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Analysis of Unemployment in France

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Analysis of Unemployment in France

Objectives of thesis

The objective of the author's diploma thesis is to describe trends, tendencies and nature of unemployment in France, one of the world's leading economies and the second biggest economy of the European Union. The author's additional objective is also to identify significant factors that influence unemployment, as well as to calculate the seasonality of France's unemployment and provide a relevant prognosis for the upcoming years.

Methodology

For the work's methodology, the author focuses on empirical research with a pertinent statistical analysis of time series data. The author incorporates three fundamental statistical analyses in order to reach the goals described in the objectives with the help of seasonality analysis, trend analysis and linear regression analysis. The kind of data used for the analysis is time series data from secondary sources, such as The World Bank and Federal Reserve Bank of St. Louis database.

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Declaration

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

In Prague on 15.03.2023   _____

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Analysis of Unemployment in France

Abstract

The objective of the author's diploma thesis is to describe trends, tendencies and nature of unemployment in France, one of the world's leading economies and the second biggest economy of the European Union. The author's additional objective is also to identify significant factors that influence unemployment, as well as to calculate the seasonality of France's unemployment and provide a relevant prognosis for the upcoming years.

The author employs empirical study and statistical analysis of time series data. Seasonality, trend, and linear regression analyses assist the author achieve the objectives. The World Bank and Federal Reserve Bank of St. Louis databases provided time series data for the research.

Seasonality and trend analysis use quarters as observations and 2000-2021 as the period window. The regression analysis uses years as observations and the same 2000–2021-time span as the previous two scenarios.

The author concludes that foreign direct investment net inflow, inflation rate, and GDP growth in % considerably affect France's unemployment rate. Time series data analysis from 2000 to 2021 yields the result. The author also found that the unemployment rate is cyclical, with greater unemployment in the first two quarters and lower unemployment in the final two. The author cites the seasonal pattern of real GDP, which drives the unemployment rate and is impacted by France's tourist receipts. For the future development of the variable for the selected country, the author assumes that unemployment is likely to stay at the same level of eight to nine per cent with the specified seasonality.

Keywords: unemployment, France, seasonality, tourism, GDP, FDI, tax

Analýza nezaměstnanosti ve Francii

Abstrakt

Cílem diplomové práce je popsat trendy, tendence a povahu nezaměstnanosti ve Francii, jedné z předních světových ekonomik a druhé největší ekonomiky Evropské unie. Dalším cílem autora je také identifikovat významné faktory, které ovlivňují nezaměstnanost, vypočítat sezónnost francouzské nezaměstnanosti a poskytnout relevantní prognózu pro nadcházející roky.

Autor využívá empirickou studii a statistickou analýzu dat časových řad. Sezónnost, trend a lineární regresní analýzy pomáhají autorovi dosáhnout cílů. Databáze Světové banky a Federální rezervní banky v St. Louis poskytly údaje o časových řadách pro výzkum.

Analýza sezónnosti a trendů používá čtvrtletí jako pozorování a období 2000-2021 jako období. Regresní analýza používá roky jako pozorování a stejné časové rozpětí 2000-2021 jako předchozí dva scénáře.

Autor dochází k závěru, že čistý příliv přímých zahraničních investic, míra inflace a růst HDP v % výrazně ovlivňují míru nezaměstnanosti ve Francii. Výsledkem je analýza dat časových řad od roku 2000 do roku 2021. Autor také zjistil, že míra nezaměstnanosti je cyklická, s větší nezaměstnaností v prvních dvou čtvrtletích a nižší nezaměstnaností v posledních dvou. Autor cituje sezónní vzorec reálného HDP, který řídí míru nezaměstnanosti a je ovlivněn francouzskými turistickými příjmy. Pro budoucí vývoj proměnné pro vybranou zemi autor předpokládá, že nezaměstnanost se při stanovené sezónnosti pravděpodobně udrží na stejné úrovni osmi až devíti procent

Klíčová slova: nezaměstnanost, Francie, sezónnost, cestovní ruch, HDP, zahraniční investice, daň

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GDP … Gross Domestic Product

USD … United States Dollar

FDI … Foreign Direct Investment

1 Introduction

The rate of unemployment is a worldwide problem that has repercussions for businesses and cultures in every region. For decades, France, a major economy in Europe, has suffered with high unemployment rates, and it continues to be a serious concern for both policymakers and residents alike. France is a country in Europe. The issue of unemployment is not confined to worries about the economy; rather, it has far-reaching social and psychological implications, such as a rise in things like poverty, crime, and social discontent.

Individuals, families, and society as a whole are all adversely affected by the essential problem that is unemployment. Throughout the course of the last several decades, France has been plagued by consistently high levels of unemployment, which has had enormous effects across the country's economy, society, and political system. The examination of unemployment in France is a significant aspect of study that calls for a comprehensive knowledge of the previous body of literature as well as the research investigations that have been conducted.

This thesis intends to investigate the problem of unemployment in France, as well as its causes and the ramifications of the problem. The theory part will begin with a detailed assessment of the historical and contemporary trends in unemployment in France, including an examination of regional and demographic imbalances. This will be the first step in the process. Following this, an investigation into the variables that contribute to unemployment in France will be carried out. These will investigate both structural and cyclical issues, including labour market rigidities, education mismatches, and economic cycles and technological advancements respectively.

The research will also investigate the policy responses to unemployment in France, both in the past and in the present, paying particular attention to the efficacy of active labor market programs, education and training policies, and social protection measures. In addition to this, an assessment of the part that employers, labor unions, and other interested parties play in influencing the unemployment rate in France will be made.

A consideration of the ramifications of unemployment for France's economy and society, including its influence on poverty, inequality, social exclusion, and political stability, will serve as the work's conclusion. This study will illustrate the significance of adopting a multi-dimensional strategy that takes into consideration the complex interplay between economic, social, and political issues in France, as well as the necessity of continuing efforts to solve the problem of unemployment in that country.

2 Objectives and Methodology

2.1 Objectives

The objective of the author's diploma thesis is to describe trends, tendencies and nature of unemployment in France, one of the world's leading economies and the second biggest economy of the European Union. The author's additional objective is also to identify significant factors that influence unemployment, as well as to calculate the seasonality of France's unemployment and provide a relevant prognosis for the upcoming years.

2.2 Methodology

For the works' methodology, the author focuses on empirical research with a pertinent statistical analysis of time series data. The author incorporates three fundamental statistical analyses in order to reach the goals described in the objectives with the help of seasonality analysis, trend analysis and linear regression analysis. The kind of data used for the analysis is time series data from secondary sources, such as The World Bank and Federal Reserve Bank of St. Louis database.

The time series data selected for seasonality and trend analysis has quarters set as observations and the selected time frame for these two analyses is 2000-2021. The time series data selected for the regression analysis has years as observations and the time frame is the same as in the first two cases – 2000-2021.

This thesis on the study of unemployment in France is not an exception to the rule that every academic research must include a literature review at some point; in fact, it is an integral part of that research. In the context of a particular study subject or research question, the term "literature review" refers to the process of doing an in-depth investigation and assessment of the existing body of written literature, research, and academic works. In the context of this thesis, the literature study will give an extensive summary of the previously accumulated information and ideas about unemployment in France.

In this thesis, the review of the relevant literature will serve many functions. To begin, it will be helpful in determining where the research gap is in the already available literature.

The researcher may discover areas where there is a paucity of study or topics that require additional inquiry by doing a critical analysis of the current body of literature and pointing out these gaps in knowledge. This will be helpful in identifying the research question and the research goals, both of which are crucial for carrying out a research study that is focused and successful. Second, doing a literature research will assist in better comprehending the many ideas and concepts already associated with the issue of unemployment in France. This will aid in the process of formulating hypotheses or research questions as well as providing a theoretical underpinning for the research investigation. The author is able to recognize the important ideas and variables that are pertinent to the research study if they have a solid comprehension of the previously established information and theories.

Lastly, doing a literature study will be beneficial in terms of assisting in the selection of relevant research methodologies and procedures. The researcher may find the research procedures and techniques that have been employed in studies that are comparable to their own by doing an analysis of the previous research studies. This will be helpful in picking the research method and approach that are the best suited for the project.

3 Literature Review

3.1 Unemployment

3.1.1 Definition

As a result of the epidemic that has been sweeping the globe over the past several years, a great number of businesses have been forced to terminate the employment of sufficient numbers of workers in order to avoid going bankrupt. Even if the epidemic has slowed down and opened up new chances and vacancies for individuals, its effects are still being felt. This is something that should be noted, as it is obviously vital. It is essential to keep in mind that the rate of unemployment in different nations throughout the world is an essential measure of the level of economic progress. People are able to draw conclusions about how affluent the nation is and where it stands in the list of the most developed countries in the world based on the information provided by this economic indicator. The rate of unemployment in a state is one factor that may be considered when determining the general quality of life in that state.

It is not a mere accident that the world economy is currently facing the worst unemployment rate in its history during the greatest economic crisis that has occurred since the Great Depression (Petrosky-Nadeau, 2021). Based on the graph below, it is evident that the pandemic and coronavirus have essentially rendered a large number of individuals unemployed.

Figure 1, Historical Unemployment rate

Source: Bureau of Labor Statistics, 2020

The level of economic activity has a significant impact on the unemployment rate. In addition, economic expansion and unemployment may be viewed as two sides of the same coin: when economic activity is strong, total production grows, and more people are required to provide more products and services, unemployment rates tend to climb. And when economic activity is poor, corporations slash positions, which leads to an increase in the rate of unemployment. In this way, unemployment might be thought of as having an anti-cyclical effect. This indicates that an increase in the unemployment rate will occur when there is a decrease in economic growth, and vice versa. But first, it is vital to define unemployment and recognize its core. The percentage of the able-bodied population that is not employed is referred to as the socio-economic element of unemployment (Barsukov, 2016). In other words, it is a measure of the percentage of the country's working-age population that is jobless at any one time. People with impairments of all different kinds are counted as part of the impaired population. This includes children who have not yet reached the age of 16, as well as adults who are incarcerated or receiving treatment in mental facilities (Barth, 1990).

Despite this, the unemployment rate has not decreased in line with the acceleration of economic development. It is more typical for businesses to attempt to reverse a drop in production by first trying to use the same number of people to complete more work or generate more output, which is another way of saying that they strive to improve their labour productivity. The hiring of more personnel by businesses won't start until there is evidence that the economy is continuing to improve at a consistent rate. As a consequence of this, the beginning of the drop in the unemployment rate won't be able to occur until a significant amount of time after the beginning of the recovery of the economy from the crisis. In the early phases of an economic downturn, the process is reversed, and rather of laying off people, businesses choose to either take on part-time employees or reduce compensation for their full-time employees. If and when the economic downturn becomes permanent and long-term, then and only then will there be a rise in unemployment. A trailing indicator of economic activity is one that tracks economic growth with some delay. This is why unemployment is considered to be a lagging indicator.

Moreover, those who have the ability to work but are unable to do so due to a variety of conditions might be considered part of the handicapped population. These scenarios include the following, among others:

- Inpatient students.
- Persons of advanced age who are now retired.
- Women who are currently on maternity leave.
- Housewives.
- Individuals who do not have a permanent location to call home (tramps).

Those who are able to work and are interested in doing so make up the working-age population (or are already working). For the purpose of this discussion, a person is regarded to be part of the labour force even if they are employed but are temporarily absent from their job due to illness.

3.1.2 Kinds

The term "unemployment" may be broken down into two main categories: voluntary and involuntary. In the first scenario, the worker themself gives their own personal refusal to report to work for one cause or another. In the second scenario, a person who is driven to work simply does not have the opportunity to locate a position that is suited for him, despite the fact that he is looking for employment.

People might be said to be in a state of voluntary unemployment when, despite the availability of employment options, they choose not to work. In contrast to the phenomenon of involuntary unemployment, which describes situations in which individuals are unable to secure employment despite making concerted efforts to do so, the phenomenon of voluntary unemployment describes situations in which individuals choose to withdraw from the labor force for a variety of reasons. There are a variety of factors that go into an individual's decision to engage in voluntary unemployment. Some examples of this are as follows.

People that pursuing education or training. Many people may choose to be voluntarily unemployed in order to pursue education or training programs that they believe will enhance their skills and improve their job prospects in the future. They may also choose to be unemployed in order to pursue education or training programs that they believe will enhance

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their job prospects in the future. Participating in an apprenticeship program, getting a degree or certification, going to a vocational school, and other similar activities might all fall under this category .

Those who opt to care for family members, whether it be children, elderly parents, or members of the family with impairments, may choose to leave the workforce voluntarily. This may result in unemployment for the individual. It's possible that these people may put their obligations as caregivers ahead of their possibilities for employment, which would result in a time of voluntary unemployment.

Early retirement is a voluntary exit from the workforce that may be chosen by certain people at some point in their working lives. It is possible for people to reach this point when they have amassed sufficient funds to sustain themselves throughout retirement or when there is a significant shift in their personal circumstances, such as an illness or the desire to pursue other hobbies (Bratberg, 2004).

People that pursuing entrepreneurial endeavors. Some people may choose to be deliberately jobless in order to establish their own firm or pursue entrepreneurial endeavors. This choice may be made for a variety of reasons. It's possible that these people are under the impression that the potential benefits of launching their own company outweigh the dangers involved with being unemployed.

