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Master's Thesis of Public Administration

**Economic Consequences of the Arab Spring in
The Middle East**

**Cases of Egypt, Tunisia, Algeria, Morocco,
and Jordan**

**중동 아랍의 봄의 경제적 영향
이집트, 튀니지, 알제리, 모로코, 요르단의
사례를 중심으로**

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**Economic Consequences of the Arab
Spring in The Middle East
The Cases of Egypt, Tunisia, Algeria, Morocco,
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Abstract

Economic Consequences of the Arab Spring In The Middle East The Cases of Egypt, Tunisia, Algeria, Morocco, and Jordan

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Civic disorders, later known as “The Arab Spring,” erupted in January 2011, spread quickly throughout the Middle East, bringing down strong political regimes that were characterized by the domino effect. This phenomenon raised multiple eyebrows and was soon the topic of every scholastic debate and discussion. Shortly after the political shocks, the arguments ensued to assess the economic shocks of this activity. This concern was not just confined to the immediately affected states but also engulfed the whole region’s impacts. This study analyses the impacts and influence of the Arab Spring with the “Arellano-Bond” dynamic panel estimation using annual data for five Middle East countries ranging from 2005 to 2019. However, this paper explored that the Middle East’s economic growth was more negatively affected by the Arab Spring than the global financial crisis; these results were buttressed by sufficient empirical evidence.

**Keywords: Arab Spring, Economic Growth, MENA, Panel Data
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Table of Contents

Abstract.....	i
Chapter 1. Introduction.....	1
1. Regional Background.....	1
1.2 Socio-Economic Facts.....	2
1.3 Political History	4
2. Purpose of Research.....	6
Chapter 2. Literature Review	10
1. Economic Growth	10
2. Political Instability and Economic Growth.....	13
3. The Arab Spring	16
Chapter 3. Causes of the Arab Spring.....	22
1. Economic Condition.....	22
2. Political situation.....	28
3. Government Performance	31
Chapter 4. Research Methodology	33
1. Research Design.....	33
2. Data and Empirical Methodology	34
2.1 Research Period and Data Set.....	34
3.2 Analytical Framework and Methodology.....	35
3. Operationalization and Conceptualization	38
Chapter 5. Empirical Analysis Findings	41
1. Descriptive Statistics.....	41
2. Correlation Analysis.....	48
2.1 Multicollinearity Diagnostics Tests.....	48

2.2 Intercorrelation Matrix Analysis	51
3. Empirical findings	54
3.1 The Model Robustness	54
3.2 Hypothesis Test and Regression Analysis	56
Chapter 6. Conclusion	60
1. Discussion	60
2. Policy Recommendation	65
3. Limitation of the Study	68
Bibliography	69

List of Figures

Figure 1: MENA region indicators over two decades (Percentage).....	2
Figure 2: OPEC proven crude oil reserves, at end 2018 (Billion Barrels).....	3
Figure 3: The effects of domestic and external shocks	18
Figure 4: GDP Growth from 2000 till 2010 for six countries	23
Figure 5: Unemployment rates in six countries from 2000 till 2010	24
Figure 6: Inflation rates from 2000 till 2010.....	26
Figure 7: Trade Balance from 2000 till 2010.....	27
Figure 8: Human Rights Scores, 2005 to 2010	29
Figure 9: World Map of the freedom of the press status, 2010.....	30
Figure 10: Corruption perceptions index	31
Figure 11: Government Effectiveness indicators	32
Figure 12: Analytical Framework Diagram	36
Figure 13: GDP per Capita Growth Rate from 2005 to 2019	60
Figure 14: FDI's growth rate from 2005 to 2018.....	61
Figure 15: Unemployment rate from 2005 to 2019	62
Figure 16: Inflation rate from 2005 to 2019	63

List of Tables

Table 1: Poverty and GINI Coefficient from 2000 till 2010	25
Table 2: Descriptive Statistics.....	44
Table 3: Extreme Observations for Macroeconomic variables	45
Table 4: Extreme Observations for Control Variables	46
Table 5: Extreme Observations for Governance Indicators	47
Table 6: Variance Inflation factor and Tolerance	49
Table 7: Collinearity Diagnostics Test.....	50
Table 8: Correlation Matrix.....	53
Table 9: Dynamic Regression Analysis (Arellano-Bond Model).....	58

Glossaries

MENA	Middle East and North Africa
GDP	Gross Domestic Product
IMF	International Monetary Fund
ILO	International Labour Organization
UN	United Nation
OECD	Organization for Economic Cooperation and development
UNESCO	United Nation Educational, Scientific and Cultural Organization
CAPMAS	Central Authority for Public Mobilization and Statistics
CBE	Central Bank of Egypt
GAFI	General Authority for Investment and Free Zones
FDIs	Foreign Direct Investments
GGGD	General Government Gross Debts
WDI	World Development Indicators
WGI	Worldwide Governance Indicators
WID	World Inequality Database

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Chapter 1. Introduction

1. Regional Background

An age ago, in the tenth century, the Middle East economy was an advanced one, concerning living standards, technology, agriculture productivity, or institutional resourcefulness. Then, failed to match the transformation happened in the Western Europe that rapidly increased (Kuran, 2004).

MENA is an abbreviation for the Middle-East and North Africa. The term of the Middle East appeared by the Western world in the 19 century to link South West Asia with North African countries¹. However, the determination of the Middle East did not appear till now officially. To clarify, the World Bank (WB) and the International organization started to use MENA, which is the Middle East and North Africa, for mentioning the countries from Iran in the East to Morocco on the Western side. Early 2000's American Administration triggered a word called "Greater Middle East" to state the entire Muslim Nations, including Pakistan, Turkey, and Afghanistan. Still, the boundaries of MENA is geographic more than social or religious.

The region full of resources, lack of administration, and without identified borders was always a fertile land for the western powers colonization from one to another. Internal corruption supported the reactionary and stopped any kind of development throughout history.

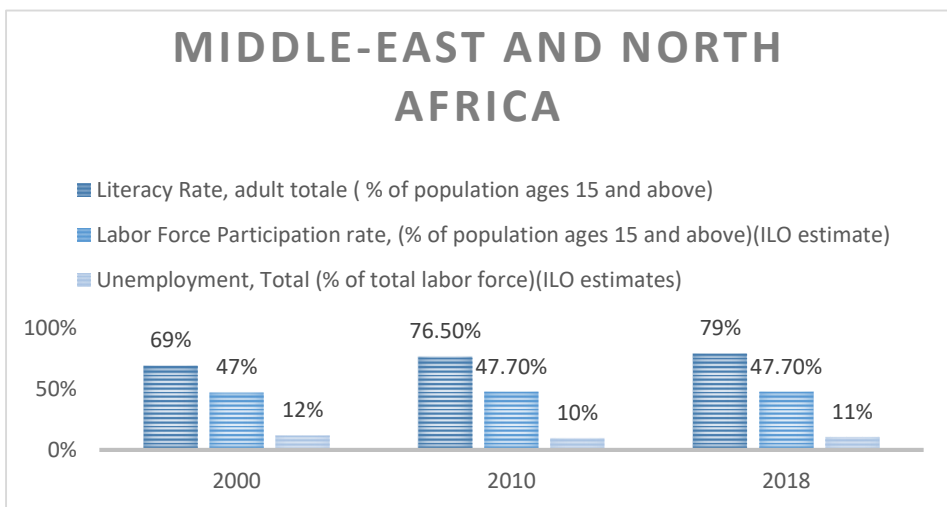
¹ "There are 19 countries that are generally considered part of the MENA. These are Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates and Yemen. A further 16 countries are sometimes included depending on usage. These Afghanistan, Armenia, Azerbaijan, Chad Comoros, Cyprus, Djibouti, Eritrea, Ethiopia, Mali, Mauritania, Niger, Somalia, Sudan and Turkey" (Kiprop, 2019).

1.2 Socio-Economic Facts

MENA region covers over 11.5 million square kilometers and approximately contains 6% of the world population; Egypt and Iran are the largest population countries following by Algeria, Morocco, and Sudan, with more than 70% of the region population. The labor force is in growth in the last decades reached around 50 percent of the people. The illiteracy rate is about 20% of the community, more than the world average by 7%, and the Unemployment rate is more than 10% comparing with the global average by 4.9%.

Although the illiteracy and unemployment rate is high in many countries of the region compared with the world average, life expectancy reached 73.9 years compared with the world average by 72.3. However, the infant mortality rate per 1000 live births is 18.9 lower than the world average, which shows 28.9 live births. The MENA countries are poorly comparing with other countries is social welfare spending with highlighting on the distorting the labor market, inefficient in the education delivery system and the neglect of female education in some states, that still have some old wrong cultures and the educational indicators are more favorable for men than women

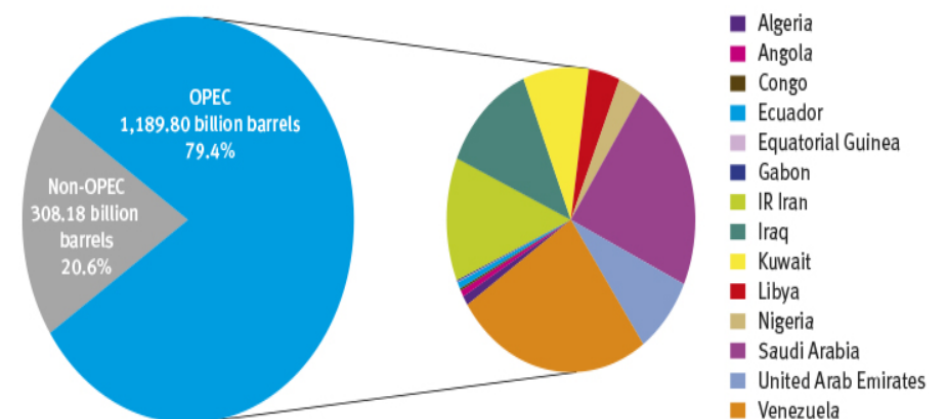
Figure 1: MENA region indicators over two decades (Percentage)



Source: WDI (2020)

The MENA region constitutes 4% of the world GDP by more than 3.6 Trillion USD and a GDP growth rate of 2.3%. GDP per capita reached 8042 USD in 2018, with a tremendous heterogeneity between countries. Saudi Arabia is the largest economy in the MENA region following by turkey, UAE, Israel, and Iran. Furthermore, the five smallest economies are Bahrain, Lebanon, Djibouti, Sudan, and Qatar. The region has approximately more than 55% of the oil reserves globally and more than 35% of the oil production; in fact, seven members of the OPEC are Middle-East countries out of 14 countries. In addition to more than 45% of the world's natural gas reserves. For this reasons and the region's substantial petroleum and gas reserves, MENA is an important source for the global stability.

Figure 2: OPEC proven crude oil reserves, at end 2018 (Billion Barrels)



OPEC proven crude oil reserves, at end 2018 (billion barrels, OPEC share)

Venezuela	302.81	25.5%	Kuwait	101.50	8.5%	Algeria	12.20	1.0%	Gabon	2.00	0.2%
Saudi Arabia	267.03	22.4%	UAE	97.80	8.2%	Ecuador	8.27	0.7%	Equatorial Guinea	1.10	0.1%
IR Iran	155.60	13.1%	Libya	48.36	4.1%	Angola	8.16	0.7%			
Iraq	145.02	12.2%	Nigeria	36.97	3.1%	Congo	2.98	0.3%			

Source: OPEC (2019)

1.3 Political History

Since the Second World War and the creation of Israel in 1948, the Middle-East has become a stronghold for the economic, political, and religious tensions. The political instability started from the Sykes-Picot treaty that carved the Middle East during the British colonization by delivering apart from Palestine to a new state called Israel. It was a cause of wars and instability in the region highlighted in the Arab-Israeli conflict, lasting until now, the Iraqi-Iranian war and the Iraqi military invasion in Kuwait, followed by the first Iraqi war in 1990. The region was indirectly a war field for both the United States and Russia in the cold war, supporting their alliances to show their muscles.

Moreover, some Islamic and non-Islamic groups were working to destabilize the internal political instability and how they were doing to change the political regimes by terrorist attacks and some actions to destabilize the countries. However, this instability generated political powers that lasted for more than 30 years in some countries controlled the states by tightening security control; indeed, it was useful sometimes against these instabilities and at the beginning. However, they did not work for economic development. They forgot about serving their people—delivering the throne in Syria from the father to his son, which was the same in Egypt and Libya. Some regimes had many corruptions, and they forget their people for money gaining. Others had no qualifications for these positions and avoided some economic reforms, and they were increasing the country's debts instead of improvements and development. They were blinded by how the chair is enjoyable more than the responsibilities believing that they were the best because of these instabilities, and if they have gone, the region will be on fire.

The real instability came after the war against Iraq in 2003 by assuming nuclear weapons were denied later. After the Iraqi invasion and removing Saddam Hussain's regime, some people said that we would finally see Western freedom. Everything went wrong after the quick spread of terrorism around Iraq and the massive religious and ethnic conflicts.

The Middle-East regimes persisted over decades in which democratic changes moved throughout Asia, Eastern Europe, Latin America, and some African countries. The revolutions that happened in the Arab World in 2011 were massive political upheaval that led millions of people took the streets against their regimes. In a matter of weeks, authoritarian regimes fell while other leaders braced for the worst (Beissinger, Amaney, & Kevin, 2015). These explosions took the world and scholars to search for the Arab Spring's reasons and the impacts over the years and how it will affect the whole world, not only the MENA region. After the Arab Spring events in 2011 and some countries started to fall in a domino, the terrorist group began to move from Iraq to these countries such as Libya, Syria, and Yemen, supported by some countries with common interests from the destruction of the Middle-East.

MENA region economy started to fall sharply since 2011 in some countries that experienced the Arab Spring. Some regional states who didn't experience the Arab spring began to collapse because of their economic and trade relations. Meanwhile, gulf countries started to suffer because of the falling of oil prices. Others suffered from the outflows of foreign direct investments and panning tourism in the Middle-East due to the terrorist attacks. All these factors had an immediate effect on rising the unemployment rates, inflation, currency reserves, budget deficits and debts, and its impact on raising poverty and deterioration of social indicators and the infrastructure of some cities that affected the citizens' essential needs.

This paper will take the opportunity to study and examine the economic and social indicators in quantitative analysis to see how the Arab spring's effect on Middle-East countries' economies. Compare different economies and how the economic consequences affected the social and political policies after the Arab Spring.

2. Purpose of Research

In 2005, a survey found that the employment expenditure, health care, corruption prevention was the top priority of the region's citizens. Democracy and human rights are also mentioned, but lower than socioeconomic worries (Zogby International, 2005). Likewise, in 2010 another survey for the Arab youth community found that the region youth's ultimate challenges and concerns were the living cost followed by employment opportunities and human rights. The vital difference between those two surveys and other surveys, especially surveys conducted in 2009, was the increased perception of income inequality (ASDA'A-Burson Marsteller, 2010).

