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The ECB's Measures in Support of the COVID-19 Crisis

Pierpaolo Benigno, Paolo Canofari,
Giovanni Di Bartolomeo, Marcello Messori

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IN-DEPTH ANALYSIS

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The ECB's Measures in Support of the COVID-19 Crisis



Policy Department for Economic, Scientific and Quality of Life Policies
Directorate-General for Internal Policies
Authors: Pierpaolo BENIGNO, Paolo CANOFARI,
Giovanni DI BARTOLOMEO, Marcello MESSORI
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The ECB's Measures in Support of the COVID-19 Crisis

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Abstract

This paper illustrates and discusses the monetary policies activated in response to the COVID-19 crisis. We argue that these policy measures have stabilised the European economic and financial system by incentivising banks' lending to households and businesses and by indirectly creating short-term fiscal capacity also for those Member States of the euro area that have a very high government debt/GDP ratio.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the Committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 18 March 2021.

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AUTHORS

Pierpaolo BENIGNO, University of Bern

Paolo CANOFARI, Università Politecnica delle Marche, Ancona

Giovanni DI BARTOLOMEO, Sapienza Università di Roma

Marcello MESSORI, Luiss Guido Carli, Roma

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ADMINISTRATOR RESPONSIBLE

Drazen RAKIC

EDITORIAL ASSISTANT

Janetta CUJKOVA

LINGUISTIC VERSIONS

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To contact the Policy Department or to subscribe for email alert updates, please write to:
Policy Department for Economic, Scientific and Quality of Life Policies
European Parliament
L-2929 - Luxembourg
Email: Poldep-Economy-Science@ep.europa.eu

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LIST OF ABBREVIATIONS

APP	Asset purchase programme
EEPUI	European Economic Policy Uncertainty Index
EU	European Union
NG-EU	Next Generation - EU
NRRP	National Recovery and Resilience Plan
PELTRO	Pandemic emergency longer-term refinancing operations
PEPP	Pandemic emergency purchase programme
RRF	Recovery and Resilience Facility
SSCI	Systemic Stress Composite Indicator
TLTRO	Targeted longer-term refinancing operations

EXECUTIVE SUMMARY

- **The ECB's expansionary monetary policy has stabilised the European economic and financial system** by indirectly creating short-term fiscal capacity at the national level and by incentivising banks' lending to households and businesses.
- **The first descriptive evidence of these aspects is offered by the examination of the monetary policy roadmap, implemented by the ECB after the spread of COVID-19.** This roadmap is centred on three initiatives: the strengthening of already operative monetary policy tools (such as the APP and the TLTRO III); the implementation of an emergency tool to increase the purchase of government bonds and other securities (PEPP); and the relaunch of refinancing operations with an unlimited potential amount at a fixed interest rate (PELTRO).
- **The ECB's policy initiatives have been implemented since March 2020 and have made recourse to monetary and banking channels.** Despite their significant impact, they can be reduced to a limited number of events characterised by actual decisions and/or policy announcements.
- **To study the possible impact of these events on spreads in financial markets and inflation expectations, we apply an event-based methodology.** To overcome the limitations of this methodology, we complement it with a qualitative analysis of the same variables.
- **The results concerning the spreads for government debts in the euro area and in Italy are particularly important.** However, some events offer interesting suggestions even with reference to spreads in banks' costs and in inflation rates.
- **The conclusion is that the ECB's expansionary monetary policy has positively affected the functioning of the euro area economic system and has avoided a severe deflation.**
- **An open question, however, still remains:** which is the positive impact imputable to the ECB's monetary policy in itself and which to the innovative interaction between an expansionary monetary policy and expansionary fiscal policies?
- **The answer to this question is crucial for policy makers.** In fact, this answer should clarify if it is reasonable to pursue an effective policy mix between the ECB's initiatives and the centralised fiscal policy measures made it possible by Next Generation – EU.

1. INTRODUCTION

The pandemic represents a significant challenge to monetary policy. “The coronavirus (COVID-19) has produced a highly unusual recession and is likely to give rise to a similarly unsteady recovery” (Lagarde, 2020a). The policies activated by the European Central Bank (ECB) have therefore been extraordinary. This paper illustrates and discusses the impact of the ECB’s recent policy on relevant spreads in financial markets and on inflation expectations.