Although choosing to remain unemployed voluntarily may be a viable option for some people, doing so can have substantial repercussions for both the unemployed person and the economy as a whole. Those who choose to remain unemployed for extended periods of time may find it difficult to return to the workforce in the future because they may have lost valuable skills, suffered a reduction in their prospective earnings, or both. Voluntary unemployment can have a negative impact on overall economic growth and productivity, which can be detrimental to the wider economy.
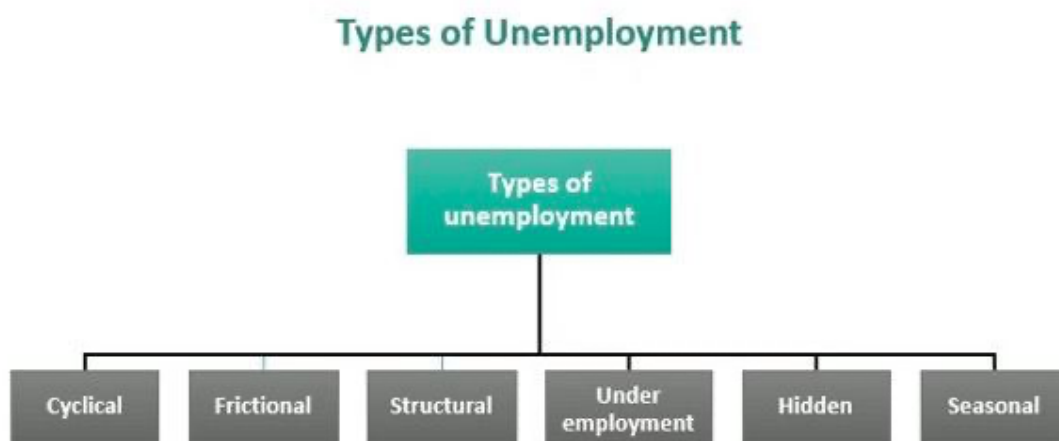
There are a variety of policies and initiatives that governments and policymakers might pursue in order to solve the issue of voluntary unemployment. For instance, new education and training programs may be introduced to assist people in acquiring new skills and

improving their employability. Childcare subsidies and other forms of support for careers may be made available in order to facilitate a better balance between the obligations of caregiving and chances for employment. Individuals may be encouraged to put off retirement or explore entrepreneurial endeavors if they are offered financial incentives to do so.

In general, being unemployed voluntarily is a complicated phenomenon that can be traced back to a wide variety of human decisions and the surrounding environment. Although it may be a sensible option for certain people, there is a possibility that it may have enormous repercussions not only for those people but also for the economy as a whole. As a result of this, policies and programs may be designed to assist in addressing the issue of voluntary unemployment and promoting work options that are more productive and sustainable for all persons.

Involuntary unemployment, on the other hand, may be broken down into two categories: natural and cyclical. Because of the natural unemployment rate in the country, there is an ideal labor reserve for the national economy, which, should it be required, is able to fill the newly created positions. Cyclical unemployment is related with the unequal growth of specific areas and sectors as well as repeated recessions in the economy. This type of unemployment can also be attributed to cyclical shifts in the labor market.

Figure 2, Types of Unvoluntary unemployment

Types of Unemployment

Types of unemployment

| Cyclical | Frictional | Structural | Under employment | Hidden | Seasonal |

Source: Pigou, 2013

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Natural unemployment also has numerous subspecies. To begin, this is what's known as frictional unemployment, and it's brought on by employees leaving and coming back. Or rather, the time it takes to find and wait for a job. The second type of unemployment is called structural unemployment, and it is produced by changes in the structure of the economy. These changes are mostly related with the advancement of science and technology, which has rendered some professions obsolete. Because of the high unemployment rate, those who are jobless do not qualify for the jobs that are now available, thus they are compelled to get additional training (Krueger, 2010).

Unemployment is a state that arises when people who are able and eager to work are unable to find employment opportunities in their area. There are a number of distinct categories of unemployed people, each of which has its own set of contributing factors and defining features. In the following paragraphs, author will investigate the various categories of unemployment in greater depth.

Those who are momentarily between jobs, migrating from one job to another, or joining the labor for the first time might experience a state of unemployment known as frictional unemployment. Since it reflects the dynamic character of labor markets, it is commonly believed to be a natural component of an economy that is in good health. Individuals who are jobless as a result of frictional unemployment are frequently employed in their search for new work and are typically enthusiastic about their chances of landing a new position (Mattila, 1974).

There is a mismatch between the abilities and credentials of job searchers and the jobs that are available in the labor market, and this can lead to a situation known as structural unemployment. Alterations in the structure of the economy, shifts in customer tastes, or technological advancements are all potential causes of this phenomenon. For instance, the transition from manufacturing to industries based on services has resulted in structural unemployment in many regions of the world. This is because employees who were trained in manufacturing are unable to find work in the new economy because it is focused on services (Deming, 2018).

The oscillations in economic activity that take place over the course of time are what cause the business cycle, which in turn leads to cyclical unemployment. A common cause of cyclical unemployment is the practice, common during economic downturns, of companies laying off people in an effort to cut expenses and so raise profits. On the other hand, when there is a boom in the economy, firms could recruit more people to satisfy the increased demand, which would lead to a drop in cyclical unemployment (Abraham, 1986).

Those who work in industries that are only active during certain times of the year, such as agriculture, tourism, or construction, are more likely to experience seasonal unemployment. For instance, in regions that receive a significant amount of snowfall annually, employees may find employment during the winter months shoveling snow but may be out of job throughout the other months of the year. During the off-season, people in these industries could look for job in other areas because seasonal unemployment is typically believed to be a natural and unavoidable element of the economy.

When jobs are lost due to the introduction of new technology or automation, this phenomenon is known as technological unemployment. It is possible that employees will lose their employment as a result of the increased capability of machines to carry out activities that were once carried out by humans. This category of joblessness is frequently associated with accelerating technological change, such as the move toward automation in manufacturing and the growing use of artificial intelligence in the service sector. For example, the shift toward automation in manufacturing has resulted in the loss of manufacturing jobs (Carnevale, 2018).

Underemployment can place when employees are working in occupations that are below their skill level or that do not offer them with enough hours or pay to satisfy their requirements. This can be a contributing factor in long-term unemployment. An individual is deemed to be underemployed if they have a college degree but are working in a position that pays the minimum wage and does not need them to have a college degree. Underemployment can also arise when people are compelled to work part-time or on a temporary basis owing to a lack of full-time employment possibilities. This type of underemployment is referred to as "involuntary part-time employment (Glyde, 1977)."

In conclusion, there are a few different categories of unemployment, each of which has its own set of causes and effects. Understanding the various forms of unemployment is critical for policymakers, as it may assist them in the development of successful measures for lowering unemployment rates and fostering economic expansion. It is possible to move toward a society that is wealthier and more equitable if people address the underlying causes of unemployment and implement policies that encourage the creation of jobs and the growth of the workforce. But kinds of unemployment are nothing without causes of unemployment.

3.1.3 Causes

Essence Individuals, families, communities, and even entire nations can be negatively impacted by the issue of unemployment, which is a severe concern. It is a multifaceted problem that may be traced back to a wide variety of sources, such as economic, social, and political considerations. In this chapter, author will investigate some of the key factors that contribute to unemployment and investigate the influence that these factors have on the lives of individuals.

One of the main causes of unemployment is the economic cycle. During a recession, there is a decline in economic activity, leading to lower production levels and a decrease in demand for goods and services (Gawel, 2010). This, in turn, leads to businesses laying off workers, which increases the unemployment rate. For instance, the global financial crisis of 2008 led to widespread job losses, with many businesses going bankrupt or downsizing to stay afloat.

Another economic issue that causes unemployment is the lack of investment in the economy. Investment is vital for economic growth as it leads to the creation of new businesses and jobs. However, if there is a lack of investment in the economy, it means there are fewer employment opportunities for people (Spence, 2011). For example, if the government does not invest in infrastructure, such as roads and bridges, it will limit the number of construction jobs available.

Furthermore, globalization has had an impact on unemployment. Globalization refers to the integration of economies and societies through the exchange of goods, services, and ideas. While globalization has led to increased economic growth, it has also led to the

relocation of jobs from developed countries to developing countries. For instance, many manufacturing jobs have moved from the US and Europe to countries such as China, leading to job losses in those countries.

Moreover, government policies also contribute to unemployment. For instance, high taxes on businesses can reduce their profitability, making it difficult for them to expand and create jobs. Similarly, excessive regulations can increase the cost of doing business, leading to businesses closing down or relocating to other countries. Additionally, minimum wage laws can lead to employers reducing their workforce or automating their operations to cut costs.

Finally, education and training play a crucial role in reducing unemployment. The lack of education and skills is a major barrier to finding employment. Workers need to have the skills and knowledge to perform the jobs that are available. The rapid pace of technological change requires workers to continually upgrade their skills to remain competitive in the job market. Therefore, governments need to invest in education and training programs that equip workers with the skills needed for the jobs of the future.

In addition, the rapid growth of technology is another factor in the disappearance of jobs. Many manual tasks have been eliminated as a result of the increased usage of automation and artificial intelligence. Several sectors have been disrupted as a result of these technological improvements. For instance, in order to streamline their operations, banks have begun utilizing online platforms, which has resulted in the termination of employees. Additionally, technological advancements have led to the displacement of workers. Automation and artificial intelligence have made many jobs redundant, leading to job losses. For example, self-checkout machines in supermarkets have reduced the number of cashiers needed, while robots have replaced human workers in factories. This has led to a mismatch in skills, with many workers lacking the skills needed for the new jobs being created. It is anticipated that this pattern will carry on, which means that further job cuts might be anticipated (Wamba-Taguimdje, 2020).

There are times when societal factors are to blame for unemployment. Who has access to work prospects can be impacted by a variety of social characteristics, including education

level, color, gender, and age, among others. A lack of education, for instance, might make it challenging for individuals to secure occupations that need for the possession of particular competencies and information. In a similar vein, discrimination on the basis of race or gender can limit work possibilities for some individuals, which can contribute to high rates of unemployment among these groups.

Also, young people are more likely to be unemployed owing to their lack of work experience, which is a need for many different types of professions. Competition for the few entry-level positions that do not require experience can be fierce, which can contribute to high rates of unemployment among young people.

In addition, having a handicap or a health condition might have an impact on one's capacity to work. It's possible that certain people have health problems that make it impossible for them to work; as a result, they wind up being jobless. Others might have their employment options restricted as a direct result of discrimination brought on by their disability.

By the way, political considerations are sometimes responsible for unemployment. The job market is susceptible to being significantly influenced by the policies and regulations imposed by the government. For instance, legislation that safeguard workers' rights might lead to corporations reducing the number of employees they hire in order to comply with the regulations, which can lead to high rates of unemployment (Kraakman, 2017).

Instability in a country's government can also have a negative impact on job prospects in that country. Because investors and businesses are unwilling to make investments or extend their operations in unstable nations, the number of job prospects in those countries is restricted.

The employment market can be negatively impacted by corruption in some nations. Corruption and nepotism can result in eligible persons being passed over for work opportunities, which in turn can contribute to high unemployment rates. The economy can become unstable as a direct result of corruption, which can have a negative impact on enterprises and ultimately result in job losses (Cuervo-Cazurra, 2006).

The problem of unemployment is a complicated one that has many diverse reasons, some of which are economic, some of which are social, and some of which are political. It is a problem that impacts people on an individual level as well as their families, communities, and countries as a whole. It is vital, in order to solve the issue of unemployment, to understand the underlying reasons of the problem and to design tailored solutions that satisfy the specific requirements of various groups of people. In order to make substantial progress toward reducing unemployment, it will be necessary to engage in cooperative and coordinated efforts on the part of a variety of stakeholders, including governments, corporations, and people.

3.1.4 Consequences

Not only does unemployment effect people on an individual level, but it also has a tremendous impact on the economies and societies of entire nations. It has serious repercussions that can have an effect on the state of the economy as well as the well-being of the people living there. In this chapter, author will discuss the effects that unemployment has had on the economy of the nation as well as the overall level of the economy.

The loss of income for people and families is one of the most obvious effects that comes with unemployment. When people lose their jobs, they also lose their major source of income, which makes it difficult for them to satisfy their fundamental requirements such as consuming food, having a place to sleep, and wearing clothes. As a consequence of this, individuals become dependent on the help or charity provided by the government, which places a considerable demand on the resources provided by both the government and nonprofit groups.

Also, a loss of income for people results in a reduction in the amount of money spent by consumers. When individuals do not have jobs, they do not have the means to purchase goods and services, which results in a decrease in the overall demand for such items. Because of this, businesses may see a drop in their income, which makes it challenging for them to develop or extend their operations. It is also possible for this to result in a reduction in the amount of tax money collected by the government, which can have an impact on the

government's capacity to deliver important services such as education, healthcare, and infrastructure.

