Investigating the Economic Situation of Iran, Turkey, and the UAE before and after Emergence of Corona Virus Through a Comprehensive Overview of Global Economic Indicators

Saman Safarchi

Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master
of
Business Administration

Eastern Mediterranean University
September 2020
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

<div style="text-align:right">

Prof. Dr. Ali Hakan Ulusoy
Director

</div>

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Business Administration.

<div style="text-align:right">

Prof. Dr. Melek Şule Aker
Chair, Department of Business
Administration

</div>

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Business Administration.

<div style="text-align:right">

Prof. Dr. Melek Şule Aker
Supervisor

</div>

Examining Committee

1. Prof. Dr. Ahmet Aker

2. Prof. Dr. Melek Şule Aker

3. Assoc. Prof. Dr. Emrah Öney

ABSTRACT

The role of health as a determinant component of human capital for well-being and consequently as a key factor of economic growth has been the subject of major research attention (Alsan et al., 2006). In this regard, the need for conducting scientific research to find out how all economic indicators will be impacted by COVID-19 pandemic is undeniable to be as a guideline for the governments for adjusting its policies to alleviate the economics losses of the global pandemic.

In order to come up with statistically meaningful findings, E-Views software is used as the program for data analysis. The data is gathered from the World Bank database as well as Trading Economics. Three time series data developed for three separate countries during a time period between 2000 and 2019 which encompasses four indicators. Hence, totally 20 observations were used for each indicator and for every country separately in the analysis. GDP Growth (annual percentage growth rate of GDP at market prices), Inflation Rate (GDP deflator), Unemployment Rate, and Human Development Index (HDI) were our four indicators. GDP Growth was considered as dependent variable and three others are taken as independent or explanatory variables. The assumption is that GDP growth would be influenced by the changes in the independent variables. Then, for choosing country, we decided to select countries on the basis of HDI in a way that each country can be a representative country for low, medium, and high HDI group. Based on the results of the analyses, with respect to the Iran's outcomes, HDI is the only variable that has significant effect on GDP Growth and this effect is positive as expected. With regard to the Turkey, out of three independent variables, Unemployment Rate and HDI have significant effect on

GDP Growth with negative and positive impact accordingly. When it comes to the UAE, it can be seen that all three independent variables have significant effect on GDP Growth. Additionally, the investigation of economic situation of three countries reveals that those countries that have higher Human Development Index (HDI) before COVID-19 pandemic have better statistics after COVID-19 pandemic; specifically, less decrease in GDP Growth, less increase in Unemployment Rate, and less increase in Inflation Rate relative to countries with lower HDI. Thus, as expected, for the time being, UAE has the best situation relative to the other two countries.

Keywords: COVID-19 Pandemic, GDP Growth, Unemployment Rate, Inflation Rate, HDI, Iran, Turkey, UAE.

ÖZ

Beşeri sermayenin belirleyici bir bileşeni ve devamı büyümenin kilit bir faktör olarak sağlığın rölesi, araştırmanın büyük konusu olmuştur (Alsan ve diğerleri, 2006). Bu bağlamda, tüm ekonomik göstergelerin COVID-19 pandeminden nasıl etkileneceğini bulmak için araştırma yapma ihtiyacını, hükümetler için politikalarını hafifletmek için ayarlamaya yapılacak neleri külbütör içinde bir kılavuz olması yadsınamaz. küresel pandeminin ekonomik kayıpları.

İstatistiksel olarak anlamlı bulgular ortaya çıkarmak için veri analizi programı olarak E-Views yazılımı kullanılmaktadır. Veriler, Dünya Bankası veri tabanından ve Ticaret Ekonomisinden toplanır. 2000 ile 2019 arasındaki bir dönemde üç ayrı ülke için geliştirilen ve dört göstergeyi içeren üç zaman serisi verisi. Bu nedenle analizde her gösterge ve her ülke için ayrı ayrı toplam 20 gözlem kullanılmıştır. GSYİH Büyüme (GSYH'nin piyasa fiyatlarına göre yıllık yüzde büyüme oranı), Enflasyon Oranı (GSYİH deflatörü), İşsizlik Oranı ve İnsani Gelişme Endeksi (İGE) dört göstergemizdi. GSYİH Büyümesi bağımlı değişken olarak kabul edildi ve diğer üçü bağımsız veya açıklayıcı değişkenler olarak alındı. Varsayım, GSYİH büyümesinin bağımsız değişkenlerdeki değişikliklerden etkileneceğidir. Daha sonra ülke seçimi için İGE bazında her ülkenin düşük, orta ve yüksek İGE grubu için temsili ülke olabileceği şekilde ülkeleri seçmeye karar verdik.

Analiz sonuçlarına göre İran'ın çıktılarına ilişkin olarak İGE, GSYİH Büyümesi üzerinde önemli etkiye sahip tek değişkendir ve bu etki beklendiği gibi olumludur. Türkiye ile ilgili olarak, üç bağımsız değişkenden İşsizlik Oranı ve İGE'nin GSYİH

Büyümesine önemli etkisi var ve buna bağlı olarak olumsuz ve olumlu etki yapıyor. BAE'ye gelince, her üç bağımsız değişkenin de GSYİH Büyümesi üzerinde önemli etkiye sahip olduğu görülebilir. Ek olarak, üç ülkenin ekonomik durumunun incelenmesi, COVID-19 pandemisinden önce daha yüksek İnsani Gelişme Endeksi (İGE) olan ülkelerin COVID-19 pandemisinden sonra daha iyi istatistiklere sahip olduğunu ortaya koymaktadır; özellikle, daha düşük İGE'ye sahip ülkelere göre GSYİH Büyümesinde daha az azalma, İşsizlik Oranında daha az artış ve Enflasyon Oranında daha az artış. Dolayısıyla, beklendiği gibi, şimdilik BAE diğer iki ülkeye göre en iyi duruma sahip.

Anahtar Kelimeler: COVID-19 pandemisi, GSYİH Büyümesi, İşsizlik Oranı, Enflasyon Oranı, İGE, İran, Türkiye, BAE.

ACKNOWLEDGEMENT

Firstly, I would like to express my sincere gratitude to my supervisor Prof. Dr. Melek Şule Aker for the continuous support for my master study and related research, for her patience, motivation, and immense knowledge. Her guidance helped me in all the time of research and writing of this thesis.

Last but not the least, I would like to thank my parents and wife for supporting me spiritually throughout writing this thesis and my life in general.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

INTRODUCTION AND AIMS OF THE RESEARCH

1.1 Introduction

The role of health as a determinant component of human capital and consequently as a key factor of economic growth has been the subject of major research attention (Alsan et al., 2006). Health actually plays an obvious role in determining physical capacities (e.g. strength, stamina, and endurance) and mental capacities (e.g. cognitive functioning, reasoning ability, intelligence). Health is therefore an important form of human capital, the improvement of which could enhance workers´ productivity (Kawachi et al., 1999). Notwithstanding widespread recognition that population health is an important factor in strengthening economies and reducing poverty, health and longevity have remained prominently a subject in the field of epidemiology and demographics (Suhrcke et al., 2005).

The new virus was realized as novel Coronavirus and was primarily named 2019-CoV; thereafter, it was renamed under the title of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and the disease it causes is currently called Coronavirus Disease-2019 (COVID-19) by the WHO (WHO, 2020). The COVID-19 pandemic has brought so much trouble to most economies throughout the world. The World Health Organization (WHO) declared COVID-19 as a pandemic after identifying more than 118,000 cases in 114 countries over the world in March, 2020 (WHO, 2020).

In this regard, the need for conducting scientific research to find out how all economic indicators will be impacted by COVID-19 pandemic is a guideline for the governments for adjusting its policies to alleviate the economic losses of the global pandemic. In order to quantify the health of an economy, economic indicators such as unemployment rate, Inflation rate, Human Development Index (HDI) alongside with the growth of the economy's GDP are selected as key indicators (Gourinchas, 2020; Saez and Zucman, 2020; McKibbin and Fernando (2020). Current study likewise has adopted the above indicators to assess the economic impact of COVID-19.

1.2 Problem Description

There is still a lot of uncertainty about the effects of COVID-19 and the possible responses of governments to limit the human and economic effects of epidemics. The question is that how is the normal course of economic recovery of countries that have experienced an economic crisis and how they can reach a healthy economy?

Looking at the history of crises like COVID-19 such as the 1968 flu (called Hong Kong flu), SARS (2003), H1N1 (2009), MERS (2012), Ebola (2014) and Zika (2016), we can say that the economic impact of COVID-19 will be greater. On the average, GDP growth in affected countries by COVID-19 is about 2.4% higher than that of the affected countries by SARS (ILO, 2020). The slowdown in GDP growth follows a rapid recovery in the previous health crises. In COVID-19 the countries have one percent lower growth than countries affected by the previous crisis. However, after a period of the initial boom during that first year, economic growth stops, and GDP growth may remain steadily low in the affected countries by COVID-19 (ILO, 2020).

The decline in GDP growth is on average much lower in low-income countries with health crises than in developed countries with health crisis. However, advanced economies are expected to suffer severely due to the COVID-19 crisis, too (Eurostat, 2020). World trade volumes are expected to decrease by 32 percent in 2020 (Eurostat, 2020).

Given the decline in global GDP, according to IMF (2020) estimates, it is expected that the share of people who live in extreme poverty may increase from 0.8 percent to 1.5 percentage points. This is equivalent to an increase of 50 to 70 million poor people for 2020 compared with initial estimates. Other figures, using various forecasts for GDP growth and the poverty line, show an increase of nearly 420 million people living in extreme poverty (IMF, 2020).

The unemployment rate is at an unprecedented level. The third edition of ILO (2020) monitors the impact COVID-19, claims that the share of workers affected by the temporary closure of the workplace has fallen from 81 percent to 68 percent over the past two weeks. However, casualties are still high during working hours. Hence, it is expected to reduce the hours of work in all areas, "America" and "Europe and Central Asia", respectively, to 12.4 and 11.8 percent (World Bank, 2020).

New evidence-based on the UNIDO Industrial Production Data Collection (2020) provides a preliminary picture of the impact of COVID 19 on manufacturing sectors in 48 countries. As far as inclusiveness is concerned, the data allows us to record the initial trends (the data are adjusted seasonally to take into account that countries produce different volumes of goods at different times of the year). Sample of 48 countries, including 30 high-income countries, 15 middle-income and lower-middle-

income countries in America, Europe, and Asia are analyzed (WHO, 2020). When comparing the data for the period of March 2020 versus December 2019 (before the crisis) and in March 2020 vs. March 2019 (annual approach), the majority of countries considered (77% and 72%) recorded negative IIP growth. The average negative growth rate in 48 countries is -4.8 percent and -4.6 percent, respectively (WHO, 2020).

According to what was said and sensitive situation during the crisis COVID-19 in this study, the economic indicators of three strategic countries in the Middle East namely Iran, UAE, and Turkey before and after crisis COVID-19 is analyzed. Given the share of GDP in these countries and other economic indicators, the results of this study could ultimately contribute to the understanding of recession due to COVID-19.

1.3 Control Description

As expected, the economic and social growth of the world is getting worse with the COVID-19 pandemic. This is well reflected in the latest human development index forecasts for 2020. "The world has seen many crises over the past 30 years, including the 2007-09 global financial crisis, each of which has made human progress, but, more generally, the world's development gains year after year," said UNDP chief Achim Steiner (2020). However, COVID-19 - with its tripartite effect on health, education, and income - may change this trend and recovery may take years (Eurostat, 2020).

Data for the first quarter of 2020 show that the COVID-19 epidemic has reduced the value of global trade by 3% (IMF, 2020). The recession is expected to accelerate in the second quarter of 2020 according to the latest UNCTAD estimate. Global trade is expected to record a quarter of 27 percent decline (World Bank, 2020). North America and Asia are expected to suffer more from declining global trade. It is expected that in

almost all areas, even in the most optimistic scenarios, we will see a two-digit decrease in trade volume. In regional comparisons, North America and Asia are expected to have the most negative impact on their exports (IMF, 2020). In this study, by comparing the economic indicators of the three countries of Iran, UAE, and Turkey, we seek to answer this question and suggest solutions for effective political policies to reduce the effects of the COVID-19 crisis and accelerate the recovery process.

1.4 Aims and Objectives of the Research

In this study, we aim to discuss the relationship between GDP Growth, Unemployment rate, Inflation Rate, and Human Development Index (HDI) in Iran, UAE, and Turkey and compare the results of these three countries. Moreover, the research aims to discover whether or not the countries that have higher HDI, have been experiencing lower decrease in GDP Growth (if any) after the occurrence of COVID-19 pandemic. The target countries are selected according to their Human Development Index (HDI). In other words, the research tries to answer whether HDI rating has any effect on GDP growth in these three countries in relation to COVID-19 crisis.

Principal objectives are the following:

- ✓ To find the relationship between GDP Growth and Unemployment Rate in Iran.
- ✓ To find the relationship between GDP Growth and Inflation Rate in Iran.
- ✓ To find the relationship between GDP Growth and HDI in Iran.
- ✓ To find the relationship between GDP Growth and Unemployment Rate in Turkey.
- ✓ To find the relationship between GDP Growth and Inflation Rate in Turkey.
- ✓ To find the relationship between GDP Growth and HDI in Turkey.

- ✓ To find the relationship between GDP Growth and Unemployment Rate in UAE.

- ✓ To find the relationship between GDP Growth and Inflation Rate in UAE.

- ✓ To find the relationship between GDP Growth and HDI in UAE.

- ✓ To find the relationship between HDI and other factors; GDP Growth, Inflation Rare, and Unemployment Rate.

- ✓ To find the relationship between HDI and GDP reduction (if any) after COVID-19 pandemic.

- ✓ To find the relationship between HDI and increase in Unemployment Rate (if any) after COVID-19 pandemic.

- ✓ To find the relationship between HDI and increase in Inflation Rate (if any) after COVID-19 pandemic.

