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Study of the causal relationship between inflation, exchange rate and market value of the Saudi capital market between 2000-2022

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Abstract:

This paper aimed to find out the extent of inflation and exchange rate fluctuations on the performance of the Saudi capital market during the period (2000-2022) . To achieve this goal, we used the descriptive approach, where the joint integration test (Johansen and Juselius Test) and the Granger causality test (Granger causality) were used, by EViews to find out that there is a simultaneous integration relationship between the real exchange rate index, inflation rates and the market value of the capital market in Saudi Arabia. The study concluded that there is no relationship or impact between the variables of the study, in addition to the fact that there is no causal relationship between the variables of the study except between inflation and fluctuations and changes in exchange rates, as the latter cause inflation.

Keywords: exchange rate, inflation, market capitalization, co-integration, time series..

JEL Classification Codes: C01, F31, D07,E31.

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Introduction*:*

The subject of currency exchange rates has attracted the attention of academics, researchers and decision-makers alike, as a result of its importance and its direct relationship to the movement of capital and financial transactions with the outside world, and the extent of its impact on the competitiveness of the economy as a whole. If countries are interested in exchange rates to rebalance their balances of payments and support the competitiveness of the economy, the financial and economic institutions related to the outside are also concerned with the development of exchange rates and affected by them, due to its fluctuations and continuous changes that negatively affect various economic and financial indicators. Thus, the exchange rate is an important variable that many investors are waiting for to make their investment decisions regarding their investment portfolios. This does not mean that the subject of financial markets is one of the unimportant topics in economics because of its effective role in modern economies applied to the policy of financial and economic openness. It has become the mirror of the economic situation from a slowdown or increase in the growth rate, as it constitutes a meeting point for the financial and business sectors where the financial sector finances the production of goods and services produced by the business sector. Financial markets have succeeded in proving their effective role in economic activities, especially in countries that have provided their success factors. Financial markets are affected by many variables. Exchange rate policy greatly affects the performance of financial markets, as fluctuations in exchange rates lead to instability in stock market performance indicators. The research problem arises from the fact that companies and financial institutions are affected by changes in exchange rates through the impact of the latter on both costs, sales and profits, which is reflected on the financial position of these institutions and thus on the value of their shares traded in the financial market, and the impact of this on the trading index. Also, volatility and instability in the exchange rate leads to a decrease in confidence in financial markets, which weakens dealing in securities, which is reflected directly or indirectly on the market index. In light of the above, the problem of the study can be limited to the following main question:

Problematic: What is the impact of inflation and exchange rate fluctuations on the performance of the Saudi capital market during the period (2000 - 2022)?

Sub-questions

- Are the time series of variables used in the research stable at the first difference?
- Is there a co-integration relationship between the study variables?
- Is there a causal relationship between the study variables?

Hypotheses: To answer questions, we suggest the following hypotheses

- The time series of the variables used in the research are unstable;
- The time series of variables used do not have the property of co-integration;
- Is there a causal relationship between the study variables?

Objectives of a study:

The research aims to apply the co-integration methodology using the Johansenand Juselius testandthus test the applicability of the error correction model , in addition to presenting the concept of inflation, exchange rates and capital markets performance.

Methodology and Research Instrument

The study relied on the descriptive approach, using what was mentioned in the theoretical literature and previous studies related to the subject of the current study, whether in books or scientific journals. As for the applied aspect, the EViews program was used to study the impact through thejoint integration test (Johansen and Juselius Test) and the Granger causality test (Granger causality).

Firstly. Theoretical aspect

1) What is the exchange rate?

1.1 Definition of Exchange Rate:

The exchange rate in a country means the rate at which a currency is exchanged with the currencies of the rest of the world, that is, the number of units paid from the currency of one country in exchange for units of the currencies of other countries (elmajid, 2016, p. 07) ,as the exchange rate is defined as the price of one currency against another currency (bernad, 1998, p. 177)

2.1 Types of Exchange Rate:

1.2.1 Nominal exchange rate: The nominal exchange rate is a measure of the value of a country's currency that can be exchanged for the value of another country's currency. Currencies are exchanged at their prices between each other. The interaction of supply and demand forces in

exchange markets determines the nominal exchange rate of a currency at a certain moment in time. The (mejlakh salim, 2016, p. 51) nominal exchange rate is also a major determinant of the local price of foreign currency. The nominal exchange rate is divided into: (belbarr mohamed, 2019, p. 162)

- **official exchange rate**: that is, applicable in respect of official current exchanges;
- **Parallel exchange rate:** It is the rate applicable in the markets.

