Czech University of Life Sciences Prague

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Master's Thesis

Analysis of Unemployment in Palestine

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

Yara Salamin, BA

Economics and Management

Thesis title

Analysis of Unemployment in Palestine

Objectives of thesis

The main goal of the following thesis is to analyze the development of unemployment indicator in Palestine and identify the main factors influencing the development of this indicator. In addition to this, the author also characterizes the main tendencies behind this indicator.

Methodology

The author splits the work into two equally important parts – the literature review and the practical part. In the literature review, the author analysis relevant scientific framework related to the topic, and analyzes the development of the indicator in the practical part of his work. Consequently, the author identifies the most important factors influencing the unemployment and creates an econometric model reflecting on the current situation and development trends in Palestine.

The proposed extent of the thesis

60-80 pages

Keywords

unemployment, macroeconomic, indicator, crisis, trends

Recommended information sources

Sabella, A. R., Farraj, W. A., Burbar, M., & Qaimary, D. (2014). Entrepreneurship and economic growth in West Bank, Palestine. Journal of Developmental Entrepreneurship, 19(01), 1450003.

Salama, A. (2017). ANALYSIS OF UNEMPLOYMENT CHALLENGES IN PALESTINE BETWEEN 2000 AND 2015. SEA: Practical Application of Science, 5(3).

Salama, A. (2017). Discuss the relationship between unemployment and level of education in Palestine. The Annals of the University of Oradea. Economic Sciences, 26(1), 171-18

Expected date of thesis defence

2022/23 WS – FEM

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Prague on 01. 04. 2023

Declaration

I declare that I have worked on my master's thesis titled " Analysis of Unemployment in Palestine" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 31.03.2023   _____

Acknowledgement

I would like to thank prof. Ing. Mansoor Maitah, Ph.D. et Ph.D. and all other persons, for their advice and support during my work on this thesis.

Analysis of Unemployment in Palestine

Abstract

The goal of the thesis is to evaluate and assess tendencies related to unemployment in Palestine. The author's main goal lies in the identification of the most important factors that influence the variable in Palestine. The author relies on the empirical approach consisting mainly out of three techniques: econometric estimation, ex-ante prognosis and seasonality analysis.

In summary, the results of this research point to the Gross Domestic Product (GDP) as the most significant factor in the prediction of unemployment in Palestine. Hence, policies that attempt to enhance GDP development might be useful in lowering the amount of unemployment in the nation. The research also reveals that time is not a reliable predictor of unemployment in Palestine. It also suggests that there is a seasonal pattern in unemployment, with the first quarter of the year having the highest unemployment rate. Consequently, measures that attempt to ameliorate the seasonal swings in employment in Palestine in order to reduce unemployment in the nation may be beneficial in doing so, provided that they are implemented effectively.

Analýza nezaměstnanosti v Palestině

Abstrakt

Cílem práce je zhodnotit a zhodnotit tendence spojené s nezaměstnaností v Palestině. Hlavní cíl autora spočívá v identifikaci nejdůležitějších faktorů, které ovlivňují proměnnou v Palestině. Autor se opírá o empirický přístup skládající se převážně ze tří technik: ekonometrický odhad, prognóza ex-ante a analýza sezónnosti.

Stručně řečeno, výsledky tohoto výzkumu poukazují na hrubý domácí produkt (HDP) jako nejvýznamnější faktor v predikci nezaměstnanosti v Palestině. Politiky, které se pokoušejí zvýšit vývoj HDP, by proto mohly být užitečné při snižování míry nezaměstnanosti v zemi. Výzkum také ukazuje, že čas není spolehlivým prediktorem nezaměstnanosti v Palestině. Rovněž naznačuje, že v nezaměstnanosti existuje sezónní vzorec, přičemž první čtvrtletí roku má nejvyšší míru nezaměstnanosti. V důsledku toho mohou být prospěšná opatření, která se pokoušejí zmírnit sezónní výkyvy zaměstnanosti v Palestině za účelem snížení nezaměstnanosti v zemi, za předpokladu, že jsou účinně prováděna.

Klíčová slova: nezaměstnanost, Palestina, krize, hospodářský růst, vzdělání, chudoba, stabilita

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OLS	Ordinary Least Squares
GDP	Gross Domestic Product
USD	United States Dollar
FDI	Foreign Direct Investment

1 Introduction

Academics, policymakers, and development experts have all demonstrated a keen interest in the Palestinian economy. Due to the peculiar political and social climate in which it operates, there are several hurdles and opportunities for long-term economic success. This thesis aims to provide a comprehensive picture of the Palestinian economy by studying its makeup, important economic sectors, obstacles, and the role non-governmental organizations play in supporting growth.

This thesis explores the evolution of the Palestinian economy. It describes how Israeli occupation and restrictions have influenced important economic indicators, including as GDP, inflation, and the trade balance. The Palestinian Authority's fiscal policies and operations will also be assessed. The Palestinian economy is diverse, with several subsectors each playing a significant part in the overall. This chapter examines the agricultural, industrial, and service-based economic pillars. Prospects for growth and employment creation, as well as sector-specific challenges and openings, are explored. There are several obstacles preventing the Palestinian economy from expanding and thriving. This chapter highlights and analyses challenges such as high unemployment, political instability, restricted access to resources, and poor infrastructure. The effects of these restrictions on the Palestinian economy and way of life will be investigated.

The high unemployment rate in the Palestinian region has grave political, social, and economic repercussions. This chapter discusses the origins and repercussions of various types of unemployment. The contributions of the Palestinian Authority and other parties to the resolution of the situation are also discussed. In fact, the purpose of this thesis is to provide a comprehensive analysis of the Palestinian economy, its challenges, and its long-term development possibilities. This research attempts to provide light on the complexities of the Palestinian economy and inform future policymaking and development activities by evaluating its several sectors, unemployment issues, and the involvement of non-profit groups (NGOs).

2 Objectives and Methodology

2.1 Objectives

The goal of the thesis is to evaluate and assess tendencies related to unemployment in Palestine. The author's main goal lies in the identification of the most important factors that influence the variable in Palestine.

Additional goal lies in finding potential economic reasons for incredibly high unemployment rate for the country. Consequently, the author eventually describes the phenomenon and provides recommendations on how to tackle the issue.

2.2 Methodology

The author bases her analysis on the time interval of 14 years – from 2007 to 2020 with data collected from The World Bank. The author uses secondary data to conduct an analysis that involves linear regression estimation, elasticity calculation, ex-ante prognosis and seasonality analysis. The author uses Gretl and Excel for the analysis.

The issue of unemployment is a critical economic and social challenge that faces many countries around the world, including Palestine. Unemployment not only affects the individual's income and well-being but also has broader implications for the economy and society as a whole. Therefore, it is essential to conduct an in-depth analysis of unemployment in Palestine to understand its causes, consequences, and potential solutions.

Econometric analysis provides a robust framework for studying the relationships between economic variables and making informed policy decisions. By using econometric techniques such as regression analysis, time-series analysis, and panel data analysis, researchers can estimate the relationships between unemployment and various economic, social, and political factors. These techniques can help identify the most significant determinants of unemployment in Palestine and the channels through which they affect the labor market.

Moreover, econometric analysis can help test hypotheses about the causes and consequences of unemployment in Palestine. For instance, researchers can test the hypothesis

that education is a crucial determinant of employment in Palestine by estimating the relationship between education and unemployment while controlling for other factors that affect employment. The results of such an analysis can provide policymakers and the author of the thesis with evidence-based recommendations on how to improve education policies to reduce unemployment.

To be more specific, it is wise to say that the author relies mostly on the empirical research, which will allow the author to get unbiased conclusions about the real state of affair in the country with the variable of unemployment.

3 Literature Review

3.1 Economy of Palestine

3.1.1 Sectors

By providing a holistic overview of the Palestinian economy, this thesis aims to contribute to the ongoing academic discourse on the topic and to serve as a valuable resource for policymakers, practitioners, and researchers interested in understanding the complexities of the Palestinian economic landscape. A huge number of small and medium-sized businesses, often known as SMEs, are active participants in the agricultural sector of the Palestinian economy. These businesses are responsible for the production of a wide variety of goods, including olive oil, fruits, and vegetables. A considerable segment of the Palestinian people, particularly in rural areas, relies on this business as their principal source of work and income (Chatelard, 2010). Yet, the sector is confronted with a number of challenges, such as restricted access to resources and markets, as well as the consequences of conflict and political instability. The industry's competitiveness has suffered as a result of these issues, making it more difficult for Palestinian farmers to compete in both the domestic and international markets. The Palestinian economy has persevered and grown over the past decade, as indicated by its gross domestic product (GDP) (Fig. 1). This graph shows the Palestinian gross domestic product's growth and challenges throughout this time period. At the start of the period under examination, the Palestinian economy grew moderately due to service and construction sector development and agriculture sector resilience. International help from donor governments and NGOs also supported GDP growth (Steinberg, 2021).

Despite the increasing trend, Palestine's GDP growth has been volatile due to political instability and Israeli economic policy. Intermittent conflicts and tensions destroyed infrastructure, productive assets, and commerce, affecting growth rates. The Palestinian Authority's delayed economic reforms contributed to this decade's GDP growth. Fiscal management, infrastructural investment, and business environment improvements have created a more stable economic framework that promotes private sector growth and job creation. Palestinian diaspora remittances, a major revenue source, have also boosted GDP growth (Bahar, 2020). Palestinians working abroad have increased household expenditure, housing investment, and small business growth. In fact, the Palestinian economy's GDP shows its

capacity to prosper despite its many challenges. The rise is due to international help, economic reforms, remittances, and significant economic sectors. Nonetheless, economic growth's instability underscores the need for long-term political solutions and a more conducive economic environment. Besides GDP, Palestine has significant number of sectors in economy that contribute to the whole picture.