More fundamentally, it is challenging to extract the economic motivation for the Arab Spring's uprisings over the past few decades. In one of its editorials, the British Guardian newspaper says, "the current situation experiencing by the Arab people of the Arab region may be worse than those that led to the outbreak of the Arab Spring." The widespread protests that erupted in the region stimulated broad social sectors, led by youth, asking for dignity and Democracy and cutting corruption roots, tyranny, and the singling out of one person and his people of control and prosperity in the country. After ten years, everyone thought that the Arab Spring dream would bring Democratic, Political systems, National Security, and Economic prosperity, become a nightmare. The feeling of injustice and fear of The Arab world's future is reinforced. Enhanced by the region's crisis, and their economic conditions are even worse than before 2011's uprisings.

As part of the Egyptian young people who participated in the Egyptian revolutions within the Arab Spring movements, after having lived the latter and its aftermaths, with a witness of economic slowdowns as a banker in one of the Egyptian multinational banks, Also by participating brainstorming of economic reforms as a senior economic researcher at the Ministry of Investment and International Cooperation. I decided to write about the Arab Spring. This study will aim to examine and analyze the economic effects and social and economic

historical events before the Arab Spring revolutions. Also, trying to find the exact reasons for these revolutions, and if they were treated later on or not.

This paper will also focus on the political situation before the Arab Spring events overcame and if governments were part of the causes for people uprising. Many elements were already undoubtedly showing that the government's performance was one of the main reasons for the Arab Spring outburst as a part of its public policies and administration. It became clear to our minds that the world and especially the Middle East have been facing economic difficulties from the economic causes deriving from the Arab Spring itself. In light of current International challenges, especially notable in the Middle East area, we can also testify that Arab Spring revolutions and their impacts on people worldwide were also quite doubtful.

This research will attempt to analyze the Arab Spring from macro and micro perspectives by using critical indicators in Middle Eastern countries, before and after the Arab Spring. Indeed, the gap will be shown in the literature throughout the years besides media that have been guiding many discontents, and huge debates about the Arab Spring consequences on the Middle East, with no succession in indicating which countries exactly went through a smooth transition, with real changes. The Arab Spring phenomenon is an intricate topic to study. Given this phenomena' interrelated nature, this study will investigate, analyze, and examine it from the beginning till nowadays. Moreover, the expected results will help to understand what happened and what is happening in the Middle East starting from the Arab spring revolutions, meaning more than nine years of events, maybe more. It will also give us some indicators for what will happen in some countries going for revolutions right now, such as Lebanon and Iraq.

Whether income inequality distribution, unemployment among youth, and poverty rates one of the reasons for the 2011 uprisings, it is essential to examine these issues as they may influence other countries in the future. It is crucial to understand the role of economic conditions and the possible economic consequences of the Arab Spring by getting closer to monitoring these economic

motivations to understand the interests of those seeking to change the political regimes under authoritarian leaders. Apart from that, examining the economic status can explain why governments and regimes might rethinking their strategies regarding the economic policies domestically and internationally if they felt there is a threat to their rules. The leaders in their positions right now, after throwing away the previous abusive regimes, must treat and solve the inequality problems and socio-economic problems as soon as possible, or maybe they will face the same fate.

These movements were a series of anti-government activities that happened in 2011. In many countries, these movements succeeded in removing their regimes and governments. Some states are still in consequence of that movement until now, trying to get out of the Arab Spring by the most little losses. This research will compare some countries with their Arab Spring experiences, such as Egypt, Tunisia, and Libya, with some countries that did not see these movements like Jordan, Morocco, and Algeria. Moreover, mentioning the affected countries by the Arab Spring in the Middle-East and the world due to the regional importance in the world economic stability will be shown.

I will try to show how the Algerian people learned from the Arab Spring in their revolution against their regime in 2019 to avoid the consequences of Syria, Libya, and Yemen. Removing the Arab Spring's confusion is a must to see what happened and still happen in the MENA region.

Changing the political system had a clear impact on the region's foreign policies and economic stability in the Middle East. So, pointing out the revolutions' economic motivations is a fundamental tool to help any other state set its strategic plans regarding political instabilities. This paper's conclusion could be used to assess old goals or developing sustainable strategies to promote stability.

The purpose of this research is to examine the Arab Spring in The Middle-

East and describe the extent to which it affected the region's economy. Therefore, this study will try to answer is on what is the economic consequences of the Arab Spring in the Middle East? The existing economic conditions in the Middle-East have led us to ask this question. The spread of the civil wars and the region's economic performance has deteriorated starting from 2011. Moreover, how the Arab Spring affected Economic performance. To answer this question, this paper will examine the reasons and motivations before 2011 that led to the uprisings. By analyzing the causes and answering the first question, we can determine if the economic performance is getting better after 2011 or not.

This study will examine the Arab Spring in the Middle-East and North Africa, especially five countries: Egypt, Tunisia versus countries didn't experience the Arab Spring, such as Morocco and Jordan and the Algerian experience 2019, by Measuring the impacts on the regional economy, which in turn affects the social and political conditions. The economic, social, and political differences between countries will be considered. The secondary data will be collected from the WB, IMF, OECD, and Penn World Tables and the concerned economic ministries and authorities.

In the discussion about the Arab Spring, many scholars found many different reasons for the 2011 events. Also, they found differences in impacts and consequences. The literature review will show the groups and the categorizations of each group of scholars and their founds

Chapter 2. Literature Review

1. Economic Growth

Economic growth and economic development have always been significant for all societies and nations. Economic theories tried to link these issues to numerous historical factors, especially in social and economic conditions. On the one hand, opinions for increasing capital investment and human capital or productivity improvement. On the other hand, others provided analysis for testing these theories for governments for national strategies implementation.

The literature started from Smith (1776), Ricardo (1815), & Malthus (1820), who stated the thoughts connected to production factors in the forms of land, labor, and capital, decreasing the investment returns. Later on, many scholars contributed to the economic growth theories throughout history; according to Paul M. Romer, the Economic Growth Happening, when people rearrange the resources, makes it more valuable. By mixing these resources to produce sustained products that can be useful for society and desirable without any economic side effect. In addition to Robert Solow in his model, “The Solow-Swan Model” is a model for long-run economic growth by considering capital accumulation, population growth, increased productivity, and looking at the technological progress.

Growth can be described as a transformation process when examining one economy that is already advanced and industrialized. An economy at the earlier stage of development will find the comparison uneven and unbalanced. Throughout history, Economists tried to improve the stages theory that each economy should pass on. According to metaphor, early Economists regularly focused on the closeness between the evolutionary types of the development of an economy and human life, economic growth, economic maturity. Later, Economists such as Colin Clark focused on controlling some economic sectors at changed stages of development. Clark said later; the process is a successful control by firstly agriculture, secondary manufacturing, and third by the trade and

service we can call “production.” In addition to what W. W. Rostow said, economic growth is a transformation from a traditional or old society to a transitional one when the organizations are developed to “take-off” society to accelerate the mature stage of society’s development. Many theories tried to develop and explain the drive from one stage to another to achieve the best outcome through better growth. Entrepreneurship and investment are the two factors most often singled out as critical.

From Clark and Rostow’s theories about investments and economic growth, investment contributes to economic growth as a part of the aggregate demand (AD) that controls the productive capacity of any economy. “An increase in investment should be a boost to economic growth; investment means expenditure on capital spending, e.g., buying new machines, building bigger factories, buying robots to enable automation. (In economics, investment does not mean saving money in a bank)” (Pettinger, 2019).

According to Pettinger, Investment is an integral part of the aggregate demand; therefore, if FDIs or investments increased, it will boost the AD and the economy in a short-run if there is an unused capacity. However, inflation will happen instead of increasing real GDP if the economy has no spare volume.

Several factors affect the aggregate demand away from investment. For instance, if consumer spending or exports is falling, then investment increasing will not positively relate to AD increase. Investments are not the most significant factor affecting the AD; according to Pettinger, investment affecting the AD by approximately 16% and consumer spending by around 66%. In the case of an economy having spare capacity, one unit increase in investment will increase economic growth. But under the condition of the investors are willing to invest and reinvest in this economy in additional assets. Citizens who are gaining employment from those investments have more income to spend in the market.

“If the investment is effective, then it should also increase the productive capacity of the economy. For example, investing in skills and education can increase labor productivity. Investment in new technology and capital can

increase productivity and the economy's productive capacity; this helps to shift long-run aggregate supply (LRAS) to the right. An increase in LRAS is essential for long-term economic growth; it can increase economic growth without inflation. If investment leads to a significant increase in productivity, it can increase the long-run trend rate of economic growth. (Average sustainable rate of growth Investment can lead to higher real GDP without inflation." (Pettinger, 2019).

Improper government investments in developing the industrial capacity could be a reason to fail the productivity increase. The private sector or FDIs can be much better in growing productivity as private organizations know-how about the nominal types of investment. Some countries, especially in the MENA region, may have limits in public services and goods such as infrastructure; these goods and services will not be delivered in the market with real competition. Then it requires the government's investments to overcome these problems such as road congestions. In long-run economic growth, investments are essential in developing productivity and increasing economic competitiveness. Without adequate and planned investment mapping, the economy will enjoy the right consumption level without balanced economic growth. It will also lead to a current account deficit and a decrease in future investment.

Apart from the relation between investments and economic growth, the economic growth rate also touches the investment level. If business firms can feel the economic improvements, they will increase their investment to meet future demand. We can conclude that the economic growth rate improvement can be a reason for significant growth in the investment rate. However, if there is a fall in economic growth, the businesses will cut their investments. "The accelerator theory states that the level of investment is dependent on the rate of change of economic growth" (Pettinger, 2019). We cannot avoid other factors that affect the interest rate, business transparency, technological development, competitiveness level, population aging, regulations, and the government intervention level.

2. Political Instability and Economic Growth

“Economic growth and political stability are interconnected. On the one hand, the uncertainty associated with an unstable political environment may reduce investment and economic development speed. On the other hand, poor economic performance may lead to government collapse and political unrest” (Alesina, Sule, Nouriel, & Phillip, 1996). In this paper, the authors found a significant result that we have to show as follows:

- Contemporary declining in economic growth has not found to increase the modern tendency of governments or regimes changes.
- They didn't find any evidence that economic growth is meaningfully different in the comparison between democrati and authoritarian regimes.
- They found that political instability inclines to be insistent in that frequent collapse increases the probability of additional failure.
- With high level of governments collaps in some countries during the time, significant deterioration of economic growth has been found than otherwise.

According to Barro J. (1991), when he measured the political unrest, he found the number of murders and the results of the violent movements and coups significantly affected the growth level with large sample of countries. Also, Kormendi & Meguire (1985) and Barro J. (1991) found property rights' space is positively correlated with economic growth. Through decades, scholars have seen the positive correlation between political instability and economic development and how the instability affecting the growth and the increase of rights will increase creativity, therefore the positive effect on the economic growth. However, some scholars found there was no correlation between the authoritarian regimes comparing with the advanced ones.

On the other hand, Londregan & Poole (1990) didn't find any empirical evidence of the economic growth reduction resulting from political instability

when using the GNP growth rate and military coup as dependent variables. As per Grossman (1999), in the weak rulers country, the probability of revolutions is higher than in others. People have more motivation to be involved in revolutionary actions rather than engage in productivity in their market. On the contrary, the strong rulers' countries that are extreme activities are hard to succeed are discouraging these market activities (Murphy, Shleifer, & Vishny, 1993). Emphasizes that weak governments are always under threat of losing their chairs and searching for how to please the lobbyists and the policy entrepreneurs, leading to the direct effect of rent-seeking activities on policymaking.

This discussion can ask if democracy affects economic growth positively or not; the answers have a huge gap between scholars trying to prove this relationship between democracy and economic growth positively or negatively. (Clemens & Jakob, 1996), used Adam Smith's words when he emphasized the importance of political and social stability as the main component of economic performance. They added that political stability is an important condition for the ideal functioning of the economy. For instance, in capitalism with private production, the government guarantees the ownership, and increases wealth is the priority. If this guarantee is not available over the private property and the labor outcome, the investment decisions will be reconsidered in that economy. Through their fiscal and monetary strategies, any independent government can control economic performance to reduce political instability. However, with the democratic governments, the political situation's instability can significantly change the public expenditure and tax policies and amendments or changes in their monetary policies. It can also affect the ruling party's power share, trying to control the political instability level (Carmignani, 2003).

Political stability can affect the economic performance within monetary and fiscal policies; for instance, controlling the inflation rate is vital to gain economic growth in monetary policy decisions and decision making related to public expenditure and taxation in their fiscal policies.

As proof of the relationship between political instability and economic

growth, we can mention the French revolution to improve the social and political conditions instead of the vast inequality and released from monarchy supporting the aristocrats and landlords. This revolution was the gate for the relationship between the capitalism of manufacturing and trade².

Another example in the center and Latin America was the relationship between Economic status and political instability, the factors of the Mexican revolutions in 1911 against Diaz's regime after the Mexican economic crisis in his ruling period. Intensifying in unemployment and hyperinflation after reducing the sugar price, which was the first Mexican product to export, was the revolution's motives. The same was in Cuba; after more dependence on sugar exports as a leading economic factor, The United States decided to diminish Cuba's exports and brought high unemployment and economic decline.

² If a state's economic condition of a nation gets worse, it can lead to revolutions. He added that Ghana's economic downturn led to the overturning of the government in 1996. Agricultural production worsened, which led to a massive trade imbalance following by increasing external debts with growing unemployment rates. Also, he mentioned the economic crisis in 1970 till 1980 in Poland that led to a massive revolution and a high level of discontent. (Neil & Richard , 1994) Stated that unemployment, economic issues, rising commodities prices, and the income shrinking enhanced the tensions between Mexico and Great Britain (Greene, 1974).

3. The Arab Spring

Since 2011, the world has witnessed repetitive demonstrations against the previous or the current regimes in the MENA region and their public policies. They were started by Cairo, Tunis, Damascus, Khartoum, Rabat, Amman, Algeria, and gulf countries with violence to remove their regimes. Others turned into civil wars, such as we can see in Libya, Syria, and Yemen. Morocco and Jordan are trying to develop their policies and control political instability. The proliferation of these events that started in 2011 and its magnitude results makes us rethink the reasons and consequences of the Arab Spring and the relationship between the economy and political and social stability.

