



The Influencing Factors and Development Measures of French GDP

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Abstract. GDP is the economic return from production activities of a certain economic unit in a country (or region) over a certain period of time. GDP can be used as an important measure of the level of a country's (or region's) economy. GDP includes consumption, investment, government purchases, and imports and exports. Today the work derives the relationship between them by studying the trend of consumption, government spending, standard deviation, correlation's and HP Filler. By studying the relationship between GDP and consumption and government spending in France, this work can propose macro policies to promote the development of French GDP.

Keywords: GDP, HP Filler, macro policies, consumption

1 Introduction

France experienced stagnant growth between 2012 and 2014, with the economy expanding by 0% in 2012, 0.8% in 2013 and 0.2% in 2014. Growth picked up in 2015 with a growth of 0.8%. This was followed by a growth of 1.1% for 2016, a growth of 2.2% for 2017, and a growth of 2.1% for 2018. According to the French Economic Observatory, the expected growth rate for 2022 will be 1.2%. In 2019, France was listed on the United Nations' Human Development Index with a value of 0.901 (indicating very high human development). France's economy entered the recession of the late 2000s later and appeared to leave it earlier than most affected economies, only enduring four-quarters of contraction.

2 Influencing factors

To better represent the trend of French GDP, consumption and government expenditure over time, this work takes time series data and equation of function. Time series data is a collection of observations obtained through repeated measurements over time. Time series data is everywhere, since time is a constituent of everything that is observable. As our world gets increasingly instrumented, sensors and systems are constantly

emitting a relentless stream of time series data. Such data has numerous applications across various industries.

As shown in Figure 1,2,3 And this work connect the end point and then start point to form a straight line and then find the equation of the line. Trend line is used to describe overall trend of change. Consumption and Government spending is described below: The values of GDP, Consumption, and Government spending have an overall flat increasing trend with the year, showing an increasing trend from 1980 to 2018 and a decreasing trend from 2018 to 2019. It can also be seen that these three have a high correlation with each other. As shown below, the Government Consumption Expenditure, Consumption and GDP of France Increase over time.

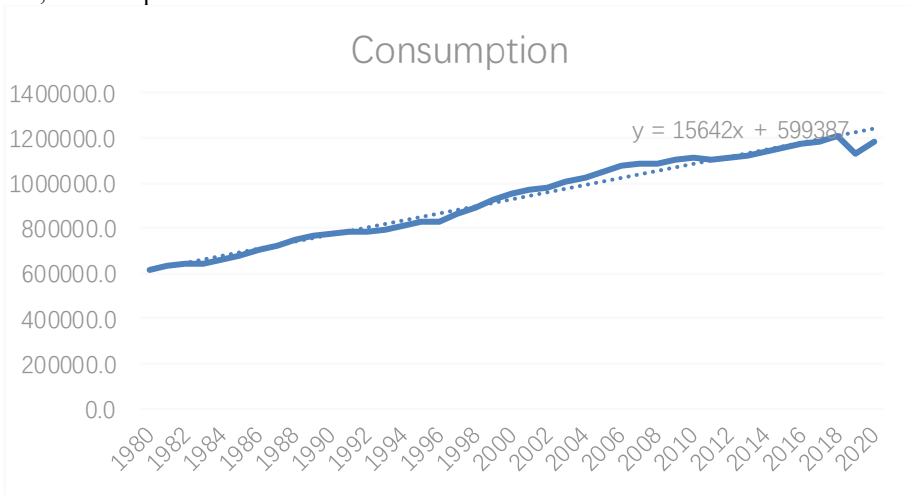


Fig. 1. Consumption changes with the year [Owner-draw].

