

The impact of oil revenue fluctuations on trading volume indicators and stock turnover rate in the Iraq Stock Exchange for the period (2005-2023)

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Abstract : The research aims to know the impact of oil revenue fluctuations on the trading volume and stock turnover indicators in the Iraq Stock Exchange for the period (2003- 2005), by analyzing Iraqi oil revenues, as well as analyzing some market influences represented by the trading volume and stock turnover indicators. To achieve the research objective, the descriptive and quantitative approach was used to analyze and measure the impact of oil revenues on the performance of the Iraq Stock Exchange indicators using the program (EViews 13). The research concluded that the interactive fluctuations in the volume of coverage revenues have an influential role in the performance of the limited market, the weakness of the economic structure, and the difficulty of economic assignment with these fluctuations, which affected the indicators referred to. The research reached a set of recommendations, the most important of which was for the management of the Iraq Stock Exchange to work by all available means to reduce the impact of this link between oil revenue fluctuations and the stock market by reducing reliance on capital through which the market is supported.

Keywords: Oil revenues, Trading volume, and stock turnover

Introduction: Oil has played an influential role in the economy since its commercial discovery in terms of its contributions to the gross domestic product and national income, total public exports, and the general budget. Oil revenues constitute the main source of financing for comprehensive development programs for oil-exporting countries. Thus, the Iraqi economy largely depends on oil, as oil revenues feed the Iraqi government budget with a large portion of its resources and contribute to building the cash reserve for the national economy. However, total reliance on oil revenues and neglect of other sectors turns the country into a single-source, deliberate economy entirely dependent on the oil sector, resulting in an economy that suffers from imbalance and instability as a result of being affected by the fluctuation of oil revenues, in addition to the permanent deficit in the state's general budget as a result of reliance on imports to meet local demand for various goods and services, due to the inability of local production to compete and cover the market for goods and services, which created a large gap between them, which subsequently affected the private sector to a high degree, and then this effect was transferred to the performance of the stock market.

First: Research Methodology

1- The importance of the research

The research derives its importance from addressing the extent of the impact of oil revenue fluctuations on the performance of the two indicators (trading volume and stock turnover rate in the Iraq Stock Exchange), to give an accurate and clear picture of the relationship between the research variables and provide the ability to confront the fluctuations facing oil revenues, which gives the opportunity to reduce their impact as much as possible according to the data highlighted by the research, in the Iraq Stock Exchange for the period (2005-2023).

2- Research Problem

The research problem was represented by the question: Is there an impact of oil revenues on the indicators (trading volume and stock turnover rate) in the Iraq Stock Exchange for the period (2005-2023) .

1- Is there an impact of oil revenues on the trading volume index in the Iraq stock exchange for the Period (2005-2023) .

2- Is there an impact of oil revenues on the stock turnover index in the Iraq stock exchange for the Period (2005-2023)

3- Research hypotheses

There is no effect of oil revenues on the trading volume and stock turnover indicators for the Period (2005-2023)

1- There is no effect of point revenues on trading volume for the period (2005) - 2023).

2- There is no effect of oil revenues on the stock turnover rate for the period (2005) - 2023).

4- Research objective

First: Analysis of Iraqi oil revenues during the research period.

Second: Analysis of some indicators of the Iraqi Stock Exchange represented by trading volume, stock turnover rate).

Third: Using some standard methods to measure the impact and correlation between the research variables.

5- Research limits

Spatial limits: The Iraqi economy (stock market)

Temporal limits: The period (2005-2023).

Second: The theoretical framework

Chapter One: The concept of oil revenues and the difference between Oil and Non-oil Revenues

First: The concept of oil revenues

Oil revenues play an essential and fundamental role in the economies of windy countries with a single resource, as they depend on oil revenues. In providing foreign currency and financing the most significant part of the state's public expenditures, therefore these revenues affect all economic variables in these countries. When their volume increases as a result of rising prices in the short term or increasing the volume of production in the long term, this leads to an increase in the level of economic activity in these countries, and in the event of a decrease, the opposite happens.

