ISLAMIC BANKING – A CHALLENGE FOR THE TURKISH FINANCIAL SYSTEM

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The Islamic banking model based on the zero interest rate or in practice, the enormously low reference interest rates and the fair distribution of profit and loss is seen as a challenge for economies that have long had the conventional economic model as their basis. The Republic of Turkey, which is one of the world's largest economies, for ideological reasons made an attempt to introduce the Islamic banking model, which required a significant reduction in the reference interest rate by the National Bank of Turkey, and as a result of this, the country faced a rapid growth in inflation, which in a given period reached over 80%, the Turkish lira recorded a historic devaluation, and the Istanbul Stock Exchange noted significant oscillations in the direction of the accelerated growth in the value of the BIST 100 (XU100) index.
The focus of this research paper is to examine the effect of the introduction of the Islamic banking model on the financial system with special reference to the financial market of the Republic of Turkey, that is, the Istanbul Stock Exchange and the representative index BIST 100 (XU100).
According to the results of the research, it can be concluded that the Islamic banking model, which contradicts the principles of the conventional economy which was based on the Turkish financial system, has caused significant destabilization of the Turkish financial system, that is, the financial market. Namely, the growth of inflation contributes to the growth of the BIST100 (XU100) index and changes in the functioning of financial flows.

Key words
BIST100 (XU100) index, financial market, financial system, Islamic banking model, Istanbul Stock Exchange.

1. Introduction

The stability of a country's financial system is one of the key determinants for ensuring long-term macroeconomic stability and respectable growth and development in the medium and long term (Heffernan, 2004). Namely, the stable financial system, which primarily includes the financial market and the institutions responsible for maintaining financial flows, in addition to enabling financial stability, has a significant contribution to creating and maintaining the resilience of the national economy in cases of global or regional financial crises and crises of

other causes, which pretends to threaten macroeconomic stability, as well as quick amortization of shocks and possible damages.

Although a large number of economists, when creating macroeconomic policies and the financial system, take into account the pragma and the real need for the application of certain models of the financial system and the application of macroeconomic measures, yet, in practice it can be noted that there are more examples where, in addition to real needs and situations, one of the crucial components is the ideology of the rulers (Matthews, 1985). Thus, some countries based on the application of Sharia and the Islamic governance model, when creating the financial system and designing the key macroeconomic components, in particular, the reference interest rate, take into account the Islamic banking model, which is relatively based on very low interest rates.

Islamic banking (the so-called Islamic finance), as a model that rests on Sharia law and the principles of the so-called "fair" sharing of profits, but also the loss of companies and financial institutions, and rejecting the interest that lenders charge as compensation for borrowed funds, goes against the foundations of the market economy and the model of capitalism as an economic system because the companies, especially banks and more recently, financial companies exist from the profit precisely from the interest on borrowed funds (BankofEngland, 2022). Thus, by applying this model, banking institutions will not only be able to survive in the market, but in the short term, the large amount of loans that will be placed to individuals and business entities at extremely low interest rates or theoretically without interest would contribute to a rapid growth of inflation, which will reflect negatively on the value of earnings and a decrease in the standard, abandonment of the basic principles of the market economy, distortion of the financial markets, accounting overestimation of the profits of business entities and a decrease in investments implying a reduction in economic activity of the country (Chouria, Khaki, Moghadam, & Hadizadeh, 2022).

The Islamic financial model is most prevalent in the Arab countries of the Middle East since the Middle Ages. Namely, the European banks that pretended to serve that market, that is, the Arab merchants, had the obligation on a local level to apply this method of lending. In modern times, the "Mit Gamr" savings bank is the most exclusive example of an Islamic banking model that has been operating in Egypt since 1963, but due to unsustainability, has stopped operating in 1967.

According to a large number of studies, even today, some countries have the Islamic financial model as a foundation for their financial markets. As the best example of such a model, the Islamic Republic of Iran can be mentioned, which is basically a Shiite country and in its Islamic financial system, according to research, has over 345 billion US dollars. In addition to Iran, this model is also applied by the countries of the Arabian Peninsula, such as Saudi Arabia, Kuwait, the United Arab Emirates, and in Malaysia, as the largest Islamic country. What is characteristic is that these countries, with the exception of Malaysia, are rich in oil, which from an economic point of view make them suitable, to a certain extent, for this kind of financial model, because, according to experience, they are more resistant to global financial crises, which is not the case for The Republic of Turkey, which is a country trying to establish this model.

