

# ‘The Role of Financial Crises Management Implementing on Investment Development in Kurdistan Region – Iraq During Financial Crises (ISIS War Crisis and COVID-19 Pandemic Crisis)’

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**Abstract:** This study aims to examine the role of crisis management in managing and handling the financial crises (ISIS war crisis and COVID-19 pandemic crisis) on investment development. As well as, the study examined the influence of the crises on investment development. An analytical and comparative study in the Kurdistan Region-Iraq. This study tries to determine the role of crisis management depending on mitroff’s-five stages model, depending on the regulation and decisions made during the occurrence of the crises. As well as, the study compared the government’s reaction at each stage in both crises era. Also, the study tries to analyze and explore the reality of the investment situation during the occurrence of crises in the region. A conceptual study theme was designed, and a set of hypotheses was developed. To verify the validity of the hypotheses. for that purpose, the financial analysis and SPSS version 28.0 was used. The study reached a set of conclusions, the KRG has more effective and better crisis management to handle and manage the COVID-19 pandemic crisis than the ISIS war crisis on investment projects depending on the scientific criteria. By another hand, the crises themselves there were different from each other. ISIS is a war crisis and external threat. Thus, the ISIS war crisis has a great negative influence on investment projects. capital in dollars dropped from the appearance of ISIS in the crisis stage by (65.20%). As well as, the number of projects dropped from (108) to (70) projects. However, the COVID-19 crisis was a global epidemic spread all over the world but for the

region it was internal threat. Causing the delay or stoppage of the projects temporarily rather than that fall the projects. Thus, The COVID-19 pandemic has a limited influence on investment projects. Thus, capital in dollars decreased slightly from the appearance of COVID-19 in the crisis stage by (18.76%). However, the number of projects increased slightly from (66) to (76) projects. The researcher suggested that Manage the crisis according to scientific criteria. And Implementing (Early warning system) to inform the projects of the occurrence of any unwanted events.

*Keywords: financial crises, crisis management, investment, ISIS war crisis, COVID-19 pandemic crisis, KRG.*

## **introduction**

Financial crises and their subset, banking crises, debt crises and currency crisis have become a worldwide phenomenon in recent years. crisis is a phenomenon that could occur at any time and is unexpected. It may cause harm to firms, organizations and countries. in a way that it can happen every ten years in financial field. Thus, it is essential to manage crisis and find opportunities in crisis to reach the organization’s or and countries success in the competitive global market. Therefore, crisis management is an essential management activity in the field of business management and financial management in particular. as (Giorgetto, 2021:6) state that Crisis management (CM) can be defined as the intervention or coordination by individuals or teams before or during or after a

crisis to resolve the crisis and decrease damages and protect the organization.

Also Kurdistan Region of Iraq (KR-I) is not far from different crisis situation. the KR-I has faced many ups and downs and suffered many crises from 2012 until 2022. The first crisis begins in the year 2014 by the same time KR-I faced four sudden shocks this year. includes budget cuts, the ISIS war crisis, the humanitarian crisis and he decline in oil prices. These factors pushed the region into a hard financial crisis. The KR-I faced another financial crisis due to suffering COVID-19 pandemic crisis in early 2020 and the decline of the oil price. The dropping in the oil price can harm the region because the main financial resource of the region depends on oil. and this study investigates the impact of these crises (ISIS war, COVID-19 pandemic) on investment development on each sector of investment sectors. Besides, it studies on the Kurdistan region's government (KRG) steps to manage these crises by using scientific principles of Crisis Management (CM), in aim to minimize the negative impacts of crises (ISIS war, COVID-19 pandemic) on sectors of investment and investment developments in the KR.

The study included the period between 2012-2022 to know the two years before ISIS war crisis and two years before COVID-19 pandemic crisis even two years after the crisis. Moreover, the study Provide an overall picture of the investment situations in the region by Analyzing the reality and developments of the investment sectors in the region. In addition, the study aims to finding the influence of the financial crises (ISIS war, COVID-19 pandemic) on the investment development in the region. As well as, it aims to finding the role of government in managing financial crisis to investment projects,

Furthermore, the research method used the comparative approach It is based mainly on making a comparison between the way of KRG's financial crisis management at ISIS war crisis period and COVID\_19 pandemic crisis period. on the other hand, comparison between the influence of ISIS war crises and COVID\_19 pandemic crises on investment sectors developments. And the analytical approach based mainly on analyzing the data of investment sectors, to observe the developments of projects in each sector before, during and after

crises period. As well as, the statistical analysis used to prove them.

