



Examining the Impact of the Stock Market on Investment and Economic Growth in Germany

Professor Mohammad Ishaq Mahdavi¹; Associate Professor Sayed Abdul Hamid Sabet²

¹ Faculty Member, Faculty of Economics, Khatam al-Nabiyyin University, Ghazni, Afghanistan

² Dean and Faculty Member, Faculty of Economics, Al-Mustafa International University, Kabul, Afghanistan

<http://dx.doi.org/10.18415/ijmmu.v12i5.6809>

Abstract

According to a number of economic thinkers, the "stock market" and especially the "stock market" are very important and influential issues for investment and economic growth in the present era. This issue is important because investment and achieving economic growth require resources and financing. Many investors face a lack or shortage of resources, for which various solutions have been proposed in the economy, including stock market transactions, and for nearly a century, the "stock market" has been considered a suitable market for meeting financial needs. This research seeks to answer the question of whether the "stock market" plays a role in providing capital for investment and economic growth in Germany? If the answer is yes, this research is library-based in terms of citation, descriptive-analytical in terms of data, and statistical in terms of data. In this research, the statistics of the stock market index and national income during the years 2003 to 2024 have been regressed with the Eviews software. The findings of the study indicate that the "German Stock Exchange Market" has played a valuable role in investment, and investment in economic growth. In this market, stray capital is collected and ultimately made available to investors through the sale of shares.

Keywords: *Stock Exchange Market; Investment; Economic Growth; Germany*

Introduction

The present era, known as the era of communications and developments, witnesses new developments and innovations in human societies every day and considers achieving "economic growth and development" as one of the great national aspirations of countries. One of these amazing achievements has been the establishment and creation of the "stock exchange market" and "financing countries" in the matter of investment and achieving economic growth and development. Today, the "stock exchange market" has taken an important part of the economies of countries and has attracted the attention of economic planners.

Therefore; Having healthy, specialized, resourceful, and faithful people with a very wide range of advanced and independent industries and technologies, modern communication and correspondence

routes, advanced sea, air, and land ports and means of transportation, modern hospitals, schools and universities at the same level as the world, self-sufficiency and economic authority in the production, distribution, and consumption of food and strategic goods, and having multiple markets, including a "proper stock exchange market," are components of the common goals of all countries, including Germany. New financial, credit, and opening-up capital markets in countries have led to the issue of "stock exchanges and their impact on investment and economic growth" being raised as an effective phenomenon in the daily lives of individuals and societies, and as a very important tool for financing companies and governments, which is an indication of the movement of capital and money to their true place.

Explanation of the Topic

Economics is a science that deals with the interpretation of human economic life, its events and phenomena. Financing, investment, economic growth and development are some of the most important issues in this field, and achieving them is considered one of the most fundamental and important human ideals. Increasing national income, investment, increasing employment, reducing unemployment, increasing exports, reducing imports, longer life expectancy, higher purchasing power, reducing poverty, proper nutrition, social and economic justice are examples of what many countries are trying to achieve.

New financial policies, credit and the opening of capital markets in countries have led to the issue of "stock exchanges and their impact on investment and economic growth" being raised as an effective phenomenon in the daily lives of individuals in society and showing itself as a very important tool for financing companies and governments. In the present era, the "stock market" plays the most fundamental role in directing and allocating long-term savings of the society towards productive investment, job creation, and obtaining development and economic growth indicators. The Federal Republic of Germany, as the leader of this market, has been able to achieve good rankings in the world and in this way, it can attract a part of the stray capital at home and abroad and use it for investment and production.

Research Background

The stock market is now operating as a very important tool in helping to expand the real sector of the economy in different countries of the world. In the present era, this market, as the most important symbol of the capital market, attracts the society's savings and directs them towards important and productive economic activities. The Federal Republic of Germany is a country that has long realized the importance of this issue and has made significant efforts to provide transparency and investor confidence in this market. In the first part of this research, which is more general in nature, a number of books are mentioned as a discussion background. In the "Book of Introduction to the Islamic Capital Market" by the late Dr. Moosavian, financial institutions, financial instruments and the capital market (stock exchange) are mentioned on the basis of Islamic principles and principles (Sharia). The book "Interrelationship of Islamic Banking and Capital Market" by the late Dr. Naghi Nazarpour explains the relationship between Islamic banks and the capital market in part of this book. However, in the specific section related to the Federal Republic of Germany, some books and sites can be mentioned. Darbisher, 1989, in his book *Political Developments in West Germany from Schmidt to Cohen*, examined the German economy and the political and economic developments in this country. In the sites, he mainly discussed the German economy, the German stock market, the economic rank and stock growth of this country.

Necessity

This research is necessary for this reason, Germany ranks third to fourth in the world and first in Europe. It necessarily requires that this issue be examined and its results be proposed for modeling other countries. Therefore, it is necessary to introduce the powerful economic country of Germany to the world.

Research Method

The present research method is library citation in terms of quality, analytical, and statistical in terms of data. In this type of research, the researcher needs a solid argumentative basis to explain and justify the reasons, and logically connects the details related to his research problem with the relevant general propositions and draws conclusions. Also, depending on the nature of the research, the researcher may use data that can confirm or refute this conclusion.

Concepts

"Stock market" is a subset of social sciences, has multiple definitions, and is not subject to a relatively comprehensive and restrictive definition. (Karim Mouloud, 2009, p. 23) In this section, an attempt has been made to provide a relatively comprehensive and complete definition of the terms and concepts that are used as keywords throughout the research. In other words, in this market, "company shares" that indicate the owner's ownership in the company are traded. (Nazarpour, 2013, p. 20).

1. **Market;** refers to an institution in which there is a mechanism for signaling and adjusting prices that balances and equalizes the supply and demand sides. (Shakeri, 2007, p. 17). Also, "market" is a place or situation where a set of institutions, buyers and sellers communicate with each other to exchange goods or services and refer to it to meet their needs. (Faraji, Mohammad Yousef, 2004: 15). Therefore, it requires that all capacities and full employment of human and capital resources be used. (Nazari, 2013, p. 1).
2. **Stock Market;** "Stock market" is referred to as a type of buying and selling market in which documents, financial securities, currencies of different countries, metals, gold and silver, etc. are exchanged. (Musavian, 2012, p. 48). As a result; "Stock market" is referred to as a type of buying and selling market in which documents, financial securities, currencies of different countries, metals, gold and silver, etc. are exchanged. (Ibid., p. 13).
3. **Securities Exchange Market;** "Stock market" refers to a place or situation that is ready and available for those who want to buy or sell securities. (Ala, 2005, Saad and Zaad). In other words, "stock market" is an organized and self-regulating market in which securities are traded by brokers. (Office of Economic Studies, Deputy for Planning and Economic Affairs, 2006, p. 7).
4. **Capital Market;** This market is considered an effective option for creating equilibrium and consists of capital market financial institutions, capital market financial instruments and capital market. (Musavian and Abuzar, 2014, p. 26). In view of the above, "capital market" refers to a market in which shares of companies can be traded. This market may have a physical location or operate only under a network of electronic communications. (Ibid., p. 27). As a result; "capital market" helps by converting savings of individuals and business units into investment made by another economic unit. (Davani, 2005, p. 17).
5. **Investment;** In the present era, "investment" increases the productive capacity of society and generally converts potential possibilities into actual ones. (Athani-Ashari, 2007, p. 2). With this in mind, all countries are constantly trying to achieve the goals they intend and provide greater welfare for their people. Therefore; "investment" means allocating resources to obtain future profits and benefits, which in economics is measured by consumption and utility, and in finance, "investment" is measured by buying stocks and hoping for their price to increase in the future. (Faraji, 2003, p. 79).
6. **Economic Growth and Development;** "Economic growth" deals with the issues of advanced industrial countries, while "economic development" deals with the problems of underdeveloped

