# Measuring and analyzing the major economic factors affecting the Iraqi dinar exchange rate ( An applied study in Iraq from the period 1996 – 2011 )

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## Abstract

This research has attempted to study the effect of some of the economical factors on the Iraqi dinar exchange rate price from the period (1996 – 2011)  . The ( Minitab ) was adopted to obtain some evaluations for the indicators that were used to analyze and evaluate the nature of relationships among the variants of the research and their tendencies and also testing the hypotheses . The research has reached a series of conclusions related to both the theoretical and practical sides of the research , and through which the hypo theses of the research were verified . Some recommendations were reached , the main one was that Iraq must be in aware of the importance of correcting the violation resulted from the Iraqi dinar exchange price versus the American dollar exchange price as the Iraqi dinar being the main goal of the economic policy and the fundamental condition of developing the economic performance and the insurance of the total economic stability , and consequently , the violation of the price exchange rate had received a greater attention in the economic literature and in the establishment of the economic policies and the main reason of any economic instability . Achieving its stability is not an easy task . Achieving such tasks without knowing the affecting factors , and how to direct them would from a greater challenge .

keywords : ( The Iraqi rate exchange , Rate inflation , Real  interest rate , Commercial openness indicator ) .

## Introduction

The stability of the exchange price rate acquires the economic   policy's priority in general and the monetary policy in particular in different countries , since it is regarded  as a basic element for providing a suitable investing environment and also attracting the reserves and stocks and for the relevance  of price stability , so most governments tend to adopt policies that secure the stability of the price exchange rate of their currencies so as to avoid severe speculations of currency ever now and them . This role is greater in the developing countries since they a large  economic  openness and a great  deficit in their balance of payment, thus, they become more influenced with the international economic price rates speculations and also faced and exposed to many external dilemmas and crises which will have a negative consequences on their local stability .

The study of the price exchange rate aims at investigating the means and measurements  that perform and accomplish stability of the national price exchange rate versus the different foreign currencies as much as possible since the complete stability of the price exchange rate of different currencies against each other is little bit desirable never the less , beyond reach , because the price exchange rate is submitted to many internal and external restrictions and it is  also exposed to the extents of demand and supply which in turn exposed to some factors with a short – term nature when the dealers prefer the foreign currency to support and consolidate their financial positions .

**Chapter one**

**The approach of the research**

**First : The problem of the research :**

The monetary stability contributes in avoiding the negative economic consequences of the changes that are unexpected , such stability will prevent any deterioration of  the living standards which is considered as the main

condition for achieving the development at the levels of the reserves , saving and domestic investment . The monetary stability is the main column of motivating the economic activity and providing the suitable environment of local and foreign investments , thus , the monetary authorities try to achieve all the economic goals like the preservance of the stability of local price exchange rate , and the availability of price structure with an interest that suits the local and international developments . the problem of the research lies in the investigation of the violation of the Iraqi dinar exchange rate and it's in stability and it is controlled by many variants and restrictions some of which are controllable and other related to the social and political conditions . The nature of such relationships had left arguments that need more investigations to know if the resulted changes in these factors would explain the price exchange rate and its movement and speculations particularly in the long and short term periods .

## Second : The importance of the research :

The research acquires its importance from the subject that is dealt with since the price exchange rate is regarded as the most important targeted variants in the monetary policy, which intern represents one of the economic policies that influence the economic activity . The importance of the study also lies in recognizing the importance of the price exchange rate and its effect upon the economic activity and its contribution in achieving the economic stability represented in the internal and external balances , the internal balance represents the stability of the local prices with the achievement of the some economic development and the use , while the external balance effects the stability of the balance of payment which is clearly shown though the compatibility of the states incomes and its exportations and also the extent of adaptation of external payments with the volume of the international trade and the mobility of capitals from and to the state . Its so important to study the price exchange rate in details and also to inquire the most important factors and variants that participate in the speculation of price exchange rate and its instability and its frequent change versus the foreign currencies .

## Third : The objectives of the research :

The research tries to achieve a series of goals and of which are :

1-     T he acknowledgement of the nature of the price exchange rate concept .

2-     Knowing the factors and determinants that affect the price exchange rate in the future .

3-     Analyzing those factors and specifying their effects and trends .

4-     Suggesting some measurements and means that help to treat such speculations and also recognizing the positive effects and trying to support them

## Forth : The hypothesis of the research :

The research assumes that the changes that occur in the internal variants in this pattern could be the most important reasons that contribute in the speculations of price exchange rate and consequently the instability of such price exchange rate in the long term period before the foreign currencies . The price rate is affected positively or negatively with the changes that occur in the rate of inflation and rate of interest and also the gross national product and rate of actual growth and the foreign currently reserves and the extent of openness and other commercial transactions conditions, Thus, the research adopts an essential hypotheses which say :

"The many economic factors affect the price exchange rate statistically significant" , other subordinate hypothesis could be derived : -

1-     The rate of inflation adversely affects the price exchange rate with a statistically moral conduct .

2-     The actual interest rate directly affects the price exchange rate with a statistically significant conduct .

3-     The commercial openness affects the price exchange rate directly with a statistically significant conduct .

4-     The economic growth affects the price exchange rate directly with a statistically significant conduct .

5-     The condition of the balance of payment affects directly at the states of surplus and indirectly at the states of deficit with a statistically significant conduct .

6-     The movements of capitals affect and also the markets being perfect on the price exchange rate directly with a statistically significant conduct .

## Fifth : The pattern of the research :

The Iraqi dinar price exchange rate was tested as an intentional , deliberate pattern and this could be justified though the following :

1- The main reason for any country's endurance and suffer is attributed to the problem of the instability of the Iraqi dinar exchange rate for its importance as a variant in the national economy .

2- The availability of a complete data that are needed for the requirement of the research's application .

3- There is a continual instability of the Iraqi dinar price exchange for than twenty years, and there are many reasons for this at the beginning of the 1990's, and that would be explained later , and for such price instability that period of time was not adopted . The period ( from 1996 to 2011 ) was chosen for investigation and through that period the essential visions could be embodied at the practical level and to analyze the results and explain them to reach a successful solutions that could participate in explaining the research's problem and then to investigate the hypo these .