## **Theoretical background**

### **1.1 Financial crisis**

Crises have become an unavoidable part of existence. They have an impact on people, communities, and businesses. Tragedies, natural disasters, and other crises that occur across the world pose a threat to the public's welfare, people's emotional and physical well-being, organizational profitability, and operational viability, and impose incalculable costs (Lositska, 2020: 12). Crisis is defined by many different researchers as (Al - Fadl,2011:128) stated that the word "crisis" is of Latin origin and means the point of transition to the worst of an acute, the word "crisis" in the English language is derived from the Greek word "Krisis" which means the emergence of a new situation or situation or a turning point or a critical moment related to the fate of an organizational entity, a group of individuals or a single. But (Coombs, 2015: 3) from another perspective defined as a crisis might be unpredictable, but it is not unexpected. Smart organizations are aware that crises will occur; they simply do not know when. It is possible to forecast crises. Crises arise at any time, adding to the element of surprise and unpredictability. Thus financial crisis can be defining by (Muhammad, 2011:50) as its instability in financial markets and failure of the banking system to perform its main tasks as a result of a sharp and sudden decrease in the price of the currency and stock prices. therefore, there are fluctuations that impact the overall financial changes, such as the amount of issuance, the prices of shares and bonds, bank deposits, and the exchange rate, in whole or in part.in short financial crisis is a situation resulting from a change in the internal or external environment. (Zafer and Tayachi, 2021:789) stated that overpricing of the assets, people irrational investment and excessive market selloffs thereby lowering the price of the assets This has resulted in significant problems that occur suddenly and affects the whole economy and financial institutions causing the entire meaning of finance and its associated terms.

### **1.2 Crisis management**

When a crisis happens or during the financial crisis companies confront liquidity problems and banks sharply restrict loans to borrowers in response to a run by short-term bank creditors, leaving companies with liquidity issues and raising their business risk, firms also prefer to forecast bigger budget cuts, which has a negative impact on auditors' fees (Almeida and Silva, 2020:7-8). the organization or government should respond to this crisis to deal with it, crisis management aims to improve an organization's ability to respond flexibly and rapidly to various types of crises (Aljuhmani and Emeagwali, 2017:50), hence good management of crisis can decrease loses and harms to least level as possible and survive this undesirable situation. According to (Crayton, 2017:26) Crisis management refers to the steps that companies take to avoid or minimize the negative effects of a crisis, therefore protecting the business, its stakeholders, and the industry from harm. (Aljuhmani and Emeagwali, 2017:52) states the importance of crisis management as any organization can be hit by a crisis. It is essential to have a clear plan of action in place in case of a crisis. In a crisis, this strategy may make or destroy the organization. It's not a matter of "whether" an organization will face a crisis; it's a question of "where" and "when" An organization's survival depends on how well they are prepared to deal with it.

### 1.3 Mitroff's five-stage model:

#### 1. signal detection

long before it occurs, a crisis sends a "repeated and persistent trail of early warning signals" that can be detected while there is still time to prevent it from occurring or take efforts to mitigate its damage. These early warning or crisis signals are pieces of information that indicate a divergence from normalcy (Paraskevas and Altinay, 2013:158).

#### 2. probing and prevention

The second point of contact is when organizations actively look for and evaluate risk variables to distinguish between crises that originate inside the organization and those that are outside the organization. The reaction will depend on what is occurring both inside the organization and outside of it, as well as how that information is received, thus making this difference is crucial (Gashi and Maharaj, 2022:12).

#### 3. damage containment

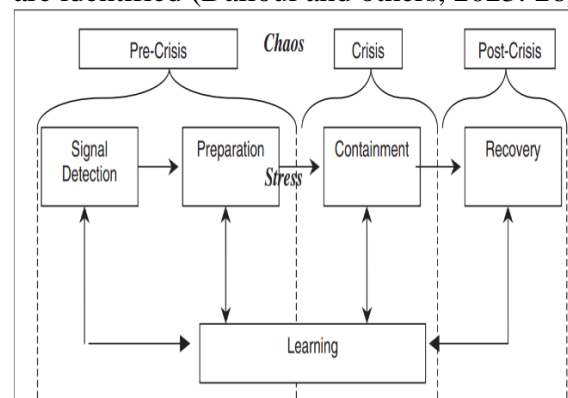
The third contact point is that it's obvious that a current crisis in the organization is taking place. At this point, the aim is to take all necessary precautions to limit the crisis and prevent it from spreading across the organization's eco-system (Gashi and Maharaj, 2022:13). Effective phase management would include plans for limiting a localized crisis from spreading to other parts of the company or its surroundings that haven't been contaminated (Bhaduri, 2019).