In addition to the commitment to join the EU, and thus the adjustment of the financial system with the regulations and directives of the EU in the field of finance, the Republic of Turkey, for ideological reasons, began to apply the Islamic banking model, while the National Bank of Turkey approached a permanent reduction of the reference interest rate. This caused a series of consequences on the economic flows of the country, which faced a strong growth of inflation starting from November 2020 in which reached the highest level of over 80%, in the months from August to November 2022 whereas the average annual inflation for 2022 was 72.3%. This situation had devastating consequences for the national economy because the standard of the population dropped significantly, and this situation also had an impact on the Istanbul Stock Exchange.

According to the monthly data from the Istanbul Stock Exchange, the representative of the Istanbul Stock Exchange, the index BIST 100 (XU100) was under strong pressure of

macroeconomic destabilization and the growth of inflation, so in July 2022 it began to grow rapidly compared to the previous period where low oscillations and stable minor but permanent growth were observed. Practically, such rapid growth and more noticeable oscillations are due precisely to one of the effects of the introduction of the Islamic banking model, which refers to the accounting overestimation of the value of companies, that is, the securities that make up the index, and the so called fictitious growth in financial performance. In addition to the already mentioned, the growth of inflation had a significant impact on the value of the lira, which during the period of high inflation recorded a historically significant depreciation, that is, devaluation.

The scope of this research paper is the impact of the introduction of the Islamic banking model on the financial market and the financial system of the Republic of Turkey. The research paper is composed of two parts, and the first part refers to the theoretical review, which is a set of fundamental establishment of the Islamic banking model and its characteristics, advantages, disadvantages and effects on the economy, a review of the Turkish financial system, that is, the financial market and financial institutions, such as banks, pension and investment funds, which are also creators of the financial system, a description of the Istanbul Stock Exchange and an overview of the financial situation of the largest companies on the Istanbul Stock Exchange, trade and value of companies during the devaluation of the lira, as a result of the reduction of the reference interest rate and the growth of inflation, a review of the conclusions of previous research and analysis in this domain. The second part refers to the empirical research which includes: 1) descriptive statistics of the average monthly value of the BIST 1000 (XU100) index and the average monthly inflation, 2) analysis of the trend of the average monthly value of the representative indices of the Istanbul Stock Exchange 3) comparative analysis of the movement of the value of the BIST 100 (XU100) index with the main indices of the Italian Stock Exchange, the Frankfurt Stock Exchange, the London Stock Exchange and the New York Stock Exchange, 4) examining the correlation of the value of the BIST100 index from the first, second and third order and 5) examining the causality between the value of the BIST 100 (XU100) index and inflation in Turkey.

2. Islamic banking model

2.1. Concept of Islamic banking

Islamic banking represents one of the models of organizing banking, that is, the financial sector in a country, mostly with an Islamic majority population. Islamic banking in a general sense is a banking system that is in harmony with the spirit, ethos and value system of Islam and governed by the principles established by the Islamic Sharia (StateBankofPakistan, 2016). The application of this banking model is based on the following principles: 1) undertaking a large number of banking transactions and activities without charging interest, 2) avoiding financing businesses that conflict with Sharia rules (example: financing the production of alcoholic beverages, cigarettes, etc.) and 3) financing of businesses and business activities based on the common well-being (Khan & Mirakhor, 1986).

2.2. Features of Islamic Banking

Islamic banking, in addition to being different from conventional banking on the basis of interest collection and the financing of certain activities, it also differs on the basis of financing. Thus, the following are sources of funding for banks in this banking model:

- Equity - The equity capital represents the part that the founders of banks pay during the establishment of the bank. Although accounting, this category represents a kind of obligation of the bank to the owners, that is, towards the founders, has a very important role in Islamic banking in the placement of loans (Khan & Mirakhor, 1986).