We argue that the expansionary monetary policy measures, activated since March 2020 by the ECB and by the Eurosystem of national central banks in response to the COVID-19 shock,¹ have stabilised the European economic and financial system by indirectly creating short-term fiscal capacity also for the heavily indebted euro area Member States and by incentivising banks’ lending to households and businesses.

These achievements have been accomplished through policy tools aimed at guaranteeing the effectiveness of the monetary and banking transmission mechanisms, at supporting the demand for financial assets in circulation, at avoiding the fragmentation of the euro area financial markets, and at ensuring accommodative liquidity conditions for the euro area banking sector. The indirect results have been the actual expansionary stance of national fiscal policies as well as low volatility in the European financial markets and favourable access to the European credit market for households and firms, despite the dramatic macroeconomic exogenous shocks.

The rest of the paper is organised as follows. Section 2 provides a taxonomy of recent policy measures adopted by the ECB to counteract the pandemic crisis. Section 3 evaluates the impact of these measures on key variables (spreads in financial markets and inflation expectations) by applying an event-based methodology. Section 4 provides a broader illustrative view of the post-pandemic behaviour of relevant spreads in financial markets and of inflation expectations. Section 5 concludes the paper.

¹ For the sake of simplicity, in the following we will often utilise the label ECB to indicate the Eurosystem of national central banks.

2. THE ECB'S RESPONSE TO THE COVID-19 CRISIS

The ECB's recent measures can be grouped into two different categories that refer, respectively, to monetary and banking channels.² The former category includes the monetary policy stimuli based on the continuation and the one-off strengthening of the asset purchase programme (APP), whose re-start was decided by the ECB in September 2019 and implemented in the following November, and on the launch of the new pandemic emergency purchase programme (PEPP). The latter category includes the refinancing, at generous conditions, of the euro area banking sector by means of the pandemic emergency longer-term refinancing operations (PELTRO) and by strengthening the targeted longer-term refinancing operations (TLTRO III), already in place. Moreover, these policy measures were accompanied – for good or ill – by a number of ECB policy announcements.

In what follows we describe these two sets of measures and the related announcements in detail.

2.1. The monetary channel

On 12 March 2020, the ECB Governing Council strengthened the existing APP. The programme consisting of a EUR 20 billion monthly purchase of securities (mainly government securities) was confirmed; moreover, an overall temporary purchase increase of EUR 120 billion by the end of 2020 was approved. In the extraordinary meeting held a few days later (18 March 2020),³ the ECB Governing Council launched the PEPP, designed to offset the negative impact of the pandemic shock on firms' liquidity and on households' income by easing the fiscal constraints on national public spending and the short-term sustainability conditions of the consequent increase in national government debts. The PEPP was based on an envelope of EUR 750 billion to be pumped into the economic system by the end of 2020. The architecture of this new programme coincides with the APP, in the sense that the PEPP purchases the same type of financial assets (mainly government securities) and meets the "capital-k" rule to determine the national composition of these securities.⁴ However, in the PEPP case, the capital-k rule is applied in a more flexible way: "fluctuations in the distribution of purchase flows over time, across asset classes and among jurisdictions" are permitted, given that these fluctuations are compatible with this rule's final equilibrium.

After the March 2020 decisions, the PEPP was subjected to two major changes.

The first change, approved in the ECB's meeting of June 2020, concerned three factors. Firstly, the programme was increased by EUR 600 billion, so that it reached a total amount of EUR 1.35 trillion. Second, its time horizon was extended at least until the end of June 2021; and, in this respect, the ECB's Governing Council committed itself to continuing the PEPP as long as the European economies are affected by the pandemic emergency. Third, the ECB decided to reinvest "the maturing principal payments from securities purchased under the PEPP" until, at least, the end of 2022.

The second major change, implemented during the ECB's meeting of December 2020, was characterised by a further increase of the PEPP envelope by EUR 500 billion, reaching a total of EUR 1.85 trillion. The time horizon of the programme was extended to at least the end of March 2022, under the usual clause that the PEPP's net purchases would last until the coronavirus crisis phase is over. Finally,

² This section partly resumes the content of Messori (2020: Section 3). If not differently specified, quotations refer to the ECB's press conferences relative to various Governing Council's meetings.

³ As we will point out below (see Section 2.3), this unplanned new meeting was also required to correct a miscommunication made by President Lagarde in the Q&A of the 12 March meeting.

