SOUTH ASIAN JOURNAL OF SOCIAL SCIENCES & HUMANITIES

ISSN: 2582-7065 (Online) SAJSSH, VOL 7, ISSUE 3, PP. 95-124

The Underground Economy and Tax Evasion in Bangladesh: Consequences for Economic Growth

Hafsha Talukdar Eiti[1], Roksana Akhter[2], Dipti Bhowmik[3], Sabiha Binta Hasan Shanu[4] & Morim Akter Juthi[5]

[1,2,3,4,5]Department of Economics, Faculty of Social Science, Mawlana Bhashani Science and Technology University, Santosh, Tangail-1902, Dhaka, Bangladesh.

Correspondence Authors: Roksana Akhter and Hafsha Talukdar Eiti, **Emails:** roksanaakhter@mbstu.ac.bd; hafshatalukdareiti@gmail.com

Received: 23rd February 2026 **Accepted:** 28th April 2026 **Published:** 5th June 2026

ABSTRACT

The objective of the study was to determine the extent of "tax evasion" and the size of the "underground economy" in Bangladesh, which comprises criminal activities and other actions that endanger the economy and society at large. The study also assessed how the "underground economy" and "tax evasion" impact Bangladesh's economic growth. The "Multiple Indicator Multiple Cause (MIMIC)" model was utilised to approximate the extent of "underground economy" and tax avoidance in Bangladesh, using data from World Development Indicators (WDI), Macrotrends (MT), Tax Foundation (TF) and Bangladesh Bureau of Statistics (BBS) from 1990 to 2023. The analysis indicated that, on average, the underground economy in Bangladesh accounts for around 34% of the country's official GDP, and that tax evasion stemming from this sector accounts for 10.87% of GDP. Furthermore, the study also found that a negative relationship between the "underground economy", "tax evasion", and economic growth in Bangladesh. Therefore, the study recommended that the government ease certain business regulations that force private enterprises to go underground solely because of government involvement. It also suggested creating a favourable business environment by legalising activities that were previously considered underground. Additionally, the study proposed that efforts should be made to formalise individuals involved in the underground economy by ensuring proper documentation and registration, as this could provide job security for some people in the country. Furthermore, through thorough tax audits, the government should improve its mechanisms for identifying instances of tax evasion.

Keywords: MIMIC, Tax Revenue, Labour Participation Rate, Trade Openness, OLS, WDI.

DOI: 10.48165/sajssh.2026.7305

INTRODUCTION

The “underground economy”, a well-recognised concept in Macroeconomics, represents a portion of the economy that goes unreported in public accounting and is therefore not considered in decision- making. While governments find it uncomfortable to acknowledge this sector as it highlights their lack of awareness of their own economy, it exists in almost all countries, including Bangladesh. Despite this, there have been limited studies in Bangladesh that provide empirical evidence of its existence (Rahman & Rahman Khan, 2012).

The recognition of the “underground economy” dates to the early 1970s, with various terms used to describe it, such as informal, unofficial, irregular, unrecorded, hidden, and shadow economy (Rahman & Rahman Khan, 2012). Although there are slight differences among these terms, they all generally refer to the portion of an economy that escapes official notice. This includes numerous small-scale production facilities and service providers that utilize labor - intensive technology and may not be significant enough for the government to actively pursue. Consequently, if these entities remain undetected by the government voluntarily, the likelihood of discovery is slim.

Furthermore, the “underground economy’ also encompasses illegal activities like drug dealing, prostitution, stolen goods trading, and bribery. These activities cannot be revealed to the government. Additionally, some individuals deliberately keep certain activities hidden from the government to evade taxes. In fact, these tax-related activities constitute the largest portion of the underground economy. The “United Nations Economic and Social Council (2006)” defines the informal sector as consisting of various individuals conducting business on the streets, sidewalks, and back alleys of cities, such as petty traders, street vendors, porters, artisans, barbers, and shoeshine boys (Rahman & Rahman Khan, 2012).

The government's economic policies are crucial for achieving economic growth at both the micro and macro levels. However, it is important to recognise that these policies are only as effective as the data on which they are based. Unfortunately, many economic strategies are ineffective because they rely on unreliable data skewed by the underground economy. Inaccurate economic statistics stemming from unreported economic activities hinder the success of such policies. As a result, important factors such as spending, unemployment, workforce participation, and earnings may not be accurately reflected. Additionally, the expansion of the underground economy hampers the efficient allocation of resources across

DOI: 10.48165/sajssh.2026.7305

sectors, thereby impeding economic progress. According to Yesmin (2003), this can also increase the tax burden on formal economy workers, diminishing Public Tax Revenues and GDP growth.

Tax evasion is a major issue intricately linked to the workings of the informal economy. To reiterate, it refers to the unlawful techniques used by individuals or businesses to decrease their tax obligations to the government. Due to this connection, it is difficult to precisely define the "underground economy" without considering “tax evasion”, as the main purpose of these activities is to evade taxes that would be imposed if they were reported. Therefore, it is valid to consider the "underground economy" as synonymous with “tax evasion.” (Pyle, 1989).

Background of the Study

According to a study by the International Monetary Fund (2018), the “underground economy” in the United States has remained stable compared to other countries. The study analysed the unreported economic activities of 158 nations from 1991 to 2015. The average proportion of the underground economy in all countries was 31.9%. Zimbabwe (60.6%), Bolivia (62.3%), and Georgia (64.9%) had the largest shadow economies. Austria (8.9%), the United States (8.3%), and Switzerland (7.2%) had the smallest shadow economies.

The consequences of underground economies can range from negative to positive. In developing nations, where shadow economies are substantial, the absence of tax collection can hinder economic progress and public initiatives. Conversely, in other situations, individuals participating in underground economies who retain their earnings rather than paying taxes can boost economic activity and drive demand. This scenario particularly applies to countries where corrupt government officials would have misappropriated the tax revenues.

Bangladesh has been placed at 144 out of 174 countries in “Transparency International’s Corruption Perceptions Index for 2012,” according to the TIB report. Corruption is a major factor contributing to the emergence of a vast informal economy in Bangladesh. Furthermore, bribery, smuggling, under-invoicing, over-invoicing, reductions in contracts and commissions, monopolisation of tenders, corruption-related extortion, seeking rent, and defaults on loans are among the main problem areas. The availability of tax amnesty schemes also appeals to illegal economic activities. Around 80-90% of the workforce in South Asia is engaged in the informal economy, creating a major challenge for achieving lasting, reliable development. The nature of work in this sector is typically unregulated, unrecognised, and low-productivity. Based on the

DOI: 10.48165/sajssh.2026.7305

findings of the Labour Force Survey (LFS) 2016-17, it is revealed that out of the overall employed labour force in the country, a significant 85.1 per cent are engaged in informal sector work. Females demonstrate higher participation in informal activities, with 91.8% involved compared to 82.1% for males. This trend is consistent in both rural and urban regions.

By the way, the informal sector in Bangladesh is witnessing considerable innovation, which manifests in various ways. Metalworkers, for example, engage in reverse engineering to produce more affordable alternatives to products sold by formal businesses, utilising accessible materials. However, remarkable creativity is also evident in high-end manufacturing. The informal manufacturers exhibit innovation not only in developing new products but also in their marketing strategies, employing appealing packaging and distinctive branding.