- Deposit transactions - Deposits from depositors are the second most important source of funding for Islamic banks. They use them to strengthen their market share in the form of placements, and as a result to improve the financial performance for the shareholders of the banks. Islamic banks mobilize free financial resources based on distinctive arrangements: Amanah, Wadiyah, of Mudarabah and Wakala for fund management (FitchRating, 2023).

In practice, there are two basic bases for mobilizing deposits by Islamic banks: 1) deposits on current accounts and 2) savings deposits.

Deposits on current accounts are those deposits that depositors can withdraw any time, that is, they are not based on a term, that is, they are not timed, and consequently, these deposits are less significant for bankers compared to deposits in the form of savings deposits that are timed for a certain period.

- Investment deposits - Islamic banks can mobilize permanent or redeemable capital with investment deposits, which in banking practice take the form of a current partnership between depositors of the same bank.

Depositors or savers in Islamic financial institutions can be compared to investors or shareholders in business entities, who earn dividends when the business entity makes a profit or loses part of their capital if the business entity registers a loss for the financial year.

The agreement between depositors and Islamic banks does not specify any rates of return, but only determines the ratio according to which profits and losses are distributed between the parties to the deposit agreement (KuwaitFinanceHouse, 2023).

2.3. Application and effects of Islamic banking

The Islamic banking model, according to research and the political structure of the countries, can be ascertained that even today is widely used, especially in the countries of the Middle East, as well as Pakistan, Malaysia, and others. It is characteristic that the Republic of Turkey, in the past period, made attempts to establish this banking model.

Although according to some research, this type of banking has more of a marketing function precisely because of the dominant religion or political peace, however, the research conducted by Yusif et al. indicates the opposite. Namely, according to them, Islamic banking in the case of Indonesia is becoming increasingly attractive not only in terms of marketing but also in the actual implementation of banking operations based on the principles of Sharia law (Yusuf, Mokoagow, Nur, & Rauf, 2023). This research also indicates the positive role of this type of banking in stimulating economic growth and softening the consequences of certain crises.

Hocine and Belabed argue that Islamic banking played a major role in the Algerian government's handling of the 2008 financial crisis. According to them, one of the most important mechanisms that encourage the economic stabilization and adoption of this banking model by Algeria are the tax concessions granted to the products of Islamic banks, which play an important role in promoting sustainability and directing investments to the Islamic financial sector and promoting and the achievement of the objectives of the Sharia rules in the domain of finances (Hocine & Belabed, 2023).

According to a large number of researches, it can be concluded that in several Islamic countries where Islamic banking is applied, has a positive effect on economic growth and development. Thus, Bridan, in his research on "Islamic banking and the economic growth of Libya" concludes that in the short term this model has a positive role on the economic growth of Libya, that is, on the profits of banks and business entities that appear as investors through the investment deposit instrument (Brydan, 2022). Also Tabash and Dhankar in their research on the effect of Islamic banking on the economy indicate a positive relationship between bank financing and economic growth (Tabash & Dhankar, 2014).

The conclusions of the research conducted by the IMF in 2015 where Islamic finance and its effects on the financial market are elaborated in detail indicate that the introduction of this model can be a very complicated process due to great differences between conventional

banking and the new model that could cause distortion of the financial market and the financial system in whole. Namely, in order to introduce this model, a detailed analysis of the characteristics of the country's financial system should be done to determine whether it is suitable and adapted, but also to take into account the habits of the actors in the financial market and the tradition of functioning.

The country that intends to introduce such a system must also take into account the legislation and the working principles of the National Bank, because some of the key conventional operations on the primary and secondary market oppose with the principles of Islamic finance, while, on one hand, conventional banks will not be able to finance Islamic banks, and on the other hand, Islamic banks will not be able to participate in part of the interbank transactions of the National Bank, which is a prerequisite for the emergence of macroeconomic disturbances such as is the growth of inflation (Afshar & Muhtaseb, 2018).