The Arab Spring demonstrations started with asking for specific reforms such as increased tuition fees, unemployment, pension system reforms, the reduction in education expenditure, and increases in poverty and human rights in Tunis and Cairo. The spread speed was unexpected in Libya and Syria because the demonstrations started directly against the entire regime. These demonstrations turned more radical like a wildfire in days, and the governments reacted more violently. The protests in Tunisia succeeded in removing Ben Ali's regime, who headed the state for more than twenty-five years and led the country, the same in Egypt, against Mubarak's Regimes who governed the state for more than thirty years. The role here was to the Egyptian and Tunisian military, who decided to be on the side of people without any rifts. Unlike what happened in Syria, Libya, and Yemen, when the Military started to be divided into two groups, one group supports the streets. Other groups support the regime from falling. Those divisions in Syria came from religious differences. Libya's rifts occurred because of Yemen's tribal differences because of the ethnic problems they lived with for decades.

Ten years since the beginning of the Arab Spring and scholars still search for the causes, impacts, and what happened exactly in that time, especially with newly discovered evidence to reach the perfect theories. Fosshagen (2014)

Discussed the interventions before and during the revolutions by political aspect; Also, Rabi & Bouasria (2017) Analyzed the MENA region's security issues before and during the Arab Spring and how these issues affect the spread of these events. On the other hand, Akcesme (2014) studied the economic motives behind the 2011 revolutions, especially in Egypt and generally in the Middle East, and the low income, income inequality, poverty, and youth unemployment reasons for the 2011 uprisings. The mentioned literature started with the Arab Spring's grounds and the motives behind these events without going deeply into the impacts and consequences.

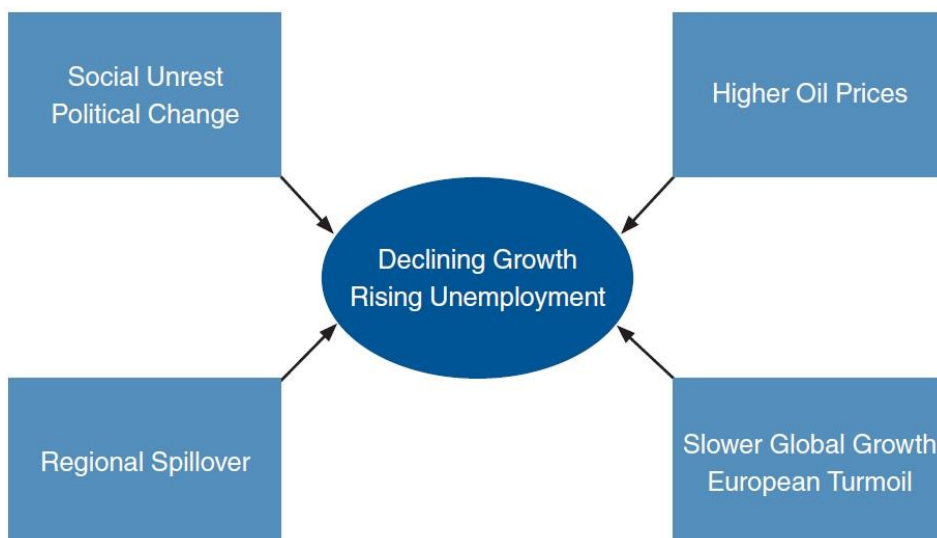
According to Ismail (2012), the revolutions started in Tunisia and Egypt due to the lack of human rights; it was a revolution against police violations. Mostly, after the murder case of the Tunisian citizen called Bouazizi, who burned himself in the street after a slap came from a police officer. The same in Egypt after Khaled Saied's case, who have been killed at a police station located in Alexandria; that's why the Egyptian protesters did their rights on the 25th of Jan 20113 as revenge from the police.

Also, Manfreda (2019), mentioned ten reasons for the Arab Spring in his article. Two-thirds of the MENA region population is under thirty years old, and the people more than doubled between 1975 and 2010 without real economic development to co-op with this massive growth. Unemployment, low living standards, inflation, and high debts were reasons for the street uprising against the regimes who faced the revolutions violently and made the people angrier.

³ “National Police Day is a national holiday in Egypt that occurs each year on 25 January. The holiday commemorates and is a remembrance for 50 police officers killed and more wounded when they refused British demands to hand over weapons and evacuate the Ismailia Police Station on 25 January 1952. The British Army surrounded the police station, then brought tanks in and took over the station” (Wikipedia, 2019).

Another scholars group started to predict the Middle East's future after the Arab Spring by examining the Middle East's economic development and the Arab Spring's effect on the region's countries⁴.

Figure 3: The effects of domestic and external shocks



Source: Khan (2014)

⁴ “Unfortunately, over the past three years, economic issues have taken a back seat to politics. The lack of attention to economic policies was presumably because governments’ primary focus was on addressing political issues with the intention that once these were resolved, they would turn to tackle the economy. Governments of the Arab transition countries have been late in realizing that politics and economics move in tandem. Political stability is tough, if not impossible, to achieve if the economy is in disarray” (Khan, 2014).

All of these factors showed in figure 6 had a series of unfavorable effects on economic performance. In 2011 the GDP growth fell sharply in the MENA region except for Morocco. In Egypt, the GDP growth fell from 5 percent to 2 percent, the same as Jordan, who didn't experience the Arab Spring at that time, the GDP growth shrunk to 2.6 percent after 6 percent of growth rate a year for the last decade. The picture was worse in Libya, Tunisia, Yemen, and Syria, with the negative economic growth that hardly seen in developing countries. Libyan case was worst after cutting oil production to less than a half-million barrels per day from 1.7 million barrels per day. In addition to UN sanctions in 2010 to freeze the Libyan foreign assets, these collapses in the oil production and Libya's primary income source led to falling the GDP to -62%. A near situation happened in Yemen with GDP growth reduction by 12% and Tunisia Shrank, almost 3 %.

From reviewing the previous literature, we can categorize them into three groups; the first group discussed the Arab Spring's reasons, and the second group examined these events' economic consequences. Still, it was in a short time with the prediction for the long-run impacts. However, some economic reforms took place in some countries like Egypt, Jordan, and Tunisia in 2016. The last group narrowed down for specific topics such as human rights and government violations. The first Gap discussed in this paper is the study's differences by starting with the Arab Spring events until 2019. This paper will focus on the MENA region's economic consequences and find if the Arab Spring achieved people's needs or not accurate movements led to economic collapse.

Other Aspects in the literature review in the conclusion of their research and the Arab spring results, if it was the beginning of a bright future or some externalities intervention, led to civil wars and economic crises. Galal & Wright (2013) Argued that the Arab Spring could be a critical step toward a much better future. Despite the economic performance widely affected by the Arab Spring, with cutting tourism, which is one of the primary income resources for Egypt, Morocco, Jordan, and Tunisia, following a significant drop in the Foreign Direct Investments (FDIs) and its impacts on unemployment rates. With the absence of

government institutions and the consequences mentioned earlier, the currency exchange reserves had a massive decrease. Social indicators reached figures never seen before, and poverty exploded. Moreover, the political condition went so far from establishing an enormous number of political parties trying to take the lead in countries that cannot control their borders. We can say that the region was a fragile region from 2011 till 2013.

On the contrary⁵, Brennan (2017) found that the Arab Spring was moving from revolutions to destruction with plans set before to destroy those old regimes and create new Islamic powers who can control and the MENA region becoming more stable. Amnesty International (2016) Statistics showed an alarming number of Arab Spring's consequences and showed the Arab Spring's harmful effects. More than 11 million people were forced to move from their homes in Syria since 2011, more than 250 thousand people have been killed, according to the UN, and more than 4 million refugees abroad. More than 2.5 Million people need humanitarian assistance and protection, in addition to the economic numbers that are still going down rapidly except the Egyptian situation.

⁵ "Arab people were deriving as cheeps in a farm by the old regimes. It is an excellent opportunity to make the Arab world grow by these revolutions, even if there are many destructions. No change without prices, always the prices are very high," said Muhannad Hadi, Regional director for Middle-East, North Africa, Central Asia, and Eastern Europe at United Nations World Food Programme. These words have been said in a conference at Seoul National University (SNU), the graduate school of public administration (GSPA), wondering how someone in this position accepts the amount of destruction happening in some countries and being responsible for millions of refugees. These armed conflicts were happening for more than nine years under the name of "The Arab Spring" I do not know this was spring, or winter came with huge thunders and storms killing millions of people, men, women, and children for changing regimes.

Many articles, newspapers, and books tackled the Arab Spring's consequences, reasons, and results. Some quantitative analyses have been done to measure the political, social, and economic consequences. Still, the recommendations were that scholars have to research more after enough time to get the right answers. Some scholars did comparison research before and after the events on political issues. The social problems have also been raised with poverty studies trying to find how the Arab spring revolutions affected specific countries' relations.

The second categorization for the literature is about the results of the Arab Spring. The first scholars' group saw those movements were just the destruction of our nations. It was exclusively sponsored revolutions led by some foreign countries that wanted to remove those regimes without looking for the people's interests, social welfare, and poverty. The second scholars' group saw these revolutions as the starting point for the Arab countries to grow and be freer. The start point for a better future full of growth and welfare even after what is happening in some countries such as Syria, Libya, and Yemen. They say, "it is just time," and all these conflicts will be ended, and the Middle-East starts from an excellent point even after some destruction.

By screening the previous literature, we can create two main categories in the literature review. The first one is categorizing, depending on how the scholars analyzed the events. The second category depends on each scholar's conclusion, even was suitable for the Arab Nations or was such destruction. The research background and base will be built on these categories and start from the conclusion gap and will try to prove that the Arab Spring was such destruction for our countries. It did not happen and was motivated by the Arab people's internal intentions. Still, they were a tool that some agencies and governments used people to destroy some economies instead of real war that it will be more expensive. People and scholars still ask if the Arab Spring revolutions were the best options for the Arab World by transferring western freedom to the Eastern world who did not try this kind of space.

Chapter 3. Causes of the Arab Spring

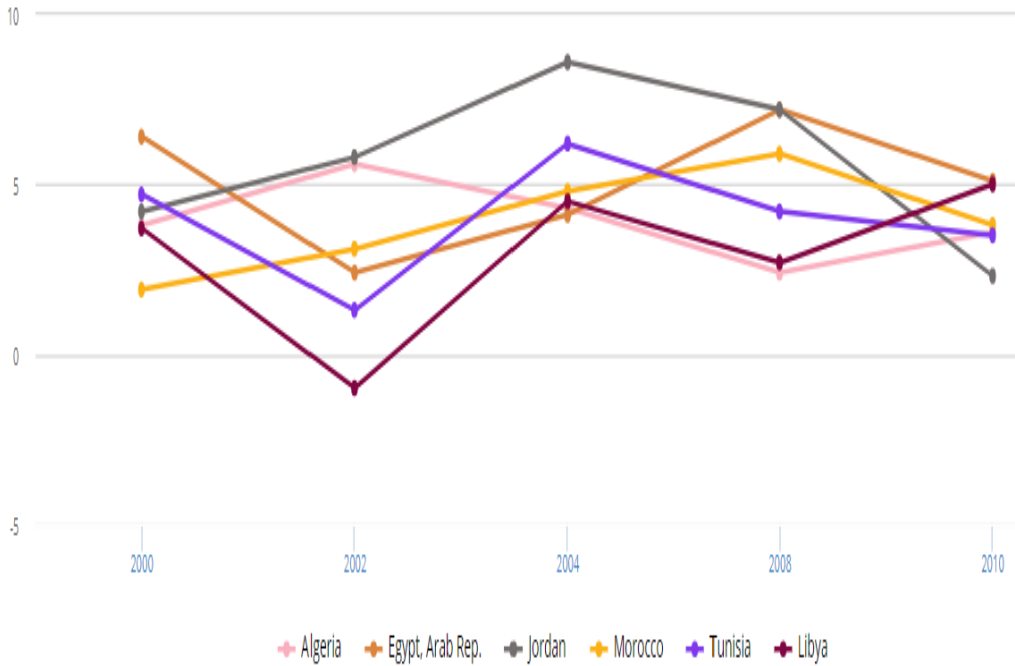
1. Economic Condition

The deterioration in the Macro-Economic indicators before the Arab Spring was the spark of the Middle East's revolution. The discontent over unemployment and the low level of living standards were among the circles and brought people to the streets, asking for better living standards. Income inequality played a considerable role in the MENA citizens' anger because of the massive gap between the rich and poor. But citizens can endure the economic hardships if they can see a better future or feel somewhat equally spread. Corruption prevented them from accepting neither financial problems nor inequality income distribution. The states were only giving a place for capitalism that benefited a small minority in the Arab countries. In Egypt, business elites collaborated with the regime to maximize their wealth over the population majority, surviving on around 2\$/day. In Tunisia, the president family's interests controlling and the same kind of corruption happening in Libya, Algeria, and Syria.

“There is a consensus among political analysts regarding the cocktail of major factors that, when combined, created the social explosion known as the 2011 Arab uprisings. The lethal mix of factors boils down to economic deterioration and government corruption, coupled with the repressive and violent nature of the Arab regimes and the suppression of individual liberties” (Salih, 2013). He explained how corruption was in the hand of ruling families since the 1980s. That led the international financial institutions such as the IMF to practice the governments' financial pressures and, somehow, the elites who benefit the reforms in their economy based on the Structural Adjustment Program's liberalization program. The high-level citizens got higher, and the poor get poorer. The unemployment rates raised significantly among the youth under 25 years old, and inflation dramatically increased, especially in food prices, which affected the low-level class.

The region's economic policies didn't change for decades the same as the leaders in charge for at least more than twenty years, with high dependence on debts and aids from the west.

Figure 4: GDP Growth from 2000 till 2010 for six countries



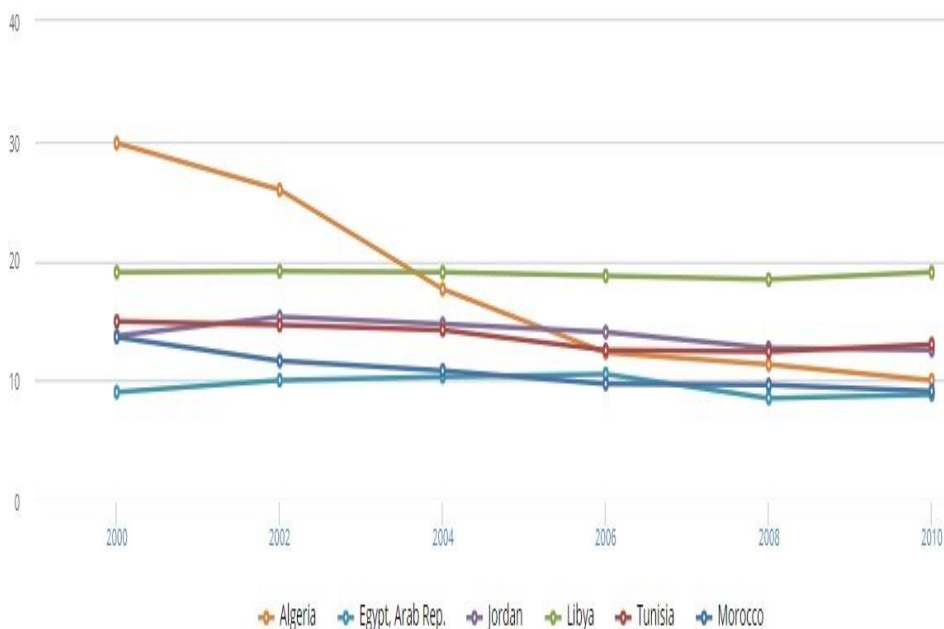
Source: WDI (2020)

Figure 8 showing the growth rate for six countries. Jordan, the country that has not experienced the Arab Spring, was falling in GDP growth, from 8.6% in 2004 to 2.3% in 2010. Likewise, Tunisia had also declined since 2004 from 6.2 % to 3.2% in 2010. Numbers are quite different in Egypt, which grew from 2002 by 2.4%: 7.2% in 2008, then falling by 2% because of the economic crisis. The same trend in Morocco grew from 2002 to 2008 by 2.3%. Two different numbers in Algeria and Libya grew from 2008 to 2010 by more than 1.5% because of rising oil prices.

