, analyzing, and preventing financial fraud in the context of modern technological innovations and existing economic uncertainty.

- **Social objective:** to improve the security and stability of the economic system through broader and more effective application of forensic accounting.

The contribution of this research will be reflected in assessing the current state of the market, identifying the most important issues in the field of forensic accounting, and exploring possibilities for their resolution.

The first part deals with the state of the economy under uncertainty caused by various instabilities and innovation trends, particularly those related to the economy. The second part focuses on different applications of forensic accounting in detecting fraud under uncertainty and modern business conditions.

2. ECONOMY UNDER CONDITIONS OF UNCERTAINTY

It can be said that political instability significantly affects global economic stability through reduced investor confidence, disruptions in trade, and volatile financial flows. Conflicts and sanctions influence energy prices and make it difficult to effectively plan business strategies, exposing companies to a higher risk of financial irregularities.

By examining history, we can observe that when OPEC introduced an embargo in 1973, it led to inflation, recession, and global market disruptions. After the Iranian Revolution in 1979, energy prices rose and production costs increased. Since the beginning of the war in Ukraine, there has been volatility in prices and disruptions in gas and oil supply. In 2026, since the beginning of the conflict in Iran and the crisis in the Strait of Hormuz, global disruptions have intensified, including rising oil prices, inflation, and recession.

Historical shocks in 1973 and 1979 demonstrated how disruptions in energy supply affect inflation and business costs (Smith, 2018). The current 2026 crisis has further destabilized energy markets, creating uncertainty in business planning and increasing the risk of accounting irregularities (IEA, 2026).

Economic volatility requires appropriate risk management models. Uncertainty leads to greater fluctuations in financial results, thereby creating space for manipulation of accounting data. In this context, forensic accounting becomes indispensable in identifying irregularities and protecting the accuracy of financial reports.

In addition, prolonged periods of uncertainty often lead to structural changes in the global economy, forcing companies to adapt their operational models. Organizations are required to implement more flexible financial strategies, diversify supply chains, and strengthen internal control systems in order to remain competitive. These adjustments, however, increase the complexity of financial reporting and create additional pressure on accounting systems.

Furthermore, economic instability tends to amplify the importance of transparency and accountability in financial reporting. Investors, creditors, and regulatory bodies demand more accurate and timely information, which places additional responsibility on organizations to ensure the reliability of their financial statements. In such an environment, the risk of intentional misstatement or unintentional errors also increases, making robust monitoring mechanisms essential.

Finally, the combination of geopolitical tensions, energy crises, and financial market volatility highlights the need for advanced analytical tools in financial oversight. Traditional accounting methods alone are often insufficient to detect complex irregularities in such dynamic conditions. Therefore, forensic accounting, supported by modern technological solutions, becomes a key instrument in maintaining financial stability and supporting informed economic decision-making.

3. INNOVATION AND DIGITAL TRANSFORMATION IN THE ECONOMY

Innovations such as digitalization, blockchain technology, artificial intelligence, and big data analytics are redefining business processes. These technologies provide more precise tools for transaction analysis and anomaly detection, but at the same time create new challenges in data protection and the detection of sophisticated fraud.

The application of digital solutions in controls enables automated detection of irregularities and improvement of internal audit procedures. Digitalization increases the risk of cyber fraud and creates a need for specialized approaches in forensic accounting, especially in crisis conditions.

Digital transformation has become a central theme of business strategies and enterprise development of all sizes. It represents a way to achieve better business results through the use of new technologies. Additionally, digital transformation is not only the introduction of new technologies and the customization of products and services, but also the redefinition of business models, optimization of business processes, and management of organizational changes (Chamber of Commerce and Industry of Serbia, 2017).

Enterprises face major challenges reflected in increased competition in domestic markets, while the development of digital technologies changes business models and consumer expectations. The need for digital transition is present in all markets, often leading to discussions about the digital gap between companies that rapidly adopt technological progress and those that maintain the status quo (Kostić, 2018).

Innovations accelerate economic transformation, but in combination with geopolitical shocks such as the 2026 energy crisis, they increase the complexity of financial flows and the risks of fraud. Forensic accounting becomes a key link between traditional control systems and digital challenges, enabling companies to quickly identify and mitigate risks (Guellim et al., 2024).