⁴ In the same meeting, the ECB extended the set of eligible financial assets which can be purchased under the APP and the PEPP to non-financial commercial papers that meet a sufficient credit quality. It also eased the collateral standards to include "claims related to the financing of the corporate sector." This move was reinforced by the following lowering of the minimum quality of collaterals temporarily accepted by the ECB (see the decisions taken on 7 and 22 April 2020).

the ECB's Governing Council extended the reinvestment of principal payments from maturing securities purchased under the programme until at least the end of 2023.

In terms of forward guidance, the above-described decisions indicate that the ECB has committed itself to continuing the expansionary utilisation of the monetary channels that also ease the national fiscal policies constraints until the expiry date of the full spending commitments included in the National Recovery and Resilience Plans (NRRPs), that is, in the Plans to be elaborated by the European Union (EU) Member States to have access to the funds of the Recovery and Resilience Facility (RRF) programme.⁵ This means that, in the absence of unexpected events, the current expansionary stance of European policies (monetary policy, national fiscal policies, centralised fiscal policy) will last until the end of 2023. However, the ECB decided to pursue its expansionary monetary policy also through the banking channel.

Regarding this last transmission mechanism, the ECB introduced a temporary LTRO during the meeting of 12 March and launched a new LTRO program (the PELTRO) during the meeting of 30 April 2020. It strengthened its operating TLTRO III during the meetings of 12 March and 30 April 2020.⁶ Finally, both the PELTRO and the strengthened TLTRO III were further improved in the ECB's meeting of 10 December 2020.

2.2. The banking channel

The temporary LTRO, approved on 12 March, should be considered a short-term liquidity bridge to cover the period between mid-March 2020 and the following 24 June, which is the expiry date of this refinancing, as well as the starting date of the strengthened TLTRO III. The temporary LTRO was centred on the ECB's approximate weekly liquidity supplies to euro area banks with full allotment at an interest rate set by the ECB's average interest rate on deposit facility (at that time and even today – i.e., February 2021, - this rate is equal to -0.5%).

The new programme, labelled PELTRO, was instead centred on seven refinancing operations to be implemented between May and December 2020 and to be closed by September 2021. This programme is characterised by the ECB's fixed-rate liquidity supplies for an amount that, as in the other LTRO programmes, is only limited by the corresponding demands from banks. Each of these refinancing operations has had an interest rate equal to the average interest rate on the ECB's main refinancing operations (today equal to 0%), as set along the duration of each specific loan, decreased by 25 basis points.⁷ Therefore, also the operations of the PELTRO programme have been characterised by a negative interest rate (-0.25%) until today. In the meeting of 10 December 2020, the ECB added four PELTRO operations to the original seven. These new operations, replicating the features of the old one, should be implemented in 2021 with a "tenor of one year."

The strengthened TLTRO III programme was defined by the ECB in its meetings of 12 March and 30 April 2020. Here, we refer to the April formulation and to the operations that started in June 2020 and that would have to be concluded by June 2021. This program has pursued the aim of providing for three-year refinancing of the euro area banking sector; and it has represented the continuation of the targeted-programme designed between March and June 2019 and launched in September of the same

⁵ It must be recalled that the RRF is the most important programme of the Next Generation – EU (NG-EU), which, in turn, represents the EU's decision to launch an expansionary centralised fiscal policy. The funds, allocated through the RRF, are equivalent to almost 90% of the NG-EU's total envelope of EUR 750 billion.

⁶ Let us emphasise that a generous refinancing of the euro area banking sector indirectly eases the expansionary stance of national fiscal policies because banks are one of the most important purchasers of government securities.

⁷ The maturities of these operations are between sixteen and eight months (i.e. in September 2021 for the first operations and in July 2021 for the last).

year.⁸ It has offered refinancing for a maximum amount of 50% of the eligible loan stock accounted for in the balance sheet of each bank at the end of February 2019, thus increasing the previous threshold which was equal to 30% of the eligible loans. The effectiveness of the TLTRO III was further strengthened by the easing of collateral requirements until June 2021, implying that the ECB accepted to temporarily increase its tolerance towards risks.