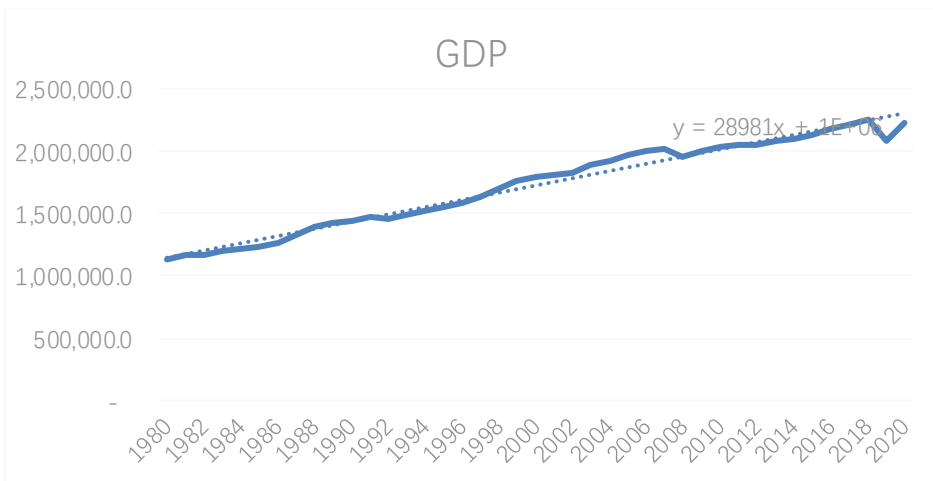


Fig. 2. GDP changes with the year [Owner-draw].

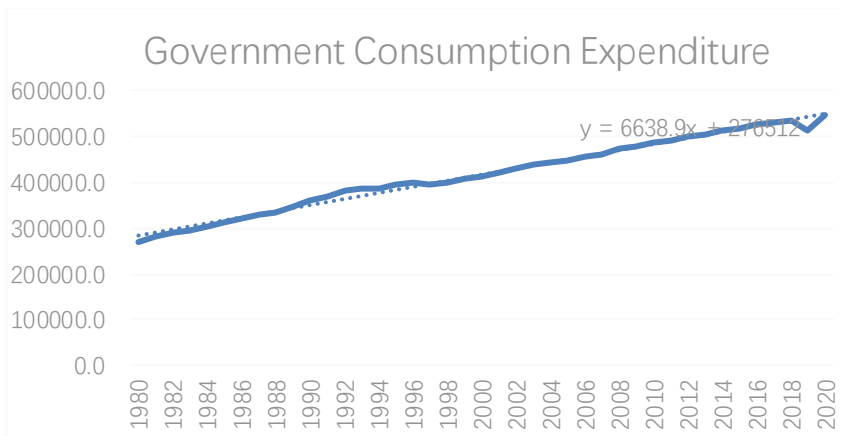


Fig. 3. Government Consumption Expenditure changes with the year [Owner-draw].

2.1 Cyclical Components

The cycle is related to the trend and is equal to the difference between GDP and the trend in GDP divided by GDP. The cyclical component of a time series refers to (regular or periodic) fluctuations around the trend, excluding the irregular component, revealing a succession of phases of expansion and contraction. The cyclical components can be viewed as those fluctuations in a time series which are longer than a given threshold. Here, it is common practice to decompose the trending variables, such as real output, into a secular (or trend) component and a non-trending, i.e., stationary, component that potentially shows cyclical behaviour.

OECD, 2005, Data and Metadata Reporting and presentation Handbook,

OECD, Paris, Section 4: Guidelines for the reporting of different forms of data.

Figure 4 shows the relationship between Co-movement of FRA GDP and Consumption Cyclical Components of France, Figure 4 shows Co-movement of FRA GDP and Government Consumption Expenditure Cyclical Components. The relationship between the two fluctuates every year, and the fluctuation value is between -5% and 10%.

It is clear that the GDP and consumption cycles follow roughly the same trend, generally in a zigzag pattern of rising and falling. The trends of the GDP and consumption cycles are: 1980 to 1982 slightly rising, 1981 to 1984 slowly falling, 1984 to 1989 slightly and rapidly rising, 1989 to 1996 slowly declining, 1996 to 2000 rising, 2000 to 2002 slowly declining, 2002 to 2006 slowly rising, 2006 to 2008 rapidly declining, 2008 to 2010 slowly rising, 2010 to 2016 slowly declining, 2016 to 2018 rising, 2018 to 2019 extremely rapidly declining, and rapid rise from 2019 to 2020. Second, we can see that GDP and government spending have opposite cyclical trends, with government spending on a downward trend when the GDP cycle is rising, and vice versa.