The Republic of Turkey, as a country that is in partial process of introducing the Islamic banking model, faced and is still facing significant macroeconomic instability, with inflation reaching a level of over 80%, and the Turkish lira is significantly devaluing against the US dollar, therefore as a result, the National Bank of Turkey has been permanently reducing the reference interest rate in the past period. According to several researches and official statistics by 2025, the country aims to have 15% of the banking sector based on the principle of the Sharia law, but this model according to researchers is caused by the lack of regulation by the state, Turkey's tradition in the domain of international trade and the high degree of variety of products that it produces, the geopolitical role it has as a relatively secular state and the formal request for EU membership (Durmus, 2023).

3. Stability of the turkish finacial system

3.1. An overview of the Turkish financial system

Based on the report on financial stability of the Republic of Turkey prepared by the IMF, it can be concluded that the country is experiencing economic growth, but the double-digit inflation in reality is sterilizing growth, and the lira is further devaluing, which makes the volatility relatively high. According to the report, it can be concluded that the Republic of Turkey currently has a high degree of fiscal risk, and that risk is reflected in the financial markets (mainly the capital market). This situation causes instability in the financial sector, whereupon investors in banks and depositories disclaim their investments, that is, deposits denominated in the Turkish lira (IMF, 2023).

3.2. Structure of the Turkish financial system

The Turkish financial system is composed of: National Bank of the Republic of Turkey, State-owned banks, Privately owned banks, Investment funds, Foreign banks, Investment and development banks, Insurance sector.

According to official data, banks have the largest share in the financial sector (over 90%), that is, financial instruments are owned by banks, this also indicates that the financial sector is based on traditional banking and more recently Islamic banking (Keskin, 2023).

According to the Turkish statistics, banks have the largest share in the financial system of the Republic of Turkey, and funds whose domain is money market trading have the smallest share. After the banks, come the pension funds, which have a share of about 2.3% of the total financial market in Turkey, and the rest of the financial intermediaries are the third.

According to official statistics, it can be concluded that the majority of financial assets in the Turkish financial system are owned by state-owned banks. This is precisely due to the Turkish ideological system, which is based on statism as an economic doctrine. Also, according to some reports that refer to Turkish banking, their conclusions point to the greater share of state-

owned banks that conceptualize their operations based on the principles of Islamic banking. From the chart it can be concluded that private domestic banks (founded by Turkish capital) are second in terms of asset ownership, and foreign banks own less than a quarter of the total assets owned by banking institutions in Turkey.

When it comes to Islamic banking, it is characteristic that this type of banks in Turkey are known as banks with participation (participation banks) and the same since 2015 until 2022 have significant growth, which according to S&P is due to the restructuring of part of the state banks from conventional to banks that base their activity on Islamic banking (Damak, 2021). According to research and analysis, it can be concluded that since 2015 until 2020 this type of finance has a permanent growth and an increase in shares in relation to conventional banking. In 2022 assets of Islamic banks in Turkey grew by 8.3%, loans and financing by 7.6%, and deposits by 10.1% (FitchRatings, 2023).

4. Ilstanbul stock exchange

4.1. Characteristics of the Istanbul Stock Exchange

The Istanbul Stock Exchange (BIST) is a stock exchange that is unique in the Republic of Turkey and was established by merging: 1) the former Istanbul Stock Exchange, 2) the Istanbul Gold Exchange and 3) the Derivatives Exchange. The Istanbul Stock Exchange was established and began trading in April, 2013. It was established with capital denominated in the Turkish lira in the amount of about 240 million US dollars in the form of an incorporated company.

4.2. Shareholders of the Istanbul Stock Exchange

The following are the founding shareholders of the Istanbul Stock Exchange: The government of the Republic of Turkey – 49%, BMI – 41%, VOB – 5%, Members of IMKB – 4%, IMKB brokers – 1% ,IAB – 0.3%.

In this case, the Government of Turkey, which has the largest participation, has the role of a stabilizer and guarantor in conditions of certain overdrafts.