1.5 Structure of the Thesis

The thesis is structured as follows:

Literature review and empirical models are explored in chapter 2. In chapter 3 we look into methodology of the present study. Formulation of our hypothesis, results and other analysis are explained in chapter 4. The conclusion is placed in chapter 5 as well as limitations and suggestions for further related studies.

Chapter 2

LITERATURE REVIEW

2.1 Previous Studies

As COVID-19 unfolds, many researchers are trying to think about the economic impact of the pandemic from a historical perspective.

From a pessimistic point of view, Fornaro and Wolf (2020) modelled the impact of Covid-19 on macroeconomic policy so as to evaluate the macroeconomic implications of the pandemic. They claimed that Covid-19 would cause a negative supply shock to the world economy by forcing factories to shut down and consequently disrupting global supply chains (OECD, 2020). The virus also decreases the worldwide demand. They found that corona virus caused a fall in demand and involuntary unemployment. Social distancing impaired the ability of households to spend. The macroeconomic impact of a negative supply shock was triggered by the coronavirus spread. Economic agents become pessimistic about future growth, employment and economic activities. The research resulted that the coronavirus would effect a short-lived negative supply shock. Drastic policy impacting employment and productivity.

According to Baker *et al.* (2020b), COVID-19 has led to massive spike in uncertainty, and there are no close historical parallels to this. Because of the speed of evolution and timely requirements of data, the authors suggest that there is a need to utilize forward-looking uncertainty measures to ascertain its impact on the worldwide economy. Using

a real business cycle (RBC) model, the authors find that a COVID-19 shock leads to year-on-year contraction of GDP by 11 percent in 4th quarter of 2020. According to the authors, more than half the contraction is caused by COVID-19-induced uncertainty.

Other researchers have examined the role of global supply chains. Bonadio *et al.* (2020) use a quantitative framework to simulate a global lockdown as a contraction in labor supply for 64 countries. The authors find that the average decline in real GDP constitutes a major contraction in economic activity, with a large share attributed to disruptions in global supply chains.

Elenev *et al.* (2020) model the impact of COVID-19 as a fall in worker productivity and a decline in labor supply which ultimately adversely affect firm revenue. The fall in revenue and the subsequent non-repayment of debt service obligations create a wave of corporate defaults, which might bring down financial intermediaries.

Using transaction-level household data, Baker *et al.* (2020) find that households sharply increased their spending during the initial period in specific sectors such as retail and food spending. These increases, however, were followed by a decrease in overall spending.

The studies on the short-run and medium-run specific macroeconomic variables on the impact of Covid-19 on the performance of these variables for aggregate 'Europe' (i.e. France, Germany, the Netherlands, Italy, Spain and the United Kingdom). Jorda et al. (2020) discovered that the macroeconomic outcome of Covid-19 is similar to that of the great historical pandemic of the last millennium that caused low returns to assets,

low investment opportunities because of the excess capital per unit of surviving labour and increased inclination to save as well as the rise in precautionary savings in a bid to rebuild depleted wealth.

Ludvigson *et al.* (2020) find that, in a fairly conservative scenario without non-linearity, pandemics such as COVID-19 are tantamount to large, multiple-period exogenous shocks. Using a 'costly disaster' index, the authors find that multi-period shocks in US (assumed to be a magnitude of 60 standard deviations from the mean of the costly disaster index for a period of 3 months) can lead to a 12.75 percent drop in industrial production, a 17 percent loss in service employment, sustained reductions in air travel, and macroeconomic uncertainties which linger for up to five months.

Coibion *et al.* (2020b) use surveys to assess the macroeconomic expectations of households in US. They find that it is primarily lockdowns, rather than COVID-19 infections, that lead to drops in consumption, employment, lower inflationary expectations, increased uncertainty, and lower mortgage payments.

Mulligan (2020) assesses the opportunity cost of "shutdowns" in order to document the macroeconomic impact of COVID-19. Within the National Accounting Framework for the US, the author extrapolates the welfare loss stemming from "non-working days", the fall in labor-capital ratio resulting from the absence/layoff of workers, and the resulting idle capacity of workplace. After accounting for dead-weight losses stemming from fiscal stimulus, the replacement of normal import and export flows with black market activities, and the effect on non-market activities (lost productivity, missed schooling for children and young adults), the author finds the welfare loss to be approximately $7 trillion per year of shutdown. Medical innovations

such as vaccine development, contact tracing, and workplace risk mitigation can help offset the welfare loss by around $2 trillion per year of shutdown.

Binder (2020) conducted an online survey of 500 US consumers to understand their concerns and responses related to COVID-19, which indicated items of consumption on which they were spending either more or less. They find that 28 percent of the respondents in that survey delayed/postponed future travel plans, and that 40 percent forewent food purchases. Interestingly, Binder (2020) finds from the surveys that consumers tend to associate higher concerns about COVID-19 with higher inflationary expectations, a sentiment which is found to be a proxy for "pessimism" or "bad times".

In order to analyze the economic impact at a higher frequency, Lewis *et al.* (2020) developed a weekly economic index (WEI) using ten different economic variables to track the economic impact of COVID-19 in the US. According to the study, between March 21 and March 28, the WEI declined by 6.19 percent. This was driven by a decline in consumer confidence, a fall in fuel sales, a rise in unemployment insurance (UI) claims, and other variables. Similarly, Demirguc-Kunt *et al.* (2020) estimate the economic impact of social distancing measures via three high-frequency proxies (electricity consumption, nitrogen dioxide emissions, and mobility records). The authors find that social distancing measures led to a 10 percent decline in economic activity (as measured by electricity usage and emissions) across European and Central Asian countries between January and April.

Loayza and Pennings (2020) examined the conduct of macroeconomic policy in the time of Covid-19 in for developing countries. They argued that the pandemic demonstrates both global public health emergency and an international economic

depression whose consequences surpassed the worldwide financial crisis of 2008-2009. The study revealed that, firstly; the human and economic expense of the Covid-19 are higher in developing countries due to the structure of their economies which aggravates the effect of shutdowns and fall in economic activities. Secondly, indicators such as lower health care capacity, larger informal sectors, shallower financial markets, less fiscal space, and poorer governance are more likely to stymie the gains of sundry containment measures taken. In order to cut down the vulnerability of citizens as a result of the pandemic, a viable macroeconomic policy that would empower monetary transmission and fiscal space as well as increase fiscal multipliers is valuable. This would guarantee macroeconomic stability and enrich the quality of governance.

Allen & Weert (2020) carried out an explanation for the late arrival of Covid-19 and the rapid spread across Brazil. The pandemic, and the health policy response to it, have essentially resulted in two shocks for Brazil: an external shock, including foreign demand and prices; and a domestic shock, as domestic demand and supply are affected by consumers' decision to avoid physical interactions, and by the restrictions on eco-nomic activity imposed to prevent contagion. In addition, as a net oil exporter, Brazil has also been hit by the oil price shock. Due to a sharp decline in demand, oil prices have been reduced by half, with some contracts even falling into negative territory in April 2020.

According to a study in Thailand conducted by World Bank (2020), an estimated 8.3 million workers will lose employment or income because of COVID-19 crisis, which has put many jobs, in particularly those related to tourism and services, at risk. The report finds that the number of economically insecure, or those living below USD 5.5

per day (in purchasing power terms), is projected to double from 4.7 million people in the first quarter to 9.7 million people in the second quarter of 2020. In particular, the share of economically insecure middle-class households with workers in the manufacturing and services sector will rise by three-fold, from 6 percent to 20 percent.

Boissay and Rungcharoenkitkul (2020) conducted an early study of the macroeconomic impact of Covid-19 using the Iranian data, most especially relative to past pandemics. Basic macroeconomic repercussions of past epidemics such as the 1918-19 Influenza, SARS (2003), H5N1 avian influenza (2003-19), Ebola (2014-16) and the present Covid-19 pandemic comprise: decrease in GDP growth and fall in manufacturing production activities, relative to other cases. They discovered the economic expenses of the Covid-19 pandemic could be proxied by GDP foregone, specifically on the basis of the comparison between the present GDP forecast and the Covid-19 outlook. In the light of the April 8th Iran data, the examination predicted that Covid-19 would cause output loss which varied around 5-9 percent for the Iran and between 4 and 4.5 percent for the global economy. The research suggested that the extent to which we reach a better understanding of the transmission channel of the Covid-19 shock to the economy, we will be able to have the better interaction between economic decisions and the pandemic and the policy trade-off would assist in reducing the macroeconomic effect of the pandemic.

A study by Teichler (2020) showed that the outbreak has a negative impact on almost all sectors. On average, the main three sectors (industry, service, and finance) are affected almost equally, while differences are observed at the sub-sectoral level. In particular, machinery, sports, tourism, transportation, banking and insurance sectors are among the most hard-hit sectors. On the other hand, food, beverage, wholesale and

retail trade are the less affected sectors due to high demand for these goods and the governmental support measures taken towards ensuring food availability in the country. These results suggest that the Turkish stock market has adjusted to some extent to the uncertainties caused by the outbreak, but the shock does not seem to be devastating in magnitude.

Similarly, Stock and Watson (2020) concluded that along with the Covid-19, oil price is falling down at the global level. This situation is vital for Turkey because the Turkish economy heavily depends on imported primary energy sources such as oil and natural gas and current decline in this commodity might ensure to close the current account deficit. In line with economic and population growth, energy demand and usage have been increasing, and the share of imported energy in total energy use is around 75%. Therefore, both the quantity and prices of these sources affect the economic progress, resilience of sectors and consumers, and also the country's current account balance.

Finally, a study performed by Harvey and MacDonald (2020) in UAE, with regard to the government's policy to provide mass quarantine largely free of charge, the data showed that Vietnamese citizens today did not have to worry about costs from COVID-19 tests (formal or informal), associated hospitalization, and centralized quarantine, thereby increasing their willingness to comply with extensive contact tracing and strict quarantine measures.

2.2 Conceptual Framework

The coronavirus has had a significant impact on the global economy in the short term. From stock markets to labor markets, emerging markets, and poor and vulnerable economies, the harmful effects of this unknown virus will be felt during this time and

in the coming months (Andren and Martinsson, 2020). According to some forecasts, the negative effects of the virus will lead to a 12 percent contraction in the global economy in recent months (Andren and Martinsson, 2020). During this period, the worst price drop in the world's stock markets occurred since the Great Depression, which was accompanied by a 60% drop in oil prices (Williams, 2020). This trend may continue, as the virus is still spreading rapidly and is likely to keep a large part of the engine of global economic growth. Accordingly, economic institutions and banks are looking to revise and reduce their previous forecasts for economic growth for the second quarter of 2020, and there are still expectations of further turmoil in the financial markets (Leuven and Louvain-la-Neuve, 2020). In this chapter, we'll look at how the coronavirus spreads, its impact on the global economy, as well as its effect on Iran, Turkey, and the UAE.

2.3 COVID-19

In the last 18 years, the world has seen three episodes of coronaviruses, known as respiratory and intestinal complications in humans. In the first instance, the outbreak of acute respiratory syndrome caused by SARS-CoV during 2002 in Guangdong, China, affected 80,988 people in 37 countries (Smith, 2020). Later, another outbreak of Middle East Respiratory Syndrome (MERS-CoV) occurred in the Middle East in 2012. Recently, however, the deadliest member of known coronaviruses to date appeared in Wuhan, China, which quickly spread throughout China and became an epidemic in the world. In the first 40 days after its outbreak, the new coronavirus (SARS-CoV-2) killed more than 1,800 people and infected more than 75,000 (Smith, 2020). The SARS-CoV, is reported to be similar to the SARS-CoV-2, which originates from market dust, from wildlife animals that have been transferred to the wildlife market. So far, the source of the zoonotic has not been confirmed, however, some bats

and snakes have been reported to be the main source and transmission venue. However, it is believed that all infected human viruses originated from animals before being transmitted to humans (Tyre and Braunstein, 2020).

The COVID-19 epidemic has become a serious challenge for health officials, the scientific community and infection control agencies around the world in terms of prevalence, treatment, and prevention (Fields, 2020). Pneumonia seems to be the most common complication of infection in humans, primarily characterized by fever, cough, shortness of breath, and bilateral side effects on chest. The overall mortality rate is not known, but it appears to be around 3%. Most deaths occur in patients with medical side effects. However, the prevalence of COVID-19 not only endangers physical health but also mental health, although health officials focus primarily on physical health (Quillen, 2020).

2.3.1 The impact of COVID-19 on the world economy

The Covid-19 virus has caused a widespread backlash in most countries around the world, and since its inception, the Covid-19 risks have been aggressively devaluing different classes of assets, with some arguing that the end result is a global economic downturn. Currently, the common question among economic activists is whether a market failure will really lead to a recession. In fact, it must be acknowledged that predictions and indicators do not have the ability to answer such questions yet (Allen and Weert, 2020). Accurate forecasting of GDP, as in many other cases, including the effectiveness of efforts to control the virus and the reaction of consumers and businesses to the spread of the virus, is not possible as long as the virus is unknown. But the effects of the virus on the world economy can be traced back to the time of the outbreak (Leuven and Louvain-la-Neuve, 2020). Here are some global studies.