### Sixth : The statistical means that are used :

The research has adopted the analytical approach for it is being the most suitable for the nature of the research , its goals and fields of study . The ready statistical program was used to analyze the relationships and the effect among the research's variants and the testing of the hypotheses . The most important indicators of this approach were : -

**1-   The simple correlation coefficient .**

This approach was used to specify the nature and extent of the relationship between two variants and also to show the nature of the relationship between the price exchange rate and :

A)   The rate of inflation .

B)   The actual interest .

C)   The trade openness .

D)   The economic growth .

E)   The trade balance .

F)   The movements of capitals and the integrity of markets .

**2-The multiple correlation coefficient .**

This approach was adopted to specify the nature of the relationship found among the independent pattern variants to know whether there is a self– correlation among them and the extent of that correlation and this is done to exclude the dependent variant which is largely combined with other variants which will results in a logical and true results when the multiple inclination pattern is used .

**3-The simple linear regression model .**

This pattern was used to measure the effect of the independent variant on the adopted variant .

**4-The multiple linear regression model**

This pattern was used to measure the effect of the gathered dependant variants on the adopted variant .

### Seventh : The research approach :

The research has depended on the analytical and descriptive approach through the use of the study of the variants and also the qualitative and quantitative factors that affect the price exchange rate at the long range period using a standard pattern to specify the extent of affect of the economic variants on the price exchange rate during the period of the research .

**Chapter two**

**The theoretical frame of the price exchange nature and its concept and its relations with the economic variants**

### First : The concept Exchange rate

The behavior of the exchange rate of any currency is regarded as one of the contemporary economic issues that has received an increase interest in recent two decades of the twentieth century . with the existence of market economy and the freedom of capital flow , the exchange rate is important to combine the local and international markets and also directing the investment towards the assets of these markets and the avocation of resources and the increase of economy's competitiveness ( campa & Goldberg , 2005 : 115 ) . There is a local currency in every country of the world that is used within its borders and this will facilitate the internal transaction . Iraq for example uses the Iraqi dinar to sell and purchase goods and services, and the united states of America uses the

dollar , while Britain uses the starling pound,so different countries use different currency of its own (AL –Saidy & Abd ,2011, 88).

Trade , investment and the transfer of capitals among these countries showed the need of another currency other than that which is locally used , and this necessitates the need of a mutual relationship between these two currencies. Hence , the foreign exchange rate is ( the price of a country's particular currency towards another ) . That means that the exchange rate of a particular country's currency is ( the number of units of foreign currency that equals to one unit of a local currency or the number of units of local currency that equals to one unit of foreign currency)  (Boumol , 1988 : 821). The price of the exchange rate is the price that is dependable in exchanging the local currency with the foreign currency,(Edwings, 2001: 50). For example the number of dollars needed to get one starling pound is ( 1.5 ) of a dollar i.e.    ( I pound = 1.5 dollar = 0.666 pound ) . The Iraqi dinar is the currency dependable in the national economy , in the local transaction and the dollar plays an important role in the Iraqi economy whether locally or in its role in dollar's circulation in the Iraqi markets or the role it obtains at the level of Iraqi's international relations .

## Second : Exchange Rate Systems

The international monetary system essentially approves that the price exchange rates of the industrializes countries are floating and exposed to speculations as a result of the economic policies of those countries or the conditions of the international monetary markets which in turn effected by many economical and political factors . with the existence of such a system the developing countries confront two options , either to float their currencies against other currencies or to fix the value of their currencies to possess a main currency or basket of currencies . After the deterioration of  ( Britton Woods ) system in 1971 , depending on the  ( pier value ) exchange rate , another exchange rate was a adopted which was more  flexible . The IMF , has verified such an amendment depending on 1978 agreement. (Jeff , 2006: 178).  The available exchange rate systems are categorized , and practically applied in the present time according to two main approaches each one obtains many nominations like : the fixed exchange rate systems and the flexible exchange rate systems and although many countries adopt the first system or other kinds of exchange rate systems , there is an increase in the number of countries that had adopted the flexible system in the recent decades ( the eighteenth's of the twentieth's century ) . This trend may continue , since the flexible systems provide better protection against foreign shock and also the more in dependability it provides in the monetary policy (Mish kin , 1997 : 180 ) .

## 1-      Flexible Exchange Rate Systems :

From these systems two main systems are divided those systems are , ( Freely Floating ) and ( Managed Floating ) , the first kind the state allows the market's powers to specify the exchange rate against other currencies depending on the demand and supply on that currency or on other currencies .  The privilege that motivate states to adopt the free exchange rate systems is the isolation of the state's economy from the unemployment and inflation in other countries' economies. There is more dependability for those monetary authorities in the countries that use the free exchange rate systems and they are not forced to interfere to maintain the exchange rate with in specific boundaries.

This means the isolation of their monetary decisions with in these boundaries and if interfered would have dire economic consequences . The state us age of free exchange rate systems deepens the economic problems in those countries that suffers those systems and also the effects of the price exchange rate speculations on the total economic variants and the desire of the investors to enter the markets of those countries ( Keith , 1991 : 96 – 98 ) . The other type of flexible exchange rate systems is the floating exchange rate system that is speculated , hence , the country amends the prices of its currency against other currencies frequently , depending on the status of reserves and the balance of payment . There  is no official limitations for the currency price and it looks like the fixed exchange price rates , when the country interferes to prevent the currency from having a particular shape or trend in a large scale . The exchange rate in the floating exchange rate systems is specified according to a rationally fixed bases , those bases are previously agreed upon . At the same time the powers of demand and supply are not  neglected .


Those systems are also critized for that the government controls the exchange rate to achieve certain roles regardless to other countries' own interests.(Paul & Don, 2006:123 – 125 ) .

The exchange rate of any particular currency is specified in the free exchange rate system by the reactions of the powers of demand and supply of that currency . The demand is established on a certain currency like the dinar to face the purchase of the foreigner's to the goods and services and Iraqi securities while the supply is established

on a certain currency like the dollar to face the Iraqi local demand on purchasing the goods and services and foreign government's securities .

## 2-    Fixed Exchanged Rate Systems :

They are fixed Exchanged rate prices versus a paged currency when the countries fix their currencies against one main international currency without any amendments ( only on special cases ) and the amount is previously announces against the peg or the country would fix its exchange rate against the basket currency , or against a standard unit like the special drawing rights ( SDRS ) or against the currency of the euro . (Alsadiq etal,69 – 70 :2007 ).