Subsidiaries and branches

As a stock exchange that gravitates around the Balkan countries and smaller Muslim countries, it has more shares in foreign stock exchanges and distinctive institutions and companies that have the treatment of branches and subsidiaries, thus, as subsidiaries are: the Istanbul Settlement Bank, the Central Depository for XB, the Agency for licensing and trade training with XB, Energy Exchange – Istanbul, Turkish Stock Exchange, ELIDAS Licensed Warehouse, JCR Eurasia Rating, Birlesik Mortgage Company, Baku Stock Exchange, Montenegro Stock Exchange, Sarajevo Stock Exchange and Kyrgyzstan Stock Exchange. The largest subsidiary is the Istanbul Settlement Bank, and the smallest is the Baku Stock Exchange.

Table 1 Subsidiaries of the Istanbul Stock Exchange and the share in percentage in total capital

Subsidiary	Share
Istanbul Settlement Bank	64,18%
Central Depository for XB	30,10%
Agency for licensing and trade training with XB	20,00%
Energy Exchange – Istanbul	30,83%
The Turkish Stock Exchange	15,00%
ELIDAS Licensed Warehouse	17,33%
JCR Eurasia Rating	18,50%
Birlesik Mortgage Company	5,00%
The Baku Stock Exchange	4,76%
The Montenegro Stock Exchange	24,43%
The Sarajevo Stock Exchange	9,89%
The Kyrgyzstan Stock Exchange	22,86%

Source: https://borsaistanbul.com/en/sayfa/2211/subsidiaries-and-affiliates

4.3. Trading on the Istanbul Stock Exchange

The Istanbul Stock Exchange trades in several ways, in which a portfolio of several shares can be created independently, that is, companies that are listed on the stock exchange can issue their shares and thus mobilize free financial resources, and investors can buy them. A total of 652 companies from various industries are listed on the Istanbul Stock Exchange, mostly located in Istanbul.

On the Istanbul Stock Exchange, as well as on other stock exchanges, several indices are listed that are representative of the listed companies. Consequently, the following indices are representative of this stock market:

BIST30 (XU030) – representative of 30 largest companies listed on the stock exchange.

BIST50 (XU050) - representative of the 50 largest companies listed on the stock exchange.

BIST100 (XU100) - representative of the 100 largest companies listed on the stock exchange.

BIST 500 (XU500) - representative of the 500 largest companies listed on the stock exchange.

Stock market volatility and the BIST100 (XU100) index on the application of Islamic banking and the rapid growth of inflation

Inflation in the Republic of Turkey has long been a macroeconomic variable that has generated instability and was a challeng for the economy. The processes of radical changes in the Turkish economy, which in the last five years, according to a large number of studies, is based on megalomaniacal mostly civil and military infrastructure projects where the country invests large amounts of financial resources, such as the construction of the Istanbul airport, the Bosphorus bridges and Dardanelles and investments in the military and technological industry caused macroeconomic stability by injecting billions of euros into the financial flow, and on the other hand the monetary authorities did not sterilize, on the contrary the National Bank of Turkey reduced the reference interest rate (Karimov, Babyev, Dudchenko, Yaryna, & Podmanicka, 2023).

Research shows that it is difficult for the Republic of Turkey to create enough domestic savings to be able to keep the economy stable and react in the direction of sterilizing certain shocks on the financial markets (Aksoy, 2023). These results are a sufficient indicator that Turkey should not make attempts to restructure the economy and the financial market, precisely because of the inability to absorb the consequences.

Çigdem, in his empirical research on inflation and volatility of the economy and financial markets, which refers to the period from 1974 to 2020, concluded that the Turkish economy, and therefore the financial market, have a high degree of connection with the growth of inflation, that is, they are highly volatile of inflation growth (Çiğdem, 2023).

5. Methodology

The research was conducted using secondary data, when choosing the data source, several criteria were used in order to increase the reliability, quality and relevance. The following criteria were taken into account: 1) the institution that published the data, 2) the time period of publication and 3) the degree of contribution to the quality of the research.