countries. (Qarabaghian, 1992, p. 6). As a result; "economic development" seeks to increase wealth, welfare of the people of the society, eradicate poverty and create employment, all of which are in line with social justice. As a result; "Economic development is a process of change and transformation that is centered on humans and the optimal use of resources and technology that leads to continuous growth to meet material needs and human welfare along with achieving the perfection of his or her potential." (Mahdavi, 1991, p. 12).

The Function and Position of the Stock Exchange in the Economy

In the economy, the "stock exchange market" is one of the most influential markets in the financial and capital markets, which can play a fundamental role in providing credit and capital shortages for investment and directing it towards active and productive economic units. The growth of the stock exchange market causes production to increase and also controls inflation. It can also help people participate in providing financial capital in industrial units and their participation in the ownership of companies, increase the commitment and efficiency of managers, and ultimately increase the growth of gross domestic product. (Izadi, 2004, p. 11). The basic basis for the formation of the "stock exchange market" is the same basic and simple concept of partnership, sharing profits and possible losses among partners, pooling capital, and financing companies and financial institutions. (Musavian, Peshin, 14). Today, this market; In addition to the advancement of its type and forms, it has significant effects on the economic and social status of society, the development, welfare and prosperity of the past countries, and at the same time it also creates profits and benefits for shareholders. (Farman-Ara, 2019, p. 19).

Therefore; the prosperity and prosperity of this market refers to functions such as earning income, financing, liquidity, sometimes tax exemptions, preserving capital against inflation, domestic and international credits of companies, information transparency, creating free competition, reducing risk and danger, benefiting from a growing economy and facilitating the transfer of ownership and the use of banking facilities. (Emami-Meybadi, 2015, p. 24).

The Nature and Position of the Stock Exchange in the German Economy

The most important goal that all countries and societies, including the Federal Republic of Germany, strive to achieve is to achieve "economic growth and development". Providing a decent life for all members of society is always at the forefront of various goals and plans of countries, and the main factor in the development of societies is the growth of their economy. Investing in the stock exchange is of great importance in the economic systems of these countries, including Germany, and acts as an economic thermometer of countries, and its role in the economy cannot be ignored.

Germany is a country located in Europe and is considered one of the developed and industrialized countries. This country has experienced the severe and devastating wars of World War I and World War II in the recent past. After World War II, it is considered one of the most important countries in the world as a result of efforts in various dimensions, including in the fields of economy, development and welfare. After reunification, the country changed its foreign and economic policies, which resulted in Germany becoming a global and regional power in the fields of politics, economics, etc. After reunification, the country made great efforts to define its national identity based on avoiding accusations of nationalism by relying on collective identity, Christian values, dedication to the progress of the European Union, democracy, and market economy. (Ahmadi Lefourki, 2015, p. 13).

German Economy

The Federal Republic of Germany has 16 federal states located in Central Europe, which are often known as stable democracies with a more homogeneous culture than conflict-ridden. (Von Dierke, 2002, p. 13). Germany is the second most populous country in Europe after Russia and the most populous country in the European Union. The country is located between the Baltic Sea and the North Sea to the

north, and the Alps to the south. Germany shares borders with Denmark to the north, Poland and the Czech Republic to the east, Austria and Switzerland to the south, and France, Luxembourg, Belgium and the Netherlands to the west. The capital of the country is Berlin, the most populous city in Germany, with over 4 million people living there. The most important commercial center of Germany is Frankfurt, the largest city in the Ruhr region. In 1946, Germany had a devastated and collapsed economy, with all its cities and industrial and manufacturing plants bombed. However, after World War II, the country was able to stand on its feet for three decades and powerfully rebuild and modernize its industrial and commercial foundations. (Darbyshire, 1989, p. 136). In less than a century, this country has one of the largest economies in the world and the top economy in Europe from an economic perspective. These developments have been very impressive, and the growth of private sector groups has also had a similar situation in this economic growth. (Darby Sher, Peshin, p. 139). According to World Bank statistics, the country's GDP in 2021 reached \$3.84 trillion and in 2022 it reached \$4072.19 billion, which is 1.81% of the total world economy (worldeconomics.com). Germany has the fourth largest economy in the world after the United States, China and Japan and the largest economy in Europe, and it is the third largest exporting country in the world. The service sector has the largest share in the country's GDP with 70%. (<https://kpmg.com>). The German economic system is mixed, and consumer goods and commercial services are produced in the free market. The government has enacted regulations to protect citizens, which has increased life security and economic justice in Germany. (<https://lahzeakhar.com>). These two issues have allowed all people to benefit from its benefits. In this country, the average life expectancy is estimated at 81 years, with women living an average of 83 years and men 78 years. (Ibid). As a result, the German economy has an advantage over other European countries with its innovation and strong focus on exports. The German economic system relies on advanced automotive, mechanical engineering, chemical and medical industries that have high production, as well as exports. Although researchers expected the German economy to shrink in 2023 due to the war in Ukraine and the tension between Russia and Europe and its negative effects on the global economy, the country still has one of the best economies in the world and the European region. According to statistics, the country's exports have increased surprisingly at the beginning of the second quarter. In April 2023, exports grew by 1.2% compared to March of this year, reaching 130.4 billion euros. It is noteworthy that exports to China this year amounted to 8.5 billion euros, the United States to 13.1 billion euros, the United Kingdom to 6.1 billion euros, and Russia to 0.7 billion euros. The country's imports in the same year decreased by 1.7 percent to 112 billion euros, which is almost twice as much as expected. (<https://kpmg.com>). According to this report, it became clear that this powerful economy has been very successful in its trade balance and that the country's exports have exceeded its imports. In terms of wealth, this country is the richest European country, which has the highest number of millionaires in the world after the United States and China. According to official statistics published in 2018, the assets and wealth of 45 German citizens are equal to the wealth of half of the country's 82 million population. (<https://fa.wikipedia.org>).

Germany's Economic Position in Europe

As mentioned, the German economy is one of the largest economies in the world and the best economy in Europe. An economy that, according to World Bank statistics, is ranked third in the world and first in the European continent, which certainly has a very privileged position. The country's GDP reached \$3.84 trillion in 2021 and more than \$4.00 trillion in 2023. (<https://parsicanada.com>).

