

Free-rider Problems in Eurozone: Inflation, Productivity, and Exchange Rate

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Abstract: The Eurozone is experiencing historically high inflation. Following the pandemic recession, the Eurozone as a 19-country currency bloc must strike a balance between credibility and economic development. Rather than a bleak economic outlook, the ECB anticipates a brisk post-pandemic recovery. However, the current situation forces the ECB to choose between Euro credibility and economic prospects. This paper begins by explaining how the Eurozone was created using theories about the fixed exchange rate system and currency union. The article then explains the Euro as a public good from the standpoint of a free-rider problem. When there is no distinction between tradeable and non-tradeable sectors, labor mobility and product mobility can address the majority of concerns. However, in the real world, non-tradeable goods and services abound, and the Eurozone must contend with historically high inflation. As a result, the following section introduces the Balassa-Samuelson Effect to examine Eurozone inflation rates.

Keywords: Eurozone, free-rider problem, inflation, productivity, exchange rate

1. Introduction

The Eurozone, as a 19-country currency bloc, experienced record-high inflation in September 2022, which has since accelerated to 9.6%. Surprisingly, the underlying price growth, which includes fuel and food prices, is also accelerating. Prices of wood, steel, oil, and many other commodities have been gradually declining for several months as supply chains disrupted by the COVID-19 are restored and normalized. However, the persistently high energy costs caused by the war between Russia and Ukraine hit both services and manufacturing firms, prompting them to raise prices. The relief from pandemic recovery is offset by the shock caused by geographic politics, as shown in Figure 1.

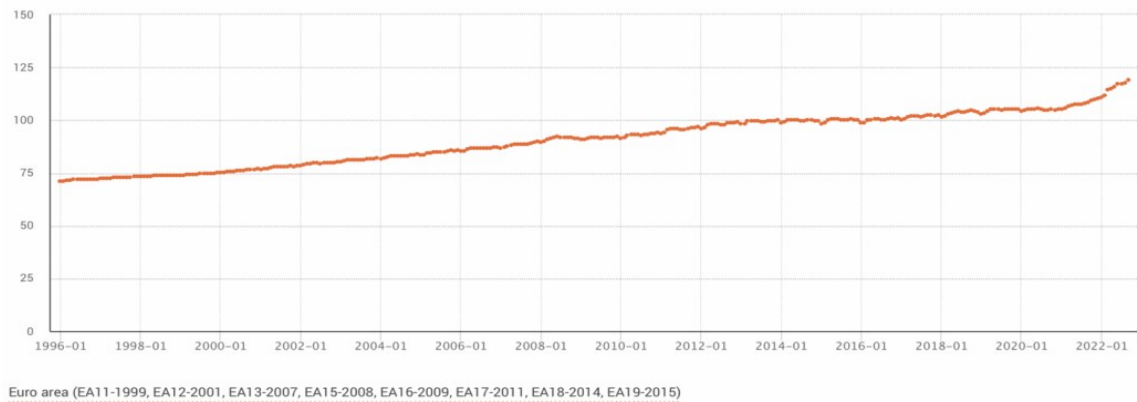


Figure 1: HCIP – monthly data (index) (source: Eurostat).

Meanwhile, Euro becomes a free-falling currency when the inflation in this region is soaring, which is shown in Figure 2.



Figure 2: Euro/ECU USD exchange rates – daily data (source: Eurostat).

The Euro exchange rate emphasizes the difficult situation that Europe is currently in. The ECB anticipates a brisk post-pandemic recovery rather than a bleak economic outlook. However, the current situation leaves the ECB torn between Euro credibility and economic prospects. On the one hand, the Fed continues to raise interest rates in order to combat rising inflation in the United States; on the other hand, the ECB remains concerned about the EU's economic downturn. The USD/EUR exchange rate has fallen to a two-decade low, posing a threat to Euro holders. Figure 3 shows that as the USD strengthens, so do claims in US dollars.

