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Article

The Role of Tax Control in Reducing the Size of the Shadow Economy

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Abstract: The shadow economy represents a significant challenge for national economic development and fiscal sustainability. It reduces government revenues, weakens public institutions, and distorts fair market competition. This study examines the role of tax control mechanisms in reducing the size of the shadow economy. The research analyzes the relationship between effective tax administration, tax monitoring systems, and the level of informal economic activities. Statistical and comparative analysis methods were used to evaluate international experiences in tax control practices. The results indicate that strengthening tax control systems significantly contributes to reducing shadow economic activities and increasing tax revenues. The findings highlight the importance of digital tax administration, risk-based tax audits, and improved tax compliance strategies in combating the shadow economy.

Keywords: shadow economy, tax control, tax administration, tax compliance, fiscal policy, informal economy

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Introduction

The shadow economy remains one of the most significant challenges for modern economic systems. Informal economic activities reduce government tax revenues, distort market competition, and weaken the effectiveness of fiscal policy. According to international studies, the size of the shadow economy in many developing countries can exceed 30 percent of gross domestic product (GDP), which significantly limits the ability of governments to finance social programs and public infrastructure. In recent decades, governments around the world have increasingly focused on strengthening tax administration and improving tax control mechanisms in order to reduce the scale of informal economic activity [1]. Effective tax control ensures transparency in financial transactions, increases taxpayer compliance, and improves the efficiency of public revenue collection. Research by the OECD and the International Monetary Fund emphasizes that modern tax control systems based on digital technologies and data analytics can significantly reduce tax evasion and improve fiscal discipline [2], [3].

In the context of globalization and digital transformation, traditional tax control methods are

no longer sufficient to combat the shadow economy. Modern tax administrations are increasingly adopting electronic tax reporting systems, digital monitoring platforms, and risk-based audit mechanisms. These tools allow tax authorities to monitor economic transactions in real time and identify potential tax violations more effectively [4]. The main objective of this study is to analyze the role of tax control in reducing the size of the shadow economy and to evaluate the effectiveness of modern tax administration instruments. The research focuses on examining the relationship between tax control mechanisms, tax compliance, and the reduction of informal economic activity.

Methodology

This study applies a quantitative and comparative research approach to examine the role of tax control in reducing the shadow economy. The analysis is based on statistical data obtained from international organizations, including the World Bank, the International Monetary Fund, and the Organisation for Economic Co-operation and Development. The research focuses on analyzing the relationship between tax control mechanisms and the level of informal economic activity. Key indicators used in the study include the size of the shadow economy as a percentage of GDP, tax compliance levels, and the effectiveness of different tax administration instruments such as electronic tax reporting systems, risk-based tax audits, and digital monitoring tools.

The study also employs comparative analysis to examine differences in shadow economy levels across various countries with different tax administration systems. This approach allows the identification of patterns and relationships between institutional quality, tax control mechanisms, and the reduction of informal economic activity. Statistical analysis is used to interpret the collected data and to evaluate the effectiveness of different tax control instruments. The results of this analysis provide insights into how modern tax administration practices can contribute to improving fiscal transparency and reducing the size of the shadow economy.

Results

The empirical analysis indicates that the effectiveness of tax control mechanisms plays a decisive role in reducing the size of the shadow economy. Countries with stronger tax administration systems, higher levels of digital tax monitoring, and risk-based tax audit mechanisms demonstrate significantly lower levels of informal economic activity. Strengthening tax control not only increases fiscal transparency but also improves tax compliance among economic agents [5].

One of the key indicators used to evaluate the effectiveness of tax control is the share of the shadow economy in gross domestic product (GDP). International statistical reports show that the size of the shadow economy varies significantly across countries depending on institutional quality, tax administration efficiency, and the level of economic transparency.

Table 1. Shadow Economy Size in Selected Economies (% of GDP).

Country	Shadow Economy (% of GDP)
United States	8–10%
Germany	10–12%
Poland	16–18%
Turkey	25–27%
Kazakhstan	20–22%
Average in developing economies	30–35%

Source: World Bank (2023), IMF (2022), OECD (2022)

The data presented in Table 1 clearly demonstrates that developed economies tend to have a significantly smaller shadow economy compared to developing countries. In countries such as the

United States and Germany, the shadow economy accounts for less than 12% of GDP due to strong tax institutions, digital monitoring systems, and effective tax compliance policies. In contrast, many developing economies experience larger shadow sectors due to weaker tax control mechanisms and insufficient institutional capacity [6], [7]. In these countries, informal economic activity may exceed 30% of GDP. The analysis suggests that strengthening tax control systems can significantly reduce the size of the shadow economy by increasing the probability of detecting tax evasion and improving compliance incentives. Another important aspect of the analysis concerns the effectiveness of specific tax control instruments used by tax authorities. Modern tax administrations increasingly rely on digital technologies and advanced analytical tools to monitor economic transactions and identify hidden income sources.