The back draws of this system is that it reflects the bad economic circum stances and imposes on the monetary authorities the regulations so as to keep large amounts of reserves of foreign currency to keep the boundaries of fixing the currency , which forms sort of burden on the authorities to manage and collect those reserves. finally, the commitment of the state to its currency means that the investors would look for the highest interest rate for their investments , which means the restrictions of the capitals movements and the inactivation of the market's activity when the fixed exchange rate system was used .          ( Paul & Don , 2006 :128 – 129 ) .

The currency exchange rate is specified and itemized in the fixed exchange rate systems through the intersection of the demand curve of the foreign currency with the supply curve of the local currency , but at previously specified balance price , made by the monetary authorities .

## Third : Exchange Rate Forms :

It is obvious that it is difficult to itemize and determine the relationship between certain currency in any country with other currencies through the declared pricing in a specific time , but there are some other considerations that give the exchange rate different other forms with different economic significance , and finally her own way of usage. ( Khalaf, 66 – 70: 2004 ).  Some forms of exchange rates are  ( Abdu majeed , 113 – 115 : 2003 ) :

### 1-The nominal exchange rate :

It is the measurement of one country's currency which could be exchanged with the value of another country's currency and could itemized according to the demand and supply in the stock exchange market at a particular time and could be changed with the change of the demand and supply and their conditions according to the adopted exchange rate system of that country . The nominal exchange rate is divided into an official exchange rate which is adopted to achieve the official current transactions and an exchange rate that is parallel to the exchange rate adopted in the parallel markets .

### 2-The real exchange rate :

This type of exchange rate is related to those units of the foreign goods required to purchase one unit of local goods , and then measures the capability of competing and also useful for the dealers in their private decision taking . If we considered two countries like Algeria's and the united states of America , the exchange rate would be as follows :

$$TCR = \frac{TcN/pdz}{1\$/pus} = \frac{TcN - Pus}{pdz} \quad \text{where as :}$$

TcR : The real exchange rate .

TcN : The nominal exchange rate .

PuS : The American peg .

PdZ : The Algeries peg .

I $ / pus gives us the purchasing power of the American dollar in American , while TcN / pdz  gives us the purchasing power in Algerian, so the actual or the exchange rate for the Algerian dinar against the dollar reflects the difference between the purchasing power of the two countries , whenever the real exchange rate increases the Algerian competitive power is increased .

## 3-The  real exchange rate :

It is the number of the actual paid number of local currency units or those units received against one international transaction of one unit value including taxes , financial subsidies ….. etc and for some economists it is the average rate of the local currency compared  to a basket foreign currencies , values for its weight and

importance in foreign trade and finally gives a general idea about the value of the national currency in the international markets .

**4-The actual real exchange rate :**

 In fact , the actual exchange rate is a nominal price because it is only an average of many multiple exchange rates , and an index of a suitable significance of a country's competitiveness abroad . This index must be corrected by the elimination of the effect of the rational prices and the actual exchange rate will become a matter of combining the actual exchange rate with the real exchange rate which represents the development of the real exchange rate for many countries .

**Forth : The evolution of the exchange rate in Iraqi :**

 The Iraqi dinar exchange rate witnessed a dramatic fall and stumble in the parallel markets during the 1990's because of the country's foreign currency and the reserves exhaustion , and the freezing of assets at the central bank and at the Iraqi public banks which are allocated to cover the value of the letters of credit and documents that are assigned for the country's imports . This weakened the monetary policy and reduced the role of the central bank in controlling and monitoring the Iraqi dinar exchange rate , because of the nature of the goal and trends of the financial and banking system and its complete submission to political decisions and not economical decisions . Many reports and studies showed that the exchange rate in Iraqi has witnessed a dramatic change in the 1980's and 1990's of the past century because of the economic and political challenges that are faced by the Iraqi economy and the Iraqi dinar parallel exchange rate has become far away from the official exchange rate as well as many other arrangements were made for the unofficial exchange rate . Negative conditions that the Iraqi economy witnessed and the multiplicity of the exchange rate and the bad management of the national economy during the control of the ex – regime, were also the reasons for that dramatic change after 2003 and when the process of the rehabilitation of the Iraqi economy was made, many factors contributed in the stability of the exchange rate when the law of the central bank was issued number 56 in 2004, which allowed a complete independence for the central bank to execute its own monetary policy depending on the indirect means of the monetary policy , when the bank started to establish a dollar public sale so as to promote stability and to improve the Iraqi dinar exchange rate against the dollar , and also issuing a brand new Iraqi currency that substitutes the old one , this process gave the central bank a complete domination to eliminate the money forgery that had used to leave very bad results on the value of the Iraqi dinar . Now , the policy of the central bank had become clearer and gave the bank more independence and more stability of the currency and made its value moves with in certain boundaries and that was made through the foreign currency's auctions and public sales that were dependent since 4/ 10/ 2003 , when the exchange rate of the Iraqi dinar dropped from(2000) dinar against a dollar in 2003 to the boundaries of (1117)dinar against a dollar at the end of 2008 . The rate of reduction was roughly 44.2% .That was a contemporary measurement adopted by bank to draw and execute the monetary policy and to control and develop the value of the Iraqi dinar exchange rate at the same  time. This made the parallel market to disappear(Abdul Nabi, 2011: 14-16 ).

**Fifth : The stages of the Iraqi dinar exchange rate :**

 The Iraqi dinar exchange rate went through many stages :

First : This stage extended from 1970's until 1980 where the fixed exchange rate dominated , the Iraqi dinar valued 3.2 a dollar .


Second : Extended from 1980 to 1990 , at this time there was a financial turmoil of the country's general budget , and the government sought financing through raising of loans        ( borrowing ) from the financial authorities using treasury bills of exchange  ( drafts). The exchange rate amounted to ( 300 – 400 ) dinar per a dollar .

Third : In 1990 there was a blockade which was ended in 2003 , and a result of the bad deficit of foreign currency's reserves , the parallel black market played a major role in financing the commercial transactions conducted by using the foreign currency which was described as being chaotic and confused which resulted in dire and severe speculations of the local exchange rate against other currencies , especially the dollar at the time there were many other dominated exchange rates in the ministry of finance and other governmental bodies and banks and other institutions as well as the ministry of trade , for example :

1-        Official exchange rate 3.2 dollar per a dinar .

2-        Accounting rate 1 dollar = 100 dinar .

3-        Encouraging exchange rate 1 dollar = 1 dinar .

4-        Buying a foreign currency 1450 dinar per a dollar .

5-        Parallel exchange rate ( market price ) .

