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The trilemma of expansionary monetary policy in the Euro area during the COVID-19 crisis

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ARTICLE INFO
JEL Classification:
E52
E61
Keywords:
European Central Bank
Policy trilemma
Euro area
Free capital mobility
Monetary policy
Financial stability
Corona crisis

ABSTRACT
The economic crisis spurred by the Corona virus (COVID-19) confronts central banks worldwide with new kinds of challenges, as in many countries a stop in production and sales due to lockdowns meets enormous fiscal and monetary impulses to overcome the crisis. In Europe the situation is more than ever complicated, as a multitude of monetary policy emergency measures implemented during the financial and European debt crisis of 2007 to 2012 are still in place, such as negative interest rates and central bank bond buying programs. Especially the bond buying programs have been intensified once more during the current Corona crisis. This article contributes to the existing knowledge by proposing a new theoretic trilemma model for the case of a monetary union. Accordingly, there exists a trade-off between stabilizing a monetary union, maintaining free capital mobility and reducing expansionary monetary policy. The results underscore the importance of resolving the trilemma without jeopardizing the currency and financial stability.

1. Introduction

As an answer to the economic crisis spurred by the Corona-virus (COVID-19) the European Central Bank intensified monetary policy support through additional asset purchases of EUR 120 billion until the end of the year 2020. These asset purchases are executed under the “Asset Purchase Program (APP)”, which was implemented in the wake of the European debt crisis. As of March 2020 the ECB enacted the “Pandemic emergency purchase program (PEPP)” as a temporary asset purchase program of private and public sector securities, which initially had an overall envelope of EUR 750 billion and was subsequently expanded to EUR 1.85 trillion, confirmed in January 2021. All asset categories eligible under the existing asset purchase program (APP) are also eligible under the program to fight the Corona-crisis. The duration of the PEPP was extended until at least June 2021 and the ECB is going to reinvest maturing securities until the end of the year 2022. Further measures include an expanded range of eligible assets under the corporate sector purchase program (CSPP) – also a program enacted after the European debt crisis – and a relaxation of collateral standards for Euro-system refinancing operations for commercial banks (MROs, LTROs, TLTROs). Under the PEPP, a waiver of the eligibility requirements will be granted for securities issued by the Greek government. In addition, non-financial commercial paper is now eligible for purchases both under the PEPP and the corporate sector purchase program (CSPP). The residual maturity of public sector securities eligible for purchase under the PEPP ranges from 70 days up to a maximum of 30 years and 364 days. For the purchases of public sector securities under the PEPP, the benchmark allocation across jurisdictions will be the capital key of the national central banks in the...
European Monetary Union. At the same time, purchases will be conducted in a flexible manner. This allows for fluctuations in the distribution of purchase flows over time, across asset classes and among jurisdictions.

We describe the conflicting goals of (i) stabilizing a monetary union, (ii) maintaining free capital mobility in the union and (iii) reducing expansionary monetary policy as a trilemma, where two of the three objectives can be achieved, but not all three of them at the same time. Mundell (1963) already describes the three sides of a trilemma’s policy goals for an open economy, namely monetary independence, exchange-rate stability and financial integration. The contribution of this article is that, for the case of a monetary union, a new kind of trilemma is proposed. The analytic difference to Mundell (1963) trilemma lies in the fact that the presented analysis builds on a voting model, which is independent of the assumptions made in IS-LM model types. In addition, the trilemma is induced by monetary policy and not caused by political decisions on the design of the exchange rate regime as in Mundell (1963). Classical trilemma situations in open economies such as Bekaert and Mehl (2019) have been adapted to develop an understanding of modern central bank policies, which often include the task of keeping financial stability. For example Schoenmaker (2005, 2011) suggests a trilemma situation during the ongoing financial integration in the European Union. Magas (2018) observes different versions of adjustment to external shocks and financial integration for small, open economies in the light of the trilemma.

In this context De Grauwe (2015) finds that the Euro crisis that emerged after 2010 was the result of two design failures of the Euro currency. First, economic cycles continued to occur at the national levels, leading to large external imbalances of countries within the Euro area. Secondly, the impossibility for national central banks to bail out their home countries allowed liquidity crises to emerge that eventually turned into solvency crises for some Euro area countries. Therefore, De Grauwe and Yuemei (2015) see the need for intervention by the ECB, when individual countries in the currency union get into debt problems. Steiner et al. (2019) argue that the Euro area entails an inherent policy trilemma between maintaining financial stability in the common currency area, independent control over the monetary base and the accommodation of unlimited internal capital flight via the Euro area central banks’ so-called “TARGET2-system”, the Trans-European Automated Real-time Gross-settlement Express Transfer system. Also, Canale et al. (2018) find a policy trilemma faced by Euro area member countries. They provide empirical evidence on a trade-off between free capital mobility, financial stability and fiscal policy flexibility by analyzing data for eleven Euro area countries.

