The Impact of the Islamic System on Economic and Social Factors: A Macroeconomic Uncertainty Context

Mohamed Sadok Gassouma [1] and Adel Benhamed [2,*]

1   Higher Institute of Theology of Tunis, Department of Islamic Law, Economics and Finance,
    Ez-Zitouna University, Tunis 1008, Tunisia; gasadok@yahoo.fr
2   Business School, King Faisal University, Al-Ahsa 31982, Saudi Arabia
*   Correspondence: abenhamed@kfu.edu.sa

Abstract: This paper examines the effects of Islamic economic and social systems within a democratic environment on the causal relationships among uncertainty, informal economy, corruption, and economic growth. For this purpose, we considered a set of Middle East/North Africa MENA countries considered to be in economic difficulty and undergoing the democratic transition process (Tunisia, Algeria, Egypt, Libya, Yemen, and Iraq) for the period of 2000–2018. Our contribution is to use the social index that measures the degree of Islamicity in each country in terms of economic and political matters. We examine the effects of Islamicity and democracy on uncertainty, informal economy, corruption, and economic growth using a vector autoregression (VAR) model. Our empirical findings show that, if a theoretical Islamic system is applied in practice, it must be accompanied by a democratic regime to effectively mitigate uncertainty, informal economy, and corruption and contribute to economic growth. Democracy is a necessary component for achieving an optimal level of Islamicity.

Keywords: uncertainty index; democracy; economic growth; Islamic indices; corruption

1. Introduction

Islam is not only a practice of worship or religion, but also a set of principles guiding the interactions and relationships between individuals and households in Muslim and non-Muslim countries. Islam is a religion characterised by totalitarianism in all activity sectors and communities. Islam is based mainly on the Qur'an, a fundamental text issued by God (Allah) and transmitted by the Prophet Mohammed.

The total number of Qur'an verses is 6232, divided into 110 verses for Islamic practices of worship and 6122 verses concerning Islamic dealings. As demonstrated by Abou Zahra (2008), Islam assigns the highest importance to householders' behaviour and to all ethical values and principles, accounting for approximately 98%.

The theologian Muḥammad ʿAbduh (1988) was the founder of the Islamic modernist movement. His contribution addressed Western intellectual living in a Muslim country or not. He rejected the efforts of many contemporary religions and traditions, and he focused his attention on the reform of the rigid structure of Islam. He stated, 'I went to the West and saw Islam, I went back to the East and saw Muslims, but no Islam', from which we can deduce that Islam can equally be found in non-Muslim countries. Askari and Hossein (2015) synthesised Islam into four critical areas: economics, finance, and banking; governance; human and political rights; and international relations. These areas are based on ethical principles, such as labour ethics, transparency in transactions, interdictions of fictive activities (such as money speculation), interdictions of excessive risk taking, and interdictions of any kind of profit-making that is not commensurate to the associated time and risk. Other principles cited by the author are linked to humanity and concern participation, democracy, and equality between genders.

The degree of the performance of Islamic practices has been studied by Askari and Rehman (2010b), Mirakhor and Askari (2017), and Askari and Mirakhor (2010). These authors established a set of Islamic indices based on the theoretical principles of Islam and tested whether Islamic principles are applied in practice. These indices were measured from 2010 to 2021 by the Islamic Foundation. The statistics show that the most Islamic country is New Zealand, followed by Denmark and Ireland. The most Islamic Muslim country is Malaysia, ranking 37th globally, and the most Islamic Arab country is the United Arab Emirates, ranking 43rd.

In recent decades, Islamists have shown significant interest in becoming political, social, and economic actors. However, their approaches to economic growth do not necessarily reflect Islamic principles, as advocated in the Qur'an and Sunnah and described by authors such as Askari and Hossein (2015), Gassouma et al. (2022), and Saeed et al. (2021).

Askari and Hossein (2015) demonstrated that both Islamic and non-Islamic countries can engage in Islamic behaviours in terms of economic transactions and social regimes. According to his studies, Ireland and Iceland are the first Islamic countries, while the Kingdom of Saudi Arabia is the most Islamic Arab country.

Gassouma et al. (2022) showed that there is a strong overlap between conventional and Islamic banks. Moreover, conventional banking practices can sometimes align with Islamic financial principles. Saeed et al. (2021) found that the profit rate (Islamic interest rate) used in Islamic banks depends on the conventional interest rate. Similarly, Gassouma and Ghroubi (2021) pointed out that the differentiation between Islamic and conventional banks lies not in the nature of financial products but in their approach to the interest margin. The Islamic interest rate is based on the profit generated by goods financed by loans, while the conventional interest rate is based on loan profit, regardless of its allocation to goods or money speculation. Therefore, Islam is a set of guiding principles and behaviours that can be applied not only to financial institutions but to any sector.

In this respect, our contribution lies in examining the effects of an optimal Islamic system within the economic cycle and democratic phenomena. The optimal Islamic system is a theoretical framework that must be put into action; however, it differs strongly from the current practices. It takes into account Islamic principles, such as the prohibition of money speculation, social equality, market transparency, social justice, military protection, environmental protection, social welfare, gender equality, civilisation, and openness to different cultures and religions. In this connection, we refer to a set of indices established by the Islamic Foundation. These indices are applied to both Muslim and non-Muslim countries and are derived from the work of Askari and Mirakhor (2010).

In this study, we consider a sample of Arab Muslim countries affected by political crises: Tunisia, Egypt, Libya, Yemen, Syria, and, to some extent, Algeria. The reason for choosing this sample is that these countries have experienced economic difficulties for the past 10 years as part of the political transition from dictatorship to democracy. Consequently, through the study, we try to propose a new conception of the Islam concept in accordance with a democratic system.

The methodology consists of adopting a panel vector autoregressive model (P-VAR) with the main variables, including the corruption index, the uncertainty index, the share of the informal economy, the democracy index, and Askari's index of theoretical Islamicity. We interpret the model's results using the impulse function and conducting a Granger causality analysis.