6-        Exchange rate for the imported transferred credits made by foreign companies ( violating financial and banking regulations ) = 3.3115

7-        State general budget exchange rate which is 1500 dinar per a dollar .

The fourth stage in 2003 had witnessed a dramatic change on the fourth of October 2003 .

   At this time the foreign currency stock market and its public sale started to be used and this reduced the speculation of the Iraqi dinar exchange rate . Those change on the Iraqi dinar exchange rate against the dollar could be explained through the period ( 1996 – 2011 ) using the data shown on Table (1)

**Table (1)**

**The average annual change occurred on the Iraqi dinar exchange rate against the American dollar from the period ( 1996 – 2011 ) .**

| The years | The I.D exchange rate against  USD |
|---|---|
| 1996 | -30.11 |
| 1997 | 25.73 |
| 1998 | 10.13 |
| 1999 | 21.73 |
| 2000 | -2.13 |
| 2001 | -0.05 |
| 2002 | 1.45 |
| 2003 | -1.07 |
| 2004 | -24.95 |
| 2005 | 1.31 |
| 2006 | 0.20 |
| 2007 | -14.10 |
| 2008 | -5.05 |
| 2009 | -1.75 |
| 2010 | 0.34 |
| 2011 | 0.84 |
| M* | -1.09 |
| STD ** | 14.11 |
| Min *** | -30.11 |
| Max **** | 25.73 |

**The researchers found and prepared this table depending on the data shown on the appendix . * The mean ** Standard Deviation *** lowest change **** highest change .**

   The table -1- may conclude the following :

1-        The differences that show important variances of development rates of the Iraqi exchange rate during the period of the research are due to many new conditions and variables and other extraordinary situations that the country went through . The financial and economic policies and the investment environment could be the reasons for such speculation that occurred on the Iraqi exchange rate against the different leading currencies .

2-        The annual levels of Iraqi dinar exchange rate price had seen a noticeable development in some years . The exchange rate of the Iraqi dinar raised against the us dollar roughly -30.11 in 1996 . The American dollar amounted 1170 Iraqi dinar , and it was the highest during the period of conducting the research . The second rise of Iraqi dinar was in 2004 when it amounted  -24.95 as a growth rate .The value of one us dollar amounted 1453 of an Iraqi dinar . The worst drop of the Iraqi dinar against the American dollar was in 1997 when the rate amounted 25.73 ; and the second drop was in 1999 when the rate amounted  ( 21.73 ) . It could be generally noticed that the annual developments in the exchange rate were un steady whether at the highest or the lowest points where they reflect the sharp and in tensed developments in the political and economic changes in the country . This could be noticed through the drop of the following statistical data in figure -1-
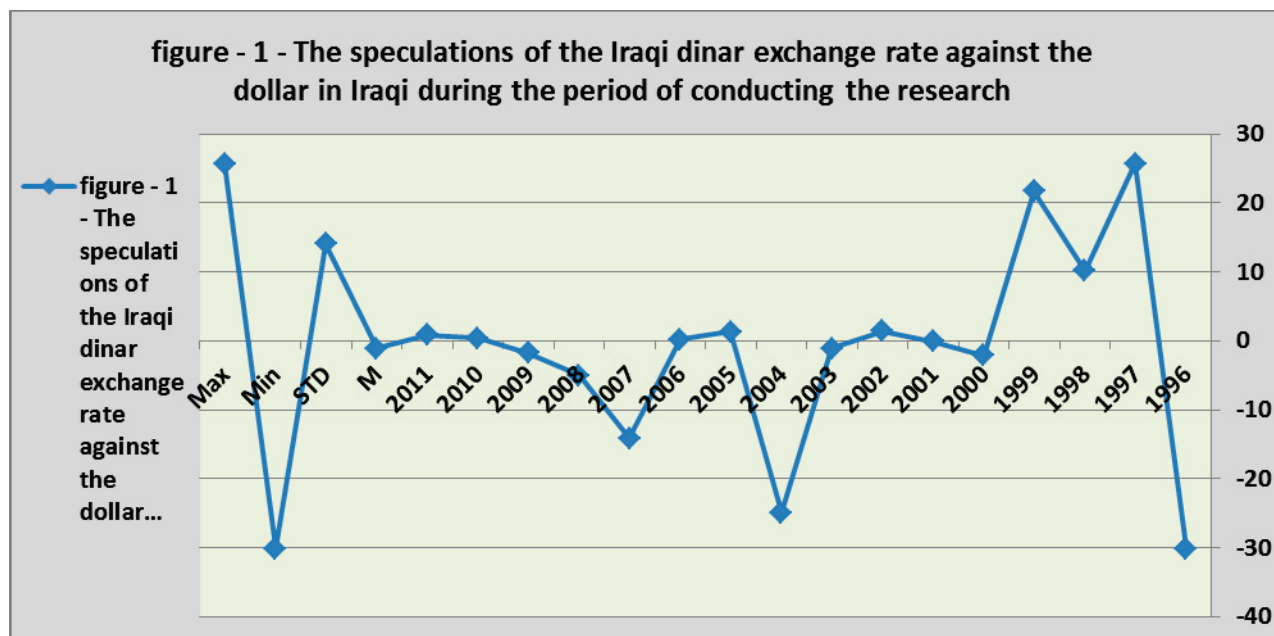
The diagram showed a huge speculation and sway at the level of the growth of the exchange rates and their increase and this shows the general average of the standard deviation which amounted 14.11 which mean the change occurred in the Iraqi exchange rate through the research's period . while the average growth of the exchange rate amounted -1.09 during the same period .

**Sixth :Exchange rates determinants :**

**1-      Inflation levels :** The higher the levels of inflation  are the higher the swaying of the exchange rates become , which make the exporting companies keep on reducing the costs of production and controlling them in the international market , while the importing ( foreign companies ) will search for lower price markets and this will result in reducing the demand on the Iraqi dinar against the supply which will consequently result in sharp reduction in its exchange rate . if the monetary policy succeeded in targeting lower inflationary rates , this will reduce the swinging of exchange rate prices and will not motivate producers to increase the levels of their prices as a result of the cost increase , since they are convinced that the monetary policy is able to preserve stability of prices . (Taylor , 2000 : 1389 – 1391 ) .