Oil revenues are defined as the cash amounts that some countries producing and exporting crude oil receive in exchange for producing and exporting it to countries that need this natural resource. Therefore, these revenues represent the most important pillars of the economies of different countries, as they are the source of foreign resources that contribute to the development of various sectors and facilitate the process of trade exchange with most countries of the world. (Al-Mahdi et al., 2019: 770)

Second: The difference between oil and non-oil revenues

Non-oil revenues represent state revenues resulting from sources collected to cover public expenditures. The sources of obtaining them differ from one country to another and vary according to the economic, political, and financial system in each country. The importance of these sources is determined by the extent to which they achieve the state's political and economic goals (Tendon , 2017:6)

Point revenues differ from others in several aspects, the most important of which are the following:

First – Oil revenues are subject to rules and customs that go beyond the will of the state and are linked to the general rules followed by oil-exporting countries in this regard and the tax practice in industrialized nations on energy consumption. They are also more abundant in the quantities produced and the percentage of demand for them on the global level, while non-point revenues are subject to rules, customs, and laws that are made by national will.

Second: The basis of oil revenues is a tax in exchange for the license granted by the host country to exploit the land owned by the state, and in return, it generates financial revenues that are a source of public revenues, while the basis of non-oil revenues, including taxes, is the contribution to the public burdens of the state, and the goal behind collecting them may be economic, financial, social, or even political.

(Tamara PPOO and et, 2016:8)

The second topic

Analysis of oil revenues and indicators

(Trading volume, stock Turnover rate)

First : Analysis of Iraqi Point revenues for the period (2005-2023)

Table (1)The size of oil revenues and the growth rate over the research period (2005-2023)

Growth rate (%)	Iraqi Oil revenues (billion barrels)	The Year
21.003	39,480,069	2005
18.814	46,908,043	2006
13.333	53,162,592	2007
48.848	79,131,752	2008
(34.641)	51,719,059	2009
29.197	66,819,670	2010
46.798	98,090,214	2011
18.867	116,597,076	2012
(5.076)	110,677,542	2013
(12.292)	97,072,410	2014
(47.139)	51,312,621	2015
(13.730)	44,267,063	2016
46.998	65,071,929	2017
46.944	95,619,820	2018
3.761	99,216,318	2019
(45.121)	54,448,514	2020
74.973	95,270,298	2021
21.198	115,466,229	2022
(15.499)	97,569,295	2023

Source : Prepared by the researcher by referring to

Central Bank of Iraq / Statistical Reports for various Years

Organization of Arab Petroleum Exporting Countries (OAPEC) / Various Annual Reports

Growth rate calculated by the researcher based on the equation $(\text{current year} - \text{Previous year} / \text{Previous year}) * 100$