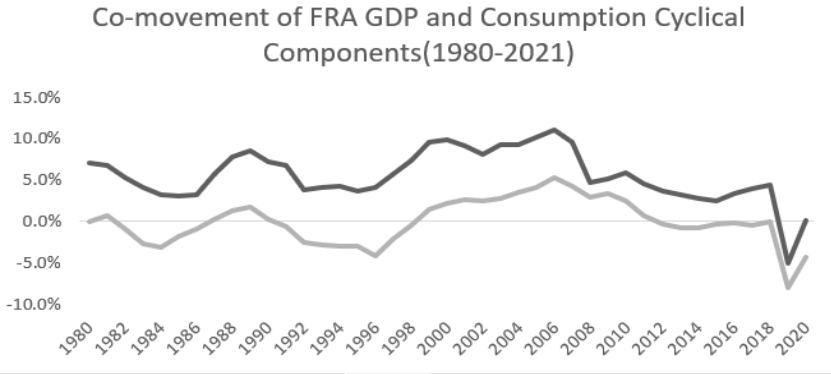


Fig. 4. Co-movement of FRA GDP and Consumption Cyclical Components (1980-2021) [Owner-draw].

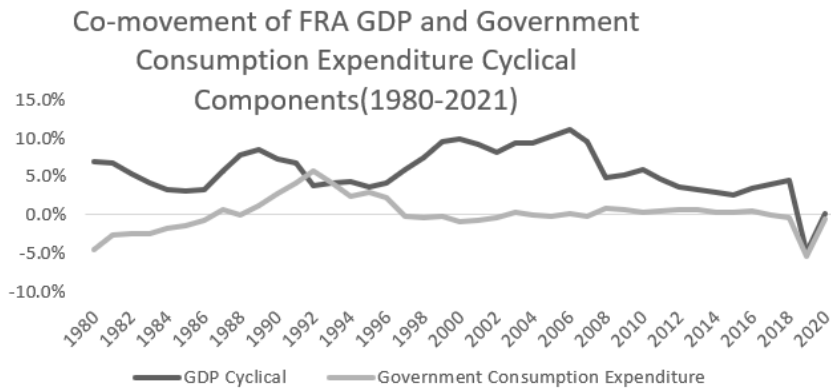


Fig. 5. Co-movement of FRA GDP and Government Consumption Expenditure Cyclical Components (1980-2021) [Owner-draw].

As shown in Figure 6, the actual GDP and expected GDP trends. From the figure 5, it can be seen that the actual and estimated trends are similar.



Fig. 6. Actual GDP and expected GDP trends [Owner-draw].

2.2 Standard deviation

In statistics, the standard deviation is a measure of the data distribution and is a measure of the extent to which the data values deviate from the arithmetic mean. A low standard deviation indicates that the values tend to be close to the mean (also called the expected value) of the set, while a high standard deviation indicates that the values are spread out over a wider range.

As shown in the figure 6, the following, GDP Cyclical Component SD=0.0309, Consumption Cyclical Component SD=0.0269

Government Consumption Expenditure Cyclical Component SD=0.0220. Consumption Cyclical SD/GDP SD=0.9. Government Consumption Expenditure SD/GDP SD=0.7. Consumption is more variable than government spending.

2.3 Correlation

Correlation is a statistical measure that expresses the extent to which two variables are linearly related (meaning they change together at a constant rate). It's a common tool for describing simple relationships without making a statement about cause and effect. It measured whether two variables can have a positive, negative or uncorrelated relationship. However, Correlation also has its own drawbacks. Correlation can't look at the presence or effect of other variables outside of the two being explored. Importantly, correlation doesn't tell us about cause and effect. Correlation also cannot accurately describe curvilinear relationships. As shown in the picture below, Corr between GDP and Consumption=0.83, Corr between GDP and Government Consumption Expenditure=0.07. Consumption has a positive relationship with GDP, Government Consumption Expenditure is not correlated with GDP.