This article contributes to the existing literature by focusing the analysis of the trilemma notion on the monetary policy in a currency union. Since the central bank is the main actor to implement monetary policy, the analysis proposes an explanation of how decisions are made at the European Central Bank in the framework of a voting model. Central bank governors are assumed to be policy oriented and rational.

2. A model of the trilemma in the European Monetary Union

The Governing Council is the ECB’s highest decision-making body and responsible for setting interest rates and conducting monetary policy. It consists of six Executive Board members and 19 national central bank governors of the Euro area countries. The accession of Lithuania to the Euro area in 2015 triggered a change in the voting rights, as already envisaged by the Governing Council in December 2002. Before January 1st 2015 the ECB Governing Council had the principle of “one member, one vote”. From January 1st 2015 onwards a rotation system of voting rights was put into place.

To allay fears that decisions in the Governing Council might be taken by a majority not necessarily representative of the Euro area’s economy, the design of the voting system disambiguated into a dynamic rotation model. Hereby, national central bank governors are allocated to different groups with varying voting rights on basis of defined economic and financial criteria of their respective home countries. The result of the system is that it simplifies the central banks governance and reinforces the ECB’s Executive Board. In particular, the rotation of voting rights helps to maintain the Governing Council’s ability to take action, even as the number of Euro area countries increases and with them, the number of members of the Governing Council.

The rotation system of voting rights implies that majorities have to be formed and respected in order to attain a broad consensual basis in the Governing Council. Hence, in the following model we abstract from the rotation system of voting rights in the ECB Governing Council, because it was put into effect after the major decisions on the ECBs quantitative easing programs in the year 2015. Building on the models of Freixas (2003) and Schoenmaker (2011), we formalize the ECBs trilemma, which worsened during the COVID-19 crisis. We underscore the importance of solving the trilemma successively, in order to exit from the COVID-19 crisis without damaging the Euro currency. To do so, we consider the decisions of each country’s member in the ECB Governing Council – the presidents of the national central banks – to vote for an exit or a continuation of the ECBs expansionary monetary policy. Hence, the policy instrument in the model is \( p \), the expansionary monetary policy in the Euro-system of the central banks of each of the 19 member countries, denoted by subindex \( i \).

Thus, the Governing Council’s members choice is interpreted as a digital variable \( z \in \{0, 1\} \), where \( z = 0 \) stands for stopping the expansionary monetary policy and \( z = 1 \) for its continuation. Furthermore, \( B_i \) denotes a country’s benefit of the expansionary monetary policy and \( C_i \) its costs. A president of a national central bank chooses to continue the expansionary monetary policy in the Euro-system only if the total benefits for his country are larger than the costs, \( B_i - C_i > 0 \). In a setting with more than one country, the total benefits of the expansionary monetary policy can be split into the benefits for the home country \( H_i \) and benefits for a foreign country \( F_e \). The sum of the respective fractions of benefits \( a_{k,i} \) for home and \( a_{f,j} \) for the foreign country is 1 and sums up to \( a_{k,i} = \sum_{j \in J} a_{f,j} \), \( \forall i, j \in J \), where \( J \) defines the set of countries. Therefore, a majority of votes in the ECBs Governing Council in favor of the continuation of the expansionary monetary policy can be collected if the respective countries expect sufficient benefits altogether. As in Schoenmaker (2011) this is an example of an improvised co-operation between the countries, since economic and financial dependencies in the Euro area may be of multiple natures. The national representatives in the ECB Governing Council gauge the overall profit or loss of the
expansionary monetary policy for their country. If the total amount of policy gains is larger than its cost, the national central bank presidents vote for the continuation of the ECBs expansionary monetary policy measures. Thus the optimal decision for each countries' representative \( i \) in the ECB Governing Council is to maximize:

\[
\zeta' = (a_i \cdot B_i - p_i)
\]

s.t.

\[
\begin{align*}
\zeta' &= 1 \text{ if } \sum_i p_i - C_i > 0 \\
\zeta' &= 0 \text{ if } \sum_i p_i - C_i < 0
\end{align*}
\]

This decision problem has many equilibria, but only one non-cooperative equilibrium leads to a unanimous vote for the full termination of the ECBs expansionary monetary policies. This is the case if no individual country can bear the total cost \( C \) by itself, so that for no country \( i \) we can assert \( a_i \cdot B_i - C_i > 0 \) and therefore \( p_i = 0, \zeta' = 0 \). If this non-cooperative equilibrium is selected, the decision to exit expansionary monetary policies completely is inefficient in terms of (i) supporting the monetary union and (ii) maintaining unrestricted capital mobility in the union. This is the case, because it would mean a de facto limitation of TARGET2-balances and a restriction of credit to peripheral countries in the Euro area. The equilibrium occurs only when part of the externalities fall outside the home country. Let us therefore further assume that the country with the highest benefits from expansionary monetary policies is the home country. The home country, however, is not prepared to meet the costs of the expansionary monetary policies entirely.