From the data in Table (1), it is clear that the volume of oil revenues during the study period witnessed a state of instability between rise and fall. This is due to several factors that directly affected the value of oil revenues, most notably crude oil prices and the volume of production and export. The volume of revenues amounted to (39,480,069) billion dollars at the beginning of the study period in (2005), then it began to increase and gradually form during the following years (2006) (53,162,592), (79,131,752) billion dollars with favorable annual growth rates as follows: (46,908,043) (2007) (2008). The oil revenues for this period were, respectively, (%18.814%), (%13.333%), (%48.848%). This is due to the improvement of economic conditions and the rise in oil prices supported by the increase in global demand in global markets, in addition to the growth of Iraq's export capacity, which approached two million barrels per day at the end of the year. 2008 after it was (1405) million barrels in 2005, thus contributing to increasing the volume of revenues for this period, but the decline in global demand and the accumulation of oil reserves led to a significant decrease in crude oil prices, as the price of oil reached (5896) dollars per barrel this year after it was (88.8) the previous year, in addition to the transfer of the impact of the global financial crisis from major countries to the rest of the world's economies, including Iraq, although it is not closely linked to the global economy, its economy was affected by the crisis as a result of the decline in oil revenues in (2009), as revenues from crude oil exports reached (51,719,059) billion dollars with a negative annual growth rate (%34.641%) over 2008, and then revenues rose again to (66,819,670) billion dollars in (2010) with a positive annual growth rate (%29.197). This growth in oil revenues continued for the years (2011) and (2012) to reach (%46.798), and since oil revenues are linked to oil prices in global markets, the record rise in prices during the period from (2011) to (2012) which reached (106.3) dollars per barrel, which is the highest price reached by a barrel of oil during the study period, led to maximizing oil revenues and recording record numbers during the same period, affected by the sanctions imposed on Iran. As for the period from (2013) to (2016), oil revenues witnessed a sharp and continuous decline during this period and gradually, as oil revenues fell from (110,677,542) billion dollars in (2013) to (44,267,063) billion dollars at the end of the year (2016) with a negative annual growth rate from (%5.076) to (%13.730), and this was a result of the decrease in oil prices. Crude oil prices fell from (103) dollars per barrel in (2013) to (36) dollars per barrel in (2016), which is the lowest price reached by a barrel of crude oil during the study period. Then, revenues rose again to (65,071,929) billion dollars in (2017) with a positive annual growth rate of (%46.998), to continue rising for the years (2018) and (2019), as revenues reached (95,619,820) and (99,216,318) billion dollars, respectively, with favorable annual growth rates of (%46.944) and (%3.761). This was the result of the improvement in the security situation by eliminating terrorist gangs and the increase in demand for oil, which contributed to raising prices, in addition to the improvement in the volume of production and export, which amounted to approximately four barrels per day, which is the highest export rate reached by Iraq during the study period, which contributed to the increase in oil revenues. Then, oil revenues witnessed a sharp decline of (\$54,448,514) billion in (2020) with a negative annual growth rate of (%45.121), and this was a result of the spread of the coronavirus pandemic, as most global markets stopped as a result, which directly affected oil prices. In the years (2021) and (2022), revenues returned to rise to reach (95,270,298) and (115,466,610) billion dollars, respectively, with positive growth rates of (%74.973) and (%21.198), as a result of decline in the impact of the Corona pandemic and the increase in demand for oil in global markets, which contributed to the return of oil prices to rise, then prices fell again, which affected the volume of oil revenues, which amounted to (97,569,295) billion dollars in (2023) with a negative annual growth rate of (%15.499).

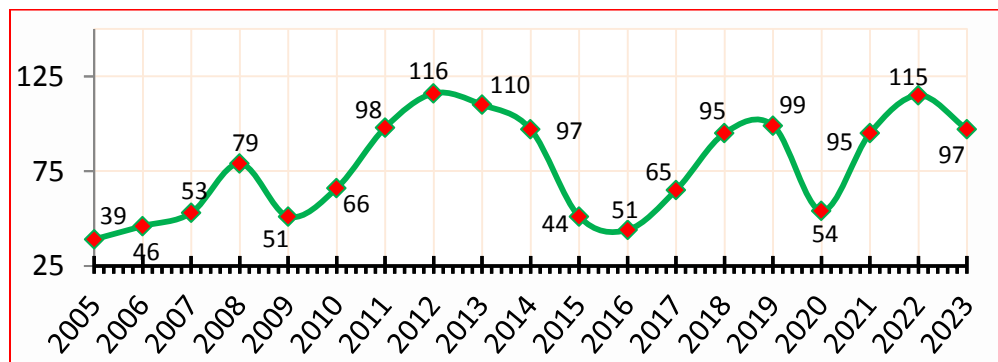


Figure (1)

Trends in the volume of revenues from Iraqi crude oil for the period (2005-2023)

Source: Prepared by the researcher, referring to the data in Table (1)

Second: Analysis of the indicators of the Iraq Stock Exchange for the Period (2005-2023)

1- Trading Volume Index

Table (2) Trading Volume Index of the Iraq Stock Exchange for the period (2005-2023)