#### 4. recovery

It has to do with the return to normal operations, which is the phase during which appropriate steps are made to recover from the harm caused by the crisis that happened in all aspects of the business, including organizational, psychological, behavioral, and even financial aspects. In other words, it is an effort to restore some of the value of an organization's tangible and intangible resources. This is accomplished by putting pre-made training programs into use that have passed testing to verify that they can fulfill the desired purpose (Al Thani and Obeidat, 2020:313).

#### 6. Learning

These are the last tasks in crisis management and signify the end of the crisis. The goal is to conduct a thorough review of the crisis management process on two levels: the tactical and technical evaluation, which looks at crisis management techniques, means, and executive and administrative processes, and the strategic evaluation, which looks at crisis management plans. Thus, it comprises a series of actions through which the crisis and earlier events are evaluated and the crisis management's good and negative characteristics, strengths, and weaknesses are identified (Dalloul and others, 2023: 26).



**Figure 2: Overview of crisis management stages**  
source: (Hensgen et al,2003:72)

#### 1.4 Investment

Investment is a field that have an important and essential role in the economic, financial and management...etc. for social growth and country developments. Money does not have any value till it invested. If a person has amount of funds but does not investing just keep it then it will not grow, money should be invested in a way to grow get return. According to (Al-Naqshbandi, 2011:41) investment is about directing the available resources in order to maximize the benefit inherent in these resources, because the available resources satisfy the basic and luxury needs of the human being. When the use of these resources is postponed at the present time to another time called the investment period, it is expected that greater satisfaction of these needs will be obtained.

### 1.5 Objective of investment

Investment has some important objectives according to (Murithi, Narayanan and Arivazhagan, 2012:166) (Singh, 2021:4) (Alwan, 2009:35) (Barquq and others, 2016:24) objectives of investment can be concluded in six points below:

1. Maximizing Return: Investors always want a high rate of return on their investments. The rate of return has defined as the total income earned by the investor during the holding time represented as a percentage of the purchase price at the start of the holding period (Murithi, Narayanan and Arivazhagan, 2012:171).

2. Minimizing the Risk: Risk refers to the probability that the actual return from a security throughout its holding period will be less than the predicted return. If the rate of return on an investment fluctuates significantly from one period to the next, it is considered riskier than if the rate of return does not vary enough. However, all investors aim to lower their investment risk (Singh, 2021:4).

#### A. 1.6 Characteristics of Investment

The characteristics or elements of investment can be understood in four terms such as return, risk, safety and liquidity.

1. Return: any sort of investment has one primary goal to generate a profit. Regular income (interest dividends, rent, etc.) or a growth in the value of the investment/capital appreciation, i.e. the difference between the selling and purchasing prices of assets,

are both examples of expected returns (Singh, 2021).

2. Risk: any investment includes some level of risk. This risk might be related to capital loss, capital payback delays, interest non-payment, or return fluctuation.

3. Safety: An investment's safety refers to the assurance of a capital return without loss of money or time. Another aspect that an investor seeks in his investments is safety. Every investor expects to receive his capital on maturity without loss and back on time (Kevin, 2011:12).

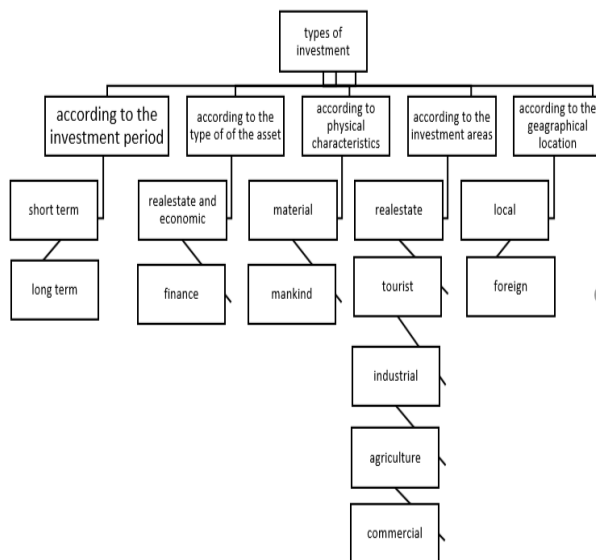
4. Liquidity: A well-developed secondary market for securities improves investment liquidity. Liquid investments can be converted into cash without losing value or time. An investor aims to maximize return while minimizing risk, fund security, and investment liquidity (Panpaliya and Bajaj, 2020:1532).

### 1.7 Investment importance

As well as (Alwan, 2009:33) illustrate the importance of investment at the national level can help to increase the country's national income, create new jobs opportunities in the national economy, support the process of economic and social progress and rise production and support the trade balance and the balance payments. As well as (Khoshnaw, 2009:24) state that investment has helped the transfer of technologies between countries. As well as, (Moussa and others, 2012:20) points out the importance of investment because it is the reason for rising production and productivity which causes to an increase in national income thus improving the standard of living of citizens and providing job opportunities, reducing joblessness. And (Murithi, Narayanan, and Arivazhagan, 2012:175) said that Investing helps in the development of financial markets where businesses may raise funds. This too helps to boost economic growth and prosperity.