There are two methods of currency pricing: direct pricing and indirect pricing: (saidi nouaman, 2011, p. 27)

- **Direct Pricing**: It is the number of units of foreign currency that must be paid to obtain one unit of the national currency, and currently few countries use the direct pricing method and the most important countries that use this method are Great Britain, and in the financial center in London, the pound sterling is measured as follows: 1 British pound - 3,476 French francs;
- **Indirect pricing**: It is the number of units of the national currency that must be paid to obtain one unit of foreign currency, and most countries in the world use this method of pricing, including Algeria. Another way in which the price of one currency is determined by another is through the process of intersecting the prices of some currencies, so this method is called cross pricing. In practice, the relationship between the currency of a particular country and other currencies cannot be determined by the daily quotations announced in a particular period, but rather by other considerations, which give the exchange rate many forms, each of which has its own meaning and thus its own use.

2.2.1 Real exchange rate (TCR): It is the nominal exchange rate weighted by relative price levels, which is mainly based on purchasing power parity theory Therefore, if the inflation rate in the country in question is faster than in another country, the nominal exchange rate should rise in order to stabilize the real exchange rate. It is worth mentioning that the decline in TCR is a rise in the value of the currency (appreciation) and this reduces the international competitiveness of the country in mind, while the rise in TCR represents a decline in the value of the currency (depreciation) and leads to increased competitiveness for that country. However, this indicator, the real exchange rate, depends only on bilateral exchanges (between the country concerned and one foreign country), which leads us to search for another indicator that examines the evolution of the real exchange rate of a currency, not compared to one foreign currency, but rather compared to a group

(basket) of currencies of the most important trading partners of that country called the real effective exchange rate. (ali, 2012, p. 51)

3.1 Functions of the exchange rate: The exchange rate performs several functions, which can be authorized as follows:

- **Standard function**: It is used for the purpose of measuring and comparing the local prices of a particular commodity with the global market prices, and thus represents the exchange rate, the link between local prices and global prices, and enables the measurement of the exchange rate of a currency against the exchange rate of the currencies of the countries of the main trading partners (james & DUNN, 1993, p. 273)
- **Developmental function**: The exchange rate is used in the development of certain exports through its role in encouraging those exports. On the other hand, the exchange rate can dispense with or disrupt certain industrial branches or replace them with imports whose prices are lower than local prices, while an appropriate exchange rate can be relied upon to encourage certain imports. Thus, the exchange rate affects the commodity and geographical composition of the foreign trade of countries. (adnane, 2020, p. 105)
- **Distributive function:** The exchange rate exercises a distributive function at the level of the international economy, due to its association with foreign trade, as the latter redistributes scientific national income and national wealth among the countries of the world. (adnane, 2020, p. 105)

2) What is inflation:

1.2 Definition of inflation: Inflation can be defined as the significant and continuous rise in the general level of prices over a long period of time, as a result of the increasing demand for goods and services and the inability of production to meet this demand. From this definition, it can be said that inflation is: (racha, 2017, p. 42)

- The movement of prices towards the rise because the basic manifestation of it is the rise in prices.
- A continuous movement, as any rise in prices should not be interpreted as inflation.
- Continuity of price movement towards continuous rise, inflation is not a temporary situation resulting from an emergency shortage of a particular commodity.

2.2 Inflation Measurement: Inflation can be measured using: (racha, 2017, p. 44)

- **Consumer Price Index**: It is the number that reflects the change in the level of prices of goods and services purchased by families. It is considered one of the most commonly used indicators. It is also a tool to measure the development of the total prices of manufactured goods and products. To measure this number, it is necessary to identify the group of goods and services that reflect the consumption pattern of these families, and then determine the expense of buying this group during a certain period of time, for example, one year and compare it to the expense of buying the same group of goods during the base year, as it is equivalent to 100% and symbolized by the symbol. It$CP_I$is considered one of the most important measures of inflation and is calculated as follows:

$$\frac{CP_{I_1} - CP_{I_0}}{CP_{I_0}} \times 100 = Inflation\ rate$$

- **Product price index**: This index includes the prices of a certain group of raw materials and intermediate goods purchased by enterprises, and is considered important as an indirect measure of the change in the prices of goods and services in society, in addition to the fact that raw materials and intermediate goods will be transformed during the various production processes into final goods, and any change in this figure will generally indicate what will happen to the consumer price index, symbolized by the symbol PPI