2.3.2 Falling Stock Prices Around the World

Figure 2.1 below shows the trend and percentage of fluctuations in the global stock price index in the first quarter of 2020 against the Coronavirus outbreak trend, which indicates a sharp decline in the stock price index against the increasing trend of the disease.
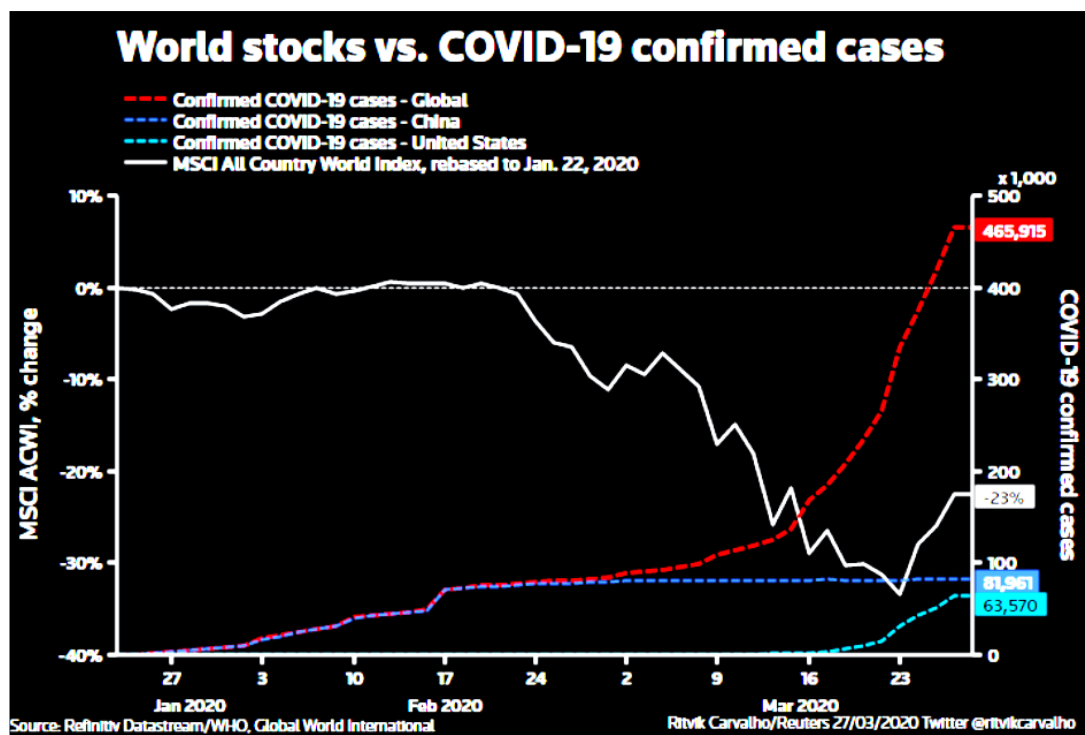
Figure 2.1: The Effects of the Coronavirus Outbreak on Global Stock Market Prices in the First Quarter of 2020. Source: Quillen (2020)

2.3.3 Rising Unemployment and Declining Employment

Economics was the brightest point of the US economic record with the large labor market and its high employment rate which brought the unemployment rate to its lowest level for half a century, or 3.5 percent, in late 2019 (Allen and Weert, 2020). The Coronavirus has now ended this boom with unemployment reaching 14% in the first quarter of 2020 (Smith, 2020). As the number of infected people in the cities increases, jobs will be shut down one by one, shutters will be pulled down, and layoffs

will likely skyrocket. There are more than three million applications for unemployment insurance (Allen and Weert, 2020). Economists predict that the demand will rise to another one million, with some estimates reaching to four million. The unprecedented two trillion dollar government support package is approved by Congress which consists of a $ 500 billion package to help the loss-making industries and another portion to provide credit for direct payments of up to $ 3,000 to needy American households (Nembot Ndeffo, 2020). The chart below shows the volatility of the US economy over the past three years, which has seen a sharp jump in the first quarter of 2020 due to the outbreak of the coronavirus.
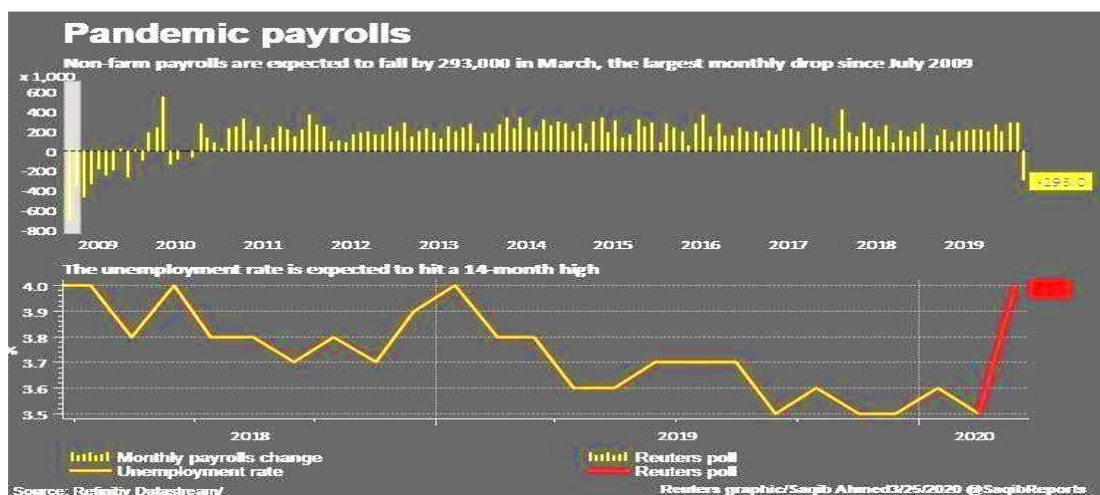
Figure 2.2: Unemployment in the US Economy over the Past Three Years. Source: Ansell (2020)

2.3.4 Europe and Efforts to Contain the Crisis

Similar measures are observed in Europe. The European Central Bank has begun efforts to combat the crisis caused by the virus. It pledged to buy more assets, more bonds and lower borrowing costs for weaker countries in the eurozone, such as Italy. It is now the task of the EU leaders to come together and implement these promises, but so far no united front has been seen. They have not yet been able to reach an agreement on the scale of support for economies devastated by the outbreak (McArdle,

17

Waters, Briscoe and Hall, 2020). Although the European Central Bank's bold move gives them enough breathing space, there is already controversy among politicians over how to set up and allocate these credit lines from the European Rescue Fund, which is about 2% of the annual output of the Eurozone (McArdle, Waters, Briscoe & Hall, 2020).

Many European governments are calling for a common debt instrument to deal with the crisis, which economists estimate will reduce the eurozone's economy by 9% this year. But Germany and some other European countries oppose it. French President Emmanuel Macron believes the survival of the United Europe project is now in jeopardy (Becker, Allen and Weert, 2020). Figure 2.3 below shows the fluctuations in the bond market in EU in four countries since the outbreak of Coronavirus.
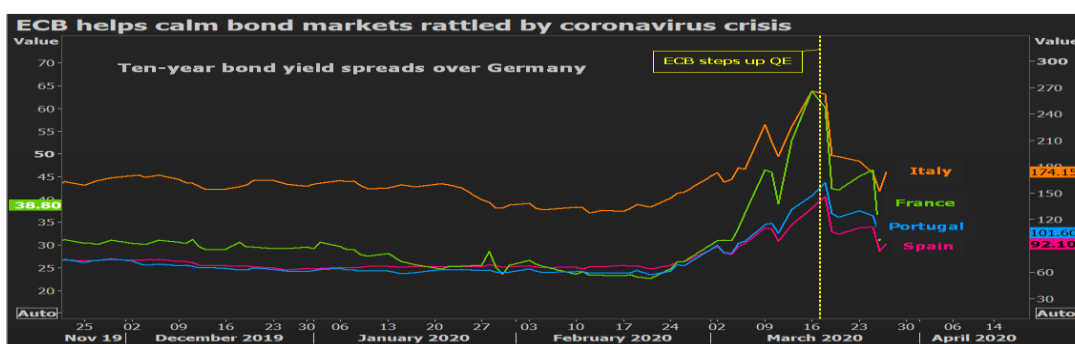
Figure 2.3: Rising Bond Rates in Europe and Efforts to Overcome the Corona Crisis.
Source: Sattinger (2020)

2.3.5 Harmful Effects of Coronavirus on Poor Countries and Marginalized Economies in the Global Economy

These days it has been more difficult time for riskier assets, stocks, bonds, and currencies in emerging markets. Few have felt as much pain as small, marginalized markets and economies, including a set of poorer and often riskier economies. Many of these economies are marginalized in Africa and suffer from the toxic combination

of simultaneous recession in oil prices and commodity prices (Becker, 2020). The gloomy outlook for the global economy, which is reflected in the recession, has further weakened the national currencies of these countries, which in turn has made the cost of paying off their foreign debt more expensive and exacerbated their problems. Oil-producing countries in Africa, such as Angola, Ghana, Gabon, and Nigeria, are experiencing a sharp drop in oil prices and declining financial resources, which could lead to new demand for loans and a rapid increase in the cost of borrowing and escalating debt. Many African countries also lack the financial or foreign exchange resources needed to fight the coronavirus and protect their economies, while their health care systems are already under severe pressure due to the spread of various diseases (Becker, 2020).

The World Bank and the International Monetary Fund (IMF) have called on all official creditors and their lenders to facilitate the human and economic consequences of the disease by providing immediate debt relief to the poor. Leaders of the Group of 20 the world's largest economies have also pledged at their annual virtual gathering to inject more than $ five trillion into the global economy to reduce job losses and revenue from the Coronavirus (Ansell, 2020). They have promised to do whatever it takes to overcome the epidemic, especially in Africa. Many hope that such an acknowledgment will in practice lead to the strengthening of global financial safety networks and national health systems and that these promises will be fulfilled (Allen and Weert, 2020).

2.3.6 The Impact of Quaid 19 on Iran's Economy

2.3.6.1 The Status of Iran's Economy Before the Shock of the Disease

Prior to the outbreak of Corona virus in March 2020, an examination of the country's economic situation showed that with the easing of the impact of sanctions on the

economy, there have been limited improvements in macroeconomic variables. However, an examination of the macroeconomic variables shows the fragility of this improvement (Sattinger, 2020). According to the Statistics Center of Iran, the latest evidence of economic performance in the first nine months of 2019 is illustrated in Table 2.1.

Table 2.1: Evidence of Economic Performance of Iran in the First Nine Months of 2019

Economic Indicator	Percentage
Economic Growth	-7.6
Economic Growth Without Oil	0
Agricultural Growth	3.2
Oil Growth	-37
Industrial Growth	2.3
Water, Electricity, and Gas Growth	7.7
Construction Sector Growth	9.6
Service Sector Growth	0.2

Furthermore, according to the announcement of the Governor of the Central Bank, economic growth without oil in the 2019 was about 1.3 percent. In fact, despite the more negative growth in 2019, the situation of the non-oil sector of Iran's economy has been much better than in 2018. However, the poor performance of the country's economy in terms of fixed capital formation during the 2010s has caused Iran's economy to have lower potential production than in the 2010s (Harvey, 2020).

2.3.6.2 Employment and the Labor Market

According to the Statistics Center of Iran, the unemployment rate in the winter of 2019 continued its downward trend and reached 10.6 percent (Harvey, 2020). However, the increase in the number of employees in this season compared to the same period last year was only about 52,000 people, which has been the lowest increase in employment since 2014 (Henry, Hill and Leitch, 2020). Statistics also show that during the years 2015 to 2019, about three million people have been added to the working population of the country (Henry, Hill and Leitch, 2020). Unfortunately, this new working population has characteristics that make them vulnerable to declining demand due to the prevalence of coronary heart disease. Employment created by the public or corporate and factory sectors, and non-corporate sector, in the services and enterprises sector under five people, and focuses on services such as retail and wholesale, repairs, transportation, Intermediaries, food services, etc. Therefore, these jobs, which are classified as "independent employee employment status", often do not have a contract and are not covered by insurance (Rychen and Salganik, 2020). This group of employees mostly do not have full-time jobs and are engaged in unstable job positions, which are mainly dependent on the demand of households and their presence outside home.

The rate of inflation, which had been increasing since 2018 and reached a record of 43% in September 2019, decreased to 35% at the end of 2019 (Rychen and Salganik, 2020). However, even without the outbreak of Corona disease, the government's huge budget deficit was the most significant inflation threat of 2020. The calculations show that Iran will export 400,000 barrels of oil at the price of $ 40 in 2020.

2.3.6.3 Channel Effect on Total Supply and Demand

The outbreak of the coronavirus has affected the overall demand and the overall supply of the economy. The decline in demand is due to the following:

• Reduction of household consumption demand due to unwillingness to buy (mainly for service sectors) because of health considerations.

• Decreased demand for households due to declining incomes for households whose jobs have been damaged.

• Reduce household demand, especially for durable goods, and increase cautionary savings due to uncertainty about the future.

In addition to the shock of total demand, the economy is also facing the shock of total supply, which is manifested in the following cases:

• Compulsory closure of most firms in service sector, including tourism, sports, and recreational activities because of implementing the social distance policy (Coyle, 2020).

• Increasing costs and making it harder to import raw materials (Coyle, 2020).

• Damage to the production chain due to the above changes (Coyle, 2020).

The medium-term effects of the current situation for the Iranian economy will be to reduce savings and investment and, consequently, to reduce production again.

2.3.6.4 Channel Effect on Budget Deficit and Inflation

Iran's economy will face a budget deficit in 2020 in various ways. Even before the outbreak of the coronavirus, reports of a budget bill at the Research Center of the Islamic Consultative Assembly addressed to the government's budget deficit. Iran's economy is facing a sharp decline in revenues, while spending cannot be reduced

accordingly, making the budget deficit one of the most important problems for Iran's economy in the coming years (Carson, 2020).

Meanwhile, the outbreak of corona disease and its costs will exacerbate the problem of the 2020 budget, the most important factors influencing the increase in the budget deficit are as follows:

Increasing the spending on health and treatment: The outbreak of coronavirus will significantly increase the cost of treatment and health (Armstrong, 2020).

Support funding for the period of social distancing: Implementing a social distance plan is essential to controlling the disease, and the government will need financial resources for this purpose. In fact, in order to compensate for the losses caused by social distancing from economic activities, it is necessary for the government to increase its support costs in order to reduce the welfare losses of households (Armstrong, 2020).

Reduced revenue: In addition to rising costs, in 2020 the government faced a sharp decline in revenue. The most important revenue reduction channels are as follows:

- ✓ Reduction of oil prices: The sharp drop in oil prices has pushed oil prices to around $ 20 to $ 30 a barrel in 2020. This would mean halving Iran's oil revenues in 2020 compared to 2019 (Armstrong, 2020).
- ✓ Reduction of tax revenues: Iran's economy will stagnate in 2020. The drop in demand due to the outbreak of the corona virus will reduce production and thus reduce government tax revenues (Armstrong, 2020).