3 Development measures

The government achieves macro-control goals by controlling national wealth. The government's tendencies through fiscal taxation are the primary means for the French government to intervene in macro intervention in the economy. The government concentrates about half of France's GDP in government control and distributes society. In this way, the operation of the entire economy is directly regulated, which has a huge impact on corporate decisions and social reproduction. French state-owned enterprises and state-owned banks control France's economic pulse and a large amount of wealth, providing necessary guarantees for the implementation of the French government's regulatory policy and the achievement of the regulation goals [1].

The government guides economic development through macro plans. The national plan is an important tool for the French government to regulate the economy. It is generally five years, which has played an irreplaceable role in promoting the sustainable and stable development of the market economy. The main content of the French government's macroeconomic plan is divided into four aspects. 1. Clarify the overall goal and strategic direction of economic development in the next five years, and continue to adjust the content of government planning according to the domestic and foreign

economic environment. After World War II, the primary goal of the French government was to restore the economy, realize the modernization of the industry, and focus on developing the basic industries of the country [2].

In the period of economic prosperity, the primary goal of planning is to stabilize France's economy, high-speed development, and social harmony. 1. Reasonably set up important indicators of national economic development. Government plans to predict and set some important macroeconomic variable indicators in the next five years. These indicators, as an important signal of economic operation, provide important references for the national macroeconomic operation trend for private enterprises. 2. Clarify industries and departments that are prioritized, and give policy tilt. The plans formulated by the French government also include important development of industries and key development areas, which plays an important role in promoting the balance between the industry and the coordinated development of the region. Some areas of market failures include infrastructure construction, highways, national defense, environmental protection and other related fields. 3. Formulate supporting solutions and measures to achieve planning goals. The government regulates market operation by formulating overall economic policies [3]. 1. Financial and financial policy. The fiscal and financial policy is the most important policy in the French overall economic policy. It is the most important tool and means for the French government to achieve economic balance and economic stability. Among them, the overall social needs are controlled by expanding or contracted fiscal policies.

The main means of financial policy is to control interest rates fluctuating in a reasonable interval and stabilize the amount of currency supply. 1. Through banks to regulate credit, when the economy is sluggish, France Bank will reduce interest rates, which plays a role in stimulating the economic driving investment. 2. Territory rectification policy. The territorial remediation policy is based on the overall planning of the central government. Through the French Central Government and various provincial governments, the development plans of various provinces are formulated to achieve the purpose of coordinated development in various places. The more well-known plan is the "New City Plan". The government no longer supports the development of Paris City, but instead supports small and medium cities around Paris, makes it rapidly developing, becomes a satellite city in Paris, alleviating the burden on Paris. By promoting territorial remediation policies, the gap between the development between various areas of France has been narrowed, and the purpose of common development has been gradually achieved [4]. 3. Price and salary policy. Price and salary policy is that in order to cope with France's unemployment, the French government has improved the minimum wage level, increasing the income of the bottom group of society, and then stimulating consumption, expanding domestic demand, revitalizing the economy, and reducing the unemployment rate.

For example, from July 1, 1995, the French government increased the minimum wage by 4%, and the legal minimum wage per hour increased from 35.56 francs to 36.98 francs, and from 6009 franc to 6249 francs per month. 4. Foreign economic policy. Foreign economic policies mainly include policies that the government implements related fields such as foreign exchange, foreign trade, attracting foreign direct investment and foreign direct investment. The former president of France has always adopted

the policy of "Europe No. 1, Africa Second", and ignore Asia. The Hillary administration has begun to attach importance to economic and trade exchanges with Asia, and to a certain extent on foreign economic policies, which has played a positive role in promoting the recovery of the French economic recovery. The government optimizes and regulates the industrial structure through industrial policies. First, the core policy in French industrial policy is industrial policy. Industrial policies cover important aspects such as the structure, investment, and research of French industrial development. Followed by energy policy. Due to the lack of French resources, the French government attaches great importance to energy policies and has given a lot of tilt the development of the energy industry in industrial policy systems. The third is agricultural policy. France is a large agricultural country and exporter of agricultural products. Agriculture has very important strategic significance in the national economy. The French government has made very precise intervention in agriculture [5].