The research is composed of:

Descriptive statistics of the average monthly value of the BIST 100 (XU100) index and the average monthly inflation in Turkey for the period from June 2021 to May 2023;

Analysis of the trend of the average monthly value of the three representative indices of the Istanbul Stock Exchange BIST 30/50/100/ for the period from June 2021 to May 2023;

Comparative analysis of the movement of the average monthly value of the BIST 100 (XU100) with the average monthly value of the indices: 1) S&P100, 2) NASDAQ 100, 3) FTSE MIB and 4) FTSE 100 for the period from June 2021 to May 2023;

Examining the first-order, second-order and third-order autocorrelation of the BIST 100 (XU100) for the period from June 2021 to May 2023. The Durbin-Watson test was used to examine the autocorrelation.

H0(1) – There is no autocorrelation of the average monthly value of the BIST100 index from the first, second and third order.

H1(1) - There is autocorrelation of the average monthly value of the BIST100 index of the first, second and third order.

Examining the causality of the average monthly value of the BIST 100 index (XU100) with the average monthly inflation rate in Turkey for the period from June 2021 to May 2023 by applying the Granger causality test (EViews);

H0(2) – There is no causality between the average monthly inflation and the average monthly value of the BIST100 index.

H1(2) - There is causality between the average monthly inflation and the average monthly value of the BIST100 index.

VARIABLES	ABBREVIATION	SOURCE
Average monthly value of BIST 100 index	XU100	Borsa Istanbul
Average monthly value of BIST 30 index	XU30	Borsa Istanbul
Average monthly value of BIST 50 index	XU50	Borsa Istanbul
Average monthly inflation rate	INF	TCMB
Average monthly value of the S&P100 index	OEX	Standard & Poor's
Average monthly value of the NASDAQ 100 index	NSD	FSE
Average monthly value of the FTSE MIB index	FTM	Borsa Italiana
Average monthly value of the FTSE 100 index	FTS	LSE

6. Results

6.1. Descriptive statistics of average monthly value of BIST100 and inflation in Turkey

From Table 1, it can be concluded that the mean value of the BIST100 index for the accounting period is 3012.5, and the mean value of inflation is 52.7%, which indicates a relatively high value. In the first 12 months (June 2021 - May 2022), the average monthly value of the index is below 2488.8, and inflation is below 54.8%. In the second 12 months (June 2022- May 2023), the value of the index is over 2488.8, and inflation is over 54.8%. According to the results of the descriptive statistics, it can be concluded that both variables have a relatively high standard deviation, which indicates that the data within the analysed period have a relatively high degree of dispersion in relation to the mean value. The descriptive statistics indicate that both variables have a negative distribution value, but it is within normal (<3), consequently, the distribution is flatter than normal and has weaker tails, which means that more data gravitates around the mean value. The frequency distribution of the index has a positive value indicating a positive symmetry of the data to the right, and opposite to the index, more data on inflation are clustered on the right side of the tail of the frequency distribution.

Table 1 Descriptive Statistics of XU100 and Inflation in Turkey

	XU100	INF
Mean	3013,48875	52,65666667
Standard Error	296,1277099	4,914112355
Median	2488,82	54,81
Mode	#N/A	#N/A
Standard Deviation	1450,723576	24,07413562
Sample Variance	2104598,894	579,5640058
Kurtosis	-1,371006604	-1,348277132
Skewness	0,506083314	-0,193468889
Range	4152,82	68
Minimum	1356,34	17,52
Maximum	5509,16	85,52
Sum	72323,73	1263,76
Count	24	24
Largest(1)	5509,16	85,52
Smallest(1)	1356,34	17,52
Confidence Level(95,0%)	612,5868407	10,16561592

Source: Author's calculation

6.2. Trend analysis of the three representative indices of the Istanbul Stock Exchange (XU100, XU50, XU30)

From Figure 1, it can be observed that the indices have a relatively similar trend in the average monthly value, thus, at the beginning of the calculation period, it can be observed that the value of XU50 and XU100 have a very similar value, so that over time, the gap between the values is increasing. The gap between the XU30 value and the other values is permanently increasing.

It is characteristic that in all three cases the gap between the values increases when the values of all three indices rapidly rise in the month of October 2022.

According to Figure 1, it can be concluded that the decrease in inflation in the Republic of Turkey caused a decline in the value of the indices (January, 2023), but not with the same intensity as the increase in value.