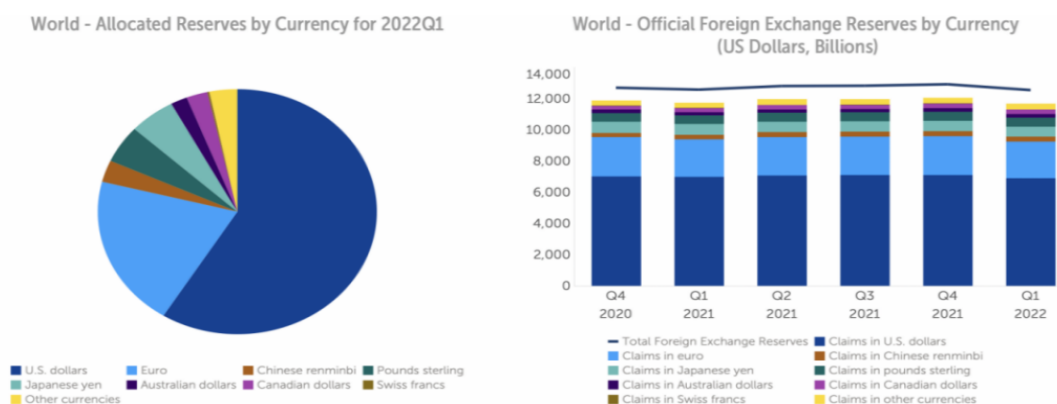


Figure 3: World – Official foreign exchange reserves by currency [1].

As the US dollar's hegemony has waned since the 2008 financial crisis, the Eurozone's share of allocated reserves has remained stable at around 20% for several years. Clearly, if the ECB wants to maintain its international credibility and reputation, policymakers must halt the decline in the exchange rate at the expense of economic recovery.

This paper initially introduces how the Eurozone is designed according to the theories of the fixed exchange rate system and currency union. Then, this article explains the Euro as a public good from the perspective of a free-rider problem. When there is no division according to tradeable and non-tradeable sectors, labor mobility and product mobility can cope with most concerns. However, the real world is that non-tradeable goods and services are everywhere, and the Eurozone needs to deal with the historically high inflation. Thus, the following section introduces the Balassa-Samuelson Effect to analyze the inflation rates in the Eurozone. This paper updates the status quo of this currency union and predicts the possible challenges in the Eurozone. Meanwhile, some suggestions have been made to the policymakers to maintain the currency union in the long run.

2. Fixed Exchange Rate and Development of Eurozone

When a government or a central bank ties the exchange rate of the official currency to another country's currency, they apply a regime called a "fixed exchange rate," which aims to keep the exchange rate within a narrow range. It can also be called a pegged exchange rate. In 1979, the European Currency Unit (ECU) as a new common currency was related to the Exchange Rate Mechanism by the European Monetary System [2]. The European Exchange Rate Mechanism can be defined as a semi-pegged system. A semi-pegged system means a currency can experience some variability and it does not need to sacrifice liquidity under an upper and lower bound interval or a margin.

Not only is a fixed margin set by the central banks of the European Economic Community (EEC) members, but the ECU is also created as the benchmark of the EMS. The ECU is an accounting currency unit. The creation of the ECU is considered a basket of currencies. The ECU composition was fixed in 1995. Then, in 1999, it was replaced by the Euro. At the same time, the EMS is also succeeded by the Economic and Monetary Union (EMU). The previous ERM is updated to the second version because all the exchange rates are fixed against the Euro.

The Maastricht criteria and the Euro convergence criteria are proposed to prepare for the currency union, which means the EU members can adopt the Euro as their official currency. This set of criteria covers HICP inflation, government budget deficits, government debt-to-GDP ratios, exchange rate stability, and long-term interest rates. The fourth criterion requires an ERM member to avoid severe tensions in the field of the currency exchange rate for at least two years [3]. The Balassa-Samuelson effects explain the issues in the Eurozone, especially during the economic recession with high inflation. Eventually, this paper discusses the future of the Eurozone and provides some suggestions.

3. Eurozone: A Currency Union

As a formal currency union with common policies, the Eurozone establishes a common monetary authority which can implement the common monetary policies within the currency union for the Euro. The US has been a successful currency union for more than two centuries [4]. However, it is hard to notice that the US dollar also faces turbulence like the Euro. It is necessary to understand the difference between the US dollar and the Euro when they are both treated as currency unions. Initially, the Fed and ECB both had absolute power to enact monetary policies. However, since the EU is still not a sovereign state, the ECB's policy goal cannot be solely price stability. Furthermore, the cost-effectiveness of their monetary policies within the Eurozone is likely to be averaged across the territory [5]. It is impossible for the ECB to differentiate the monetary policies among the members.

Normally, fiscal and monetary policies always work together. However, the Eurozone members can never reach an agreement on their fiscal policies. Therefore, when the ECB aims to decrease the price level and increase the interest rate, member countries may not want their unemployment rate to increase as a result. Then, they prefer to utilize their fiscal policies, which largely eliminates the effectiveness of monetary policies at last.