The "economy" in Germany started with innovation and a strong focus on exports, more than other European countries. The German economic system relies on advanced automotive, mechanical engineering, chemical and medical industries that have high production, as well as exports. On the other hand, Germany is one of the founding countries of the European Union and supports this union even in difficult circumstances. Also, Germany's geographical location, which shares borders with 9 European countries, has led to more exports to these countries and plays an important role in their economies. According to economic growth statistics, Germany has enjoyed higher growth than other European countries. This country has enjoyed higher economic growth consistently from 2008 to 2018. In 2009,

this country enjoyed lower growth than other European countries, but since 2010, it has enjoyed higher growth than those countries and has increased the growth gap more than the previous year every year. In 2018, Germany enjoyed economic growth of 112 and other European countries enjoyed 107. (<https://parsicanada.com>).

Therefore; Germany can show its position and authority in the green continent of Europe as a powerful country from many angles such as politics, democracy, significant contribution to the union, softness, avoidance of nationalist behaviors and superior economy. The existence of wealth, modern industry, modern technology and consumer market are all advantages that make Germany worthy of cooperation with other countries. Despite its problems, the German economy has very positive signs, the most important of which is market stability. On the other hand, the reputation and strength of the German economy have a tremendous role in European developments and have made this country the beating heart of this green continent. (Rahmani, 2005, p. 119).

History of the German Stock Exchange

Germany is one of the most important countries in the European Union in terms of economy, trade and politics. This country is also one of the influential countries in various fields in the global arena and is considered one of the industrial and economic countries in Europe. (<https://khanesarmaye.com>). Germany has been described as a success story of economic growth alongside Japan and other industrialized countries. Although the economies of these two countries are very strong today, history shows that the economies of these two countries were very weak during the First and Second World Wars, which both swallowed the capital of these two countries and turned them into ruins from an economic perspective. (Darbysher, Peshin, p. 137). In the decades after the war; both countries experienced the fastest economic growth in their entire history, especially in relation to the "stock exchange" and are considered among the first successful countries alongside European countries such as England, Switzerland and... These two countries were very quick to enact laws and regulations governing the activities of an institution called the "Stock Exchange Market" to prevent any fraud, forgery, and violation of shareholders' rights. (Izadi, Hassan, Peshin, pp. 11-12).

This country does not have a single economic center and various economic sectors are concentrated in different parts of it. The "German Stock Exchange" is located in Frankfurt, while "Berlitzmann", which is Germany's largest multimedia company, is located in Gütersloh. Wolfsburg, Stuttgart, and Munich are the centers of the "German automotive industry". The "Stock Exchange and Securities Market" of this country consists of eight sub-markets located in different parts of this economic country, and the financial transactions of each of these markets are very important for the European and global economy. (<https://fa.wikipedia.org>). Although Germany is the fourth largest exporter of goods in the world and the first exporter in the European continent; But one of the most important features that encourages international investors to invest in German securities is the high liquidity of the country's financial markets. Considering this, it became clear that Germany is one of the best countries in the region in Europe and the world in various fields, including the "stock exchange". Because; One of the most important advantages of buying stocks in Germany is that there are no restrictions for people living in other countries to buy German stocks and people all over the world can buy stocks in Germany. Also, there is no specific minimum cost for buying stocks in Germany and investors with minimal capital can also invest by buying stocks in Germany. (<https://fa.wikipedia.org>).

Therefore; Although Germany is one of the world's leading economies with a very high GDP, it plays a very important role in the economy and even politics of Europe and the world. Despite this, this country has smaller financial markets even compared to other countries such as England and France. This is why Germany had the 12th largest stock market in 2016, while the UK was third. This may be a cultural issue, suggesting that people and retail investors in Germany are not very keen on investing in the stock market, unlike people and retail investors in the UK and the US who are very keen on investing in

the stock market. However, the country also has the most important stock market, which will be discussed below.

1. Frankfurt Stock Exchange

According to a report by the International Finance Corporation, an institution affiliated with the World Bank, Germany was among the top four countries in the world in terms of capital market development in 2004, along with the United States, Japan, and the United Kingdom. (World Bank Group, 2024, part 2, p 33). Considering this, it is clear that Germany is the leader in terms of capital market development and the securities market, including the "stock market", in the world, and this "market" has had a positive impact on investment, development, and economic growth in this country. Examining the German stock exchange allows us to make good use of the country's strengths and positive points in this area and act accordingly. Although other countries, including Islamic countries, have also had positive activities and performances in this area, this country has been successful in the fields of industry, the automobile market, and the capital market, including the stock market.

As mentioned, Germany is one of the best countries in the world and the region from an economic point of view, although it is not as well-off as some European countries in terms of investment in financial markets, including the "stock market". However, this country also has a well-known stock exchange market under the name "Frankfurt Stock Exchange".

"Frankfurt Stock Exchange" is one of the most important and largest stock exchange markets in Germany and the twelfth largest stock exchange in the world in terms of market value in the financial sector. (<https://www.boerse-frankfurt.de>). This exchange has a turnover of 90%, which operates in two trading venues, "Extra" and "Thalerborse", among seven regional exchanges in Germany. In this section, it is good to mention a number of important factors of this market.

1.1. The Establishment of the Frankfurt Stock Exchange

The history of the establishment and origin of the "stock exchange" dates back to medieval trade fairs in the 11th century. Slowly, this market flourished, and in the 16th century, "Frankfurt", which is the center of this market, became a wealthy city with an economy based on trade and financial services. Finally, this market was established in 1585 to "determine fixed exchange rates", which was considered a sign of the "birth of the stock exchange", and over the following centuries, Frankfurt became one of the first major exchanges in the world, such as London, Paris, etc. (<https://khanesarmaye.com>). In 1993, control of this market was transferred to the "Deutsche Börse" company, which has more than 5,000 employees and has established numerous offices in different parts of the world to serve investors in financial markets in the United States, Europe and Asia. (Ibid). Currently, private investors trade more than one million securities on the Frankfurt Stock Exchange trading floor. In this market, the growing needs of international trade are well met by conducting specialized trade and advanced electronic transactions.