**Proposition:** The efficiency of reducing expansionary monetary policies from the point of view of the home country depends on the size of the fraction \( a_{h,i} \), where the range of benefits \( B_i \) in the home country is \( a_{h,i} \in \left( \frac{C_i}{B_i}, 1 \right) \). If \( a_{h,i} < \frac{C_i}{B_i} \), then reducing expansionary monetary policies will be efficient. Vice versa, a home country increases expansionary monetary policies if \( a_{h,i} > \frac{C_i}{B_i} \). Therefore, given rational decision making, a home country will reduce expansionary monetary policies only if the benefits are sufficiently large.

**Proof of proposition:** The efficient solution is \( \zeta^* = 1 \text{ if } B_i > C_i \) and \( \zeta^* = 0 \text{ if } B_i < C_i \). Using Eqs. (1) and (2), the first best solution will be reached in the case of \( a_i = 1 \). Given that \( a_{i,j} > 1 \forall j \in J \), a continuation of expansionary monetary policies \( (\zeta^* = 1) \) will be voted for, if the benefits in the home country are larger than the total costs: \( a_{h,i} \cdot B_i - C_i > 0 \). Otherwise \( a_{h,i} < \frac{C_i}{B_i} \) the exit equilibrium occurs \( (\zeta^* = 0) \), even if the continuation of expansionary monetary policies is optimal \( (B_i > C_i) \).

The proposition states that as soon as measures towards an exit of expansionary monetary policies increase \( a_{h,i} \) (and \( a_{h,1} \)), this will destabilize the monetary union.

3. The trilemma and TARGET2-balances during the COVID-19 crisis

The trilemma is that upholding free capital mobility and stabilizing the monetary union are compatible only as long as no or very limited reduction of expansionary monetary policies occurs. Sinn and Wollmershäuser (2012) show that TARGET2-balances measure the intra-Euro area balances of payments and indirectly also international credit given through the Euro-system in terms of reallocating the ECB's net re-financing credit. If a substantial reduction in the monetary base would take place, the monetary union would be jeopardized, since this leads to capital flight via the TARGET2-system to save havens within the Euro area. This capital flight is perceivable in the rise of the TARGET2-balances of peripheral countries in the Euro area. TARGET2-balances are equalized if banks in surplus countries in the Euro area grant credit to banks in deficit countries and importers use these loans to pay for imports from surplus countries. With the aggravation of the financial and debt crises, banks in peripheral countries in the Euro area started to refinance themselves more and more directly via the ECB, with the effect that capital in the Euro-interbanking market also started flowing directly from surplus countries to deficit countries. Inversely, the TARGET2-balances in the Euro area built up, a fact that can also be observed during the current COVID-19 crisis. For example, the net accounts receivable of the German central bank (“Deutsche Bundesbank”) in the TARGET2-system amounts to 1’115.19 billion Euros as of September 2020, while almost half of the Greek external debt stems from TARGET2-accounts payable. Hence, limiting TARGET2-balances would be equal to restricting the free mobility of capital, which is irreconcilable in a monetary union.

4. Conclusion

The European COVID-19 crisis is not settled to this date and has once more revealed different flaws in the construction of the Euro, since national fiscal policies have not built up sufficient buffers in the past. As a result, the ECBs monetary policy and emergency measures are one of the main public supporting instruments during the COVID-19 crisis. In the aftermath of the sovereign debt crisis, Euro area countries agreed on a banking union with a common supervisor to break up the links between banks and their sovereigns. To solve the trilemma, further progress is needed in reducing and sharing risks in the Euro area, such as creating a common deposit guarantee scheme and the reduction of banks’ exposures to domestic sovereign bonds. Such progress may not be sufficient, however, for national fiscal policies and monetary policy to smooth the current COVID-19 crisis. Hence, as Stráský and Claveres (2018) underscore, the introduction of a common fiscal stabilization capacity is necessary to reinforce the Euro area in case of a recession, both at the country level and Euro area level. Combining a fiscal stabilization capacity with a stepwise reduction of the asset purchase programs could give the ECB room to break free of the described trilemma and help to exit the COVID-19 crisis without jeopardizing the...
Euro currency.

CRediT authorship contribution statement

Sebastian Lang: Conceptualization, Methodology, Writing – original draft. Wolfgang Schadner: Conceptualization, Validation, Writing – review & editing.

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