A nation's gross domestic product (GDP) can fall as a direct result of its high unemployment rate as well. The Gross Domestic Product of a nation is the total worth of all the products and services that are produced within a specific time period. When there is a high unemployment rate, there is a subsequent fall in the production of goods and services, which results in a decrease in GDP. A fall in GDP may lead to a decrease in foreign investment, which can lead to an increase in inflation, which can lead to a decrease in exports, therefore this can have a rippling effect on the entire economy. The relationship between inflation and unemployment can be shown through The Phillips curve as a graphical representation. It is named after the economist A.W. Phillips, who first observed the inverse relationship between the two variables in the UK in the 1950s (Alisa, 2015). The curve shows that when there is low unemployment, there tends to be high inflation, and vice versa. In other words, there is a trade-off between unemployment and inflation (Fig. 3).

The traditional Phillips curve is downward sloping, which means that as the unemployment rate decreases, the rate of inflation increases. This relationship is based on the assumption that there is a fixed relationship between the supply of labor and the demand for labor. As the economy approaches full employment, firms have to compete for labor, and

this competition leads to higher wages. Higher wages, in turn, lead to higher production costs, which are passed on to consumers in the form of higher prices, leading to inflation.

Figure 3, Phillips Curve
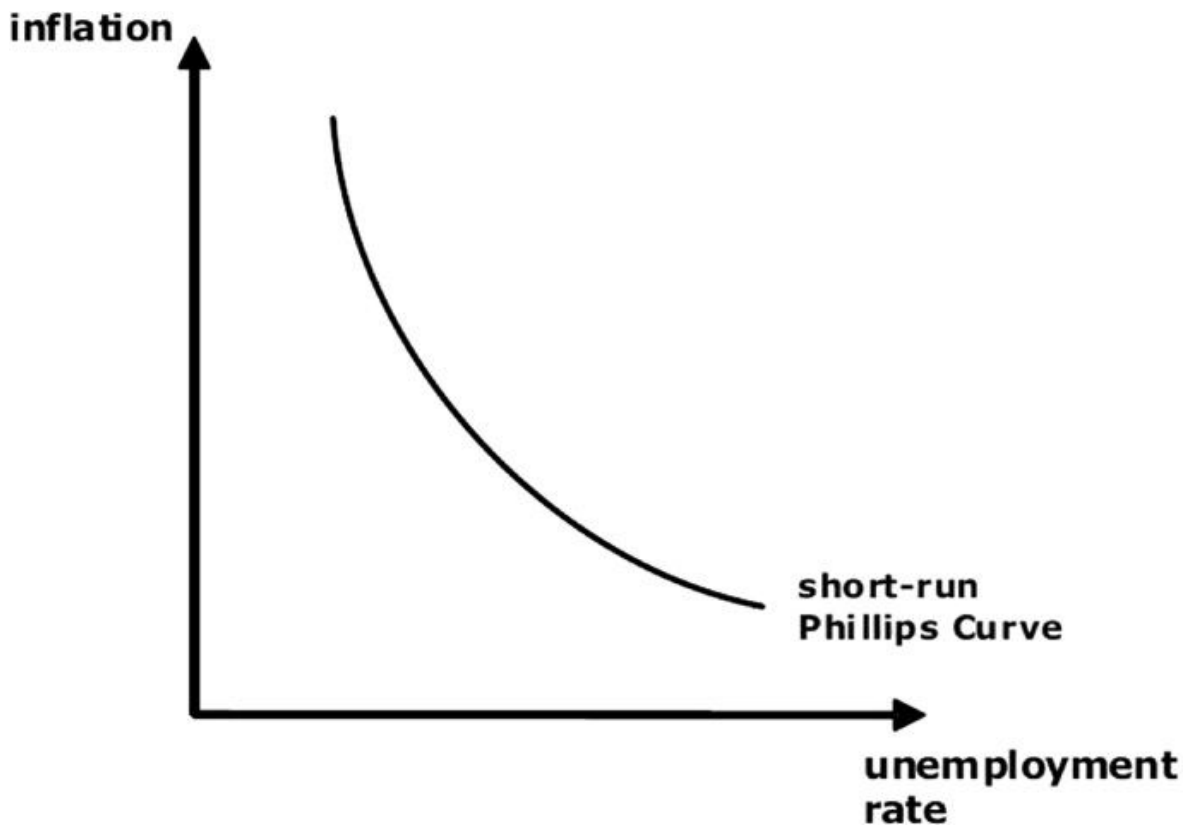
Source: Daniel, 2021

However, the Phillips curve is not a reliable tool for predicting the relationship between inflation and unemployment in the long run. In the short run, changes in inflation can have an impact on the unemployment rate, but in the long run, the relationship between the two variables is less clear. The long-run Phillips curve is generally seen as vertical, meaning that there is no relationship between inflation and unemployment (Benati, 2015).

The reason for this is that in the long run, the economy adjusts to changes in the level of inflation. As inflation increases, workers demand higher wages to compensate for the higher cost of living, and this leads to higher production costs. Firms then pass on these higher costs to consumers in the form of higher prices. As prices rise, the demand for goods and services decreases, and this leads to a decrease in output and employment, and a rise in

unemployment. In other words, the short-term trade-off between unemployment and inflation disappears in the long run.

The Phillips curve has also been subject to criticism for its failure to predict the stagflation of the 1970s. This was a period when there was both high unemployment and high inflation, which contradicted the traditional Phillips curve. This led to the development of the natural rate of unemployment theory, which posits that there is a natural rate of unemployment that is determined by structural factors such as technology, demographics, and institutional factors. The natural rate of unemployment is the rate that exists when the economy is in equilibrium, and there is no cyclical unemployment. This theory implies that policymakers cannot reduce unemployment below the natural rate in the long run without generating inflation (Barro, 1983). In conclusion with the Phillips curve, it is a graphical representation of the inverse relationship between inflation and unemployment. In the short run, there is a trade-off between the two variables, but in the long run, the relationship is less clear.

In addition, high rates of unemployment can cause social unrest and instability in the community. Those who are unable to obtain job experience increased levels of frustration and anger, which can result in acts of civil disobedience such as strikes, rallies, and protests. This can be disruptive to enterprises and make it harder for them to function, which can lead to a further fall in the level of the economy.

Apart from its economic repercussions, unemployment also has social repercussions that can have an impact on people, families, and communities. The psychological effect it has on individuals is one of the most significant effects as a result. When people are unable to find work, they frequently struggle with emotions including worthlessness, sadness, and worry. Their mental health may deteriorate as a result of their perception that they are a failure or that they do not measure up to expectations. This can result in a loss in productivity, which, in turn, makes it more challenging for individuals to obtain job in the future.

In addition to this, unemployment might make it more difficult to move up the social ladder. When people are unable to find work, they may be compelled to accept positions that pay less or have less benefits than the ones they previously held because they simply cannot

find work. Because of this, it may be difficult for them to move up the social ladder, which might result in a cycle of poverty and restricted prospects.

In addition to this, high unemployment rates are linked to an increase in the rate of crime. If a person is unable to obtain gainful employment, they may resort to engaging in criminal behavior, such as shoplifting or trafficking drugs, in order to make ends meet. This can result in a rise in crime rates, which makes it more difficult for communities to flourish and draw in new companies.

In continuation of discussion about the repercussions of unemployment for the government, an additional important impact is the rise in the amount of money spent by the government on social services. The number of individuals who require support from the government for fundamental requirements such as housing, food, and medical care rises in tandem with rising rates of unemployment. This places a major demand on the resources available to the government and has the potential to increase the budget deficit.

In addition, high unemployment rates might result in a rise in crime rates, which can put an additional burden on the resources available to the government. In order to fight the surge in criminal behavior, governments may need to increase the amount of money they invest in law enforcement and the judicial system.

The capacity of the government to recruit and keep talented individuals might be negatively impacted by unemployment as well. When there is a lack of available labor in the economy, talented and competent persons may leave the nation in pursuit of chances abroad that are more favorable. This can result in a "brain drain," in which the government loses its people who are the best educated and competent in the workforce, making it more difficult to accomplish economic growth and development.

Last but not least, unemployment can contribute to political instability, which in turn might hinder the ability of the government to make choices and carry them out. It is possible for people to grow upset and resort to extreme political parties or ideologies when they are unable to satisfy their fundamental necessities because of a lack of employment opportunities. This can lead to social unrest and riots. Because of this, it may be difficult for

the government to preserve stability and put into place policies that are successful in addressing unemployment and other economic difficulties (Schimmelfennig, 2014).

In conclusion, the repercussions of unemployment are serious and have the potential to have a considerable influence on the economy, society, and government of the nation. A high unemployment rate can bring to a decline in income, consumer expenditure, and GDP, in addition to an increase in social unrest and the number of people committing crimes. It is also possible for it to have an effect on people's mental health and to limit their social mobility, making it difficult for them to move up the social ladder. It may become necessary for the government to increase spending on social services, and the government may also suffer a loss of talented people, both of which will make it more challenging to accomplish economic growth and development. As a result, it is vital to combat unemployment through effective policies and initiatives to ensure the health and well-being of people as well as the country as a whole.

3.2 France's Economy

3.2.1 Sectors

France is one of the largest economies in the European Union and the world, with a GDP of around $3.13 trillion in 2022. The service sector is the largest sector of the French economy, accounting for around 70% of its GDP and employing around 77% of the country's workforce (Focus-Economics, 2022). In this article, author will explore the service sector of the French economy in more detail.

The service sector in France is diverse and covers a range of industries, including finance, insurance, real estate, tourism, transportation, and communication. The sector has been growing rapidly in recent years, driven by factors such as increased globalization, technological advancements, and changing consumer preferences.

Figure 4, Sectors of France Economy
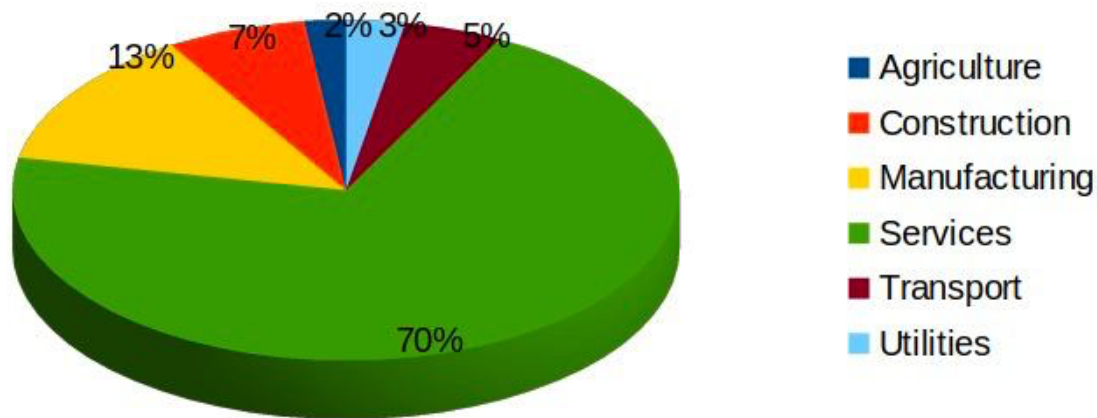
Source: Focus-Economics, 2022

The financial and insurance industries are one of the most significant contributors to the French service sector, accounting for around 20% of the country's GDP. Paris, the capital of France, is home to some of the largest banks and financial institutions in the world, making it a significant financial hub. The insurance industry is also significant, with some of the largest insurance companies in the world headquartered in France.

The services sector is the largest contributor to France's GDP, accounting for around 70% of the total. This sector includes tourism, banking, insurance, healthcare, education, and other professional services. Paris, the capital city, is the center of France's services industry.

Tourism is another essential industry in the French service sector, contributing around 8% of the country's GDP. France is one of the most popular tourist destinations in the world, attracting millions of visitors every year. The country has a rich cultural heritage, with iconic landmarks such as the Eiffel Tower, the Louvre Museum, and the Palace of Versailles. France is also renowned for its wine, food, and fashion, which are major draws for tourists. France has a diversified economy with multiple sectors contributing to its GDP (Figure 5).

France has a long history of manufacturing, and the sector has played a crucial role in the country's economic development. The manufacturing sector in France is diverse and covers a wide range of industries, including aerospace, automotive, chemicals, electronics, food and beverages, and pharmaceuticals.