**2-       Domestic interest rates changes :** The dominating interest rates are the main determinants for the counties with high interest levels , since the real interest rates will attract foreign capitals which will result in an increase of the foreign exchange rate value and its currency . ( Al-Hasani 2002 : 158 – 159 ) .The interest price effects the exchange rate price through the short – term financial investment movements , since these investments are very sensitive to the changes of interest prices . The available assets for international lending will flow to regions where the expected return is higher , the increase of the interest rate price will attract the foreign capitals leading to a country's currency rise in the foreign exchange rate market . when the interest rate is reduced , the opposite thing happens . The inflation rate should be considered when the interest rate us specified and determined . The interest rate price should be higher than the inflation rate .

**3-       Trade openness indicator :** This could be measured with such openness related to foreign trade . The indicator was measured according to the following equation : - ( The value of the imports of goods and services of the operation + the value of Iraqi exports of different goods) ÷ GDP × 100 equals the trade openness indicator . The higher the percentage the more openness with the world will be and that will be reflected in a positive way on the Iraqi dinar exchange rate and vice versa . There are many developing countries with a very week degree of openness to the external world because of cruel materials , especially the agricultural exports  that have low revenues , while the industrialized countries import the prime goods that are produced in those developing countries and manufacture them making use of the low cost in the foreign markets and consequently , the degree of openness will become larger . (Corden & Neary ; 1989 : 829) .

**4-       The economic growth :** Is the continual increase of the GDP , the gross domestic product during a specific period of time and this includes the increase of the average capita .  The economic growth is measured through the GDP and its evaluation by the currency of that country and then comparing it with the previous

period and average growth that should be already known .The bad thing in those equations they are monetary and do not taken into account the effect of the inflation . Each country has its own currency and then the achieved growth cannot be compared in different countries according to such measurement . So one international unit of currency is used to evaluate the GDP of different countries to make the process of evaluating the assured growth more practical and easy . The economic growth could also be measured by using the gross domestic product with respect to population when per capita increases the economic indicator will be positive . The positive indicator is also indicated through the production increase , the good use of the human resources and the increase of the exports and the gain of accumulated returns of the foreign currency . The positive indicator is useful in repaying the debts or the increase of consumption of the imported goods or the increase of the amounts of reserves of the foreign currency which will positively effects the exchange rate . ( Kumar , 2007 :225 – 227 ) .

**5-    Balance of payment (trade balance ):** Balance of payment is important in documenting the monetary values of the foreign economical transactions , that are usually distributed between the country's earnings of the foreign currencies  and its payment of those currencies, and consequently , the difference between these parties for the current account whether positively (surplus), or negatively  (deficit), and that will be reflected on the foreign exchange markets when the speculations become severe some times and in a relative way.(Walter,1997: 363–372). The changes and speculations that occur in the averages of the trade exchange have noticeable effect on the exchange rates . The increase of the amounts of exports against the value of the amounts of imports effects the value of currency and then rises  and when the demand on the value of exports depend on the preference and the outer income  and the existence of alternatives and also the good price in the international market . The increase of demand on exports will be reflected on the products' prices and they become higher on the short – term , because the adaptation on the long – term would be the function of the produced quantity and on the sales of exporting industries , and thus , the value of their currency will be increased , and there will be an increase of imports and decrease of exports and this will result in the dropping of the foreign exchange rate . When there is an increase on the local demand on the foreign imports the currency will be reduced in its value as for the partnership countries there will be an increase in the demand on its currency and thus the value will be increased (Jewartini & Astrop, 1988:552 -553) . Anyhow , the deficit or the surplus of the trade balance sheet has an important role in the speculations of the foreign exchange rate of any country's currency when such country does through those two conditions . The deficit of the payment balance in an accumulative way would consume the foreign monetary resources which will create difficulties when importing goods and services ( Consumptive , Productive ) , and more pressures would be put on the value of the local currency and comes down according to the relationships between the supply and the demand in the foreign exchange rate markets .

**6-    The capital movement :** All the above – mentioned factors are not decisive in report of exchange rate prices in the international markets. The capital movement has become important in the demand and supply of currencies and play an important role in specifying and itemization of the exchange rate . In those countries where there is a free capital movement , the exchange rate will be flexible because they can amend the exchange rate in response to the changes of monetary flows that would be effective  on the economic variants hike the interest rate and inflation . If the country followed the system of fixed exchange rate in the existence of huge international capital ills' movements , the increase of the capital flow as a result of the external demand on the local currency with an expansional monetary policy will result in the reduction of the local interest rate and this will result in generating sort of instability between the interest rate that is targeted at certain level and the new interest rate which will have a negative effect on the current balance of payment.(Abdul Khaliq, 2000:27). The government will be less capable of putting and adopting an effective monetary policy that depends on controlling the demand through the monetary accumulations , the main goal will be keeping the exchange rate fixed and stable , and this goal will be a burden in the existence of markets opened to the external world . The monetary policy had to follow the capitals' movements from and to the country , the country should adopt the policy of floating which means  the seizure of the effect of the increase of the foreign funds on the volume of the transacted cash and this is done by the absorption of the increase of financial or monetary reserves , which depend on the level of the local financial markets , the existence of a developed financial markets and opened to the world's markets help the banks to compensate the cash coming from abroad , because of the freedom of transferring the foreign currency and this will weaken the effect of such policy , but when the flow of those capitals go outside the country, the monetary authorities start to consume the foreign reserves to keep a fixed and stable exchange rate as what happened in the crisis of Thailand. The fund flow abroad forms a pressure on the exchange rate which leads the country to float its exchange rate because of its incapability of sending and pumping foreign currencies in to the markets because of the huge volume of capitals . The volume of foreign assets at the commercial banks are used as a measure for the capitals' movement and also specifying the degree of integrity among the financial markets , the increase of the volume indicate a high degree of integrity of the

international markets (Barbour , 54 -55 : 2008 ) . It is so important to mention that the measure of such variant is done through the net foreign assets that are available at the state's treasury  : ( Net foreign assets = the total foreign currencies and the gold in the central bank + the total foreign currencies and gold at the commercial banks – the foreign liabilities at the Iraqi central bank and the commercial banks ) . It is important to mention that the level of openness of the capitals flow movement would affect directly on the exchange rate prices . If those flows exceeded the capacity power of the national economies ; this will lead to an increase of reserves of foreign currency and consequently , the increase of the national currency and the opposite happens when the capitals escape the country which will affect negatively on the national exchange rate .