### 1.8 investment types

According to (Al-Shakaki, 2008:26) put investment types in a chart below.



**Figure3: types of investment**  
**Source: (Al-Shakaki, 2008:26)**

## 1.9 Research hypotheses

**First hypothesis:** KRG used the scientific criteria to handle and manage the ISIS crisis of investment projects.

**Second hypothesis:** KRG used the scientific criteria to handle and manage the Covid-19 crisis of investment projects.

**Third hypothesis:** there is the influence of the ISIS war crisis on the investment projects.

**Fourth hypothesis:** there is the influence of the COVID-19 pandemic crisis on the investment projects.

## RESEARCH METHOD AND METHODOLOGY

### 2.1 The research Questions and problems

A crisis is a phenomenon that could occur at any time and is unexpected. It may cause harm to firms, organizations, and countries so it's essential to manage crisis and find opportunities in crisis to reach the organization's success in the competitive market. The research problem which apply in the Kurdistan region in the board of investment to realize how to handle investment projects during a different crisis by implementing the scientific criteria of crisis management on the reality of the situation. As well as, crisis can have a negative impact on whole entities particularly on investment field. Which cause harm to the growth and

development of countries and the KR in particular as well. we can frame the research problem in the questions below:

RQ1. Is the crisis management done by the KRG according to scientific criteria to deal with the ISIS crisis of investment projects?

RQ2. Is the crisis management done by the KRG according to scientific criteria to deal with the COVID-19 pandemic crisis of investment projects?

RQ3. Is there the influence of the ISIS war crisis on the investment projects?

RQ4. Is there the influence of the COVID-19 pandemic crisis on the investment projects?

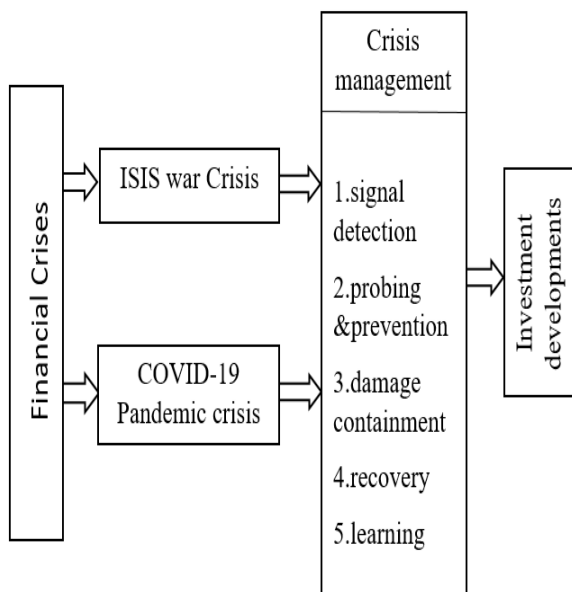
### 2.2 The research purpose

1. Highlight the role of governments reaction in managing investment projects while there is the existence of a crises.
2. Analyze the reality and developments of the investment sectors in the KR during pre-crisis and crises.
3. Analyze the influence of the financial crises (ISIS war crisis and COVID-19 pandemic crisis) on investment developments.

### 2.3 Research importance

It is the first study that discusses the way of managing the crisis and finds solutions to minimize the damage of the crisis, also brings the scientific principles of crisis management to the reality of KR. It also does not stop there, the study comparing the management method at the occurrence of the different crises (ISIS war crisis and COVID-19 pandemic crisis) shows which of the way of management crisis was more effective. It also reads the crisis carefully and shows their effects on the development of investment sectors. From two time periods of crisis. And comparing the influence of the (ISIS war crisis and COVID-19 pandemic crisis) on the investment projects.

## 2.4 The research model



**Figure 1: the research model  
Prepared by the researcher**

The model illustrates that the Independent variable is (financial crises) with two dimensions. Besides, the model has a moderate variable (crisis management) which through implementing the crisis management stages on the time of the occurrence of different crises (ISIS war crisis and COVID-19 pandemic crisis) can have influence of the investment developments for all the sectors of the investment. Also, (investment development) is the depended variable.

## 2.5 Study design

This study has utilized Secondary research is frequently known as desk research since it includes combining material from the internet, peer-reviewed publications, textbooks, government archives, and libraries.

The study used the Quantitative method and Qualitative method. The researcher used a quantitative method for primary Data to investigate the crisis influence which were estimated statistically by SPSS, moreover, Financial analysis used to read the number of capital in dollars and number of projects to observe the changes. for that purpose, Microsoft Excel was used for organize and arranging the tables and figures.