4. Free-rider Problem

When some agents do not need to pay for public goods and services or resources of a communal nature, they can still benefit from them. It means the price mechanism cannot adjust the demand and supply anymore and a market failure emerges. Since there is no way for the authorities or people who pay for the public goods and services to manage other people not to access or consume public goods and services, free-riders are never incentivized by the price mechanism to pay for the public goods and services [6]. As a result of the excess demand, public goods and services, which are influenced by free-rider issues, are always under-produced, degraded, and overused.

The public perplexed by a free-rider issue is always non-excludable and non-rivalrous. Non-payers are not barred from using or benefiting from a good; it is non-rivalrous when people consume one product or service but the availability of that product or service for another consumer is not reduced [7]. In the Eurozone, the Euro can be viewed as a public good that is non-excludable and non-rivalrous. From this point, it is easy to understand why many people within the Eurozone prefer to criticize each other due to their unlimited budget deficits.

The Eurozone can be classified into two groups according to their trade surplus. Figure 4 shows that Belgium, Germany, Ireland, the Netherlands, Slovenia, and Slovakia enjoy a surplus during the intra-Eurozone trade, which should be defined as Group A. Meanwhile, Estonia, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Austria, Portugal, and Finland face a trade deficit, which is categorized as Group B.

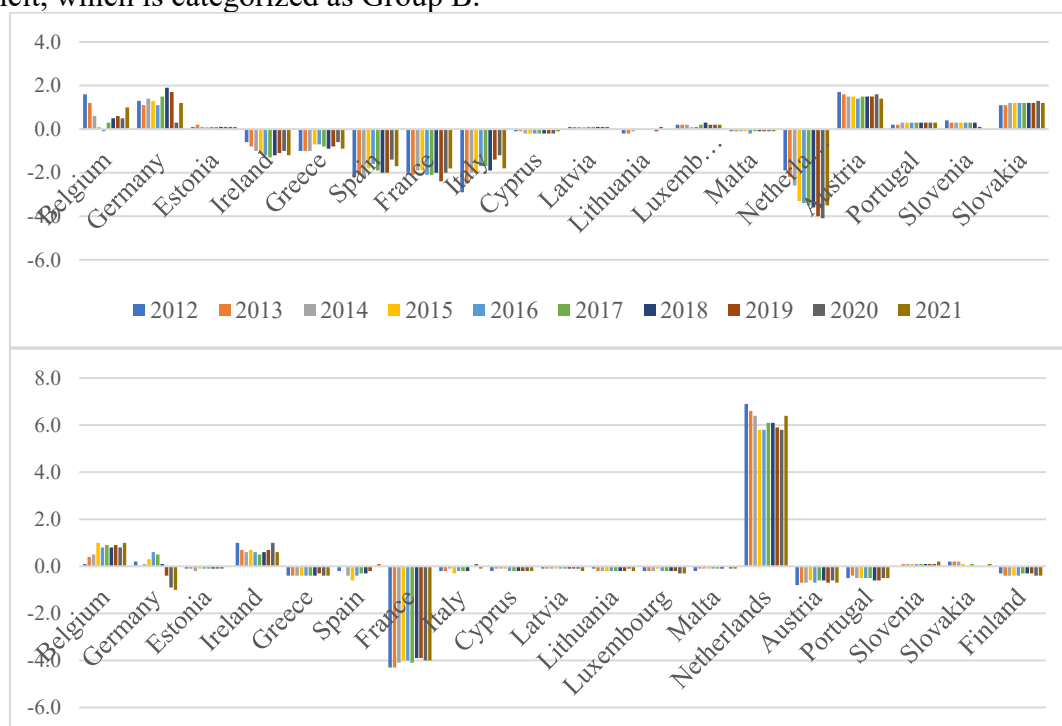


Figure 4: Intra-Eurozone trade surplus (source: Eurostat).

In the event that these countries do not adopt the Euro as their common currency and they use a flexible exchange rate system, the trade surplus and trade deficit within the Eurozone can be fixed by the changes in the exchange rate. Group B imports more from Group A, which means their demand for the currency of Group A increases, and the currency of Group A will appreciate. Group B needs to pay more for products from Group A, which is caused by the appreciation, so Group B will import fewer products than before, and the trade imbalance between Group A and Group B will be corrected.