**Chapter Three**

**Measuring and analyzing the relationship between the research's variants.**

After discussing the private concepts related to the variants of the research it is so important to conduct an applicable analysis for those variants . According to this the research was categorized into the following main points : -

**First : Analyzing the correlation relationships among the variants of the research from the period ( 1996 – 2011 ) .**

This is done between the exchange rate and some of its determinants . Those relations were analyzed to know the nature and degree of relationship between the independent variant  Y1 and the dependant variants . This relation will let us know the extent of change and affect that occur on the exchange rate when other variants change .

The analysis of the correlation relations drew us to the following results :

**1-      The analysis of the correlation relations between the exchange rate as an independent variants found in the table (1) in Iraqi from the period(1996 – 2011 ) .**

   Through the theoretical frame we found that there is a relationship between the exchange rate and some of the important determinants . To test this relationship experimentally the correlation coefficient among the research's variants during the research's period . The results were shown in the table ( 2 ) .

**Table ( 2 )**
**The results of the correlation relationship between the research variants in Iraqi during the time period of the research**

| Dependant variant / Independent variants | Exchange rate price y1 |
| --- | --- |
| Level of inflation x1 | 0.46- |
| Real interest rate x2 | 0.49 |
| Commercial openness indicator x3 | 0.62 |
| Economic growth rate x4 | 0.73 |
| The trade balance status x5 | 0.69 |
| Markets integration and movement of capitals x6 | 0.81 |

**The table was prepared by some researchers who were depending on the  computer outcomes .**

   The table shows a weak correlation relationship and also an adverse relationship found between the inflation rate average and the exchange rate the average rate was about -46% , this shows the kind of split in the Iraqi market , since the success of the monetary policy after 2003 kept the exchange rate stable with the rise of the inflation levels , especially those imported ones which affected the purchasing power of the Iraqi dinar . There was a week and reversal correlation relation between the real interest rate and the exchange rate which amounted to 49% . This is due to the changes that had occurred in the Iraqi dinar exchange rate which corresponds to the changes in the real interest rates and the exchange rate which made the correlation coefficient 49% . The exchange rate of the Iraqi exchange rate responds to the changes in the actual interest rate more than the changes in the inflation rates . The table shows a sound and direct relation between the economic growth indicator and the exchange rate which mounted 62% and there is a story and direct relation between the economic growth indicator and the exchange rate which mounted 73% .There is a strong relationship between the Iraqi  payment balance ( the trade balance ) and the price of the exchange rate of the Iraqi dinar during the period of the research the correlation coefficient amounted %69.

The correlation coefficients shown in table ( 2 ) showed a capitals' movements and the perfect markets and the exchange rate which mounted %81 .

2-      **The analysis of the correlation coefficients among the total dependant variants in Iraqi during the period of the research .**

This will be implemented to know the problems of the auto – coefficient found among the dependent variants, and then to exclude the variants that are automatically combined in a very strong way with other variants when the multiple linear regression were used, In other words, the dimensions of any dependant variant is automatically combined with other variant so as not have other problems with the auto – correlation and then its effects upon the results of the multiple linear regression as well as, the insertion of the independent variant which is excluded from the simple linear regression's model .

The correlation values show the variants between the independent research variants through the table ( 3 ) according to the following .

**Table ( 3 )**
**The results of the correlation relationship among the independent research variants in Iraqi  during the period of the research .**

| Independent variants | Inflation rate x1 | Real interest rate x2 | Indicator of trade openness x3 | Economic growth indicator x4 | Trade balance status x5 | Capitals movement and market integration x6 |
|---|---|---|---|---|---|---|
| Inflation rate x1 | | | | | | |
| Real interest rate x2 | 0.191- | | | | | |
| Trade  openness x3 | 0.257- | 0.291 | | | | |
| Economic growth indicator x4 | 0.105 | 0.066- | 0.146- | | | |
| Trade balance status x5 | 0.075- | 0.019 | 0.167 | 0.261- | | |
| Capital movement and market integration x6 | 0.411- | 0.373 | 0.073 | 0.652 | 0.803 | |

**The table was prepared by some researchers who were depending on the  computer outcomes .**

Table ( 3 ) shows a week correlation coefficient between the inflation rate and other independent variants the exception is the variant of the capitals' movements and markets' integration which were higher than other variants which mounted ( 0.411 ) , the table always shows other correlation coefficients which shows a week correlation coefficients between the real interest rate and other variants those rates amounted (0.373,0.019 , 0.066- , 0.291) consequently . The commercial openness indicator showed a strong direct relation only with the dependant variant , which amounted 0.673 . The economic growth indicator variant and the variant of the trade balance have shown a strong direct relation only with the variant x6 when it amount 0.652 , 0.803 consecutively . These variants are very high in comparison with other independent variants . The variant x6 was excluded from the multiple linear inclination . This variant was used in the simple linear inclination to show its effect on the dependant variant .

**Second : The analysis and tests of the effect of the independent variants in the dependant variant in Iraqi during the period of the research .**

This section aims at understanding the range of effect of the multiple variants in the Iraqi dinar exchange rate during the period of the research . and in order to achieve the goal of the research and testing its hypo these a series of independent variants were tested , those variants are : -

The rate of inflation x1 , the real interest rate x2 , the trade openness indictor x3 , the economic growth indicator x4 , the trade balance status x5 , the movements of capitals and the markets' integration x6 . To analyze the effect relationships during the research period for those variables in the dependant variant ( the exchange rate ) . The data were prepared using the program ( Minitab ) . The research has adopted the method of the simple linear regression and the multiple one to calculate and analyze the values of the notifies using the mini squares which will give the best linear values that are non – partial  at the level of ( 0.05 ) . The tests showed :

1-        (t) test: shows the nature of relationship between the two variants, the dependant and independent or being significant or non – significant when the value of (t) is significant when it is more that its table value , which means the effect of the dependant variant with the independent variant. given that(t) schedule value at the significant level (0.05) and freedom degree (n–2) amounted (1.76 ) .

2-        (f) test : This model shows that it is moral at 0.05 and freedom degree of (n –k , k-2) whereas , (k) represents the independent variants and (n) represent the number of views knowing that the (f) value amounted (4.67) at the state of the simple linear regression and amounted (5.12) at the multiple linear regression.

3-        Testing the specification coefficient ($R^2$) : This coefficient measures the rate of change in the dependant variants that is notified by the independent variants .