LITERATURE REVIEW

Empirical Review

Numerous research studies have been conducted to assess the size of the “hidden economy” in Bangladesh.

Table 1: *Empirical proof indicates*

Author(s)	Objectives	Methodology	Finding/conclusions	Contributions/gap
(Reza, 1989)	The primary goal of this research was to evaluate the extent of the “underground economy” in Bangladesh in 1985.	This study was not conducted using a specific methodology	Based on the analysis, Bangladesh's "underground economy" accounts for approximately one-third of the country's official GDP.	This study's findings only cover one year. Therefore, we should not draw any definitive conclusions from it.
(Kabir Hassan & Suk -Yu,	The main purpose of this study was to	The study employed the “Currency	The CDA revealed that the underground economy has averaged	Kabir Hassan's research found that the size of the

DOI: 10.48165/sajssh.2026.7305

2010)	determine the extent of the illicit economy in Bangladesh.	Demand Approach (CDA)" and the "Multi-indicator and Multi-causes Approach (MIMIC)" model to reach its goals.	10.1% of GDP from 1975 to 2008. On the other hand, the dynamic (MIMIC) approach showed that the size of the "underground economy" in Bangladesh varied from 29% in 1996 to 46.6% in 2004.	"underground economy" in Bangladesh can range from 10% to 38%, depending on the methodology used.
(Sams Uddin Ahmed, 2018, n.d.)	The aim of this research is to discuss the causes, consequences and remedies of tax evasion in Bangladesh.	No specific methodology was used for this study.	This study found that the informal economy in Bangladesh is thriving, leading to increased tax avoidance.	This study lacks the ability to quantify tax evasion and determine its impact on economic growth in Bangladesh.
(Faruk Bhuiyan & Omar Faruk Bhuiyan, n.d.)	The study focuses on the use to determine the size of the "Shadow economy" of Bangladesh, which is a direct consequence of the indirect tax burden	The study used the Currency demand model in achieving its objectives.	The study found that the highest amount of shadow economy was in 1981 and lowest was in 1988. From 2000 to 2009 the "shadow economy" was stable but nowadays shows fluctuating trend. Additionally, the underground economy is driven by rising tax burdens and social	This study explains the "Shadow economy" has both positive and negative effect on the economy of Bangladesh. Domestic taxes, real interest rate, level of banking service, real per capita GDP are independent variables which show

DOI: 10.48165/sajssh.2026.7305

	prevailing over times in Bangladesh.		security obligations.	very much significant contributors to the shadow economy of Bangladesh.

Source: Author's explanation

Numerous studies conducted by (Schneider, 2005; Aigner et al., 2010), (Hassan & Schneider, 2016; Medina & Schneider, 2018) " have aimed to measure the extent of the underground economy in different countries. In these studies, data spanning 3 to 26 years were analysed, covering the years 1999 to 2015. The countries included in these studies varied in terms of their developmental status, with classifications ranging from "Asian Developing Countries", including Kuwait, to transition and OECD countries. The findings of these studies revealed that the UE in Kuwait ranged from 14.51% to 20.8% of official GDP across the studies.

In their study, Omodero, (2019) analyses the effects of the "underground economy" on Nigeria's economy. They employ two approaches, the transaction approach and the "MIMIC" approach, to determine the size of the "underground economy" in relation to GDP and the resulting loss of tax revenue for the government. The results show a correlation between increased tax revenue and economic growth, and a correlation between decreased tax revenue and a decline in GDP. Thus, the study concludes that underground economic activities have adverse effects on the government and impede Nigeria's economic advancement.

In a study conducted by Anwar et al., (2017) The researchers utilised the "Expenditure-Based method of Pissarides and Weber (1989)" to measure the underground economy in Pakistan. By analysing data spanning from 2011 to 2012, the study found that the "underground economy" accounted for approximately 14.148% of Pakistan's GDP in 2012.

Significance of the Study

The main contributions of the paper are:

DOI: 10.48165/sajssh.2026.7305

To the best of our knowledge, this is the first study in Bangladesh to examine the impact of the "underground economy" and "tax evasion" on declining economic growth.

This study uses updated and comprehensive available data (1990-2023).

Objectives of the Study

The following are the study's objectives:

1. To determine the size of the "underground economy" and the level of "tax evasion" in Bangladesh.
2. To examine how the "underground economy" impacts the economic growth of Bangladesh.
3. To identify the relationship between "tax evasion" and "economic growth" in Bangladesh.

METHODOLOGY

Data Sources

The study used secondary time series data because it is more accurate and credible. The annual data are taken from the "World Development Indicators (WDI), Macrotrends (MT) and Bangladesh Bureau of Statistics (BBS)" for the 34 years 1990 to 2023. Underground economy (% of GDP) and Tax evasion (% of GDP) are generated from the MIMIC Model.

Methods of Data Analysis

We have structured the methodology section of this study according to the constitution of (Wiafe et al., 2024) . First, the study ensures data stationarity. To prevent spurious regression and ensure accurate estimates, the study verified the stationary properties of the variables by applying the "Augmented Dickey- Fuller (ADF)" and "Phillips-Perron (PP)" tests at both levels and after differencing. Then, the study will use the "MIMIC" model to generate the average size of the underground economy and tax evasion. The next stage is to use the "Ordinary Least Squares (OLS)" method to look for the relationship between the variables. Finally, the study conducted diagnostic tests to assess the models' strengths and weaknesses.

MIMIC Model Estimation

DOI: 10.48165/sajssh.2026.7305

The study uses the “Multiple Indicators, Multiple Causes (MIMIC)” model approach, which was promoted by (Dell’Anno et al., 2007) to calculate the size of Bangladesh’s “underground economy”. The “MIMIC” method employs a “Simultaneous Equation Model (SEM)” and considers the "underground economy" to be a hidden variable that cannot be easily identified. This approach aims to verify the validity of economic theories by analysing actual data and the suggested connections between observed and unobserved variables.

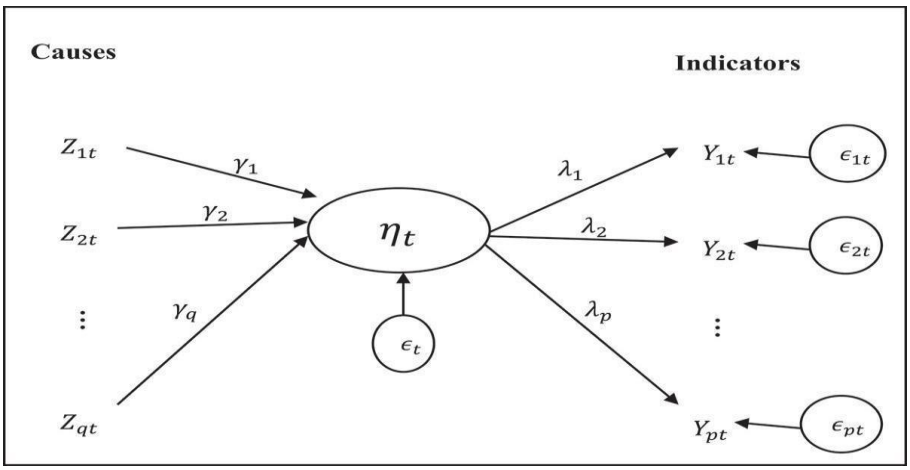


Figure 1: General structure of a “MIMIC” model.
Source: Schneider and Buehn

Buehn and Schneider express the MIMIC model in the above figure as follows:

Structural part: $\eta_t = \gamma' xt + \varsigma_t$ (1)

Where the vector $xt' = (x1t, x2t, \ldots, xqt)$ represents the time series variable *xit, i=1, ..., q.* $\gamma' = (\gamma 1, \gamma 2, \ldots, \gamma q)$, a (1×q) vector of coefficients in the structural model that explain the »causal« relationships between the latent variable (η_t) and its causes.