2. Literature Review

2.1. Uncertainty and Economic Growth

Uncertainty can be a stimulator of business cycle fluctuations. Bloom (2009) and Bloom et al. (2018) argued that uncertainty increases by 50% on average during a US recession and that uncertainty shocks temporarily lead to a decline in output (GDP) and productivity. In addition, Caggiano et al. (2014) found that, during an economic recession,

uncertainty shocks lead to rapid declines in industrial production and employment, which in turn negatively affect the real economic activity.

In the same context, Jurado et al. (2015) and Rossi and Sekhposyan (2015) found that uncertainty shocks in economic policy measured by the GDP have a larger and more prolonged negative effect on industrial production and employment. The uncertainty index used by Rossi and Sekhposyan (2015) includes the cumulative density of the GDP residual terms. Therefore, the index has a greater ability to detect negative innovation than other measures of uncertainty.

Uncertainty can also affect the financial growth of sustainable economies. Ahsan et al. (2022) showed that a defensive commercial strategy can moderate the negative effects of an uncertainty policy on Chinese firms and consequently improve sustainable growth. Gu et al. (2021) examined the green economy in 30 provinces in China. The authors measured the impact of economic uncertainty on pollution, and the findings revealed an inverse U-shaped relationship between inclusive green growth and uncertainty. This negative effect was moderated by media attention.

So, the first hypothesis is:

H1. *Economic uncertainty contributes to negative economic shocks.*

2.2. Uncertainty, Corruption, and Economic Growth

Uncertainty can stimulate legal and ethical slippages, such as economic and political corruption. Bardhan (1997), Guriev (2004), and Kaufmann and Wei (2010) showed that corruption creates uncertainty for investors and increases investment risks in countries with high levels of corruption.

Legal inefficiency and political instability were discussed by Mauro (1997). His study showed that inefficiency leads to an increase in corruption, which reduces private investment and economic growth. Afzali et al. (2021) examined private and public firms in 93 countries throughout the world. They found that economic uncertainty leads private firms to manipulate taxes, while public firms choose bribery as their favourite tool of corruption.

Bloom (2009) studied the relationship between uncertainty and economic growth and observed that a high level of uncertainty in the transition phase of economic policy leads to a rapid slowdown in economic activity. Similarly, Baker et al. (2016) used the uncertainty index series to test its impact on economic activity. The authors concluded that uncertainty slows down economic recovery. Moreover, uncertainty affects the growth of low-income countries more than that of high-income ones, as described by Ugur (2014).

Tanzi and Davoodi (1997) examined the relationship between corruption and economic growth. The researchers identified four channels through which corruption affects economic growth: increased public spending, decreased health and education investment, and the deterioration of public infrastructure. Ugur (2014) found that, in low-income countries with inefficient bureaucratic conditions, the indirect effect of public finance corruption is likely to undermine economic development. Using the Dumitrescu–Hurlin panel causality test, Dokas et al. (2023) found a negative relationship between corruption and economic growth. However, this effect can be reduced by innovation, mainly in developed countries.

In this context, Gassouma (2019) found that, after the Arab revolution, which occurred in Tunisia in 2011, abnormal accounting accruals and manipulation increased significantly. This increase in corruption mainly occurred due to the absence of market discipline, the inefficiency of external audits, and the conflict interest between shareholders and managers.

In certain conditions, however, uncertainty may stimulate economic development. Colombo (2013) reported that, in developing countries, the presence of political uncertainty and economic corruption resulted in increased economic growth. The analysis found that, without uncertainty, corruption has a negative impact on the economy, investments, and human capital and consequently increases public expenditure.

So, we propose hypothesis 2:

H2. *Corruption and uncertainty contribute to a decline in economic growth.*

2.3. Corruption, the Informal Economy, and Economic Growth

The emergence of an informal economy is usually the result of corruption. Mishra and Ray (2010) showed that informality and corruption are complementary. For example, a corrupt environment allows informal firms to demand illegal protection from the authorities. These authorities become increasingly corrupt, which affects a high share of the informal sector. Choi and Thum (2005) showed that, at the beginning, informal entrepreneurs choose to engage in informal activities without resorting to corruption. However, to safeguard their initial investment and ensure the continuity of their activities, they are forced to pay bribes to bureaucrats and systematically feed corruption.

At the same time, the informal sector may have a beneficial effect on the economy. In this regard, Dell'Anno (2022) argued that the informal economy supports official GDP growth in the MENA region because the additional resources created are spent in the formal economy through consumption networks and reinvestments. Another beneficial effect of an informal economy was discussed by Eilat and Zinnes (2002), who showed that the informal economy has the potential to enhance economic growth by limiting outdated regulations, thus improving income distribution.

An informal economy can also create employability. Tokman (1992) considered informal employment to be a 'lifeline' for the poor population. Similarly, Marcouiller et al. (1997) showed that this sector reduced public expenditure by creating jobs and reducing poverty. Consequently, income from the informal sector plays a key role in poor households: many poor families have moved to middle- and even higher income levels through the informal economy.

Tokman (1992), Dell'Anno (2022), Eilat and Zinnes (2002), and Marcouiller et al. (1997) showed that the informal economy serves as a rescue tool and complements the real economy. In the absence of fair regulations, the informal economy can allow for the consolidation and development of investments by creating employment opportunities and reinvesting informal resources in the formal economy. This conclusion prompted us to examine the role of democracy and Islamic governance mechanisms in catalysing corruption through better regulation, thereby pushing the informal economy towards formality.

So, the hypothesis that will be tested is:

H3. *The informal economy can create an opportunity for economic growth in accordance withuncertainty.*

2.4. Democracy, Islamicity, Corruption, and Economic Growth

The effect of a democratic system on the economy can be studied in terms of many economic and social factors. Mohtadi and Roe (2003) found that democracy can only be improved under pressure from civil society actors. Democracy prevents corruption through laws and good institutional governance.