Figure 3, GDP rate of Palestine for the last 8 years (2014-2022)
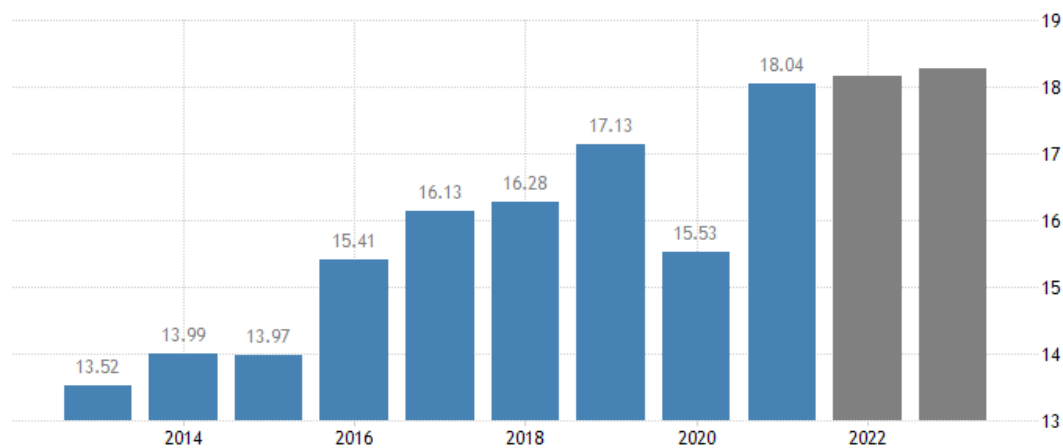
Source: Trading Economics, 2022

Also, it is important to show the banking system in Palestine. The Palestinian financial system consists of local banks, international banks, and institutions managed by the Palestinian diaspora (Rabie, 2021). These financial organizations offer a variety of banking goods and services to its consumers. The Palestinian banking industry must overcome several obstacles, including a lack of financial resources, high levels of political instability, and restrictions on travel and access to financial services. Two distinct regions make up the Palestinian territories: the Gaza Strip and the West Bank.

The West Bank is landlocked and has land borders with Jordan and Israel, whereas the Gaza Strip is a coastal enclave that shares land borders with Egypt and Israel. The West Bank and Gaza Strip are connected via the relatively brief West Bank-Gaza Strip Land Bridge. The prolonged conflict and political unrest in the region have had a devastating effect on both the banking sector and the economy of the Gaza Strip and West Bank. Due to limits on travel and financial services, consumers and businesses have less convenient access to banking services. This has further hindered Palestinian banks' capacity to expand and compete globally (Teitelbaum, 2019).

Figure 4, West Bank-Gaza Strip Bridge
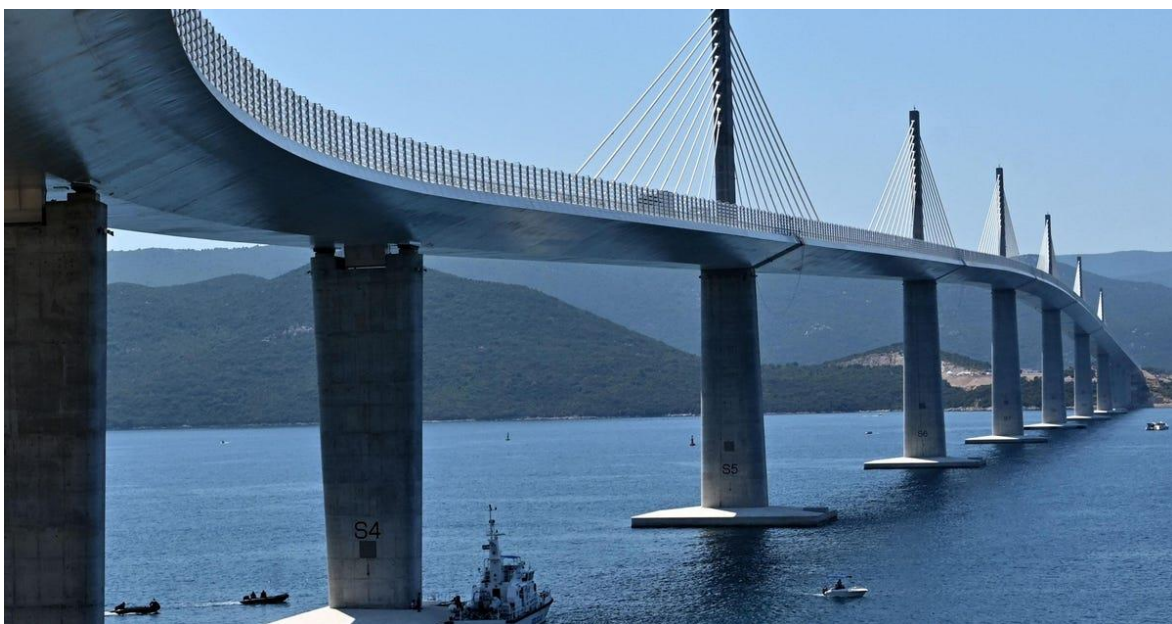
Source: Haaretz, 2022

The Israeli government's policies of settlement building and blockade of the Gaza Strip have had a devastating effect on the Palestinian economy (Dall'Alba, 2021). These constraints have made it more difficult for businesses to operate and grow by restricting their access to resources and markets. This has resulted in widespread poverty and high unemployment rates, particularly in Gaza. Notwithstanding these difficulties, Palestinians nevertheless have access to a functional financial system that serves their needs. Both financial inclusion and regional economic growth are actively sought objectives. Stabilization in the region and the end of the present conflict are essential for the expansion of the Palestinian economy and banking industry. But at this point it is important to note all crucial economic sectors for Palestine.

The insufficient availability of water resources is one of the most critical challenges facing the Palestinian agriculture sector. The region is experiencing a serious crisis referred to as water scarcity as a result of the limited quantity of fresh water sources and the high demand for water

for agricultural uses (Feitelson, 2012). Because of this problem, agricultural production has been on the decline, making it increasingly difficult for farmers to produce enough food to satisfy the demands of the market (Al-Arda, 2017).

Agriculture sector in Palestine is one of most significant economy fuels but Palestinian farmers face enormous challenges brought on by limited access to a variety of markets (Fullilove, 2023). They run into difficulties while trying to market their wares in other nations, such as an unpredictable political climate, limited infrastructure, and travel restrictions. These problems contribute to the industry's declining competitiveness in both domestic and international markets, which is a problem that has been caused by the industry itself.

In spite of these challenges, the agricultural sector in Palestine has the potential to expand and flourish. This could happen, in particular, if the political climate were to become less volatile and if the necessary infrastructure were to be developed. The development of this industry will bring about an increase in the number of job possibilities available to Palestinians and will contribute to the broadening of the Palestinian economy.

Both in terms of the generating of cash and the development of employment opportunities, the tourist industry is another key contributor to the Palestinian economy. Jerusalem, as a primary destination for tourists from all over the world, plays a significant role in the industry's most important subsectors, which are cultural tourism and religious tourism, respectively. Despite the fact that Palestine's tourist sector is essential to the entire economy of the country, the sector continues to face obstacles that slow down its expansion.

The absence of infrastructure in strategically advantageous locations is also serious challenge confronted by the Palestinian tourist sector. Because of this, vacationers have a difficult time traveling to the area and taking advantage of everything it has to offer since there is a shortage of available hotel, transportation, and other services. Due to a lack of sufficient infrastructure, there is less competition within the tourist sector in comparison to other prospective holiday locations. As a result, it is more difficult for enterprises in the region to expand and prosper. The Palestinian tourism sector faces additional challenges as a result of a lack of financial investment (Suleiman, 2011). Although having the potential for growth and expansion, the industry has only received modest investment from both the public and the private sectors. In addition, potential visitors are dissuaded from choosing Palestine as a

vacation spot due to unfavorable media coverage and travel advisories issued by a number of other nations. Notwithstanding these setbacks, Palestine's tourism industry still has a significant amount of unrealized growth and development potential that has not yet been realized. The region's rich cultural and religious past, in addition to its one-of-a-kind natural beauty and historical sites, all serve to entice visitors to visit and explore the area. In addition, tourists are drawn to the region by its particular food and its well-preserved traditional arts and crafts. There would be an increase in the number of tourists to the region if the region had the necessary infrastructure, and the political atmosphere would be more stable, which would lead to a considerable improvement in the economic situation of the Palestinian people (Hobfoll, 2011).

The industrial sector is vital to the economy of the Palestinian territories since it is the primary source of employment for a considerable number of Palestinians and the primary provider of goods and services that satisfy their fundamental need (Marie, 2016). Notwithstanding the significant challenges that the company is currently facing, production of textiles, food products, and consumer goods is continuing as usual. The Palestinian industrial sector has a substantial obstacle in the shape of a deficiency in the quantity of raw materials that are accessible. Because of the instability of the political atmosphere and the limits that have been imposed on travel, it became challenging for local manufacturers to locate sources of raw materials inside the region. Because of this, Palestinian industries struggle to raise their production while simultaneously preserving their position as leaders in their respective local and international markets (Dana, 2015).

Because it does not have sufficient access to financial resources, the Palestinian industrial sector is having difficulty competing with other countries' manufacturing sectors. Because of the challenges they have in acquiring adequate finance, many manufacturing facilities are unable to update their facilities with cutting-edge equipment in order to keep pace with technological advancements. As a consequence of this, it is possible that it will become more challenging for manufacturers to grow their businesses and access new markets, which would result in a reduction in the sector's competitiveness. In spite of all of these challenges, Palestine's manufacturing sector is nevertheless able to provide a major contribution to the total economy of the nation. This is the case despite the fact that the country has a very low labor force participation rate. The industry is responsible for the employment of a considerable number of Palestinians and contributes to the growth of the Palestinian economy both

financially and technologically. In addition, the industry is responsible for the employment of a substantial number of Palestinians. Even though it faces competition from a variety of other industries, Palestine's manufacturing sector remains an important driver of the country's economy (Gertner, 2007). The Palestinian economy stands to profit from the removal of these impediments, as well as from an increase of the private sector's access to resources and finance, such as through cooperation with foreign partners or the formation of government initiatives that provide support.