Measurement part: $y_t = \lambda \eta_t + \varepsilon_t$ (2)

Where the vector of individual time series variables yjt, j =1, …, p, is represented by $yt' = (y1t,$

$y2t, \ldots, ypt)$. A (p×1) vector of disturbances, $\varepsilon t = (\varepsilon 1t, \varepsilon 2t, \ldots, \varepsilon pt)$, has each εjt, $j = 1, \ldots, p$ representing a white noise term. In the (p×1) vector of regression coefficients λ, the single λj, j = 1, …, p, represents the magnitude of the anticipated modification. Solving for the reduced

DOI: 10.48165/sajssh.2026.7305

form of the equation first will allow us to solve the equation above. Therefore, the reduced form equation will be,

$y_t = \Pi x_t + z_t$ (3)

where $\Pi = \lambda\gamma'$ and $zt = \lambda\zeta t + \varepsilon t$. The reduced form equation can be estimated using the "Maximum Likelihood Estimator".

Empirical Models

Underground Economy

Asiedu and Stengos, (2014) suggest that various factors contribute to Bangladesh's underground economy, including tax burden (measured as the total tax revenue as a % of GDP), inflation, government spending, and unemployment. Indicator variables, such as labour participation, trade penetration ratios (or openness), and GDP growth, can help identify the existence of the "underground economy". The figure shown below illustrates the hypothesised connection between the unobservable latent variable and the observable causes and indicators.

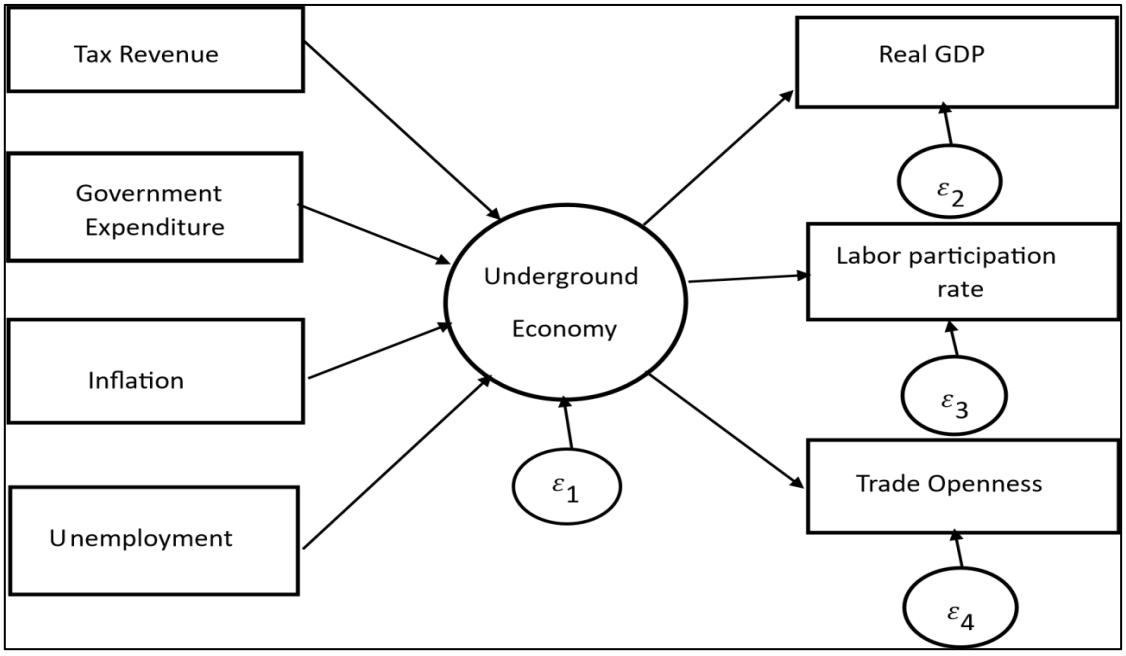


Figure 2: MIMIC (3.4.1) Model
Source: Author's Creation

The MIMIC model, which is depicted in Figure 2, has "four multiple causes" of the "underground economy" and 'three indicators" of this economy.

DOI: 10.48165/sajssh.2026.7305

The initial stage involves determining the MIMIC model index for underground economies by using the structural equation (1). This is done by multiplying the coefficients of the significant causal variables by their respective time series. In the specific example, the structural equation is shown as:

$$\tilde{\eta}_t = -.035 \times x_{1t} + .047 \times x_{2t} - .003 \times x_{3t} - .047 \times x_{4t} \quad (4)$$

Next, this index is recalculated to reflect the absolute values of underground economies, with a specific year serving as the baseline. The base values needed for the final stage of the calibration process are retrieved from Schneider (2006). Consequently, the magnitude of the underground economy $\hat{\eta}_t$ at a given time t can be expressed as:

$$\hat{\eta t} = 100 \times \bar{\eta t} / \bar{\eta} 2010 \times \eta^{*}2010 \quad (5)$$

Where,

$\eta^{*}2010$ = Exogenous estimates (base value) of the underground economies in 2010.

$\eta\, t$ = The value of the MIMIC index at t according to equation (4).

η 2010 = The value of this index in the base year 2010.

Tax Evasion

To estimate the amount of "tax evasion" in Bangladesh, the study followed the model suggested by Feige (1981).

This involved calculating tax evasion by multiplying the size of the "underground economy" by the Average Tax Rate (ATR). Data on the corporate income tax rate in Bangladesh are gathered from the Tax Foundation. The assumption made was that if income in the "underground economy" had not been hidden from tax authorities, it would have been subject to the standard tax rate. Mathematically, it is represented as:

Tax Evasion = Average Tax Rate × Underground Economy as a % of GDP (6)

Underground Economy and Economic Growth

The study applied the "Ordinary Least Squares (OLS)" method to identify the impact of "underground economy" on "economic growth", as indicated below.

DOI: 10.48165/sajssh.2026.7305

$$LnRealGDPt = \beta_0 + \beta_1 UEt + \beta_2 FDIt + \beta_3 INRt + \beta_4 UNEMt + \beta_5 IRt + \mu_t \quad (7)$$

Where,

UE = "underground economy" as a % of GDP

FDI = Foreign direct investment

INR = The inflation rate

UNEM = Unemployment rate

IR = The interest rate

Real Gross Domestic Product (GDP) served as an indicator of economic expansion, representing the dependent variable that can change in response to various factors. All variables except FDI are predicted to have a negative impact on "economic growth". It is unclear whether the "underground economy" will have a positive or negative effect on the formal economy, so we anticipate either a positive or a negative sign.