Democracy can also improve economic life through disciplinary laws, just as it can harm economic activity through the so-called 'corrupt democracy', which manages specific interests under the pretext of social values and Islamic principles. In this context, we present some research that discusses the interplay between religiosity, democracy, and corruption in the economy.

A recent study conducted by Ghosh et al. (2023) tested the effect of the democratic regime on economic growth and on a sustainable economy in BRICS countries. The results of this study showed that economic growth through using the renewable energy and democracy creates a cleaner environment.

On the other hand, the effect of democracy on inequality in the economy was studied by Wong (2021). He showed that democracy and electoral competition lead politicians to a lower redistribution of economic wealth and increase inequality.

Islamicity encompasses a set of religious, ethical, and cultural mechanisms based on Shari'ah principles from the Qur'an and Prophet Mohammed's texts. In theory, Islam is a

social value system that reduces corruption and any kind of manipulation through wealth and social equality. Islamic social life is governed by the following basic principles: the prohibition of speculation and arbitrage (Riba), the prohibition of manipulation (Ghech), the prohibition of uncertainty (Gharar), solidarity, democracy (Shura), social justice, and the fight against poverty through donations and fiscal and social taxes (Zeket).

The relationship between religiosity and corruption was studied by Afzali et al. (2021), who investigated religiosity and local trust in different societies across the world. The authors found that religiosity (including Islamicity) plays an important role in moderating and reducing corruption in both public and private firms in the presence of economic uncertainty.

In the sense, the Islamicity can take two way: religion and science practice. So, Bakhouche et al. (2023) have shown that Islamicity as far as religion have no effect on Islamic banking stability. The superiority of Islamic banking in terms of stability compared to a conventional one is due to the Maqasad Sharia practices (objectives) of Islam and not to Islam as a religion, because Islamic banks can be more stable in non-Muslim countries than in Muslim countries.

At the same time, Benhamed and Gassouma (2023) investigated the role of a sustainable system based on religion, specifically Islam, in economic stability. The study showed that the Islamic approach can mitigate corruption and achieve economic sustainability more than the traditional mechanism of sustainability. The Islamic labour index encapsulates the key factors in the Islamic system: the development of humanity, women's presence in the workforce, democracy, job satisfaction, and freedom of work and expression contribute to stabilising the economy.

Heggedal et al. (2022) examined the impact of democracy on corruption in the context of religiosity. The authors studied political corruption in a religious system and measured political efficiency by evaluating politicians' levels of corruption during uncertain periods, such as elections. The impact of politicians' wages on corruption during electoral periods and in the presence of uncertainty was also examined. The findings showed that corruption increases with politicians' wages; in other words, high wages lead politicians to deviate from ethics. In contrast, in the context of religiosity, the effect of wages on corruption is negative. Therefore, religiosity reduces politicians' corruption despite their high wages.

The final hypothesis is:

H4. *Religiosity, and Islamicity as an example, can mitigate corruption and improve economic growth.*

3. Methodology

We applied the vector autoregression (VAR) model to the uncertainty index, which comprises the following main variables: democracy, informal economy, corruption, and economic growth. The utility of the VAR model is to deduce the impulse function to illustrate the effects of Islamicity and democracy on macroeconomic and social factors.

For our study, we chose the VAR model to investigate the relationships among the included variables. The panel VAR model was developed by Sims (1980) and generalised to panel data by Holtz-Eakin et al. (1988). The model describes the theoretical process, as discussed above, commencing with uncertainty and extending to the informal economy. This may generate a deviation from the law, which leads to corruption. However, corruption can either damage the real formal economy or bolster investments, thereby stimulating the formal sector.

In addition, the VAR model has been used by many authors that tested the contagion effect, such as Caraiani et al. (2023), who tested the effect of the monetary policy on sustainable economy; Yemba et al. (2024) tested the monetary policy in China; and Dąbrowski et al. (2022), who tested the contagion of oil shocks in the economy.

Furthermore, the VAR model allowed us to detect the combined effect and transmission between all variables in the context of democracy and Islamicity in accordance with economic factors.

At the same time, the countries in our sample operate in an uncertain context characterised by a democratic transition process with the emergence of Islamicity. Democracy (DEMO) and Islamicity (ISL) have important effects on corruption (CORUP) (Afzali et al. 2021) and uncertainty (UNC) (Heggedal et al. 2022).

$$Z_{i,t} = \beta_0 + \beta_1 \sum_{j=1}^{p} \varnothing_j Z_{i,t} + \varepsilon_{i,t}$$

$$Z = \begin{bmatrix} ISL \\ DEMO \\ UNC \\ INFOMAL \\ CORUP \\ TCGBP \end{bmatrix}$$

$$\varnothing_j : lags \ from \ j = 1 \ to \ j = n$$

3.1. Data Description

Our sample was a group of Islamic countries in the MENA region that experienced a revolutionary crisis between 2000 and 2018 and are in the process of democratic transition. The countries selected were Algeria, Egypt, Iraq, Lebanon, Libya, Tunisia, and Yemen, which yielded a total of 133 observations for the panel data. The data were collected from the World Bank database, the Islamic Foundation (for extracting the index database), and the Centre for Economic Policy Research database in London. In the methodology, we utilised a set of variables encompassing social, economic, and ethical factors. All variables were subjected to effect testing using the VAR model.

Our aim in this paper was to show the contagion cycle effect of Islamicity in accordance with a democratic regime on uncertainty, which leads to corruption and consequently to an informal economy. Corruption and the informal economy, in turn, lead either to an improvement in economic growth or to its decline. This paradigm was discussed in the literature review. Consequently, we adopted six variables: the Islamicity index (ISL), democracy index (DEMO), uncertainty index (UNC), corruption index (CORUP), the informal economy in terms of GDP (INFORMEL), and economic growth (TCGBP). These variables are described below:

The ethical factor was Islamicity (ISL), using the data of the index constructed by Askari and Hossein (2015) and published by the Islamicity Foundation Database. A higher Islamicity index indicates a higher quality of Islamicity in each country.