3.1.2 Problems

The Israeli government's policy of restricting movement and access is one of the most important barriers that the Palestinian economy is now confronting. This policy was introduced by the Israeli government. Because of these limitations, it is more challenging for businesses to access new markets, and it is more challenging for people to find employment possibilities outside of the region. As a direct consequence of this, the competitiveness of the Palestinian economy is diminished, which makes advancement and growth more difficult. The Palestinian economy is already experiencing additional challenges, such as a dearth of investment on the part of potential investors. The government and private firms have only offered a very small amount of assistance for the economy, even though it can grow and thrive. Both the growth and development of the economy have been impeded by a lack of adequate investment in core infrastructure and a restricted supply of capital (Halland, 2016). In addition to this, the Palestinian economy is struggling with widespread poverty as well as significant unemployment rates. These problems are made much worse in Palestine, because agriculture is the major means of subsistence for a significant portion of the Palestinian population. Palestinians now have less options to earn a living for themselves as a direct result of the suffering agricultural economy, which is caused by violence, political instability, a lack of resources and markets, and a lack of resources overall (Lin, 2022).

Another obstacle that the Palestinian economy must overcome is the scarcity of banking and financial services. It is difficult for a considerable number of Palestinians, particularly those living in rural areas, to receive loans or other forms of finance since they do not have access to traditional financial institutions. This is especially true for individuals who live in urban areas. This is especially important to keep in mind in metropolitan settings. The growth

and development of the economy can be hampered when there is insufficient access to financial resources and banking services, particularly in the areas of agriculture and small companies.

Other significant challenges facing the Palestinian economy include widespread instances of corrupt behavior and a general absence of openness throughout both the Palestinian government and the business sector. Investment might be discouraged when there is a lack of transparency and corruption, which can have a negative impact on the economic competitiveness of a country. Because there is a lack of openness and corruption in the region, businesses and people may be unwilling to take chances in the area. These factors have the potential to push further the advancement of the economy (Berger, 2015).

Finally, as a direct consequence of the conflict, the Palestinian economy has suffered serious damage, which has directly contributed to the political instability that has ensued as a result (Ijoyah, 2022). Because to the drawn-out nature of the conflict, a significant number of Palestinians have been forced to flee their homes, and vital pieces of infrastructure, like as roads and bridges, have been severely damaged or altogether destroyed. This has a detrimental effect on the competitiveness of the economy and slows down the overall progress of the country. It will be essential for Palestine's future that efforts be made to establish peace and stability in the region, as well as for international support to be provided for the rebuilding of infrastructure and the implementation of programs for sustainable development. This will allow for the creation of a more robust economy.

Another obstacle that the Palestinian economy must overcome is the scarcity of educational and occupational training options that are easily available. It is difficult for many Palestinians, particularly those who live in rural areas, to acquire the education and training opportunities necessary to participate in the contemporary economy because they do not have access to exceptional education and training programs. This is especially true for those Palestinians who live in urban areas. As a consequence of this, there is a possibility that economic growth and development would be stifled, and that poverty and unemployment rates will increase. These findings have the potential to impede the growth of the economic sector (Badwan, 2015).

One of the obstacles that the Palestinian economy must overcome is the scarcity of cutting-edge technology and equipment that is easily accessible. If a company does not have access to

modern machinery and tools, it may be more difficult for that company to create items and compete successfully on both the domestic and worldwide markets. This is especially true for businesses located in more rural places. Because of this, it will be more difficult for the economy to expand and prosper as a result of the fact that it may limit competitiveness and decrease productivity (Wachsberger, 2021).

There are some challenges that the Palestinian economy must contend with is a dearth of access to international export markets. As Palestinian companies strive to grow into new export markets and sell their goods to clients located outside of the region, they could run against roadblocks along the way. This is due to the fact that there is a paucity of infrastructure that is specifically geared for export, as well as constraints on the ease with which commodities may be transported around. Because of this, it is possible that Palestinian economic competitiveness as well as the capacity for growth and development may suffer (Sultan, 2020).

Another significant obstacle that the Palestinian economy must overcome is the scarcity of access to medical care and other fundamental conveniences. Many Palestinians, particularly those who live in rural areas, do not have access to fundamental amenities like clean water, sanitation, and power, as well as high-quality medical treatment. This is especially true of those who are unemployed. This is particularly relevant for people who are living in poverty. It's possible that the economy may become less productive and less competitive, which would ultimately lead to increasing poverty and unemployment rates (Hamed, 2020). Access to basic services and medical care needs to be improved in order for the economy to expand and prosper, and for the nation to be in a position to offer job and income possibilities to its residents.

The Palestinian economy is plagued by a number of issues, some of which include restrictions on movement and investment, high rates of poverty and unemployment, a lack of access to financial and banking services, the negative effects of conflict and political instability, widespread corruption and a lack of transparency, a dearth of opportunities for education and training, a lack of access to cutting-edge technology and medical supplies, and so on. These issues all contribute to a lack of economic growth in the Palestinian territory. If the economy is going to expand and thrive, as well as if residents are going to have access to a variety of employment and income options, then these problems need to be solved (Aburaida, 2021). There are a variety of potential solutions, including investments in infrastructure, improved

access to resources and markets, promotion of economic growth and development in key sectors, reduction of corruption and promotion of transparency, expansion of educational and training opportunities, expansion of access to technology and equipment, and expansion of access to basic services and healthcare (Ibrahim, 2020).

3.1.3 Assistance from NGO's

The provision of help to the Palestinian economy is significantly aided by the efforts of non-governmental organizations, known as NGOs. Non-governmental organizations, by means of the activities and projects they carry out, contribute to the expansion and development of the Palestinian economy by helping to address some of the most significant difficulties now confronting it (Carapico, 2000).

The provision of microfinance services is one of the primary ways in which non-governmental organizations contribute to the stabilization of the Palestinian economy. Microfinance services assist stimulate economic growth and development in an area by providing modest loans and other types of financial services to individuals starting their own enterprises as well as to owners of small businesses. Microfinance services assist companies gain access to financing, which enables the firms to make investments in new equipment, expand their operations, and enter new markets. All of these things have the potential to have a beneficial influence on the economy as a whole (Arner, 2020).

The provision of educational and vocational training programs is another method through which non-governmental organizations lend a hand to the Palestinian economy. These initiatives teach Palestinians the abilities and information they require to take part in the modern economy, and they have the potential to help reduce poverty and unemployment in the region. The Palestinian economy will be more competitive if non-governmental organizations work to enhance the quality of educational and training options available in the region. This will contribute to the expansion and development of the Palestinian economy (Alshaerb, 2017).

The agricultural sector receives additional aid from NGO's, which is another way in which these organizations contribute to the Palestinian economy. There are several NGO's that aim to enhance farmers' access to resources like water and seeds, as well as providing them with training and support (Altieri, 2012). This may serve to boost the productivity of the agricultural

sector as well as its level of competitiveness, both of which may have a beneficial effect on the economy as a whole. In addition to these initiatives, NGOs contribute to the Palestinian economy by assisting small and medium-sized businesses through the support that they give. There are many NGOs that offer training and support to small and medium-sized businesses in order to assist these businesses in enhancing their operations and expanding into new markets. This can help these businesses become more competitive and contribute to the expansion of the Palestinian economy.

In fact, non-governmental organizations also provide a hand to the Palestinian economy by way of the help they offer for the construction of infrastructure (Qita, 2009). This may involve providing financial assistance for the building of roads, bridges, and other types of infrastructure, as well as for the repair of infrastructure that has been destroyed. NGOs have the potential to assist raise the competitiveness of the Palestinian economy and contribute to its growth and development by working to improve access to various forms of infrastructure.

It also important that NGOs play an important part in the process of giving help to the economy of Palestine. NGO programs and initiatives help to address some of the most significant challenges that the Palestinian economy faces, including limited access to capital, limited access to educational and training opportunities, and limited access to resources (Hilal, 2012). These challenges are all exacerbated by the fact that the Palestinian economy has limited access to these programs and initiatives. The provision of access to resources, training and support, as well as the development of infrastructure, are all ways in which non-governmental organizations can contribute to the overall well-being of the Palestinian population and help to promote economic growth and development in the region.

3.2 Unemployment

3.2.1 Types and Causes

There is a big economic and social problem that affects nations all over the world, and that problem is unemployment. It is the condition of a person who is actively looking for work but is unable to get employment in spite of their efforts. There are many distinct factors that contribute to unemployment, and it can be broken down into several subcategories. In addition to this, it has a significant bearing not just on the economy but also on society in general. In this all-encompassing review, author will go over the notion of unemployment, as well as its

various forms and the impact it has on the economy (Alba, 2014). Also, both the causes of unemployment and the potential solutions that may be implemented to combat the problem will be investigated and discussed in detail.

Those who are eager and able to work but are unable to locate work opportunities that meet their needs are said to be unemployed. To determine the unemployment rate, just divide the total number of people actively looking for work by the number of jobless people. Because it offers insight into both the effectiveness of the labor market and the general performance of the economy, this metric is frequently cited as a measure of the overall economic health of a country. Low unemployment rates are indicative of a robust and flourishing economy, but high rates may signal that the economy is struggling (Benmelech, 2012). Unemployment that is caused by job transitions, such as persons looking for new work after quitting their old job or getting laid off, is an example of a form of unemployment known as frictional unemployment. It is generally accepted that a dynamic labor market will always contain some level of frictional unemployment, and that this is both a natural and unavoidable occurrence.