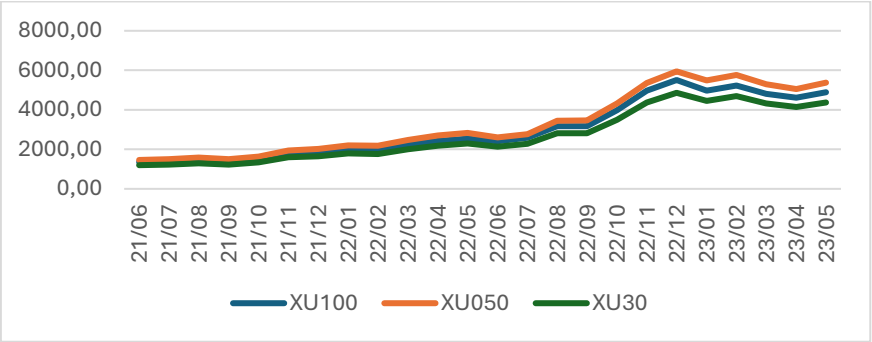

Figure 1 Analysis of the trend of the representative indices of the Istanbul Stock Exchange
Source: Istanbul Stock Exchange

6.3. Comparative analysis of the value of XU100 with the values of representative stock indices from the USA, Germany, Great Britain and Italy

It is evident from Figure 2 that only the BIST 100 index has stronger oscillations in the analyzed period. Namely, in the period when the Istanbul index has a rapid growth, the other indices are relatively stable or with oscillations that have no significant meaning. Thus, in the entire observed period, the OEX records a high level of stability, that is, there are almost no oscillations, the British index also records a high level of stability, this is primarily due to the economies of the USA and Great Britain, which have a similar structure.

After that, it is evident that the Italian index records oscillations, which are in line with the movement of the Turkish index, this is due precisely to the Italian economy, which in the same period as Turkey is facing high inflation, but contrary to the Turkish one, the same at a much lower level.

Unlike the others, the movement of the value of the German index is characteristic, which varies, but in contrast to the Istanbul and Italian ones.

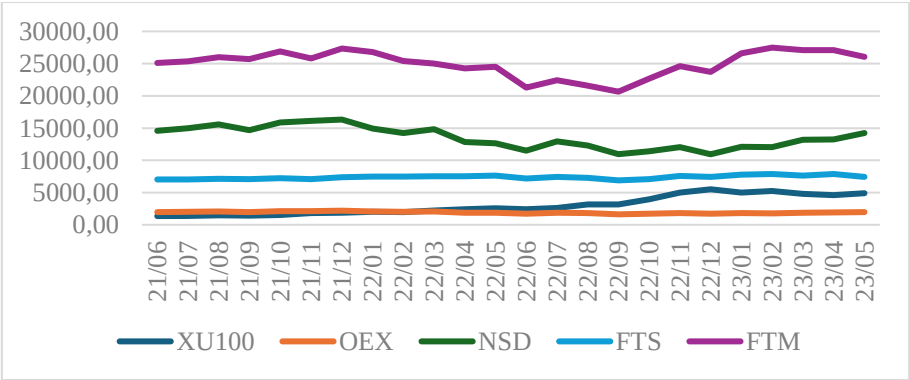

Figure 2 Comparative analysis of XU100 with representative indices of more developed stock markets
Source: Istanbul Stock Exchange, S&P, Frankfurt Stock Exchange, London Stock Exchange and Italian Stock Exchange

6.4. Autocorrelation of the average monthly value of the XU100 index

According to the autocorrelation results, it can be concluded that: The average monthly value of the XU100 index has a strong positive autocorrelation of the first order, which means the value of the index in the current month is strongly influenced by the value of the index in the previous month. The Durbin-Watson test results confirm the autocorrelation results. The average monthly value of the XU100 index has a significant positive autocorrelation of the second order. The value of the index in the current month is influenced by the value of the index of the month before the previous one.

The average monthly value of the XU100 index has a relatively positive autocorrelation of the third order.