This index is a combination of four sub-indices: the Islamic economic index, the Islamic governance and legislative index, the human rights index, and the international relations index. The Islamic economic index reflects economic Sharia principles, such as the prohibition of money speculation (Riba), social equality, market transparency, and the prohibition of abusive risk taking (Gharar). The Islamic governance and legislative index reflects social justice, military protection, environmental protection, and a sustainable economy. The humanity Islamic index includes social welfare, gender equality in economic and political life, civilisation, and democracy. The Islamic index of international relations includes military quality and openness to different cultures and religions.

The political factor was the democracy index (DEMO), which was obtained from the World Bank database and based on Mohtadi and Roe's (2003) work. A higher index score indicates a stronger democracy.

The level of uncertainty was measured using the world uncertainty index (UNC), which captures crisis events, such as the Gulf War, the Euro debt crisis, the Brexit vote, and the COVID pandemic, as reported in textual reports and magazines. The world uncertainty index considers the frequency of words related to uncertainty (e.g., 'crisis', 'war', 'democratic', 'election', and 'vote'). Derived by Ahir et al. (2022) and computed

for 143 countries from 1990 to 2023, this index was collected from the World Uncertainty Index database.

The socio-economic factors were corruption (CORUP) and the informal economy (INFORMEL). The levels of corruption were collected from the World Bank database, which provides a score for each country (from 0 for the most corrupt to 100 for the most ethical). The informal economy variable, which measures the share of parallel transactions relative to the GDP, was extracted from Elgin et al.'s (2021) database issued by the Centre for Economic Policy Research in London.

3.2. Descriptive Statistics and Statistical Tests

Table 1 provides a description of these variables. Table 2 reports the stationarity of these variables, and Table 3 shows the results of the cointegration test for all the variables included in the VAR model.

Table 1. Descriptive statistic of the panel variables of the VAR model.

Variable	Obs	Mean	Std. Dev.	Min	Max
TCGBP	133	0.0387	15.9633	−0.6707	1.2313
ISL	133	0.5365	0.7645	0.2744	4.6548
CORUP	133	3.0926	0.6907	1.5	4.9
DEMO	133	4.0484	1.3736	1.144	6.72
INFORMEL	133	0.2906	7.8419	0	0.3876
UNC	133	0.2647	0.2234	0.0551	1.2538

Note: The total observation is the total panel observation composed of 7 countries combined by 19 years. TCGBP is the growth rate of GBP; ISL is the Islamic index; CORUP is the corruption index; DEMO is the democracy index; INFORMEL is the rate of informal economy; and UNC is the economic uncertainty policy index.

Table 2. Stationarity test of the panel VAR variables.

	Statistic	Probability
TCGBP	−2.4450	0.0072
ISL	2.2461	0.9877
ISL (Second difference)	−2.5843	0.0049
DEMO	−3.3941	0.0003
UNC	−1.5622	0.0591
INFORMEL	−2.2910	0.0110
CORUP	−0.9890	0.1613
CORUP (First difference)	−3.1352	0.0009

Table 3. Cointegration test of the variables.

	Statistic	Probability
V-Statistic	−1.6926	0.9547
Rho-Statistic	1.0474	0.8526
PP-Statistic	−2.1642	0.9312
ADF-Statistic	1.7841	0.8312

The null hypothesis of stationarity states that a variable is non-stationary if it has a unit root. The hypothesis is rejected when the t-statistic is lower than the critical value and the *p*-value is lower than 0.05. The null hypothesis of the cointegration test assumes that there is no cointegration v the variables and is rejected when the *p*-value of the padroni statistics is lower than 0.05.

We found that the *p*-values of all the variables were lower than 0.05. Therefore, we rejected the null hypothesis of non-stationarity and can confirm that all variables are stationary. In addition, the majority of the padroni statistics have a *p*-value lower than 0.05. Therefore, we accepted the null hypothesis of cointegration, which indicates a lack of cointegration among variables.

3.3. Estimation of the VAR Model

The first step was to find the optimal lags of the VAR model. These were selected using the Akaike information criterion (AIC), likelihood ratio (LR) test statistic, the final prediction errors, Schwarz information criterion (SC), and Hannan–Quin (HQ) information criterion. As shown in Table 4, the optimal lag corresponds to lower values for these criteria. Hence, a lag equal to 1 was selected.

Table 4. Lag selection for the VAR model.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	−373.4590	NA	297.8678	22.72388	22.95116	22.81073
1	−178.0834	42.10801	2.680703 *	15.68955 *	24.09867	18.90292 *
2	−96.0382	59.30099	5.111174	18.58973	21.54429	19.71876
3	−49.2964	58.65641 *	3.924311	18.16849	22.48668	19.81860
4	−31.6829	30.19409	6.994643	18.41894	24.10078	20.59014
5	−25.7802	50.90414	4.178861	17.28550	24.33098	19.97778
6	−15.8323	237.4735	5.594144	18.73852	20.32944 *	19.34646

* Indicates the lag order selected by the criterion.

After assessing stationarity and determining the optimal lags for the VAR model, we examined cointegration using the trace test, as shown in Table 5.

Table 5. Cointegration test of the VAR model.

	Eigenvalue	Statistic	Critical Value	Prob.
None	0.626963	131.7128	195.7536	0.2052
At most 1	0.337076	66.63166	69.81889	0.1874
At most 2	0.286633	39.49941	47.85613	0.2409
At most 3	0.171576	17.20732	29.79707	0.6247
At most 4	0.067933	4.784150	15.49471	0.8313
At most 5	0.002134	0.141012	3.841465	0.7073

The obtained VAR model was estimated using the generalised moment method (GMM), as shown in Table 6.