There is a mismatch between the skills required by businesses and the talents possessed by job seekers, and this can lead to a type of unemployment known as structural unemployment. There are a number of factors that might contribute to structural unemployment, including developments in technology, the spread of globalization, and shifts in consumer tastes. These factors can cause particular industries to become outdated or less competitive (Hogan, 2013). Author listed some of them below (Di Matteo, 2020).

Decreased Consumer Spending. High unemployment rates contribute to decreased consumer spending because those who are jobless have less money available for discretionary purchasing. This reduction in spending might lead to a decreased demand for goods and services, which can, in turn, slow down the expansion of the economy.

Lost Human Capital. When people are out of work for lengthy periods of time, their previous knowledge and abilities run the risk of becoming out of date or obsolete. This decrease in human capital can have a negative impact on overall productivity as well as economic production.

Increased Government Spending. It is possible that governments may be needed to raise the amount of money they spend on social welfare programs like unemployment payments in order to assist individuals who are without job. This can result in deficits in the budget as well as a rise in the national debt.

Reduced Tax Revenues. Because fewer people are working and generating money that is taxable, tax revenues might be reduced when there is unemployment. This makes it more difficult for governments to provide public services and invest in infrastructure.

Education and Training. Increasing people's access to high-quality education and training programs can assist them in acquiring the skills essential to compete successfully in today's work market. This has the potential to both lower the rate of structural unemployment and increase worker competitiveness.

Diversification of the Economy. Promoting the expansion of several industries at the same time might result in the creation of new employment possibilities and a reduced reliance on sectors that are particularly vulnerable to structural shifts or economic slumps.

Investing in Infrastructure. Putting money into infrastructure projects, such as those involving transportation, electricity, and communication networks, may help boost economic growth and provide new employment opportunities. These investments have the potential to boost overall productivity as well as the environment in which businesses operate. Policies that are active in the labor market governments have the ability to establish policies that are geared at linking people who are looking for work with those who have open positions. These policies could include aid with job searches, unemployment benefits that are tied to job training or education and pay subsidies for businesses who hire people who have been jobless for a long period of time.

Helping Small and Medium-Sized Businesses. Becoming successful small and medium-sized businesses frequently play a vital role as substantial job producers within an economy. The expansion of small and medium-sized businesses and the creation of new jobs can both benefit from the government's provision of financial assistance, reduction of regulatory hurdles, and provision of tax benefits.

Monetary and Fiscal Policies. In order to encourage economic development and job creation, central banks have the ability to utilize monetary policy instruments such as changing interest rates and conducting quantitative easing. Other fiscal policy tools include tax cuts and spending cuts. Increasing aggregate demand and supporting the development of new jobs may also be supported by governments via the deployment of fiscal measures such as tax cuts and increased government expenditure (Abrahams, 2022).

The changes in the business cycle are closely tied to cyclical unemployment, which may be defined as unemployment that occurs in cycles. When the economy is weak, firms frequently decrease their personnel in order to save money, which results in a rise in the number of people looking for work. On the other hand, when the economy is doing well, firms are more likely to increase their workforces, which results in lower unemployment rates. This sort of unemployment is connected to businesses that face swings in demand based on the seasons, such as agriculture, tourism, and construction, which are all examples of industries that might be affected by seasonal unemployment. Workers typically find themselves temporarily unemployed at slower times of the year, which is what constitutes seasonal unemployment.

Automation and the introduction of new technologies are two factors that might contribute to the loss of jobs. This is especially true for individuals with low levels of education and training. While new employment may be created as a result of technological advancements, the individuals whose positions are eliminated may not possess the skills necessary for the newly created ones. The integration of economies throughout the world, often known as globalization, can result in the movement of jobs to nations that have lower labor costs, which can cause unemployment in countries that have higher labor costs. Changes in population size, age distribution, and migration patterns Changes in population size, age distribution, and migration patterns can alter the supply and demand dynamics of the labor market, which can affect unemployment rates. The level of unemployment in a nation may be impacted by a variety of governmental policies, including minimum wage laws, rules governing the labor market, and trade policy, amongst others.

The problem of high unemployment is a complicated one that has far-reaching repercussions not just for the economy but also for society as a whole. It is necessary to design effective strategies to address this issue, and one way to do so is to understand the many forms of unemployment and the underlying causes of each (Schoukens, 2020). Together,

governments and other stakeholders can work to reduce unemployment and foster economic growth by making targeted investments in education and training, promoting economic diversification, providing support for small and medium-sized enterprises, and implementing targeted labor market policies. But it also important to understand that problems with unemployment differ to country to country.

Palestine is not an exception because unemployment is a big problem that plagues countries all over the world, and Palestine is not an exception to this problem. The persistent violence and political unrest in the region have made it challenging for the Palestinian economy to thrive, which has led to high rates of unemployment. But the problem of unemployment in Palestine is not as basic as it would initially appear, and it is essential to have a thorough comprehension of its nuances in order to devise viable solutions (Jonassen, 2015).

When it comes to determining the extent of unemployment in Palestine, one cannot just depend on official figures as their sole source of information. Although the Palestinian Central Bureau of Statistics (PCBS) estimates that the unemployment rate for the first three months of 2021 will be somewhere around 24%, this statistic only conveys a portion of the full picture (Samarah, 2021). In point of fact, unemployment in Palestine is a complex problem that requires a closer examination of a variety of factors. These factors include the types of employment that are available, the gender and age of workers, and the impact that political and economic conditions have on the labor market (Fig. 3).

**Figure 5, Unemployment rate in Palestine for the last 20 years**
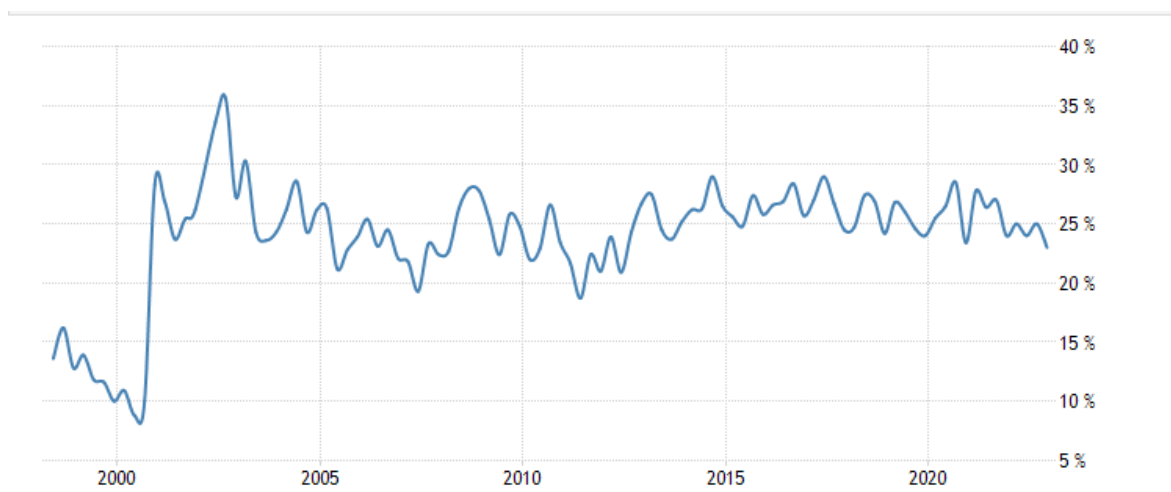
Source: WAFA, 2023

The restricted number of work possibilities that are now accessible is one of the primary contributors to the high unemployment rate in Palestine. The Palestinian economy is highly dependent on the public sector, and a significant number of Palestinians are now employed by the government. Yet, the government's capacity to create new employment is constrained since the continuous conflict and political instability make it difficult to attract foreign investment and expand the private sector (Faza, 2023). This in turn makes it difficult for the government to create new jobs. This implies that a significant number of Palestinians are either compelled to hunt for employment in other countries or are forced to settle for low-paying occupations in the informal sector.

The unequal treatment of men and women in Palestine's workforce is another element that adds to the country's high unemployment rate. When it comes to the job market in Palestine, women face major challenges due to the fact that they are frequently barred from particular fields of employment and are subjected to prejudice throughout the recruiting process (Hardal-Zreik, 2022). In addition, many women are unable to work because conventional gender norms and the duties of family life prevent them from doing so, which reduces the options available to them for economic empowerment.

Figure 6, Unemployment of youth in Palestine (15-24 years old)
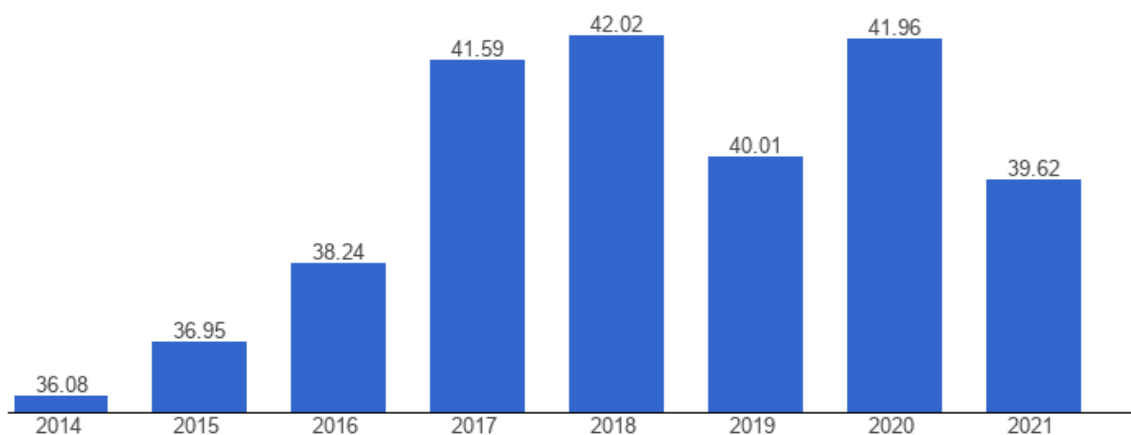
Source: The Global Economy, 2022

When it comes to unemployment, one of the most important factors in Palestine is a person's age. Around forty percent of people between the ages of 15 and 24 are now without work in the country (Fig. 4). This problem is especially prevalent among young people and there is a fact that for the last 6 years the unemployment of youth in Palestine has been in

27

crucial position. This is due in part to the restricted variety of work possibilities that are now accessible, but it is also attributable to the fact that a large number of young people lack the skills and experience necessary to compete effectively in the labor market. For this reason, education and training programs in Palestine that aim to provide young people with the information and abilities necessary for today's modern workplace are very necessary in order to lower the rate of youth unemployment there.