Figure 5, Distribution of France GDP across economic sectors (2011-2021)
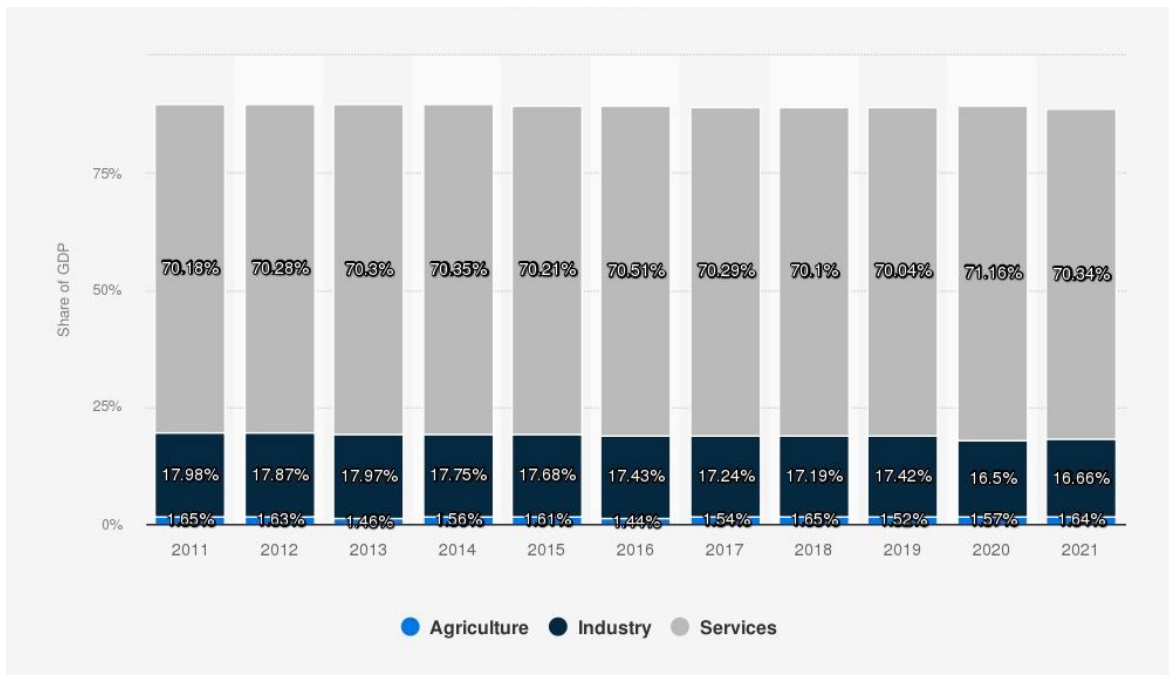
Source: Statista, 2023

The aerospace industry is one of the most significant contributors to the French manufacturing sector, with companies such as Airbus and Dassault Aviation headquartered in the country. France is the second-largest aerospace industry in Europe after Germany and the third-largest in the world after the United States and China. The industry is a significant employer in the country, employing around 200,000 people directly and many more indirectly (Ahlstrand, 2022).

The automotive industry is another important sector of the French manufacturing industry. France is home to some of the world's largest automotive companies, including Renault, Peugeot, and Citroën. The industry is a significant employer in the country, with around 300,000 people directly employed and many more indirectly (Agostino, 2022). The industry has been facing challenges in recent years due to the shift towards electric vehicles and the increasing competition from low-cost manufacturers.

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The chemicals industry is also a significant contributor to the French manufacturing sector, with companies such as Total and Solvay headquartered in the country. The industry is a major exporter, with around 40% of its production exported to other countries. The industry is also a significant employer, with around 160,000 people directly employed and many more indirectly (Aghion, 2020).

The electronics industry is another important sector of the French manufacturing industry, with companies such as Schneider Electric, STMicroelectronics, and Thales headquartered in the country. The industry is a significant employer, with around 180,000 people directly employed and many more indirectly. The industry is also a major exporter, with around 75% of its production exported to other countries.

The food and beverages industry are also an essential sector of the French manufacturing industry, with companies such as Danone, Nestlé, and L'Oreal headquartered in the country. The industry is a major exporter, with around 30% of its production exported to other countries. The industry is also a significant employer, with around 500,000 people directly employed and many more indirectly.

France has a rich agricultural heritage, with agriculture being a significant sector of its economy. Despite the declining share of agriculture in the country's GDP, it remains an important industry and a significant source of employment, particularly in rural areas. In this article, we will explore the agricultural sector of the French economy in more detail.

The agricultural sector in France is diverse and covers a range of products, including crops, livestock, and dairy. The country is known for its wine and champagne production, as well as its dairy and meat products. France is also one of the largest producers of grains and oilseeds in Europe.

The agricultural sector in France is characterized by a high degree of mechanization and modern farming techniques. The country has a well-developed infrastructure for agriculture, including irrigation systems, machinery, and transportation networks. This infrastructure has

helped the sector to be more productive and efficient, allowing French farmers to compete effectively in global markets.

The French government plays a significant role in the agricultural sector, providing subsidies to farmers and implementing policies to support the industry. These policies include price supports for agricultural products, subsidies for rural development, and protectionist measures to shield the domestic market from foreign competition.

However, the agricultural sector in France faces some challenges, including declining profitability and aging farmers. The average age of farmers in France is around 55 years, and there is a shortage of young farmers entering the industry. Additionally, there is a growing demand for organic and sustainable farming methods, which requires significant changes in farming practices and investments in new technologies.

Despite these challenges, the agricultural sector in France remains a vital part of the economy, providing employment and contributing to the country's exports. The sector has been undergoing significant changes in recent years, with a focus on increasing productivity, improving sustainability, and adapting to changing consumer preferences.

The agricultural sector is an important industry in the French economy, providing employment and contributing to the country's exports. The sector is characterized by a high degree of mechanization and modern farming techniques, supported by a well-developed infrastructure and government policies. However, the sector faces some challenges, including declining profitability and aging farmers, which requires significant investments in new technologies and changes in farming practices.

Nuclear power is the primary source of electricity in France, accounting for around 71% of its total electricity generation. France has the second-largest fleet of nuclear reactors in the world, after the United States, with 56 reactors spread across 19 sites. Nuclear power has been a significant source of energy in France since the 1970s and has helped the country reduce its dependence on imported oil and gas. However, nuclear power has been the subject of criticism in recent years, with concerns about safety and the disposal of nuclear waste.

Oil and gas are also significant contributors to the French energy sector, although the country is heavily dependent on imports to meet its energy needs. France has limited reserves of oil and gas and relies on imports to meet around 99% of its oil and gas consumption. The country has been investing in renewable alternatives to reduce its dependence on fossil fuels.

Energy efficiency is also an essential aspect of the French energy sector. The country has been implementing policies and programs to reduce energy consumption in buildings, transport, and industry. For example, France has set a target of reducing energy consumption in buildings by 38% by 2020, compared to 2005 levels. The country has also been promoting the use of electric vehicles to reduce emissions from the transport sector.

In conclusion, the energy sector is an essential part of the French economy, with nuclear power being the primary source of electricity. Renewable energy is also a growing industry in France, with the country investing heavily in wind and solar power. Oil and gas are significant contributors to the energy sector, although the country is heavily dependent on imports to meet its energy needs. Energy efficiency is also a priority for the French energy sector, with the country implementing policies and programs to reduce energy consumption in buildings, transport, and industry.

The construction sector is a vital component of the French economy, contributing significantly to its GDP and employment. The sector is responsible for the construction and maintenance of buildings, roads, bridges, tunnels, and other infrastructure. In this article, we will explore the construction sector of the French economy in more detail.

The construction sector is the fourth-largest sector of the French economy, accounting for around 7% of its GDP and employing around 1.5 million people. The sector has been growing steadily in recent years, driven by factors such as urbanization, population growth, and the need for infrastructure development.

The construction industry in France is diverse, covering a range of sub-sectors such as residential construction, commercial construction, and civil engineering. Residential construction is the largest sub-sector, accounting for around 60% of all construction activity

in the country. The demand for housing in France has been increasing due to population growth, urbanization, and changing demographics.

Commercial construction is another significant sub-sector, accounting for around 25% of all construction activity in the country. This sub-sector includes the construction of office buildings, retail spaces, hotels, and other commercial properties. The demand for commercial properties in France has been increasing due to the growth of the service sector and the country's attractiveness to foreign investors.

Civil engineering is also an essential sub-sector of the construction industry in France, accounting for around 15% of all construction activity in the country. This sub-sector includes the construction of infrastructure such as roads, bridges, tunnels, and airports. The French government has been investing heavily in infrastructure development in recent years, which has led to significant growth in this sub-sector (Odediran, 2012).

The construction industry in France is highly regulated, with strict safety, health, and environmental regulations in place. The industry is also heavily unionized, with trade unions playing a significant role in collective bargaining and labor relations.

Despite the growth and importance of the construction sector, it faces several challenges, including a shortage of skilled labor, rising costs of materials, and increasing competition. The sector also faces the challenge of sustainability, with increasing pressure to adopt green building practices and reduce its carbon footprint.

In conclusion, the construction sector is a vital component of the French economy, contributing significantly to its GDP and employment. The sector is diverse, covering a range of sub-sectors such as residential construction, commercial construction, and civil engineering. The sector faces several challenges, including a shortage of skilled labor, rising costs of materials, and increasing competition. However, with the government's support and investments, the sector is expected to continue growing and contributing to the overall growth of the French economy.

Innovation and entrepreneurship are key drivers of economic growth and development, and France is no exception. In recent years, the French government has made significant efforts to support and promote innovation and entrepreneurship, with a focus on developing new technologies and fostering the growth of new businesses. In this article, we will explore the innovation and entrepreneurship sector in France in more detail.

The French government has launched several initiatives to support innovation and entrepreneurship, including the French Tech initiative. The French Tech initiative aims to create a dynamic and innovative ecosystem in France, with a focus on promoting new technologies and digital businesses. The initiative provides support to startups and entrepreneurs, including access to funding, mentoring, and networking opportunities.

France is also home to a number of world-class research institutions, including universities and research centers, which are actively engaged in research and development activities. These institutions collaborate with businesses and startups, providing them with access to cutting-edge research and technology.

In recent years, France has emerged as a hub for innovation and entrepreneurship, with a growing number of startups and new businesses. The French startup ecosystem is particularly strong in the areas of fintech, healthcare, and e-commerce, among others.

The fintech sector in France is growing rapidly, with a number of startups developing innovative financial technologies and services. For example, Lydia is a mobile payment app that allows users to make peer-to-peer payments and manage their finances from their mobile devices. Another example is Payfit, a platform that simplifies payroll and HR management for small and medium-sized businesses.

The healthcare sector is also an area of focus for innovation and entrepreneurship in France. The country has a well-developed healthcare system and is home to a number of research institutions and pharmaceutical companies. The startup ecosystem in the healthcare sector is focused on developing new technologies and solutions to improve patient outcomes and reduce healthcare costs. For example, KardiaMed is developing an AI-powered platform to help doctors diagnose and treat heart disease more effectively.

E-commerce is another area of focus for innovation and entrepreneurship in France. The country has a large consumer market and a growing e-commerce sector, which is creating opportunities for new businesses and startups. For example, Vestiaire Collective is a fashion marketplace that allows users to buy and sell pre-owned luxury fashion items.

In conclusion, innovation and entrepreneurship are critical drivers of economic growth and development in France. The government has launched several initiatives to support innovation and entrepreneurship, and the country has a strong startup ecosystem focused on developing new technologies and solutions. The fintech, healthcare, and e-commerce sectors are particularly strong areas of focus for innovation and entrepreneurship in France.

3.2.2 Specialization

France's economy is the third biggest in the European Union and the seventh largest in the world (WorldData, 2023). The economy of the country is rather diverse, with a concentration on several important industries that are the primary drivers of growth and development. In this post, we shall go more into the areas of economic specialization that France possesses.

There is a long history of manufacturing in France, and the country has a strong heritage of making things of a high quality. The manufacturing industry in this nation is a substantial economic contributor, accounting for around 10% of the country's GDP and providing employment for over 2.5 million people. The manufacturing industry in France is rather varied, spanning a wide range of industries such as aerospace, automotive, electronics, and pharmaceuticals, among others. Companies like as Airbus and Dassault Aviation have their headquarters in France, contributing to the nation's major contribution to the aerospace sector. Almost ten percent of all of France's exports come from the country's thriving aircraft sector, making it one of the country's most important economic drivers. The sector is known for its high level of innovation, with a primary focus on the creation of new technologies and goods that are tailored to the requirements of the international market.

Companies such as Renault and Peugeot-Citroen have their headquarters in France, making the automobile industry another key sector in France's industrial sector. Over 15

percent of the country's total exports come from the automobile industry, making it one of the most important contributors to the country's exports. The market is extremely competitive, with a primary emphasis placed on the creation of innovative technologies and goods that can cater to the requirements of international consumers (Mohdhar, 2021).

Figure 6, Major Brands through out all regions of France

Source: The French, 2021

Companies like STMicroelectronics and Schneider Electric have their headquarters in France, making the nation a significant player in the electronics industry, which is another prominent area in France's manufacturing sector. Over ten percent of the country's total exports come from the electronic industry, making it a significant contribution to the country's overall exports. The sector is known for its high level of innovation, with a primary focus on the creation of new technologies and goods that are tailored to the requirements of the international market.

The pharmaceuticals business is another prominent area in France's manufacturing sector, and the nation is home to the headquarters of major pharmaceutical corporations such as Sanofi and Servier. Over ten percent of the country's total exports come from the pharmaceuticals business, making it a significant sector that helps drive the country's economy. The sector is known for its high level of innovation, with a primary focus on the creation of novel products and treatments that are tailored to the requirements of the international market.

In addition to its robust industrial sector, France's economy is driven mostly by its robust service sector, which accounts for the bulk of France's GDP. The service sector is quite varied and encompasses a wide range of businesses, such as tourism, communication, transportation, real estate, and insurance. Several of the greatest banks and financial organizations in the world have their headquarters in the city of Paris, which makes it a significant financial center.

Because France is such a popular tourist destination, the country's tourism industry is one of the most significant contributors to the overall service economy. The Eiffel Tower, the Louvre Museum, and the Palace of Versailles are just a few of France's many famous sites that contribute to the country's extensive cultural history. Wine, cuisine, and fashion are all important aspects of French culture that attract a large number of tourists to the country.