3) How Capital Markets are Performing

1.3 Definition of Capital Markets

If the market is defined as the place where the supply of goods meets the demand for them, the money market is similarly the place where the supply of money meets the demand for them. Money is offered by those who have financial surpluses and are savers, while money seekers are usually deficit owners (for example, investors wishing to expand their projects). In this market, this confluence process (i.e. between supply and demand) is arranged through the issuance and trading of financial instruments. Financial markets arecharacterized by some characteristics that distinguish them from realmarkets, including: What is traded in the financial market is securities and financial instruments, such as debt instruments (bonds), ownership instruments (stocks), mortgages, and

others. The combination can be achieved between sellers and buyers of securities and financial instruments in a specific place, which is known as the stock exchange, and can be done without the need for the presence of the place, but only through means of technology and communication, such as the global information network (Internet), fax, telephone or any other means. In order to achieve this, effective channels must be available to ensure the communication of dealers in the market, which ensures that the price of the security at any one moment in time. (ahmed, 2021, p. 08)

2.3 Capital Markets Performance Indicators

There are some indicators that reflect the performance developments in the financial markets. For research purposes, the following indicators are used: (kacem, 2013, p. 166)

- **Market value rate** : The market value rate indicator is used to measure the size of the total supply and is equivalent to the ratio of the market value of local stocks listed on the financial market of the concerned country to GDP. This indicator is appropriate for the ability of the state to move capital and diversify risks at the macroeconomic level, although factors such as taxes may change the incentives for listing companies' shares in the financial market;
- **Financial Market Liquidity:** The primary function of the financial market is to achieve liquidity for securities at all times. This is usually the top priority for both domestic and foreign investors, especially since highly liquid financial markets enable investors to liquidate an accused investment whenever the need arises and the market is able to achieve this through the system of incentives and sanctions so that dealing with them as successful companies increases its market value while dealing with the shares of other distressed companies decreases and their market value decreases;
- **The General Index** of**Stock Prices:** It is a statistical indicator used as a measure of general movement in the market consisting of a set of securities that reflect the state of the entire market.In the event that it rises, this indicator assumes that the market as a whole is high and then decreases, the market as a whole decreases and its importance significantly through its use by all parties dealing in the market and is used to measure market trends and price movement as a whole;
- **Volume Index** :**Volume** represents the value of stocks that trade in the market hall at various prices during a certain period. It is one of

the indicators that give important hints about the strength of the market and the prospects of its rise or fall in the future.

- **The number of companies index:** It means the number of companies listed in the financial market. This index is used to indicate the size of the market. This index loses that significance if it is not accompanied by the use of the market value index, that is, the number of companies listed in the market may be large, but the total market for those companies is small.

4) Theoretical relationship between the study variables:

1.4 The relationship of the exchange rate with inflation: The exchange rate transfers the impact of monetary policy to inflation directly. Changes in the exchange rate affect inflation directly by increasing the prices of imports, or the domestic prices of goods and services that enter international trade. Expansionary monetary policy, and the consequent decline in interest rates, as well as the demand for domestic assets, eventually lead to a decline in the exchange rate. Accordingly, import prices rise, which increases inflation rates. This direct channel is characterized by its ability to transfer the impact of monetary policy to inflation and macroeconomic variables more quickly than the total demand and supply channels. (fouad, 2022, p. 215)

2.4 Relationship of exchange rate and financial market performance:

Exchange rate fluctuations are one of the risks facing institutions and companies operating in the international field and listed on the stock exchange at the same time. These fluctuations directly affect stock prices due to the sensitivity of these prices . Therefore, the change in the value of the currency will inevitably affect stock prices in particular and the stock market index in general. This isbecause the rise in the value of the local currency (within the framework of the floating exchange system)will lead to a rise in the cost of production, including the rise in the prices of produced goods, which leads to a decrease in the competitiveness of these products in the market and thus a decrease in the share prices of listed companies, which results in a rise in interest rates as well as an increase in inflation rates and thus a change in the direction of the market index from rising to falling. From the above, it is clear that there is an inverse relationship between exchange rates and the financial markets index. (zahra, 2019, p. 236)

3.4 The relationship between inflation and financial market performance: Inflation has positive and negative effects on the performance of financial markets, and these effects are transmitted as follows:

- **The mechanism of transmission of the positive effects of inflation on the stock markets:** The rise in inflation rates will lead to a decrease in confidence in the monetary currency, which leads investors in the markets to escape the inflation tax through their acquisition or preference for stocks instead of keeping money. Their retention of money will make them vulnerable to the loss represented by the decline in the real value of money. Therefore, investors and owners of capital resort to getting rid of the losses of this decline by directing their money towards financial markets, and the reason for this is that the prices of stocks and bonds reflect the real value of the investor's head in these securities, which changes according to the change in inflation rates, which leads to an increase in trading operations in financial markets. (ali w. h., 2013, p. 73)
- **The mechanism of transmission of the negative effects of inflation on stock markets:** At the same time, inflation has a negative impact on the performance of the stock market, especially if it reaches a certain level and continues to rise, its continuous rise will lead to:

- Pushing countries to take many measures of their own, including imposing taxes on companies that would lead to a decrease in the profits and returns of companies issuing shares and thus a decrease in the market value of shares, which leads to a decrease in demand for them and thus a decrease in the performance of the financial market; (ibrahim, 1999, p. 56)
- Pushing central banks to follow a deflationary monetary policy, which leads to a decrease in demand for goods and services produced by companies, which is reflected in a decrease in their cash flows - a decrease in revenues, which leads to a decrease in the volume of trading in stocks and a decrease in their prices and market value. (ibrahim, 1999, p. 57)

Secondly: The standard aspect

Through this part of the research, we will address the impact of inflation and exchange rate fluctuations on the performance of the Saudi capital market 2000-2022.

1) Study Variables

Table (01): Definition of the study variables

Variables	category, chain, series, concatenation, train, round, spectrum, leash, string, stay	Input Supply	Code
Inflation	Inflation, prices paid by consumers (% p.a.)	World Bank Database	**INF**
Exchange Rate	Real effective exchange rate index (2010 = 100)	World Bank Database	**EX**
Capital market	Market cap % of GDP	World Bank Database and CEIC Data	**MC**

Source: Prepared by Researcher

2) Descriptive Analysis

Before making the assessment, we conduct a descriptive test of the study variables, and the results of this test are shown in the following table:

Table (02) : Results of the descriptive analysis

Variables	Market Value	Inflation	Exchange Rate
Mean	110.6619	2.282503	109.0073
Median	66.91300	2.236290	112.8027
Maximum	330.8182	9.870248	126.9344
Minimum	35.88100	-2.093333	94.30827
Std. Dev.	92.50406	2.707419	9.796964
Skewness	1.396859	0.757135	0.189895
Kurtosis	3.436346	3.903440	1.818958
Observations	23	23	23

Source: Prepared by researcher based on the outputs of the statistical program 10Eviews

- **For the market value variable:** The average market value variable was 110.66, while this variable reached its highest value of 330.81 in 2020, with the lowest value of this variable recorded being 35.88 in 2000;
- **For the inflation variable:** The average inflation variable was 2.28, while this variable reached its highest value of 9.87 in 2008, while the lowest value of this variable was -2.09in 2019;
- **For the exchange rate variable:** The average exchange rate variable was 109, while this variable reached its highest value of 126.93 in 2001, with the lowest value of this variable recorded being94.30 in 2008.

3) Correlation matrix

The following table shows the correlation matrix between the study variables

Table (03) : Correlation Matrix

Variables	Market Value	Inflation	Exchange Rate
Market Value	**1**	--	--
Inflation	-0.108	**1**	--
Exchange Rate	0.124	-0.687	**1**

Source: Prepared by researcher based on the outputs of the statistical program 10Eviews

It is noted from the above table that an inverse relationship between inflation and market value was recorded and a record between inflation and the exchange rate was recorded. The correlation value was estimated at -0.687, and a direct relationship between the market value and the exchange rate was recorded at 0.124, but the relationship remains weak.

4) UNIT ROOT TEST :

Inorder to know the stability of the time series of the model variables, we use the single unit root test represented by the (Phillips-perron)test

,where this test is considerednon-parametriceffective, asit takes into accountthe conditional variation oferrors, it allowsthe eliminationof biases resulting fromthe special characteristicsof random oscillations , where (1988) (Phillips-perron) adopted the same limited distributions of the (DF) and(ADF)tests and this testis conducted in four stages: (mohamed, 2011, p. 212)