While considering unemployment in Palestine, it is impossible to disregard the influence that political and economic situations have had (and continue to have) on the labor market. Movement restrictions and trade obstacles that make it difficult for companies to function as a result of the continuous conflict and occupation of Palestinian lands have resulted in considerable economic problems. These issues have been brought about as a direct result of the conflict. In addition, the COVID-19 epidemic has contributed to a further deterioration of the economic situation, which has resulted in the loss of jobs and a rise in the percentage of people living in poverty (Allabadi, 2020).

3.2.2 Consequences

The high rate of unemployment is a serious social and economic problem that has repercussions for people as well as for society. When a big number of individuals are unable to obtain employment, it results in a variety of repercussions, some of which can have an effect that lasts for a very long time. In this section, author will show the repercussions of unemployment by looking at how it impacts people on an individual, family, and community level, along with providing particular instances that show the seriousness of the issue. The most direct and evident repercussion of being unemployed is a loss of money, which is also one of the most acute consequences. If a person or family does not have a reliable source of income, it may be difficult for them to afford critical requirements such as shelter, food, and medical care. As was observed in the United States during the Great Depression in the 1930s, when unemployment rates reached up to 25%, this can lead to poverty, starvation, and homelessness (Malik, 2021). As was mentioned before there is several historic examples of causes and harsh consequences on any country through unemployment, author will list some of them below.

Problems with mental health in unemployment is frequently related with increased stress, worry, and depression, all of which can take a toll on a person's mental health and contribute to a decline in that health. According to the findings of a research that was published in the year 2013 in the peer-reviewed journal "Social Science & Medicine," people who are jobless are at a greater risk of experiencing mental health disorders than their peers who are working (Reiss, 2013).

Reduced life satisfaction can be the result of both a lack of financial stability and the psychological impact of being unemployed. This can have a negative influence on both well-being and quality of life. Those who are unemployed may have feelings of failure or inadequacy as a result of their inability to obtain job, which can be detrimental to their sense of self-esteem and self-worth. Also, unemployment may place a strain on personal relationships since it can lead to financial hardship, which can then lead to disagreements amongst family members or partners. In addition, the loss of social ties and support networks through one's place of employment might further worsen problems in one's personal relationships.

Prolonged unemployment can cause a decline in an individual's level of education and experience, which in turn lowers that person's human capital. Because of this, it may become more challenging for workers to obtain new occupations, since their skills may become obsolete or irrelevant, which can lead to a cycle of long-term unemployment. Increased rates of crime is also shows that high rates of unemployment have been connected, in certain situations, to increasing rates of crime. This is because individuals may resort to unlawful activities in order to find a source of income. A study that was conducted in 2012 and published in the "European Journal of Criminology" discovered a correlation between the number of unemployed people and the number of property crimes (Cid, 2012).

A high unemployment rate can have a negative influence on total economic growth since it means fewer people are working and contributing to the economy. This, in turn, can have an adverse effect on the standard of living. This can lead to decreased tax revenues for the government, which can then lead to less public spending and investment, which can further contribute to an already dire unemployment situation. High unemployment rates can be a contributor to both social unrest and political instability. This is because displeasure with current economic conditions can lead to demonstrations, strikes, or even acts of violence. For instance, the upheavals that took place during the Arab Spring in the early years of the 2010s

were in part driven by the high rates of unemployment and bad economic conditions that prevailed in various Middle Eastern and North African nations (Akaev, 2017).

In any form, the repercussions of unemployment are widespread, and they have the potential to have a considerable influence on people, families, and communities. Taking action to address the problem of unemployment is essential for supporting economic growth, as well as enhancing mental health and overall well-being, social and economic stability, and overall well-being.

But it also important to note that since this work focuses on Palestine so high unemployment rate has a wide range of negative repercussions, including a dampening effect not just on the country's overall economic expansion but also on the social fabric of the country as a whole (Tsani, 2013). It is essential to have an understanding of the fundamental factors that are contributing to the issue of unemployment in order to be able to successfully address the problem. Furthermore, it is necessary to devise comprehensive solutions that take into consideration the particular challenges that the Palestinian people are facing in order to be able to address the issue effectively. This article expands on what was covered before and analyzes several aspects of the problem of unemployment in Palestine from a variety of perspectives. These components cover both the reasons that contribute to the problem as well as potential remedies for social stability and sustained economic growth.

Instability in the political system is significant problem in Palestine at this moment. The continuous war between Israelis and Palestinians as well as the political instability in Palestine are both factors that contribute to the high unemployment rates in the nation. It is possible that there may be less opportunities for employment as a result of the unpredictable security situation and the restrictions placed on migration. This may be discouraging to both domestic and foreign investors. Access to resources is limited by the Israeli occupation and the restrictions placed on access to natural resources, land, and water impede the expansion of essential economic sectors, such as agriculture and manufacturing, which in turn limits the number of employments that may be created within these sectors (AlKhaldi, 2020).

Mismatch in education as a result of the Palestinian education system frequently not being aligned with the requirements of the labor market, there is a mismatch between the abilities of graduates and the work opportunities that are now available. This mismatch is due to the fact

that the Palestinian education system is frequently not aligned with the requirements of the labor market. This difference is one of the factors that can be contributing to the high rates of youth unemployment. An increasing population of Palestine and it has a young population that is also rising at a rapid rate. This puts pressure on the labor market since the number of individuals seeking for employment is larger than the number of jobs that are available. The burden placed on the economy by a growing population makes the job market even more difficult.

It is necessary to resolve the problem of unemployment in Palestine that a peace settlement be reached that will withstand the test of time, as well as achieve political stability. As a result of this, the environment would become more favorable for economic expansion, investment, and the generation of new employment opportunities. In Palestine's efforts to improve its economy and provide employment opportunities, an increase in foreign support, which can come in the form of financial aid, technical assistance, and programs that build capacity, can be of great value. This support can take the form of financial aid, technical assistance, and programs that build capacity. In addition, the application of international pressure on Israel to ease restrictions on mobility and access to resources may have a positive impact on the Palestinian labor market. This would be a welcome development.

Fostering innovation and entrepreneurship may lead to the production of new job opportunities, particularly in industries such as the renewable energy sector and the technology industry. Aspiring company owners can benefit from financial support, coaching, and access to resources if these opportunities are made available to them. This has the potential to encourage economic growth and the creation of new employment. An investment in infrastructure projects, such as transportation networks, energy systems, and water management, may create jobs in the near term and contribute to the economic growth in the long term.

Enhancing economic integration, eliminating trade barriers, and producing new employment opportunities are all potential results that might result from strengthening regional cooperation with the nations that are located in the surrounding area. This cooperation might result in the development of joint initiatives, the sharing of resources and information, as well as other endeavors.

In order to properly handle the issue of unemployment in Palestine, one needs to apply a comprehensive strategy that takes into consideration the particular challenges that the nation must struggle with. Only then will an effective solution be found. There are a great number of potential solutions that might help to the sustainable growth and social stability in Palestine; some of these possibilities include securing peace and stability, reforming the education system, fostering entrepreneurialism, and investing in infrastructure. These are only a few of the possible solutions to the problem. There is the possibility for domestic and international people to work together in order to aid in the development of a more hopeful future for the Palestinian people, as well as to pave the way for economic growth and social improvement.

4 Practical Part

4.1 Seasonality

Seasonality analysis of unemployment is a crucial aspect of understanding the labor market dynamics. The unemployment rate is one of the most widely used indicators of the labor market's health and serves as a barometer of economic well-being. However, the unemployment rate is not a constant measure, and it is subject to fluctuations across different times of the year. The unemployment rate can be affected by various seasonal factors, such as holidays, weather, and school schedules.

Seasonality analysis is an essential tool for policymakers and economists to understand the patterns and trends in unemployment rates. By examining the seasonality of unemployment, policymakers can better predict how the labor market will behave in the future, which can inform policy decisions related to unemployment benefits, job training, and other labor market interventions. Additionally, understanding seasonal patterns in unemployment can provide insights into the underlying causes of unemployment, such as changes in demand for certain types of labor.

For example, seasonal fluctuations in unemployment can provide insights into the effects of changing weather patterns on agricultural employment. In areas where agriculture is a significant source of employment, unemployment rates may be lower during the harvest season when there is an increased demand for labor. Similarly, in areas with a high concentration of

tourism-related industries, such as hotels and restaurants, unemployment rates may be higher during the off-season when there is less demand for labor.

Furthermore, seasonality analysis is critical for accurate comparisons of unemployment rates across different time periods. If seasonal factors are not taken into account, it can be challenging to compare unemployment rates from one month to another or from one year to another. For instance, if the unemployment rate in January is consistently higher than the unemployment rate in December due to seasonal factors, comparing the two months directly without adjusting for seasonality could lead to incorrect conclusions. Nevertheless, the author proceeds to the analysis of unemployment for Palestine, which is delivered with the help of the following formula:

$$Seasonal\ Factor = \left(\frac{Quarterly\ Averages}{Grand\ Average} - 1\right) * 100 \tag{1}$$

Effectively, the author uses the following dataset from Table 1 for the analysis.