2.3.6.5 Impact on Employment

As mentioned in the previous sections, most of the vulnerable effects of the Coronavirus outbreak are felt in the service sector. To analyze the effect of the disease on employment, the affected occupations are first examined in the early stages of disease prevalence. The average age of employees in these activities is in the range of 35 to 37 years, and due to the small savings of employees in this age group, the unemployment of these people can affect the spread of poverty (Trow, 2020).

New employment in recent years is the employment that is not provided by the public or corporate and factory sectors, but mainly by the non-corporate sector and focuses on services such as retail and wholesale, repairs, transportation, intermediation, food services. This group of employees mostly do not have full-time jobs and are engaged in unstable job positions, which are mainly dependent on the demand of households and their presence outside the home. Therefore, the decrease in demand during March and the possibility of its continuation at least until the end of May 2020 will cause the widespread destruction of these jobs (Ram, 2020).

It should be noted that many jobs lost due to the outbreak of corona (informal jobs and independent employees) do not have insurance that will reduce the employer's premium discount and do not have access to government facilities and financial assistance. Most of the group is not included in the government's plans to keep jobs in businesses. On the other hand, if we consider the shock of declining demand due to the prevalence of corona as temporary, the lost employment in large and medium size enterprises will be revived after Corona disease passes, but for this type of job, it is not possible to revive and even provide daily livelihood. Therefore, in addition to the policies of supporting economic enterprises, supportive and livelihood policies should

be considered from the poor population of the country, especially with geographical identification (Ram, 2020).

2.3.6.6 Hiring in Seasonal and Part-Time Jobs

Many low-income groups work in seasonal jobs and generate income in the first six months of the year. This group of employees is not normally covered by social security insurance and easily lose their jobs and cannot benefit from unemployment insurance.

2.3.6.7 The Low Percentage of Social Security Insurance Coverage (Pension Insurance in the Lower Deciles)

A look at the employment situation in different income deciles in 2018 shows that about 77% of Iranian households have at least one person working in that year. So that its distribution among different income deciles is not significantly different. That is, what differentiates the different income deciles from each other is not employment or unemployment, but income from work (Kelsall, Poole, and Kuhn, 2019).

2.3.6.8 Iran's Measures to Counter the Effects of the Coronavirus

Despite being under sanctions, the government has allocated 20 percent of this year's budget, or about 100,000 billion tomans ($ 7.3 billion), to the fight against Corona (IMF, 2020). The Iranian government's efforts to counter the effects of the virus include the following:

The first step is to provide facilities to businesses affected by the outbreak of Coronavirus. In this regard, 75,000 billion tomans ($ 5.5 billion) will be provided to businesses affected by Corona. In order to play its role and fulfill its historic mission, the Central Bank offered to provide banking facilities at a preferential interest rate of 12%, which was approved by the parliament (Harvey and MacDonald, 2020).

Follow up on the initial action of the Central Bank to help reduce the loan rate of one million Tomans to subsidized households and to meet the basic needs of the large part

of the affected population (four million low-income households) by releasing part of the reserves. Legally, one - two million tomans ($ 73 to $ 147) is considered a 30-month loan with a 4% interest rate, the difference 12% to be paid by the government (Harvey and MacDonald, 2020).

The next step of the government is to help and support business owners. For this purpose, installments of facilities for business owners (both natural and legal persons), as well as installments of Gharz-ul-Hasna for all persons, will be matured during March, April 2020, and May 2020 and due to the conditions created by Coronavirus. (Harvey and MacDonald, 2020).

Consideration of two support packages for low-income groups is also undertaken by the Iranian government. Seven million low-income people are expected to be supported by two special "livelihood" packages. The first package includes a monthly allowance of 200,000 to 600,000 tomans ($ 14,000 to $ 44,000) for three million Iranians without a fixed income (Harvey and MacDonald, 2020).

According to the public relations of the Central Bank, at least $ 280 million has been allocated immediately for the import of medicine and medical equipment (Harvey and MacDonald, 2020).

Details of the support package of the heads of the forces of taxpayers following the outbreak of Corona are below:

- ✓ Cash and non-cash payments spent for Corona became an acceptable tax expense.
- ✓ Value Added Tax Payment Extended.

✓ A new 3-month deadline has been set for debt repayment.

✓ The deadline for protesting against tax papers has been extended until the end of June.

2.3.7 The Impact of COVID-19 on Turkey's Economy

2.3.7.1 Turkey's Economic Growth Trend After Corona

As a growing economy, like all countries in the world, Turkey is currently embroiled in the coronavirus crisis and its various political, economic, and social consequences. Prior to and after the outbreak of coronavirus in Ankara, the Ankara Government took some steps to combat the virus in the areas of healthcare and economy, according to measures announced by Turkey at various times after the virus was spread. It shows the readiness of the Ankara Government in this regard and the preparation of various scenarios (Salas, 2020). Commenting on the impact of the Coronavirus on the country's economy and the world's economic recession in general, Oguzzhan Ozbash, Deputy Governor of the Central Bank of Turkey (2020), said: "*Due to the positive trend of the country's economic growth in January and February, we expect to see the continuation of this growth in the first quarter of the year*". The central bank has taken steps to minimize the negative economic impact of the disease. Turkey's economy is dynamic. The central bank also has a set of broad and effective mechanisms at its disposal that can be implemented if necessary (Central Bank, 2020). But tourism, services, sports, transportation, and consumer goods production in Turkey (especially sustainable home appliances) are among the most important sectors affected by the Corona outbreak. On the other hand, due to the rapid and consecutive decrease in interest rates in the last year, the Central Bank of Turkey now has fewer tools to support various economic sectors in the country, and the mistake in deciding on interest rates

can have many currency and inflationary consequences for Turkey (Central Bank, 2020).

2.3.7.2 The Trend of Economic Growth in Turkey

The Turkish economy in 2018 and 2019 faced many ups and downs. But fortunately, the proper management of the country has been able to restore economic stability, and the trend has continued to the point that the World Bank has announced that Turkey's economic situation will prosper in 2020, with the goal of being among the top ten. Turkey's aim to be in largest 10 economies in the world is getting closer (Shelley, 2020). Turkey's finance minister has claimed that many of the investment projects that have been delayed in recent years due to the recession will be re-launched in 2020 and Turkey will achieve one of the highest growth rate in the world (Shelley, 2020).

Many of the world's great economists believed that 2020 would be a year of change for Turkey after the 2018 economic record, which was hit by the 2018 economic crisis. Therefore, people who invested their assets in the country last year, or even registered a company in Turkey and registered a company in Istanbul, will have significant profits waiting for them. However, Corona's prevalence has changed the statistics and expectations of various economic organizations and institutions (Shelley, 2020).

2.3.7.3 Corona's Impact on the Turkish Economy

The Turkish economy was recovering after a period of recession, but the outbreak of the coronavirus has forced Ankara to approve billions in aid to deal with the current situation. Meanwhile, demand from Turkey to allocate more aid to various sectors of the country's economy is growing (Central Bank, 2020). According to the Moody's Rating Institute (2020), among the G20 economies, it is expected that the Turkish economy will suffer more than any other, and in the second and third quarters of 2020, its total growth will decline to minus seven percent. Turkey has previously announced

efforts to achieve a 5% ambitious growth rate for 2020. The shock is likely to have the greatest impact on Turkey's tourism industry by the end of the summer. This is despite the fact that in 2019, Turkey's unemployment rate rose from 11% to 13.7%, and last month the inflation rate was 12.37% (Central Bank, 2020).

The World Bank (2020) cuts its economic growth forecast for Turkey to 0.5 percent this year due to the Coronavirus, which is a significant drop from the 3.5 percent forecast before the Corona spread. However, given the government's support for the economy, it is expected that the growth trend will gradually resume to the point of 4% growth for Turkey as projected to be in 2021 (World Bank, 2020).

2.3.7.4 Turkey's Measures to Counter the Effects of the Coronavirus

In the first place, in line with banking policies in this country, some restrictive measures were applied. The purpose of these measures was to reduce the impact of crisis on the devaluation of the lira and lower the price of securities (Moretti, 2020). The second package of support from the Central Bank of Turkey is to facilitate and increase the purchase of foreign bonds. Turkey's tourism industry has grown by more than eight percent in the past decade, attracting more than 45 million tourists in 2019 alone (Shelley, 2020). Given that Turkey's income from the tourism industry is high (this figure is about 30 billion lira or $ 4.5 billion in 2019) and is important for the Turkish economy. So with the complete cessation of flights inside and outside Turkey, this source of income is greatly reduced (Beneito et al, 2020). However, the Turkish Government has provided support to various economic sectors, especially the affected ones.

2.3.8 The Impact of COVID- 19 on UAE's Economy

It is difficult to find a week in recent months in which the crisis over UAE's debts and the theft of billions of dollars have not been exposed by officials from major Dubai

companies with close ties to the Abu Dhabi Government. The Corona epidemic, which has crippled the joints of various economic activities, is expected to create an endless list of troubled companies such as the UAE Healthcare Company (Betts and McFarland, 2020).

According to the Shafaqna (2020), quoting Al-Arabi Al-Jadeed, following the scandal related to the fraud of the Emirates Health Care Company (NMC Health) and the escape of "PR Shetty", its Indian founder, with $ 6.6 billion and deception in Eighty local, regional and international companies have fled the country, and the Abu Dhabi Government has suffered a fatal economic blow.

In recent days, banks and companies in the UAE stock market have repeatedly revealed their connection to the NMC HEALTH crisis and each of its affiliates. The largest share of the debt was related to Tejarat Bank Abu Dhabi, which revealed in a statement to the Abu Dhabi Stock Exchange that it owns about 4.2 billion dirhams ($ 1.14 billion), or 17 percent of the total debt declared by the country's health care company. It has been to this bank (Yousef and Baratali, 2020).

In recent years, many debt and tax evasion cases have been linked to the UAE; Last year, Abraj Dubai faced a crisis of collapse and large debts, which led to its reconstruction. Based on Bloomberg News (2020), loans to the Dubai Government, which are set to be paid in 2021, are likely to be renewed. According to the company's assessments, UAE banks, which are still suffering from the consequences of the global financial crisis, especially the UAE real estate market, are facing new risks due to falling property and debt prices (IMF, 2020).

According to the reports, the steady decline in real estate prices is reminiscent of 2009 and the global financial crisis, which left the company with a $ 23.5 million loan.

But Corona's consequences could be even more severe, as preventive measures to curb the spread of the virus have led to the collapse of dynamic activities such as tourism, marketing, and financial services in Dubai (Central Bank, 2020).

The first person with corona was registered in the UAE is on January 29. The Capital Economics Institute (2020) named Dubai the most vulnerable area in the Middle East concerning Corona and warned that the city would face its worst debt crisis in a decade. The country's high dependence on global trade has made it more vulnerable to corona than any other country in the region. The sharp drop in oil prices is another reason for the UAE's economic growth challenges (IMF, 2020).

Referring to the recession in Dubai's housing sector, Capital Economics predicts that Dubai's economic growth will slow to a negative five to six percent this year if the Corona crisis continues into the summer. Dubai's debt now stands at $ 88.9 billion, or 80 percent of the city's gross domestic product (Gui-zhi, 2020). Compared to 2014, the sales of residential units in Dubai have decreased by 30%. Dubai's economy grew 1.94 percent last year, the lowest level since 2009. According to Capital Economics (2020), the UAE government will not be able to overcome the debt crisis in Dubai if the situation worsens, and this will have a very bad effect on Dubai's credit rating (Gui-zhi, 2020).

The UAE government has so far allocated $ 27 billion in loans and credits to support Dubai against Corona, much of which is to support the private sector and increase the

lending power of banks. The UAE Wealth Fund has $ 95 billion in various resources, some of which are expected to be spent in the coming days (World Bank, 2020).

Due to the high dependence of the UAE economy on the tourism sector, the closure of tourism-related centers due to the outbreak of the coronavirus in the country, the economy will suffer heavy losses (World Bank, 2020). The tourism sector around the world has been hit hard by the crackdown on coronavirus. The Emirate of Dubai is scheduled to deliver eight A-380 aircraft - before the end of the Airbus program in 2021 on the world's largest passenger aircraft - to the airline. Corona and its severe negative impact on the air travel sector may take years to recover. The UAE aircrafts are in talks to cancel the purchase of five of the A-380s (IMF, 2020).

With 115 A-380 aircraft, the UAE has the largest fleet of such aircraft in the world. The country once requested the purchase of 162 aircrafts of this type but reduced it to 123 in 2019 (Kostoglou and Paloukis, 2020). Corona's outbreak has forced airlines around the world to reconsider their strategies and plans. Emirates is currently reviewing the early retirement of its current A-380 aircraft. The UAE Group has announced a 28 percent drop in profits in the 2019-2020 fiscal year due to declining revenues because of Corona (Kostoglou and Paloukis, 2020). The group is seeking to eliminate the need for about 30,000 jobs to cut costs, and accordingly, the number of more than 105,000 employees in the group will be reduced by nearly 30% by the end of March. The International Air Transport Association (IATA) predicts that the UAE will lose 13.6 million passengers and a basic income of $ 2.8 billion, and 163,000 jobs in the aviation sector due to Corona (Kivinen et al, 2020). Dubai International Airport has seen a 20 percent drop in passenger traffic in the first quarter of this year, with Corona spreading. The number of passengers has dropped to about 18 million, and air

traffic has dropped by about 19 percent. Dubai's economy has been severely damaged by Corona's containment measures, which have almost halted the activities of vital sectors such as aviation and tourism. In particular, the Emirate, like its wealthy counterpart Abu Dhabi, does not have enough oil wealth to reduce Corona's economic consequences (Kivinen et al, 2020).