1. Estimation by OLS of the three baseline models of the Dickey-Fuller test, with the computation of accompanying statistics;
2. Estimation of short-term variance : $\hat{\sigma}^2 = \frac{1}{T}\sum_{t=1}^{T} \hat{\varepsilon}_t^2$, where remainders $\hat{\varepsilon}_t$ are represented;
3. Corrected coefficient estimation s_1^2, called long-term variance, extracted through the combined variations of the rest of the previous models, where:

$$s_1^2 = \frac{1}{T}\sum_{t=1}^{T} \hat{\varepsilon}_t^2 + 2\sum_{i=1}^{l}\left(1 - \frac{i}{l+1}\right)\frac{1}{T}\sum_{t=i+1}^{T} \hat{\varepsilon}_t \hat{\varepsilon}_{t-i}$$

In order to estimate this variation it is necessary to find the number of slowdowns, estimated in terms of the total number of observations T as follows: $l \approx 4\left(\frac{T}{100}\right)^{2/9}$;

4. Calculate the Phillips-Pyron statistic: $t_{\hat{\phi}}^{*} = \sqrt{k} \times \frac{(\hat{\phi}-1)}{\hat{\sigma}_{\hat{\phi}}} + \frac{T(k-1)\hat{\sigma}_{\hat{\phi}}}{\sqrt{k}}$ with $k = \frac{\hat{\sigma}^2}{s_1^2}$, which is equal to -1 in the asymptotic statewhen it is $\hat{\varepsilon}_t$ white noise. This statistic compares with the critical value of theMacKinnon table.

As shown in the table, the results ofthe following Phillips-perron test :

Table 04: Unit Root Test

(**PP**)				
At level I(0)				
		MC	INF	EX
WITH CONSTANT	t-Statistic	-1.5368	-2.6654	-1.6899
	Prob.	0.4968	0.0958	0.4222
		n0	*	n0
WITH CONSTANT AND TREND	t-Statistic	-1.9935	-2.5354	-1.6164
	Prob.	0.5727	0.3097	0.7530
		n0	n0	n0
WITHOUT CONSTANT AND TREND	t-Statistic	-0.4186	-1.6114	-0.3932
	Prob.	0.5206	0.0994	0.5305
		n0	*	n0
At first difference I(1)				
		d(MC)	d(INF)	d(EX)
WITH CONSTANT	t-Statistic	-4.5164	-7.4357	-2.7796
	Prob.	0.0020	0.0000	0.0782
		***	***	*
WITH CONSTANT AND TREND	t-Statistic	-4.3971	-7.4022	-3.6294
	Prob.	0.0115	0.0000	0.0515
		**	***	*
WITHOUT CONSTANT AND TREND	t-Statistic	-4.5313	-7.5522	-2.8392
	Prob.	0.0001	0.0000	0.0068
		***	***	***

Source: Prepared by researcher based on the outputs of the statistical program 10Eviews

From the above table, we note that all chains are not stable at the level but stabilized at the first difference, according to the Phillips-perron test, and this is what enables us to do the co-integration test (Johansen and Juselius Test), which requires the stability of all time series at the first difference.

5) Finding the Optimal Time Delay Count for the var Model

Before conducting the co-integration test, it is necessary to determine the appropriate time lag periods (Lag Length) as the extracted results are highly sensitive to the number of lag periods necessary to self-correlate to the error limit, which is determined by informatics standards (HQ, SC,AIC), as it represents:

HQ :Hannan-Quinninformation criterion

SC : Schwarz information criterion

AIC : Akaike Information Criterion

Table (05) : Optimal number of time delays for var model

Lag	LOGL	LR	FPE	AIC	SC	HQ
0	-228.9098	NA	2368108.	23.19098	23.34034	23.22014
1	-204.0377	**39.79544***	**492146.7***	**21.60377***	**22.20121***	**21.72039***
2	-198.2292	7.550981	730843.5	21.92292	22.96844	22.12702
3	-190.0056	8.223682	967780.7	22.00056	23.49415	22.29212

Source: Prepared by researcher based on the outputs of the statistical program 10Eviews

From the above table, we note that the number of optimum slowness periods according to the var model is one slowness (delay) according to each of the AIC , SC, and HQ standards.