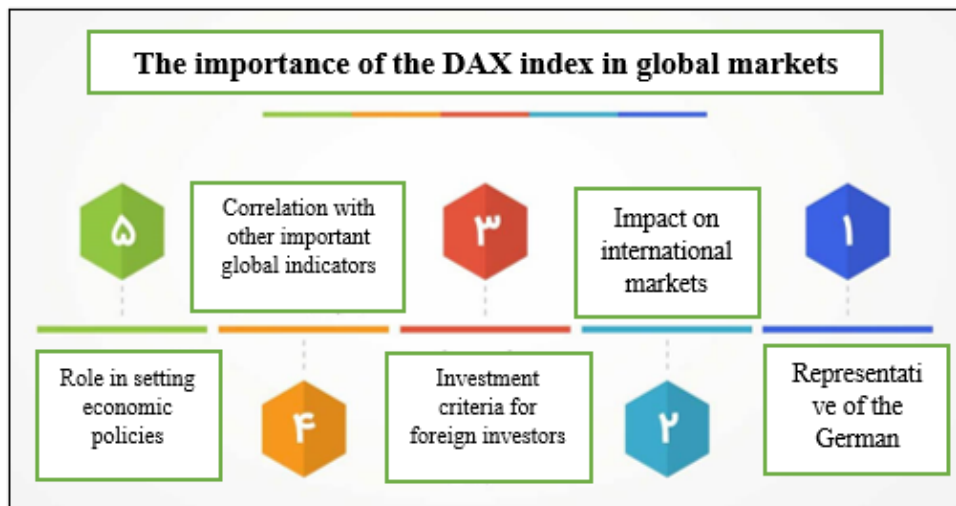
1.2. Indices and Companies Active in the Frankfurt Stock Exchange

The Frankfurt Stock Exchange follows a series of indices that are suitable for investing in the stock and securities market. These indices are: "TecDAX", "LDAX", "CDAX", "EuroStoxx50", "VDAX", "MDAX" and "SDAX". (<https://chartiran.com>). There is also another index specifically for "German stocks" called "DAX" (Deutscher Aktienindex). This index is a stock index that represents 40 of the largest and most liquid German companies that trade on the Frankfurt Stock Exchange. This symbol, which is used to measure the status of German stocks, shows the average trading volume of these 40 companies. (<https://iranbroker.net>). International investors look to the DAX index as an important tool for making investment decisions. (<https://utofx.com>). A positive performance of this index can indicate good investment opportunities in Germany and Europe. In addition to being used in the stock market, this index

is also used to assess the economic situation in Germany. The German economy and stock market as a whole have been evaluated very well for several years compared to these indices.

The DAX index is of particular importance in several ways:

1. Representation of the German economy;
2. Influence on international markets;
3. Benchmark for foreign investors;
4. Correlation with important global indices;
5. Role in setting economic policies. (<https://utofx.com>).



The German stock market in general and the Frankfurt Stock Exchange in particular enjoy a superior economic position in Germany due to the ease of entry and exit as an investment market. A large number of companies active in various fields have participated in the Frankfurt Stock Exchange in this market. (<https://khanesarmaye.com>). As a result; the best domestic and foreign famous companies are listed and active in these indices. For example, we can say: In addition to London and Paris, bankers such as Mayer Amschel Rothschild and Max Warburg have had a significant impact on the financial trade in Frankfurt. (Ibid).

Therefore; German economic indices, including the DAX index, which is a stock exchange index, were launched in 1988 and represent the 40 largest listed companies in the country. This index is a total return index that is often used as a benchmark for the German stock market, with eighty percent of the market capitalization owned by companies such as Lufthansa, Volkswagen, BMW, Bayer, Henkel, Beiersdorf, and Hugo Boss, which are known as the largest and most liquid companies in Germany. (<https://chartiran.com>).

1.3. Features and Benefits of the Frankfurt Stock Exchange

As mentioned earlier, the Frankfurt Stock Exchange is known as the largest German stock exchange among the eight major German stock exchanges. This market has special features and benefits that have attracted the attention of domestic and foreign investors. The features mentioned below have made this stock exchange the top stock exchange in Germany and the twelfth in the world. Now; some of these features are mentioned:

1. High level of market information transparency;
2. Increasing liquidity and liquidity as much as possible;
3. Reducing the costs of stock exchange transactions;
4. Having strict, smooth and comprehensive rules;
5. Protecting assets and transactions against any type of manipulation or fraud. (www.boerse-frankfurt.de).

Therefore; Transparency of information, greater liquidity, reduced costs, the existence of rules that are the same for everyone, and protection of assets are among the most important indicators of a strong and capable market that investors like to invest in. This is why the Frankfurt Stock Exchange has a control system based on the supply and demand of securities and stocks, and their prices are determined and implemented through the mediation of specialized "market makers". With its extraordinary capacity, this market ensures the reliable and smooth operation of stock exchange transactions.

As a result; The "Frankfurt Stock Exchange", with the presence of many domestic and foreign investors and giant German companies, is a suitable place for large securities transactions, including stocks, among investors, which are carried out under special conditions, where they can also trade various types of assets specific to the German financial market or assets and stocks of other countries.

1.4. Institutions supervising the Frankfurt Stock Exchange transactions

In order to supervise the proper operation of the Frankfurt Stock Exchange, there are three supervisory institutions in Germany, the main task of which is to supervise the compliance of the stock exchange market with national and international standards. (<https://chartiran.com>). The main goal of this supervision is to protect the capital of investors and stock exchange users and gain their trust in this market. These institutions are:

1. Federal Financial Supervisory Authority; The Federal Financial Supervisory Authority or "BaFin" as a reputable supervisory institution plays an important role in the German financial market and can create job security and work-life balance for individuals. This institution strives to ensure that the German financial system can continue to function properly, remain competitive and sustainable, and its integrity is maintained. Also; the trust of investors and insured persons in this organization is maintained and market operators behave fairly. (<https://itsca-brokers.net>).
2. Stock Exchange Supervisory Authority; The BAB is an important supervisory body in the German stock exchange that monitors the proper execution of transactions on the various stock exchange markets and platforms. As a result, it plays an important role in ensuring the legal and fair functioning of the markets. (<https://bingxfarsi.com>).
3. Trading Supervision Office; This office, abbreviated as "TSO", is an independent supervisory body of the Frankfurt Stock Exchange. This independent body is responsible for monitoring the functioning of the markets and oversees the proper execution of transactions on important trading platforms such as Xetra and Eurex as well as specialized trading on the Frankfurt Stock Exchange. The Trading Supervision Office is tasked with identifying irregularities, disruptions and possible manipulations in the markets. If suspicious cases are identified, it provides the relevant information to the supervisory authorities, in particular the Federal Financial Supervisory Authority (BaFin). (Hein, 2020, p 774).

Therefore; The above-mentioned supervisory authorities (BaFin), (BAB) and (TSO) have managed to make this market a trusted market in many ways. These institutions work together to achieve

their main goal, which is to protect investors and strengthen confidence in the German and international financial markets. These institutions play a very important role in maintaining transparency, fairness and the proper functioning of the markets and help to establish a safe and stable environment in the German stock market.

1.5. What Are the Duties of the Frankfurt Stock Exchange Council?

The Frankfurt Stock Exchange Council consists of 18 members who play a key role in deciding on fundamental issues of the stock exchange organization. One of the duties of this council is to appoint, dismiss and supervise the activities of the board of directors. Other duties of the council include issuing stock exchange rules, implementing the necessary regulations for fees and determining the conditions for concluding transactions on the stock exchange. The board of directors is required to obtain the approval of the stock exchange council on all important and fundamental issues of the Frankfurt Stock Exchange. (<https://www.boerse-frankfurt.de>).