Tax Evasion and Economic Growth

The study applied the "Ordinary Least Squares (OLS)" method to identify the impact of "tax evasion" on economic growth, as indicated below.

$$LnRealGDPt = \beta_0 + \beta_1 TEGDPt + \beta_2 INRt + \beta_3 \text{GNS}t + \beta_4 IRt + \mu_t (8)$$

Where,

TEGDP = Percentage of tax evasion in the country

GNS = Gross national savings

IR = Interest rate

INR = Inflation rate

Economic growth is measured using Real GDP. It is anticipated that "tax evasion" will adversely impact "economic growth".

Justification of Variables

DOI: 10.48165/sajssh.2026.7305

Causal Variables

a) Taxes and Related Issues*:* According to a study by (Christopoulos, 2003), The underground economy is influenced by changes in tax rates. When taxes increase, taxpayers are more inclined to engage in the black market, and when taxes decrease, they are more likely to return to the formal economy. Therefore, it is anticipated that taxes will have a good effect on the "underground economy," while tax revenue will have a negative effect.

b) Government expenditure: The growth of the public sector frequently drives the underground economy. Due to the public sector's reputation for cumbersome, complex laws, many people choose to work in the shadow economy to avoid these administrative obligations. When the public sector grows and becomes more heavily regulated, it serves as an incentive for individuals to engage in the unorganised sector (Aigner, 1988). In this study, the presence of state activities is measured using real government consumption, and it is expected that the model's coefficient will be positive.

c) Inflation: Inflation's effects on the underground economy are frequently underestimated. According to research by (Crane & Nourzad, 1986), Inflation rates have a favourable impact on tax evasion and involvement in the underground economy. This is because when costs increase, people feel they must conceal a portion of their income to purchase the same package of goods and services. Thus, it is anticipated that inflation will have a favourable impact on the size of the underground economy.

d) Unemployment*:* The impact of the unemployment rate on the size of the underground economy is not clearly defined in the literature. While some suggest a positive correlation between formal-sector unemployment and participation in informal economic activities, others argue that the underground economy shrinks as unemployment rises, thereby reducing GDP growth. These conflicting views lead to the conclusion that (Tanzi 1999, n.d.) that no clear correlation exists between the unemployment rate and the underground economy, leaving the expected effect uncertain.

Indicators Variables

a) Real Gross Domestic Product: The relationship between real GDP and the underground

DOI: 10.48165/sajssh.2026.7305

economy is uncertain and unpredictable (Dell'anno & Schneider, n.d.). When the formal economy experiences a downturn, leading to job losses, individuals may turn to the underground economy for income, causing its growth as real GDP shrinks. However, the drop in GDP could also reduce demand for goods and services in the underground economy, ultimately offsetting the previous effect.

b) Openness: Trade penetration ratios, also known as openness, are used as a measure of the underground economy. When governance is weak, an increase in foreign trade or openness can create opportunities to manipulate import invoices or export prices to avoid tariffs or other trade hurdles. This ultimately leads to a larger underground economy. Thus, under weak governance, openness is considered a positive indicator of the underground economy. However, in the long run, trade liberalisation policies can have a detrimental impact on the hidden economy. Such policies remove entry barriers, promote competition, reduce corruption, and encourage firms to transition from the underground economy to the official economy. A detailed examination of this topic can be found in (Schneider F., 2000, n.d.) comprehensive survey.

c) Labour participation rate: By examining labour participation rates, we can identify the existence of the underground economy. Research such as (Tanzi 1999, n.d.) It has been revealed that during economic downturns, the formal economy experiences layoffs, leading individuals to seek work in the underground economy. Consequently, a drop in the official labour force participation rate may indicate a larger underground sector. In summary, the underground economy tends to hinder labour participation in the official sector.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2: *Results of Descriptive Statistics*

Variables	Mean	Std. Dev	Min	Max
Real GDP	144.0671	133.8715	30.96	460.2
Trade Openness	32.20088	8.101291	18.89	48.11

DOI: 10.48165/sajssh.2026.7305

Labor Force Participation	45.00706	4.195341	38.04	50.21
Government Expenditure	5.173529	.5523003	4	6.2
Tax Revenue	7.345588	.9031903	5.57	9.8
Inflation Rate	6.242059	2.231829	2.01	11.4
Interest Rate	5.861515	4.953249	-13.64	14.82
FDI	.5935294	.4943369	0	1.74
Unemployment	3.745588	. 9248069	2.2	5.21
GNS	31.63634	6.411992	21	41

Source: Author's Estimation.

Table 2: *Displays descriptive statistics for the significant variables utilised in the research.*

Stationary Test

Table 3: *Results of Augmented Dicky-Fuller and Phillips-Perron Test*

Variables	At levels			Difference			
	5% critical value	ADF test Statistic	PP test Statistic	5% critical value	ADF test Statistic	PP test Statistic	Remark
Real GDP	-2.978	1.402	1.234	-2.980	-4.266***	-4.244***	I(1)
Openness	-2.978	-1.859	-1.882	-2.980	-4.876***	-4.835***	I(1)
Labor force participation	-2.978	-0.676	-0.728	-2.980	-4.073***	-4.077***	I(1)
Government Consumption	-2.978	-1.841	-1.764	-2.980	-8.842***	-8.409***	I(1)

DOI: 10.48165/sajssh.2026.7305

Tax Revenue	-2.978	-1.246	-1.486	-2.980	-3.880***	-3.848***	I(1)
Unemployment	-2.978	-1.735	-1.601	-2.980	-6.228***	-6.895***	I(1)
Inflation	-2.978	-3.909	-3.853	-2.980	-7.004***	-8.332***	I(1)
Interest Rate	-2.980	-4.022***	-3.974***	-2.983	-8.381***	-10.044***	I(0)
FDI	-2.978	-1.857	-1.791	-2.980	-6.605***	-6.678***	I(1)
GNS	-2.980	-3.702	-1.822	-2.983	-4.933***	-6.678***	I(!)

Note: Significant levels at 1%, 5% and 10% are indicated by***, ** and * respectively.
Source: Author's Estimation.

The stationary test results with the lead variables at their initial level are shown in Table 3. The findings show that the variable Interest Rate is integrated of order zero, I(0), and the variables Real GDP, Openness, Labour Force Participation, Government Consumption, Tax Revenue, Unemployment, Inflation, FDI and GNS are integrated of order one, I(1).

Mimic Model Estimates

The study examined the structural and measurement equations to estimate the extent of the "underground economy". As shown in Figure 3, four causal factors and three indicator variables were used to predict a nation's underground economy. The Maximum Likelihood Estimator (MLE) findings are seen in Table 4.

Table 4: *Estimates from the MIMIC model*

		Estimate	S.E.	z	P
Structural Underground	Tax Revenue	-.0350644	.018683	-1.88	0.061*
	Government Expenditure	.0475984	.0260848	1.82	0.068*
	Inflation	-.0031806	.0023131	-1.38	0.169
	Unemployment	-.0047044	.0131028	-0.36	0.720

DOI: 10.48165/sajssh.2026.7305

Measurement						
Real GDP	<-	underground	1.000			
Openness	<-	underground	-97.78369	48.60138	-2.01	0.044**
Labor Force Participation	<-	underground	-3.970235	4.492072	-0.88	0.005***

Chi-square = 25.923 probability = 0.92 GFI = 0.930 RMSEA = 0.000 CFI = 1.000
Note: Significant levels at 1%, 5% and 10% are indicated by***, ** and * respectively.
Source: Author's Estimation.