Growth rate (%)	Trading Volume Index (One million dinars)	The Year
186.68	366,809,833	2005
(59.95)	146,891,378	2006
190.94	427,367,466	2007
(29.48)	301,350,341	2008
36.69	411,928,166	2009
(2.80)	400,359,889	2010
135.08	941,198,207	2011
(5.03)	893,825,279	2012
217.76	2,840,220,313	2013
(68.37)	898,315,988	2014
(49.21)	456,179,755	2015
13.10	515,956,944	2016
(25.01)	386,879,100	2017
(39.85)	232,681,022	2018
22.44	284,914,117	2019
15.95	330,385,118	2020
145.98	812,698,567	2021
(35.82)	521,518,741	2022
28.81	671,809,958	2023

Source : Prepared by the researcher based on the annual reports of the Iraq Stock Exchange (multiple years)

The growth rate was calculated by the researcher using the following equation :

$(\text{current year} - \text{Previous year} / \text{Previous year}) * 100$

It is noted from the data in Table (2) that the index decreased from (366,809,833) million dinars in (2005) to (146,891,378) million dinars in (2006) with a negative annual growth rate of (%59.95). This decline is due to the lack of security stability as well as the military operations that led to the rise of inflation and unemployment rates to very high levels during the year, which led to a significant decline in trading volume as a result of the negative expectations that spread in the market. In (2007), the index witnessed a significant increase of (427,367,466) million dinars with a positive annual growth rate of (%190.94). This improvement in trading volume is due to the development of the security situation and its relative stability. As for (2008), the index returned to decline again as it decreased to (301,350,341) million dinars with a negative annual growth rate. (%29.48) as a result of the deterioration of the security situation, which was reflected in the expectations of traders in the market and thus led to a decrease in the volume of demand to buy shares. In the year (2009), the volume of trading increased to reach (411,928.166) million dinars, with a positive annual growth rate of (%36.69). The reason for this increase is due to the activation of electronic trading, which was at a rate of one session per week at first, after which the number of sessions per week increased to three sessions.

The Index fell again in (2010) to reach (400,359,889) million dinars with a negative annual growth rate (%2.80). The reason for the decline was the lack of trading in the shares of some banks listed in the market as a result of their preoccupation with increasing their capital, in addition to the delisting of Basra International Bank as a result of its failure to disclose and adhere to the instructions issued by the Securities Commission. In (2011), the trading volume activity rose again to achieve this time (941,198,207) million dinars with a positive annual growth rate of (%135.08). This was a result of the rise in crude oil prices in global markets and the improvement of most international and Arab financial markets and their reflection on the Iraqi Stock Exchange. In (2012), the index declined again to reach (893,825,279) million dinars, with a negative annual growth rate of (%5.03). In (2013), the index witnessed a significant increase of (2,840,220,313) million dinars, with a positive annual growth rate of (%217.76). This increase is the highest during the research period and is due to investors and market traders feeling fear for their investments and properties as a result of political unrest, which prompted investors to dispose of the shares they own and convert them into cash to protect themselves from the huge loss they might be exposed to. Then, in (2014), the index declined again to reach (898,315.988) million dinars, with a negative annual growth rate of (%68.37). In (2015), the index continued to decline for the second year in a row, and this time achieved (456,179,755) million dinars, with a negative annual growth rate. (%49.21), and this was a result of the decline in crude oil prices, which in turn caused a deficit in the state's general budget.

In (2016), the performance of the trading volume index improved to rise again, reaching (515,956,944) million dinars, with a positive annual growth rate of (%13.10), then decreased in (2017) and reached (386,879,100) million dinars, with a negative annual growth rate of (%25.01). The decline continued for the second year in a row, reaching (232,681,022) million dinars in (2018), with a negative annual growth rate of (39.85). The reason for the decline is due to the security disturbances that accompanied military operations, which negatively affected the trading volume index in the market.

Then the years (2019), (2020) and (2021) witnessed an increase in the trading volume index to reach, respectively, 284,914,117, (330,385,118), (812,698,567 million dinars) with positive annual growth rates (%22.44), (%15.95) and (%145.9), and this was due to the rise in crude oil prices for this period, in addition to the formation of a positive outlook for the future in the near term by traders in the Iraq Stock Exchange, which was positively reflected in the trading volume. Then the index fell again in the year (2022) if it reached (521,518,741) million dinars with a negative annual growth rate(%35.82), then it rose again in the year (2023) and reached (671,809,958) million with a positive annual growth rate (%28.81). The implementation of large deals and the follow-up of the disclosure of joint-stock companies by the Securities Commission with the sectorial authorities were the reason for the increase in trading volume this year.