Table 6. Standard deviation and t-statistics for the VAR model estimation.

	ISL	DEMO	UNC	INFORMEL	COR	GROWTH
ISL(-1)	0.758213	0.042422	−0.040741	0.132845	−0.029647	−0.373291
	(0.11720)	(0.13885)	(0.03648)	(0.95625)	(0.05928)	(3.38548)
	[6.46967]	[2.30552]	[−2.11690]	[2.13892]	[−2.50010]	[−2.11026]
DEMO(-1)	−0.016187	0.803595	0.006763	0.251068	0.046520	−1.007569
	(0.06281)	(0.07441)	(0.01955)	(0.51248)	(0.03177)	(1.81438)
	[−3.25772]	[10.7990]	[2.34595]	[2.48991]	[2.46423]	[−1.55533]
UNC(-1)	−0.244156	−0.124038	0.307460	1.656432	0.178257	−1.554455
	(0.35055)	(0.41532)	(0.10911)	(2.86028)	(0.17732)	(10.1264)

Table 6. *Cont.*

	ISL	DEMO	UNC	INFORMEL	COR	GROWTH
	[−1.69650]	[−1.29865]	[2.81795]	[1.57911]	[2.00528]	[−2.15350]
INFORMAL(-1)	−0.041197	−0.004364	−0.017487	0.934205	0.003866	0.015810
	(0.01235)	(0.01464)	(0.00385)	(0.10080)	(0.00625)	(0.35687)
	[−3.33478]	[−2.29817]	[−4.54781]	[9.26783]	[1.61861]	[2.04430]
CORUP(-1)	0.046965	0.221680	−0.036528	−1.344420	0.856039	1.256949
	(0.12642)	(0.14978)	(0.03935)	(1.03154)	(0.06395)	(3.65203)
	[2.37150]	[1.48001]	[−1.92833]	[−1.30331]	[13.3862]	[2.34418]
GROWTH(-1)	−0.000442	−0.003359	0.000398	0.003345	−0.004264	−0.445086
	(0.00374)	(0.00444)	(0.00117)	(0.03055)	(0.00189)	(0.10817)
	[−2.11814]	[−3.75724]	[2.34168]	[2.10949]	[−2.25133]	[−4.11472]
C	1.412034	0.272571	0.815143	3.931038	0.108387	5.915033
	(0.61196)	(0.72504)	(0.19047)	(4.99327)	(0.30955)	(17.6780)
	[2.30740]	[2.37594]	[4.27961]	[1.78727]	[2.35014]	[2.33460]
R-squared	0.582761	0.803979	0.522219	0.725523	0.855190	0.203365
Adj. R-squared	0.546479	0.786934	0.480673	0.701655	0.842598	0.134092
Sum sq. resids	19.44917	27.30104	1.884160	1294.873	4.976556	16230.19
S.E. equation	0.530916	0.629021	0.165247	4.332007	0.268559	15.33689
F-statistic	16.06213	47.16722	12.56960	30.39785	67.91433	2.935720
Log likelihood	−56.04804	−68.93461	32.65621	−215.5859	−4.251507	−311.6673
Akaike AIC	1.659159	1.998279	−0.675163	5.857522	0.296092	8.385983
Schwarz SC	1.873832	2.212952	−0.460491	6.072195	0.510765	8.600655
Mean dependent	0.546418	4.055685	0.270673	29.17303	3.076886	3.812203
S.D. dependent	0.788365	1.362724	0.229305	7.931037	0.676915	16.48168

( ) represents the standard deviation. [ ] represents the t-statistic.

To ensure the significance of the VAR model, we performed a stability test. Table 7 and Figure 1 show the stability results for the VAR model.

Table 7. Stability of the VAR model.

Variables	Modulus
ISL	0.916276
DEMO	0.867824
UNC	0.867824
INFORMAL	0.626034
CORUP	0.442587
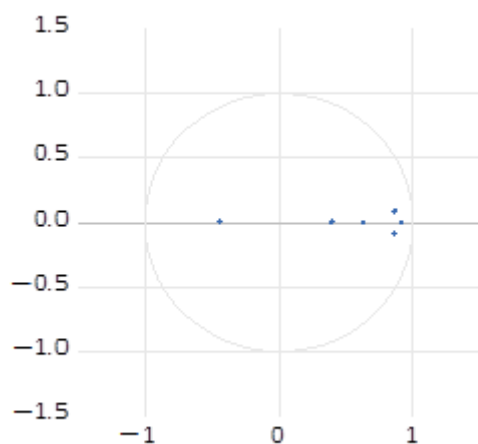
Figure 1. Stability of the VAR model.