However, the currency union fixes the exchange rate. Then, if the Euro can be regarded as the currency issued by Group A, for Group B, they do not need to bear an increasing cost caused by the appreciation, which sustains the long-term trade deficit of Group B. The Euro can be viewed as a public good, which is equivalent to an increase in the purchasing power of Group B. Group B can benefit from this public good and create excess demand for the euro.

When the perspective changes to the extra-Eurozone trade, Belgium, Germany, Estonia, Latvia, Luxembourg, Australia, Portugal, Slovenia, and Slovakia can be viewed as Group C, which experiences a trade surplus; meanwhile, Ireland, Greece, Spain, France, Italy, and the Netherlands bear the long-run trade deficit. In the event that Group C and Group D have their official currencies, the currency of Group C should appreciate, and the currency of Group D should depreciate. However, because they are in a currency union, Group C enjoys a competitive pattern of trade, and Group D benefits from the stronger purchasing power than they normally have. Figure 5 shows that, in general, the Eurozone benefits from the trade surplus before October 2021.

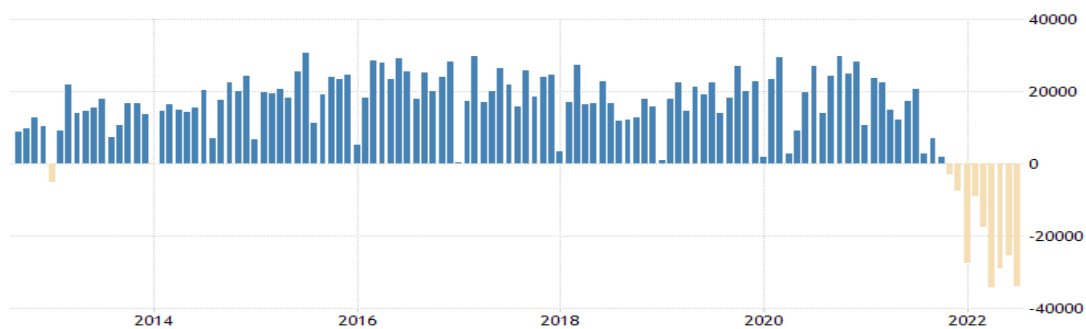


Figure 5: Eurozone trade surplus (source: Eurostat).

According to the analysis above, it is evident that it is unnecessary to analyze which country is a free rider before 2022. It is irrational to criticize those countries which enjoy a trade surplus when labor and product mobility are not restricted within the Eurozone and the economy is not divided into tradeable and non-tradeable sectors. However, currently, the Eurozone faces record high inflation, which requires the ECB to increase interest rates at the cost of economic growth. It is necessary to analyze what the currency union will encounter during the economic recession and high inflation.

5. Balassa-Samuelson Effect

The ECB recently raised interest rates by 75 basis points to combat rising inflation [8]. The ECB believes that it requires two more years to decrease interest rates from an average of 8.1% to 2.3%. Figure 6 illustrates that it is easy for the Eurozone to deal with the previous inflation by adjusting the interest rate, because the overall inflation level has been maintained at a relatively low level for a couple of decades.

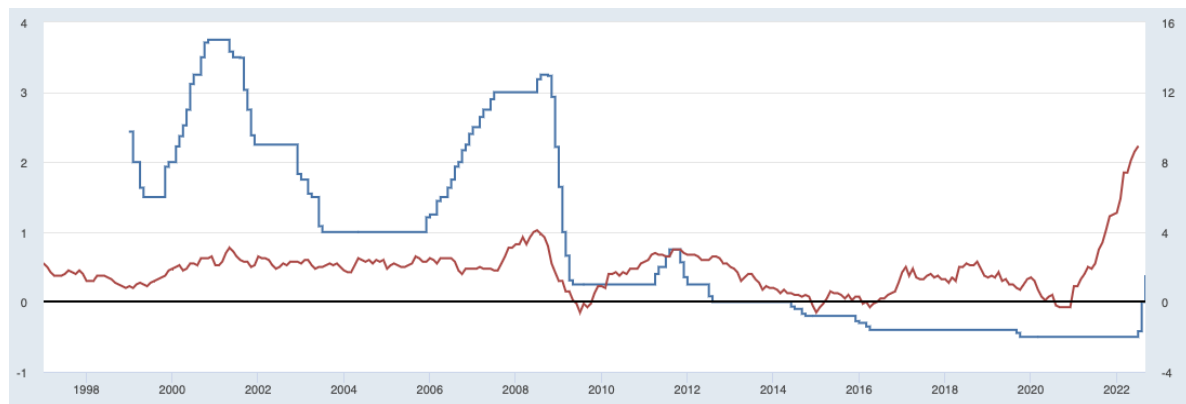


Figure 6: ECB deposit facility rate (left) and CPI (right) (source: ECB; OECD).