On the other hand, the study used a qualitative method as an interview method which researcher

used an open-ended question so that in-depth information will be collected. The aim of interview method is to collect data about the (how the KRG managed financial crises with using the scientific criteria of crisis management). Furthermore, fifteen questions asked to the individuals who are expertise and have exceptional knowledge about the subject for that purpose the researcher direct interviewed with four general directors in Board of investment and General Directorate of Investment in Erbil.

## 2.6 Data collection methods

Data has been obtained entirely from primary sources to achieve the study's specific goal. The primary data comes from the following sources:

- The Board of Investment (BOI) in the KR-I.
- The (BOI) annual reports

All the data realistic and reliable which the data derived from the Board of Investment. Whole the information was gathered in Kurdistan Region-Iraq from the year 2012 until 2022. To investigates the impact of financial crises (ISIS war crisis and COVID-19 pandemic crisis) on investment projects from the year 2012 until 2022. Also, the researcher has visited the BOI and Directorate of Investment in Erbil. For interview method to collect data about the research. Interview questionnaire form Prepared depending on financial crisis management principles about understanding of the reality of the situation and to distinguish the government's reaction from each stages of crisis management stages pre-crisis, during and post-crisis period.

## 2.7 Data analysis

1. The findings were analyzed to determine the role of KRG to manage the financial crisis, depends on the mitroff's five-stage model. The analysis used comparative method which the individual responses were compared to reveal the common response presented by participants. And these variables that are highly-supported with documents.
2. Data analyzed statically by using SPSS to investigate the crisis influence on the investment development for the all sectors.
3. Financial analysis used to read the number of capital in dollars to observe the changes, for all the investment sectors.

## 2.8 Research borders

The research data included two borders time and place borders as shown below:

### A. time borders:

The study will investigate on the data and information from the 1-1-2012 till 31-12-2021.

### B. Place borders:

The study investigates in Kurdistan region as a sample which contain three governorates (Erbil, Sulaymaniyah and Dohuk). and collect data from the Board of investment in the Kurdistan region.

## IMPLEMENTATIONS, RESULTS, AND DATA ANALYSIS

### B. 3.1 comparison between first crisis and second crisis:

By summarizing the interview answers, the study reached some points as shown in the table (1) the study compared the regional government’s decision between the crises in the five stages of managing crisis.

**Table 1: Compare first crisis with second crisis**

Stages of CM	First crisis	Second crisis
1. Signal detection	did not have an efficiency and tangible reaction	all the region's borders with countries were closed for protection aims.
2. Probing and prevention	investors have been warned to find quick funding to complete their projects with more facilities.	a halt of projects for safety purposes all over the region.
3. damage Containment	the permission was extended and the implementation of the project	the decentralize d system to hand over power and

	was postponed for those projects that are located in the war zone.	Extension of project completion permits as shown in appendix (2).
4. Recovery	establishment of the ninth cabinet, reforms were carried out, and the priorities of investment projects were reviewed	Planned to focus on three sectors (industry, agriculture, tourism) projects. During the 2020 strategic plan of BOI.
5. Learning	investing in the necessary projects and priorities for the region's income.	Diversifyin g the source of the region's income

### Prepared by the researcher

the table (1) shows all the decisions that the government has issued on investment projects. In the signal detection stage in the first crisis government does not steps toward about projects similarly the region’s government does not step toward about projects. But the region’s government in the both crises focused on the citizen’s safety.

Also, in the Probing and prevention stage in the first crises region’s government sends warning signals to the projects that the crisis will occur and aware them to have a plan. But in the second crisis because of different situation, government aware projects to halt and stop their projects.

Moreover, actual management of crisis occur in the containment damage stage, the region’s government provide the permission extending for those projects that are located in the war zone. But, in the second crisis government made useful decision by the decentralized system to hand over power to give facilities and decrease routines. Besides provide the permission extending for projects.

In the recovery stage meant efforts are made to return activities nearly to normal or better than

before of crisis. government at the first crisis established ninth cabinet, reforms were carried out and the priorities of investment projects were reviewed as a compliment of this reform at the second crisis by the ninth cabinet made a decision for planning to focus on three sectors (industry, agriculture, tourism) projects.

Finally, learning stage for the first crisis was important to the region's government due to the big harm of financial by the ISIS war crisis, government take a lesson and learned to prevent future crisis by investing in the necessary projects and priorities for the region's income. As compliment for this learning in the second crisis government determined to Diversifying the source of region's income by focus on (industry, agriculture, tourism) sectors.