The new TLTRO III improved the refinancing conditions for the most, medium, and less virtuous bank types already set in September 2019.⁹ The most virtuous banks should get an interest rate equal to the average rate on the excess of bank reserves at the ECB (that is, -0.50%) decreased by 50 basis points. In the June 2020 - June 2021 period, their current interest rate (-1%) should also be the maximum rate for their TLTRO III refinancing, while for refinancing preceding or following that period, the interest rates should be the average rates on the excess of bank reserves at the ECB in force for the duration of refinancing. Median virtuous banks should obtain interest rates on refinancing equal to those in force on average in that period. However, between June 2020 and June 2021, its rate on refinancing should not be higher than the corresponding average rate on the main refinancing operations of the ECB¹⁰ decreased by 50 basis points. The less virtuous banks should obtain, in the same period, an interest rate equal to the maximum rate to be paid by the median virtuous banks.

During the meeting of 10 December 2020, the ECB decided to launch three additional TLTRO III operations from June to December 2021. Moreover, it decided to extend the most favourable interest rates and collaterals' conditions, set on refinancing in the previous April meeting, by one year (that is, from June 2021 to June 2022); and it increased the maximum amount of refinancing that euro area banks can borrow by fixing the threshold at 55% of their stock of eligible loans. However, these improved conditions were limited to the most virtuous banks and to those able to meet "a new lending performance target" with respect to their previous class.

2.3. The ECB's announcements

The monetary policy roadmap, implemented by the ECB since the spread of COVID-19 and described in the two previous sub-sections, has been complemented by the decisions taken by the European and international regulatory and supervisory authorities. These authorities have temporarily eased some prudential and accounting rules as well as a number of supervisory requirements. Here, it is not necessary to enter into a detailed presentation of the initiatives that do not belong to monetary policy (see, in this respect: Gortsos and Ringe, 2020). Instead, it can be interesting to complete our descriptive presentation of the ECB's responses to the pandemic shocks by selecting the main announcements made by ECB President Christine Lagarde during the presentation of the ECB's monetary policy decisions. In fact, these announcements can have an important impact on the effectiveness of monetary policies (see Section 3).

In this respect, the key problem is represented by the selection's criteria adopted to classify a statement as an announcement. On the one hand, it is crucial to be selective: the re-reading of the press conferences and other documents should suggest the insulation of a large number of apparent announcements that had, in fact, negligible impacts. On the other hand, the selection cannot be based

⁸ In the original formulation (June 2019), the refinancing of the TLTRO III had a two-year duration. This refinancing was extended to a three-year duration in September 2019.

⁹ In the original formulation of the TLTRO III, the benchmark of each bank was defined by referring to the amount of eligible loans disbursed in previous periods. Under the new TLTRO III, banks are catalogued according to their ability to meet their reference threshold (benchmark plus a possible add-on) relating to the net loans granted to the productive sector. The most virtuous banks would meet their reference threshold in the March 2020 - March 2021 period. The medium virtuous banks would meet the benchmark increased by 1.15% in the longer April 2019 - March 2021 period. The remaining banks are the less virtuous ones.

¹⁰ It was (is) 0% in June 2020 (today).

on *ex post* criteria of significance; otherwise, the subset of the selected announcements would matter by definition. Since it is impossible to solve this well-known logical and analytical problem here, we will make recourse to a judicious, even if sloppy, criterion of reasonableness.

It is reasonable to maintain that President Lagarde made an important announcement answering the following question raised by a journalist in the Q&A session on 12 March 2020: "At the moment certain countries are hit especially hard, like Italy. What can the ECB do if the spread for government bonds increases? [...] Could there be ... possibilities to help certain countries?" Mrs. Lagarde replied: The ECB is not "[...] here to close spreads. This is not the function or the mission of the ECB. There are other tools for that, and there are other actors to actually deal with those issues."

The above reply can be classified as an announcement for at least three reasons. First, it is based on a credible and shared view. Draghi (2014), Visco (2019), and many other members of the ECB's Governing Council had repeatedly emphasised that monetary policy could not be the only player "in town" and could not play a role of substitution in relation to the objectives of the fiscal policy. At the opposite, during the economic crisis, monetary policy would need the support of an expansionary and centralised European fiscal policy. The second reason is that the timing for the reappraisal of this shared view was, however, so inappropriate that it transformed the statement into a negative surprise: in those days, a large number of Europeans were watching on TV the dramatic Italian emergency caused by an external factor that was out of the national governments' control. Finally, the contrast between the first and the second reason was so significant that President Lagarde had to correct her statement a few hours later and the Governing Council had to immediately launch new initiatives.