To summarize, the French economy is diverse, with a concentration on a number of essential industries that are the primary drivers of growth and development. The manufacturing industry is a substantial contribution to the economy of the country, with a particular emphasis on the aerospace, automotive, electronic, and pharmaceutical product industries. Another significant contribution to the economy of the country is the service sector, which includes industries like as tourism, finance, and insurance in addition to real estate, transportation, and communication. Since France places such a great emphasis on innovation and quality, it has risen to the top of many of these industries to become a leader. As a result, France's goods and services are in high demand all over the world.

3.3 Determinants of Unemployment

Economic growth is a key determinant of unemployment in France, as it impacts the overall demand for labor in the economy. When the economy is growing, businesses are more likely to invest in new projects and hire new workers, leading to increased employment opportunities. On the other hand, when the economy is in recession or experiencing slow growth, businesses are less likely to invest in new projects and may lay off workers, leading to increased unemployment.

The level of economic growth in France has been relatively low in recent years, with the country experiencing an average annual growth rate of around 1.5% over the past decade (Azam, 2023). This has had a significant impact on the country's employment situation, with the unemployment rate getting lower and lower for the past 7 years (Fig. 7).

Figure 7, France unemployment level
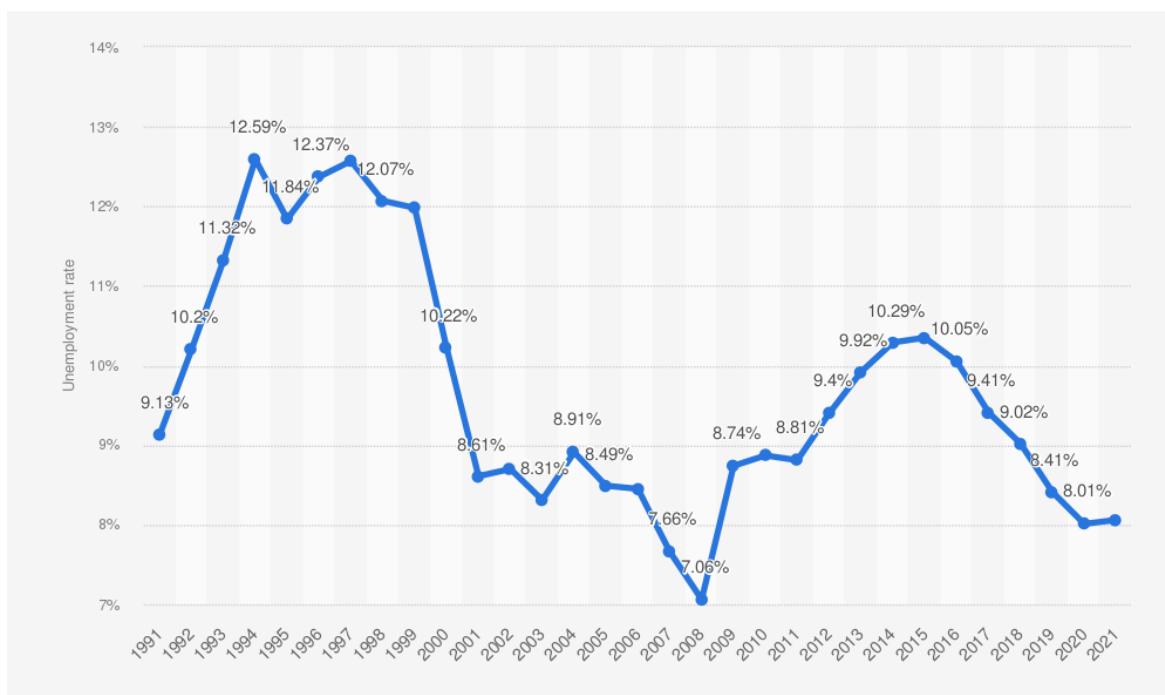
Source: Statista, 2021

Another determinant of unemployment in France is the country's labor market regulations. France has a highly regulated labor market, with significant protections for workers. While these protections are designed to ensure that workers are treated fairly and

have access to important benefits, they can also make it difficult for businesses to hire new workers or adjust their workforce in response to changing economic conditions.

Finally, demographic factors also play a role in determining unemployment in France. The country has an aging population, with many older workers retiring from the workforce each year. While this can create employment opportunities for younger workers, it can also lead to labor shortages in certain industries or regions. Similarly, France's relatively low birth rate means that there are fewer young people entering the labor market each year, which can exacerbate the challenges associated with youth unemployment.

In conclusion, there are several determinants of unemployment in France, including the level of economic growth, labor market regulations, education and training, and demographic factors. While these challenges are significant, the French government has implemented a range of policies aimed at addressing them, with a focus on promoting economic growth, improving labor market flexibility, and investing in education and training.

For example, France's strict regulations around firing workers can make businesses hesitant to hire new employees, as they may be concerned about the potential legal and financial consequences if they need to lay off workers later on. Similarly, the country's high minimum wage can make it difficult for businesses to hire low-skilled workers, as they may not be able to afford to pay the required wage.

Another labor market-related determinant of unemployment in France is the country's relatively low level of labor market flexibility. This refers to the ability of employers to adjust their workforce quickly in response to changes in demand or economic conditions.

In France, labor market flexibility is limited by a range of factors, including the country's strict employment protection legislation and collective bargaining agreements. This can make it difficult for businesses to adjust their workforce in response to changing economic conditions, leading to increased unemployment during times of economic downturn.

In recent years, the French government has implemented a range of policies aimed at improving labor market flexibility and reducing unemployment. These policies include measures to reduce labor market regulation, encourage entrepreneurship and innovation, and promote vocational training and apprenticeships.

Another factor impacting unemployment in France is the country's relatively high level of structural unemployment. This refers to unemployment that is caused by long-term changes in the structure of the economy, such as changes in industry or shifts in the demand for certain types of skills.

In France, structural unemployment has been driven in part by the decline of traditional industries such as manufacturing and agriculture, which have historically provided employment opportunities for low-skilled workers. As these industries have declined in importance, many workers have been left without employment opportunities, contributing to the country's persistently high unemployment rate.

Education and training are critical determinants of unemployment in France. With a highly skilled workforce, France has long been a leader in research and development, particularly in fields such as aerospace, nuclear energy, and pharmaceuticals. However, the country also faces persistent challenges related to unemployment, particularly among young people and those with low levels of education or training.

Another challenge facing France's education system is the need to adapt to the changing nature of work in the modern economy. With the rise of automation and digital technologies, many jobs that were previously available to low-skilled workers have disappeared, while new jobs have emerged in fields such as artificial intelligence, data science, and renewable energy.

To address this challenge, the French government has focused on promoting STEM (science, technology, engineering, and mathematics) education, with the aim of producing a highly skilled workforce capable of driving innovation and growth in key sectors of the economy. The country has also implemented policies aimed at encouraging entrepreneurship and innovation, including tax breaks and other incentives for small businesses and start-ups.

One of the key challenges facing France's training system is the need to ensure that training programs are aligned with the needs of employers. In the past, there has been a mismatch between the skills that young people possess and the skills that are in demand in the labor market. This can lead to high levels of youth unemployment, as young people struggle to find work that matches their qualifications and interests.

To address this challenge, the French government has worked closely with employers and industry groups to develop training programs that are tailored to the needs of specific sectors of the economy. This has included the creation of training centers that are focused on particular industries, such as automotive or aerospace, as well as partnerships between universities and businesses aimed at promoting research and development in key areas of the economy.

Demographic factors are an important determinant of unemployment in France, as they impact both the supply and demand for labor in the economy. France has an aging population, which is leading to labor shortages in certain industries and regions, and a relatively low birth rate, which can exacerbate the challenges associated with youth unemployment.

One of the primary demographic factors affecting unemployment in France is the aging of the population. The country's population is aging rapidly, with many older workers retiring from the workforce each year. This has led to labor shortages in certain industries and regions, particularly those that rely heavily on skilled workers, such as healthcare and construction.

As older workers retire, businesses may struggle to find qualified replacements, leading to labor shortages and increased competition for workers. This can push up wages and make it more difficult for businesses to hire new employees, particularly in regions where the labor market is already tight.

In addition, the aging of the population can also lead to an increase in the number of workers who are no longer able to work due to health problems or disabilities. This can

contribute to higher levels of structural unemployment, as these workers may have difficulty finding new employment opportunities (Nguyen, 2022).

Another demographic factor impacting unemployment in France is the country's relatively low birth rate. France's birth rate has been below replacement level for several decades, which means that there are fewer young people entering the labor market each year.

This can exacerbate the challenges associated with youth unemployment, as there may be fewer opportunities available for young people entering the labor market. In addition, the low birth rate can also lead to labor shortages in certain industries, particularly those that rely heavily on younger workers, such as retail and hospitality.

To address these challenges, the French government has implemented a range of policies aimed at promoting workforce participation among older workers and improving the employability of young people. For example, the government has introduced policies aimed at increasing the retirement age, encouraging older workers to remain in the workforce for longer. Similarly, the government has invested in vocational training programs and apprenticeships, aimed at providing young people with the skills they need to succeed in the modern labor market. These policies are aimed at increasing the supply of labor in the economy, and ensuring that workers are able to compete effectively for available jobs.

In conclusion, demographic factors such as the aging of the population and low birth rate are important determinants of unemployment in France. These factors impact both the supply and demand for labor in the economy, and can lead to labor shortages, increased competition for workers, and higher levels of structural unemployment. To address these challenges, the French government has implemented a range of policies aimed at promoting workforce participation among older workers and improving the employability of young people.

Technological change has been a major determinant of unemployment in France, as it has led to significant changes in the nature of work and the skills required by workers. The rapid pace of technological innovation in recent years has led to the automation of many

tasks that were once performed by humans, leading to job losses in certain industries and occupations.

One of the industries that has been most affected by technological change in France is manufacturing. The rise of automation and the use of robotics in manufacturing has led to the closure of many factories and the loss of jobs for workers. This has had a significant impact on regions that were once heavily reliant on manufacturing, such as the Nord-Pas-de-Calais region in northern France.

Another industry that has been affected by technological change is retail. The rise of e-commerce and online shopping has led to the closure of many traditional brick-and-mortar stores, leading to job losses for retail workers. This trend has been particularly pronounced in smaller towns and cities, where the closure of a major retail outlet can have a significant impact on the local economy.

In addition to the loss of jobs in certain industries, technological change has also led to changes in the skills required by workers. The rise of digital technologies and the increasing importance of data analysis and coding skills means that workers who do not possess these skills may find it difficult to find employment.

This has been particularly challenging for older workers, who may not have had the opportunity to develop these skills earlier in their careers. In addition, workers in certain regions or industries may be more likely to lack these skills, leading to geographic or sectoral disparities in unemployment rates.

While technological change has been a significant determinant of unemployment in France, it has also created new employment opportunities in certain sectors. For example, the growth of the digital economy has led to the emergence of new industries, such as software development and data analysis, which require highly skilled workers.

The French government has recognized the importance of addressing the challenges associated with technological change and has implemented a range of policies aimed at

promoting technological innovation while also ensuring that workers are equipped with the skills required for the modern labor market.

One of the key policy initiatives in this area is the government's national strategy for the digital economy, which aims to promote the development of digital technologies while also ensuring that workers are equipped with the necessary skills to succeed in the digital economy.

This strategy includes investments in digital infrastructure, such as high-speed internet and mobile networks, as well as the development of training programs and apprenticeships aimed at providing workers with the skills required for the digital economy.

In conclusion, technological change has been a significant determinant of unemployment in France, as it has led to the loss of jobs in certain industries and the emergence of new skills requirements. While these challenges are significant, the French government has recognized the importance of addressing them and has implemented a range of policies aimed at promoting technological innovation while also ensuring that workers are equipped with the skills required for the modern labor market.

The business cycle is a significant determinant of unemployment in France, as it influences the overall demand for labor in the economy. The business cycle refers to the fluctuations in economic activity that occur over time, typically characterized by periods of expansion and contraction.

France has experienced several periods of economic expansion and contraction over the past few decades. For example, in the late 1990s and early 2000s, the French economy experienced a period of strong growth, with the unemployment rate declining from around 12% to around 8% over the course of the decade. This was driven by a range of factors, including increased investment in infrastructure and a favorable global economic environment (Ahmad, 2022).

However, in the aftermath of the global financial crisis in 2008, the French economy entered a period of contraction, with economic growth slowing significantly and

unemployment increasing. The unemployment rate rose from around 7.5% in 2008 to around 10.5% in 2013, as businesses reduced investment and laid off workers in response to the challenging economic conditions. More recently, the French economy has experienced a period of moderate growth, with the unemployment rate declining slightly from its peak in 2013. However, the rate remains stubbornly high, and France continues to face significant challenges in reducing unemployment.

In conclusion, the business cycle is a significant determinant of unemployment in France, as it influences the overall demand for labor in the economy. While the country has experienced several periods of expansion and contraction over the past few decades, persistent challenges associated with the country's rigid labor market have made it difficult for businesses to adjust their workforce in response to changing economic conditions. To address these challenges, the French government has implemented a range of policies aimed at improving labor market flexibility and promoting economic growth.

Overall, unemployment rates are determined by a complex interplay of economic, social, and political factors, including economic growth, labor market policies, education and training, demographic factors, technological change, and business cycles.

Apart from the other factors that contribute to the rise in unemployment is the fact that the vast majority of people who are jobless and eligible to receive unemployment benefits choose instead to live off of the money they get. Because its size for the first year can be up to 70 percent of wages, you do not need to rush into looking for a new home to live.