All values of the modulus were greater than 1. Referring to the graph, we can observe that all the dots are inside the circle. Therefore, we concluded that our VAR model satisfied the stability criteria. However, the estimation of the VAR model did not offer insights into financial significance. Therefore, we constructed an impulse function to investigate the response of each variable to shocks, as shown in Figure 2.
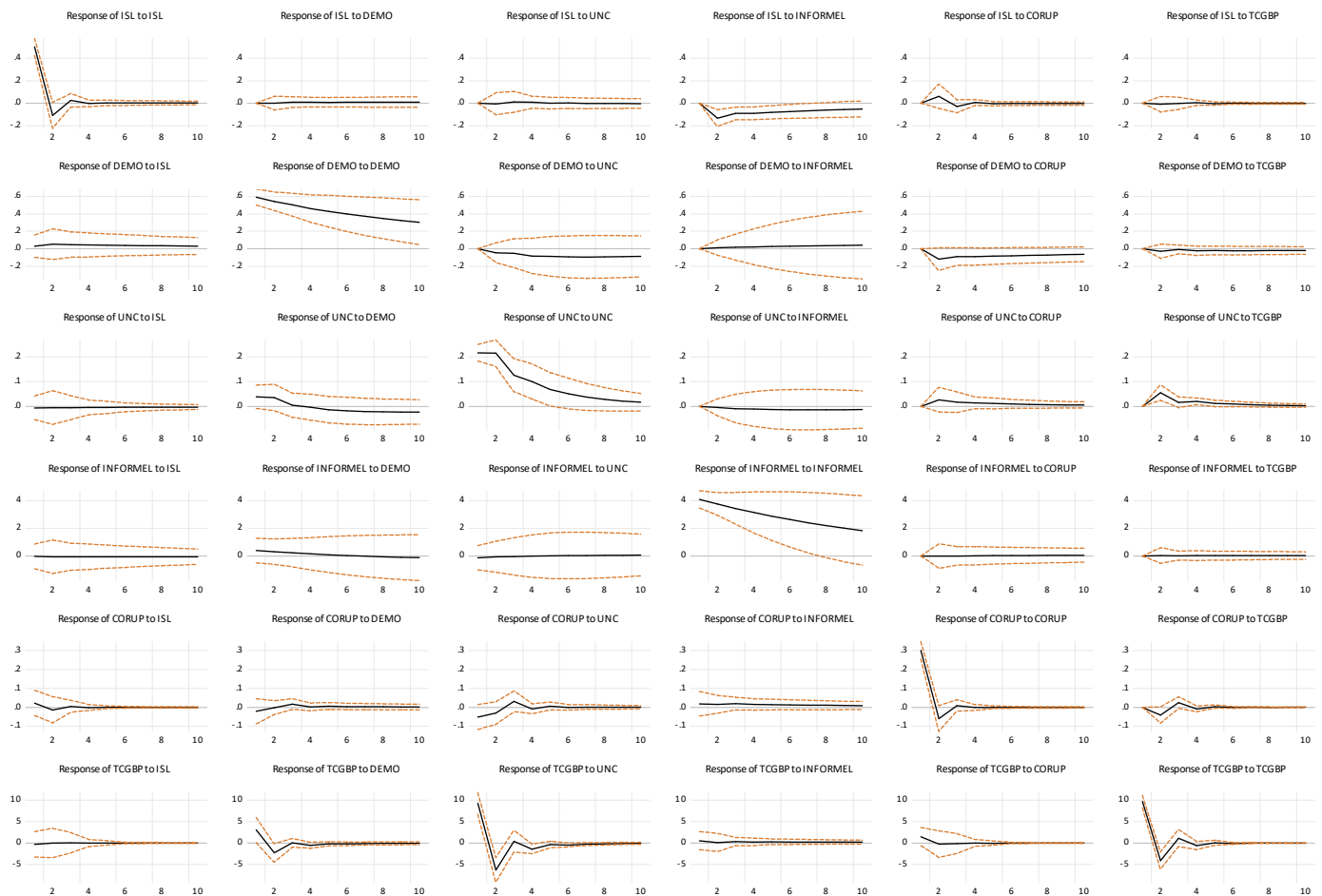
Figure 2. Impulse function of the VAR model.

4. Results

Based on the interrelatedness among the variables and drawing from the theoretical literature, we interpreted how changes in one variable can set off a chain reaction, as outlined below in Figure 3.
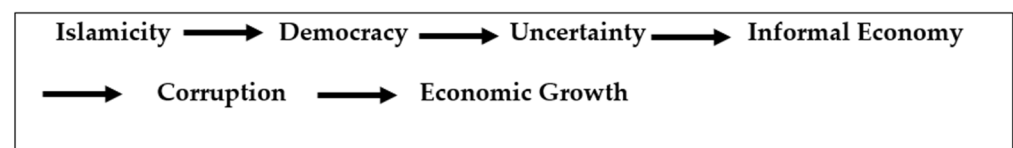
Figure 3. Contagion cycle.

Starting with the Islamicity–democracy relationship, according to Figure 4, a positive democracy shock leads to an increase in Islamicity. Democracy strengthens the application of Islamic principles in terms of economic, legal, human, and international relations. Similarly, Figure 5 shows that Islamicity can strengthen democracy. This result is logical, since democracy is a component of Islamic principles (Askari and Rehman 2010a).
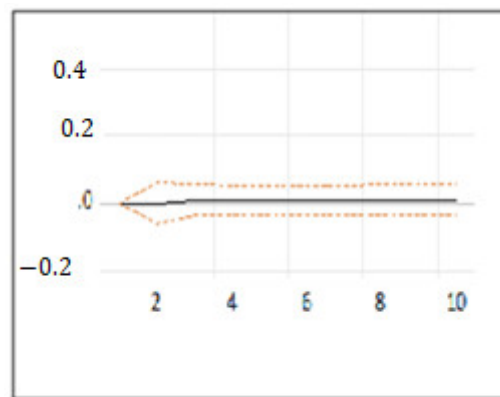
Figure 4. Response of Islamicity to democracy shocks.
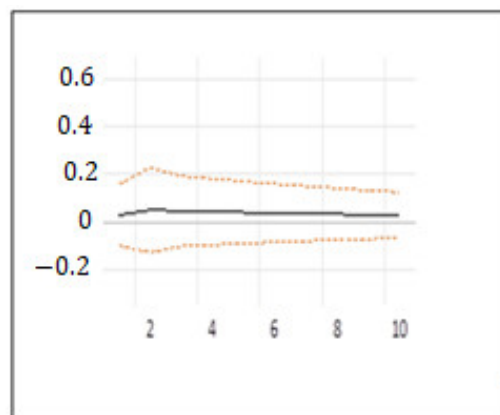
Figure 5. Response of democracy to Islamicity shocks.