All six countries are in common in GDP growth falling since 2004, except for a muted growth in 2008 that followed by falling till 2010. The average growth rate for the six countries was 4.5 for ten years. This low level of growth for developing countries looking for economic development and social welfare; with this growth average, the governments didn't change their economic policies to improve their economies; on the contrary, the government's options were always borrowing. The fall in GDP growth affected the GDP per Capita significantly, with the massive population growth that was 2.2% on average.

The decline in GDP growth affected unemployment rates at the same levels from 2000 till 2010, without a significant change.

Figure 5: Unemployment rates in six countries from 2000 till 2010



Source: WDI (2020)

Figure 9 shows the lack of unemployment rate improvement except for Algeria that decreased the unemployment rates from 30% in 2000 to 10% in 2010. Libyan unemployment rates stopped at 20% during the same period. Likewise,

Egypt didn't improve the employment opportunities, and the unemployment rates remained at 10% during that decade. The situation was not much changing in Tunisia and Jordan that kept high unemployment rates around 14% during the Ten years. Regarding Morocco, that watched a noiseless improvement in their unemployment indicator that decreased from 13.6% to 9.1 in 2010.

Table 1: Poverty and GINI Coefficient from 2000 till 2010

	Egypt		Jordan		Morocco	
	GINI Index	Poverty Headcount ratio at 5.5\$ a day (% of population)	GINI Index	Poverty Headcount ratio at 5.5\$ a day (% of population)	GINI Index	Poverty Headcount ratio at 5.5\$ a day (% of population)
2000	0.53	Null	0.53	Null	0.59	58.90%
2002	0.52	Null	0.53	35.60%	0.59	Null
2004	0.52	77.70%	0.54	Null	0.59	Null
2006	0.51	Null	0.54	24.40%	0.59	47.00%
2008	0.51	77.40%	0.54	23.00%	0.59	Null
2010	0.52	70.50%	0.57	17.50%	0.59	Null
	Algeria		Tunisia		Libya	
	GINI Index	Poverty Headcount ratio at 5.5\$ a day (% of population)	GINI Index	Poverty Headcount ratio at 5.5\$ a day (% of population)	GINI Index	Poverty Headcount ratio at 5.5\$ a day (% of population)
2000	0.51	No Data Available	0.58	50.60%	0.54	No data Available
2002	0.49		0.57	Null	0.53	
2004	0.49		0.56	Null	0.54	
2006	0.48		0.55	Null	0.53	
2008	0.47		0.54	Null	0.53	
2010	0.46		0.53	30.50%	0.52	

Source: Adapted from WID (2020) & WDI (2020)

Not only unemployment among youth was the only burden on Middle East citizens. Income inequality and poverty rates were at high levels, increasing the discontent against regimes that were not changing their strategies. As we can see

in Table 1, more than 70% of the Egyptian population was living under 5.5\$ per day in 2010 with income inequality by .52 according to the GINI coefficient index, which means there was a massive gap between rich and poor people time. The lower poverty rate among the six countries was Jordan, which decreased from 35.6% in 2002 to 17.5% in 2010, which was still at a high poverty level. The six countries have the typical inequality income distribution by .50 on average with a lack of improvement over ten years, causing more inequality and more instability.

Side-by-side, the inflation rates in Egypt, Jordan, and Libya were increasing rapidly, as shown in figure 10. In Libya jumped from -9.8 % in 2002 to 10.4 % in 2008 before decreasing to 2.8 % in 2010. Egypt, 2.7 % in 2002 to 18.3 % in 2008 with a soft decrease in 2010 to 11.3 %. Jordan from 1.8 % to 14 % ending 4.8 % in the same period. Algeria, Tunisia, and Morocco had stable inflation during this decade with a subtle difference.

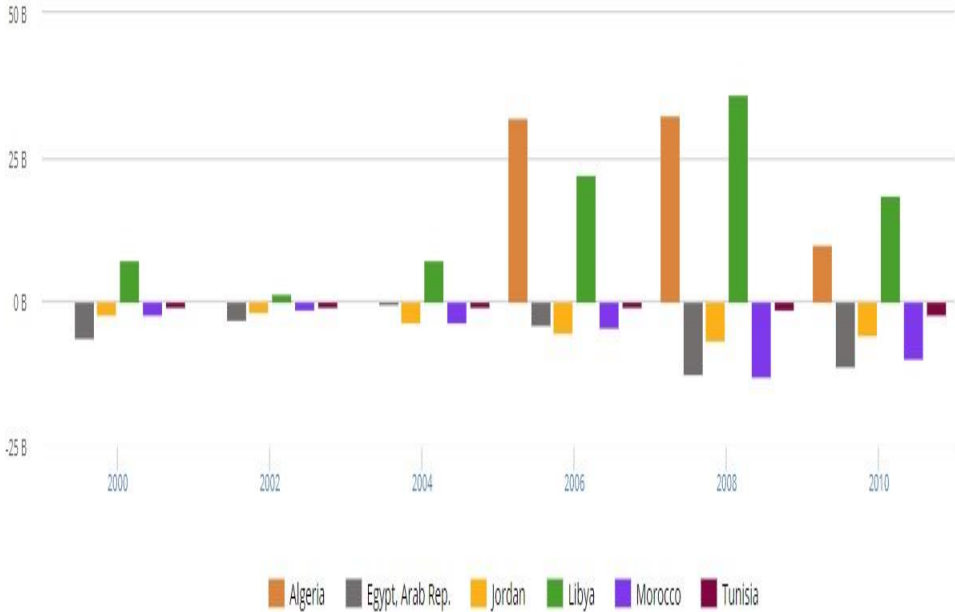
Figure 6: Inflation rates from 2000 till 2010



Source: WDI (2020)

The indicators mentioned above degradation are a definite result of the lack of domestic production and productivity deterioration. Throughout decades of these countries, the trade balance was always on the negative side, not only those countries but the whole Middle East countries due to the lack of know-how, innovation, and R&D. These reasons came up by not placing the education and scientific research on their priorities. Figure 11 showing how the trade balance is proving the lack of productivity, only Algeria and Libya in the positive side of that graph due to the oil and gas trade.

Figure 7: Trade Balance from 2000 till 2010



Source: WDI (2020)

Since the beginning of the 21st century, the regional economy was not a good sign for the governments that received many recommendations and advice from international organizations for the necessary need for economic reforms among these countries to keep up with MDGs announced in late 2000 by the UN.

2. Political situation

The political situation was not more developed than the economy. The brutal and vicious nature of the Arab regimes was on the top in the list of significant indicators crowning the 2011 Arab Spring uprising. Most of these Arabian regimes ranked highly as dictatorial regimes in which the power is controlled by few high ranking people; moreover, those regimes often used all physical violence to maintain their power across decades. Some regimes were using the state of emergency and laws in fighting terrorism to justify their crimes against citizens. “Most of these regimes have adopted policies that consolidate absolute rule, pave the way for succession within the family framework, and secure in a systematic way economic and social discrimination as well as political exclusion along ethnic and sectarian lines” (Salih, 2013).

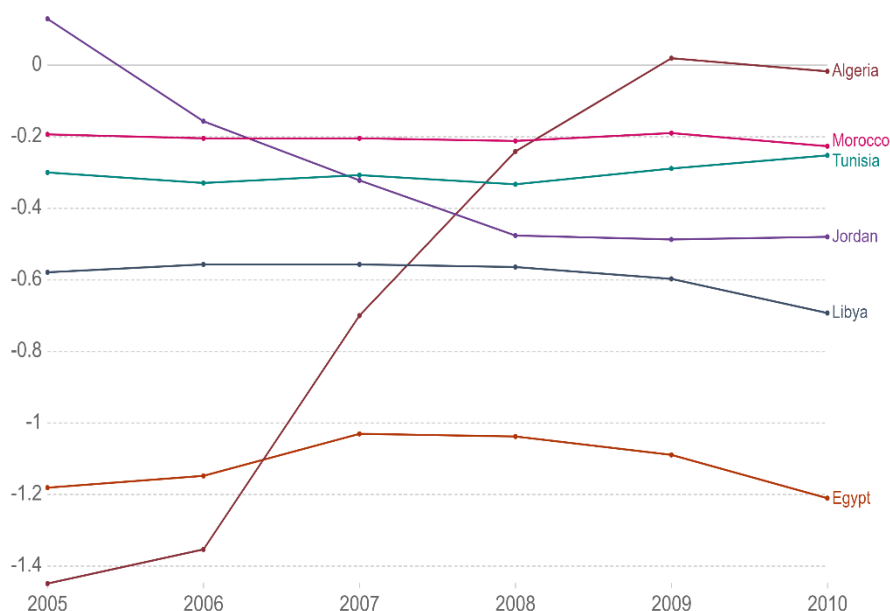
Fundamental human rights were lost, like freedom of speech, press freedom, freedom of organization, and association freedom in most Arab countries. Those regimes controlled the mass media communication to spread the news they wanted to maintain their power; journalists, human rights activists, and politicians were always harassing by the authorities under the authoritarian regimes.

Besides the political instability and the low level of freedom, the dynastic successions' preparation was an important reason for the people to go to the streets, asking for removing those regimes. With slogans of “All sha'ab youreed esqat el nizam,” which means “The people want to remove the whole regime.” The Egyptian president was preparing his son to take the lead after him. In the same scenario in Libya, the Libyan president prepared his son for being the president after his death. Those regimes were dealing with their countries as kingdoms; they can give the leadership to the coming generations as it happened in Syria by delivering the rule from the former President Hafez Al Asa'ad to his son Bashar Al As'ad.

Figure 8: Human Rights Scores, 2005 to 2010

Human Rights Scores, 2005 to 2010

These Human Rights Scores indicate the degree to which governments protect and respect human rights. The values range from around -3.8 to around 5.4 (the higher the better).



Source: Schnakenberg and Fariss (2014), Fariss (2019) OurWorldInData.org/human-rights/ • CC BY
Note: These Scores are produced from an econometric model that combines measures from nine other sources. For details, see Fariss (2019).

Source: Our World In Data (2020)

Figure 10 shows human rights status in the six countries on the graph's negative side, far away from the highest score, which is 5.4. This worsening in human rights in Egypt was getting worse without improvement. Libya, Jordan, Tunisia, and Morocco stayed in their levels during those years, but the status was better than Egypt. Algeria succeeded in improving the human rights status from -1.4 in 2005 and even less before it to zero in 2010. Overall, it indicated the violation of human rights by the ruling regimes that it was not considering human rights as an indicator of the political instability. It will lead to revolutions in 2011.

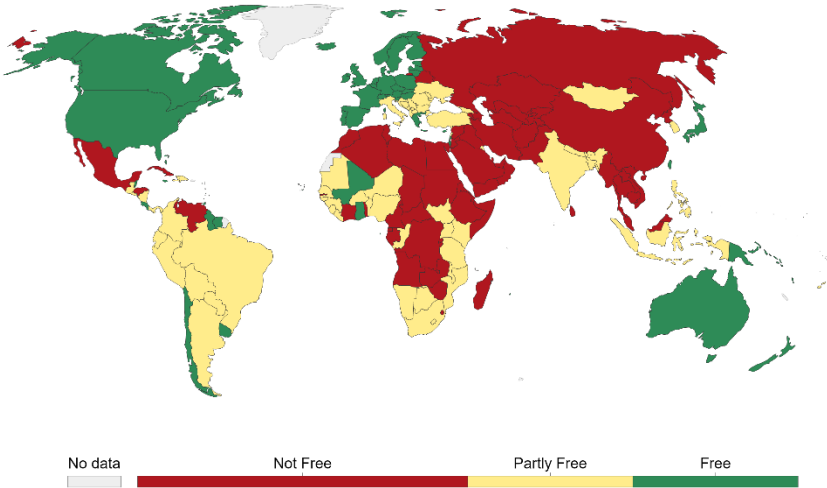
The violation of human rights was not only violated, but the freedom of the press was at the highest levels before the revolutions in 2010. All the authoritarian regimes have the common idea of controlling the media and the media to stabilize

territory. Figure 11 shows the press freedom map in those countries and the world in 2010, showing the relation between authoritarian and press freedom violations.

Figure 9: World Map of the freedom of the press status, 2010

World Map of the Freedom of the Press Status, 2010

The Freedom of the Press Status is measured by Freedom House. It measures the level of freedom and editorial independence enjoyed by the press.



Source: Freedom House, Freedom of the Press Status (2017)

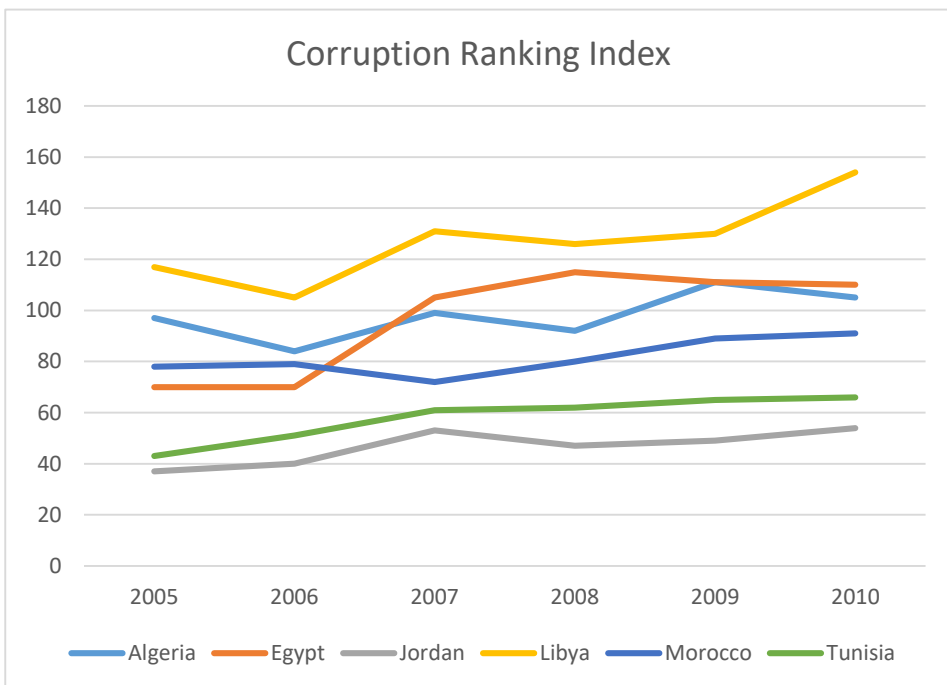
OurWorldInData.org/human-rights/ • CC BY

Source: Our World In Data (2020)

3. Government Performance

After mentioning the economic and political situation before the Arab Spring and how people were suffering from the economic, social, and political deterioration last decades, which is reflecting the government performance in those countries whose were had not a clear strategic policy to provide a better life for citizens over the years; however, corruption was one of the most common essential factors in these six countries. It showed in figure 14 how the ranking for those six countries was going up, which means more ranking equal more corruption.