The stock exchange council, which is currently in office, was elected on November 28, 2019 for a term of 3 years. The chairman of the stock exchange council is from Fraport AG, which is the executive management of the control and financial affairs of the Frankfurt Stock Exchange. The vice chairman of the stock exchange council is from DekaBank Deutsche Girozentrale, a credit institution under public law. Other members of the council are investment companies, banks and other credit institutions, Goethe University Frankfurt, and financial service providers and economic experts. The permanent guests of this council are the ministers of the ministries of economics, energy, transport and housing. (Theadora Ruh, 2009, 35).

Therefore; The Frankfurt Stock Exchange is one of the most important German stock exchanges, ranking 12th in the world. This market has special indicators and advantages that are very important in attracting and attracting investors due to the high liquidity of the financial markets. Due to these characteristics, many well-known and very powerful companies in terms of income and wealth are active in this market. Like many other stock markets, this market has regulatory institutions and a stock exchange council, which has played a significant role in attracting investors and stock exchange brokers. For this reason, the Frankfurt Stock Exchange is one of the largest securities trading centers in the world, accounting for about 90 percent of the turnover, and is the largest of the seven stock exchanges in Germany, with more than 200 listed companies and a market value of about \$2 trillion. (www.gozareshakhabar.ir)

2. Economic Impact of the Frankfurt Stock Exchange

As mentioned above, Germany rose from the ruins of World War II and was able to have a say in various fields. This country has made many efforts in the fields of politics, society and economy. Germany has a political system of a federal republic, democratic and parliamentary. Germany has 16 states that can act independently in some matters. Germany is now one of the most industrialized countries in the world and, as the richest member of the European Union, is considered the economic engine of the Eurozone. (<https://fa.wikipedia.org>). This section refers to the economic impacts of the German stock exchange market on investment and economic growth.

In general, it can be said that in macroeconomic analysis; the increase in national income depends on factors such as consumption, investment, government spending, and net exports, which is shown as the following function.

$$Y = C + I_o + G_o + X_o - M_o \Rightarrow Y = a + b(Y - T_o + Tr_o) + I_o + G_o + X_o - M_o$$

In this induced consumption function, income tax, government spending, and net exports also depend on investment. This means that part of consumption depends on the income obtained from

production and investment, and usually the spending of many governments is also obtained from taxes that depend on income. Net exports also depend on investment and production. Considering this, we can say: Investment is a very important factor in increasing national income, which on the other hand, investment also depends on financial and monetary resources. In the meantime, the capital market is one of the two important elements in financing investment, and today the stock market has played an important role in the capital market to increase the income of countries. Therefore; all developing countries are trying to attract domestic and foreign capital and observe its role in the field of investment, economic growth and development. (Mahdavi, 2005, p. 17).

Therefore; The economic, social and cultural programs of Germany require that the effects of some markets, including the "stock market" on investment, growth and economic development be well analyzed. In this context, the study of the effects of the stock market on investment, growth and economic development resulted in the following issues, which can be referred to as the results of this research.

2.1. The Economic Role of the German Stock Market on National Income

The most important goal that countries in the world are trying to achieve is economic growth and development, which is achieved as a result of investment. Because; providing a decent life with prosperity is always at the forefront of various goals and plans of countries. On the other hand, we know that "economic growth and development" requires significant and large economic investments. Considering this, it is concluded that achieving economic growth and development is possible through the creation of a strong and efficient capital market with basic infrastructure and long-term financing.

The German economy has a market economy system that constitutes the largest national economy in Europe, the third largest economy in terms of gross national product in the world and the fourth in terms of gross domestic product. (World Bank, Peshin, 33). About 40 million people are employed, of which 53.2% are men and 46.8% are women. Approximately 2.1 million people are unemployed in Germany, with an unemployment rate of 5.1% to 6.4% among those aged 15–64. The country has a skilled workforce, large capital stock, low corruption, and a high level of innovation, with the service sector accounting for 71% of the total GDP, industry for 28%, and agriculture for 1%. (<https://fa.wikipedia.org>).

Therefore, the service sector accounts for the largest share of GDP, which is largely reflected in the German stock market. The GDP in Germany in 2024 is estimated to be €1,121.06 billion, with an average of €673.32 billion from 1991 to 2024, reaching a high of €1,121.06 billion in the second quarter of 2024 and a low of €392.63 billion in the first quarter of 1991. (Federal Statistical Office).



GDP over the last ten years (figures in billions of dollars)

As a result, Germany has created the largest and most reliable stock exchange in the world, providing a greater share of its GDP from this understanding. Today, giant economic companies operate in this market and play an important role in increasing the country's GDP and per capita income every year. (<https://fa.tradingeconomics.com>).



German stock market index over the last 20 years

Based on data from Germany from 2003 to 2024, the following results were obtained by performing a regression. These results show that there is a correlation between the German stock market index and national income (GDP), and this relationship is direct.

Dependent Variable: GNP
Method: Least Squares
Date: 01/30/25 Time: 22:58
Sample: 2003 2024
Included observations: 22

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOURSS	0.039250	0.003407	11.51909	0.0000
C	352.3909	36.89652	9.550791	0.0000
R-squared	0.869015	Mean dependent var		741.6227
Adjusted R-squared	0.862466	S.D. dependent var		187.4133
S.E. of regression	69.50334	Akaike info criterion		11.40713
Sum squared resid	96614.28	Schwarz criterion		11.50632
Log likelihood	-123.4785	Hannan-Quinn criter.		11.43050
F-statistic	132.6893	Durbin-Watson stat		1.206909
Prob(F-statistic)	0.000000			

Correlation regression results between the German stock market index and GDP

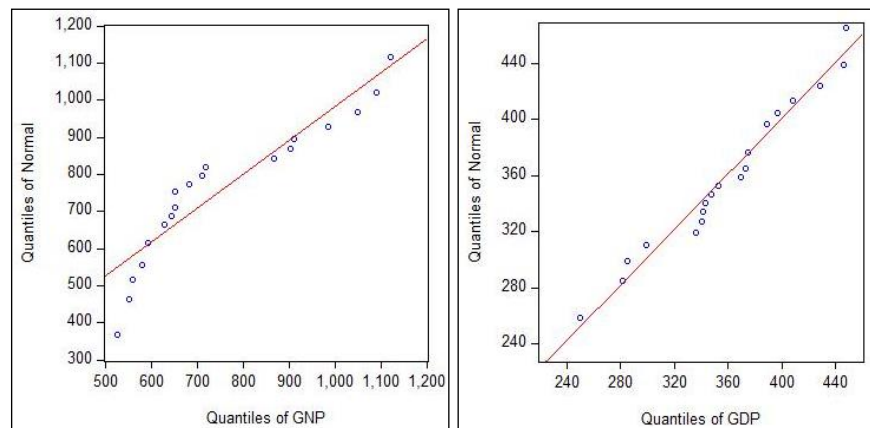
In this test, with a probability of less than 5%, the width from the origin is 352 with a positive slope of 3%, all coefficients are correlated and significant. That is, if the German Stock Exchange Total Index changes by one unit, the gross national income will increase by 3%. In addition, the value of the t-statistic is also greater than 2, which indicates significance. The regression equation also shows the above results well. This equation, which is defined as $GNP = 0.039 \cdot BOURSS + 352.39$, indicates a width from the origin of 39% with a positive slope. Also, the results of the regression of the stock exchange index on the gross domestic product are also significant and all coefficients are correlated with each other. In other words, with a probability of less than 5%, the width from the origin is 263 and its slope is also positive. This test shows that if the German Stock Exchange Total Index changes by one percent, the gross domestic product will change by nine thousandths. The regression equation also shows the above results

well. This equation, which is defined as $GDP = 0.0096 \cdot BOURS + 266.35$, has a width from the origin of 00.96 with a positive slope.