2.4 GDP (Gross Domestic Product)

2.4.1 Defining GDP

Gross domestic product is the most comprehensive variable that reflects the performance of the real sector of the economy. By definition, "GDP is the market value of all final goods and services produced in a country over a year (World Bank, 2007)." Final goods and services are goods and services that are in the last stage of the production chain and buyers use them for consumption purposes (McCloy, Campbell, and Cudeck, 1994).

2.4.2 Theories of GDP Growth Forecasting with an Accounting Approach

The changes in GDP are considered to be economic growth and in a way reflect the trend of economic developments and indicate the increase in the size of the national economy over a period of time. One of the approaches to measuring GDP is the income approach, in which GDP is calculated from the company's total profit, employee salaries, and bonuses, and production and import taxes (Salvatore and Reagle, 2002). In the field of the use of accounting data in predicting major economic variables, a better approach to the use of alternative indicators instead of the main components of GDP was used. According to Kanchitachki and Patatokas (2014), accounting profits based on accepted accounting principles have the potential to replace the profits of the company, which is one of the main components of measuring GDP. As a result, the

growth rate of accounting profit can be an alternative to the company's profit growth rate, which is the main driver of the economic growth rate.

Kanchitachki and Patatokas (2014) believe that this information is available with a time delay. As a result, they suggest using accounting profits instead of corporate profits; Because accounting profits are available quarterly and at the right time. Accounting profit based on accepted accounting principles is one of the timely data and a good source in predicting economic variables, which can be a good indicator of the company's profit. Despite its emergence in recent years, macro-accounting has had a good theoretical underpinning. Numerous theories have emerged in recent years through the efforts of researchers such as Hohan et al. (2015), Nallardi and Ognova (2017). Examples include investment demand theory and consumer demand theory. According to these theories, the variables that are the output of the financial accounting system have the necessary explanatory power to predict some economic indicators. These theories are described below.

2.4.2.1 Investment Demand Theory

According to the theory of investment demand, increasing some accounting variables such as accounting profits and operating cash flows will lead to an increase in the company's capacity to produce goods and services; Because in this case, the financial resources available to organizations in order to invest will increase (Becker, 1975). This will have different consequences for society. As a result of increased profits, business executives will see this as good news and will increase the organization's investment level. As a result, the shock to investment is expected to boost economic growth (Becker, 1975).

2.4.2.2 Consumer Demand Theory

According to consumer demand theory, a sudden increase in profits will lead to an increase in the wealth and income of the company's shareholders and employees. If the wealth of shareholders and employees increases in the short term, their level of consumption and investment will increase significantly. In Kitz's theory of demand for consumption, consumption in the short term will be affected by one's income. Employees, managers, shareholders, and ultimately the government will also benefit from the increase in the company's profits (Shelley, 1996). As a result, this increase in economic growth will be expected in society. In addition, the relationship between accounting information and economics can be explained by the theories of the information channel and the real impact channel. These hypotheses are presented by Shivakomar and Oktay (2014).

2.4.2.3 Information Channel Theory

According to the information channel theory, managers' decisions will be influenced by economic conditions. In general, this theory suggests that both intra-organizational information and information related to economic variables affect the way financial units are financed and invested. Influenced by internal factors, managers make decisions about the company's financing and investment activities (investment opportunities and financial constraints). As a result, to the extent that these internal factors are dependent on the economic situation of the country, it is expected that the financing and investment decisions of managers reflect expectations regarding the state of economic variables (Asadi and Naqdi, 1997).

2.4.2.4 Real Effect Channel Theory

According to the channel theory, the real impact of the upward trend in the financing process of companies will lead to an increase in the company's investment process and

the subsequent level of production; In other words, this theory examines how changes in the company's financing activities can actually affect the future economic situation (Han et al., 2015; Asadi and Naqdi, 1397).

2.4.3 The Impact of Operating Profits on GDP

A country's economic growth is determined by calculating changes in GDP, so it is important to calculate GDP and the factors that affect it, but it is not easy to identify the factors that affect GDP and the need for testing and research. On the other hand, profit is one of the most important criteria for evaluating performance and determining the value of an enterprise, which is obtained from the company's financial statements and is one of the most important products of the company's financial statements (Iordanova, 2007). The net profit reported in the financial statements is considered as one of the most important criteria for evaluating the performance and determining the value of an enterprise, which is always used by a wide range of users such as accounting, financial managers, stock market analysts, investors, and shareholders. (Kanchitchi and Patatokas, 2014). Also, because a company's value is related to its current and future profits, determining profits is very important. Financial statements should provide information to stakeholders that are useful for decision making. Profit and loss statement and reported profits are the most important criteria for measuring the performance of companies because it can be effective in determining stock prices. Therefore, the accounting system must provide complete and optimal information about profits (Darabi and Moradlou, 2011). Market participants are always looking for quality financial information, quality financial information is information that is reliable and reduces information asymmetry correctly. There are many studies in the accounting literature that the quality of disclosure of higher financial information increases the reliability of this information in terms of shareholders and other users. If

the financial statements are vague and of poor quality, they lack effectiveness and influence on economic decisions. In other words, it can be said that profit has an economic effect that is transparent (Darabi and Moradlou, 2011).

In the economic literature, the rate of the annual growth rate of a country's GDP is called economic growth. The method of determining economic growth rate is that first, after calculating the country's GDP per year, by removing the effects of inflation from it due to inflation, the number obtained each year is greater than the real amount. That is adjusted by eliminating the effect of inflation is the actual amount of GDP, which is also called the adjustment of GDP to the values of the base year. To do this, a tool called the Gross Domestic Product Modeling Index is used, which makes it possible to compare the values of GDP each year with a specific year, also called the base year (Stock and Watson, 2009).

2.5 The Inflation Rate

Inflation is a situation in which the general level of prices continues to rise over time (Mousavi and Ragheb, 2014). Inflation is a steady rise in the general price of goods and services, which ultimately leads to declining purchasing power and economic turmoil. Inflation rate means the percentage change in the price index over a period (usually one year) (Rahmani, 2007).

In economic theories, inflation is divided into three types: creeping inflation (calm or mild), severe inflation (rapid inflation) and excessive inflation (unbridled inflation). Inflation, in general, has three main sources: demand pressure, cost pressure, and the structure of the economy. Regarding Iran's economy, many factors affecting inflation are derived from structural factors (Bavardi, 2013).

2.5.1 Operational Definition (Method of Measurement) Inflation Rate

The Consumer Price Index (CPI) is a measure of changes in the prices of goods and services consumed by Iranian urban households. This index, as a means of measuring the general level of prices of goods and services used by households, is one of the best measures to measure the change in purchasing power of domestic currency (Central Bank of the Islamic Republic of Iran). To measure the inflation rate, the price index of consumer goods and services (based on the base year of 2004) available in the Central Bank's time series information database is used as the price index (Namazi and Rezaei, 2012).

2.6 Unemployment Rate

In the present world, unemployment is one of the controversial issues not only in underdeveloped and developing countries, but also in developed countries (Card, 2001; Grossman, 2005; Oreopoulos and Salvanes, 2009). Unemployment is known as a situation in which a bunch of people are ready to work and actively in search for a job but they cannot find that (Rafiq et al., 2010). What is meant by unemployment and shortage of job is beyond natural rate of unemployment that occurs even if a society has full-employment rate, because if an economy is at full-employment level, it does not mean that anybody and 100 percent of people who can work, are working and we still have some unemployed people; this kind of unemployment is called natural rate of unemployment that could be 2,4,5... percent depending on country's characteristics. These people are unemployed not because there are not available jobs for them but for

some natural reasons such as search or frictional unemployment[1], structured unemployment[2], and voluntary unemployment[3] (ILO, 2011).

2.7 Human Development Index

HDI is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. The social and economic dimensions of a country are based on the health of people, their level of education attainment and their standard of living (Levine, 2013).

---

[1] Even if the economy is operating very well and there are jobs available, when individuals lose their job for some reasons such as resigning or a company bankruptcy, usually it takes time to find a new job approximately six months or a year on average; however, if the labor market is efficient and information is communicated to unemployed people about the availability of jobs very quickly, this period of time is going to be relatively short (Levine, 2013).

[2] Occasionally, as a consequence of emergence of some phenomena such as globalization and computerization, people who are looking for a job or have been already employed, are not skillful enough and companies are in search of new kinds of skills. Therefore, jobs are available but skills are not adequate for available jobs and there is a lack of necessary skills (Spletzer, 2012).

[3] This is a situation whereby a part of people prefers to stay unemployed because of the fact that the level of wage which is paid is not coinciding with workers' expectations and is unable to meet substantial needs of job seeker (Levine, 2013).

Chapter 3

METHODOLOGY

3.1 An Overview of Chapter

Knowing that a scientific study needs to be acceptable and also replicable logically, systematically and ethically, this chapter will go into detail about research approaches and sampling techniques to reveal that an authentic study has been performed.

3.2 Econometrics and Regression Analysis

Econometrics is the application of statistical techniques that puts economical and mathematical theories into reality and enables researchers to test and estimate economical phenomena (Salvatore and Reagle, 2002). Estimating parameters of the regression model plays the determinant role. In this regard, regression analysis plays the core part in the econometric studies. It is a statistical technique for obtaining the line that best fits the data points according to an objective statistical criterion (Mincer, 1962). It is great for forecasting economic variables and evaluating or implementing government or business policies; it makes estimating relationship between economic variables very easy and also helps with testing economic theories and hypothesises (Becker, 1975).

3.3 Sample and Procedure of the Study

Sample of the current study comprises three countries namely Iran, Turkey, and the UAE selected on the basis of Human Development Index (HDI) world ranking. The aim is to find whether there are differences among these three countries in economic

growth, unemployment rate, and inflation rate, before and after emergence of Corona virus.

In order to come up with statistically meaningful findings, E-Views software is used as the program for data analysis. After data collection, all desired indicators were inserted into E-Views data sheet. Microsoft Excel was utilized to make tables and diagrams.

3.3.1 Steps Used for Data Collection

The data is gathered from the World Bank database as well as Trading Economics. Three time series data developed for three separate countries during a time period between 2000 and 2019 which encompasses four indicators with the aid of World Bank database. Hence, totally 20 observations were used for each indicator and for every country separately in the analysis. GDP Growth (annual percentage growth rate of GDP at market prices), Inflation Rate (GDP deflator)[1], Unemployment Rate[2], and Human Development Index (HDI)[3] are the four indicators analyzed. GDP Growth is considered as dependent variable and three others are counted as independent or explanatory variables. The assumption is GDP growth would be influenced by the changes in the other variables. Then, the sample countries are selected on the basis of their HDI position in a way that each country can be representative countries with low, medium, and high HDI so that we can be able to generalize the results to other identical

---

[1] Both GDP Deflator and Consumer Price Index (CPI) get an average of prices in an economy. However, CPI by definition is taking a basket approximately of 210 goods that has been identified as average urban family's monthly consumption, measuring those month by month and check how it changes from one month to another. The GDP Deflator on the other hand, does not have a specific basket of goods but looks at all the goods and services that are included in GDP (Levine, 2013).
[2] Refers to share of labor force that is without work but available for and seeking employment (Spletzer, 2012).
[3] HDI is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. The social and economic dimensions of a country are based on the health of people, their level of education attainment and their standard of living (Levine, 2013).

countries with the similar situation. With regard to HDI, the year 2020 is selected which is the last update of World Bank database available. Then, having the data on HDI for all counties across the world, the average of this index throughout the world is calculated in 2020 which was nearly 0.75. Afterwards, some countries with lower, nearly the same, and higher HDI than world average are chosen. Finally, we came up Iran, Turkey, and UAE in turn with 0.7, 0.76, and 0.88 which are placed below, on, and above the world average accordingly.

In the next step, in order to investigate the economic status of desired countries after emergence of Corona virus, the first[1] and second[2] quarters of the year 2020[3] are taken, and the GDP Growth, Unemployment Rate, and Inflation Rate of these two quarters compared for each country separately. Specifically, each country's GDP reduction in the second quarter (if any) relative to the first quarter in the three independent variables are calculated. HDI is chosen as an important category because these countries have many things in common; thus, they can be compared more systematically. The data in this section was gathered from Trading Economics between January and Jun in the year 2020. This part is done as supplementary of the previous part so that we can reach a comprehensive overview of these three countries' economic status before and after Corona virus.

There were a few missing data for some indicators of specific countries. Enders (2003) stated that a missing rate of 15% to 20% is common in educational and economical studies. Statistically, over the time period between 2000 and 2020, the percentage of

---

[1] January, February, and March.
[2] April, May, and Jun.
[3] The World Health Organization (WHO) declared COVID-19 as a pandemic over the world in March, 2020 (WHO, 2020). Therefore, it's economic repercussions after March, 2020 is under the consideration in this study.

missing data for each of the three indicators of all three countries was less than five which is statistically justifiable. Specifically, this almost five percent meant maximum one missing data (if any) out of 21 observations for each of the indicators. To tackle the problem of one missing data for some indicators, we got the average of the desired indicator between previous and next year and substituted the average.

3.3.2 Data Analysis and Statistical Models

Three time series data analyses were performed to examine the effect of Unemployment Rate, Inflation Rate, and HDI on GDP Growth, accordingly. The next stage in the process of econometrics analysis was to select a functional form and perform a regression analysis. Since the classical linear regression model was under consideration, the method of ordinary least square was used. The entire statistical and econometrics analysis was fulfilled adopting E-Views 11 statistical package.

3.4 Measures

3.4.1 Estimation Techniques

3.4.1.1 Validity and Reliability

Berman (2006) stated that based on validity criterion, variables must measure what they are supposed to measure. In this study, the data for relevant indicators which were related to desired variables were gathered. Thus, with respect to the data collection methods adopted, the study satisfies validity criterion.

Berman (2006) described reliability as when repeating measurements results in the same findings. In this study the reliability criterion is met due to the fact that data was gathered for the same period of time and same specifications which logically yields high reliability.