The following are the evaluation results : -

**Table ( 4 )**
**The results of the evaluation effect of the independent variants in the dependent variant**

| Dependant variant | In dependant variant | Regression coefficient | X1 | X2 | X3 | X4 | X5 | F Measured | R2 |
|---|---|---|---|---|---|---|---|---|---|
| Y | B | 1344 | 0.0032 | 0.0042 | 0.1001 | 0.1309 | 0.1008 | 6.67 | 76.9% |
|  | T | 3.16 | -1.89 | 1.93 | 2.65 | 3.49 | 2.68 |  |  |
|  | Nature of the relation | S | S |  | S | S | S | S |  |

**The table was prepared by some researchers who were depending on the computer outcomes .**
**S = significant**
**NS = Non significant**

  The table (4) shows the results of the multiple linear inclination results , the experimental evaluations were strong and that give a good interpretative value the amount of the measured (f) amounted 6.67 which is more than the table value which mounted 5.12 .

 The notifies and their statistical significant are harmonious with the hypo these ,the inflation rate variant (x1) showed a strong significant reversed relationship with dependant variant , and the relationship was compatible and amounted        (-1.89) and it is more than the value of scheduled (t) which amounted (1.76) ,this proves the a dependant of the first research hypothesis concerning the variant (x2) the average interest rate was significantly direct with the dependant variant , and this is clearly noticed through the value of (t) which amounted (1.93) which is larger than its schedule value which mounted (1.76) and this finally proves the adequacy of the second research hypothesis . The increase of one unit to the real interest rate would increase the price of the exchange rates of the Iraqi currency by 0.0042 . The trade openness indicator ( x3 ) has shown a strong  significant relationship with the variant (y1) the relationship and its sign were compatible with the hypothesis of the research which was the third . There is a tangible effect  for the fourth variant which is the economic growth indicator , through the following of the calculated ( t ) which amounted 3.49 and it is more than its schedule value which amounted to 1.76 , there was a strong relationship between the independent variant and the dependant variant in a way that approves the adequacy of the fourth research hypothesis . According to table (4) , the independent variant which was the fifth ( x5 ) reflected the status of the trade balance which showed a strong significant relationship with the dependant variant which mounted (2.86) for (t),which is larger than its schedule value and this supports the fifth research hypothesis from its scheduler value and this supports the fifth branch of the research hypothesis . The relationship between the two variants was not compatible with the research hypothesis . In other words , one unit increase of the surplus of the trade balance would lead to arise in the Iraqi dinar exchange rate against the American dollar . $R^2$ value shows that the resulting variant in the Iraqi dinar exchange rate was caused by a %76.9  of the resulting variants in the five independent variants , previously mentioned , the remaining %23.1 percent is due to other variants not considered in the pattern .

 This could be explained as a result of the importance of these variants in the specification of the Iraqi dinar exchange rate value being chief indices that specify many facts about the Iraqi economic policies and also those policies concerning the monetary policy and to be more specific , the exchange rates , since it is so essential to

consider these indices as being important to specify exchange rate or also to consider the reasons of the Monterey variant's instability .

And as clearly shown previously , the five independent variants are considered important constraints in the dependant variant during the period of the research being conducted in Iraqi , and also as shown in the rational importance evaluation and according to the rate of effect and the significant relationship and its direction , showed that the main variant which affects in the dependant variant is x5 , x4 , x3 , x2 , respectively and finally x1 according to the data shown in table ( 5 ) .

**Table ( 5 )**
**The results of evaluation of the effect of the capital's movements and markets' integration X6 in the dependant variant .**

| Dependant variant | In dependant variant | Regression coefficient | X6 | F Measured | R2 |
|---|---|---|---|---|---|
| Y | B | 1684 | 0.0146 | 13.04 | %48.2 |
|  | T | 22.75 | 2.11 |  |  |
|  | Nature of the relation | S | S | S |  |

**The table was prepared by some researchers who were depending on the**     **computer outcomes .**
   **S = significant**
   **NS = Non significant**

The results shown in the above table indicate the experimental appropriateness for all estimates which were strong enough to add a high ability of explanation . This could be noticed through the (f) value which amounted (13.04) . This value is bigger than its scheduler value which amounted(4.67). It could also be noticed that marks indication and their statistical values are coordinated with the hypothesis,X6 variant showed a strong moral relationship with the dependant variant Y1.This could be noticed through the value of (t) which amounted (3.61) and it is bigger than its scheduler value which amounted (1.76) and this approves the truth of the sixth research hypothesis. In other words, one unit increase of foreign capitals in the Iraqi financial institutions would result in an increase in the Iraqi exchange rate against the dollar amounts ( 0.0146).

**Suggestions and conclusions**

**First : conclusions :** Many conclusion were reached through the theoretical review of some economic variants and their effect on the Iraqi dinar exchange rates at both the theoretical and practical levels .

**The first part : The conclusions obtained from the theoretical point of view :**

1-     In its local transactions , the Iraqi dinar is the currency that is adopted and used in circulation , while the dollar is regarded very important in the Iraqi economy whether locally or through circulation at the level of the Iraqi international relations .

2-     The Iraqi exchange rates witnessed great deterioration and started high increase in the parallel market during the 1970s because of the great assumption of Iraqi reserves of foreign currency allocated to cover the value of letters of credit , and credit letters of the country's imports , Which are irrevocable , this wreaked the monetary policy and also reduced the role of the central bank in monitoring the exchange rate , because of the nature of the goals and tendencies of the financial and monetary system and its being controlled by political decisions more than its being of a financial nature and other economical factors .

3-     The Iraqi dinar exchange rate was known to be duplicated at the time when the government sets an official price for it ,a parallel market emerged due to blockade and scarcity of foreign currency and Iraqi openness on foreign countries due to the expansion of imports without any foreign trans formation .

4-     The modern monetary policy depended series of measures at the course of its duties , some of them were severe to confront the rising inflationary pressures and also to fight other inflationary pressures so as to achieve a rising rates of growth and also realizing a balanced balance of payment .

5-     The monetary policy has realized some reforms in the years ( 2001 – 2007 ) and they achieved an economic stability , such stability was represented in the exchange rate and reduction of the inflation rates and establishing a strong reserves which are intensified from less than 4 billion dollars in 2004 to be 60 billion dollars in 2011 .

**The second part : The conclusions obtained from the practical part :**

6-      The results showed a clear variance in the development of the exchange rate growth in Iraqi during the period of the research , which revealed an uneven growth . This could be seen in table (1) and the dropping the statistical data in the diagram -1- .