From Table 4, the Chi-square value is 25.923 with a p-value of 0.92. This indicates that the proposed model fits the data well, as the p-value is greater than the alpha level of 0.05. Additionally, the CFI value of 1.000, the GFI value of 0.930 and the RMSEA value of 0.000 further support this conclusion. These values meet the recommended cutoffs of 0.9 specified by (Hu & Bentler, 1999; Kenny et al., 2015).

Table 4 shows that tax revenue has the expected negative impact on the underground economy. When tax revenue increases, it means that tax evasion decreases. In simple terms, the decline in tax evasion has a detrimental effect on the underground economy. This finding aligns with the (Srinivasan, n.d. 1973) and (Yitzhaki+, 1974) A model suggesting that an increase in taxes will increase the number of individuals involved in the informal economy.

Based on the findings shown in Table 4, it is apparent that the final government consumption, which served as a measure for the public sector's magnitude, displayed the anticipated positive correlation with the "underground economy". The findings indicate a 47.5 per cent increase in the "underground economy" during public-sector growth. This result aligns with the research conducted by (Aigner et al. 1986) which suggested that a larger public sector and increased economic regulation encourage individuals to participate in the "underground economy." (Giles, 2002) Also observed that excessive regulation has a positive impact on the hidden economy.

Once again, Table 4 shows a negative relationship between the size of unemployment and the underground economy. Although this finding is not statistically significant, it aligns with the "(Giles, 2002) " model, which suggests that the unemployment rate negatively impacts the

DOI: 10.48165/sajssh.2026.7305

underground economy. Additionally, the coefficient on inflation attains its positive expected sign with the extent of the underground economy. According to Friedrich and Enste, (2000), trade openness in the long run negatively affects the range of the underground economy. The study's findings align completely with this concept.

According to a recent study, the presence of the "underground economy" in Bangladesh is strongly influenced by participation in the formal labour market. The study suggests that an increase in formal economy employment leads to a decrease in the size of the underground economy. These findings align with similar research by "(Nchor & Adamec, 2016), (Nchor et al., 2015), (Schneider & Buehn, 2016) and support the hypothesis made by "Martino et al. (1980)" which stated that a thriving underground economy is linked to reduced participation in the formal labour market.

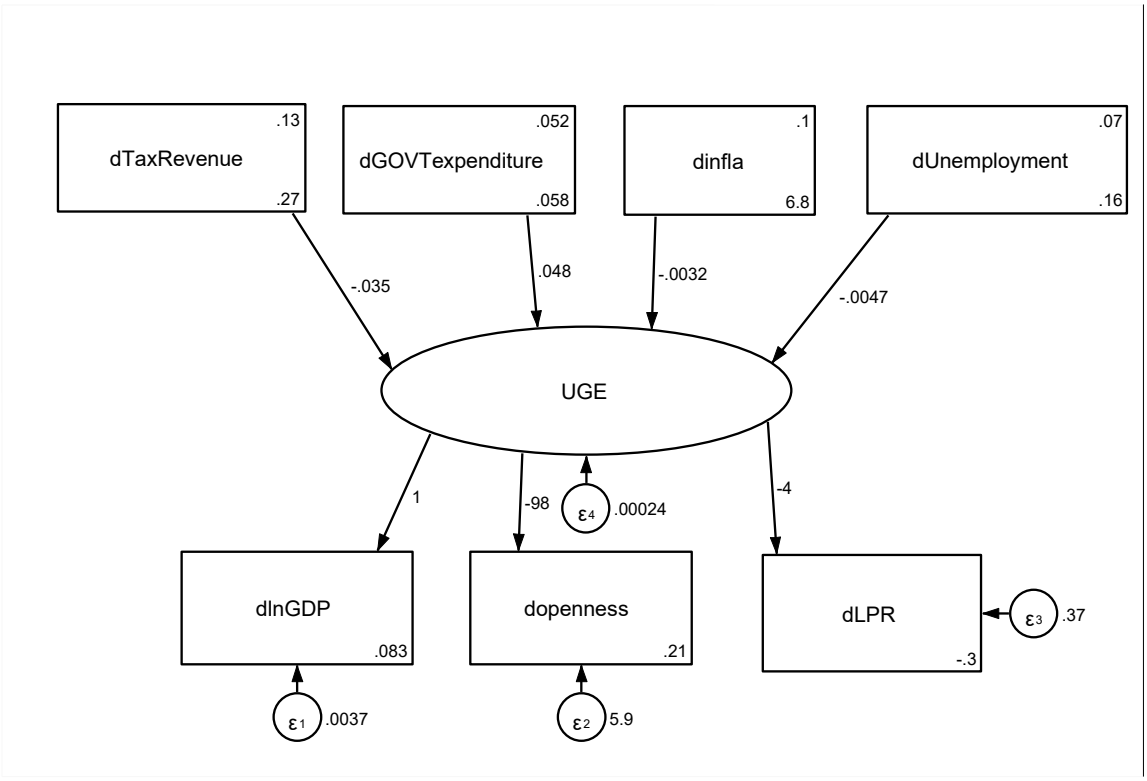


Figure 3: MIMIC (3.4.1) Model Estimate
Source: Author's computation.

Figure 3 of the study shows the graphical explanation of the MIMIC model estimation.

Diagnostic Tests for the MIMIC Model

In this study, we used the Goodness-of-Fit Index (GFI), the Comparative Fit Index (CFI), and

DOI: 10.48165/sajssh.2026.7305

the Root Mean Squared Error of Approximation to assess how well the proposed model fits the data.

Table 5: *Results of numerous diagnostic tests*

Fit statistics	P-value	Description
Likelihood ratio P > chi2	0.930	Goodness of fit
Baseline comparison CFI	1.000	Comparative fit index
Population error RMSEA 90% CI, lower bound Upper bound	0.000 0.000 0.060 Probability MSEA = 0.05	Root mean squared error of approximation

Source: Author's Estimation

In our study, the GFI probability value is greater than 0.05, indicating that the test results are statistically insignificant at the 5% level. Similarly, the CFI value is 1.000, and the RMSEA value is 0.000, indicating an exact fit of the data.

Estimation of the Underground Economy

The study used an exogenous value of 37 per cent as the base year, sourced from the World Bank, to estimate the size of the "underground economy" as a percentage of GDP. Table 6 represents the summary statistics of the Bangladesh underground economy.

Table 6: *Descriptive statistics of the underground economy % of GDP*

Parameters	Estimates

DOI: 10.48165/sajssh.2026.7305

Mean	34.13912
Median	34.67
Standard deviation	2.273267
Kurtosis	1.859302
Skewness	-o.4855661
Range	6.9
Minimum	30.1
Maximum	37.4

Source: Author's computation.

Table 6 shows that the underground economy accounts for around 34% of Bangladesh's official GDP on average, with a standard deviation of 2.3%. Figure 4 presents the trends in Bangladesh's underground economy throughout the years.