3.4.1.2 Unit Root Test

When dealing with time series data, it is a widely accepted criterion to firstly test the data for stationary due to the fact that time series data often do not have unit root. In other words, this kind of data usually are non-stationary, that is to say, they have mean, variances, and covariances that vary over time. Hence, there is no possibility of predicting any non-stationary data which in turn results in little reliability as a source for modelling or estimation (Iordanova, 2007). Therefore, since the time series data was used in this study, they underwent unit root test to see whether they are non-stationary or not. There are several alternatives for this process. In this study, we took on Summary test type. With regard to this test, if the P-value is less than five percent, we reject the null hypothesis whereby data is not stationary and accept the alternative (Iordanova, 2007). It is necessary to say that we chose automatic lag length taking individual intercept and using Schwarz Info Criterion. Since in our model, the P-value for all indicators in most of the methods used, namely Levin, Lin and Chu t, Im, Pesaran and ShinW-stat, ADF- Fisher Chi-square, and PP - Fisher Chi-square, is higher than 5 percent, our data has got unit root and is not stationary. Thus, we accept null hypothesis. Needless to say, the coefficient is certainly negative that is to say our model is viable and valid an allows us to go for further analysis.

3.4.2 Ordinary Least Squares (OLS) Regression Analysis

After fulfilment of the above techniques, we run the regression OLS to analyze the relationship among GDP Growth, Unemployment Rate, Inflation Rate, and HDI. This process will divulge the existence, nature, direction, strength, and magnitude of probable predictive relationships. Parameter estimation was carried out using ML estimation. Additionally, the unknown parameters were also estimated to adjust variances and covariances regenerated from the model to observed data. Standardized

regression coefficients were employed to specify the independent variables that have highest explanatory power on estimating variation in dependent variable. Standardized regression coefficients are utilized in multiple linear regression so as to optimize comparison among independent variables through ignoring measurement units. Statistically, all dependent and independent variables are subtracted by the mean and divided by the standard deviation to be standard, specifically meaning that standardized coefficient indicates the change in response to a change of one standard deviation in a predictor.

3.4.2.1 Features of an Efficient Ordinary Least Square Linear Regression (OLS)
When dealing with a single dependent variable and three independent variables as predictors, multiple linear regression method was statistically appropriate for testing hypotheses.

It should be remarked that an efficient ordinary least square linear regression (OLS) model should hold some features so that valid statistical interference is achievable (Stock and Watson, 2009).

First of all, the regression line must be fitted to the data strongly. If the value of R-squared is more than 60 percent, our model meets the criteria (Iordanova, 2007). In our three models this would be the case and the regression line is appropriately fitted to the data with scoring 78.04, 76.01, and 75.13 percent as R-squared.

Another feature is that variance of the residuals (error term) must be homoscedastic which is equivalent of having constant variance by residuals and in opposition with heteroscedasticity to gain the best unbiased linear estimator. In this study, the Breusch-Pegan-Godfrey test was accomplished to check if our regression model meets the

mentioned hypothesis in which the null hypothesis is in favour of being homoscedastic if the P-value is higher than five percent (Iordanova, 2007). In the three models in this analysis, variance of the residuals is homoscedastic because of the fact that it is more than five percent.

Another sing of an efficient ordinary least square linear regression (OLS) model is following normal distribution by residuals. Respectively, we used Jarque Bera Statistics test in which normal distribution of residuals is considered as null hypothesis. If the P-value is more than 5 percent, we accept the null hypothesis and vice versa (Iordanova, 2007). Our three models pass this criteria having P-value higher than five percent (approximately 78 percent).

Additionally, since in time series data autocorrelation problem may be found which is against an efficient ordinary least square linear regression (OLS) model, we made sure that our model is excluded from serial correlation via using Breusch-Godfrey Serial Correlation LM Test which holds the assumption that residuals are not serially correlated as null hypothesis. On the basis of this test, if the P-value is higher than 5 percent, we accept the null hypothesis which is regarded as residuals are not serially correlated and vice versa. In our three analyses, the P-value is higher than 5 percent and we do not have auto-correlation problem (Iordanova, 2007).

Moreover, in an efficient ordinary least square linear regression (OLS) most of the independent variables (in our models at least 2 out of 3) should be individually significant (having P-value less than five percent as as an alternative of null hypothesis) to explain dependent variable. It can be tested using T-test. Fortunately,

this is the case in our three models and we accept the alternative instead of null hypothesis.

Furthermore, all independent variables should be jointly significant (containing P-value less than five percent as an alternative of null hypothesis) to influence dependent variable. The accuracy of this criterion in our three models was checked by using F-test. In our three model, the null hypothesis is rejected and we accept null.

Chapter 4

DATA ANALYSIS AND DISCUSSION

4.1 An Overview of Chapter

This chapter will cover the results of our analyses using different tests. First, the features of an efficient ordinary least square linear regression will be investigated by exploring the related tables and then the hypotheses will be tested. Afterwards, the corresponding tables are brought for multiple regression model for each country. Additionally, we will have an overview of confirmed cases and death toll due to COVID-19, reported to WHO, in each country from the beginning of pandemic period and finally we compare the results with our developed hypotheses.

4.2 Estimation Techniques

4.2.1 Unit Root Tests

As discussed in the previous chapter, all the variables have got unit root. The corresponding Table 4.1 shows the results of the tests to check unit root test by using different tests, namely Levin, Lin and Chu t, Im, Pesaran and ShinW-stat, ADF- Fisher Chi-square, and PP - Fisher Chi-square. The criterion is that out of four tests, at least two of them must have probability higher than 0.05.

Table 4.1: Unit Root Test, GDP (Iran)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.05699	0.0137	9	179
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and ShinW-stat	-4.02506	0.1603	9	179
ADF - Fisher Chi-square	48.4158	0.0696	9	179
PP - Fisher Chi-square	46.6250	0.1058	9	180

Table 4.2: Unit Root Test, Unemployment Rate (Iran)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.44037	0.0749	9	173
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.83893	0.0330	9	173
ADF - Fisher Chi-square	26.6922	0.0850	9	173
PP - Fisher Chi-square	17.7279	0.1737	9	180

Table 4.3: Unit Root Test, Inflation Rate (Iran)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.62209	0.0244	9	172
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.79464	0.0666	9	172
ADF - Fisher Chi-square	34.5247	0.0908	9	172
PP - Fisher Chi-square	22.6161	0.2058	9	180

Table 4.4: Unit Root Test, HDI (Iran)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.77214	0.0001	9	170
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.88782	0.1873	9	170
ADF - Fisher Chi-square	21.9874	0.2325	9	170
PP - Fisher Chi-square	17.5995	0.4823	9	180

Table 4.5: Unit Root Test, GDP (Turkey)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.05699	0.0137	9	179
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and ShinW-stat	-4.02506	0.1708	9	179
ADF - Fisher Chi-square	48.4158	0.0996	9	179
PP - Fisher Chi-square	46.6250	0.2058	9	180

Table 4.6: Unit Root Test, Unemployment Rate (Turkey)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.44037	0.0749	9	173
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.83893	0.0530	9	173
ADF - Fisher Chi-square	26.6922	0.0950	9	173
PP - Fisher Chi-square	17.7279	0.0737	9	180

Table 4.7: Unit Root Test, Inflation Rate (Turkey)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.62209	0.0244	9	172
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.79464	0.0776	9	172
ADF - Fisher Chi-square	34.5247	0.1008	9	172
PP - Fisher Chi-square	22.6161	0.0058	9	180

Table 4.8: Unit Root Test, HDI (Turkey)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.77214	0.0001	9	170
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.88782	0.1564	9	170
ADF - Fisher Chi-square	21.9874	0.2299	9	170
PP - Fisher Chi-square	17.5995	0.5648	9	180

Table 4.9: Unit Root Test, GDP (UAE)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.05699	0.0137	9	179
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and ShinW-stat	-4.02506	0.1611	9	179
ADF - Fisher Chi-square	48.4158	0.0396	9	179
PP - Fisher Chi-square	46.6250	0.2067	9	180

Table 4.10: Unit Root Test, Unemployment Rate (UAE)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.44037	0.0749	9	173
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.83893	0.0630	9	173
ADF - Fisher Chi-square	26.6922	0.0850	9	173
PP - Fisher Chi-square	17.7279	0.1473	9	180

Table 4.11: Unit Root Test, Inflation Rate (UAE)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.62209	0.0244	9	172
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.79464	0.0554	9	172
ADF - Fisher Chi-square	34.5247	0.0803	9	172
PP - Fisher Chi-square	22.6161	0.2076	9	180

Table 4.12: Unit Root Test, HDI (UAE)

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.77214	0.0001	9	170
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.88782	0.1901	9	170
ADF - Fisher Chi-square	21.9874	0.2225	9	170
PP - Fisher Chi-square	17.5995	0.6453	9	180

Table 4.13: Correlation Matrix (Iran)

Correlation Probability	HDI	INF_RA	UN_EM_RA
HDI	1.000000		

INF_RA	-0.423730	1.000000	
	0.1718	-----	
UN_EM_RA	-0.443878	0.335805	1.000000
	0.1431	0.4155	-----

Table 4.14: Correlation Matrix (Turkey)

Correlation Probability	HDI	INF_RA	UN_EMP_RA
HDI	1.000000		

INF_RA	-0.576922	1.000000	
	0.1074	-----	
UN_EMP_RA	-0.139509	0.548329	1.000000
	0.2056	0.4901	-----

Table 4.15: Correlation Matrix (UAE)

Correlation Probability	HDI	INF_RA	UN_EM_RA
HDI	1.000000		

INF_RA	-0.678730	1.000000	
	0.2816	-----	
UN_EMP_RA	-0.479888	0.310205	1.000000
	0.1332	0.1955	-----

It can be seen that there is no correlation[1] problem among independent variables in neither higher developed countries nor lower developed countries.

4.2.3 Features of an Efficient Ordinary Least Square Linear Regression (OLS)

As mentioned in the preceding chapter, our model is statistically fit for running regression OLS. See Tables 4.16, 4.17, 4.18.

4.3 Hypothesis Development

H1: Unemployment rate has negative significant effect on GDP Growth in Iran.

H2: Inflation Rate has negative significant effect on GDP Growth in Iran.

H3: Human Development Index has positive significant effect on GDP Growth in Iran.

H4: Unemployment rate has negative significant effect on GDP Growth in Turkey.

H5: Inflation Rate has negative significant effect on GDP Growth in Turkey.

H6: Human Development Index has positive significant effect on GDP Growth in Turkey.

H7: Unemployment rate has negative significant effect on GDP Growth in UAE.

H8: Inflation Rate has negative significant effect on GDP Growth in UAE.

---

[1] At 95 percent confidence interval.

H9: Human Development Index has positive significant effect on GDP Growth in UAE.

H10: The higher HDI, the stronger relationship between GDP Growth, Inflation Rate, and Unemployment Rate.

H11: The Higher HDI, the lower decrease (if any) in GDP Growth after COVID-19 pandemic.

H12: The Higher HDI, the lower increase (if any) in Unemployment Rate after COVID-19 pandemic.

H13: The Higher HDI, the lower increase (if any) in Inflation Rate after COVID-19 pandemic.

The model for testing these hypotheses is exhibited as following:

$E\ (Y) = a_i + b_{1i}X_{1i} + b_{2i}X_{2i} + b_{3i}X_{3i} + e$

Y: GDP Growth

a: Vertical Intercept (constant)

X_1: Unemployment Rate

X_2: Inflation Rate

X_3: HDI Ranking

b_1: Slop of Coefficient (it measures change in Y per unit change in X_1 while holding

X_2 and X_3 constant) $= \frac{\Delta Y}{\Delta X_1}$, coefficient of Unemployment Rate

b_2: Slop of Coefficient (it measures change in Y per unit change in X_2 while holding

X_1 and X_3 constant) $= \frac{\Delta Y}{\Delta X_2}$, coefficient of Inflation Rate

b_3: Slop of Coefficient (it measures change in Y per unit change in X_3 while holding

X_1 and X_2 constant) $= \frac{\Delta Y}{\Delta X_3}$, coefficient of HDI ranking

4.4 Ordinary Least Square

Table 4.16: Ordinary Least Square, Regressed on GDP (Iran)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UN_EMP_RA	-1.612289	0.038862	-2.889406	0.1126
INF_RA	-1.374143	0.375497	-3.659535	0.2272
HDI	0.183101	0.150687	1.215107	0.0004
C	9.626873	3.034900	3.172056	0.0242

R-squared	0.780403	Mean dependent var	8.106133
Adjusted R-squared	0.131592	S.D. dependent var	5.795907
S.E. of regression	5.401113	Akaike info criterion	6.248438
Sum squared resid	2946.374	Schwarz criterion	6.349541
Log likelihood	-324.0430	Hannan-Quinn criter.	6.289407
F-statistic	6.253139	Durbin-Watson stat	0.119165
Prob(F-statistic)	0.000616		

As is illustrated from the Table 4.16, HDI has significant effect on GDP Growth

because the corresponding probability is less than 0.05 percent (0.0004). Moreover,

corresponding coefficient of HDI demonstrates that this significant effect on GDP

Growth is positive, meaning that if HDI goes up by one unit, GDP Growth will go up

by almost 18%. Two other independent variables do not have significant effect on

GDP Growth in Iran.

Table 4.17: Ordinary Least Square, Regressed on GDP (Turkey)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UN_EMP_RA	-0.044037	0.023189	-1.898995	0.0019
INF_RA	-1.099485	0.554780	-1.981839	0.1427
HDI	1.008130	0.073718	0.110287	0.0325
C	18.67384	2.374221	7.865248	0.0236

R-squared	0.761605	Mean dependent var	10.88139
Adjusted R-squared	0.144353	S.D. dependent var	3.762281
S.E. of regression	3.480154	Akaike info criterion	5.378478
Sum squared resid	968.9179	Schwarz criterion	5.494231
Log likelihood	-221.8961	Hannan-Quinn criter.	5.425010
F-statistic	5.667545	Durbin-Watson stat	0.322082
Prob(F-statistic)	0.001428		

As is illustrated from the Table 4.17, Unemployment Rate and HDI have significant effect on GDP Growth because the corresponding probabilities are less than 0.05 percent. According to the coefficients, the effect of Unemployment Rate is negative; however, this effect from HDI is positive.