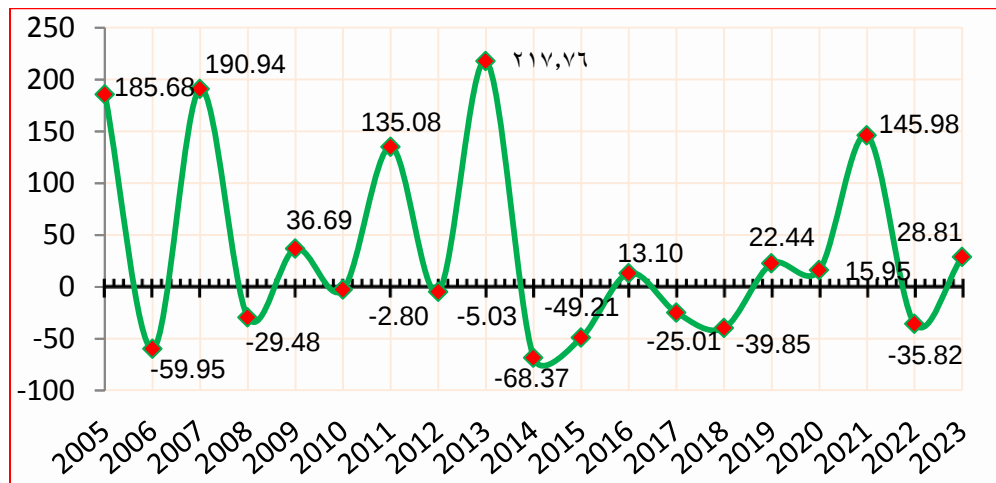


Figure (2)

Trends in the trading volume index in the Iraq Stock Exchange for the Period
(2005-2023)

Source : Prepared by the researcher by referring to the data in Table (2)

2- Stock turnover rate index

Table (3) Stock turnover rate index in the Iraq Stock Exchange for the Period (2005-2023)

Stock turnover rate index (%)	The Year
11.61	2005
7.54	2006
20.08	2007
13.19	2008
12.95	2009
11.62	2010
19.09	2011
15.97	2012
24.65	2013
9.43	2014
5.43	2015
5.52	2016
3.61	2017
1.98	2018
2.44	2019
2.35	2020
5.11	2021
3.34	2022
3.59	2023

Source : Prepared by the researcher based on the annual reports of the Iraq Stock Exchange (multiple years)

It is noted from the data in Table (3) that the stock turnover rate index reached (%11.61) in the year (2005). Then it started to decline to reach (%7.54) in the year (2006), as a result of the increase in the costs of transactions concluded during this year, after which the index rose again and reached (%20.07) in the year (2007), due to the increase in the volume of liquidity in the market. The index witnessed a gradual decline for the three consecutive years to reach (%13.19) in the year (2008), while in the year (2009) It reached (%12.95). At the end of the year (2010), the index continued to decline to reach (%11.62), and this was a result of the decrease in the volume of trading due to the deterioration of the security situation, after that it returned to rise again and significantly to reach (%19.09) in the year (2011) as a result of the increase in the volume of trading at higher rates that reached (135.08%) compared to (%43.04) for the market value. In the year (2012), the stock turnover index decreased to (%15.97) then it began to rise again in the year (2013) to reach (%24.65), which is the highest level reached by the index despite the decrease in the rates of the two indicators, trading volume and market value, in relative and absolute terms. After that, the index declined to witness in (2014) a decrease of (%9.43) due to a significant decline in crude oil prices. In (2015), the index continued to decline for the second consecutive year to reach (%5.53). In (2016), the index rose slightly to reach (%5.52) with a growth rate over the previous year of (%1.65). This increase is due to the improvement in the economic situation, albeit slightly during this year.