A second significant announcement was made by President Lagarde during the presentation of the ECB's monetary policy decisions taken in the 29 October 2020 meeting. On that occasion, the ECB's President affirmed that, despite the fence-sitter attitude taken by the Governing Council, new monetary policy initiatives were likely in the near future: "Staff macroeconomic projections in December 2020 will allow a thorough reassessment of the economic outlook and the balance of risks. Based on this updated assessment, the Governing Council will recalibrate its instruments, as appropriate, to respond to the unfolding situation."

In this case, we can also mention – at least – three reasons to justify our interpretation. First, in the fall of 2020 there was a prevailing expectation that the pandemic impact would have required further policy interventions due to the unanticipated significance of the second wave of COVID-19. Second, Mrs. Lagarde made a precise commitment, in the sense that she clearly specified the timing and the conditions for strengthening the ECB's monetary policy. Third, the main economic forecasts indicated that – on average – the fourth quarter of 2020 would have re-opened a recessionary phase in the euro area. In fact, as we already specified, in the meeting of December 2020 the ECB strengthened its expansionary unconventional monetary policy through the monetary and banking channels.

On the contrary, we maintain that it would be inappropriate to classify the repeated statements on the possible strengthening in the expansionary stance of the ECB's monetary policy as announcements. In the press conference of 30 April 2020, President Lagarde affirmed that the Governing Council was "fully prepared to increase the size of the PEPP" and "to adjust all of its instruments, as appropriate". The same concepts were restated in the press conferences of 4 June and 16 July 2020, even if in a milder form. Then, despite the improved utilisation of all the tools of monetary policy, in the meeting of 10 December 2020 it was reiterated that the ECB's Governing Council remained "ready to adjust all its instruments, where appropriate...". There are two reasons why we do not consider these affirmations announcements. First, the content is self-evident but, in the meantime, it does not commit the ECB to specific initiatives. Consequently, it follows a common view.

Given the last observations, assessing a statement made by Mrs. Lagarde during the press conference relative to the meeting of 21 January 2021 becomes more controversial. Before confirming that the monetary instruments will be utilised to “counter the negative pandemic shock to the path of inflation”, the ECB President claimed that, “if favourable financial conditions can be maintained with asset purchase flows that do not exhaust the envelope over the net purchase horizon of the PEPP, the envelope need not be used in full.” In terms of our reasonable but sloppy criteria of selection, this last statement is ambiguous. It does not commit the ECB to specific initiatives; however, it could be perceived as a surprise.

3. ASSESSING THE IMPACT OF THE ECB'S PANDEMIC MEASURES

In this Section, we evaluate the impact of the measures implemented by the ECB to counteract the pandemic crisis by applying an event-based methodology, which allows us to study the effects of the policies undertaken or announced by the ECB on key variables (spreads in financial markets and inflation expectations). These variables are important for the monetary policy's transmission mechanism. We follow, and extend, the analysis of Szczerbowicz (2015), who instead focuses on the monetary policies implemented after the 2007-2008 financial crisis.¹¹

3.1. Events

A monetary event which can be significant in our analysis is identified by the time in which new decisions are undertaken or new information is released regarding the monetary policy stance. Our analysis is focused on the pandemic crisis, and therefore our search for monetary events starts from the beginning of 2020. Moreover, we are interested in the euro area's expected and actual monetary policy. Hence, we refer to the actual initiatives and to the announcements made by the ECB since the beginning of its reaction to the pandemic shock (mid-March 2020).

In Table 1, we date the events that, following the discussion in Section 2, we have identified as significant changes in the implemented monetary policy and/or as significant "announcements." It is worth noting that we define an event on the basis of its timing; therefore, this event can refer to multiple ECB announcements and/or multiple ECB actions that occurred on the listed date. It is also worth noting that we have decided to neglect a specific policy action (4 June 2020) and a possible announcement (21 January 2021) that were examined in the previous Section. In the former case, the actual strengthening of the PEPP had been largely anticipated by the market investors without any ECB announcement; moreover, this action was the only component of the possible event.¹² Our conclusion is that this event did not mark a significant change in the ECB's monetary policy. In the latter case, the wording of President Lagarde's statement was still so vague that our decision is based on the dominance of the ECB's lack of commitment with respect to the possible surprise effect.