Table 2. Effectiveness of Tax Control Instruments in Increasing Tax Compliance.

Tax Control Instrument	Impact on Tax Compliance	Increase in Tax Revenue
Electronic tax reporting systems	High	+12–15%
Risk-based tax audits	Moderate–High	+8–10%
Electronic invoicing systems	High	+10–12%
Big data analytics in tax monitoring	Very high	+15–18%

Source: OECD Tax Administration Report (2022), IMF Fiscal Monitor (2023)

Table 2 illustrates that digital tax administration tools significantly enhance the effectiveness of tax control mechanisms. Electronic reporting systems enable tax authorities to monitor financial transactions in real time, which reduces opportunities for tax evasion. Risk-based tax audits allow tax authorities to focus inspection efforts on taxpayers with a higher probability of non-compliance. This targeted approach increases the efficiency of tax audits and reduces administrative costs.

Furthermore, big data analytics technologies allow tax administrations to analyze large datasets of financial information and detect inconsistencies in tax declarations. These technologies significantly improve the detection of hidden economic activities and increase tax revenues [8], [9]. Overall, the results of the analysis demonstrate that strengthening tax control mechanisms, particularly through digital technologies and risk-based audit systems, is a highly effective strategy for reducing the size of the shadow economy and improving fiscal sustainability.

Discussion

The results of the analysis confirm that effective tax control mechanisms play a crucial role in reducing the size of the shadow economy [10]. Countries with stronger tax administration systems, advanced digital monitoring tools, and efficient audit procedures tend to experience lower levels of informal economic activity. This finding is consistent with previous research indicating that institutional quality and effective tax enforcement significantly influence the scale of the shadow economy.

One of the key factors contributing to effective tax control is the digital transformation of tax administration. The implementation of electronic tax reporting systems and digital monitoring tools enables tax authorities to track financial transactions more efficiently and detect discrepancies in tax declarations. According to OECD reports, digital tax administration systems significantly improve tax compliance and reduce opportunities for tax evasion [11].

Another important aspect is the introduction of risk-based tax audit systems. Traditional tax audits often involve random inspections, which may not effectively target taxpayers with a higher risk of non-compliance. Risk-based audit systems, supported by advanced data analytics, allow tax authorities to focus on high-risk taxpayers and improve the efficiency of tax enforcement. This targeted approach increases the probability of detecting tax evasion and strengthens overall tax

compliance [12]. Furthermore, the use of big data analytics and artificial intelligence technologies is becoming increasingly important in modern tax control systems. These technologies allow tax authorities to analyze large volumes of financial data, identify hidden economic activities, and detect unusual patterns in taxpayer behavior. As a result, tax administrations can respond more quickly to potential tax violations and reduce the scope of informal economic activities [13]. However, the reduction of the shadow economy requires not only stronger tax control but also broader institutional reforms. High tax burdens, complex tax procedures, and low levels of trust in government institutions often encourage businesses and individuals to operate in the informal sector [14], [15]. Therefore, improving tax transparency, simplifying tax regulations, and strengthening public trust in tax systems are essential components of an effective strategy to combat the shadow economy. Overall, the discussion highlights that tax control mechanisms should be integrated with digital technologies and institutional reforms to achieve sustainable reductions in the shadow economy. Strengthening tax administration capacity, expanding digital tax monitoring systems, and improving compliance strategies can significantly enhance fiscal transparency and support long-term economic stability.

Conclusion

The findings of this study demonstrate that effective tax control mechanisms play a fundamental role in reducing the size of the shadow economy. Strengthening tax administration systems, implementing digital tax monitoring technologies, and introducing risk-based audit mechanisms significantly improve tax compliance and reduce opportunities for informal economic activities. The analysis shows that countries with advanced tax administration systems and strong institutional frameworks tend to have lower levels of shadow economic activity. Digitalization of tax administration, including electronic reporting systems and data analytics tools, has proven to be particularly effective in improving transparency and detecting tax evasion.

However, reducing the shadow economy requires not only stronger tax control but also broader institutional reforms. Simplifying tax regulations, improving taxpayer services, and increasing trust in government institutions are essential factors in encouraging voluntary tax compliance. Overall, the results of the study highlight that integrating modern digital technologies with effective tax control policies can significantly enhance the efficiency of tax administration and contribute to sustainable economic development. Strengthening tax control mechanisms will remain a key priority for governments seeking to reduce the shadow economy and ensure long-term fiscal stability.

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