Table 2 Autocorrelation

Order of correlation	Value	Durbin-Watson test
Lag 1	0,902099	0,02
Lag 2	0,795147	
Lag 3	0,671538	

Source: Author's calculation

6.5. Determination of the causality of the average monthly inflation on the average monthly value of the BIST100 index

When determining the causality, and in order to make the results more reliable, the stationarity of the data was tested with the ADF test. During the testing, non-stationarity was determined, while the results indicate that the differentiation of the second-order data both in the case of inflation (p=0.0003, p<0.05) and the index (p=0.0000, p<0.05) show stationarity, which makes them relevant to testing causality.

Table 3 ADF test of average monthly inflation

Null Hypothesis: D(INF,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=1)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.415432	0.0003
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

Source: Author's calculation (EViews)

Table 4 ADF test of the average monthly value of the XU100 index

Null Hypothesis: D(XU100,2) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=1)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.472467	0.0000
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

Source: Author's calculation (EViews)

According to the results of the Granger causality test, it can be concluded that the growth of inflation has a positive causality on the average monthly value of the index, the causality is established on stationary data (differentiation of the second order) and with a temporal discrepancy of the first order (Lag 1). The causality test does not establish causality between the index value and inflation, that is, the increase in the value of the index does not cause an increase in inflation.

Table 5 Results of the Granger causality test

Pairwise Granger Causality Tests
Date: 01/10/24 Time: 15:36
Sample: 1 24
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
XU1002 does not Granger Cause INF2	21	0.78050	0.3886
INF2 does not Granger Cause XU1002		5.21318	0.0348

Source: Author's calculation (EViews)

7. Discussion

Based on the research results, it can be concluded that the value of the BIST100 index is in permanent growth during the research period. In addition to this index, the other two representative indices of the Istanbul Stock Exchange have a permanent growth. Also, from the comparative analysis, it can be concluded that the increase in the value of BIST100 is caused by internal reasons, because the rest of the indices, with the exception of the Italian one, are relatively stable.

The results of the research indicate the acceptance of the hypothesis H1(1) because there is a strong positive autocorrelation of the index value with a time discrepancy of one month indicating that the disturbed stability of the stock market is very difficult to regulate and stabilize which coincides with the conclusions of Aksoy's research.

The Islamic banking model has significantly negatively affected the stability of the economy and caused the growth of inflation in Turkey. According to the results of the causality test, it can be concluded that the hypothesis H1(2) is accepted, because the causality test indicates that inflation causes an increase in the value of the BIST100 index. The existence of causality largely confirms the conclusions of the researches of Durmus and Ashtraf and Muhtaseb in the domain of the effects of the Islamic banking model on the economy and financial market of Turkey.

8. Conclusion

Islamic banking, as a model that is characteristic for its basic principles, can be said to be a significant challenge for its introduction in countries where a large part of the current banking sector is based on conventional banking. Consequently, the Republic of Turkey, which is making an attempt to introduce this banking model, and as a result of reducing the reference interest rate, faced a rapid growth of inflation and a historic devaluation of the lira. This macroeconomic crisis also strongly affected the financial market in the country, with the three representative stock indices, especially the BIST100, noticing strong growth correlated with inflation.

According to the results of the research, it can be concluded that the growth of inflation has a causal relationship with the value of the stock market index BIST100, that is, inflation contributed to the growth of the value, and thus to the destabilization of the already fragile financial system. In addition to causality, the comparative analysis of the value of BIST100 with the representative indices of the New York, Frankfurt, London and Italian stock markets

also indicates the internal reasons (inflation) for the increase in value, where, apart from the Turkish and Italian indices, which appear in countries that also face growth of inflation, the other indices are relatively stable and without significant oscillations.

Also, the research results indicate the presence of a strong positive autocorrelation of the average monthly value of the BIST100 index, which further contributes to the growth of the value despite the gradual reduction of inflation towards the end of the observed period.

The Republic of Turkey, in order to stabilize the financial market and make it predictable, and thus attractive for investors, must act with targeted measures such as: 1) Tightening the monetary policy, setting an inflation target and gradually returning inflation within the set target; 2) Stabilizing the lira through monetary sterilization of the strong pressure from megalomaniacal investments; 3) Renunciation of the Islamic banking model as the dominant form of banking in the Republic of Turkey;

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