Table 1: Monetary policy events

Event #1 12 March 2020	Having reached some time ago a zero lower bound in policy interest rates, the ECB implemented an enlargement of the APP and a strengthening of the TLTRO III. Moreover, President Lagarde announced that the ECB's duty was not "to close spreads" between euro area national government bonds, despite the exceptionality of the economic crisis.
Event #2 18 March 2020	The ECB implemented the PEPP and the enlargement of the range of the eligible assets in the APP. Moreover, it started the easing in the quality of accepted collaterals.
Event #3 30 April 2020	The ECB implemented the PELTRO and further strengthened the TLTRO III. Its Governing Council also affirmed that it stands ready to provide additional

¹¹ See also, among others: Gagnon *et al.* (2011), Krishnamurthy and Vissing-Jørgensen (2011), Swanson (2011), Campbell *et al.* (2012), Hamilton and Wu (2012), and Altavilla and Giannone (2017).

¹² This aspect explains why we did not have any doubt about including the event of 10 December in Table 1, which is composed by several ECB initiatives.

	liquidity, if needed. However, according to our previous analysis, this statement is not included in the significant events.
Event #4 29 October 2020	The ECB announced that its monetary policy instruments will be recalibrated to support economic recovery and counteract the projected negative inflation path, according to the new empirical evidence provided in December.
Event #5 10 December 2020	The ECB implemented further strengthening of the PELTRO, the PEPP, the TLTRO III.

Source: Authors' elaborations on ECB decisions and press conferences.

3.2. Methodology and results

An event-based analysis allows us to evaluate the impact of the events considered on variables of interest. We aim at evaluating how the ECB's unconventional and extraordinary monetary-policy measures have impacted two important aspects of the economic processes: 1) the borrowing conditions of agents (banks, firms and national governments), since these conditions are key elements in a smooth functioning of the monetary policy's transmission mechanisms; 2) the inflation expectations, since these expectations are important both as an element of the monetary policy's transmission channels and as an indicator of the ECB's achievement in terms of its price stability objective.

Let us refer to point 1) above. We measure the impact of ECB extraordinary monetary policy initiatives on several variables. Starting with the transmission of this policy or of its announcement to the banking sector, we look both at short-term and long-term measures of spreads in credit markets. These spreads highlight banks' borrowing costs. For the short-term spread, we use the differential between the 1-month (3-month) interbank rate captured by the EURIBOR and the 1-month (3-month) overnight indexed swap (OIS) rate, which is assumed as a proxy of the risk-free rate in the economy. For the long-term spread, we use the differential between a composite yield on bank bonds and the 10-year swap rate capturing the long-term risk-free rate.¹³ Examining then the transmission of ECB monetary policy (implemented or announced) to the corporate sector, we consider the spread between a composite long-run yield on BBB corporate bonds and the 10-year swap rate.¹⁴ Finally, turning to the national governments we consider two cases: (i) the variation of the spreads between the composite yield of the 10-year government bonds of the euro area and the swap rate with the same maturity assumed as a benchmark; (ii) the spread between the yield of the 10-year Italian government bonds and the same benchmark just specified.

The source of all the data is Datastream, and the period examined for the sample is January 2019-January 2021. For each of the above-mentioned variables, we run the following regression:

$$(1) \quad y_t = \alpha + \sum_1^m \beta_i y_{t-m} + \sum_1^d \delta_j x_t + \sum_1^5 \gamma_v Z_t + \varepsilon_t$$

where the variables denote: y_t , the two-day changes of the variable under scrutiny (e.g., spread for – respectively – bank borrowing, corporate bonds, and government bonds); x_t , the control variables (where the control is set for week-calendar days); Z_t , the five dummy variables for the identified monetary policy event; ε_t , a random shock; α , the constant in the regression; β_i ($i = 1 \dots m$), the

¹³ The Datastream mnemonic for the bank bond index is IBCBANK (IBbox index), which aggregates bonds at different maturities.

¹⁴ The Datastream mnemonic for the corporate bond index is IBCB10, which aggregates bonds at different maturities.

coefficients referring to the respective lags of the variable y_t ; δ_j ($j = 1 \dots d$), the coefficients with respect to the control variables; γ_v ($v = 1 \dots 5$), the coefficients with respect to the dummies of the five events identified.