Figure 10: Corruption perceptions index

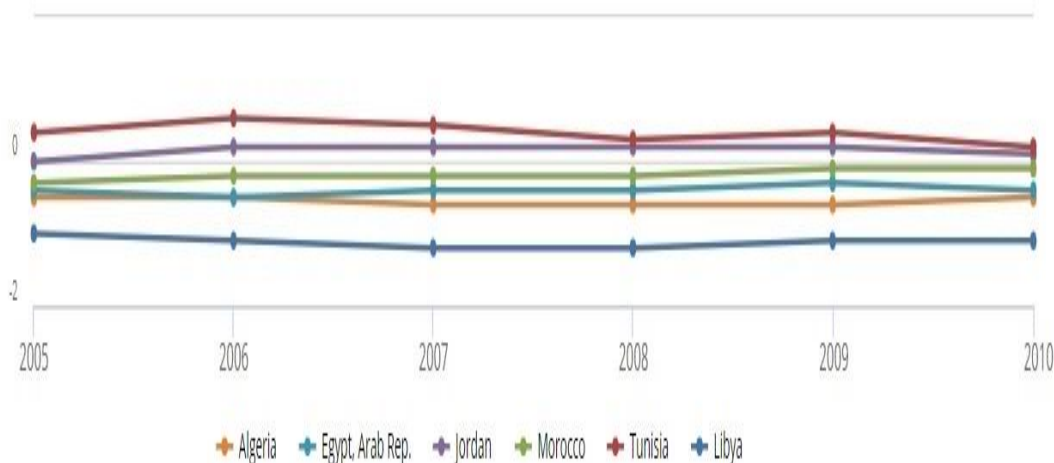


Source: Transperancy International (2020)

Figure 12 the rapid increase in the ranking from 2005 to 2010, reflecting that the governments didn't try to stop this phenomenon. Corrupted people were controlling in the governments because corruption is always using public power

to collect private gains; this corruption is still affecting the government's effectiveness.

Figure 11: Government Effectiveness indicators



Source: WDI (2020)

Figure 13 shows that government effectiveness⁶ in six countries has the same trend of keeping the level of ineffectiveness; those countries didn't improve government performance over the years, making the corruption increase and affect all sectors economically, socially, and politically.

All reasons mentioned in this chapter's economic condition, political status, and government performance were the revolutions' internal reasons. It showed how the regimes were not working with policies to develop their countries.

⁶ "Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Estimate gives the country's score on the aggregate indicator in standard normal distribution units' ranging from approximately -2.5 to 2.5" (World Bank, 2020).

Chapter 4. Research Methodology

After defining my research questions and conducted a detailed review of what other scholars in the same field have said about the Arab Spring. In addition to reviewing how previous scholars reached their conclusions and assumptions on which their works are based, they used theoretical frameworks and methods to collect and present their data. I used these observations to plan how to tackle my research questions, gather my data, and which model I'm going to use in my research. This chapter that flowing organically from the previous chapter, which is a literature review, will provide a detailed account of how I approached my dissertation and why I have decided to come it in the way I had.

This study has been utilized based on two assumptions; first, if the Arab Spring has not had a negative impact on the Middle East countries or it had negative economic consequences on the region. Second, if the Arab Spring influenced the region's statistical economic trend or it was because of other external factors.

1. Research Design

To test the previously mentioned hypothesis to find the proper answer to the research questions discussed before. A quantitative analysis will examine in depth the macroeconomic and how it is affected by the Arab Spring. According to Alberto & Javier (2003), Alesina, Sule, Nouriel, & Phillip (1996), Mahmoud, Ali, & Nathir (2019) and Murat & Nazife (2017), using panel data to see the effect of an event on the economic growth is the best way in analyzing data in this regard. "The panel data, which are collected on a set of individuals over several time points, are ubiquitous in economics and other analytic fields because their structure allows for individuals to act as their own control groups" (Roberto & Rachid, 2017).

This kind of data occurs when the researcher observes a set of individuals such countries over a time period during the observation for those individuals,

which is applicable in our research by observing five countries over 15 years. The Panel data has two dimensions; the first is the Cross-section dimension; the second is the time. Parameters are likely puzzled by individual, time, or both, but purely each cross-section and period acting as its own control group. Bernard, Alain, & Badi (2014) discussed the importance of the panel data in the last decades, especially in economics, by several models representing different estimations to predict.

Panel data is more informative, variable, and more efficient than the standard time series or cross-sectional data. However, panel data can sense and calculate the statistical effects more than standard cross-sectional or time series data and minimize collinearity within the variables, individual heterogeneity, and estimation biases that can occur while combining groups in one single time-series data. Panel data models are regularly using in economics and social sciences.

2. Data and Empirical Methodology

2.1 Research Period and Data Set

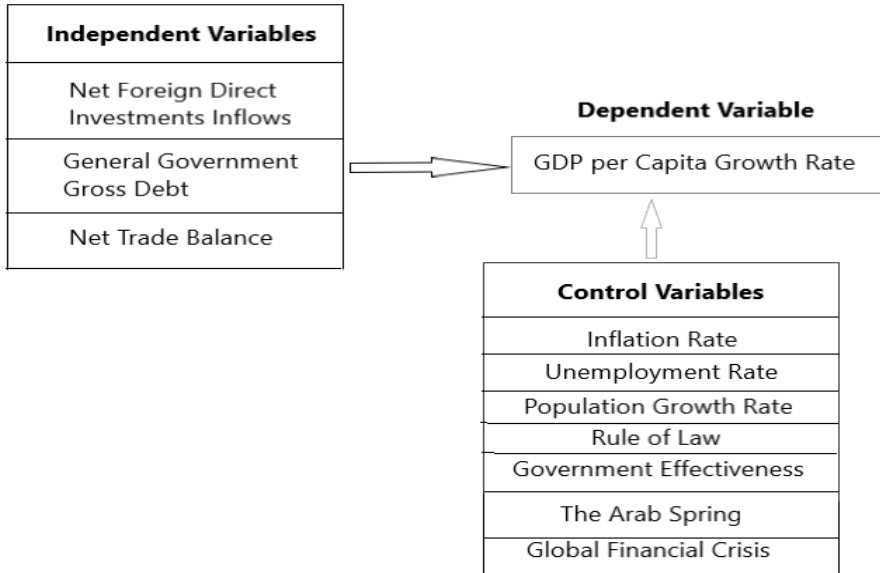
My empirical analysis utilizes annual data between 2005 and 2019. Five Middle-East countries included in the research analysis have involved of Egypt, Jordan, Tunisia, Algeria, and Morocco. Countries such as Syria, Libya, and Yemen were excluded from the research since data related to these countries were missing. Moreover, the Gulf countries have been excluded due to their asymmetric economic sizes due to oil-based economies. This study involves the data collected from the World Bank databases and the International Monetary Fund.

3.2 Analytical Framework and Methodology

This study used panel data to investigate the impacts of the Arab Spring revolutions on the Middle-East countries' economies. The dependent variable is the gross domestic product per capita annual growth rate (GDPC). Hence, the study estimated that the dependent variable is using the difference of GDPC between times t and $t+1$ across time $t(t=1:10...T)$ and in countries $c(c=1,2,3,...,C)$. The projected model used Arellano-Bond GMM dynamic regression. Using an endogenous variable has been lagged as an independent variable (explanatory variable) not to correlate this independent variable with the error term.

The explanatory variables signify a set of factors that are highly affecting economic growth and development. These variables include general government gross debt (GGDP); Bittencourt (2011) found a negative relationship with economic growth. Trade Balance (TRDBAL) and foreign direct investments (FDI) are also vital factors of growth. According to Ricardo & Lima (2007), who emphasized the constraints enforced by the balance of payments on economic growth, exports development is directly related to economic development. FDI stimulates the transfer of technology that boosting overall economic growth and development (Maria & Levine, 2002). Other macroeconomic indicators were set as control variables observed as a vital indicators of economic development: Population Growth, Inflation rate, and Unemployment Rate because of the observed relationship between these variables and the economic growth. Public institutions also observed as a motivator for economic development (Keith & Gonzalo, 2010). These variables include the rule of law and government effectiveness by relying on people, businesses, and policy-makers' perceptions to measure institutions and governance quality, side—by—side with two dummy variables to measure the Arab Spring and global financial events.

Figure 12: Analytical Framework Diagram



We can specify the panel data in the following equation empirically:

$$GR_{ct} = \alpha_0 + \beta_1 GR_{ct-1} + \beta_2 MV_{ct} + \beta_3 AS_{ct} + \beta_4 GFC_{ct} + \varepsilon_{ct} \quad (1)$$

GR_{ct} is the difference of the GDPC growth rate for a country C in two consecutive years. AS_{ct} is a dummy variable that equals 1, representing the period after the Arab Spring from 2011 till 2019, and Zero for the period before the interesting event from 2005 to 2010. GFC_{ct} also a dummy variable that signifies the global financial crisis from 2008 to 2010, which has a value of 1 and Zero otherwise. These dummy variables allow comparing these two events' consequences on the Middle East countries' economic growth. MV_{ct} is a

collection of variables that describing the macroeconomic variables of country C. ε_{ct} is the error term.

The equation mentioned above (1) is projected using the Arellano-Bond dynamic model, targeting to detect the effects of countries not observed by the independent variables. Moreover, this model involving one lagged independent variable, which is GR_{ct-1} , allowing for the partial adjustment mechanism. It accepts that the essential instruments are established on the instrumental variables' lagged values. Also, the Arellano-Bond dynamic model is clustering the error terms of countries and years to allow them to be correlated within countries, not between the countries as mentioned by (Cameron & Trivedi, 2009) and (Petersen, 2009).

Based on the previous explanation, the Arellano-Bond dynamic regression is the best option for this study to answer our questions and test my research hypothesis. Moreover, this model's robustness is checked using different diagnostic tests, including AR with one and two lags, Sargan Test for validity, and the test for homoscedasticity; these diagnostics results will be discussed later in the model robustness section⁷.

⁷ Ex: \emptyset Is the degree to which the shock affects the economic system, X is the set explanatory variables. We can interpret \emptyset as it is the correlation between Y_{ct} and Y_{ct-1} . The reason for choosing the dynamic model is the lagged function because the Arab Spring happened in 2011. The global financial crises occurred in 2008, and these intangible events are not represented by the explanatory variables X_{ct} . These events affected the economic growth in that year, but we cannot expect the effect of these events will appear directly after these events. Therefore, this model includes the lagged function to allow the next year to benefit from the event's year. Moving forward for the following years and by construction also on the event's year. Over the years, the event's effect will disappear when (\emptyset) the degree to which the shock carries through the system, the effect will diminishes gradually if $\emptyset = .9$, system will go back to its normal fairly when $\emptyset = .1$.

3. Operationalization and Conceptualization

This section will present the concept and the operational description for each investigated variable, measurement criteria, and the source for each one:

Dependent Variable:

Gross Domestic Product per capita growth rate is conceptualized as a “result of dividing the gross domestic product by midyear population. GDP per capita is gross domestic product divided by midyear population. GDP at purchaser’s prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the products’ value. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources” (World Bank, 2020), operationalized as an annual percentage growth rate with aggregation in 2010 U.S. dollars. Data has been collected from the world development indicators.

Independent Variables:

- Foreign Direct Investment Net Inflows (FDI) Conceptualized as “the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital, as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors and is divided by GDP” (World Bank, 2020) and operationalized as an annual percentage of GDP. Data has been collected from the world development indicators.
- General Government Gross Debt is conceptualized as “the gross debt of the general government. The Debt Guide defines total gross debt as —all liabilities that are debt instruments. Financial claims that require payment(s) of

interest or principal by the debtor to the creditor at a date or dates in the future” (World Bank, 2020). Data operationalized as a percentage of the GDP and collected from the international monetary fund.

- Net Trade Balance was conceptualized as “a net trade in goods and services and derived by offsetting imports of goods and services against exports of goods and services” (World Bank, 2020). Data operationalized in current U.S. dollars in a million and collected from the world development indicators.

Control Variables:

- Unemployment Rate conceptualization “is a share of the labor force without work but available for and seeking employment” (World Bank, 2020). It is operationalized as an annual rate and the data collected from the world development indicators.
- Inflation Rate conceptualized by “the consumer price index, inflation reflects the annual percentage change in the average consumer’s cost of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly” (World Bank, 2020). Operationalized as an annual rate and collected from the world development indicators.
- Population Growth Rate is conceptualized and operationalized as “an Annual population growth rate. The population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship” (World Bank, 2020). Data has been collected from the world development indicators.
- Government Effectiveness conceptualization “is the capture of perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and

implementation, and the credibility of the government's commitment to such policies. As an Estimate, operationalized gives the country's score on the aggregate indicator in the standard normal distribution units, ranging from approximately -2.5 to 2.5. However" (World Bank, 2020), Data has been collected from world governance indicators.

- Rule of Law concept "is the capture perceptions of the extent to which agents have confidence in and abide by society's rules, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Operationalized as an Estimate, the country's score on the aggregate indicator in the standard normal distribution units ranges from approximately -2.5 to 2.5" (World Bank, 2020). The data has been collected from world governance indicators.
- The Arab Spring is conceptualized and operationalized as a binary variable that contains values of Zero and one. Zero has been coded for all countries before the Arab Spring (from 2005 till 2010). Value one coded for all countries for the years after the Arab Spring event (from 2001 till 2019).
- The Global Financial Crisis is also conceptualized and operationalized as a binary variable containing Zero and One's values. One value has been coded for all countries in the years 2008, 2009, and 2010, otherwise Zero.