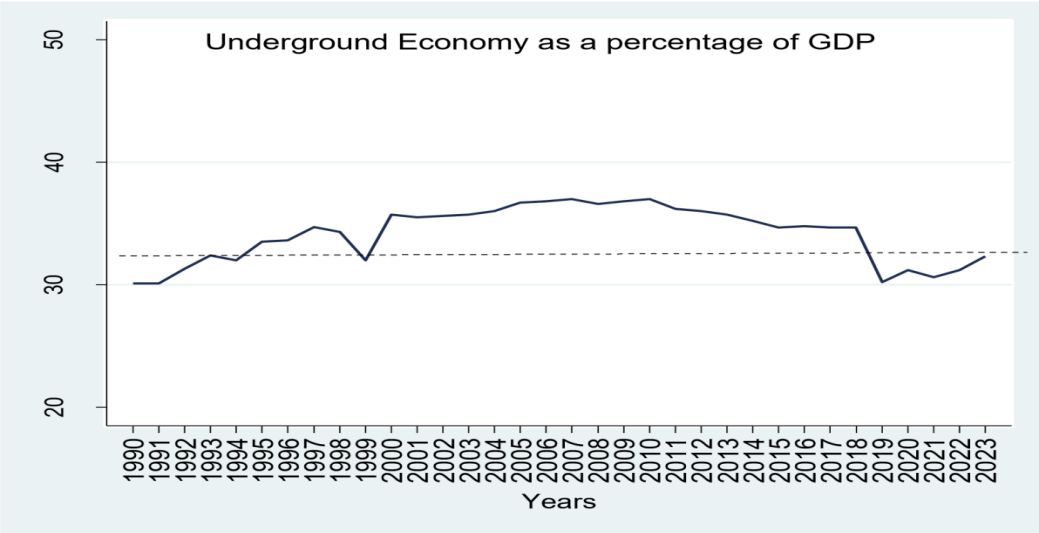


Figure 4*: Trend in the size of the underground economy in Bangladesh, 1990-2023.*
Source: Author's computation

According to Figure 4, the underground economy in Bangladesh has fluctuated over the years rather than remaining constant. The highest levels were seen in 2007 and 2010, with the lowest recorded in 2019.

DOI: 10.48165/sajssh.2026.7305

Estimation of Tax Evasion

The study continued to investigate the extent of "tax evasion" or revenue decline caused by the existence of the "underground economy". Table 7 presents the summary statistics of tax evasion in Bangladesh.

Table 7: *Tax evasion as a percentage of GDP*

Parameter	Estimates
Mean	10.87441
Median	10.8
Standard Deviation	1.747861
Kurtosis	2.030122
Skewness	.0060463
Minimum	7.55
Maximum	13.88
Range	6.2

Source: Author's computation.

According to Table 7, in Bangladesh, the "underground economy" contributes to an average annual tax evasion value of 10.87 % of GDP, with a standard deviation of 1.74 percent. The trend in the value of tax evasion because of the underground economy is presented in Figure 5.

DOI: 10.48165/sajssh.2026.7305

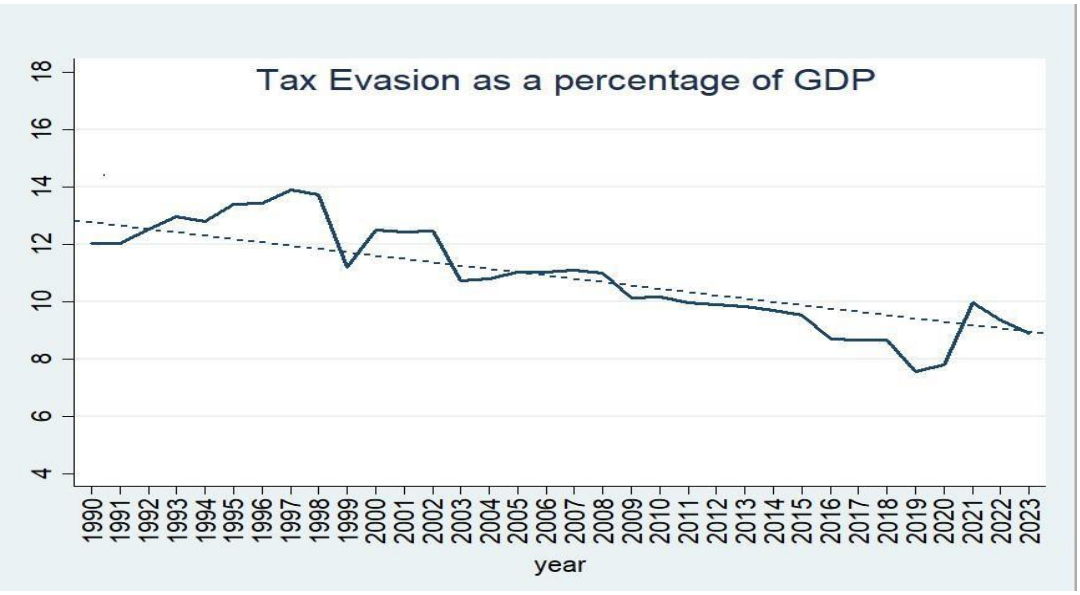


Figure 5: Trend in the value of tax evasion in Bangladesh, (1990 –2023)
Source: Authors Estimation

Figure 5 of the study shows that tax evasion in Bangladesh fluctuated over time. In 2019, tax evasion stood at its lowest point, accounting for only 7.55 of GDP. Subsequently, there was the highest tax evasion in 1997 that was 13.88%. The rise in the rate of tax evasion compared to GDP since 2020 can be attributed primarily to the country's swift economic expansion during that period.

Effect of the Underground Economy on the Growth of The Official Economy

The purpose of the study was to investigate how Bangladesh's underground economy impacts the growth of the official economy. The "Ordinary Least Square (OLS)" method was utilized to analyze the data, and the findings can be found in Table 8.

The model seems to have a high level of statistical significance, with an explanatory power of 67.90%. This means that 67.90% of the variations in economic growth can be explained by the chosen independent variables in the model. The study shows that, foreign direct investment positively affects economic growth in Bangladesh. At the same time, inflation, unemployment rate and interest rate in Bangladesh has a negative effect and significant on economic growth.

Table 8: *Effect of underground economy on economic growth*

Real GDP	Coef.	Std.Err.	T	P > t	[95%conf.	Interval]

DOI: 10.48165/sajssh.2026.7305

Underground economy	-3.84313	1.13053	-3.40	0.002***	-6.166975	-1.51928
Unemployment	-5.45499	2.95885	-1.84	0.077*	-.6270252	11.53702
Foreign direct investment	7.83275	6.48606	1.21	0.238	-5.49955	21.16506
Inflation	-.092969	1.00335	-0.09	0.927	-2.155354	1.969415
Interest rate	-2.08320	.436760	-4.77	0.000***	-2.980976	-1.18542
-cons	32.454	40.9800	3.23	0.003***	48.21019	216.6906

N	=	32	R – squared	=	0.6790
F (5, 26)	=	11.00	Adj R - squared	=	0.6172
P-value	=	0.0000***	Root MSE	=	11.1

Note: Significant levels at 1%, 5% and 10% are indicated by ***, **, and *, respectively.
Source: Author's Estimation.

The data in Table 8 shows that the "underground economy" has a negative impact on the official economy's expansion. In other words, when all other things remain constant, a rise (or fall) in the underground economy by one unit is linked to a decrease (or increase) of 3.84 units in economic growth. This discovery is considered statistically meaningful, with a t-value of -3.40 and a p-value of 0.002.