In the beginning of 2022, the President of France made an announcement on the beginning of a program to tackle unemployment. He referred to it as the country's "second concern" after the threat of terrorism and claimed that France was in a state of economic emergency (Clegg, 2022).

On the other hand, these data have a pattern of increasing, which has a trend of having a negative impact on the status of the economy as a whole.

4 Practical Part

4.1 Seasonality Analysis

The very first part of the author's analysis is assessing the seasonality of the unemployment variable for France. According to the information mentioned in the theoretical part and also according to the nature of the variable itself with its different types of unemployment, the variable is traditionally a cyclical one primarily due to the changes in employment relative to different seasons, when some people lose their job due to lower demand for services and products produced during a particular time of the year. The author has managed to meticulously collect all relevant data from the FRED database and each observation represents a quarter of a given year. Unemployment is measured in annual percentage points according to the methodology of the International Labor Office. The following chart indicates the scatterplot of unemployment against time, where this periodicity can be easily noticed:

Figure 8, scatterplot of unemployment against time (2000-2021)
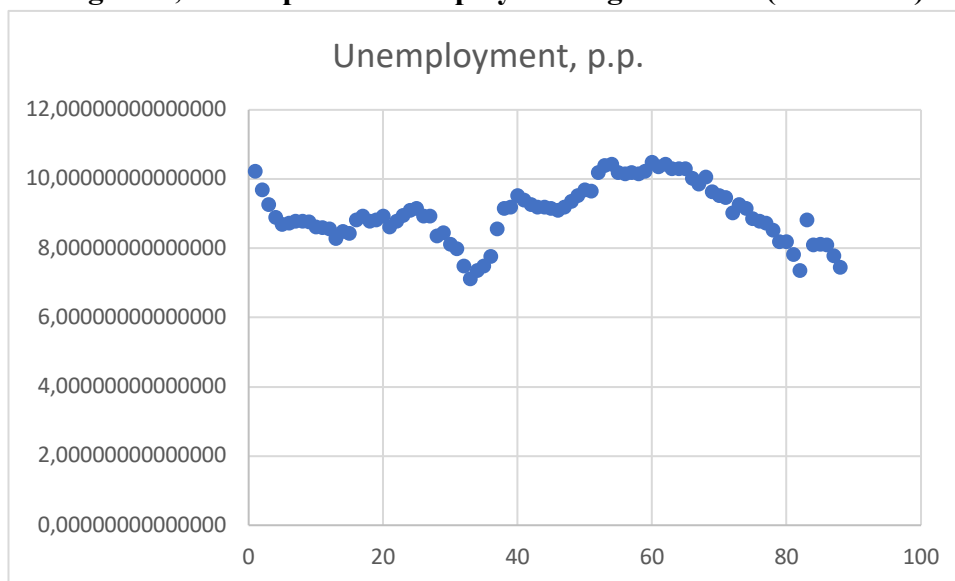
Source: own processing based on FRED and The World Bank

The following table contains a brief visualization of the dataset used by the author in his analysis.

A more detailed overview is presented in the appendix of the thesis (Table 7).

Table 1, a part of the unemployment seasonality database (2000-2002)

Year	Quarter	Unemployment, p.p.
2000	Q1	10.23333333333330
2000	Q2	9.70000000000000
2000	Q3	9.26666666666667
2000	Q4	8.90000000000000
2001	Q1	8.70000000000000
2001	Q2	8.73333333333333
2001	Q3	8.80000000000000
2001	Q4	8.80000000000000
2002	Q1	8.76666666666667
2002	Q2	8.63333333333333
2002	Q3	8.60000000000000

Source: FRED, 2022

Instead of using software that would allow the author to process all data at once, the author instead focuses on computing the seasonality index by hand according to the following formula:

$$Seasonality\ index\ (in\ \%) = \frac{Quarterly\ Averages}{Grand\ Average} * 100,$$ where quarterly averages are calculated as averages of each quarter for 4 of them and the grand average is calculated as the average of quarterly averages.

The author's intermediary calculations are available in the following table:

Table 2, calculation of quarterly averages

Quarter	Average
Q1	9.10869565217391
Q2	9.04927536231884
Q3	9.03623188405797
Q4	8.98840579710145
Average	*9.04565217391304*

Source: own processing based on FRED and The World Bank

Based on the calculations from the table above, it is possible to conclude that the average quarterly unemployment in France is equal to 9.04%, which is a relatively high value for a

country with such a developed economy. Then, the author proceeds to the calculation of the seasonality index and from the seasonality index, the author expresses seasonal deviation in percentages, where positive values mean that on average, unemployment is higher for those quarters and negative values mean that on average, unemployment is lower for those quarters. The table is presented below.

Table 3, seasonal deviations

Quarter	Seasonal deviation
Q1	0.70%
Q2	0.04%
Q3	-0.10%
Q4	-0.63%

Source: own processing based on FRED and The World Bank

Eventually, the author reaches the results of the seasonality analysis, where the following concludes:

- Unemployment in the first quarter of the year in France is 0.7% higher.
- Unemployment in the second quarter of the year in France is 0.04% higher.
- Unemployment in the third quarter of the year in France is 0.1% lower.
- Unemployment in the fourth quarter of the year in France is 0.63% lower.

The total sum of all deviations is equal to 0, justifying the fact that the author's calculations are correct from the mathematical point of view, so the results obtained by the author can be used for the application of the seasonality index for the trend estimation.

4.2 Trend Analysis

Calculation of seasonality analysis allows the author to adjust the trend that will be created by him to the existing seasonality so that the trend will be more accurate and precise. In this part of the thesis, the author estimates a trend, which is created based on the following formula:
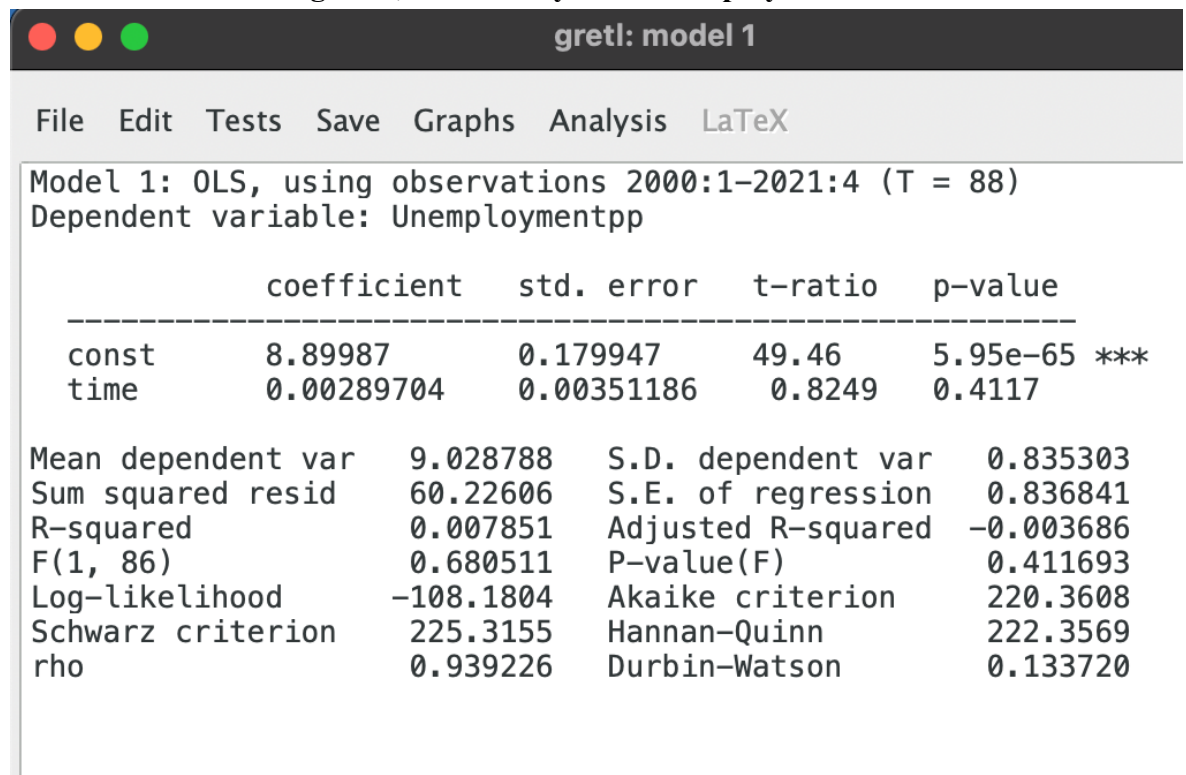
$$y = t + si + \varepsilon i$$

t stands for the trend component;

si stands for the seasonal component;

ei stands for the irregular or stochastic component;

y stands for quarterly unemployment in France in percentage points.

The estimation itself is done in Gretl using the OLS method, i.e., the ordinary least squares method. The author uses the same dataset as in the previous chapter and it is essential for the author to add a time vector into Gretl before applying the OLS method. The outcome of the OLS from Gretl is available below:

Figure 9, trend analysis of unemployment

```
                                       gretl: model 1

File   Edit   Tests   Save   Graphs   Analysis   LaTeX

Model 1: OLS, using observations 2000:1–2021:4 (T = 88)
Dependent variable: Unemploymentpp

              coefficient   std. error   t-ratio   p-value
   -------------------------------------------------------------
   const       8.89987       0.179947     49.46     5.95e-65 ***
   time        0.00289704    0.00351186   0.8249    0.4117

Mean dependent var    9.028788    S.D. dependent var    0.835303
Sum squared resid     60.22606    S.E. of regression    0.836841
R-squared             0.007851    Adjusted R-squared   -0.003686
F(1, 86)              0.680511    P-value(F)            0.411693
Log-likelihood     -108.1804     Akaike criterion     220.3608
Schwarz criterion    225.3155    Hannan-Quinn         222.3569
rho                   0.939226    Durbin-Watson         0.133720
```

Source: own processing based on FRED and The World Bank

According to the output of the OLS, the author can estimate the following model:

$$y = 8.89 + 0.00289t + Si + \varepsilon i$$

Meaning, that on the selected time interval, unemployment was increasing in France and the average quarterly increase in unemployment was equal to 0.002 per cent. Also, the seasonality index can be added according to particular quarters thus improving the quality of the model, which is simply bad – just 0.007 is the value of the coefficient of determination

meaning that almost no variation in the dependent variable is explained by the time variable. Yet, when taking into consideration the nature of unemployment, it is not at all surprising, but it is still a valuable piece of information that will be used by the author in the later parts of the work.

Also, the author presents a graphical representation of the estimated model in terms of the scatterplot of the difference between the actual and fitted.

Figure 10, actual against fitted
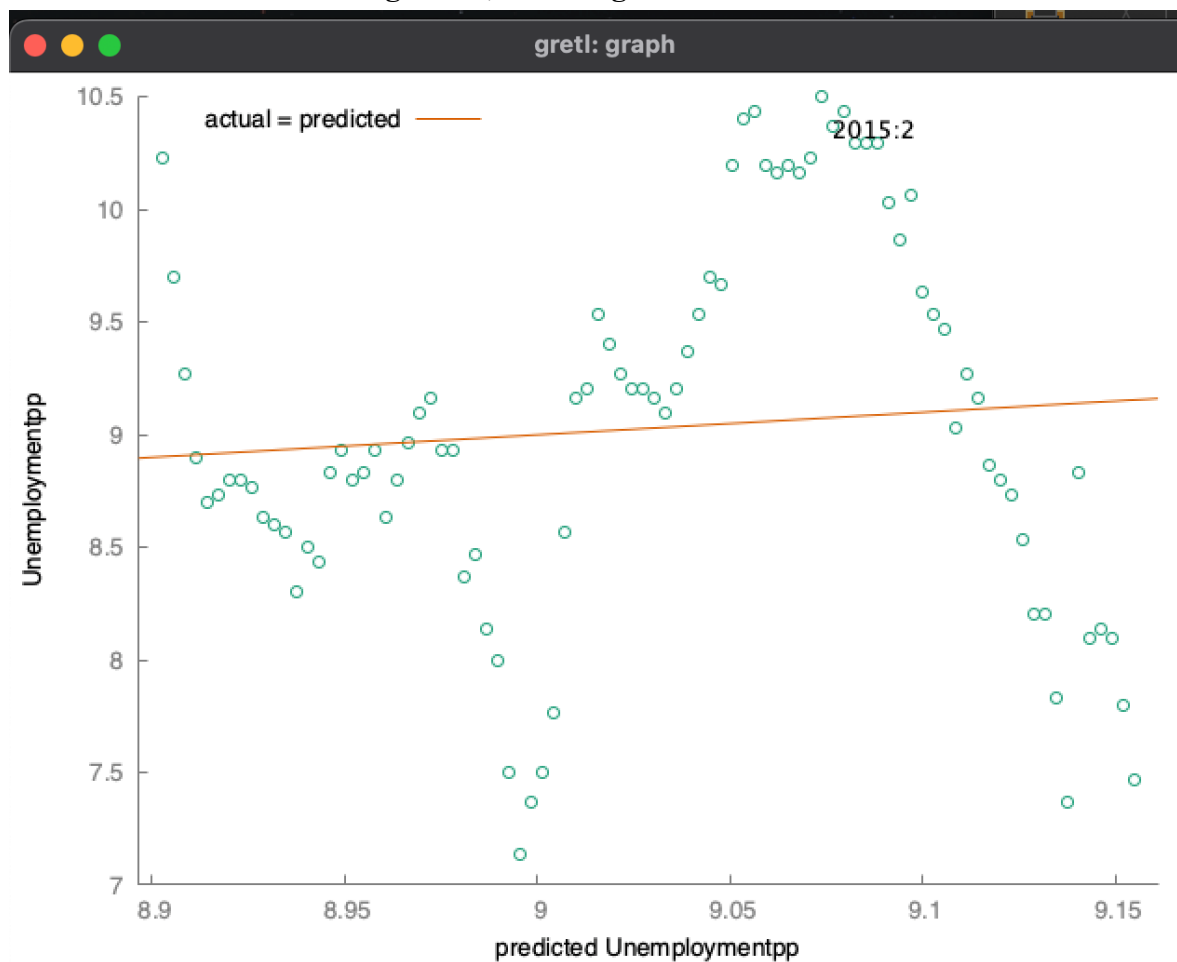
Source: own processing based on FRED and The World Bank

The poor quality of the model is visible on the scatterplot presented above, which also underpins the author's conclusion about the overall quality of the model. Then, the author continues to the linear regression analysis, where important determinants of unemployment will be selected and tested on the subject of their significance.