Regarding the validity issues and threats to internal validity, a group of countries in the same environment to reduce the threat of History maturation have been used. The Research relied on multiple sources of data from reports, documents, and several international organizations with conformity with government websites, local universities, local think tanks, and institutions reports to apply the triangulations.

Chapter 5. Empirical Analysis Findings

SAS software has been used in the statistical analysis in this quantitative research to find the proper answer for the research questions and make the hypothesis test. In this chapter, the descriptive analysis, the empirical findings, and the hypothesis testing will be discussed depending on the results shown.

1. Descriptive Statistics

In order to measure the Arab Spring's impacts on the Middle-East countries' growth, this study used Gross Domestic Product Per Capita Growth Rate (GDPC) for five countries Egypt, Tunisia, Algeria, Jordan, and Morocco, from 2005 to 2019. The definition and the source of all variables mentioned in the previous chapter. The GDPC has (75) observations across countries, and in all years, the average growth is (1.55 %) with variance among countries and time by (4.44 %). The Arab Spring affected Tunisia's growth rate with the lowest growth rate in 2011 (-2.8 %). Meanwhile, Jordan was affected the most, although it didn't experience the Arab Spring revolutions. The economy was shrinking from 2010 till 2013 by (-2.8%,-2.7%,-2.7%, and -2.3%) because of the Global Financial Crisis following by the Arab Spring. It was a burden on the Jordanian economy that didn't bear two shocks in the two following years. By contrast, the highest growth rates before the Arab Spring were in Morocco in 2006 by (6.3%) following by Tunisia in 2007 by (5.6%) and Egypt from 2006 to 2008 by (4.9%, 5.2%, and 5.2%) respectively.

Net Inflows of the Foreign Direct Investment (FDI) as a percentage of GDP has been used in the analysis as an independent variable to see the Arab Spring's effect on FDIs, which is one of the vital determinants of economic growth. FDI has (75) observations without missing value by average (3 %) with a variance of (.1 %) among all countries in 15 years. The highest FDIs inflows as a percentage of GDP was Jordan over time, with the highest value in 2006 by (23 %) from its GDP and decreased to (9 %) in 2009. The lowest values appeared for all countries

after 2011, with the lowest value in Egypt among all states by (-2 %) in 2011 following by Algeria by (-3 %) in 2015 due to the depreciation of the Algerian Dinar in 2015. However, Algeria shown the lowest FDIs inflows as a percentage of GDP among all countries after 2011 despite it didn't experience the Arab Spring revolutions.

General Government Gross Debt (GGGD), as a percentage of GDP, included (75) observations without missing values with a mean of (56 %) with minimum value observed in Algeria over the time among all the countries by (7.6 %) in 2013. On the contrary, the maximum among all countries over the years observed in Egypt, especially after 2011 that reached (88.5 %) in 2015 to (103 %) from its GDP in 2017 as the highest gross debt within all countries. Also, the third macroeconomic variable, which is the Net Trade Balance (NETTRDBAL), had the same number of observations with an average of (-7.13 Billion USD) with the maximum deficit (Minimum value) among all countries was in Egypt by (-34.7 Billion USD) in 2016. And the minimum deficit (Maximum Value) was in Algeria all over the time by (32.47 Billion USD) in 2008.

Regarding the control variables, the unemployment rate had the full number of observations, and the average unemployment rate was (12.03 %); Tunisia was the highest unemployment among the five countries by (18.33 %) in 2011 and Egypt with the lowest rate of unemployment in 2008 by (8.5 %). The unemployment rate is shown a standard deviation of (2.3 %). However, the inflation rate missed on observation to be (74) observations with an average of (5 %), the highest rate of inflation was in Egypt by (29.5 %) in 2017 due to the currency floating in late 2016, Jordan was the lowest country in inflation rate by (-.8 %) in 2015, and the same negative inflation was in 2009 and 2016. for the population growth with the same observations; Jordan has the maximum population growth of all time with top growth by (5.58 %) in 2012 with a full number of observations and (2.03 %) as an average growth rate for the five countries, in contrast, Tunisia always having the lowest growth rate of the population all the time with minimum growth by (.8 %) in 2005. The three other

countries are remaining around the average.

As to the governance indicators, variables were taking a rule in this analysis; the government effectiveness (GE) variable didn't miss any observation with average effectiveness by (-.20100) among the five countries and standard deviation of (.33417), which is reflecting the poor condition of the governments. The Tunisian government is the most effective government during the 15 years; the best performance was 2006 with a score of (.6435). The Egyptian government is the worst among all countries for all years, especially after the Arab Spring, with the worst (-.8774) score in 2013. The average rule of law is (-.2074) in enforcing the law, reflecting that those countries are not setting good policies to implement the law. RL standard deviation among all countries is (.38837) with (75) observations, Jordan is the best country among the research's countries in enforcing the law and its implications in all years with the highest score in 2014 by (.46421). Algeria is the lowest country in enforcing the law with a minimum score of (-.8639) in 2015; however, Algeria is the worst among all the countries over the years.

Table 3. It is showing the descriptive statistics showing the mean, standard deviation, minimum and maximum values for the nine variables we have in our model. For tables 3, 4, and 5. Are showing the extreme values for each variable for all countries during the time of the research. The descriptive statistics section draws a big picture for our data to understand those countries better and see what the average for each variable among all nations is during the time. The number of observations shows our research data's size and the minimum and maximum values to see the lowest and highest value for each variable to see those countries' levels.

Table 2: Descriptive Statistics

Descriptive Statistics				
Variable	Label	No. of Obs.	Mean	Std. Dev.
GDP/ Capita	GDPC	75	1.55602	2.10859
Foreign Direct Investment	FDI	75	0.03686	0.03892
General Government Gross Debt	GGGD	75	56.2587	24.3013
Net Trade Balance	NETTRDBAL	75	-7126	12623
Government Effectiveness	GE	75	-0.201	0.33417
Role Of Law	RL	75	-0.2074	0.38837
Unemployment	Unemploy	75	12.0318	2.36099
Inflation	Inflation	74	0.05076	0.0477
Population Growth	Popugr	75	2.03994	1.22588

Note:

GDPC is in percentage – FDI and GGGD are the percentages of GDP – NET TRDBAL is in Millions – PS, GE, and RL are scoring scale from -2.5 the lowest to 2.5 the highest - Inflation, Unemploy and Popugr in percentage.

Table 3: Extreme Observations for Macroeconomic variables

GDP/ Capita					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
2.89086	2011	TUN	4.96739	2006	EGY
-2.8775	2010	JOR	5.2283	2007	EGY
-2.7894	2011	JOR	5.26716	2008	EGY
-2.7757	2012	JOR	5.63771	2007	TUN
-2.3552	2013	JOR	6.32203	2006	MOR
FDI					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
-0.0205	2011	EGY	0.0999	2009	JOR
-0.003	2015	ALG	0.12687	2008	JOR
0.00703	2014	ALG	0.15113	2007	JOR
0.00717	2017	ALG	0.15546	2005	JOR
0.00718	2012	ALG	0.23212	2006	JOR
GGGD					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
7.6	2013	ALG	88.5	2015	EGY
7.7	2014	ALG	92.7	2018	EGY
8.1	2008	ALG	96.8	2016	EGY
8.7	2015	ALG	98.3	2005	EGY
9.3	2012	ALG	103.2	2017	EGY
NETTRDBAL					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
-34677	2016	EGY	17000	2011	ALG
-30369	2015	EGY	24201	2005	ALG
-27450	2016	ALG	30125.6	2007	ALG
-27349	2017	EGY	31947	2006	ALG
-26830	2014	EGY	32476.3	2008	ALG

Table 4: Extreme Observations for Control Variables

Unemploy					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
8.517	2008	EGY	15.514	2016	TUN
8.757	2010	EGY	15.934	2013	TUN
8.8	2007	EGY	16.022	2019	TUN
8.91	2011	MOR	17.63	2012	TUN
8.96	2009	MOR	18.334	2011	TUN

Inflation					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
-0.0088	2015	JOR	0.13814	2016	EGY
-0.0078	2016	JOR	0.13971	2008	JOR
-0.0074	2009	JOR	0.14402	2018	EGY
0.00196	2019	MOR	0.18317	2008	EGY
0.00442	2014	MOR	0.29507	2017	EGY

POPUGR					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
0.8	2005	TUN	5.13663	2009	JOR
0.93445	2006	TUN	5.30904	2013	JOR
0.97676	2013	TUN	5.3426	2010	JOR
0.97862	2012	TUN	5.5304	2011	JOR
1.00267	2011	TUN	5.5818	2012	JOR

Note:

GDPC is in percentage – FDI and GGGD are the percentages of GDP – NET TRDBAL is in Millions –Inflation, Unemploy, and Popugr in percentage.

Table 5: Extreme Observations for Governance Indicators

GE					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
-0.8774	2013	EGY	0.30885	2008	TUN
-0.8227	2014	EGY	0.38139	2009	TUN
-0.8085	2012	EGY	0.38188	2005	TUN
-0.7695	2015	EGY	0.46867	2007	TUN
-0.6595	2016	EGY	0.64352	2006	TUN

RL					
Lowest			Highest		
Value	Year	Country	Value	Year	Country
-0.8639	2015	ALG	0.38737	2007	JOR
-0.8639	2017	ALG	0.39297	2013	JOR
-0.8574	2016	ALG	0.41155	2008	JOR
-0.8155	2019	ALG	0.43943	2015	JOR
-0.8077	2011	ALG	0.46421	2014	JOR

Note:

GE and RL score scale from -2.5, the lowest to 2.5 the highest.

2. Correlation Analysis

2.1 Multicollinearity Diagnostics Tests

Correlation analysis is vital in quantitative analysis to check if there are multicollinearity problems in our model or highlight the omitted variables among all variables we are using. Table 6 is the first step for checking this problem to ensure that no independent variables fall below 0.1 in tolerance; the lowest tolerance is for the RL variable, a control variable by .07. Regarding the variance of inflation, there are no independent variables having a value of more than 10. However, RL has the highest value with 13.6.

As a review of Table 7 results, the collinearity diagnostics are presented. In this table we have to look at the eigenvalue and the condition index columns and their relationship. The values in eigenvalue should not to be small or very close to zero and in the condition index value should not to be high and if there is relation of small value in eigenvalue and condition index, we can indicate a multicollinearity problem. This study results shows that non of of the values match this condition.

Table 6: Variance Inflation factor and Tolerance

Variance Inflation Factor and Tolerance			
Parameter Estimates			
Variable	Label	Tolerance	Variance Inflation
Foreign Direct Investment	FDI	0.24477	4.08549
General Government Gross Debt	GGGD	0.22466	4.45111
Net Trade Balance	TRDBAL	0.24008	4.16525
Unemployment	Unemploy	0.74987	1.33357
Inflation	Inflation	0.51211	1.9527
Population Growth	popugr	0.46859	2.13407
Government Effectiveness	GE	0.12636	7.91377
Role Of Law	RL	0.07321	13.65904
Arab Spring	AS	0.23233	4.30431
Global Financial Crisis	GFC	0.36428	2.74514

Table 7: Collinearity Diagnostics Test**Collinearity Diagnostics**

Variable	Label	Number	Eigenvalue	Condition Index
Foreign Direct Investment	FDI	1	2.03352	1.79752
General Government Gross Debt	GGGD	2	1.05269	2.49832
Net Trade Balance	TRDBAL	3	0.42417	3.93575
Unemployment	Unemploy	4	0.33206	4.44823
Inflation	Inflation	5	0.25981	5.02887
Population Growth	popugr	6	0.12633	7.21194
Government Effectiveness	GE	8	0.12041	7.38693
Role Of Law	RL	9	0.04591	11.96348
Arab Spring	AS	10	0.02806	15.30187
Global Financial Crisis	GFC	11	0.0066	31.55366

As a conclusion from the above results and checking the multicollinearity, we can say that our model is clear from multicollinearity problems. There are no omitted variables that will negatively affect our regression analysis⁸. Using variance inflation and tolerance factors is highly recommended in the statistics literature on how to check the multicollinearity (Dianna & Henry M Jackson Foundation, 2017) mentioned how to check the problem and interpret the results was published by SAS enterprise. Also (Wu, 2019) discussed which method we have to use to test the variance's multicollinearity and interpreinflation factors⁹.

2.2 Intercorrelation Matrix Analysis

Table 8. Reports variables intercorrelation between each other. As expected, the Dependent variable correlates with some variables, and some other variables are not correlated. GDP per capita is positively associated with FDI by $r = .303$ with $p < .01$. However, there is a low correlation between GDP per capita and general government gross debt and net trade balance.

Regarding the control variables, GDP per capita is negatively correlated

⁸ As Dianna & Henry M Jackson Foundation (2017) mentioned that “Knowing your data and thinking about possible confounding interactions is certainly a best practices guideline, but multicollinearity analyses should still be conducted to test your theory before taking measures to combat something that is not there” they also mentioned that “Multicollinearity can be briefly described as the phenomenon in which two or more identified predictor variables in a multiple regression model are highly correlated. The presence of this phenomenon can have a negative impact on the analysis as a whole and can severely limit the conclusions of the research study and To check multi-collinearity is to use Variance Inflation Factor (VIF) for each independent variable. It is a measure of multi-collinearity in the set of multiple regression variables. The higher the value of VIF the higher correlation between this variable and the rest.”.

⁹

with the unemployment rate by $r = -.317$ with $p < .01$, the population growth rate by $r = -.446$ with $p < .01$, and low correlation with the Inflation rate. For the governance indicators variables, the Dependent variable has a low correlation with government effectiveness and the rule of law. For the dummy variables, the Arab Spring is strongly correlated negatively by $r = -.506$ with $p < .01$ and low correlation with the global financial crisis.

For the governance indicators variables, Government effectiveness positively affected the FDI by $r = .4637$ with $P < .01$ and negatively affected the Inflation by $r = -.413$ with $P < .01$. The rule of law is supporting government effectiveness. Regarding the dummy variables, the Arab Spring negatively correlated with all variables except general government gross debt, inflation, unemployment, and population growth with a positive correlation, which means the Arab Spring's negative impacts on the economy. The global financial crisis has no strong correlation with all variables, which means a low blow of that crisis than the Arab Spring revolutions.

Multicollinearity diagnostics tests and the intercorrelation matrix analysis are fundamental statistical procedures before going to the regression analysis, redundancy; two regressors might provide the same data or information about the dependent variable providing unreliable coefficients of the predictors. A vital explanatory variable can become useless as that feature has relationship with other predictors; also, the affected predictors' coefficients' standard errors shown to be large. Here, we cannot reject the H_0 of linear regression with equal to zero coefficient. This problem can lead a "Type II error" with believing that there isn't a significant effect of a predictor on the response variable when essentially there is a unobservable impact. This correlation analysis section can lead us to the next one for the regression analysis with a solid ground after understanding the variables and their correlations.