Dependent Variable: GDP				
Method: Least Squares				
Date: 01/30/25 Time: 22:48				
Sample: 1382 1402				
Included observations: 21				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOURSS	0.009994	0.001716	5.822889	0.0000
C	263.4401	17.49003	15.06230	0.0000
R-squared	0.640873	Mean dependent var	357.7619	
Adjusted R-squared	0.621971	S.D. dependent var	49.16391	
S.E. of regression	30.22796	Akaike info criterion	9.745805	
Sum squared resid	17360.86	Schwarz criterion	9.845283	
Log likelihood	-100.3309	Hannan-Quinn criter.	9.767394	
F-statistic	33.90603	Durbin-Watson stat	1.103278	
Prob(F-statistic)	0.000013			

Correlation regression results between the German stock market index and GDP

Therefore; it was found that the relationship between the total index of the German stock exchange and the gross national and domestic product is a direct relationship and a one percent change in the total index of the German stock exchange will change the German national income by a certain amount. Also, the generalized first-order results of Dickey Fuller show that the variables of this test are well-fitted.



GNP and GDP variables fitting graph

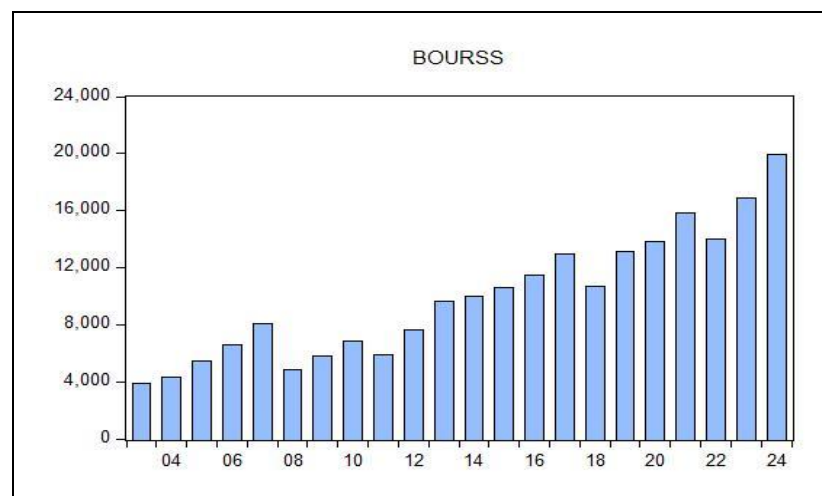
As a result; the correlation coefficients in both tests are significant. Because; the correlation coefficient between gross national income and the stock exchange index is equal to, which indicates a relatively strong correlation. The correlation coefficient between gross domestic income and the stock exchange index is equal to, which indicates a relatively strong correlation. Both correlations are closer to one. On the other hand, the correlation coefficient of each variable with itself is one, but the coefficient of the two variables is a number between negative one and positive one. A positive number indicates a direct and complete relationship between the variables. The number zero indicates the absence of a relationship between the variables. A negative number indicates a reverse and complete relationship between the variables. According to the values in the correlation coefficient table in Eviews, you can find out whether there is a strong, weak, direct or inverse relationship between the variables.

	GDP	BOURSS		GNP	BOURSS
GDP	1.000000	0.829312	GNP	1.000000	0.932210
BOURSS	0.829312	1.000000	BOURSS	0.932210	1.000000

2.2. The Role of the German Stock Market in Per Capita Income

Increasing per capita income is another very important goal of the economic systems of countries, including the Federal Republic of Germany. Almost all economic schools on economic development and its indicators have endorsed the "national per capita income of countries" index and have emphasized its achievement. (Shoghi Elfingeri, 1976, p. 94).

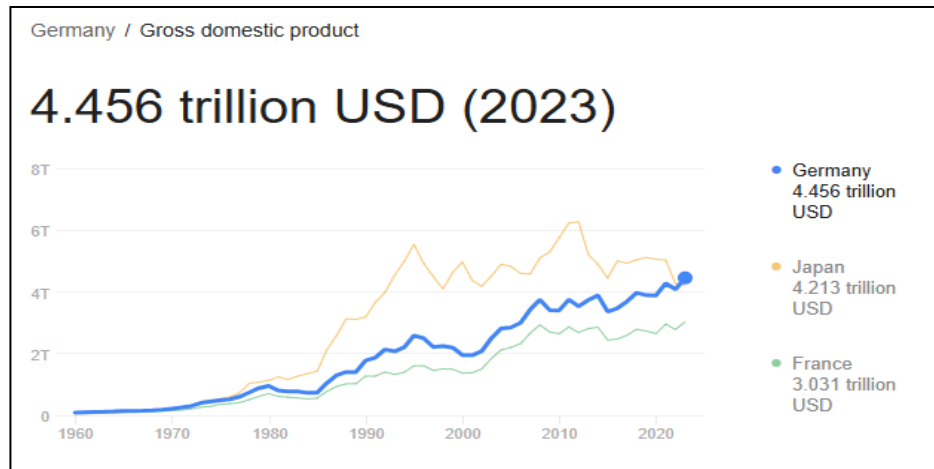
One of the ways to increase the per capita income of countries is the entry of investors into the stock market, whose income also increases with the transactions made. As mentioned, with the increase in gross national and domestic income, the per capita income of these countries also increases. Germany is one of the countries that ranks third in the world in terms of economy and first in the European region. By establishing and forming the Frankfurt Stock Exchange, which has a long history in this country, this country has so far carried out many positive activities and annually brings billions of dollars into the production, economy and investment cycle. According to reports, Germany received the most foreign capital in 2023, surpassing the United States with 410 billion euros, which constitutes 12% of the total investment in Europe. (<https://nabzebourse.com>). Although the German people do not have much thirst for this market, the presence of large and giant companies in the world has placed the country in 12th place in this market globally and in first place in Europe, which has caused the country's stock market index to always be growing, indicating economic growth and an increase in the country's per capita income.



Growth graph of the German stock exchange total index during the years 2003-2024

Therefore; one of the most important and acceptable indicators of economic development is the "per capita national income" index, which increases with the increase in investment in the stock market, which in turn increases the per capita income index.