4.3 Linear Regression Analysis

Linear regression estimation is a complex analysis for which a set of exogenous variables is needed alongside an endogenous one due to the fact that compared to trend estimation, the primary goal of linear estimation is to quantify the effect in selected units of each regressor.

Henceforth, it is not possible to blindly put macroeconomic variables without having enough evidence to support the assumption that there might be a statistical effect on the endogenous variable caused by either of the exogeneous variables. In the author's linear estimation, he assumes a linear regression model with 5 regressors, which has the following form:

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

Now, the author will explain the selection of each variable and the logic behind assuming a statistically significant effect of the selected variable as well as the units of measurement.

- X1 is the first exogenous variable, which represents the annual average inflation rate for France measured by percentage points and based on the CPI. The reason behind choosing unemployment as an independent variable is perfectly clear – the two are believed to be highly negatively correlated with each other and the relationship between the two is explained by the Phillips curve, thus confirming the author's assumption about mutual statistically significant effect between the two. According to the economic theory, whenever unemployment increases, inflation goes down and the opposite is relevant, hence a minus sign for the parameter ß1 is assumed.

- X2 is the second exogenous variable, which represents the FDI net inflow in billions of USD in France. FDI stands for foreign direct investment and the logic of including this variable in the linear regression estimation is perfectly clear – FDI is any cash inflow from abroad, where foreign investors either buy a business in a

given country (France, in that case) or they simply start building or developing business entities, thus creating workplaces for domestic residents. Henceforth, it is assumed that the sign of the second variable is negative and a high statistical significance of FDI on unemployment is assumed.

- X3 is the third exogenous variable and it represents the GDP growth rate in percentage points compared to the previous period (previous year, in the context of the author's research). The logic for incorporating the variable of GDP is similar to the second exogenous variable because whenever a given country increases its domestic output when the GDP is growing, more working places are opened and people have more opportunities to work, so the author assumes that the sign of this variable will be negative.

- Finally, X4 is the fourth exogenous variable and it represents the average tax burden in France per worker. In other words, x4 is the average percentage of income that is paid to an official in a form of any tax including income tax, security tax, etc. The author assumes that the sign of the average tax burden per worker in percentage points will be positive since some workers might find themselves unwilling to work under such conditions and such payroll.

Apart from that, the author also contains a stochastic variable in the end that indicates that this is an econometric estimation, where variables are also subject to unexpected changes under the weight of unpredicted circumstances. T, compared to the trend estimation, represents annual observations. The model also contains an intercept term $\beta 0$, so if all other variables are equal to zero, the unemployment value will be equal to the intercept term, which is a highly unlikely scenario to happen. The dependent variable itself is the annual unemployment rate expressed in percentage points.

Apart from the assumptions made related to the signs of variables, the author also expects the following to be true for the model in order to be able to find a practical application of the model and precisely interpret a quantitative effect of each variable:

- No multicollinearity is expected, otherwise, estimated parameters will not be the best and those coefficients will not represent any practical value for the author for later interpretation. Multicollinearity is defined by the author as a strong correlation between a set of independent variables, and the boundary for either rejecting or accepting the assumption is 0.75.

- No heteroscedasticity is expected, otherwise, parameters will be biased, which is not good and violates fundamental assumptions of econometric estimation. This is tested with the help of White's test, which will be done in Gretl.

- No autocorrelation or periodicity of residuals over a particular period of time, would result in parameters being not consistent, which is also not good from the econometric point of view. This is tested according to the Breusch-Godfrey test.

- Normally distributed residuals, i.e., residuals distributed according to the normal distribution or a bell-shaped curve. This is tested according to the Jarque-Bera test.

- Linear parameters, otherwise, the OLS cannot be applied without further transformation of the original model.

- The observed mean is equal to the fitted mean, otherwise, the model is not valid.

The following table presents the dataset used for the estimation:

Table 4, linear regression dataset

Year	Unemployment, p.p. yt	Inflation, p.p. x1t	FDI, net inflow billion USD x2t	GDP Growth rate, % from the previous period x3t	Average tax burden per worker, p.p. x4t
2000	10.22000027	1.675959887	41.38908266	3.923669227	50.4
2001	8.609999657	1.634780795	50.14205392	1.983721419	50.1
2002	8.699999809	1.923412287	51.55048385	1.135531482	49.9
2003	8.31000042	2.098472191	42.35080068	0.823160757	50.1
2004	8.909999847	2.142089646	35.60853581	2.829752929	50.3
2005	8.489999771	1.745869364	85.13706193	1.66321998	50.5
2006	8.449999809	1.675124496	78.95705379	2.449323601	49.7
2007	7.659999847	1.48799806	83.7775984	2.424736243	49.7
2008	7.059999943	2.812861949	67.9974469	0.25494596	49.8
2009	8.739999771	0.087620478	18.42292806	-2.873313828	49.8
2010	8.869999886	1.531122704	38.88943921	1.949437623	49.9
2011	8.81000042	2.111597952	44.20581113	2.192700633	50
2012	9.399999619	1.954195316	32.94466332	0.313134751	50.1
2013	9.920000076	0.863715498	31.58928379	0.576326675	48.8
2014	10.28999996	0.507758823	5.804878133	0.956183052	48.4
2015	10.35000038	0.037514381	42.82541411	1.112912341	48.5
2016	10.05000019	0.183334861	32.80366673	1.095464404	48
2017	9.409999847	1.032282751	35.86811175	2.291419994	47.4
2018	9.020000458	1.850815083	77.49309869	1.865066071	47.4
2019	8.409999847	1.108254923	53.4993375	1.842971814	47.2
2020	8.010000229	0.476498853	14.72535308	-7.784586492	46.6
2021	8.062999725	1.64233141	88.42762069	6.816589136	47

Source: The World Bank, 2022

The author starts by projecting a correlation matrix for the purpose of verifying if there is no presence of multicollinearity:

Figure 11, correlation matrix
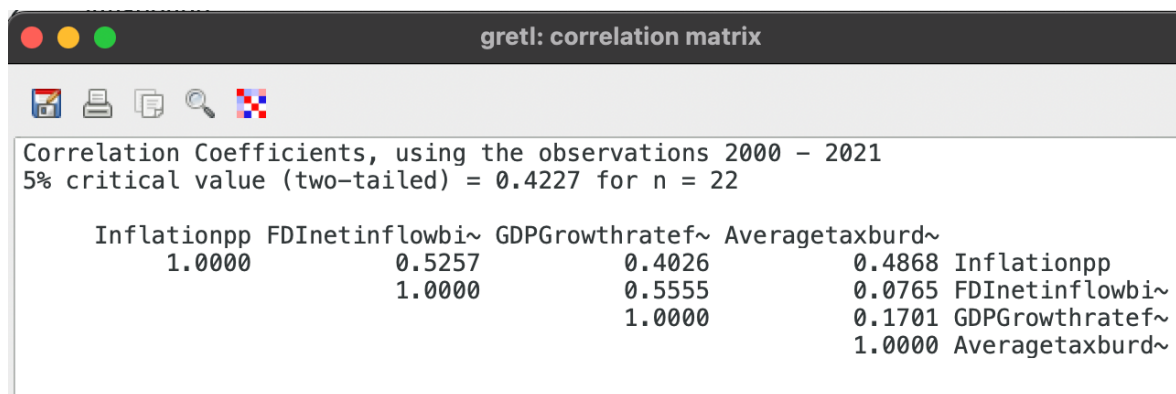
Source: own processing based on FRED and The World Bank

The result is optimistic, as there is no multicollinearity identifying between any single pair of independent variables – all values of correlation coefficients are lower than 0.75, which is good and enables the author to continue his linear estimation.

Figure 12, estimated parameters

```
Model 1: OLS, using observations 2000-2021 (T = 22)
Dependent variable: Unemploymentpp

                    coefficient   std. error   t-ratio   p-value
       ------------------------------------------------------------
  const               6.30219      5.50518       1.145    0.2682
  Inflationpp        -0.602916     0.225008     -2.680    0.0158   **
  FDInetinflowbill~  -0.0235146    0.00705749   -3.332    0.0039   ***
  GDPGrowthratefro~   0.214455     0.0561562     3.819    0.0014   ***
  Averagetaxburden~   0.0874095    0.113654      0.7691   0.4524
```

Source: own processing based on FRED and The World Bank

The parameters are:

$$yt = 6.3 - 0.6029x1t - 0.0235x2t + 0.214x3t + 0.087x4t + \varepsilon i$$

Based on the coefficients of independent variables, it is possible to say the following about the effect on the dependent variable:

- When inflation increases by 1 percentage point compared to the previous year, it is expected that unemployment in France will decrease by 0.6 percentage points, which fully lives up to the author's expectations about the relationship between the two.

- When the FDI net inflow in billion USD increases by 1 billion USD, it is expected that the unemployment in France will decrease by 0.02 percentage points, which also fully lives up to the author's expectations about the relationship between the two.

- When the GDP in France increases by 1% compared to the previous year, unemployment in France increases by 0.21 percentage points. This did not live up to the author's expectations about the sign, but it might be a consequence of structural changes in the French economy. Thus, it might be assumed that the output is indeed increasing, but the degree of automation is increasing and big enterprises started to focus more on hiring highly qualified labour or simply switching to machines, when it comes to manual and easy tasks, thus increasing the degree of automation and leaving some workers jobless.

- When the average tax burden in France increases by 1 percentage point, unemployment in France increases by 0.08 percentage points. This did live up to the author's expectations.

All in all, the author is satisfied with the results of the economic verification and despite a minor problem with the sign of the third variable (GDP growth), it is still possible to say that the model obeys economic logic and it can be used for making general conclusions about the direction of a change in the dependent variable (unemployment rate in percentage points).

Then, the author continues to the mathematical verification, where the average value of the fitted dependent variable is compared to the observed dependent variable. In the case of the author's analysis, the two are perfectly equal being equal to 8.897864 each. Hence, the model is created correctly from the mathematical point of view. Then, the author presents a bunch of additional statistical parameters that will help the author to perform a statistical verification:

Figure 13, statistical characteristics of the model

Mean dependent var	8.897864	S.D. dependent var	0.878250
Sum squared resid	5.335568	S.E. of regression	0.560229
R-squared	0.670599	Adjusted R-squared	0.593092
F(4, 17)	8.652193	P-value(F)	0.000533
Log-likelihood	-15.63353	Akaike criterion	41.26706
Schwarz criterion	46.72227	Hannan-Quinn	42.55214
rho	0.060215	Durbin-Watson	1.709038

Source: own processing based on FRED and The World Bank

According to the coefficient of determination, the model currently explains just 67% of the variation in unemployment through the variation in the set of selected exogenous variables, which is far from perfect. However, unemployment is not an easy variable to predict, so the result is acceptable. The adjusted R square is lower, but it is a traditional situation, so the author will discard the information about the adjusted R square and proceed to the verification of the F value and P value connected to it.

The author will now perform an F test that will help the author to define if the model is statistically significant or not:

- Ho: model is significant
- Ha: model is not significant
- A = 0.05
- F-test
- P = 0.0005
- 0.0005 < 0.05 => At 5% significance level, the model is fully significant due to the rejection of the null hypothesis about the statistical insignificance of the model.

Then, the author proceeds to the statistical verification of independent variables, for which he creates the following table where those t-tests are performed:

Table 5, t-tests

Ho: x1 is not significant Ha: x1 is significant	Ho: x2 is not significant Ha: x2 is significant	Ho: x3 is not significant Ha: x3 is significant	Ho: x4 is not significant Ha: x4 is significant
A = 0.05	A = 0.05	A = 0.05	A = 0.05
P = 0.01 0.01 < 0.05 => Inflation is significant at 5% significance level.	P = 0.0039 0.0039 < 0.05 => FDI is significant at 5% significance level.	P = 0.0014 0.0014 < 0.05 => GDP growth rate is significant at 5% significance level.	P = 0.45 0.45 > 0.05 => Average tax burden is not significant at 5% significance level.