Table 8: Correlation Matrix

	GDPC	FDI	GGGD	NETTRD BAL	Unemploy	Inflation	popugr	GE	RL	AS	GFC
FDI	0.30354 0.0081***	1									
GGGD	0.01997 0.865	0.28259 0.014**	1								
NETTRD BAL	0.0247 0.8334	0.01646 0.8886	(-0.56963) <0.0001***	1							
Unempl oy	(-0.31716) 0.0056***	0.10328 0.3779	0.13189 0.2593	0.1558 0.1819	1						
Inflation	0.15488 0.1876	0.06684 0.5715	0.33022 0.0041***	(-0.3398) 0.0031***	(-0.02893) 0.8067	1					
popugr	(-0.44622) <.0001***	(0.4794) <.0001***	(0.20988) 0.0707*	(-0.1255) 0.2833	0.06891 0.5569	0.08962 0.4476	1				
GE	0.05731 0.6252	0.46374 <.0001***	0.08974 0.4439	0.13892 0.2346	0.2613 0.0235**	(-0.41362) 0.0002***	0.14343 0.2196	1			
RL	(-0.06354) 0.5881	0.58263 <.0001***	0.50992 <.0001***	(-0.0541) 0.6448	0.30606 0.0076***	(-0.19465) 0.0965*	0.39811 0.0004***	0.82366 <.0001***	1		
AS	(-0.5066) <.0001***	(-0.43232) 0.0001***	0.20155 0.0829*	(-0.43947) <.0001***	0.1965 0.0911*	0.01806 0.8786	0.02729 0.8162	(-0.23865) 0.0392**	(-0.11679) 0.3183	1	
GFC	0.11945 0.3074	0.08147 0.4871	(-0.24246) 0.0361**	0.15938 0.172	(-0.25816) 0.0253**	0.10513 0.3727	0.06835 0.5601	0.13724 0.2403	0.07004 0.5504	(-0.61237) <0.0001***	1

No. of Observations is 75

***P < 0.01; ** P < 0.05 *P < 0.1

3. Empirical findings

3.1 The Model Robustness

This research checked the model's robustness using several diagnostic tests, including AR with one and two lags, Sargan test of over-identifying restrictions for exogeneity¹⁰, and white and pagan tests for homoscedasticity. Regarding the Sargan test, the H0: over-identifying restrictions are valid, which means the null hypothesis says that instruments as a group are exogenous; hence, the insignificant p-value is preferred for the robustness of the model. By not rejecting the null hypothesis of the Sargan test, the model proved its validity, and the data in our hand is valid for the dynamic regression with all instruments (Arellano, 1992), (Arellano & Bover, 1995) and (Bond & Blundella, 1998). For our model, we are not rejecting the null hypothesis of the Sargan test with Prob > Chisq = .6463, which will be shown later in the regression analysis table. Sargan test is popularly used since Sargan (1958) proposed in his book. It has been used in several research types in many fields for testing over-identifying restrictions in the statistical models. He derived several variants in 1975.

¹⁰ As per SAS (2020) "Sargan test, is a test of the validity of the moment conditions that are conferred by the GMM instruments that were used. The p-value indicates that the moment conditions are not valid and that you should probably look for a set of instruments other than the default set that PROC CPANEL provides. The second diagnostic test is the AR (m) test for autocorrelation in the residuals. In well-fitting dynamic panel models, you expect to see some autocorrelation of lag 1, but any autocorrelation at higher lags indicates a poor fit. The autocorrelation at lag 2 is significant, leading you to seek a better-fitting alternative".

The second step for checking the robustness of our model is the AR (m) test. This test rejected the null hypothesis of AR1 that the coefficients on one lag are all zero but didn't reject the null hypothesis of AR2, reflecting our model in well-fitting dynamic panel models. The third step for checking the validity of the model is checking the Heteroskedasticity, which means unequal scatter in the context of residuals or error term; in another way, it is a change in the residuals' spread of the range of measured values. The reasons to check the homoscedasticity, Heteroskedasticity, don't cause bias in coefficient estimates, but it makes it less precise; lower precision increases the probability that the coefficient estimates are further from the correct population value (White, 1980). Furthermore, Heteroskedasticity tends to produce p-value that is smaller than they should be and increase the variance of coefficient estimates without detecting this increasing from the regression procedures, this problem can lead the researcher to conclude that a model term is statistically significant when it is actually not (White, 1980).

So, in white and pagan tests for checking the Heteroskedasticity, the null hypothesis is there is homoscedasticity, and the alternative hypothesis says Heteroskedasticity. In our model, we reject the H0 in both tests with $Pr > \text{Chisq} .2523$ in the white test and $Pr > \text{Chisq} .0645$ in the Pagan test; test results will be shown later in the regression analysis table.

By checking the validity of the data through the Sargan test, and by proving that our model can employ the Arellano-Bond with AR1, 2 test with the absence of the second-order serial correlation in AR2 and presence of serial correlation in AR1 which was expected due to the lagged value of the dependent variable. In addition to white and pagan tests that proved that our data doesn't have a Heteroskedasticity problem. We can interpret the regression analysis with a transparent background and solid ground of robustness.

3.2 Hypothesis Test and Regression Analysis

As I discussed in the empirical strategy section to establish and check whether the Arab Spring affects economic growth, estimation results are reported in Table 9 for the whole sample. As expected of a negative effect on growth, this study found that the Arab Spring and the global financial crisis to a lesser degree. Arab Spring in a significant negative relationship with the economic growth with coefficient -1.861 and P-Value $< .01$, which means that the Arab Spring reduced the growth of the GDP per capita by 1.9 % after the Arab Spring revolutions through the negative effects discussed before in the correlation analysis. The vital findings that the global financial crisis affected the economic growth lower than the Arab Spring event. The relationship between GDP per capita growth and global financial crisis has a coefficient of -1.527 with P-Value $< .05$, which means that the global financial crisis reduced the economic growth of the Middle East countries by 1.5 %.

While testing the macroeconomic independent variables of foreign direct investments inflow, general government gross debt, and net trade balance, we confirm the positive relationship between the FDIs inflow and the economic growth (Thi-Huyen, Duc Hong, Anh The, & Thang Cong, 2019), with coefficient 29.55 with P-Value $< .01$ which is mean that in our sample countries, 1 % percent increase in FDIs as a percentage of GDP will increase the GDP per capita growth rate by 29.5 %. We can also confirm the negative relationship between the general government gross debt and the GDP per capita growth (Bittencourt, 2011), with coefficient -0.0459 with P-Value $< .05$. A 1 % increase in the debts as a percentage of GDP will decrease the growth rate of GDP per capita by 4 %. We cannot confirm the influence of the net trade balance because the estimation is not significant. Hence, we can remind of the negative effect of the Arab Spring and global financial crisis on the foreign direct investments inflow by hesitating the investors to invest more money in those countries, moreover, the positive influence on the debts by straining the fiscal balances by experiencing such events and crisis.

These results are robust when other macroeconomic control variables are included in the model. The unemployment rate was found negatively correlated with the economic growth with coefficient -0.4141 with P-Value < .05, that 1 % increase in the unemployment rate will decrease the GDP per capita growth rate by 4.1 % found by (Dumitrescu Bogdan , Dedu , & Enciu , 2009). A positive correlation has been found between inflation rate and economic growth with coefficient 12.1750 with P-Value < .05, then explains of 1 % increase in the inflation rate will increase the GDP per capita growth rate by 12.1 % as found by (Lucas, 1973), (Gillman & Nakov, 2004) and (Anis, 2001). However, this relation between inflation and economic growth is debatable and controversial in theories and empirical findings through history¹¹. Population growth negatively correlated with the growth of GDP per capita by coefficient -1.442 with P-Value < .001. This strong correlation means a 1 % increased population growth will decrease the economic growth rate by 1.4 %, as found by Zhang (2015) and Barlow (1994).

We cannot address the relationship between the institutional developments measured by the governance indicators and the economic growth measured by GDP per capita growth rate because of the insignificance of both correlations, the negative one with the rule of law, and neither the positive relation with government effectiveness. However, this analysis drew the picture of the Arab Spring's impacts and the Global Financial Crisis on Egypt and Tunisia, those who experienced the Arab Spring revolutions, and Algeria, Jordan, and Morocco, those who didn't experience the event, which affected the region negatively.

¹¹ Friedman (1973) "succinctly summarized the inconclusive nature of the relationship between inflation and economic growth as follows:

Historically, all possible combinations have occurred: inflation with and without development, no inflation with and without development".

Table 9: Dynamic Regression Analysis (Arellano-Bond Model)

Parameter Estimates				
Variable	Label	Estimate	Standard Error	Pr > t
Intercept	Intercept	11.78817	2.3679	<.0001
GDPC (Lag 1)	GDPC, Lag 1	-0.25081	0.1066	0.0224
Foreign Direct Investment	FDI	29.5586	7.2849	0.0002***
General Government Gross Debt	GGGD	-0.04597	0.0191	0.0196**
Net Trade Balance	NETTRDBAL	-0.00003	0.000019	0.2039
Unemployment	Unemploy	-0.41413	0.1795	0.025**
Inflation	Inflation	12.17507	4.6983	0.0124**
Population Growth	popugr	-1.4424	0.2709	<.0001***
Role Of Law	RL	-0.8638	2.1475	0.6892
Government Effectiveness	GE	0.135303	1.5496	0.9308
Arab Spring	AS	-1.861	0.6835	0.0088***
Global Financial Crises	GFC	-1.52718	0.594	0.013**
Sargan Test		Pr > ChiSq	.6464	
AR(m) Test	A2 (1) Pr > Statistic	.0004 / AR (2) Pr > Statistic	.8091	
White Test		Pr > ChiSq	.2523	
Breusch-Pagan		Pr > ChiSq	.0645	
***P < 0.01; ** P < 0.05 *P < 0.1				

The regression analysis showed the correlation between all variables and their significance. This statistical inference is used for testing this research hypothesis to check whether rejecting the null hypothesis or accepting it. The first Null hypothesis (Ha0) was: Is the Arab Spring has not had a negative impact on the Middle East economies. According to the empirical findings and results, I can reject this (H0) and confirm (Ha1) the negative effect of Arab Spring on the Middle East countries under a 95 % significance level. Moreover, this study rejected the (H0) of the second hypothesis that the Arab Spring didn't influence the statistical trend. Hence, this study can confirm the influence of the Arab Spring on the statistical economic direction negatively.

The subsequent transition that happened in 2011 across the MENA region has created a insubstantial economic situation. Aside from the impact on social welfare, FDIs, essential goods, exports and imports, tourism and economic growth were all subject to unequivocal blows. In the post of the Arab Spring, the region experienced lower annual economic growth rates in production than many other developing nations in the world (Mahmoud, Ali, & Nathir , 2019).

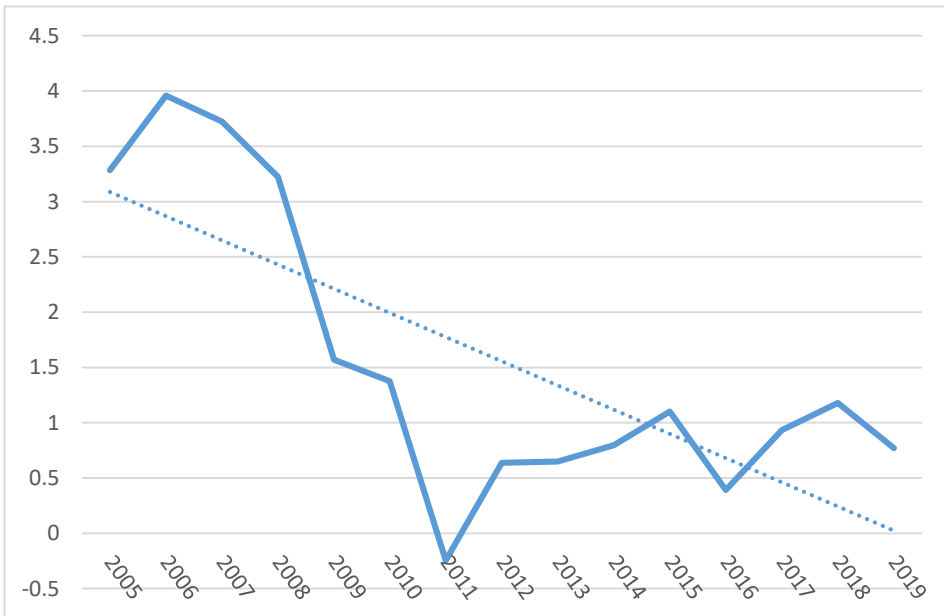
Hence, we can confirm the negative impact of the Arab Spring on the Middle East countries. This event has been acknowledged as one of the most historical events in the 21st century. It has been named as the process of change to democratization and spreading all over the Arab countries.

Chapter 6. Conclusion

1. Discussion

In this study, Arab Spring revolutions had been investigated whether it affects economic growth or not in Egypt, Tunisia, Algeria, Morocco, and Jordan. Annual data between 2005 and 2019 had been utilized as a research period. Other countries left behind due to the lack of data belonging to these countries. Figure 13 showing the GDP per capita growth rate for the same time and the effect of the Arab Spring on the Middle East in 2011 and the Global Financial Crisis in 2008. After these two crises, the Middle East countries are trying to reach back the average growth rate before these crises. In 2008 those countries lost more than 50 % of their growth rate. 2011 they reached -0.3% for the first time on average and how the Arab Spring was a massive burden on their fiscal budgets by losing more than 100% of their growth from 2008 to 2011.