Table 1, unemployment seasonality dataset

Unemployment	Year	Quarter
26.5	2015	Q1
25.6	2015	Q2
25.6	2015	Q3
24.8	2015	Q4
27.4	2016	Q1
25.8	2016	Q2
26.6	2016	Q3
26.9	2016	Q4
28.4	2017	Q1
25.7	2017	Q2
27	2017	Q3
29	2017	Q4
29.2	2018	Q1
24.5	2018	Q2
30.2	2018	Q3
32.4	2018	Q4
31.7	2019	Q1
29.1	2019	Q2
24.6	2019	Q3
24	2019	Q4
25	2020	Q1
26.6	2020	Q2
28.5	2020	Q3
23.4	2020	Q4
27.8	2021	Q1
26.4	2021	Q2
27	2021	Q3
24	2021	Q4

Source: The World Bank, 2022

Then, the author proceeds to the estimation of the first table, where she will present quarterly averages for the selected time series covering 7 years from 2015 to 2021. The result of the calculation for quarterly averages is indicated in Table 2.

Table 2, quarterly averages

Q1	28.00
Q2	26.24
Q3	27.07
Q4	26.36
Grand Average	**26.92**

Source: own procesing based on The World Bank

Based on the analysis, it can be said that the average for quarterly unemployment in Palestine from 2015 to 2021 was 26.92 percent, which is an incredibly high number, which is a sign that the country experiences serious problems with unemployment. Then, the author proceeds to the calculation of seasonality factors for each quarter in Table 3 indicated below.

Table 3, seasonality factors

Seasonality	
Q1	4.0%
Q2	-2.5%
Q3	0.6%
Q4	-2.1%

Source: own processing based on The World Bank

Based on the output of the seasonality analysis, the author can conclude the following for the case of Palestinian unemployment rate:

- In the first quarter, the level of unemployment is on average 4% higher than the average level.
- In the second quarter, the level of unemployment is on average 2.5% lower than the average level.
- In the third quarter, the level of unemployment is on average 0.6% higher than the average level.

- In the fourth quarter, the level of unemployment is on average 2.1% lower than the average level.

All in all, it is wise to say that the worst quarter for Palestine in terms of unemployment is the first one while the second and the fourth are the best ones since the level of unemployment is slightly lower in those quarters.

4.2 Prognosis

Ex-ante prognosis, which is also known as forecasting, is a tool that is crucial for companies and organizations to use in order to plan their operations, make choices based on accurate information, and be ready for the future. The use of quarters as dummies in ex-ante prognostication makes it possible to generate a more accurate and in-depth prediction since it takes into consideration seasonal fluctuations that have the potential to alter the result.

It is crucial to use quarters as dummies while doing ex-ante prognosis for a few different reasons. To begin, it enables the introduction of seasonal differences into the prediction. For instance, at particular periods of the year, businesses such as retail and tourism have significantly higher levels of customer demand. Businesses are able to generate more accurate forecasts of their sales and income dependent on the season by employing quarters as dummies in their calculations.

Second, when doing an ex-ante forecast, employing quarters as dummies may be an effective way to find trends and patterns in the data. Businesses are able to spot seasonal patterns and changes in customer behavior by conducting an analysis of historical data on a quarterly basis. This information may be put to use to modify marketing tactics and product offers so that they are a better fit for the needs of the target audience.

Last but not least, the ex-ante prognosis method, which uses quarters as dummies, may assist companies in allocating resources and planning for future costs. Businesses are able to make educated choices on whether to invest in new projects or goods, as well as when to minimize expenditure in order to manage their cash flow, by projecting their income and costs on a quarterly basis.

In conclusion, employing quarters as dummies in ex-ante prediction is a significant tool that may help organizations make educated choices and be ready for the future by taking into account seasonal fluctuations, recognizing trends and patterns, and assigning resources. The author presents the dataset for the ex-ante prognosis based on quarters as dummies in Table 4.

Table 4, dataset for ex-ante prognosis

Unemployment	Year	Quarter
26.5	2015	Q1
25.6	2015	Q2
25.6	2015	Q3
24.8	2015	Q4
27.4	2016	Q1
25.8	2016	Q2
26.6	2016	Q3
26.9	2016	Q4
28.4	2017	Q1
25.7	2017	Q2
27	2017	Q3
29	2017	Q4
29.2	2018	Q1
24.5	2018	Q2
30.2	2018	Q3
32.4	2018	Q4
31.7	2019	Q1
29.1	2019	Q2
24.6	2019	Q3
24	2019	Q4
25	2020	Q1
26.6	2020	Q2
28.5	2020	Q3
23.4	2020	Q4
27.8	2021	Q1
26.4	2021	Q2
27	2021	Q3
24	2021	Q4

Source: The World Bank, 2022

The author implements linear regression method for the ex-ante prognosis using MS Excel. The linear regression estimation is done in accordance with the OLS formula presented below:

$$OLS = (X^TX)^{-1}X^TY \hspace{4cm} (2)$$

For the purpose of linear regression analysis, the statistical approach known as the Ordinary Least Squares (OLS) method is often used. The OLS technique is used to estimate the parameters of a linear equation that provide the best fit for a given collection of data points while doing basic linear regression. The approach achieves its goal by reducing, as much as possible, the total sum of the squared discrepancies that exist between the actual values of the dependent variable and the values that are predicted by the linear equation.

The OLS approach operates on the presumption that the errors produced by the regression model have a normal distribution and a homoscedastic variance (also known as a constant variance). In addition to this, it presupposes that the connection between the variable that is dependent and the variable that is independent is linear (s).

The OLS technique is comprised of a few different stages. The data are first displayed in order to provide an initial visual analysis of the correlation between the dependent variable and the independent variables. Using the ordinary least squares (OLS) approach, the next step is to estimate the slope and intercept of the regression line if it is determined that a linear connection exists. The procedure for calculating the estimates involves minimizing the sum of the squared residuals, which refers to the discrepancies that exist between the actual values and the values that may be predicted using the regression line.

When the slope and intercept have been measured, the goodness of fit of the regression line is evaluated with the use of measurements like the coefficient of determination (R-squared), as well as the standard error of the estimate. These measurements give information on the regression line's ability to reliably forecast the values of the dependent variable and how well it fits the data. The result of the implementation is shown in Table 5.

Table 5, ex-ante prognosis

Regression Statistics				
Multiple R	0.314239679			
R Square	0.098746576			
Adjusted R Square	-0.05799315			
Standard Error	2.336847029			
Observations	28			
	Coefficients	Standard Error	t Stat	P-value
Q4	26.32142857	1.249097278	21.0723608	1.5441E-16
Q1	1.649553571	1.260027847	1.30914057	0.20341573
Q2	-0.109821429	1.253967072	-0.0875792	0.93096919
Q3	0.716517857	1.250316505	0.57306918	0.57215866
Time Vector	0.002232143	0.055202822	0.0404353	0.96809504

Source: own processing based on The World Bank

Based on the ex-ante prognosis, the author can create the following model:

$$y_t = 26.32 + 1.64x_{1t} - 0.109x_{2t} + 0.71x_{3t} + 0.0022t + \varepsilon_i$$

Consequently, it can be said that the constant represents the figure for the fourth quarters with the values for other quarters representing relative difference compared to the fourth one. However, despite the optimistic narrative prior to the creation of the model, the quality of the model expressed in the coefficient of determination terms suggests that the model is not applicable for making general conclusions as the adjusted r square is negative with the ordinary one being incredibly low explaining just 9.8% of variation in the dependent variable with the help of regressors. Therefore, the described situation helps to understand that the time all alone

cannot really explain all fluctuations behind the development of unemployment and the variable is moving in a somewhat random direction under the heavy force of external factors.

4.3 Linear Regression

4.3.1 Variables and Assumptions

Now, after realizing that the time all alone cannot explain the development of the variable, the author proceeds to a more complex linear regression, where she finds factors that are expected to have a significant influence on the country's unemployment level. The author assumes the following economic model:

$$y \ (unemployment) = f(x_1, x_2, x_3, x_4)$$

- X_1 stands for the GDP in billion current USD.
- X_2 stands for the inflation in %.
- X_3 stands for the FDI in net million inflow of current USD.
- X_4 population growth in %.

The author additionally performs a descriptive analysis of all variables, which is indicated in Table 6 with the following set of measures selected for the descriptive analysis: mean, median, maximum, minimum, standard deviation and coefficient of variation.

Table 6, descriptive analysis

Measure	Unemployment	GDP	Inflation	FDI	Pop. Growth
Mean	22.17	12.59	2.10	157.88	2.50
Median	22.16	13.74	1.73	169.83	2.53
Maximum	26.26	17.13	9.89	300.47	2.79
Minimum	17.60	5.82	-0.74	19.60	2.01
Standard Deviation	2.96	3.64	2.60	87.74	0.21
Coefficient of Variation	13%	29%	124%	56%	8%

Source: own procesing based on The World Bank

Consequently, the author proceeds to the formulation of an econometric model, which is indicated below.

$$y_t = \beta_0 + \beta_1 x_{1t} + \beta_2 x_{2t} + \beta_3 x_{3t} + \beta_4 x_{4t} + \varepsilon_i$$

The author suggests that the model will have consistent predictors and will also follow the assumption of linearity with normally distributed error terms. Consequently, the author also expects that the model will have no problem of multicollinearity leading to not the best parameters, no problem of autocorrelation leading to problems with consistency, no heteroscedasticity resulting from different standard deviations of dependent variable at different levels of independent variable. The latter assumptions are verified with the help of econometric tests. The author presents the complete dataset in Table 7.