As a result; Germany, with its first rank in Europe, can be concluded that the "per capita income" of this country shows an extraordinary increase. The German government officials understood the problem well after World War II and were able to achieve success in this field and provided the basis for attracting capital in the Frankfurt Stock Exchange, and in this regard, in addition to affecting economic development and growth, it has also increased the country's per capita income. Data from this country shows that Germany's GDP in 2024 is 4.3 trillion euros, part of which belongs to the huge amount of stock market transactions. (<https://www.worldometers.info>).



Germany's gross domestic product per year

In this regard; the increase in transactions in the German stock market has led to economic growth, increased investment, improved employment, and overall increased social welfare, placing the country in first place among European countries and third in the world from an economic perspective. Undoubtedly, the attraction of foreign investors to the stock market indicates the success of this market in Germany.

2.3. Preventing the Excessive Use of Natural Resources

One of the essential factors in creating sustainable development and growth is the “responsible use of natural resources”. Sustainable development is considered when “economic development” in the process of which the needs and welfare of future generations are not sacrificed to the needs and welfare of the present generation. (Elliot, 2010, p. 18). Sustainable development is continuous development over time that must be considered to expand the possibilities of human life, not only for the present generation, but also for future generations. Today, the concept of sustainable development has been accepted by almost all governments, including Germany, as a desirable political goal. Achieving this goal will be achieved when, in its process, economic, financial, trade, energy, industrial agriculture, environmental policies, use of natural resources, etc. must be implemented and practiced in a way that sustains economic, social and environmental development. (Rahmani, 2013, p. 84).

On the other hand, it is clear that countries have used their natural resources ruthlessly for investment, economic growth and development and do not think about future generations at all. The economic history of some countries, including Germany, indicates that achieving economic growth without reducing natural resources is possible. One way to help in this matter is to create a "stock exchange market".

Germany is one of the advanced European countries that has realized the need to use renewable energies and has taken effective measures in this regard. This country has implemented environmental policies to change its energy sources. (<https://www.imna.ir>). Undoubtedly, preserving the environment and preventing the excessive use of natural resources requires huge costs. By creating the largest "stock exchange market" and "stock exchange market", Germany has been able to cover part of its environmental costs from the taxes collected by investors in this market. This country has tried with very precise and targeted programs to manage the excessive use of natural resources well with "responsible use of natural resources" and to compensate part of its costs from this market.

Therefore; If a country can maintain its standard of living in investment, production, consumption and distribution, without depleting natural resources or destroying its environment, then this country is

undoubtedly on the path of sustainable development. Just in front of these countries, there are countries whose income is mainly derived from the depletion of non-renewable natural resources such as oil, gas, coal, etc. These countries cannot be considered as a sustainable country with sustainable development. Because; These countries cannot maintain their economy after the non-renewable resources are exhausted. Meanwhile, Germany, by understanding this important and vital issue of renewable resources such as wind, solar energy, and the stock market, has provided the possibility of continuing to generate income for future generations. (<https://datatopics.worldbank.org>).

2.4. The Role of the German Stock Market in Human Development

As is clear, “human development” is another important indicator for development. “Human development” is a process during which the capabilities of individuals in a society increase. (Madani Ghahfarkhi,

2017, p. 3). In other words, human development emphasizes a long life with health and access to knowledge and the ability to achieve livelihood resources for a dignified life, which indicates an increase in capabilities during a specific process, an increase in the quality of life, the development and expansion of human talents and capacities, and most importantly, the long-term progress of humans in the dimensions of a long and healthy life, access to knowledge, and enjoyment of appropriate standards of living.

Since quantitative indicators faced challenges and did not indicate a fair distribution of wealth among individuals in society, economists found it necessary to use composite economic, social, political, and cultural indicators under the title of “human development.” (Khalilian, 2000, p. 59). For this reason, economic thinkers have established a position and framework beyond quantitative factors in order to achieve the level of economic development and growth, and have considered development, which is more of a qualitative transformation, to include social, cultural structures, etc., which include the level of health, nutrition, education, mortality rate, life expectancy, etc. Each of these indicates examples of qualitative development versus quantitative development. (Akbari, 2009, pp. 99-100.) Therefore, “human development” is indirectly affected by the “stock market”. Because; many companies that sell their shares on the stock market pay attention to important issues within the organization, including human development. Because; many companies consider themselves obliged to increase the level of employee literacy, physical and mental health of employees, fair distribution of organizational resources, etc. Also, many investors and stock buyers, by earning more income, have provided the grounds for participation in acquiring human development indicators, which, by increasing the level of literacy and improving the capacity of the human resource, as well as increasing the physical and mental health of the workforce, etc., prepare the ground for economic growth and its impact on the world.

As a result, the stock market indirectly plays an important role in creating or increasing human development and, without a doubt, in societies where women are economically independent, they are less vulnerable than in societies where women rely on others for their livelihood. Similarly, illiterate and unskilled workers are more vulnerable than those who have received good education. (Madan Ghahfarkhi, Peshin, p. 225). In this regard, as mentioned, in order to achieve economic growth and development at the national and international levels, capital accumulation and financing are needed. The optimal use of labor in the production process depends to some extent on the amount of available capital and its accumulation. (Hassanzadeh, 2009, p. 33). Also, health, which is one of the main components of human development, requires the provision of health and hygiene resources. Companies and industrial owners pay huge expenses for insurance and the like every year. Sometimes these companies face a shortage of resources in these areas, and these companies can provide financing by selling part of the company's shares and use it to improve the mental, spiritual and physical health of employees.

Germany, as well as having made serious and numerous efforts in the field of economy in terms of GDP, per capita income, etc., this country has also demonstrated valuable efforts to increase human development indicators. As Germany is considered one of the best in the world in the field of economy and the economic hub of Europe, this country is also in a superior position and the first in various fields of human development such as literacy, health, life expectancy, nutrition and mortality rate.

Based on evidence; Germany is one of the countries with the highest human development score in 2018, ranking fifth. The German Human Development Index (HDI) for 2018 was estimated at 936%, and Norway topped the index with 953% in the same year. (<https://fa.wikipedia.org>). In light of this, the Federal Republic of Germany, after a period of complete destruction, has regained its authority and has become known as an economic miracle from an economic perspective, which the German Minister of Economics considers to be the result of the sincere efforts of all German people. (Knopp, 2004, p. 324).

Therefore; Germany has a social welfare system that emphasizes the support of individuals and families. In this country; Social insurance, unemployment insurance, health insurance, pension insurance, elderly care insurance, social assistance, family assistance, housing assistance and educational assistance are among the welfare services, part of which is obtained from the understanding of the stock market. This has led to Germany having a strong middle class society and a high human development index that can help improve the quality of life and general welfare. (<https://sabetgroup.co>). With this in mind, it can be said that Germany also made a significant contribution to human development with the scientific revolution it launched in this country. In Europe, scientificization was widespread before industrialization, but until years after the industrial revolution, there was still no close connection between industry and scientific and technical education. But from the second half of the 19th century, this situation changed, and people who had received formal and university scientific and technical education were employed in the industrial sector, so that laboratories were organized for these people in many institutions. It was here that "science at the service of industry" was the phrase that Alfred Marshall used to describe Germany's contribution to world industrial leadership. In Germany, the passion for education and the prestige and importance of university professors produced completely different results than in other countries. A very close working relationship was established between industry and universities, and the German government provided large sums of money for research in chemistry and its teaching to universities and technical schools. (<https://donya-e-eqtesad.com>).