This research has validated that the underground economy in Bangladesh hinders economic growth. This is because labour market participation rates and working hours are decreasing. As more individuals shift to the informal sector, participation rates in the official economy may decline. The expansion of the underground economy results in a decrease in production inputs, especially labour, as they are diverted away from the formal economy. This shift could slow the official economic growth rate. Moreover, the underground economy is influenced by factors such as tax obligations, access to banking services, and GDP per capita. Various methods of income concealment and tax avoidance have been uncovered, including hiding real income to evade taxes and having government employees transfer their illegal earnings through money laundering to tax havens or the accounts of acquaintances. In the corporate sector, reporting lower profits or losses is a common tactic to hide actual income or evade taxes,

DOI: 10.48165/sajssh.2026.7305

ultimately having a detrimental impact on economic growth.

Table 9: *Results of numerous diagnostic tests*

Name of the tests	p-value
Normality	0.3662
Serial Correlation	0.1392
Heteroscedasticity	0.3287

Source: Author's computation

In our study, the p-values for the numerous diagnostic tests are greater than 0.05, suggesting that the test results are statistically insignificant at the 5% level. That means Table 9. Shows that our model is free of autocorrelation and heteroscedasticity, and that the model residuals follow a normal distribution.

Effect of Tax Evasion on Economic Growth

To examine the impact of tax evasion on economic growth, we utilised the "Ordinary Least Squares (OLS)" method. The results obtained from the regression analysis are presented in Table 10.

Table 10: *Effect of tax evasion on economic growth*

Real GDP	Coef	Std. Err	T	P > t	[95%Conf	Interval]
Tax Evasion	-.0917290	.0556070	-1.65	0.011**	-.0205825	.0022367
Gross National Savings	.0156337	.0069928	2.24	0.034**	-.0299817	-.001285
Inflation	-.0016703	.0036395	-0.46	0.650	-.009138	.0057975
Interest Rate	-.0060078	.001617	-3.72	0.001***	-.0093256	-.002689
_Cons	-.1878474	.0607159	-3.09	0.005***	.0632686	.3124263

DOI: 10.48165/sajssh.2026.7305

N	= 32	R-squared	= 0.7642
F (4, 27)	= 5.85	Adj R-squared	= 0.6845
Prob > F	= 0.0016***	Root MSE	= 0 .054156

Note: Significant levels at 1%, 5% and 10% are indicated by ***, **, and *, respectively.
Source: Author's Estimation.

The model appears significant (5.85, 0.0016) with an explanatory power of 76.42%. From Table 10, the coefficient of inflation was not significant, although it had the expected sign. However, Gross National Savings is found to have a significant and positive impact on Bangladesh's economic growth; on the other hand, the interest rate is found to have a significant and negative impact on Bangladesh's economic growth.

Tax evasion has an inverse impact on economic growth, as evident from Table 10. The data shows that "all other things remaining constant," an increase in tax evasion by one unit leads to a decrease in economic expansion by 9.17 per cent. Conversely, a 1 percentage point decrease in tax evasion is expected to increase economic growth by the same amount. When firms evade taxes, they may gain a cost advantage over legally operating businesses, resulting in market distortions and the displacement of legal entities (*OECD Annual Report 2004.*, 2004). This, in turn, discourages legitimate businesses from investing and expanding, ultimately damaging economic growth.

Additionally, tax evasion is detrimental to economic growth as it can diminish a government's ability to collect potential revenue and limit spending. Another perspective presented by (Mironov, 2010) suggests that tax evasion hampers economic growth by reducing productivity among evaders who are unable to access capital markets.

Table 11: *Results of numerous diagnostic tests*

Name of the tests	P-value
Normality	0.1132
Serial Correlation	0.0772

DOI: 10.48165/sajssh.2026.7305

Heteroscedasticity	0.7562

Source: Author's Computation.

In our study, the p-values for the numerous diagnostic tests are greater than 0.05, suggesting that the test results are statistically insignificant at the 5% level. That means Table 11. Shows that our model is free of autocorrelation and heteroscedasticity, and that the model residuals follow a normal distribution.

LIMITATIONS AND RESEARCH GAPS

The primary limitation of this study is its reliance on the MIMIC model, which produces indirect estimates that can vary significantly depending on the chosen causal indicators. Because the study utilises secondary data spanning three decades, it may be susceptible to data fragmentation or inconsistencies in historical reporting from local sources such as the BBS. Furthermore, the abstract suggests a potential definitional gap; by grouping "criminal activities" with general "tax evasion," the research might overlook the nuances of the survivalist informal sector, such as small-scale agriculture or street vending, which operate outside the law but lack criminal intent. Lastly, the study identifies a negative correlation with growth but lacks a detailed sectoral analysis, leaving it unclear which specific industries contribute most to the underground drain.

FUTURE SCOPE AND RESEARCH PLAN

Future iterations of this research could significantly enhance accuracy and actionability through the following plan:

Primary Data Integration: Conduct field surveys and interviews with small business owners to capture the "human element" and specific motivations for remaining unregistered, moving beyond purely econometric modelling.

Comparative Regional Analysis: Expand the scope to compare Bangladesh's underground economy with peer nations in South Asia (like Vietnam or India) to determine if the 34% GDP threshold is a regional trend or a localised issue.

Impact of Digitalisation: Investigate how the rise of mobile financial services (MFS) and digital tax filing systems in Bangladesh since 2010 has influenced tax compliance and the

DOI: 10.48165/sajssh.2026.7305

visibility of previously "hidden" transactions.

CONCLUSIONS AND POLICY RECOMMENDATIONS

Conclusions

The uniqueness of this study lies in its use of structural equation modelling to estimate the size of the “underground economy” in Bangladesh. According to our findings, the underground economy in Bangladesh accounted for approximately 34% of the total economy during the years 1990-2023. Like other developing nations, the expansion of the underground economy in Bangladesh should be a cause for concern as it signifies corruption within the public administration. Additionally, the inverse impact of the informal economy on Bangladesh's economic progress implies that if it were to increase, the actual GDP per capita would be lower. Furthermore, it leads to significant fiscal losses and inefficiencies within the government. However, it is important to acknowledge that while the informal economy negatively impacts government revenue through increased tax avoidance, it also plays a significant role in Bangladesh's economic growth by providing employment and income opportunities in both the formal and informal sectors. So, the informal economy must be consolidated into the formal economy through legal means.

Policy Recommendations

The study's findings and conclusions led to several policy recommendations. Firstly, to effectively tackle tax evasion and the expansion of the informal economy, the government, along with tax agencies like the “Bangladesh Revenue Authority”, should introduce policies that lessen the tax and regulatory load on the nation. By lessening these burdens, the government can incentivise more people to engage in the legitimate economy, leading to higher revenue generation and enhanced economic development. Furthermore, there is a need to relax some business regulations that compel private enterprises to operate informally and evade tax declarations.

Secondly, the research indicates that to achieve economic growth, the government should implement a fair, transparent, and straightforward tax system while also fostering innovation and entrepreneurial activity. This strategy is anticipated to reduce taxes, enhance tax compliance, and ultimately tackle tax avoidance. In general, a robust tax system is essential for economic progress, and measures that boost both tax compliance and economic development

DOI: 10.48165/sajssh.2026.7305

should be given priority.