French politics rookie Macron resigned as a former President Hollande Cabinet Economic Minister one year later, and then founded the Republic to move forward and run for the president. With the help of the French's general changes, Macron raised the banner of "innovation" and "progress", trying to create "fusion of ideals and reality French socialism" to achieve "the great rejuvenation of France". Judging from the ruling program launched during his campaign and a series of reform solutions launched by the Elysee Palace, Macron can be called the president with the most reform plan in French history. The reform content covers taxation, employment, education, and labor law. Waiting for various fields, density even exceeds President Dai Gaulle in 1958.

The direction of Macron reform can be called the "social liberalism" path, mainly divided into three aspects: tax reform, structural reform, and national governance reform. In terms of taxation, the reform measures launched by the government include: to compensate for social security donations and reducing corporate income tax and capital benefit taxes with the use of CSG (CSG). Structural reforms are even more comprehensive. From the cancellation of the railway industry subsidies to the reform of labor law, such as strengthening the internal labor and capital consultation of the enterprise, simplifying the employment procedures, even the sub-designated aspects of poor community schools, redesigning vocational education and training, etc. The plan can be described as the first place, and it is not enough.

Judging from the evaluation of the year after the reform, although many aspects have started reforms, they are in the situation of the semi-proclast project, and many important areas have not touched. What's more serious, due to the errors of the selection of reforms, the rhythm of reform, and the target group of the reform, Macron's reform not only failed to achieve the expected results, but deepened the dissatisfaction and contradictions of the government at all levels of society. Taking the fuel tax that caused the yellow vest movement this time as an example, although the initial fuel tax plan only increased the area of 0.065 euros, due to the reform of the labor law reform and the reform of the social security system, it touched the welfare of the people at the bottom, and the fundamental fundamentals of 2018 were transferred. Bad, the increase in fuel taxes has become the best reason to protest the middle and lower French people represented by the suburban farmers on the street. Although the original intention of fuel tax reform is to improve the environment and bring a series of benefits such as

increasing taxes and development of renewable energy to the government, this method of using short-term methods to solve long-term structural problems is the wrong prescription [6].

In fact, from the perspective of the reform content of Macron in the past two years, many reforms have seized the shortcomings in French economic and social issues. They are very targeted. Requirements and wage taxes are designed to enhance the structural reform of French enterprises' competitiveness. This also shows that Macron has a deep understanding and ambition to the structural problems in the French economy. In the long run, if it continues to continue, it can play a role in promoting economic growth. On April 9 this year, the Economic Cooperation and Development Organization also affirmed the reform of Macron's reform since it was submitted to French Economic Minister Lemerle. It may be "increased the per capita GDP in ten years to increase the per capita GDP by 3.2%, making low-income families the main beneficiary." Although the data in 2018 is lower than the forecast of government and international currency funds, the average growth rate of French economy in the past 10 years is only 0.8%. It can be said that French economic growth has shown a certain stability. Especially in the fourth quarter, the Bank of France and the Institute of Statistics and Economic Research repeatedly gave 0.2% growth data based on the yellow vest movement, but the final result was to reach 0.3% higher than expected. French Minister of Economic Minister Lemerle expressed an optimistic attitude on social networks [18]. In his opinion, despite the impact of the worsening international environment and the yellow vest movement, a series of measures to increase purchasing power by the government will be continue to take effect in 2019, driving the consumption capacity of the French people, thereby promoting economic growth. In terms of employment, although the unemployment rate in France is higher than the national average level of the euro zone, and it is also among the top in the economic cooperation and development organizations, it enters the decline channel after reaching a historical high of 10.5% in the first half of 2015 [19]. It has been maintained for more than three years, and in the fourth quarter of 2019, another 0.3 percentage points have been reduced to 8.5%. In addition, the employment rate of people aged 15-64 in the same period increased by 0.2 percentage points to 66.1%, the highest point since 1980. Among them, young people aged 15-24 have benefited the greatest, with a growth of 0.9 percentage points [7].