According to Figure 6, the impulse function of the Islamicity–uncertainty relationship shows that an Islamicity shock decreases uncertainty. This suggests that, when properly applied, ethical, political, and social rules reduce uncertainty and ensure economic and political stability. Inversely, according to Figure 7, uncertainty shocks improve Islamicity. Therefore, we conclude that Islamicity cannot be established in a transparent environment, but once it takes root, it will lead to the stabilisation of economic and social life. This result is in line with those of Afzali et al. (2021), who found that religiosity, such as Islamicity, can only be established in an uncertain environment and contributes to a corruption-free climate.
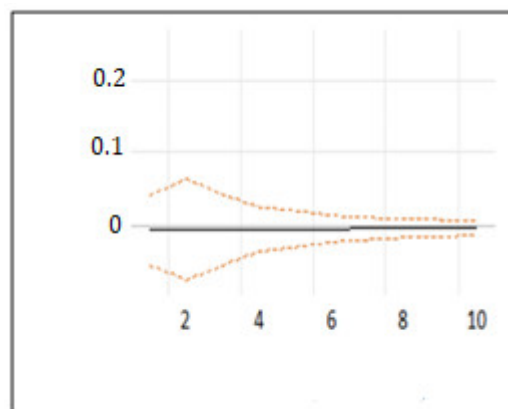
Figure 6. Response of uncertainty to Islamicity shocks.
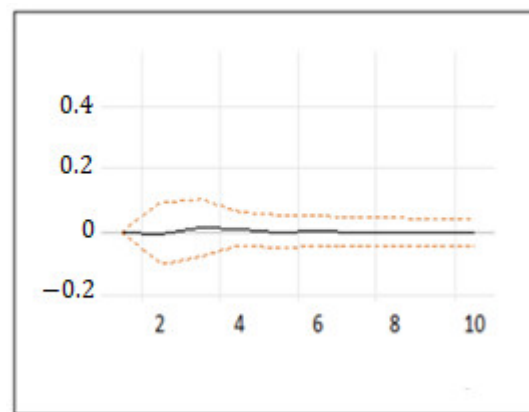
Figure 7. Response of Islamicity to uncertainty shocks.

At the same time, the response of democracy to uncertainty shocks, as shown in Figure 8, is negative. The establishment of a democracy requires stable economic and political environments. An uncertain environment slows down the democratic regime.
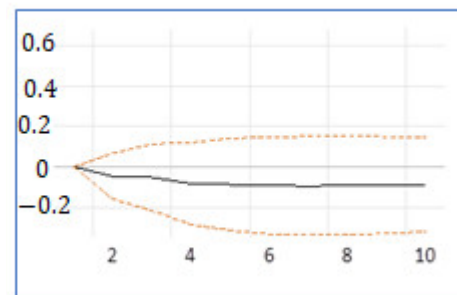
Figure 8. Response of democracy to an uncertainty shock.

Therefore, we conclude that Islamicity generates democracy and, in turn, democracy generates uncertainty. Moreover, the interaction between democracy and Islamicity leads to an uncertain environment for a certain period, followed by a return to the initial state.

The impulse function for the uncertainty–informality relationship shown in Figure 9 illustrates that an uncertainty shock leads to a slight decrease in informal sector transactions. Economic and social stability leads households to become market speculators. These few speculators operate in the parallel certainty market and escape unfavourable state policies without needing an uncertain context. Likewise, according to Figure 10, the response of uncertainty to an informality shock is negative. In other words, the informal economy reduces uncertainty. Once informal speculators emerge in parallel markets, they no longer need policy uncertainty. On the contrary, they try to become part of the formal market.
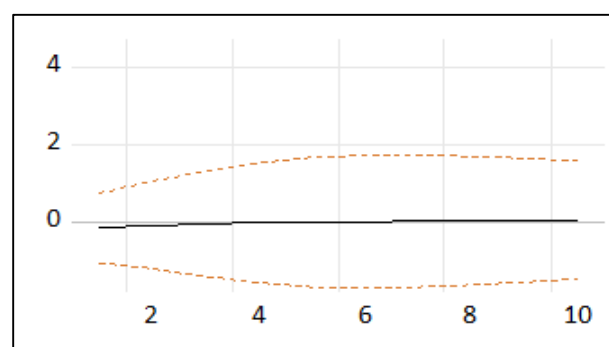
Figure 9. Response of informality to an uncertainty shock.
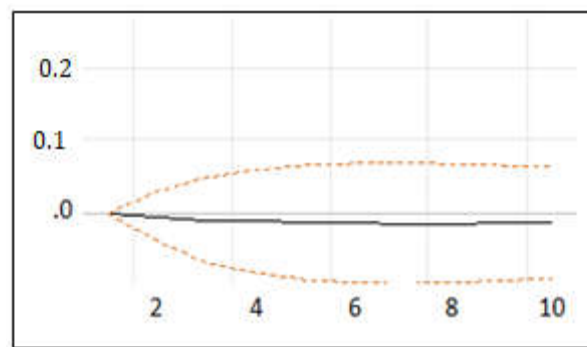
Figure 10. Response of uncertainty to an informality shock.

The response of corruption to an informal economy shock is positive (Figure 11). However, the informal economy increases corruption. Informal speculators may motivate legislators and administrators to protect them and share profits with them, as described by Choi and Thum (2005) and Mishra and Ray (2010). According to Choi and Thum (2005), corruption due to the informal economy can take the form of bribes given to administrators or tax manipulation. In addition, according to Figure 12, an uncertainty shock leads to an increase in corruption.
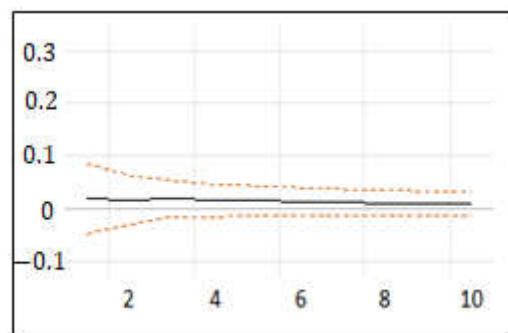
Figure 11. Response of corruption to a shock in informality.
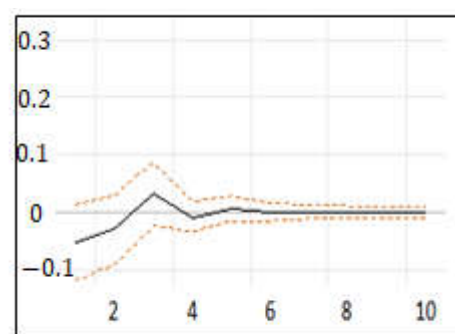
Figure 12. Response of corruption to an uncertainty shock.