Table 4.18: Ordinary Least Square, Regressed on GDP (UAE)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UN_EMP_RA	-0.112289	0.039762	-2.889406	0.0017
INF_RA	-1.291133	0.376997	-3.659535	0.0072
HDI	1.194101	0.190687	1.215107	0.0021
C	9.626873	3.094900	3.172056	0.0020

R-squared	0.751313	Mean dependent var	8.106133
Adjusted R-squared	0.131592	S.D. dependent var	5.795907
S.E. of regression	5.401113	Akaike info criterion	6.248438
Sum squared resid	2946.374	Schwarz criterion	6.349541
Log likelihood	-324.0430	Hannan-Quinn criter.	6.289407
F-statistic	6.253139	Durbin-Watson stat	0.119165
Prob(F-statistic)	0.042594		

As is illustrated from the Table 4.17, all three independent variables have significant effect on GDP Growth because the corresponding probabilities are less than 0.05 percent. It is understandable from the corresponding coefficients that these significant effects are negative by Unemployment Rate and Inflation Rate but negative by HDI.
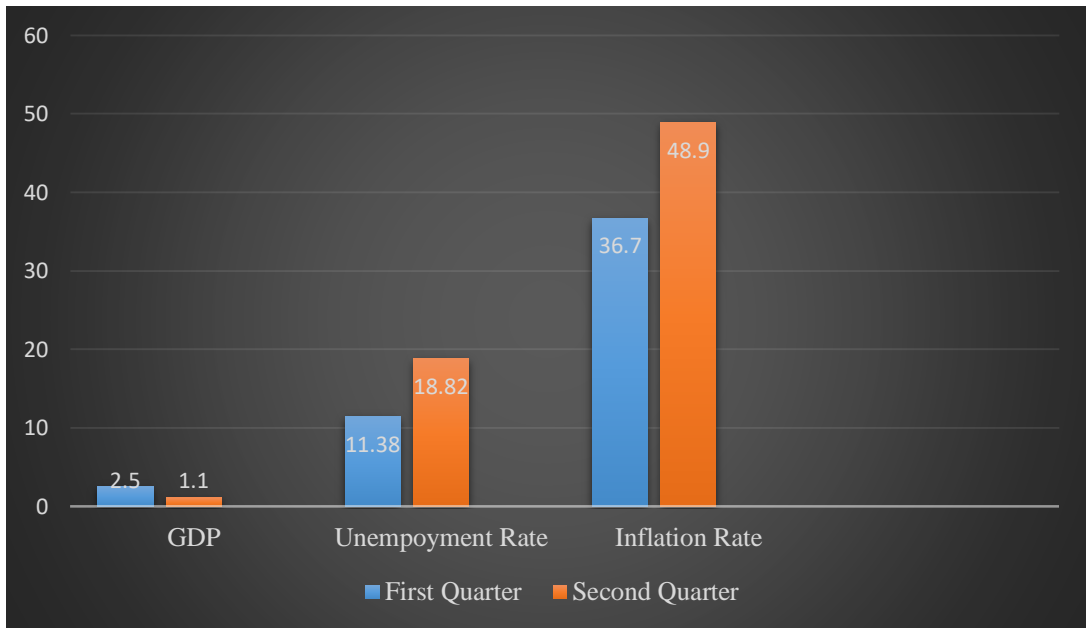
4.5 Quarterly Analysis

Figure 4.1: Comparison of GDP Growth, Inflation Rate, and Unemployment Rate in the Second Quarter of the Year 2020 Relative to that of in the First Quarter in Iran

Figure 4.2: Comparison of GDP Growth, Inflation Rate, and Unemployment Rate in the Second Quarter of the Year 2020 Relative to that of in the First Quarter in Turkey
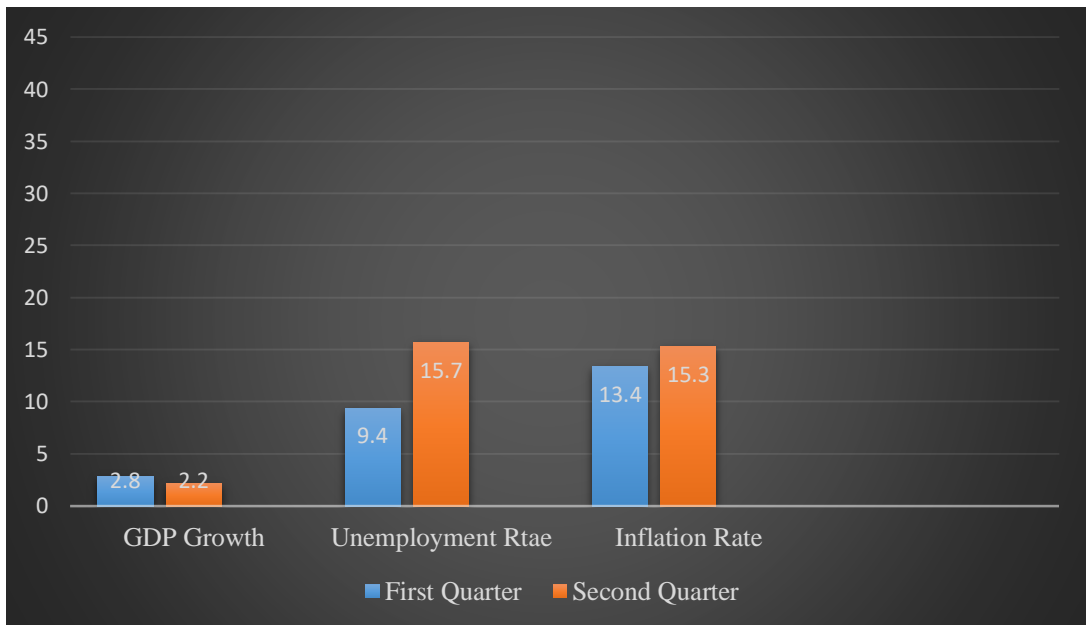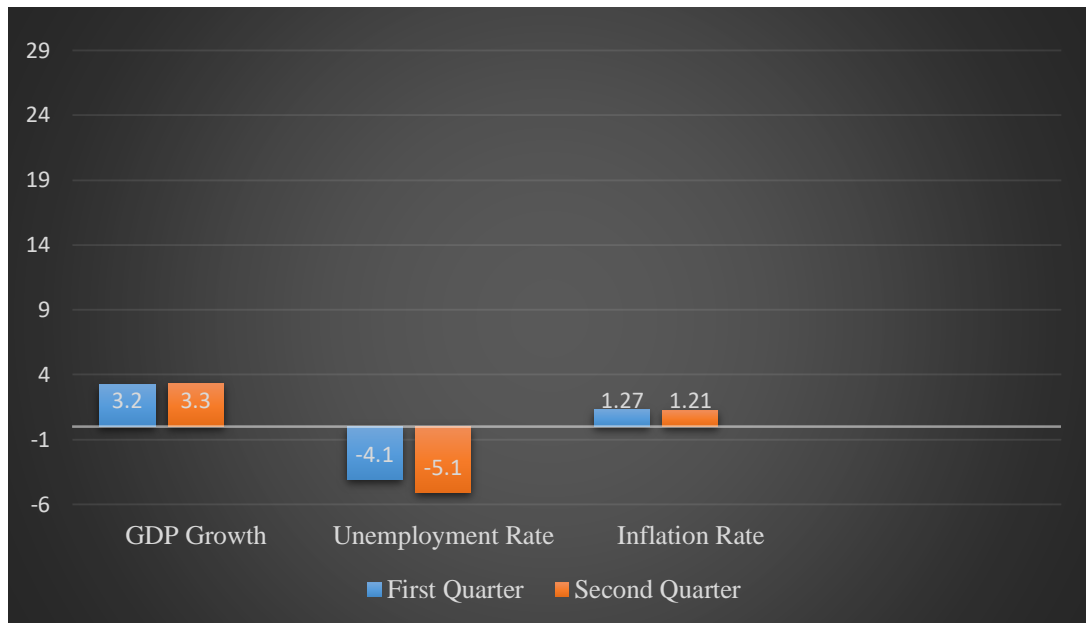
Figure 4.3: Comparison of GDP Growth, Inflation Rate, and Unemployment Rate in the Second Quarter of the Year 2020 Relative to that of in the First Quarter in UAE

4.6 Result Hypotheses[1]

Table 4.19: Result Hypotheses

HYPOTHESES	FINDINGS
H1: Unemployment Rate has negative significant effect on GDP Growth in Iran.	NOT SUPPORTED The two variables are not correlating significantly (Corresponding probability is higher than 0.05 with negative coefficient)
H2: Inflation Rate has negative significant effect on GDP Growth in Iran.	NOT SUPPORTED The two variables are not correlating significantly

---

[1] At 95 percent confidence interval

	(Corresponding probability is higher than 0.05 with negative coefficient)
H3: Human Development Index has positive significant effect on GDP Growth in Iran.	SUPPORTED The two variables are correlating significantly at 5% level (Corresponding probability is less than 0.05 with positive coefficient)
H4: Unemployment Rate has negative significant effect on GDP Growth in Turkey.	SUPPORTED The two variables are correlating significantly at 5% level (Corresponding probability is less than 0.05 with negative coefficient)
H5: Inflation Rate has negative significant effect on GDP Growth in Turkey.	NOT SUPPORTED The two variables are not correlating significantly (Corresponding probability is higher than 0.05 with negative coefficient)
H6: Human Development Index has positive significant effect on GDP Growth in Turkey.	SUPPORTED The two variables are correlating significantly at 5% level (Corresponding probability is less than 0.05 with positive coefficient)

H7: Unemployment Rate has negative significant effect on GDP Growth in UAE.	SUPPORTED The two variables are correlating significantly at 5% level (Corresponding probability is less than 0.05 with negative coefficient)
H8: Inflation Rate has negative significant effect on GDP Growth in UAE.	SUPPORTED The two variables are correlating significantly at 5% level (Corresponding probability is less than 0.05 with negative coefficient)
H9: Human Development Index has positive significant effect on GDP Growth in UAE.	SUPPORTED The two variables are correlating significantly at 5% level (Corresponding probability is less than 0.05 with positive coefficient)
H10: The higher HDI, the stronger relationship between GDP Growth, Inflation Rate, and Unemployment Rate.	SUPPORTED (Overall, corresponding probabilities confirm this hypothesis)
H11: The higher HDI, the lower decrease (if any) in GDP Growth after COVID-19 pandemic.	SUPPORTED (Refer to the Figure 4.1, 4.2, and 4.3)

H12: The higher HDI, the lower Increase (if any) in Unemployment Rate after COVID-19 pandemic.	SUPPORTED (Refer to the Figure 4.1, 4.2, and 4.3)
H13: The higher HDI, the lower Increase (if any) in Inflation Rate after COVID-19 pandemic.	SUPPORTED (Refer to the Figure 4.1, 4.2, and 4.3)

Chapter 5

CONCLUSION

5.1 Discussion of Findings

As is observed from the ordinary least square multiple regressions, in Iran, out of three independent variables, HDI is the only variable that has significant effect on GDP Growth and this effect is positive as expected. The two variables are correlating significantly at 1% level (99% of the time). However, the coefficient of HDI is not very high; thus, HDI level effects GDP Growth in Iran most of the time, but only influences GDP 18% which is understandable since there are so many factors influencing Iran's GDP. For example, a major source of income in Iran is coming from petroleum exports, the level inflation would be only partially influencing GDP in Iran. With regard to the Turkey's outcomes, ordinary least square multiple regression demonstrates the results with more similarity with our hypotheses such that out of three independent variables, Unemployment Rate and HDI have significant effect on GDP Growth with in turn negative and positive impact. When it comes to the UAE's outcomes, it can be seen that all three independent variables have significant effect on GDP Growth and it matches completely with our hypotheses. Therefore, ordinary least square multiple regressions overall, bring us to a conclusion that countries with higher HDI development have more consistency with economic theories as explained in literature review based on which GDP Growth, Inflation Rate, and Unemployment Rate are considerably interconnected with each other.

Focusing on four indicators discussed in the study, the investigation of economic situation of three countries reveals that those countries that have higher Human Development Index (HDI) before COVID-19 pandemic, which signifies having better economic situation with more stability and stronger base[1], have being also recording better statistics after COVID-19 pandemic; specifically, less decrease in GDP Growth, less increase in Unemployment Rate, and less increase in Inflation Rate relative to countries with lower HDI. Thus, as expected, for the time being[2], UAE has the best situation relative to two other countries. Moreover, in all three countries analyzed, HDI turned out to be the only variable that has an effect on GDP Growth of the three countries.

All in all, this study subscribes to the fact that when a country develops its HDI which is representative of a country's overall achievement in its social and economic dimensions, that country not only will function more efficiently and effectively from economic perspective and in favor of economic theories, but also will be more equipped and prepared for running the economy and surviving either in normal situation or in the face of unpredictable situations such as COVID-19 pandemic. Furthermore, this study potentially contains some useful clues for governments and policy makers especially in lower HDI developed countries to prompt them to reconsider their economic and social policies and take corrective and fundamental actions.

5.2 Limitations of the Study

Due to the fact that this study is using secondary data, researcher had no control on the process of data collection. However, at the World Bank, the development data group

---

[1] Concluded after the verification of part of thesis hypotheses from number 1 to 10.
[2] Following the economic situation of countries in this study is stopped in June.

works closely with the bank's regions and global practices guided by professional standards in the collection of data to ensure that users can benefit from confident and accurate data produced.

Moreover, since this study is carried out during the period of COVID-19 pandemic and the situation is continuing at the present time, the concluding stage of this pandemic is ambiguous and we are unclear about when the disease subsides all over the world and what will happen to the economic situation of each country at the end of this pandemic period.

5.3 Recommendations for Further Studies

Firstly, our study was performed in a specific length of time from the year 2000 up until June 30th, 2020. However, after the COVID-19 pandemic, countries may undergo many changes in the area of different economic indicators for different reasons. Therefore, re-evaluation of this study in the desired countries is suggested for adapting the findings.