Table 7, dataset for the linear estimation

Years	Unemployment, %	GDP, billion current	Inflation, %	FDI, net inflow in million of USD	Population growth, %
2007	18.28	5.82	1.86	19.60	2.78
2008	22.91	7.31	9.89	51.51	2.79
2009	20.45	8.09	2.75	300.47	2.70
2010	21.42	9.68	3.75	179.94	2.63
2011	17.60	11.19	2.88	238.84	2.56
2012	19.20	12.21	2.78	62.99	2.50
2013	19.89	13.52	1.72	189.56	2.43
2014	20.53	13.99	1.73	159.71	2.37
2015	23.00	13.97	1.43	104.94	2.32
2016	23.94	15.41	-0.22	296.47	2.27
2017	25.68	16.13	0.21	183.95	2.01
2018	26.26	16.28	-0.20	210.69	2.57
2019	25.34	17.13	1.58	131.88	2.54
2020	25.89	15.53	-0.74	79.74	2.52

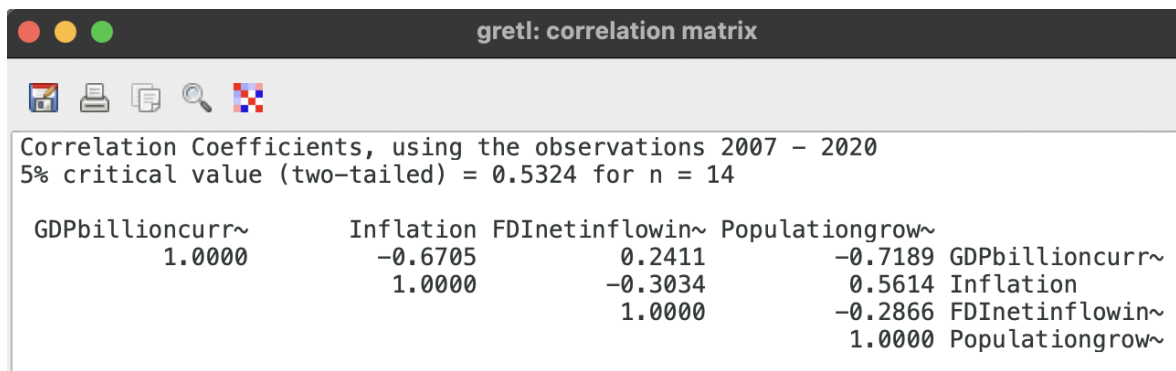Source: own procesing based on The World Bank

First, the author checks the assumption of multicollinearity with the acceptable level of collinearity to be equal to 0.8. In Table 8, the author indicates the correlation matrix used for the analysis. Multicollinearity is a statistical phenomenon that happens when two or more

independent variables in a regression model are substantially associated with each other. Because of this correlation, it is difficult to determine the specific contribution that each independent variable contributes to the variable that is being studied since the impacts of the many variables cannot be differentiated from one another.

When the independent variables in a regression model are significantly connected to one another as a result of their measurement or the underlying idea, a phenomenon known as multicollinearity may take place. For instance, in a regression model that investigates the connection between education and income, it is quite probable that education and income have a strong association with one another. This is because greater levels of education are often linked with larger incomes.

A regression model may be negatively impacted in a variety of ways when multicollinearity is present. It may result in a reduction in the accuracy and dependability of the regression coefficients, an increase in the standard error of the coefficients, and a drop in the statistical significance of the independent variables. Also, since the effects of the independent variables cannot be isolated from each other, it might make it difficult to comprehend the findings of the regression model. This difficulty can be caused by the fact that the independent variables cannot be separated.

Table 8, correlation matrix


```
gretl: correlation matrix

Correlation Coefficients, using the observations 2007 – 2020
5% critical value (two-tailed) = 0.5324 for n = 14

GDPbillioncurr~        Inflation FDInetinflowin~ Populationgrow~
       1.0000           -0.6705          0.2411          -0.7189 GDPbillioncurr~
                         1.0000         -0.3034           0.5614 Inflation
                                         1.0000          -0.2866 FDInetinflowin~
                                                          1.0000 Populationgrow~
```

Source: own procesing based on The World Bank

As a consequence, no multicollinearity is identified for the case of the LRM estimation implemented by the author. The author proceeds to the OLS implementation with the result shown in Table 9.

4.3.2 Estimation

Table 9, OLS output from Gretl

```
●  ●  ●                        gretl: model 1

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Model 1: OLS, using observations 2007–2020 (T = 14)
Dependent variable: Unemployment

                      coefficient  std. error   t-ratio  p-value
     ----------------------------------------------------------------
     const             5.85181      14.8522      0.3940   0.7028
     GDPbillioncurrent  0.770180     0.308257     2.499    0.0339   **
     Inflation          0.209577     0.367798     0.5698   0.5827
     FDInetinflowinmi~ -0.00232314   0.00836549  -0.2777   0.7875
     Populationgrowth   2.62092      4.81901      0.5439   0.5997

Mean dependent var   22.17071    S.D. dependent var   2.955460
Sum squared resid    55.92180    S.E. of regression   2.492696
R-squared            0.507521    Adjusted R-squared   0.288642
F(4, 9)              2.318724    P-value(F)           0.135559
Log-likelihood      -29.55942    Akaike criterion     69.11884
Schwarz criterion    72.31412    Hannan–Quinn         68.82306
rho                  0.610260    Durbin–Watson        0.790656

Excluding the constant, p-value was highest for variable 5 (FDInetinflowinmillionofU)
```

Source: own procesing based on The World Bank

According to the output, the following model is assumed:

$$y_t = 5.85 + 0.77x_{1t} + 0.20x_{2t} - 0.0023x_{3t} + 2.62x_{4t} + \varepsilon_i$$

Effectively, the author can provide the following interpretation:

- When GDP increases by 1 billion USD, unemployment goes up by 0.77 percentage points.
- When inflation increases by 1 percentage point, unemployment goes up by 0.20 percentage points.
- When FDI increases by 1 million USD, unemployment goes down by 0.0023 percentage points.
- When population growth increases by 1 percentage point, unemployment increases by 2.62 percentage points.

4.3.3 Verification

For the verification, it is first essential to take a look at the quality of the model expressed in the coefficient of determination. According to the output from Table 9, it can be suggested that the percentage of variation explained is just 0.28 or 28%, which is far from being ideal.

When it comes to the F test, the model is significant at the significance level of five percent, which is a good sign. During the process of individual t-tests for each variable, the author suggests that the only significant variable for the case is GDP due to the rejection of the null about insignificance ($0.03 < 0.05$). Therefore, the model contains just one significant variable. In Figure X, the author presents the visual comparison of fitted against observed values with the help of graph builder in Gretl.

Figure 5, actual versus fitted
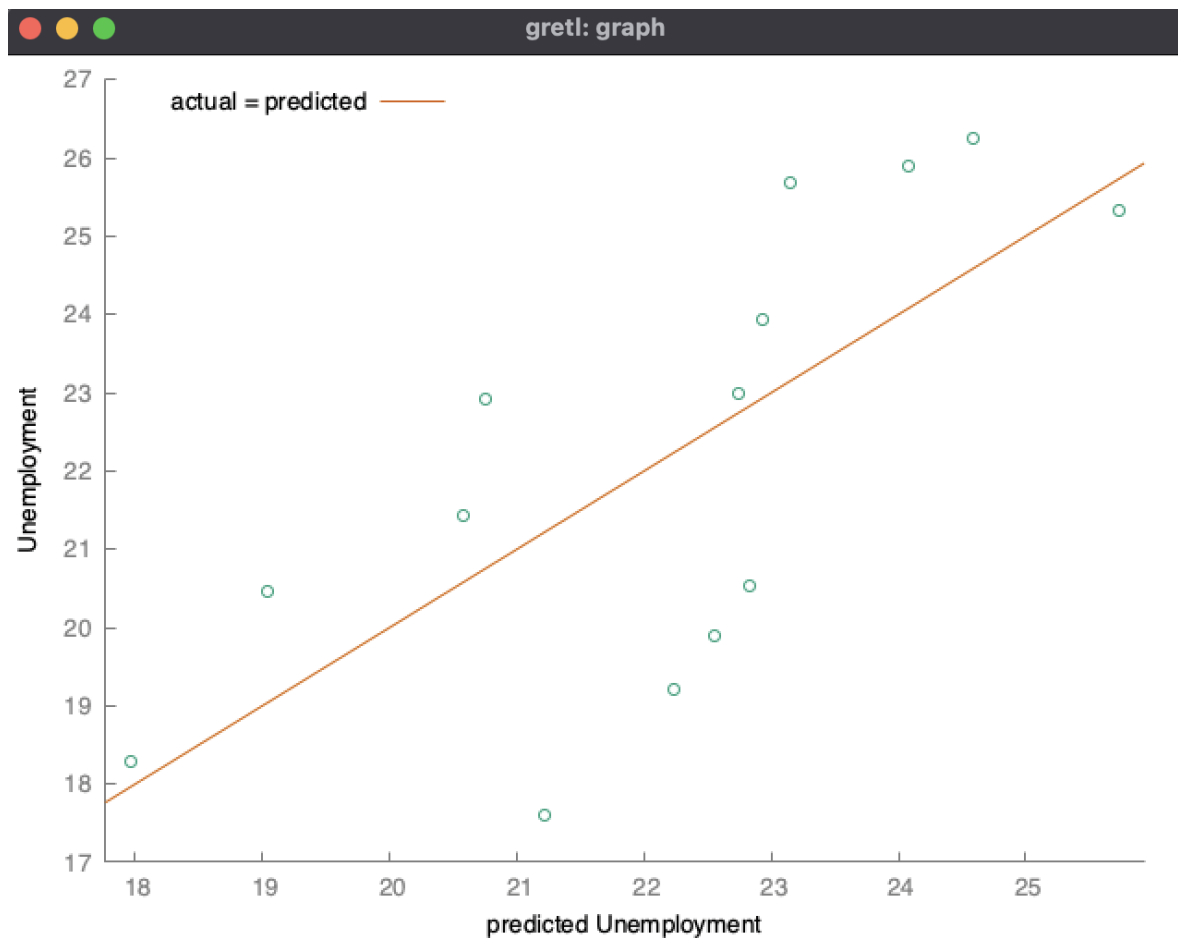
Source: own procesing based on The World Bank

Effectively, it is visible that for some cases, there is a really vast residual value, which explains a relatively low adjusted coefficient of determination for the case. For the final piece of verification, the author proceeds to the econometric verification concerned with questions of autocorrelation, heteroscedasticity and normality of residuals. In Table 10, the author presents the results.