In addition, according to the French Economic Situation Observation Institute (OFCE) in 2018, an economic forecast [20]. Since 2012, the French economic output gap has been shrinking, and it is expected to reach the level of potential output at the end of 2019. 2018 and 2019, French enterprises

Industry investment will remain strong, and foreign trade will continue to drive economic growth. Benefiting from growth, employment creation will continue to make efforts. The unemployment rate of France will be reduced to 8.4% and 7.9% in 2018 and 2019. The European Central Bank and Economic Cooperation Development Organization predicts that the French economic growth rate in 2019 will be 1.3%, which will be higher than the 1% growth target of the euro zone.

Of course, French economic growth still faces many difficulties in the short term, and there are factors from the external environment. For example, the cyclical of world

economic growth into atrophy will bring the risk of a overall economic environment. From this perspective, in fact, the euro zone country increase

Long slowing is not a good thing for the French economy, because 49% of the French export market is a euro country. If the economic growth of these countries slows down, not only the French exports are blocked, but the competitive environment facing enterprises will be more intense. In recent years, the situation in the Middle East has become increasingly complicated, and the risk of geopolitical conflicts will increase fluctuations in oil prices, and will also cause French import costs to rise and economic growth. In addition, uncertain Brexit incidents and future European elections will also affect France's political and economy to a certain extent.

From the perspective of internal factors, there are also many uncertain factors in France's economic reform in the next few years. The biggest uncertainty is the French people's confidence in reform. Economic reform, especially the labor market reform, has a long history in France, but the French's response in the face of reform is often conflict. Protesting the demonstration on the street has become a daily scenery of French society. Macron pointed out in an interview with Forbes magazine. "For the past thirty or forty years, the typical reaction of the French to the change is to declare resistance" ○ 21. The wave of strikes not only affect the daily life of the French, but also has a serious impact on the operation of the enterprise and even a serious impact on the national economy. Statistics show that due to the strikes of strikes since the reform of the Labor Law in 2018, especially the yellow vest movement that emerged in November, the average annual consumption expenditure of French families fell from 1.1% in 2017 to 0.8%.

Another uncertain domestic factors are the continuous worsening public finance in France. At the end of April 2018, France promised to keep the budget deficit at a level 2.3% in the financial stability report submitted to the EU, and this is a number based on the economic growth rate of 2%. At the expected level, the deficit in 2018 is natural. After the aggressive yellow vest movement, the government was forced to make concessions in terms of taxation, and the budget target naturally rose. According to the 2019 budget bill adopted by the parliament at the end of the year, this number will reach 2.7%, and in 2020 will reach 3.2% ○ 23, and return to the fiscal discipline indicators specified in the Malaysia. Therefore, the report submitted by the Economic Cooperation and Development Organization in April 2019, while affirming economic reform, also pointed out that the public fiscal situation in France has not been reversed [8-11].

4 Conclusion

From the current domestic and foreign situation judgment, the new government led by Macron has chosen a path of sharp reform. From the long run, if people persist in reform and constantly amend the direction, it can fully achieve the role of boosting economic growth. Judging from the results of the reform in the past two years, the government's relevant commitments, such as the cancellation of oil prices, tax-free overtime, reducing some universal social donations, and minimum wages, it has also stimulated economic growth to a certain extent. However, there were problems with incomplete and

outdated reforms before, which also brought more uncertainty to the future reform path. And when the economic situation improves, people are willing to accept reform, but during the difficult period of economic growth, the advancement of reform will encounter resistance from all parties. In recent years, the French economic reform has caused the policy to change because of the government change, which has led to uncertain policies and failed to achieve substantial changes. As a new generation of political leaders who do not have the background of the traditional party, Macron is completely conditional to achieve better results in the new economic and social reforms in the future. The key is to grasp the timing and rhythm of reform.

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