The results of the regressions are presented in the following Tables only with respect to the coefficients that relate to the events identified.

Table 2 considers the impact of the events on the variations in the spreads faced by the banking sector. The first two columns refer to the short-term spread at 1-month and 3-month maturities, while the last column refers to the long-term spread.

Table 2: Effects of the events on banks' spreads

	1-month spread	3-month spread	Long-term spread
12 March 2020	-0.01***	-0.02**	-0.09**
18 March 2020	-0.01***	-0.02*	0.03
30 April 2020	0.02***	0.00	0.00
29 October 2020	0.01***	0.00	-0.01
10 December 2020	0.00	0.00	0.00
Obs.	521	520	519
R ²	0.23	0.38	0.67

Notes: *** if $p < 0.01$; ** if $p < 0.05$; * if $p < 0.1$.

Source: Authors' elaborations.

In commenting Table 2, it should be noted that the estimated parameters of the regression capture the short-term impact, on a two-day horizon, that the various events examined have had on the variation of the spread. A coefficient of 0.01, for example, indicates that the event increased the spread after two days by 0.01%, i.e., 1 basis point. Under this metric, the same Table shows that the monetary policy event identified only had marginal impacts on moving the spreads that are relevant for banks' borrowing conditions. The additional and more convenient refinancing offered by the strengthening of the TLTRO III on 12 March 2020 was the ECB initiative that had the most significant effect in reducing spreads at all horizons considered. In particular, the long-term spreads have decreased by almost ten basis points. The other events did not have a comparable impact on banks' spreads. In some cases, they have just had a marginal impact on short-term maturities.

The results become more interesting if we look at the spreads for government debts in the euro area. This is shown in the first and second column of Table 3, which display, respectively, the euro area overall government spread and the Italian government spread.

The results for the first two events, 12 and 18 March 2020, are significant and sharp. The ECB's monetary policy decisions and announcements of 12 March 2020 significantly contributed to the rise of the government spreads that occurred on that day and on the following two days. This specifically applies to the Italian spread, which is estimated to have increased by 28 basis points after this event. The main culprit is President Lagarde's famous sentence at the press conference. As we already recalled, Mrs. Lagarde said that the ECB's role was not that of closing sovereign debt spreads. Indeed, as shown in Table 3, the market understood the message fairly well; and this message was not compensated for by the strengthening of the TLTRO III. However, our analysis cannot exclude the fact that investors were also disappointed by the modest strengthening of the APP. On the contrary, on 18 March 2020, the ECB launched the new EUR 750 billion PEPP. This event had a significant impact on reducing government spreads and, mostly, on reducing the Italian one. The effect was important since it has amounted to 77 basis points.

Table 3: Effects of the events on firms' and governments' spreads

	EA sovereign spread	Italian sovereign spread	Corporate bond spread
12 March 2020	0.11***	0.28***	-0.02
18 March 2020	-0.23***	-0.77***	0.04
30 April 2020	0.01***	0.00	0.01
29 October 2020	-0.02***	-0.05***	0.01***
10 December 2020	0.00	0.02**	-0.01**
Obs.	522	522	518
R ²	0.36	0.33	0.62

Notes: *** if $p < 0.01$; ** if $p < 0.05$; * if $p < 0.1$.

Source: Authors' elaborations.

It is interesting to note that the mere announcement of the future strengthening of the ECB's expansionary monetary policy, which occurred on 29 October 2020, produced relatively weak results: a 5-basis-point reduction of the Italian debt spread and an even lower reduction in the euro area debt spread. However, the robust implementation of this announcement on 10 December apparently had no effect at all. At first glance, this empirical result is difficult to explain. In fact, it signals that positive announcements do not have the same impact as actual positive initiatives; however, financial investors tend to incorporate the news in their market reactions so that the announcements can defuse the implementations due to the lack of market surprise.

The third column of Table 3 shows that the monetary events here examined have had only marginal effects on spreads in the corporate bond markets. Interestingly, the controversial announcement characterising the 12 March event did not completely blur the positive effects of the ECB's actual decisions on corporate bonds. This means that the strengthening of the TLTRO III was perceived by potential borrowers as good news in terms of the interest rates structure. However, the impact was small (only 2 basis points) and not significant; hence, it does not allow for a robust interpretation.