### C. 3.2 Investment developments in the KR.

Investment process developed and dropped due to these hard situations that the region passed in during this period. Each year the investment state was different from another year and this explained in the table (2) below.

**Table 2: investment developments (2012-2022)**

Year	N. of projects	Capital in dollars	Stages
2012	128	\$6,102,673,151	pre-crisis stage
2013	108	\$10,373,070,879	Golden year (pre-crisis stage)
<b>ISIS war crisis</b>			
2014	70	\$ 3,620,927,189	ISIS war crisis stage
2015	31	\$ 3,190,349,090	decline stage
2016	32	\$ 2,871,724,407	decline stage
2017	33	\$ 740,563,329	decline stage
<b>post-crisis stage (recovery stage)</b>			
2018	51	\$ 3,145,864,752	post-crisis stage (recovery stage)
2019	66	\$ 2,733,952,264	Stable stage (pre-crisis stage)
<b>Covid-19 pandemic crisis</b>			
2020	76	\$ 2,018,271,500	COVID-19 pandemic crisis (new crisis)
2021	72	\$ 8,509,765,986	crisis continue stage
2022	94	\$ 2,176,043,119	recovery stage
Total	761	\$ 45,483,205,666	

**Prepared by the researcher depending on the data of BOI**

The table (2) shows the investment projects from the year (2012) until (2022). As well as the number of projects and capital in dollars. as shown in the table (2) The year 2012 the number of projects was on the top by 128 projects invested in this year, the year 2013 was a golden year the capital in dollars for investment projects on the top by (10,373,070,879\$). The ISIS war crisis in 2014 significantly affected the investment projects and the development of the projects deteriorated, the capital in dollars sharply dropped to (3,620,927,189\$). This declined stage continued until the year 2018 until the capital in dollars became less than one million dollars and the number of projects became only 33 projects. This difference is due to the ISIS crisis appeared in the late of 2014, but their subsets affects became obvious the years after. For that reason, the researcher named the year of 2015, 2016 and 2017 as a declined stage.

In the year 2018 the ISIS war crisis was faded and destroyed. Besides, the number of projects starts to progress and reached to 51 projects. As well as, the capital in dollars' reforms began and increased to (3,145,864,752\$). thus the study combined two stages in one year as a post-crisis stage and recovery stage. In the year 2019 investment projects continued to develop the number of projects reached to 66 projects. In the year 2020 another crisis is emerged and the COVID-19 pandemic crisis reached to the area but the effect of this crisis was different from the previous crisis. It caused the halt of business functions, but it does not cause the deterioration of investment developments. Therefore, from the year 2019 and 2020 capital in dollars stayed stable around two million dollars, and the number of projects increased from 66 to 76 projects.

The year after in the 2021 there is still the crisis but it does not affect the investment projects, the capital in dollars significantly climbed to (8,509,765,986\$) the main reason is the Chinese mega projects invested by (4,906,110,000\$). While number of projects decreased slightly to 72 projects, this decline was limited. Remaining the investment projects stable and developed is the sign for a good managing of crisis by the KRG in the crisis era. In the year 2022 the number of projects progressed to 94 projects this number is the heights number after the occurrence of crises this is a sign toward



improvement, and the capital in dollars for this year was (2,176,043,119\$) this amount is near to the years 2019 and 2020, except of the year 2021 which means the investment projects progressed in these late years even with the existence of crisis or absent of the crisis.

After the COVID-19 pandemic crisis the projects of investment developed. For first time after the ISIS war crisis investment projects developed and increased from 2020 to 2021 by (2,010,170,000\$) to (8,518,400,864\$). This amount is near to the pre-crisis of ISIS war crisis stage. And the number of projects reached to 97 projects this is the highest amount after the occurrence of the ISIS war crisis. The total projects which invested during that period is 761 projects by (45,483,205,666\$).

*D. 3.3 The Statistical Analysis*

In order to test the research hypotheses, we used Simple Regression Analysis in order to find the effect of Crisis on each of Capital in dollars and Number of projects. For this purpose, SPSS version 28.0 was used.

**1. Capital in dollars:**

**Table 3: Regression Parameter Estimation of the effect of Crisis on the Capital in dollars.**

Coefficients <sup>a,b</sup>				
Model		Standardized Coefficients	t	P-Value
		Beta		
1	Crisis	0.704	3.136	0.011
a. Dependent Variable: capital in dollars				
b. Linear Regression through the Origin				

**Prepared by the researcher depending on SPSS data analysis results.**

To determine the effect of the Crisis as an explanatory (independent) variable on the Capital in dollars as the response (dependent) variable, the simple regression analysis was used. The model (1) is expressed as follows:

$$\text{Capital in dollar} = 0.704 * \text{Crisis}$$

The estimated value of the coefficient is (0.704) of the variable Crisis is significant (P-Value = 0.011) as shown below in the table (3)

This model verification was made using F-test in ANOVA (Analysis of Variance) as shown in the table (4).