In addition, the increasing integration of digital systems across all sectors of the economy has significantly changed the nature of financial transactions. Organizations now rely heavily on interconnected platforms that process vast amounts of sensitive financial data in real time. While this improves efficiency and accessibility, it also increases exposure to operational risks and cyber threats, requiring stronger control mechanisms and continuous monitoring.

Furthermore, the rapid evolution of technology demands constant adaptation of forensic accounting methodologies. Traditional auditing techniques are no longer sufficient to address the complexity of modern financial environments. As a result, forensic accountants must continuously update their skills and incorporate advanced technological tools to effectively identify irregularities and ensure the reliability of financial information.

Finally, the role of forensic accounting is increasingly shifting from a purely investigative function to a strategic component of corporate governance. By integrating technological innovation with analytical expertise, it contributes not only to fraud detection but also to long-term risk management and the strengthening of organizational resilience in an increasingly digital and uncertain global economy.

4. FORENSIC ACCOUNTING: CONCEPT AND METHODOLOGY

4.1. DEFINITION AND FUNCTION

Forensic accounting can be defined as the application of investigative and analytical skills aimed at detecting manipulation in financial statements that deviate from accounting standards, tax laws, and other legal regulations (Belak, 2011).

It represents the application of investigative and analytical skills to resolve financial issues in a manner consistent with standards required by courts. It is important to emphasize that forensic accounting is not limited only to conducting financial investigations that result in legal proceedings; however, if that is the purpose, the investigation and analysis must meet the standards required by the competent court (Hopwood et al., 2014).

Forensic accounting integrates accounting, auditing, and legal practice to identify and document financial irregularities in accordance with the law. It contributes to transparency, fraud prevention, and support for judicial processes.

Accounting fraud is considered intentional action aimed at distorting financial statements and accounting records in order to achieve certain goals, often to the detriment of an organization or the state.

Understanding the methods and techniques in accounting that can manipulate final results is important. However, it is even more important to prevent fraud before it occurs. Detecting and protecting against accounting fraud is essential for preserving the financial integrity of an organization and the regulatory system. Organizations should establish strong internal controls, educate employees on ethical issues, and strive for transparency in business operations. The use of forensic accounting, regular audits, and monitoring of trends are key tools in detecting and combating fraud.

The development of forensic accounting is evident and necessary, as the number of criminal activities increases each year, along with a growing number of accounting fraud cases. Statistics indicate that one-third of these cases are discovered by chance. Investors and owners lose capital and returns, employees lose wages, creditors are unable to collect receivables, and the state loses revenue.

The development of forensic accounting is supported by the education of forensic accountants to detect accounting fraud and prove damages using various methods and techniques, thereby assisting investigative authorities.

Forensic accountants can provide expert support to judicial and regulatory bodies in investigating and prosecuting cases of falsified financial statements, contributing to the enforcement of justice and the protection of investors and the public interest. The goal is to detect, prove, and prevent irregularities in order to preserve the integrity of the financial system and protect the interests of all relevant stakeholders (Lalić et al., 2024).

The contemporary business environment is characterized by rapid technological change and pronounced economic uncertainty, significantly influencing the way organizations are managed and business decisions are made. Digitalization, the development of artificial intelligence, the application of blockchain technology, and the increasing use of big data are transforming financial flows and accounting processes. At the same time, global crises, inflation, political instability, and disruptions in energy markets further complicate business operations and increase the risk of financial irregularities. Under such conditions, forensic accounting is gaining increasing importance as an instrument for safeguarding financial integrity and the reliability of business information.

Forensic accounting represents a specialized field that integrates accounting, auditing, and investigative techniques with the aim of detecting and proving financial fraud and irregularities. Unlike traditional accounting, which focuses primarily on recording and reporting, forensic accounting has a proactive and investigative dimension. Its purpose is not only to identify irregularities but also to provide evidence in a form that is admissible in legal proceedings. This interdisciplinary nature makes it a crucial tool in modern economic conditions.

However, technological innovation also introduces new challenges. The expansion of digital financial systems, cryptocurrencies, and online transactions increases the complexity of financial flows and makes them more difficult to monitor. Cybercrime, identity theft, and manipulation of digital data represent growing threats to organizations. In such an environment, forensic accountants must possess not only traditional accounting knowledge but also advanced digital and analytical skills in order to effectively respond to emerging forms of financial fraud.

Economic uncertainty further amplifies the need for forensic accounting. During periods of crisis and instability, organizations often face increased pressure to maintain positive financial performance, which may lead to manipulation of financial statements. Inflation, rising costs, and reduced liquidity create an environment in which the risk of fraud increases, both within organizations and in their external relationships. In this context, forensic accounting plays a vital role in maintaining transparency and preserving the trust of investors, creditors, and other stakeholders.