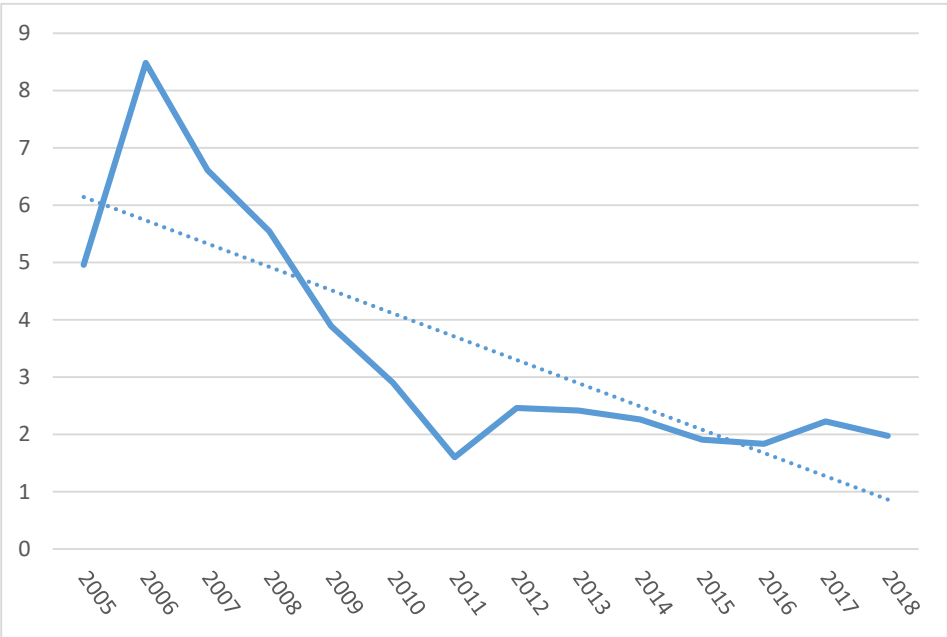
Figure 13: GDP per Capita Growth Rate from 2005 to 2019



Source: Adapted from WDI (2020)

There are many reasons for the decline in the GDP per capita growth rate, but one of these crucial reasons is the loss in FDI inflows, and in some countries, they faced a massive outflow of their FDI because of insecurity trustworthy. Figure 14 shows FDI inflows decline in the five countries starting from 2007 and 2008 till the deterioration in 2011 by almost 1% without exceeding 3% after nine years of these events. Hence, we can link the findings mentioned before in this study regression findings and how the FDI affect economic growth, one of the vital determinants of these countries' development. The most important reason for this decline in FDI growth is the security and instability in the Middle East, lasting until now. No investor can trust to invest in such an environment full of political unrest and civil wars in three borders countries. After nine years of instability, we can see the effect of the Arab Spring on the FDI inflows; in 2019, the Middle East countries need more than 9% of FDI growth to reach the same levels before 2008, hard to achieve but not impossible.

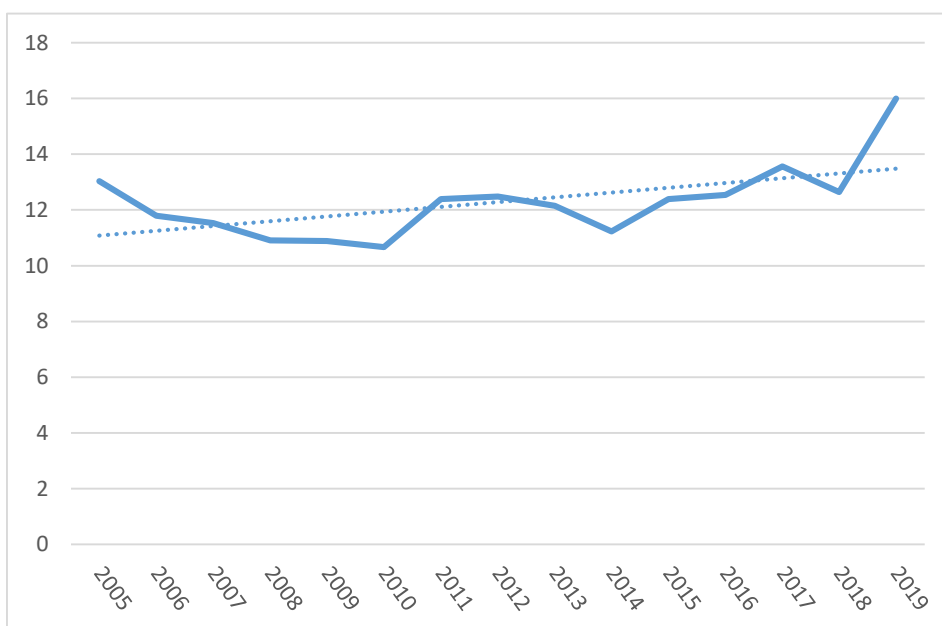
Figure 14: FDI growth rate from 2005 to 2018



Source: Adapted from WDI (2020)

Therefore, we can mention the unemployment rate's growth rate for the same period in figure 15, which shows the increasing unemployment rate and losing jobs, especially after 2011. As we can see, unemployment raised more after 2011 than the global financial crisis; more than 5% of the Middle East labor force lost their jobs in eight years instead of generating more jobs. The unemployment rate was one of the most important reasons for raising the Arab Spring, and decreasing the unemployment rate was in the revolutions' slogan. After around ten years, people are losing more jobs than getting it, which means that the revolutions didn't treat that reason good. Still, citizens in the Middle East are suffering from unemployment, and the governments should generate more jobs to avoid any discontent from their citizens and provide adequate social welfare. Increased unemployment came from the outflow and the decrease in FDIs inflows, as mentioned in the correlation analysis before. From the regression findings, this increase in unemployment negatively affected economic growth.

Figure 15: Unemployment rate from 2005 to 2019

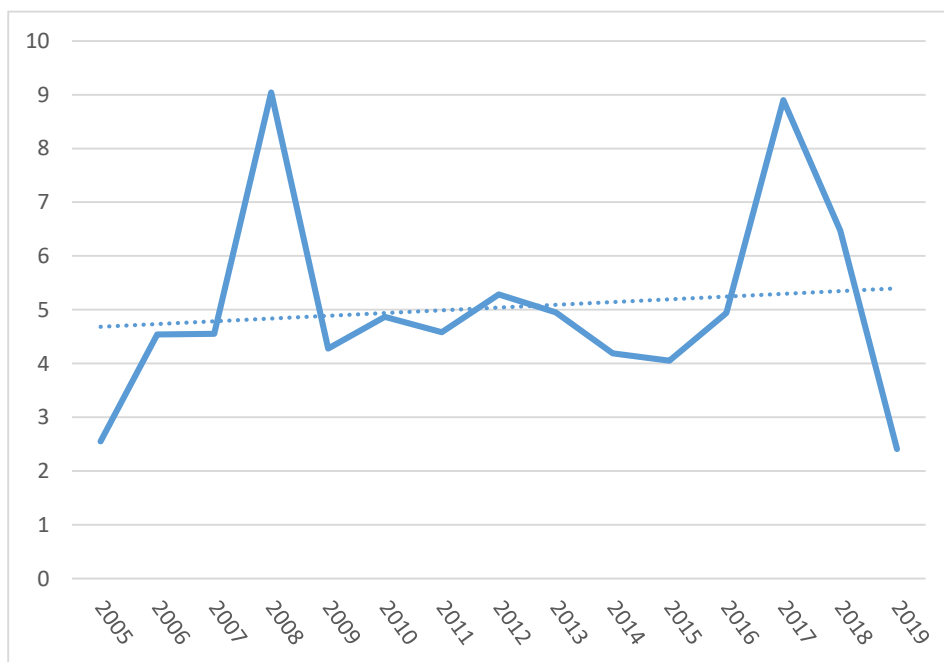


Source: Adapted from WDI (2020)

In addition to the unemployment rate, the inflation rate is different from FDIs and the unemployment rate. The effect of the global financial crisis was massive and raised by more than 5% in 2008 and recovered quickly in 2009 at its normal levels. The Arab Spring didn't affect the Inflation rate at all, as shown in figure 16. The inflation rate increased in 2017 and 2018 due to Egypt and Tunisia's economic reforms that affected the prices by more than 4% on average. The positive correlation we found earlier in the regression analysis between inflation and economic growth shows how the negative effect of inflation's stability on economic growth.

On the other hand, this stability in inflation supports Middle East citizens by raising the unemployment rate and job loss. But the higher inflation rate in the Middle East before the revolution was also one of the fundamental reasons for the revolutions. We can say here that the revolution didn't solve either the inflation problem among the Middle East countries.

Figure 16: Inflation rate from 2005 to 2019



Source: Adapted from WDI (2020)

As a result of civil disorders started in late 2010 and spread widely to the Middle East region and the countries nearby, authoritarian regimes had fallen in most of the region except the gulf countries and some countries for some other political reasons.

This study results can be shortened in five observations. First, civil disorders reduce the MENA's economic growth, not only for the countries experiencing the disorder but also for the whole region. Second, the Arab Spring revolutions negatively affect macroeconomic stability by its effect on the Foreign Direct Investment inflows, which is one of the vital growth determinants and cutting one of the essential income channels in the MENA countries, which is tourism. Third, the Arab Spring loaded the budget balance with increasing in the public debt directly after the global financial crisis, further compounding its impacts. Fourth, the Arab Spring affected negatively more than the global financial crisis impacts on the MENA region. Fifth, the governance indicators that are measuring government performance reflected the deterioration of these countries' institutions with more burden on economic growth.

Notably, we confirm expectations from conflicts, revolutions, and political instability, providing draining in fiscal balance and weakening economic growth (Bittencourt, 2011), In addition to model robustness, adding control variables with statistical procedures for checking data validity and giving more precision for the results by creating confidence in the research results.

2. Policy Recommendation

The correlations found in this paper may be significant for policymakers to develop some failures in previous policies before or after such events. The relation between Foreign Direct Investment and economic growth is fundamental, and policymakers have to develop and improve their countries' investment climate for more sustainable economic growth. FDIs boost the economy by introducing technology and reducing unemployment. Moreover, the relationship between economic growth and unemployment is vital to obtain growth in living standards. Suppose economic growth is below its normal levels. It is an indicator to stimulate employment because the rising income will reduce inflation pressure. On the contrary, if the growth is above the natural levels, the policymaker's decision will not severely promote job creation to obtain a sustainable growth rate without generating inflation. However, Working on the net trade balance is very important to obtain sustainable growth and reducing the draining of foreign currency reserves. The surplus in trade balance will attract more investors to invest in an economy clear from civil disorders and conflicts. The following are some suggestions and recommendations:

- Governments should work to reduce imports and replace goods that can be produced locally, considering the quality and efficiency of these goods that will help promote more jobs and lead to the possibility of exporting. It will also help stop the draining of the foreign currency reserves and positively affect the balance of payment and trade balance.
- Immediate effort in investment mapping and investment promotion geographically by giving advantages to remote areas and needed areas to attract FDIs by working on facilitating the procedure and implementation to meet the investor's needs.
- Working on better utilization of the PPP model that has been succeeded in other sectors
- Attracting the informal economic sector to enter the formal one by improving the accessibility procedures

- The Enhancement of infrastructure conditions with the necessary essential services and transportation is vital to increase the living standards and prevent people from discontent and integrating isolated communities.
- Pay more attention to income redistribution by enhancing the law of minimum and maximum salaries and achieving income and social equality.
- Reforms plans are needed in health care and education if these governments are looking to boost the economy sustainably.
- The Arab League Secretariat should initiate the implementation of the development and modernization process in the Arab World to enhance solidarity and growth. This initiation should include the settlement of disputes and conflicts to help for more stability in the whole region.
- Real involvement from the political parties will help the Arab countries to move forward to transparency and make political stability.
- Ensure the institutions' accountability and fill the gap between institutions buildings and strategic planning and monitoring by improving the idea that institutions serve the whole society.
- Governments should get closer care for the public institutions by modernizing them efficiently. These institutions would tolerate investors to work in a trustful economy and allow financial markets to be operated under better economic status with potential job creation. This closer attention should be more immediate to rebuilding these institutions in the post-conflict era, considering each country's specifications and its culture, fiscal burden, and economic condition. With globalization and the beginning of the artificial intelligence era, policymakers and governments should work faster to develop their public institutions to co-op with the fast development of technology. Facing the future of AI with this condition of institutions in the MENA region countries will make it harder to reach for the steady-state.
- Working on constituting social and financial policies to provide more employment for unemployed in the Middle East countries.
- Revising laws and giving people freedom is vital with the legal limit,

understanding that Western freedom cannot be transferred to all countries. Each state has its own culture and education level for understanding freedom.

- Low welfare levels, rising in unemployment rates, income inequality distribution among social classes is creating a community going to enhance the political stability not in the countries at issues but also in the countries nearby. This political stability will be more enhanced with high illiteracy rates, corruption, and deterioration in social welfare perspectives by adding more pressure on citizens to request change and better lives.
- The Tunisian government has to create more jobs and reduce the unemployment rate as it was one of the reasons that led to the revolutions in 2010
- The Algerian government has to work on economic diversity instead of depending on the oil economy, especially that the world is going for a green economy based on renewable energy.
- The Jordanian government has to develop policies related to population growth because of its negativity.

Middle East countries have a long way to go; these negative impacts will not stay permanent; for instance, Egypt, after the second revolution in 2013, reached the highest economic growth in 20 years by 5.6 % in 2018/2019. Also, it achieved the lowest unemployment rate in 30 years by 7.5 % in the mid of 2019, with the lowest inflation rate in recent records by 2.4 % in 2019. Plus, the succession in budget deficit reduction from -12.5 % in 2016 to -8 % in 2019. These figures indicate and conclude that there is a way to move on from such events' negative economic consequences; the practice still opens for the other Middle East countries to get on the road for development and growth.

3. Limitation of the Study

Nevertheless, it is essential to highlight the limitation of this study. The most important is adding more countries to the research to understand better the whole region and the impacts on gulf and north gulf countries. This paper drew a picture of the economic implications of the Arab Spring countries. However, it didn't quantify the political and social impacts of the Arab Spring on the MENA region that might be negative or positive from removing authoritarian regimes and comparing it with the current ones.

Moreover, the post-shock period is concise in evaluating the Arab Spring's long-run impacts on the Middle East countries' economies or studying with the synthetic counterpart model. Further research can investigate the convergence in countries' economic growth in terms of long-run or steady-state characteristics (Barro R. , 2012); doing this kind of paper requires long-term data, and it is beyond our study scope.

It would be interesting to examine the Arab Spring's impacts on the microeconomic indicators and understand how the firms and households were affected by the Arab Spring revolutions. It would also be valuable to study the effects on poverty, multidimensional poverty, inequality, and youth; it will help policymakers work on tools to ease the revolutions' impacts.

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국문초록

중동 아랍의 봄의 경제적 영향

이집트, 튀니지, 알제리, 모로코, 요르단의
사례를 중심으로

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이후 2011년 1월 '아랍의 봄'으로 알려졌던 시민 소요가 중동 전역으로 빠르게 확산되면서, 도미노 효과로 강력한 특정 정치체제의 붕괴를 초래하였다. 이 현상은 다중을 놀라게 했고 곧 모든 학문적 논쟁과 토론의 화두가 되었다. 정치적 충격 직후, 이의 경제적 충격을 평가하기 위한 논쟁들이 이어졌다. 이 사건은 직접적으로 영향을 받은 주에만 국한된 것이 아니라 전체 지역에 영향을 주었다. 본 연구는 중동 5개국에 대한 2005년부터 2019년까지의 연간 데이터를 사용하여 "Arellano-Bond" 동적 패널 추정을 통해 아랍의 봄의 충격과 영향을 분석한다. 본 연구에서는 중동의 경제성장에 있어 글로벌 금융위기보다 아랍의 봄이 더욱 부정적인 영향을 끼쳤다고 평가했는데, 이러한 결과는 충분한 실증적 증거에 의해 뒷받침되었다.

주제어: 아랍의 봄, 경제 성장, MENA, 패널 데이터

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