In the years (2017) and (2018), the index returned to a state of decline and reached (%3.61) for the first year and (%1.98) for the second year, which is the lowest decline the index has achieved during the study period. This is due to the state of austerity imposed by the state, which affected the volume of liquidity and its attraction to trading, which in turn affected the volume of stock trading, as the growth rate of stock trading decreased at the end of the year (2018) to (%39.85) compared to the previous year. However, in the year (2019), the index stabilized and returned to a state of

increase and reached (%2.44) Then it began to decline again and reached (%2.35) in the year (2020) despite the increase in trading volume. Still, the turnover rate index depends on both the market value and trading volume. If the increase in trading volume is less than the increase in market value, this will negatively affect the stock turnover rate, and this is what happened this year.

After that, the index rose again to reach (%5.11) in the year (2021), due to the optimism among market participants, which gave confidence to both individuals and investors, so the trading volume rose to a record high and at a growth rate of (%14,598) compared to the previous year. Then it declined to reach (%3.34) in the year (2022). One of the reasons for this decline is the blocking of trading of some companies listed on the market, as their number decreased from (105) companies in the year (2021) to (103) companies in the year (2022), which affected the volume of liquidity in the market. In the year (2023), the index returned to a state of stability to reach (%3.59), which is higher than last year with a growth rate of (%0.07).

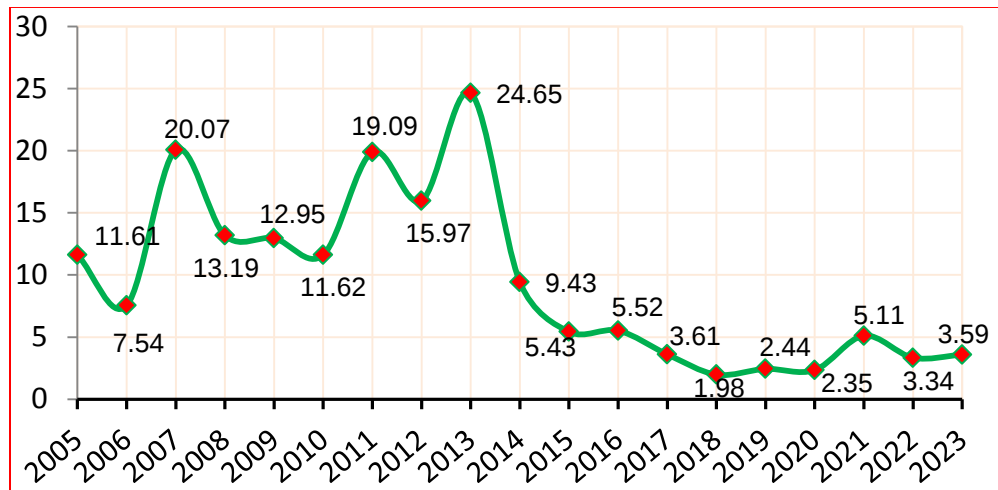


Figure (3)

Trends of the stock turnover index for the Iraq Stock Exchange for the Period (2005-2023)

Source : Prepared by the researcher by referring to the data in Table (3)

Section Third

Third : Measuring the impact of oil revenues on the Iraq Stock Exchange indicators for the Period (2005-2023)

1- Measuring the impact of oil revenues on the trading volume index :

The relationship between the trading volume index (TV) and oil revenues (OIR) was estimated as in Table (4).

It is clear from Table (4) that the estimation results indicate the positive impact of oil revenues on the trading volume index of securities, as the value of the oil revenues variable parameter reached (0.446711) and was significant with a probability of Value- less than the standard value, which is (0.05), as it came (0.0072). This result means that an increase in oil revenues by (%1) leads to a rise in the trading volume in the market by (%0.44). This result is consistent with the opinion that if oil revenues increase as a result of the rise in oil prices, this increase will be directly reflected in the trading volume. As for the value of the fixed limit, it was also significant, as the value was positive and reached about (28.94312). As for the value of R², it reached (0.82), meaning that oil revenues explain (%82) of the changes that occur in the trading volume index, while the remaining percentage (%18) is not presented due to other factors outside the model. The results also indicate that the model Moral through the F value, which was significant with a probability value of (0.07191). As for the D.W value, it was about (2.02), which indicates the absence of a problem of autocorrelation in the model and thus the acceptance of the model.