Periods of economic uncertainty often result in increased financial risk. Organizations may face declining revenues, reduced liquidity, and higher operational costs, which can create incentives for

financial statement manipulation. In such circumstances, forensic accounting provides mechanisms for identifying inconsistencies, analyzing financial patterns, and detecting anomalies that may indicate fraudulent behavior. The application of advanced analytical tools and methodologies allows forensic accountants to examine large volumes of data and uncover irregularities that might otherwise remain hidden.

The number of incorrect and fraudulent financial transactions is increasing globally, exposing organizations to higher risks of unethical and dishonest practices. As a result of a growing number of corporate scandals worldwide, the demand for forensic accounting has significantly increased. Financial fraud is increasingly recognized as one of the major economic threats on a global scale, which has led to a greater need for skilled forensic accountants and auditors capable of detecting, investigating, and preventing such activities.

4.2. TECHNIQUES AND TOOLS

Tools and methodologies of financial analysis within forensic accounting involve the use of specialized software that enables detailed examination of transactions and accounting records. These programs often include advanced features such as data mining to uncover patterns and anomalies in financial data.

Sampling techniques also play a crucial role, allowing the detection of suspicious trends within large volumes of data. Financial ratio analysis is essential for assessing an organization's performance and identifying unusual deviations that may indicate fraud. Methodologies include examining trends and patterns in historical financial data to identify inconsistencies. Forensic techniques are used to discover and interpret evidence of fraud. A notable example is the application of Benford's Law, a mathematical method used to detect irregularities in datasets based on digit frequency distribution (Anghel, 2023).

Digital technologies have introduced new dimensions to financial operations, including cloud computing, online banking, mobile payment systems, cryptocurrencies, and blockchain. While these tools enhance efficiency and accessibility, they also increase vulnerability to fraud, cyberattacks, and data manipulation. Forensic accountants must combine traditional accounting knowledge with technological literacy and analytical skills to address these challenges. The integration of artificial intelligence, machine learning, and digital forensics into investigative practices is essential for adapting the profession to modern conditions (Petare, 2025).

To detect financial fraud, identify financial irregularities, and support legal procedures, forensic accounting combines accounting, auditing, and investigation skills. Financial records and transactions are examined in forensic accounting to resolve legal disputes, regulatory investigations, and internal corporate investigations. This checks financial data for irregularities and unethical activity. Assisted by law enforcement, legal professionals, and corporations, forensic accountants investigate financial crimes such as fraud, embezzlement, and money laundering. They examine financial transactions, hidden assets, financial losses, and fraud. Forensic accountants can explain complex financial issues in court. Insurance claims, bankruptcy, civil litigation, and regulatory compliance are their specialties. Accountants, financial analysts, auditors, and lawyers need expertise (Nadaf, 2023).

The rapid development of modern technologies has significantly transformed the field of forensic accounting, introducing new tools and techniques for detecting, analyzing, and preventing financial fraud. Innovations such as artificial intelligence, machine learning, blockchain technology, and advanced data analytics have reshaped traditional forensic methods and enabled more efficient and accurate financial investigations.

One of the most important innovations in forensic accounting is the use of artificial intelligence (AI) and machine learning algorithms. These technologies allow forensic accountants to analyze large volumes of financial data in real time, identify unusual patterns, and detect anomalies that may indicate fraudulent activity. AI-based systems are particularly effective in recognizing hidden relationships within complex datasets that would be difficult to detect using traditional manual methods.

Big data analytics also plays a crucial role in modern forensic investigations. By processing structured and unstructured data from multiple sources, forensic accountants can gain deeper insights into financial behavior and transaction flows. This enables the early detection of irregularities and enhances the ability to predict potential risks before they escalate into serious financial fraud.

Blockchain technology has introduced additional transparency and traceability in financial transactions. Since blockchain records are decentralized and immutable, they reduce the possibility of data manipulation and provide a reliable audit trail. Forensic accountants can use blockchain analysis tools to verify transaction

histories and track the movement of digital assets, especially in cases involving cryptocurrencies.

Another important innovation is the use of digital forensics tools, which enable the recovery and analysis of electronic evidence from computers, mobile devices, and cloud systems. These tools are essential in investigating cyber-related financial crimes, including data breaches, identity theft, and online fraud. The increasing reliance on digital platforms in business operations has made digital forensics an indispensable component of modern forensic accounting.