6) Granger causality test

The idea of causality dates back to Granger (1969) and was generalized by Sims (1972). The causality test,in Granger's sense , involves usingthe (F)test to check whether theinformation provided aboutthe (Y) variable provides statistically significant information aboutthe (X) variable inthe presence of the (X)slowed down. If not , " (Y) does not cause Granger (X) "and the use of this test requires thatthe variables used be stable. If the studied chains are unstable, we make the first differences to make these chains stabilize. Granger's causation test is based on the following equations: (derouiche, 2013, p. 154)

$$\Delta Y_t = \sum_{i=1}^{n} \alpha_i . \Delta X_{t-1} + \varepsilon_t \dots (1)$$

$$\Delta X_t = \sum_{i=1}^{n} \beta_i . \Delta Y_{t-1} + \varepsilon_t \dots (2)$$

$$\Delta Y_t = \sum_{i=1}^{n} \theta_i . \Delta Y_{t-1} + \sum_{i=1}^{n} \mu_i . \Delta Y_{t-i} + \varepsilon_t \dots (3)$$

$$\Delta X_t = \sum_{i=1}^{n} \eta_i . \Delta X_{t-1} + \sum_{i=1}^{n} \gamma_i . \Delta Y_{t-i} + \varepsilon_t \dots (4)$$

We note that Equation (1) is a reducing equation for Equation (3), and Equation (2) is also a reducing equation for Equation (4).

To test the causal relationship, we will use the following hypotheses:

The Null Hypothesis: $\mu_i = 0 : H_0$

$\gamma_i = 0 : H_0$

The following table shows the causal relationship between inflation, the exchange rate and the performance of the Saudi capital market

Table(06) : Granger causality test

Obs	H_0 فرضية العدم	قيمة (**F**) المحسوبة	Prob.
22	INF does not Granger Cause MC	0.33293	0.5707
	MC does not Granger Cause INF	1.74667	0.2020
	EX does not Granger Cause MC	0.87109	0.3624
	MC does not Granger Cause EX	0.28784	0.5978
	EX does not Granger Cause INF	6.56125	**0.0191**
	INF does not Granger Cause EX	0.27349	0.6070

Source: Prepared by researcher based on the outputs of the statistical program 10Eviews

From the above table, there is no causal relationship between all the variables of the study because the probability value is greater than 0.05, except in one case, the probability value is less than 0.05, which is that the fluctuations and changes in exchange rates cause inflation, and this can be due to imported inflation.

7) Results of the Joint Integration Test (Johansen and Juselius Test)

The Johansen-Juselius test is used because it takes into account small samples and determines the number of co-integration relationships that exist, and this test involves estimating the Vector Autoregressive model, using the Maximum Likelihood Function.

The number of co-integration can be determined using the following tests:

- Trace ;
- Maximum Eigen Values Test.

Table(07): Results of the Joint Integration Test (Johansen and Juselius Test)

Test (Trace)اختبار الأثر				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.464375	21.46363	29.79707	**0.3294**
At most 1	0.300731	8.352899	15.49471	**0.4285**
At most 2	0.039247	0.840793	3.841466	**0.3592**
Test (Maximum Eigenvalue)اختبار الامكانية العظمى				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.464375	13.11073	21.13162	**0.4421**
At most 1	0.300731	7.512106	14.26460	**0.4305**
At most 2	0.039247	0.840793	3.841466	**0.3592**

Source: Prepared by researcher based on the outputs of the statistical program 10Eviews

The nihilistic hypothesis can be accepted that there is no simultaneous integration at the level of significance (10%) and (5%), because the impact values are smaller than the critical values, and this means that there is no long-term equilibrium relationship between inflation, the exchange rate and the performance of the Saudi capital market, and this

is due to the nature of the Saudi economy, which is considered the largest income from the oil sector, and a capital market in which it is still emerging, as long as this test has not been achieved, it is not possible to pass to the model estimation.

Conclusion:

- Time series settle at the first difference;
- There is no causal relationship between the variables of the study except between inflation and fluctuations and changes in exchange rates, as the latter cause inflation.

Recommendations:

In light of the above, the following recommendations can be made:

- The need to search for new and diverse ways and mechanisms to enhance the efficiency of the financial market and its performance at the required level in order to enhance the aspects of disclosure and transparency by announcing all important financial information about listed companies to help investors evaluate securities and assess the risks resulting from them to raise the attractiveness of investment in the Saudi capital market.
- Hard work and perseverance to maintain a low inflation rate, invest foreign exchange reserves, and work to increase them because they enhance the stability of the currency, and thus the stability of the financial market.
- The need to develop and activate the financial market through the introduction of financial derivatives (financial options, swap contracts, financial futures, and futures contracts) for the purpose of hedging various financial risks, especially the risk of exchange rate fluctuations.
- The need to conduct more studies and experimental and field research in order to measure the determinants of the performance of financial markets, and to work as a bridge of cooperation between researchers and those in charge of these markets to spread investment awareness and benefit from the results of research and proposals and recommendations of this type of studies and research.

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