Conclusion

In this article, while explaining the necessity and background of the discussion, a series of important concepts that have played a key role throughout this article were first explained, and then the function and position of the stock exchange in the economy, especially in the Federal Republic of Germany, were examined. In this research, it was pointed out that Germany has taken the third place among countries from an economic point of view and the first place in Europe. Undoubtedly, this progress would not have been possible without the efforts of the German government and the employment of a skilled and experienced workforce. On the other hand, prosperity, development and economic growth require capital, which many countries, including Germany, provide part of the capital of manufacturing companies in this way by establishing a capital market. This issue causes economic prosperity and plays a decisive role in various economic sectors and indicators.

The findings of this study show that the stock market has an impact on investment, economic growth and development in Germany, and it was concluded that the "total stock index" has a positive impact on "gross national income", "gross domestic income", "per capita income", "environmental protection" and "human development". According to the regression test conducted through Iviews, there is a significant correlation between the coefficients and variables.

Therefore; the German stock market has had a significant impact on investment, economic growth and development in this country. By creating information transparency and ensuring financial security for investors, this country has been able to attract many of the world's largest companies to the Frankfurt Stock Exchange. These companies have invested billions of euros in this market. It was also found that investors receive diverse opportunities and flexibility in this market from reassuring measures. The Frankfurt Stock Exchange, one of the most important stock exchanges in Germany in terms of market value, transaction value, diversity of financial instruments, diversity of companies and markets, acceptance of important and influential companies, continuous review and reform of microstructures, and improvement of transparency and information, has experienced an encouraging trend in recent years.

According to the statistics of the last few years of this country, it was seen how this country managed to become one of the best in the world in the field of economy and stock market in a short period of time after World War II. This country was able to deal with all the problems ahead and overcome obstacles and difficulties. Ultimately, it reached such a level of economic and social infrastructure and a degree of growth, prosperity and progress that today it is considered one of the most important economic poles in the world.

References

1. Ahmadi Lefourki, Behzad, (2015), Federal Germany; Foreign Policy, Middle East Policy and Policy Towards Iran, Part 1, Tehran, Cultural Institute for International Studies and Research.
2. Akbari, Nematollah, (2009), Collection of Articles of the Conference on Islamic Economics and Development, Part 1, Tehran, Arsalan Publications.
3. Emami Meybadi, Ali Reza (2015), Study of the Obligations and Responsibilities of Stock Brokers in Iranian Law, Part 1, Tehran, Majd.
4. Izadi, Hassan (2004), Principles and Techniques of Forming a Stock Portfolio, Part 1, Tehran, Publications of the Iranian Industrial Education and Research Center.
5. Hassanzadeh, Ali and Azam Ahmadian, (2009), The Effect of Stock Market Development on Economic Growth, Quarterly Journal of Money and Economics, No. 2.
6. Khalilian Ashkazari, (2018), Mohammad Jamal, Securing and Allocating the Government Budget, Part 1, Qom, Imam Khomeini Educational and Research Institute (RA).
7. Darbysher, Jan, (1989), Political Developments in West Germany from Schmitt to Cohen, translated by Hassan Pesta, 1st, Tehran, Islamic Revolution Publications and Education Organization.
8. Davani, Gholam Hossein and Amani, Ali (2005), Stock Exchange, Stocks and Stock Pricing, 4th, Tehran, Taati Publications.
9. Rahmani, Ali, (2005), Germany; National Interests and Security of the Islamic Republic of Iran, 1st, Tehran, Abrar Institute of Cultural, International Studies and Research.
10. Rahmani, Farideh, (1993), Sustainable Development from Theory to Practice, Political Economic Information, No. 69-70.
11. Shakeri, Abbas (2007), Microeconomics 2: Theories and Applications, 3rd, Tehran, Nei Publications.
12. Shawqi Al-Fanjari, Mohammad (1976), The Economic Doctrine of Islam, Al-Thaniyyah, Egypt, Al-Hayyah Al-Masrya Al-Ama'a L'Al-Kitab.

13. Alaa, Ainullah (2005), *Principles of Investment Management in the Stock Exchange*, Part 1, Tehran, Tahouri Publications.
14. Faraji, Mohammad Yousef (2004), *Microeconomic Theory*, Part 1, Tehran, Commercial Printing and Publishing.
15. Farmanara, Vahid, Komijani, Akbar, Farzinush, Asadollah and Ghaffari, Farhad, (2019), *The Role of the Capital Market in Financing and Economic Growth*, *Financial Economics Quarterly*, Year 13 / Issue 74, p. 19.
16. Von Dierke, Sabine, (2002), *The Struggle Against the Status Quo*, Translated by: Mohammad Qaed, Part 1, Tehran, Ministry of Culture and Islamic Guidance Publications.
17. Knoop, Guido, (2004), *The Fateful Days of Germany*, translated by Ali Akbar Hosseinieh Farahani, first, Tehran, Abrar Cultural Institute for International Studies and Research.
18. Madani Ghahfarkhi, Saeed (2017), *The State of Human Development in Iran*, first, Tehran, Parseh Publications.
19. Madani Ghahfarkhi, Saeed, (2017), *The State of Human Development in Iran*, first, Tehran, Armansa Publications.
20. Deputy for Planning and Economic Affairs (2006), *Introduction to the Stock Market*, No. 20, December and January, p. 7.
21. Moussavian, Seyed Abbas and Soroush Abuzar (2014), *Introduction to the Islamic Capital Market*, first, Tehran, Kanun Andishe Jawan.
22. Moussavian, Seyed Abbas, (2012), *The Islamic Capital Market (Stock Market)*, first, Tehran, Islamic Culture and Thought Research Institute.
23. Mahdavi, Abolghasem (2001), *Macro-strategies for Iran's Economic Growth*, Part 1, Tehran, Commercial Publishing.
24. Mahdavi, Mohammad Eshaq (2011), *Economic Development Indicators with an Islamic Approach with a View to Afghanistan*, Master's Thesis, Qom Imam Khomeini Educational and Research Institute (RA).
25. Nazarpour, Mohammad Naqi, Haghighi, Meysam (2013), *Interrelationship between Islamic Banking and Capital Market*, Part 1, Qom Zamzam Hedayat Publications.
26. Nazari, Hassan Agha (2013), *Juridical-Economic Foundations of Financial Institutions of the Islamic Capital Market*, Part 1, Qom, Hawzam and University Research Institute.
27. Elliott, Jennifer, (2010), *Introduction to Sustainable Development*, Translated by: Mansour Ebrahimi, Tehran, Aein Ahmad.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).