The response of economic growth to corruption is negative, as shown in Figure 13. As corruption increases, economic growth decreases. At the same time, according to Figure 14, economic growth decreases following a shock in the informal economy level. Thus, both uncertainty and informality generate economic growth and do not reduce economic development in these countries in the presence of Islamicity and democracy.
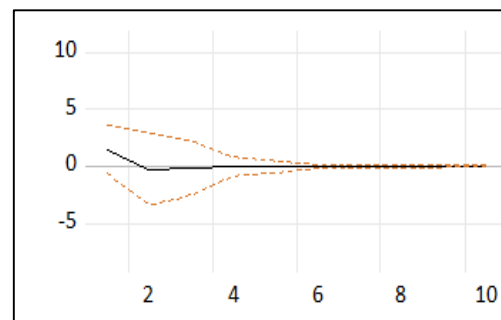
Figure 13. Response of growth to corruption.
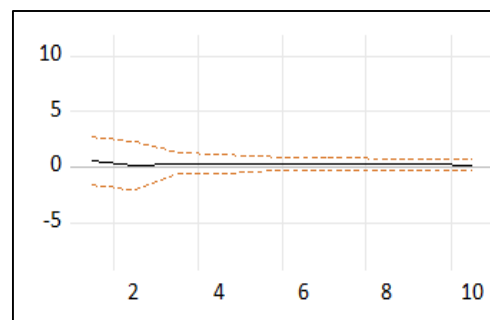
Figure 14. Response of growth to a shock in the informal economy level.

5. Summary

The chain reaction illustrated in Figure 3 shows that Islamicity has an effect on democracy, democracy on uncertainty, uncertainty on the informal economy, the informal economy on corruption, and corruption on economic growth. The relationships between these factors are described in Section 4. However, in this section, we discuss all variables together to confirm the contagion effect.

When Islamicity increased, democracy also increased because the relationship between the variables was positive. This, in turn, led to a reduction in uncertainty, which contributed to a decrease in the informal economy level, as shown by the positive response of uncertainty to a shock in the informal economy. When the informal economy decreased, corruption also decreased due to the positive response of corruption to a shock in the informal economy. Finally, a drop in corruption led to economic growth. Therefore, Islamicity and democracy reduce uncertainty and foster economic development by fighting against corruption and the informal economy.

When we removed democracy from the sequence illustrated in Figure 3, we directly assessed the effect of Islamicity on uncertainty, which affected the informal economy, leading to changes in corruption and, ultimately, economic growth. We found that Islamicity slightly increased uncertainty. The increase in uncertainty led to an increase in the informal economy, which contributed to an increase in corruption and, consequently, a decline in economic growth.

Therefore, Islamicity without democracy, in the context of revolutionary Muslim countries undergoing a democratic process transition, cannot solve the issues associated with the informal economy and corruption and does not create economic growth. This result is in line with that of Afzali et al. (2021), who demonstrated that religiosity and ethical behaviours fight against corruption, and that of Heggedal et al. (2022), who found that religiosity in a democratic context mitigates political corruption. Even when politicians' wages increase, the system's inherent religiosity fosters stability and discourages electoral manipulation.

Thereby, we can confirm the first, second, and third hypotheses discussed in the literature review and affirm that uncertainty, corruption, and informal economy reduce

economic growth. But, we can reject the fourth hypothesis, because religiosity can only improve economic growth together with democracy.

In summary, we evaluated economic growth in an Islamic democratic system. We found that, when Islamicity is not applied in a democratic system, economic growth cannot improve, despite the fact that the Islamic system fights uncertainty, the informal economy, and corruption. So, instead of returning to a dictatorship regime, these Islamic countries must moderate their Islamic practice and apply a democratic regime together, rather than applying an abstract Islamic system.

6. Conclusions

The contributions of this paper lie in the integration of political and ethical components, specifically democracy and Islamicity, in the economic literature of uncertainty, informal economy, and corruption. Few authors have studied the impact of democracy on the economy, and there is a notable lack of studies linking democracy and corruption to Islamicity.

Two main theoretical conclusions can be drawn: the informal economy supports corruption (Choi and Thum 2005; Mishra and Ray 2010), and corruption and informality damage the economy (Mauro 1997). However, it is important to note that both corruption and informality can stimulate economic development and generate employment opportunities (Marcouiller et al. 1997; Eilat and Zinnes 2002).

These theories were tested empirically in Tunisia, Egypt, Libya, Yemen, and Iraq over the period of 2000–2018. Our empirical approach was based on a VAR model that incorporated democracy, Islamicity, informal economy, corruption, and economic growth as the key variables. The empirical results show that, in these revolutionary countries, both Islamicity and democracy fight uncertainty, the informal economy, and corruption and stimulate economic growth. In addition, by removing democracy from the economic cycle, abstract Islamicity increases uncertainty and corruption and promotes the informal economy. In summary, Islamicity and democracy are complementary and necessary to complete the democratic and political transition in Muslim countries, and their simultaneous presence is necessary for the economy, as they both contribute to its development.

This paper had some limitations, such as the fact that we did not create our own Islamicity index, but applied an established index. The reason for this is that our vision of Islam in this paper could be different to that of other researchers. In addition, we did not consider the different kinds of Islamicity index, which affect several areas.

In addition, this study did not consider other religions in addition to Islam in order to better compare them in terms of their effect on the economy and democracy.

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