**Table 4: The regression model of Crisis affecting the Capital in dollars significancy using ANOVA**

ANOVA <sup>a,b</sup>						
Model		Sum of Squares	df	Mean Square	F	P-Value
1	Regression	1.36594E+20	1	1.36594E+20	9.832	<b>0.011<sup>c</sup></b>
	Residual	1.38929E+20	10	1.38929E+19		
	Total	275523555846465220000.000 <sup>d</sup>	11			
a. Dependent Variable: capital in dollars						
b. Linear Regression through the Origin						
c. Predictors: Crisis						
d. This total sum of squares is not corrected for the constant because the constant is zero for regression through the origin.						

**Prepared by the researcher depending on SPSS data analysis results.**

The P-Value of F-test (0.011) in the above ANOVA, which is significant means that the chosen model above is significant and well-constructed with R-Square = 0.496 (49.6%). In other words, R Square measures the proportion of the variability in the Capital in dollars' variable explained by the Crisis variable in the above regression model. The model is confirming our analysis that as long as the crisis exists, the Capital in dollars of projects will be invested.

**2. Number of projects:**

**Table 5: Regression Parameter Estimation of the effect of Crisis on the number of projects**

Coefficients <sup>a,b</sup>	
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Model		Standardized Coefficients	t	Sig.
		Beta		
1	Crisis	0.801	4.227	0.002
a. Dependent Variable: number of projects				
b. Linear Regression through the Origin				

**Prepared by the researcher depending on SPSS data analysis results.**

The following simple regression analysis was done to ascertain the impact of the Crisis as an explanatory (independent) variable on the No. of projects as the response (dependent) variable: the model number (2) is expressed as below:

$$\text{Number of projects} = 0.801 * \text{Crisis}$$

The estimated value of the coefficient is (0.801) of the variable Crisis is significant (P-Value = 0.002) as shown in the table (5). This model verification was made using F-test in ANOVA (Analysis of Variance) as shown in the table (6) below:

**Table 6: The regression model of Crisis affecting the number of projects for trade sector significance using ANOVA**

ANOVA <sup>a,b</sup>						
Model		Sum of Squares	d f	Mean Square	F	P-Value
1	Regression	40249.14	1	40249.14	17.868	.002 <sup>c</sup>
	Residual	22525.86	10	2252.586		
	Total	62775.00 <sup>d</sup>	11			
a. Dependent Variable: number of projects						
b. Linear Regression through the Origin						
c. Predictors: Crisis						
d. This total sum of squares is not corrected for the constant because the constant is zero for regression through the origin.						

**Prepared by the researcher depending on SPSS data analysis results.**

The P-Value of F-test (0.002) in the above ANOVA, which is high significant means that the chosen model above is high significant with R-

Square = 0.641 (64.1%). R Square measures the proportion of the variability in the number of projects variable explained by the Crisis variable. The model shows that the result was statistically (highly significant) effect of the crisis on the number of projects. This result is confirming our analysis by existence of the crisis, number of projects will decrease.

*E. 3.4 Canceled projects*

**Table 7: canceled projects**

years	N. of canceled projects	capital in dollars for canceled projects
2012	11	642,298,444
2013	24	2,110,861,088
2014	22	1,395,437,054
2015	5	812,204,700
2016	4	261,639,683
2017	7	72,950,606
2018	3	290,111,700
2019	5	294,647,604
2020	4	131,628,500
2021	1	6,496,000
2022	0	0
total	86	6,018,275,379

**Prepared by the researcher depending on the data of BOI.**

The table (7) shows that the most canceled projects was in the years 2013 and 2014 which (24) projects in the year 2013 and (22) projects in the year 2014. It proves that due to ISIS war crisis the most investors renunciation to their projects. Even if this projects stops in the year 2015 or 2016 but they will be cancel in the year of taken license. Also the table shows that the canceled projects were not increased in the crisis year, it was as the previous years before COVID-19 crisis. Because of the COVID-19 was the reason for stoppage overall the works for temporary. In general, The total amount of the canceled projects is 86 projects by (6,018,275,379\$)

this amount is a large amount which indicates there is the impacts of crises.