Source: own processing based on FRED and The World Bank

Consequently, the author is able to say that there is just one variable which is not significant at the level of significance level equal to 5% and it is the fourth variable of the average tax burden. All in all, the result is rather good with 3 out of 4 variables being categorized as significant.

Now, the author will proceed to the econometric verification, and he will base his findings on the output of three individual tests from Gretl:

Figure 14, econometric tests

```
White's test for heteroskedasticity —
  Null hypothesis: heteroskedasticity not present
  Test statistic: LM = 20.9522
  with p-value = P(Chi-square(14) > 20.9522) = 0.102863

LM test for autocorrelation up to order 1 —
  Null hypothesis: no autocorrelation
  Test statistic: LMF = 0.0718273
  with p-value = P(F(1, 16) > 0.0718273) = 0.792119

Test for normality of residual —
  Null hypothesis: error is normally distributed
  Test statistic: Chi-square(2) = 0.585782
  with p-value = 0.746103
```

Source: own processing based on FRED and The World Bank

Test for heteroscedasticity:
- Ho: heteroscedasticity is absent
- Ha: heteroscedasticity is present
- A = 0.05
- P = 0.1
- 0.1 > 0.05 => Ho is not rejected. No heteroscedasticity.

Test for autocorrelation:
- Ho: autocorrelation is not present
- Ha: autocorrelation is present
- A = 0.05
- P = 0.79
- 0.79 > 0.05 => Ho is not rejected. Autocorrelation is not present.

Test for normality:

- Ho: normality is present
- Ha: normality is absent
- A = 0.05
- P = 0.74
- 0.74 > 0.05 => Ho is not rejected. Normality is present.

This model is categorized as BLUE because all assumptions of linear estimation are followed. In addition to the original estimation, the author also computes elasticities for each variable for the whole-time interval based on the following formula:

$$Elasticity\ (in\ percentual\ terms)$$
$$= Parameter\ of\ Xn\ variable\ * \frac{Average\ value\ of\ Xn\ variable}{Average\ Fitted\ Value}$$

The following table contains the output for the elasticity analysis:

Table 6, elasticities

Inflation, p.p.	FDI	GDP Growth rate	Average tax burden per worker
-0.094197014	-0.12666	0.030502392	0.482073288

Source: own processing based on FRED and The World Bank

Based on the elasticity analysis, the author can conclude the following:

- When inflation increases by 1% in France, unemployment decreases by 0.09%.
- When FDI increases by 1% in France, unemployment decreases by 0.12%.
- When the GDP Growth rate increases by 1% in France, unemployment increases by 0.03%.
- When the average tax burden per worker increases by 1%, unemployment increases by 0.48%.

Everything is perfectly justified from the economic and also statistical points of view.

5 Results and Discussion

5.1 Determinants of Unemployment in France

First, it is wise to say that unemployment in France is a cyclical variable, meaning that there is a seasonality pattern present for the variable. However, over the course of 22 years, it is possible to say that the variable is pointed upwards and increases over time meaning that the country did not really live up to expectations set by author authors. As Fougère, 2009 specified in his article on youth unemployment and crime in France, one of the main driving forces behind the high unemployment rate in France and the fact that over time, the variable is not decreasing and the situation is getting even worth is the youth unemployment and due to this youth unemployment, it leads to high crime rates by the youth who are unable to find themselves a job. Henceforth, the author's finding about the negative development of unemployment in France is shared by another academist, who additionally blames high youth unemployment for that. As for youth unemployment, it definitely makes sense as requirements to enter a job in France are high and not every young man can find himself capable of finding a decent job. However, being jobless in highly developed economies does not always bring countless benefits in the form of subsidies, which are obviously not always enough for young people who have rather ambitious plans and a lot of desires, so the only choice that they have is to for the help of organized crime and other kinds of criminal offences that will help them to earn money. Clearly, this surely enough suggests that high working standards and highly required qualification lead to the fact that young people in France are sometimes trapped in a circle with no exit. The same is highlighted by Cahuc in 2013, who also brings up a couple of proposed changes by the French government that would presumably help to tackle the problem in the long run.

Then, continuing to the seasonality, the author concludes that unemployment is traditionally lower in the third and fourth quarters of the year for France and it is higher for the first and the second quarters. Clearly, unemployment itself is a variable that is highly correlated with other variables and in that case, it is wise to understand the connection between unemployment and the real GDP of the country. If a given country's real GDP is a cyclical variable with better performance in particular quarters,

then it is expected that it will inevitably have an effect on the unemployment variable, since the GDP is one of the main driving forces behind preventing people from being jobless, what was also found out by the author when he came to the conclusion that GDP growth is a significant predictor of the unemployment rate in France. However, the author of the diploma thesis did not manage to find any real proof that will underpin his finding about the potential seasonality of the real GDP and its connection to unemployment. Yet, the author came across the article written by Ferrante, 2018, who clearly expressed that a lot of European economies' output is strongly dependent on another seasonal variable, which is tourism and revenues from tourism. Henceforth, given the seasonality of France for the lower unemployment in Q3 and Q3 – two quarters where tourism is at its peak, it is possible to assume that it is highly likely that the seasonality of unemployment is explained by the seasonality of the real output and then the seasonality of tourism revenues, which are a big deal for France, one of the countries receiving the most international visitors, which is highlighted by Corne, 2015.

Then, continuing to the results of the Linear Regression analysis, it is possible to say that the variable of FDI and Inflation are considered to have the highest statistical effect on the dependent variable of unemployment, alongside the variable of GDP growth. The same results in terms of statistical significance are obtained by other authors and notably, by Asif, 2013 and Ozel, 2013. Yet, the case of each country is different, and it was downright wise to understand the real reasons behind the unemployment determinants for France. When it comes to inflation and its effect on unemployment, it is wise to say that this effect is somewhat anticipated in almost every economy according to the principle of the Phillips curve, which is also highlighted by Stock, 2008. However, when it comes to the FDI variable, it is not so clear because, for different environments, this variable can have an insignificant effect on the dependent variable of unemployment for a reason that FDIs are not really effective in particular countries where foreigners are not able to manage their investments properly and achieve the maximum effect with high ROI, which is mentioned by Al-Sadig, 2009 in his analysis of the effect of corruption on the FDI. However, when talking about France, it is wise to say that it is a relatively advantageous environment for investors as the country has a relatively transparent system, despite suffering from

excessive bureaucracy, as was stressed by Lafourcade, 2011. All in all, the author's finding underpins his findings about relatively good conditions for investors and France is a good place for allocating FDIs. Finally, when it comes to the variable of GDP growth, the author has already explained it in the same chapter a bit earlier.

5.2 Potential Development

The author believes that the potential development of the unemployment variable in France is significantly dependent on three main factors:

Future vector of the economy's development and business cycles, if the current recession caused by the Ukrainian conflict will continue as the conflict will become more and more global, it is likely that the growth of GDP will not be so high, so the FDI will stop rising as well and the unemployment will be growing as the number of refugees and immigrants will keep on increasing, as Fromentin, 2013 claims it and the author of the diploma thesis agrees.

Future of automation; if the automation of production lines will continue in France, it is likely that more and less qualified labour will find themselves entangled in the situation when their profession will not be in demand, as Charnoz, 2017 specified it just as author of the diploma thesis sees it.

Political change and potential takeover of the French government by the National Rally with the figure of Marine Le Pen as a potential replacement for Emmanuel Macron, who is likely to change the situation with immigration and protect the domestic market, as Stockemer, 2017 also highlighted it.

6 Conclusion

In the author's conclusion, it is inferred that the unemployment rate in France is significantly influenced by the foreign direct investment net inflow, inflation rate, and GDP growth percentage. The conclusion is reached as a result of the analysis carried out on the time series data that was collected throughout the period of time ranging from 2000 until 2021. The author also found that the unemployment rate is a cyclical variable, which means that it is subject to seasonality, with higher unemployment in the first two quarters of the year and lower unemployment in the last two quarters of the year. In addition to this, the author found that the unemployment rate is a cyclical variable. This seasonality is justified by the author by referring to the seasonal pattern of the real GDP, which is a primary driving factor and variable that influences the unemployment rate. The unemployment rate, in turn, is impacted by the seasonal pattern of tourist earnings collected by France.

The dynamics of unemployment in France are negative, which means that over the course of 22 years, the unemployment variable has increased rather than decreased. There are plenty of reasons for this, some of which include immigration, a high degree of automation, and redundant professions, as well as youth unemployment as a result of inadequate social policies and impossible to comply with job entry requirements, so youth are trapped in a circle with no exit that sometimes boils down to the plight of the unemployed.

As for the pertinent prognosis, the author is of the opinion that utilizing the trend estimated by him and by utilizing any trend estimate, it is nearly impossible to provide an answer that is not ambivalent to the question regarding the future unemployment rate of France. This is due to the fact that this macroeconomic variable is dependent on an infinite number of other factors, which were discussed earlier. However, the author is of the opinion that this trend will not likely alter much so long as the present administration is in power. After the economic downturn brought on by the energy crisis and the conflict in Ukraine, the EU economy will begin to stabilize, at which point the unemployment rate in France will return to its previous values of approximately eight or nine percent, following the same seasonality pattern as before, with unemployment being higher in the first and second quarters and unemployment being lower in the third and fourth quarters.

According to the author, there are three primary reasons that will greatly affect how the unemployment rate in France changes in the future: the author of the diploma thesis suggests that the current recession caused by the Ukrainian conflict will likely not be so high in the future, so the FDI will stop rising as well and the unemployment will be growing as the number of refugees and immigrants keeps on increasing; future of automation; if production line automation continues in France, it is possible that more and more less qualified labor will get trapped in a scenario where their profession is no longer in demand; if National Rally, led by Marine Le Pen, were to win power in France, Macron would be replaced by someone more sympathetic to nationalist sentiments and less committed to open borders, this would eventually result in a significant change in the unemployment situation in the country.

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8 Appendix

Table 7, database for seasonality analysis (2000-2021)

Year	Quarter	Unemployment, p.p.
2000	Q1	10.23333333333330
2000	Q2	9.70000000000000
2000	Q3	9.26666666666667
2000	Q4	8.90000000000000
2001	Q1	8.70000000000000
2001	Q2	8.73333333333333
2001	Q3	8.80000000000000
2001	Q4	8.80000000000000
2002	Q1	8.76666666666667
2002	Q2	8.63333333333333
2002	Q3	8.60000000000000
2002	Q4	8.56666666666667
2003	Q1	8.30000000000000
2003	Q2	8.50000000000000
2003	Q3	8.43333333333333
2003	Q4	8.83333333333334
2004	Q1	8.93333333333333
2004	Q2	8.80000000000000
2004	Q3	8.83333333333334
2004	Q4	8.93333333333333
2005	Q1	8.63333333333333
2005	Q2	8.80000000000000
2005	Q3	8.96666666666667
2005	Q4	9.10000000000000
2006	Q1	9.16666666666666
2006	Q2	8.93333333333333
2006	Q3	8.93333333333333
2006	Q4	8.36666666666667
2007	Q1	8.46666666666667
2007	Q2	8.13333333333333
2007	Q3	8.00000000000000
2007	Q4	7.50000000000000
2008	Q1	7.13333333333333
2008	Q2	7.36666666666667
2008	Q3	7.50000000000000
2008	Q4	7.76666666666667
2009	Q1	8.56666666666666
2009	Q2	9.16666666666666
2009	Q3	9.20000000000000
2009	Q4	9.53333333333333
2010	Q1	9.40000000000000
2010	Q2	9.26666666666667
2010	Q3	9.20000000000000

2010	Q4	9.20000000000000
2011	Q1	9.16666666666666
2011	Q2	9.10000000000000
2011	Q3	9.20000000000000
2011	Q4	9.36666666666667
2012	Q1	9.53333333333333
2012	Q2	9.70000000000000
2012	Q3	9.66666666666666
2012	Q4	10.20000000000000
2013	Q1	10.40000000000000
2013	Q2	10.43333333333330
2013	Q3	10.20000000000000
2013	Q4	10.16666666666670
2014	Q1	10.20000000000000
2014	Q2	10.16666666666670
2014	Q3	10.23333333333330
2014	Q4	10.50000000000000
2015	Q1	10.36666666666670
2015	Q2	10.43333333333330
2015	Q3	10.30000000000000
2015	Q4	10.30000000000000
2016	Q1	10.30000000000000
2016	Q2	10.03333333333330
2016	Q3	9.86666666666667
2016	Q4	10.06666666666670
2017	Q1	9.63333333333333
2017	Q2	9.53333333333333
2017	Q3	9.46666666666667
2017	Q4	9.03333333333333
2018	Q1	9.26666666666667
2018	Q2	9.16666666666666
2018	Q3	8.86666666666667
2018	Q4	8.80000000000000
2019	Q1	8.73333333333333
2019	Q2	8.53333333333333
2019	Q3	8.20000000000000
2019	Q4	8.20000000000000
2020	Q1	7.83333333333333
2020	Q2	7.36666666666667
2020	Q3	8.83333333333334
2020	Q4	8.10000000000000
2021	Q1	8.13333333333333
2021	Q2	8.10000000000000
2021	Q3	7.80000000000000
2021	Q4	7.46666666666667

Source: The World Bank, 2022