Table (4)
Volume Index Equation Estimation Results

Dependent Variable: TV Method: Least Squares Date: 05/31/24 Time: 22:35 Sample: 2005Q1 2023Q4 Included observations: 76				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
OIR	0.446711	0.343279	1.301305	0.0072
C	28.94312	12.30034	2.353034	0.0213
R-squared	0.822372	Mean dependent var		35.67947
Adjusted R-squared	0.809161	S.D. dependent var		97.72187
S.E. of regression	97.27325	Akaike info criterion		12.01889
Sum squared resid	700194.2	Schwarz criterion		12.08022
Log likelihood	-454.7178	Hannan-Quinn criter.		12.04340
F-statistic	1.693394	Durbin-Watson stat		2.027592
Prob(F-statistic)	0.007191			

Source : Prepared by the researcher based on the results of the Program Eveiws13

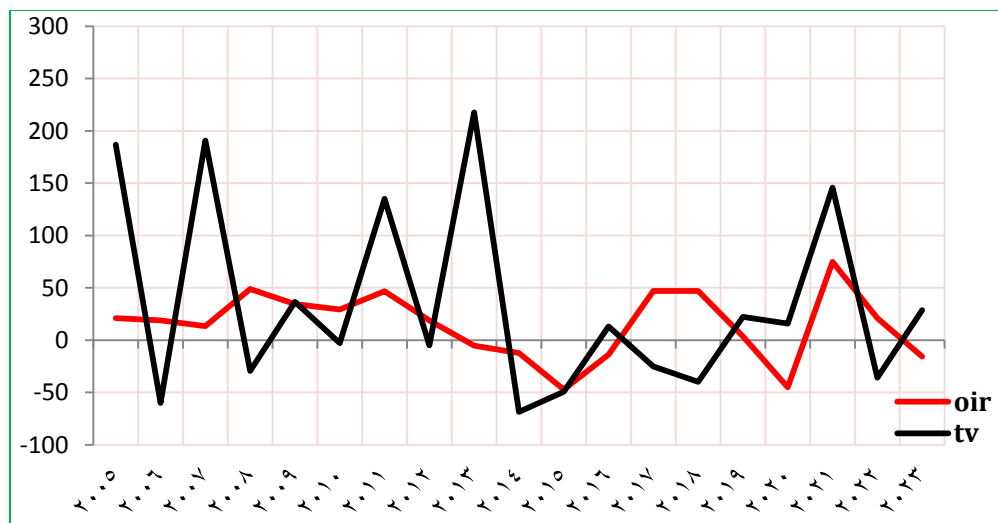


Figure (4)

The relationship between Point revenue and trading volume Index

Source : Prepared by the researcher based on the results of the Program Eveiws13

2- Measuring the impact of oil revenues on the stock turnover index :

The relationship between the stock turnover index (STR) and oil revenues (OIR) was estimated as in Table (5)

It is clear from Table (5) that the estimation results indicate the positive impact of oil revenues on the stock turnover index of companies listed on the Iraq Stock Exchange, as the value of the oil revenues variable parameter reached (0.028775), which is a weak relationship and was significant with a probability of P-Value less than the standard value, which is (0.05), as it reached (0.0305). This result means that an increase in point revenues by 1% leads to a rise in the stock turnover rate by (0.02%)