However, it is important to recognize that the inflation rates within the Eurozone are vastly different, which could have a long-term impact on the currency union, especially since the inflation rate is now uncontrollably high. Figure 7 depicts the Eurozone's uneven inflation.

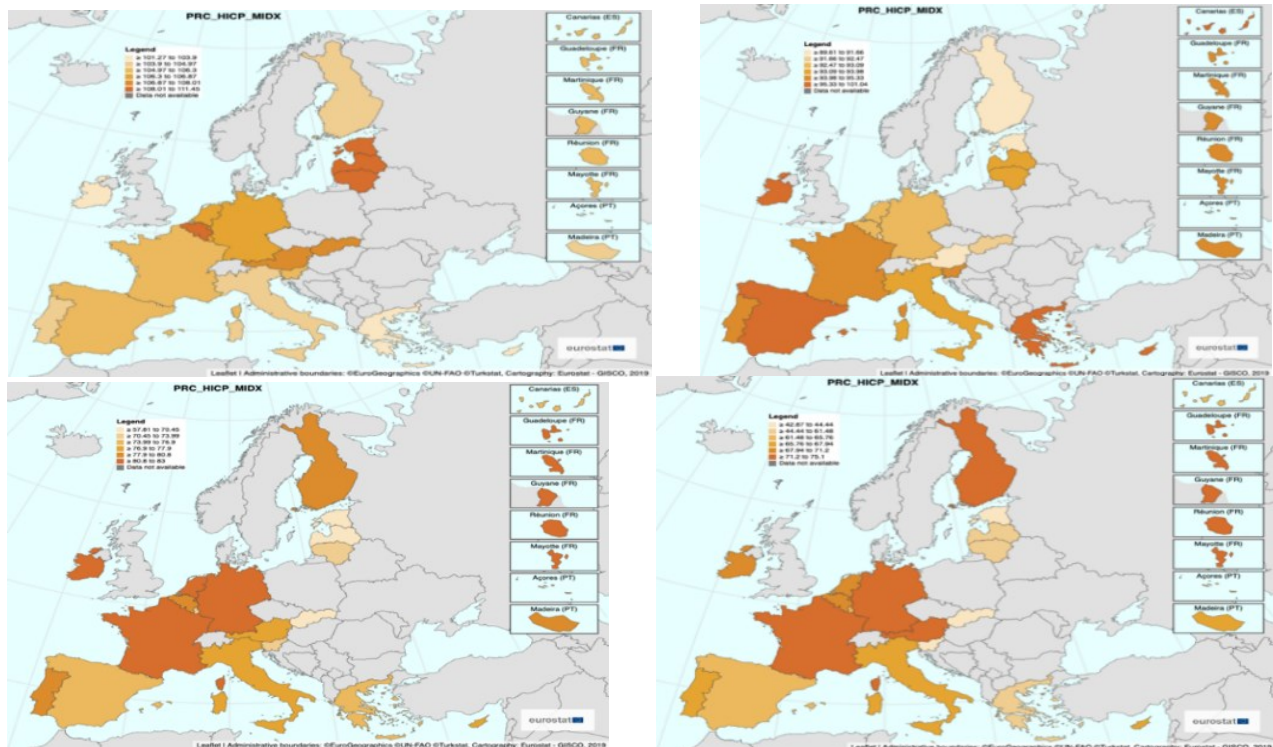


Figure 7: Inflation rates in Eurozone (source: Eurostat).

The Balassa-Samuelson effect concentrates on the productivity gap in different countries, particularly during the production of tradeable goods [9]. The Balassa-Samuelson effect proposes that high-income countries with higher productivity can earn more from tradeable goods. Because the law of one price assumes that the prices of tradeable goods are equal all around the world, the one-price rule does not apply to non-tradeable goods. People in the tradeable sector can earn higher real wages because of their higher productivity. Then domestic non-tradeable goods will become relatively cheap and the real wages in the non-tradeable sector will be relatively low [10]. However, labor can move between the tradeable and non-tradeable sectors. Therefore, the wage level for the non-tradeable sector will also rise to the level in the tradeable sector. The real exchange rate will rise. Under a fixed

exchange rate system, the overall price level will increase. However, under a floating exchange rate system, the currency will appreciate.