### *F. 3.5 Testing Research Model and Hypothesis*

By analyzing the results of the analysis the reality of the investment situation in the region, as well as analyzing the answers of interview's questions and the final results that were reached in the field side, the hypotheses that were developed at the beginning of the research can be tested, which are as follows:

**First hypothesis:** based on the hypothesis (KRG used the concept of crisis management to handle and manage the ISIS crisis). The research sample does not agree with this hypothesis because the KRG does not use the concept of crisis management to handle and manage the ISIS crisis. And the government's reaction toward investment projects has not been effective and does not pay attention to investment projects. Because, the main focus of the KRG to protect its borders and fighting, therefore the KRG did not pay much attention to investments. The KRG do not made any important decisions in the third top crisis management stages, but after crisis faded, in the recovery and learning stage KRG steps toward make better investment state. This hypothesis was achieved when the final result of the opinions of the research sample according to the answers of interview's question. Also the data of investment development confirms it, while investment development harmed and decreased sharply by (65.20%) from the year 2013 to 2014. The years after it continues to decrease by (11.76%) and (9.92%) until the year 2017 by (55.33%). The number of cancelled projects was also high, with (24) and (22) projects in 2013 and 2014.

**Second hypothesis:** based on the hypothesis (KRG used the concept of crisis management to handle and manage the COVID-19 crisis). The total sample of the research agrees that local KRG used the concept of crisis management in the right way to handle and manage the COVID-19 crisis from the citizen's perspective as well as from investment projects perspective. Because from KRG has a react in each stage, the most important decision taken in the damage containment stage such as (the decentralized system to hand over power and

Extension of project completion permits). These decisions helped projects to struggle with the crisis. As well as, the KRG has a plan to give attention to three main sectors and make them priority such as (tourism, agriculture, and industrial) with the aim of diversification of KR income through the investment sectors except the oil sector. This means the KRG learned from the crisis how to develop the region's economy through other different sectors. This hypothesis was achieved when the final result of the opinions of the research sample according to the answers of interview's question. Also the data of investment development confirms it, while investment development decreased lightly from the year (2019) to 2020 by (18.76%) but investment projects developed in the year after by (76.40%).

**Third hypothesis:** in the base of the hypothesis (there is the influence of the ISIS war crisis on the investment projects). there is the influence of the ISIS war crisis on the investment projects. This hypothesis was achieved when the capital in dollars dropped from the appearance of the ISIS in the crisis stage by (65.20%). Capital in dollars continues to decrease in the declined stage until the crisis faded by (11.76%) in the year 2015 and (9.92%) in the year 2016 until the year 2017 by (55.33%). As well as, the number of projects dropped from (108) to (70) projects, till reached (33) projects in the year 2017. Also, the statistical analysis approves that the crises affect the capital in dollars and number of projects of the investment projects.

**Fourth hypothesis:** in the base of the hypothesis (there is the influence of the COVID-19 pandemic crisis on the investment projects). there is the limited influence of the COVID-19 pandemic crisis on the investment projects. This hypothesis was achieved when the capital in dollars decreased slightly from the appearance of the COVID-19 in the crisis stage by (18.76%). However, the number of projects increased slightly from (66) to (76) projects.

## **Conclusions and recommendations**

### **4.1 Conclusions**

1. The KRG does not has an effective and good crisis management to handle and manage the

- ISIS crisis on investment projects depending on the scientific criteria.
2. The KRG has an effective and good crisis management to handle and manage the COVID-19 pandemic crisis on investment projects depending on the scientific criteria.
  3. The damage caused by financial crises on projects can be reduced. And the government can react quickly by applying scientific crisis management principles to minimize the bad effects of the crisis.
  4. The ISIS war crisis has a negative influence on the investment projects. capital in dollars dropped from the appearance of the ISIS in the crisis stage by (65.20%). As well as, the number of projects dropped from (108) to (70) projects.
  5. The COVID-19 pandemic has a limited influence on the investment projects. Thus, capital in dollars decreased slightly from the appearance of the COVID-19 in the crisis stage by (18.76%). However, the number of projects increased slightly from (66) to (76) projects.
  6. The crises themselves there were different from each other. The ISIS is a war crisis and external threat thus the war in any country causing the economic deterioration, also the projects in the region they had a bad drop. The focus of the KRG on the boarder's protection, internal securities and war armies.
  7. However, the COVID-19 crisis was a global epidemic and internal threat. Caused of the delay or stoppage of the projects temporary rather that fall of the projects.
  8. When the crisis occur the development of the projects will be slow and the projects will stop.

#### G. 4.2 Recommendation

There are the most important recommendations for investment projects to confronting different crises that could occur any time. In order to obtain stable investment environment in the KR.

1. Implementing of (Early warning system) to inform the projects of the occurrence of any unwanted events.
2. Installation a response team (crisis management team) to prepares an organization to respond to potential crises.
3. Attempting to rely on local products, raw materials and Strengthen local employees.
4. Diversify and develop investment sectors to avoid financial deficits during crises.
5. Set a (strategic investment map) as a tool for investors to invest in that sector which the most useful for the KR.

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