Lastly, the research suggests that to promote long-term economic growth, the underground economy should be legitimised through appropriate documentation rather than being completely transitioned into the formal sector. The government can introduce creative strategies and policies to legalise the economic activities of the informal sector, such as implementing insurance or pension programs for local artisans. To join these programs, artisans would need to provide proper documentation of their businesses, including business registrations and tax filings. Furthermore, it is important to ensure a fair balance between the prospects of legitimising illicit funds and the imposition of significant penalties for unlawful actions.

DOI: 10.48165/sajssh.2026.7305

REFERENCES

Anwar, S., Akbar, R., Waqas Akbar, M., & Azhar, A. (2017). Measuring the Size of Under Ground Economy in Pakistan: A Microeconomic Approach. *J. Appl. Environ. Biol. Sci*, *7*(8), 84–93. www.textroad.com

Ahamed, S. U. (2016). Tax Culture: The Bangladesh perspective. *Journal of Bangladesh Studies*, *18*(2), pp. 56-63.

Christopoulos, D. K. (2003). Does underground economy respond symmetrically to tax changes? Evidence from Greece. In *Economic Modelling, 20*.

Omodero, C. O. (2019). The Financial and Economic Implications of Underground Economy: The Nigerian Perspective. *Academic Journal of Interdisciplinary Studies*, *8*(2), 155–167. https://doi.org/10.2478/ajis-2019-0027

Tanzi, V. (1999). Uses and abuses of estimates of the underground economy. *The Economic Journal*, *109*(456), F338–F347. https://doi.org/10.1111/1468-0297.00437

Schneider, F. (2005). Shadow economies around the world: What do we really know? *European Journal of Political Economy*, *21*(3), 598–642. https://doi.org/10.1016/j.ejpoleco.2004.10.002

Srinivasan, T. N. (1973). Tax evasion: A model. *Journal of Public Economics*, *2*(4), 339–346. https://doi.org/10.1016/0047-2727(73)90024-8

Reza, S. (1989). THE BLACK ECONOMY IN BANGLADESH: SOME PRELIMINARY OBSERVATIONS / L'ÉCONOMIE SOUTERRAINE AU BANGLADESH: QUELQUES REMARQUES D'INTRODUCTION THE BLACK ECONOMY IN BANGLADESH: SOME PRELIMINARY OBSERVATIONS. In *Source: Savings and Development* (Vol. 13, Issue 1).

Yitzhaki+, S. (1974). A note on INCOME TAX EVASION: A THEORETICAL ANALYSIS*. In *Journal of Public Economics* (Vol. 3). North-Holland Publishing Company.

Giles, D. E. A. (2002). Taxes and the Canadian underground economy. *Toronto: Canadian Tax Foundation*.

Asiedu, E., & Stengos, T. (2014). An Empirical Estimation of the Underground Economy in Ghana. *Economics Research International*, *2014*, 1–14. https://doi.org/10.1155/2014/891237

Rahman, A. F. M. A., & Rahman Khan, A. (2012). *Measuring Underground Economy of Bangladesh: Transaction Approach*.

Yesmin. b., & R. H. (2003). Measuring the Underground Economy and its impact on the Economy of Pkistan. *The Lahore Journal of Economics*, *9*(2), 93–103.

Nchor, D., & Adamec, V. (2016). Investigating the Stability of Money Demand in Ghana. *Procedia - Social and Behavioral Sciences*, *220*, 288–293. https://doi.org/10.1016/j.sbspro.2016.05.501

DOI: 10.48165/sajssh.2026.7305

Schneider F., & Enste. D. (2000). Shadow Economies: Size, Causes, and Consequences. *Journal of Economic Literature*, *38*(1), 77–114. https://doi.org/ 10.1257/jel.38.1.77

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Dell'Anno, R., Gómez-Antonio, M., & Pardo, A. (2007). The shadow economy in three Mediterranean countries: France, Spain and Greece. A MIMIC approach. *Empirical Economics*, *33*(1), 51–84. https://doi.org/10.1007/s00181-006-0084-3

Nchor, D., Adamec, V., & Kolman, P. (2015). Comparison of Shadow Economies: The Case of Ghana, Nigeria and UK. *Mediterranean Journal of Social Sciences*. https://doi.org/10.5901/mjss.2016.v7n1p248

Wiafe, P. A., Armah, M., Ahiakpor, F., & Tuffour, K. A. (2024). The underground economy and tax evasion in Ghana: Implications for economic growth. *Cogent Economics and Finance*, *12*(1). https://doi.org/10.1080/23322039.2023.2292918

Report:

Pyle D. J. (1989). *TAX EVASION AND THE BLACK ECONOMY*.

Mironov, M. (2010). *Tax Evasion and Growth: Evidence from Russia*. http://ssrn.com/abstract=1571616http://www.mironov.FM

Dell'anno, R., & Schneider, D. H. C. F. (n.d.). *The Shadow Economy of Italy and other OECD Countries: What do we know?*

Hassan, M., & Schneider, F. (2016). *Size and Development of the Shadow Economies of 157 Countries Worldwide: Updated and New Measures from 1999 to 2013*.

Schneider, F., & Buehn, A. (2016). *Estimating the Size of the Shadow Economy: Methods, Problems and Open Questions*.

Crane, S. E., & Nourzad, F. (1986). *Inflation and Tax Evasion: An Empirical Analysis* (Vol. 68, Issue 2). https://www.jstor.org/stable/1925500

Faruk Bhuiyan, M., & Omar Faruk Bhuiyan, M. (n.d.). *Estimating the size of the Shadow Economy: A Case Study on Bangladesh Estimating the size of the Shadow Economy: A Case Study on Bangladesh Author's Details*. https://www.researchgate.net/publication/371910995

Kabir Hassan, M., & Suk -Yu, J. (2010). *A Re-examination of the U.S. Underground Economy: Size, Estimation, and Policy Implications*. http://ssrn.com/abstract=1705303https://ssrn.com/abstract=1705303Electroniccopyavailablea t:http://ssrn.com/abstract=1705303

Medina, L., & Schneider, F. (2018). *Shadow Economies Around the World: What Did We Learn Over the Last 20 Years? WP/18/17, January 2018*. http://www.econ.jku.at/schneider/.

Aigner, D. J., S. F., & G. D. (1988). *Me and my shadow: estimating the size of the U.S. hidden*

DOI: 10.48165/sajssh.2026.7305

economy from time series data.in W. A. Barnett, E. R. Berndt, & H. White (Eds.). http://ageconsearch.umn.edu

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The Performance of RMSEA in Models with Small Degrees of Freedom. *Sociological Methods and Research*, *44*(3), 486–507. https://doi.org/10.1177/0049124114543236

Books:

OECD Annual Report 2004. (2004). OECD Pub.

Book chapter:

Aigner, D. J., Schneider, F., & Ghosh, D. (2010). Me and my shadow: estimating the size of the U.S. hidden economy from time series data. In *Dynamic Econometric Modeling* (pp. 297–334). Cambridge University Press. https://doi.org/10.1017/cbo9780511664342.015

DOI: 10.48165/sajssh.2026.7305