7-      It was clarified during the process of the analysis of the correlation relationships that there is a week direct relationship between the exchange rate of inflation in Iraqi during the research period and the real interest rate which amounted %45 and a strong direct relationship between the exchange rate and the trade openness which amounted to nearly (1.62) and the data analysis showed a direct strong relationship between the exchange rate and both the economic growth indicator and the trade balance in Iraqi and another very strong and direct relationship between the exchange rate and the capitals movements and the market's perfection , and this is clearly seen through the results in table(2).

8-      Analysis of effect's relationships showed a significance of an effect to the rate of inflation of the exchange rate in Iraqi during the research's period . there is a direct significant effect of the real interest rate on the dependant variant , and a significant effect of the trade openness on the exchange rate which mounted (2.65) and it was larger than its schedule value which mounted(1.76).The relationship of effect reflected also the existence of strong significant effect for the economic growth and the trade balance and the movements of capitals in versus to exchange rates. This is clear through the results shown on table (4 )(5) . This approve certified of the hypotheses are being certified .

**Second : suggestions :**

1-      Iraqi economy is open and largely depends on the worldwide countries and the government adopts sort of policy that currency could easily be exchanged . capitals' movements from and to Iraqi , but the monetary policy ( especially the exchange rate policy doesn't tend to keep the stability of the exchange rate of the Iraqi currency the Iraqi dinar ) . The value of the Iraqi dinar is exposed to severe speculation . Thus , the Iraqi economic policies had to do their best to attract foreign investments to use them in financial markets . Those investments' attraction will not be completed without the insurance of stability in the exchange rate . All the restrictions related to foreign currency system and foreign payments should be released .

2-      Trying harder and harder to eliminate the structural deformity in the (GDP ) to have appositive result in the structure of exports as well as the elimination of the traces of the imported inflation and consequently the success of the monetary policy at the level of exchange rate stability and the reduction of the rates of inflation and the preference of purchasing power of the Iraqi dinar .

3-      Developing the Iraqi stock markets and the creation of further financial instruments which contribute in the reform of the financial and monetary systems , through the adoption of a sound and effective financial and monetary policy that reduce the deficit in the budget and also the government debt volume , this will stabilize the exchange rate at the medium range .

4-      The extent or degree of openness , plays an important role in deterring and shaping the suitable exchange rate systems , Iraqi for example , with its wide openness in his economies and foreign trade must deal with and treat the disfiguration of his relationship of openness through the correct and successful diversity of the exports' structure and also the support of national industries during a specific time so as such manufactories will be able to produce and manufacture .

5-      Choosing a fixed exchange rates in the countries with open economies will protect her from severe speculation in the prices of goods it followed a flexible exchange rate system since this kind of exchange rate would not make those speculation but also will transfer them to costs and local prices which at the end will cause a huge violation in the balance of the local goods sector and their prices would be reduced as a result of the reduction of the imported goods which results in higher unemployment .

6-      On the contrary the countries with closed economies which have a lower share of foreign trade from the GNP will try to use the flexible exchange rate system because it is costly to correct the foreign instabilities through an inflationary policy or other local deflation policies.

7-      The research advices further studies concerning the exchange rates and their effects on the movements of prices' indicators , and it is particularly important to conduct more studies about the effect of stabilizing and fixing the Iraqi dinar exchange rate against the dollar and its role in protecting the local price indicator in the exchange rate price movements .

8-      An increase of the national economy's productivity through focusing up on the specialized projects which produce other products and exports rather than the oil and the natural gas … etc , in addition to the importance of increasing exports to assist the process of the creation of a foreign reserves to meet the imports and to be used in the management of the monetary policy and the perseverance of the stability of the exchange rate according to some economic criteria .

9-      The conducting of further studies and researches in the topic that deals with the effecting factors and other special limitations of the exchange rate so as to come out with a scientific results that shows the effect of other factors in the resulting variants of the exchange rate ( the local exchange rate ) against and the methods of remedies to secure better stability of currencies .

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**Attachment (1 )**

**Annual changes to the independent variables of the study and approved for the period 1996 – 2011**

| Net foreign assets | Trade balance status | Economic development index | Commercial openness index | Real interest rate | Iraqi annual inflation rate | Iraqi exchange rate against American dollar | Years |
|---|---|---|---|---|---|---|---|
| 691.88 | -10046.10 | 49.64 | 177.69 | -3.4 | 15.4 | 1170 | 1996 |
| 754.32 | -10046.10 | 69.65 | 53.20 | -11 | 23 | 1471 | 1997 |
| 987.65 | -10046.10 | 34.86 | 66.60 | -2.8 | 14.8 | 1620 | 1998 |
| 1001.54 | -10046.10 | 17.58 | 102.79 | -0.6 | 12.6 | 1972 | 1999 |
| 1295.80 | -10046.10 | 1.41 | 127.53 | 7.1 | 4.9 | 1930 | 2000 |
| 1718.99 | -10046.10 | 2.31 | 91.57 | -4.4 | 16.4 | 1929 | 2001 |
| 1460.29 | -10046.10 | -6.90 | 54.62 | -8.3 | 19.3 | 1957 | 2002 |
| -1550.33 | -10046.10 | -33.10 | 109.84 | -23.6 | 32.6 | 1936 | 2003 |
| -2891.65 | -10046.10 | 24.07 | 93.12 | -18.9 | 26.9 | 1453 | 2004 |
| -2790.21 | -10046.10 | 2.34 | 101.63 | -29.8 | 36.9 | 1472 | 2005 |
| 30550.18 | -10046.10 | 39.64 | 102.58 | -45.48 | 53.2 | 1475 | 2006 |
| 43374.86 | -10046.10 | 0.41 | 115.87 | -19.5 | 30.8 | 1267 | 2007 |
| 66041.02 | -10046.10 | 10.74 | 181.56 | 9.18 | 2.7 | 1203 | 2008 |
| 62142.94 | -10046.10 | 2.72 | 132.41 | 6.03 | 2.8 | 1182 | 2009 |
| 68139.35 | -10046.10 | 9.38 | 153.80 | 4.77 | 2.4 | 1186 | 2010 |
| 77149.41 | -10046.10 | 5.21 | 191.29 | 1.3 | 5.6 | 1196 | 2011 |

Table prepared by researches based on data contained in :

Central bank of Iraqi , general directorate of statistics and research , annual statistical bulletin

( 2002 – 2011 )   http://www.cbi.iq

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