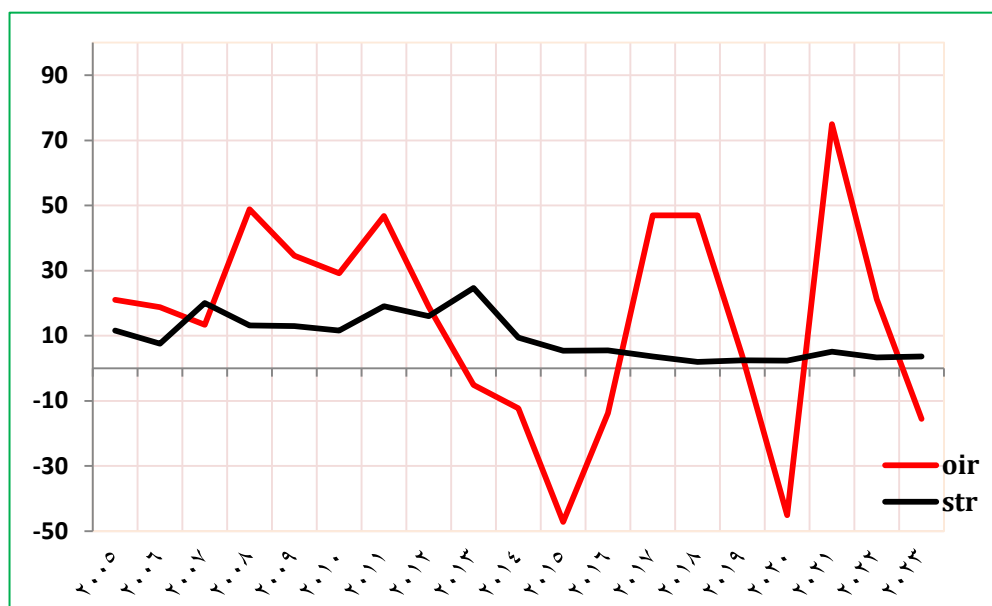
As for the value of the fixed limit, it was also significant if this value was positive, reaching about (9.013441). The value of 2R was (0.019371), which is a weak explanatory power, meaning that oil revenues only explained (0.01%) of the changes that occur in the stock turnover index, while the remaining percentage is not presented due to other factors outside the model. The results also indicate that the model is significant through the F value, which was important

with a probability value of (0.030502). As for the value of ρ , it was about 2, which indicates the absence of the problem of autocorrelation in the model.

Table (4) Stock Turnover Index Equation Estimation Results

Dependent Variable: STR Method: Least Squares Sample: 2005Q1 2023Q4 Included observations: 76				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
OIR	0.028775	0.023800	1.209025	0.0305
C	9.013441	0.852812	10.56908	0.0000
R-squared	0.019371	Mean dependent var		9.447368
Adjusted R-squared	0.006119	S.D. dependent var		6.764914
S.E. of regression	6.744185	Akaike info criterion		6.681202
Sum squared resid	3365.818	Schwarz criterion		6.742537
Log likelihood	-251.8857	Hannan-Quinn criter.		6.705714
F-statistic	1.461741	Durbin-Watson stat		1.119220
Probe (F-statistic)	0.030502			

Source : Prepared by the researcher based on the results of the Program Eviews13



The relationship between oil revenues and the stock turnover ratio

Source : Prepared by the researcher based on the results of the Program Eviews13

Conclusions and Recommendations

First : Conclusions

- 1- The activity of the Iraqi Stock Exchange was characterized by fluctuations throughout the research period, which was reflected in the indicators mentioned, meaning that the changes, whether downwards or upwards, do not proceed in a consistent and gradual manner, but rather in the form of leaps.
- 2- The role of the Iraq Stock Exchange in contributing to the development of the economy was weak due to the backwardness of the infrastructure supporting the market and the absence of supporting institutions that work to limit the severity of price fluctuations, reduce risks, and increase the speed of trading.

3- The results of the standard analysis indicate that there is a weak correlation between oil revenues and the performance indicators of the Iraqi Stock Exchange, whether the relationship is direct or inverse.

Secondly: Recommendations

- 1- Decision-makers in the country must develop a clear plan aimed at reducing dependence on oil, with a time frame set for adapting to local and global economic and political changes.
 - 2- Work harder to promote the Iraq Stock Exchange by using various media types to highlight the feasibility of investment and the opportunities available in the market.
 - 3- Working on opening several branches of the Iraqi Stock Exchange in the remaining governorates to facilitate the market's work and attract a large group of investors and companies.
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