Furthermore, automation and advanced audit software have improved the efficiency of routine forensic procedures. Automated systems can continuously monitor financial transactions, flag suspicious activities, and generate real-time alerts for further investigation. This shift from reactive to proactive fraud detection represents a major advancement in the field.

In conclusion, technological innovation has fundamentally transformed forensic accounting by enhancing its accuracy, speed, and effectiveness. The integration of digital tools and analytical technologies has made forensic techniques more sophisticated and capable of addressing the growing complexity of financial crimes in the modern digital economy.

CONCLUSION

The global economy in 2026 is characterized by a high degree of uncertainty driven by rapid technological transformation, escalating geopolitical tensions, and a severe energy crisis resulting from the conflict in Iran and the disruption of maritime traffic through the Strait of Hormuz. The consequent rise in oil prices to approximately \$90–\$100 per barrel has a direct adverse impact on corporate liquidity, operational costs, and overall profitability (International Energy Agency, 2026).

In this context, forensic accounting is increasingly evolving from a traditional control-oriented function into a strategic risk management instrument. It plays a crucial role in the identification, investigation, and prevention of financial fraud, while simultaneously enhancing transparency and reinforcing the financial resilience of organizations operating in unstable environments. By integrating investigative techniques with accounting and auditing principles, forensic accounting contributes to more reliable financial reporting and supports informed decision-making in both the private and public sectors.

Furthermore, the integration of advanced digital tools—including data analytics, artificial

intelligence, machine learning, and automated auditing systems—significantly strengthens the effectiveness of forensic accounting practices. These technologies enable faster detection of anomalies, more precise risk assessment, and improved monitoring of large and complex financial datasets. As financial systems become increasingly digitalized and interconnected, the role of forensic accountants expands, requiring a higher level of technological competence alongside traditional financial expertise.

In addition, the growing complexity of global financial transactions, cross-border operations, and regulatory frameworks further emphasizes the need for robust forensic accounting practices. Organizations are now exposed to a wider range of risks, including cyber fraud, data manipulation, and sophisticated financial crimes that are more difficult to detect using conventional methods. Consequently, forensic accounting serves not only as a reactive mechanism for investigating irregularities but also as a proactive system for strengthening internal controls and preventing potential misconduct.

Overall, forensic accounting has become an indispensable component of modern business management in conditions of economic uncertainty and energy market instability. Its continuous development and integration with digital technologies position it as a key discipline for ensuring financial integrity, enhancing corporate governance, and maintaining trust in the global financial system.

REFERENCES

- [1] Anghel, G., & Poenaru, C. E. (2023): Forensic accounting, a tool for detecting and preventing economic fraud: *Valahian Journal of Economic Studies*, 14(2), 87–100.
- [2] Belak, V. (2011): *Poslovna forenzika i forenzično računovodstvo: Borba protiv prijevare*: Belak Excellens.
- [3] Guellim, N., et al. (2024): Evaluating the perceived value of forensic accounting: A systematic review: *Discover Sustainability*, 5, Article 351.

- [4] Kostić, Z. (2018): Innovations and digital transformation as a competition catalyst: *Ekonomika – Časopis za ekonomsku teoriju i praksu i društvena pitanja*, (1), 13–23.
- [5] Petare, P. A. (2025): Forensic accounting in the digital era: Challenges and innovation. In *Connecting disciplines: The multidisciplinary research revolution* (pp. 85–95).
- [6] Lalić, S., et al. (2024): Uloga forenzike u unapređenju računovodstvene prakse zemalja u tranziciji: In *Zbornik radova Međunarodna konferencija "BELECON"* (pp. 318–324).
- [7] Nadaf, Y. (2023): Role Of Forensic Accounting In Preventing Financial Frauds: *South India Journal of Social Sciences*, Vol. 21, No. 39, pp. 153-159.
- [8] Hopwood, W. S., Leiner, J. J., & Young, G. R. (2014): *Forenzičko računovodstvo*: Singidunum University.
- [9] International Energy Agency. (2026): *Oil market report – March 2026*.
- [10] The Times of India. (2026): Crude global prices April 2026: Oil climbs towards \$96 as Strait of Hormuz remains under pressure.
- [11] Chamber of Commerce and Industry of Serbia. (2017, October 5). <http://www.pks.rs>



This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License