Germany has gained a common reputation for having the highest productivity in the Eurozone [11]. According to the Balassa-Samuelson effect, Germany should experience the highest inflation in the Eurozone. However, the high inflation in Germany has just appeared in recent months, which is closely related to the soaring energy prices. It is related to the extra-Eurozone trade. Does the Balassa-Samuelson effect fail to explain the different inflation rates within the Eurozone? It would be no. According to the Balassa-Samuelson effect, labor mobility can solve the gap in the tradeable and non-tradeable sectors. However, the Eurozone does not restrict labor mobility. Currently, the inflation issue reflects that the labor mobility between tradeable and non-tradeable sectors within the Eurozone cannot be accomplished as policymakers expect. However, the productivity in the tradeable sector within the Eurozone is equal. However, the productivities in the non-tradeable sector may be different.

As productivity increases, the real effective exchange rate should increase [12]. However, if the euro is viewed as an official currency issued by the Eurozone countries with higher productivity, it should appreciate. However, because they are in a currency union, those countries with lower productivities are provided with strong purchasing power due to the tradeable sector. However, the productivity in their non-tradeable sector is still low. It means there are excess euros to chase for the products and services in the non-tradeable sector, which will lead to inflation. The difference between the non-tradeable and tradeable sectors determines inflation. A larger gap results in higher inflation. Besides, if the residents of a country prefer more non-tradeable products and services, it may also result in higher inflation.

However, the Eurozone countries with higher productivities do benefit from the currency union when they trade with countries outside the Eurozone. It is clear that the Eurozone benefits from the trade surplus in recent years. The Euro suffers because the average productivity in the Eurozone is relatively low, which hinders the appreciation of the euro. Then, those countries with higher productivities within the Eurozone can benefit from a better pattern of trade at the cost of high inflation in other regions. According to this viewpoint, countries with high inflation cannot even be compensated for by their relatively high purchasing power. Thus, most of these countries within the Eurozone are determined to use fiscal policies and debt to compensate their residents for the loss in purchasing power, which may threaten the development of the Eurozone in the long run [13].

6. The Future of Eurozone

If the Eurozone wants to maintain its competitiveness via the relatively low exchange rate due to the low productivity on average, the Eurozone needs to invite more members to this currency union. However, it is clear that these members with relatively low productivity may encounter higher inflation than before. They may also need compensation from the rich countries in the Eurozone through debts or other fiscal policies. It will increase the fiscal burdens of those rich countries. Those rich countries with higher productivity may want to compensate them in this way during the economic boom. However, those countries even need to cope with the high inflation caused by the soaring energy prices. If they can't solve the problems caused by rising energy prices, this currency union will struggle to survive in the long run.

At present, the ECB is determined to increase the interest rate. Then, the exchange rate of the euro will also increase. An appreciation in the euro will undermine the trade competitiveness of those rich countries with high productivities. Then, they may need to cope with the economic recession rather than compensate the countries with lower productivity. Does this mean this currency union cannot survive the economic recession? The answer may be pessimistic. Figure 7 clearly shows that, fortunately, those countries with lower productivities do not experience the high inflation caused by

the soaring energy prices. It means they do not need to increase the interest rate if they have their official currency. However, they need to follow the lead of the ECB and bear the possible economic recession caused by an increase in the interest rate. Besides, an increase in the interest rate will also lead to an appreciation of the euro, which may undermine their competitiveness in international trade. Thus, it is not clear how this currency union can be sustained during high inflation and economic recession.

7. Conclusion

Previously, this paper focused on the shortcomings of this currency union during the economic recession. However, over the last couple of decades, people have often neglected how this currency union benefits these countries and creates more opportunities for the Eurozone. The economic growth during the last several decades in this region is largely related to the convenience achieved by this currency union. It is evident that, normally within the Eurozone, it is difficult to define which country is a free rider. When people consider the countries within the Eurozone and outside the Eurozone, it is much more challenging to define free riders because of the debt issues and fiscal policies.

However, countries within the Eurozone can do something for the long-term development of the Eurozone, for instance, improving average productivity. Improving average productivity, rather than limiting the budget deficit, is a more effective way to cope with the instability within this region in the long run. Besides, it is necessary for the ECB to consider and evaluate whether it is reasonable and sustainable to maintain trade competitiveness via a low exchange rate in this way. In the long run, the euro will definitely appreciate. However, expanding the currency union to those countries with lower productivity will definitely undermine the credibility of the euro. Thus, they need to reconsider which is more important: competitiveness, credibility, or sustainability in the long run.

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