Table 10, econometric verification

```
LM test for autocorrelation up to order 1 –
  Null hypothesis: no autocorrelation
  Test statistic: LMF = 9.20139
  with p-value = P(F(1, 8) > 9.20139) = 0.0162258

Test for normality of residual –
  Null hypothesis: error is normally distributed
  Test statistic: Chi-square(2) = 4.6899
  with p-value = 0.0958521

White's test for heteroskedasticity –
  Null hypothesis: heteroskedasticity not present
  Test statistic: LM = 6.60698
  with p-value = P(Chi-square(8) > 6.60698) = 0.579568
```

Source: own procesing based on The World Bank

For the author's case, it can be said with a fair degree of confidence that there is no problem of heteroscedasticity ($0.57 > 0.05$), no problem of the absence of normality ($0.09 > 0.05$), but there is a problem with autocorrelation of residuals ($0.01 < 0.05$) and based on the DW criterion, it is expected that there is a problem of positive autocorrelation in the dataset for the model.

The statistical phenomenon of autocorrelation, which is often referred to as serial correlation, takes place when the mistakes produced by a regression model are shown to be associated with one another over the course of time. Because of this association, one of the assumptions of the Ordinary Least Squares (OLS) method—namely, that the mistakes are independent of one another—has been breached.

When there is a discernible and repeatable pattern in the residuals produced by the regression model, autocorrelation is a possibility. For instance, the residuals in a time series regression may have a pattern of positive or negative correlations across time. This indicates that the mistakes from one time period are connected to the errors from the time periods that came before it in the analysis.

A regression model may be adversely affected by autocorrelation in a number of different ways. It may result in estimates of the regression coefficients that are skewed and inefficient, as well as in a reduction in the accuracy of the standard errors and a reduction in the statistical significance of the independent variables. Also, it might make it difficult to understand the findings of the regression model, as the effects of the independent variables may be confused with the effects of the autocorrelated errors. This can be a problem since autocorrelation can occur when there are several independent variables.

For the final stage of the practical part, the author continues to the elasticity analysis which will help to express percentual effect of each independent variable on the dependent variable (unemployment). In Table 11, the author presents the overview of elasticities for the year 2020.

Table 11, elasticities

GDP, billion current	Inflation, %	FDI, net inflow in million of USD	Population growth, %
0.496748	-0.0061086	-0.0076183	0.27399101

Source: own procesing based on The World Bank

According to the elasticity analysis, the author can suggest the following:

- In 2020, 1% change in GDP caused 0.49% increase in the unemployment.
- In 2020, 1% change in inflation caused 0.006% decrease in the unemployment.
- In 2020, 1% change in FDI caused 0.007% decrease in the unemployment.
- In 2020, 1% change in population growth caused 0.27 increase in the unemployment.

Clearly, GDP is the variable that has the highest effect on the unemployment in Palestine according to the elasticity analysis.

5   Results and Discussion

5.1   Determinants of Unemployment

The objective of this diploma thesis was to investigate the many elements that have a role in the high unemployment rate that exists in Palestine. The conclusions of the research are presented in the chapter titled "Results and Discussion." This study includes the evaluation of a variety of economic variables, such as GDP and time, and their link with unemployment rates in Palestine. Specifically, the study was conducted in Palestine. The results, as well as the consequences such findings have for policymakers, are discussed in the following sections.

Gross Domestic Product (GDP) emerged as the most significant element in the research as a predictor of unemployment in Palestine. The findings of the study indicated that GDP is the most important factor in the prediction of unemployment in Palestine. This conclusion is in line with findings from prior studies that have shown a connection between GDP and unemployment rates in developing nations. There is a positive association between the two variables, which can be shown by the fact that a greater GDP results in a lower unemployment rate.

The dependence of the Palestinian economy on the services sector is one of its defining characteristics; this sector is responsible for more than half of the GDP. As a result, the performance of the services sector may have major ramifications for both the economy and the labor market if it shifts even little. The results imply that policymakers should concentrate on fostering economic development and diversifying the economy by supporting investment in the industrial and agricultural sectors. This should be done in order to maximize the benefits of the findings.

The study also showed that the passage of time is not a good predictor of unemployment in Palestine. This was one of the findings that came to light as a result of the investigation. The unemployment rate is subject to considerable shifts over time, and it is difficult to precisely forecast how these shifts will play out. This conclusion is in line with findings from other studies that have shown the shortcomings of using time series analysis to make accurate forecasts of economic developments.

Yet, the research revealed that there is a discernible cyclical trend in the unemployment rate. It is possible that the low demand for labor during the winter months was a contributing factor in the high unemployment rates that were recorded during the first three months of the year. While formulating employment policies and programs, decision-makers should do their best to take into consideration the seasonal nature of the labor market. Similar findings are also made by Aburgamea (2018), who identified the same determinants and concluded that the GDP and generally the production in the country is the most important determinant of the unemployment. At the same time, Salama (2017) disagrees believing that the main justification lies in the fact that human capital is low in the country and lack of education is the main explanation for such an adverse situation, which is also highlighted by Abu-Ras.

5.2 Recommendations

A crucial concern that demands the attention and action of policymakers in Palestine is the country's high unemployment rate. The following are some suggestions that might assist in finding solutions to the problem of unemployment:

Increase Investment in Infrastructure. Education, and Training to Encourage Economic Development Authorities in Palestine should prioritize expanding investments in infrastructure, education, and training to stimulate economic growth. These activities would result in the creation of more jobs, a reduction in the rate of unemployment, and an overall improvement in the country's quality of life.

Increase Economic Diversification. The majority of Palestine's economy is based on agriculture and services, neither of which are particularly labor-intensive fields. It may be possible to bring the unemployment rate down by encouraging manufacturing and other types of business that have the potential to grow and employ more people as part of an effort to diversify the economy.

Promote Entrepreneurship. The decision-makers in Palestine have another opportunity to stimulate entrepreneurship by creating favorable conditions for start-up businesses. These favorable conditions might include tax cuts and chances for investment. This strategy would not only result in the creation of new employment, but it would also encourage innovation and contribute to the expansion of the economy.

Education and Training Needs Improvements. If one invests in bettering our educational system and creating more opportunities for people to get vocational experience, one can better prepare one's workers to compete successfully in today's labor market. This would make the Palestinian labor force more employable while also opening up new job possibilities.

Spending More Money on Public Works Projects. The federal government might spend more money on public works projects like roads, bridges, and schools. This would result in the creation of employment for those who work in construction as well as other skilled laborers.

Promote Foreign Investment. the Palestinian decision-makers also have the opportunity to stimulate foreign investment by enacting regulations that simplify the process of doing business in the nation from the perspective of foreign investors. This would lead to the creation of new employment possibilities as well as an increase in economic growth.

In general, it is necessary to take a multifaceted strategy that targets the underlying problems that are contributing to the high unemployment rate in Palestine. The Palestinian people's unemployment rate and level of life may see significant improvements if policymakers prioritized economic expansion, economic diversification, entrepreneurial endeavors, education and training, increased government expenditure, and more foreign investment.

6 Conclusion

In summary, the results of this research point to the Gross Domestic Product (GDP) as the most significant factor in the prediction of unemployment in Palestine. Hence, policies that attempt to enhance GDP development might be useful in lowering the amount of unemployment in the nation. The research also reveals that time is not a reliable predictor of unemployment in Palestine. It also suggests that there is a seasonal pattern in unemployment, with the first quarter of the year having the highest unemployment rate. Consequently, measures that attempt to ameliorate the seasonal swings in employment in Palestine in order to reduce unemployment in the nation may be beneficial in doing so, provided that they are implemented effectively.

It is quite probable that the future of unemployment in Palestine will rely on a variety of circumstances, including political stability, economic development, and the execution of policies that are successful in addressing the problem. The political climate in Palestine is still unstable, and there are constant confrontations and tensions with Israel. This has the potential to have a big influence on the economy and job possibilities in the country. As a result, every step forward in the direction of resolving these issues might potentially have a favorable influence on the situation of unemployment in Palestine. The rate of unemployment in Palestine may be significantly impacted by a number of fundamental factors, including economic development.

It is possible to help increase work opportunities and decrease unemployment by continuing efforts to enhance GDP growth via investments in infrastructure, education, and job development initiatives. In addition, the implementation of effective policies aimed at addressing the underlying causes of unemployment in Palestine, such as improving education and skills training, promoting entrepreneurship and innovation, and increasing access to financing for small and medium-sized enterprises, can also contribute to the reduction of unemployment in the country. These policies can help reduce unemployment in the country. Overall, while it is difficult to predict the future of unemployment in Palestine, it is clear that addressing the underlying factors contributing to unemployment, such as political instability, a lack of economic growth, and limited access to education and skills training, will be critical in reducing unemployment and promoting economic development in the country. This is the case even though it is difficult to predict the future of unemployment in Palestine.

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