Furthermore, it is recommended to investigate why in the countries such as Iran there is no complete and significant association between Unemployment Rate and GDP Growth and also between Inflation Rate and GDP Growth (and even between other economic parameters and GDP Growth) in accordance with theories relative to that of in higher developed countries. Additionally, it is suggested to find out what other factors from political and social to economic elements, intervene and play a determinant role in such countries that stop them from progress.

REFERENCES

Aceleanu, M. I. (2012). LINKS BETWEEN EDUCATION, EMPLOYMENT AND QUALITY OF LIFE. THE CASE OF ROMANIA. *Management & Marketing*, *7*(4).

Alias, M. H., Ahmad, N., & Kefeli, Z. (2007). *Employability of Islamic studies graduates in Malaysia*. USIM.

Allen, J., & De Weert, E. (2007). What do educational mismatches tell us about skill mismatches? A cross-country analysis. *European Journal of Education*, *42*(1), 59-73.

Allen, J., & Van der Velden, R. (2007). Transitions from higher education to work. In *Careers of university graduates* (pp. 55-78). Springer, Dordrecht.

Andrén, D., & Martinsson, P. (2006). What contributes to life satisfaction in transitional Romania?. *Review of Development Economics*, *10*(1), 59-70.

Arai, K. (2001). Internal rates of return to higher education for non-quitters and the role of female higher education. *Hitotsubashi Journal of Economics*, *42*(1), 1-15.

Archer, W., & Davison, J. (2008). Graduate employability. *The council for industry and Higher Education*.

Arkes, J. (2010). Using unemployment rates as instruments to estimate returns to schooling. *Southern Economic Journal*, *76*(3), 711-722.

Armstrong, M. (1996). *AHandbook of personnel management practice*. Kogan Page.

Bai, L. (2006). Graduate unemployment: Dilemmas and challenges in China's move to mass higher education. *The China Quarterly*, *185*, 128-144.

Ball, S. C. (1990). *More Means Different: Widening Access to Higher Education: Final Report [of the RSA/Industry Matters Project]*. RSA.

Bartlett, W., Uvalić, M., Durazzi, N., Monastiriotis, V., & Sene, T. (2016). From university to employment: higher education provision and labour market needs in the Western Balkans synthesis report. *European Commission, Directorate-General for Education and Culture*.

Bartlett, W., Uvalić, M., Durazzi, N., Monastiriotis, V., & Sene, T. (2016). From university to employment: higher education provision and labour market needs in the Western Balkans synthesis report. *European Commission, Directorate-General for Education and Culture*.

Becker, G. S. (2009). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago press.

Beneito, P., Ferri, J., Luisa Molto, M., & Uriel, E. (2001). Determinants of the demand for education in Spain. *Applied Economics*, *33*(12), 1541-1551.

Betts, J. R., & McFarland, L. L. (1995). Safe port in a storm: The impact of labor market conditions on community college enrollments. *Journal of Human resources*, 741-765.

Bhorat, H., Cassim, A., & Tseng, D. (2016). Higher education, employment and economic growth: Exploring the interactions. *Development Southern Africa*, *33*(3), 312-327.

Boffy-Ramirez, E., Hansen, B., & Mansour, H. (2013). The effect of business cycles on educational attainment. *Available at SSRN 2294146*.

Breneman, D. W. (2002). For colleges, this is not just another recession. *The chronicle of higher education*, *48*(40), B7-B9.

Bridgstock, R. (2009). The graduate attributes we've overlooked: Enhancing graduate employability through career management skills. *Higher Education Research & Development*, *28*(1), 31-44.

Card, D. (2001). Estimating the return to schooling: Progress on some persistent econometric problems. *Econometrica*, *69*(5), 1127-1160.

Corominas, E., Saurina, C., & Villar, E. (2010). The match between university education and graduate labour market outcomes (education-job match): an analysis of three graduate cohorts in Catalonia. *Studies on Higher Education and Graduate Employment, Girona University*.

Delaney, J. A., & Doyle, W. R. (2011). State spending on higher education: Testing the balance wheel over time. *Journal of Education Finance*, 343-368.

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural equation modeling*, *8*(3), 430-457.

Ferrante, F. (2009). Education, aspirations and life satisfaction. *Kyklos*, *62*(4), 542-562.

Ferro Luzzi, G., & Flückiger, Y. (2003). An econometric estimation of the demand for tourism: The case of Switzerland. *Pacific Economic Review*, *8*(3), 289-303.

Fulgence, K. (2016). Employability of Higher Education Institutions graduates: Exploring the influence of Entrepreneurship Education and Employability skills development program activities in Tanzania.

Goldberg, I., Goddard, J. G., Kuriakose, S., & Racine, J. L. (2011). *Igniting innovation: rethinking the role of government in emerging Europe and Central Asia*. The World Bank.

Grossman, M. (2006). Education and nonmarket outcomes. *Handbook of the Economics of Education*, *1*, 577-633.

Gunduz*, L., & Hatemi-J, A. (2005). Is the tourism-led growth hypothesis valid for Turkey?. *Applied Economics Letters*, *12*(8), 499-504.

Hager, P., McIntyre, J., Moy, J., Comyn, P., Stone, J., Schwenke, C., & Gonczi, A. (1996). *Workplace Keys. Piloting the Key Competencies in Workplace Training*.

Hanushek, E. A., & Woessmann, L. (2008). The role of cognitive skills in economic development. *Journal of economic literature*, *46*(3), 607-68.

Harvey, L. (1999). Employability: Developing the relationship between higher education and employment. *Quality in higher education*, 1-14.

Harvey, L. (2001). Defining and measuring employability. *Quality in higher education*, *7*(2), 97-109.

Harvey, L., & MacDonald, M. (1993). *Doing sociology: A practical introduction*. Macmillan International Higher Education.

Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: can entrepreneurship be taught? Part I. *Education+ Training*, *47*(2), 98-111.

Hernadi, I., Rathore, A., & Dorji, R. (2012). Higher education and employment: Challenges in Bhutan.

Husain, T., Sanyal, B. C., Abbasi, M. H., & Khiin, S. R. (1987). Higher education and employment opportunities in Pakistan. *Paris: International Institute for Educational Planning*.

Iordanova, T., & Data, C. R. (2009). Introduction to stationary and non-stationary processes. *Retrieved September*, *19*, 2013.

Kane, T. J. (1994). College entry by blacks since 1970: The role of college costs, family background, and the returns to education. *Journal of political Economy*, *102*(5), 878-911.

Karadisi, O. (2012). Effectiveness of universities and colleges in imparting employability skills to their graduates in Tanzania: The case of Dar es salaam Colleges and Universities. *Unpublished Postgraduate project, University of Dar es Salaam*.

Katircioğlu, S. T. (2010). International tourism, higher education and economic growth: The case of North Cyprus. *The World Economy*, *33*(12), 1955-1972.

Katircioglu, S. Trade, tourism and growth: the case of Cyprus Appl. *Econ*, *41*(21), 2741-2750.

Khamis, F. G., Hanoon, M. F., & Belarbi, A. (2010). The Relationship between Education and Occupation Using Fully and Partially Latent Models. *International Journal of Intelligent Technologies & Applied Statistics*, *3*(3).

Kivinen, O., & Ahola, S. (1999). Higher education as human risk capital. *Higher education*, *38*(2), 191-208.

Kolawole, C. O., & Arikpo, P. A. (2004). Predictors of Self-Employment Efforts Among Unemployed Nigerian graduates.

Kostoglou, V., & Adamidis, P. (2010). Analyzing the employability of higher education graduates and detecting the effecting factors. *The Cyprus Journal of Sciences*, *8*, 73.

Kostoglou, V., & Paloukis, S. (2007, August). Graduates' Employment in European Union. In *Proceedings of the 5th International Conference "New Horizons in Industry, Business and Education"(NHIBE 2007)* (pp. 103-107).

Lazear, E. P., & Spletzer, J. R. (2012). *The United States labor market: Status quo or a new normal?* (No. w18386). National Bureau of Economic Research.

Levine, L. (2013). The increase in unemployment since 2007: Is it cyclical or structural?.

Livanos, I. (2010). The relationship between higher education and labour market in Greece: the weakest link?. *Higher Education*, *60*(5), 473-489.

Lopez, R. (2003). The policy roots of socioeconomic stagnation and environmental implosion: Latin America 1950–2000. *World Development*, *31*(2), 259-280.

McArdle, S., Waters, L., Briscoe, J. P., & Hall, D. T. T. (2007). Employability during unemployment: Adaptability, career identity and human and social capital. *Journal of vocational behavior*, *71*(2), 247-264.

McCowan, T., Reilly, T., & Steven, D. (2014). Can higher education solve Africa's job crisis? Understanding graduate employability in Sub-Saharan Africa. *British Council, Policy brief*.

McGuinness, S., Whelan, A., & Bergin, A. (2016). Is there a role for higher education institutions in improving the quality of first employment?. *The BE Journal of Economic Analysis & Policy*, *16*(4).

Menon, M. E. (2008). Perceived rates of return to higher education: Further evidence from Cyprus. *Economics of Education Review*, *27*(1), 39-47.

Mincer, J. (1991). *Education and unemployment* (No. w3838). National Bureau of Economic Research.

Mora, J. G., García-Aracil, A., & Vila, L. E. (2007). Job satisfaction among young European higher education graduates. *Higher Education*, *53*(1), 29-59.

Moretti, E. (2004). Estimating the social return to higher education: evidence from longitudinal and repeated cross-sectional data. *Journal of econometrics*, *121*(1-2), 175-212.

Ng, T. W., & Feldman, D. C. (2009). How broadly does education contribute to job performance?. *Personnel psychology*, *62*(1), 89-134.

Nickell, S. (1979). Estimating the probability of leaving unemployment. *Econometrica: Journal of the Econometric Society*, 1249-1266.

Omotor, D. G. (2008). The role of exports in the economic growth of Nigeria: the bounds test analysis. *International Journal of Economic Perspectives*, *2*(4), 222-235.

Oreopoulos, P., & Salvanes, K. G. (2009). *How large are returns to schooling? Hint: Money isn't everything* (No. w15339). National Bureau of Economic Research.

Pinnington, A., & Edwards, T. (2000). Introduction to human resource management. *OUP Catalogue*.

Prasad, N. (2008). Growth and social development in the Pacific Island countries. *International Journal of Social Economics*, *35*(12), 930-950.

Puhakka, A., Rautopuro, J., & Tuominen, V. (2010). Employability and Finnish university graduates. *European Educational Research Journal*, *9*(1), 45-55.

Rafiq, M., Ahmad, I., Ullah, A., & Khan, Z. (2010). Determinants of unemployment: A case study of Pakistan economy (1998-2008). *Abasyn journal of social sciences*, *3*(1), 17-24.

Ram, R. (1989). Can educational expansion reduce income inequality in less-developed countries?. *Economics of Education Review*, *8*(2), 185-195.

Rangel, E., & Ivanova, A. (2014). Higher education policies and employment in Mexico. *Modern Economy*, *5*(07), 821.

Roze, S., Baetge, J., & Hartmann, L. IMPROVING THE LINK BETWEEN HIGHER EDUCATION AND EMPLOYMENT IN INDIA.

Rychen, D. S., & Salganik, L. H. (Eds.). (2003). *Key competencies for a successful life and well-functioning society*. Hogrefe Publishing.

Salas-Velasco, M. (2007). The transition from higher education to employment in Europe: the analysis of the time to obtain the first job. *Higher Education*, *54*(3), 333-360.

Salvatore, D. (1982). *Theory and Problems of Statitics and Econometrics*. Mcgraw-hill.

Sattinger, M. (1993). Assignment models of the distribution of earnings. *Journal of economic literature*, *31*(2), 831-880.

Sattinger, M. (2012, April). Assignment models and quantitative mismatches. In *Prepared for the Expert Workshop" Skill Mismatch and Firm Dynamics: Integrating Skills with the World of Work," April* (Vol. 27).

Schomburg, H., & Teichler, U. (2007). *Higher education and graduate employment in Europe: Results from graduates surveys from twelve countries* (Vol. 15). Springer Science & Business Media.

Shelley, K. J. (1996). 1994-2005: Lots of College-Level Jobs--but Not for All Graduates. *Occupational Outlook Quarterly*, *40*(2), 2-9.

Shukran, A. R., Wok, S., Majid, H. S. A., & Noor, N. M. (2004). Graduate Employability.

Stevens, P., & Weale, M. (2003). Education and Economic Growth. National Institute of Economic and Social Research, London. *cee. lse. ac. uk. Стаття надійшла до редакції*, *13*, 2013.

Ţaran-Moroşan, A., Sava, R., & Diaconescu, C. (2010). THE COSTS AND BENEFITS OF EDUCATION-A BRIEF REVIEW. *Studies in Business & Economics*, *5*(3).

Teichler, U. (2007). Does higher education matter? Lessons from a comparative graduate survey. *European Journal of Education*, *42*(1), 11-34.

Teichler, U. (2009). Higher education and the world of work. *Conceptual Frameworks, Comparative Perspectives, Empirical Findings. Rotterdam. Taipei*.

Tellegen, B. G. (2013). *The Relationship between Education and the Labor Market in the Current Context of Sub-Saharan Africa* (Master's thesis).

Trow, M. (1973). Problems in the transition from elite to mass higher education.

Tyre, M., & Braunstein, S. (1992). Higher education and ethical policing. *FBI L. Enforcement Bull.*, *61*, 6.

Weligamage, S., & Siengthai, S. (2003, November). Employer needs and graduate skills: the gap between employer expectations and job expectations of Sri Lankan university graduates. In *9th International conference on Sri Lanka Studies. Matara, Sri Lanka*.

Yousefy, A., & Baratali, M. (2011). Women, employment and higher education schoolings. *Procedia-Social and Behavioral Sciences*, *15*, 3861-3869.

Zhao, G. Z. (2009). Higher Education Scale and Employment Relationship in China. *Online Submission*, *6*(5), 16-20.