Let us now turn to point 2) above. In Table 4, we repeat the econometric analysis of equation (1) by using measures of inflation expectations captured by the spread between nominal and real yield and by using swap rates at the same maturity. We use 5- and 10-year inflation expectations.¹⁵

Even in this case, the announcements did not have much impact on inflation expectations. An interesting observation is that in some cases the responses went in the opposite direction of the economic intuition suggested by the announcements. For example, the announcement of 12 March had a deflationary content; on the contrary, the whole event produced an increase in inflation expectations probably due to the expected impact of the strengthened TLTRO III. Moreover, the 18 March event should have boosted inflation expectations rather than producing a long-term decline. A caveat to consider, as it will be clear in the next Sections, is that the above analysis better captures the short-term movements of the variable of interest in response to the event identified rather than the persistent effect of the policies. Moreover, market-based measures of inflation expectations may not be appropriate for measuring the relevant inflation expectations for economic agents' consumption and investment decisions. But, most importantly, they may adjust only slowly to new information as agents process their long-term economic impact. As it will be shown in Section 4, agents' reaction started to head in the "correct" direction, but with some delay.

¹⁵ The source of the market-based expectation data is again Datastream.

Table 4: Effects of the events on inflation expectations

	5-year horizon	10-year horizon
12 March 2020	0.02***	0.04***
18 March 2020	0.01	-0.05***
30 April 2020	0.01*	0.01*
29 October 2020	0.02***	0.02***
10 December 2020	-0.01**	-0.01***
Obs.	522	520
R ²	0.48	0.48

Notes: *** if $p < 0.01$; ** if $p < 0.05$; * if $p < 0.1$.

Source: Authors' elaborations.

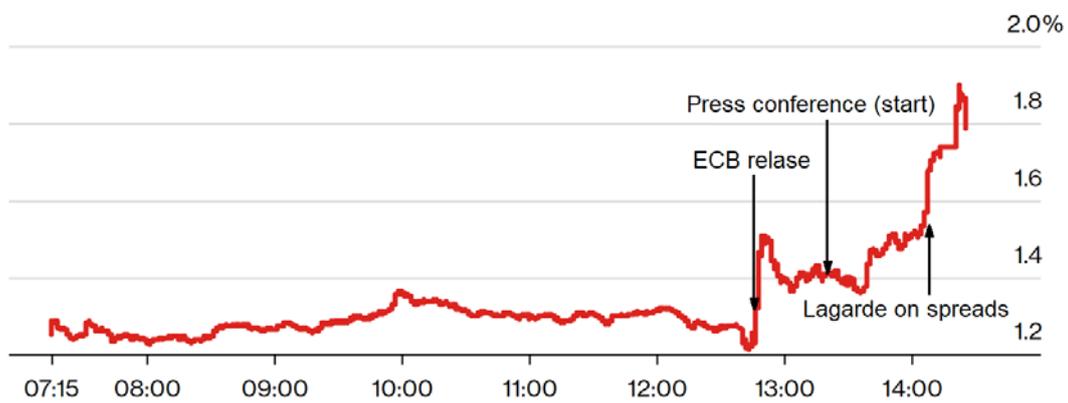
3.3. Limitations

An event study analysis has some significant limitations that are worth considering. First, in the case of actual decisions on monetary policy stances, the event should not be anticipated by the market. This anticipation could result from leakage of information or simply because the market had anticipated, albeit partly, the possible ECB measures before they were implemented. In these cases, the event study analysis could still capture some surprise in the actual release of the decision with respect to the previous market information set. The same applies to the announcements. The latter should not be fully anticipated by the market; otherwise, their possible impact is cancelled.

Second, on an event day, different decisions and announcements could be released with a consequent flow of contradictory information. Since we are analysing the impact on two-day changes of the variables of interest, it is not possible to disentangle the effects of the different decisions and announcements given on the same event day. Event #1 is a good example of this problem. At that date, the ECB strengthened some key parameters regarding TLTRO III and enlarged – even if mildly – the APP but, afterward, during the press conference Mrs. Lagarde suggested that the ECB's role was not that of closing spreads in sovereign debt markets.¹⁶ Figure 1 illustrates the complexity of this event by plotting the 10-year benchmark yield on Italian debt. At the time in which the ECB released information on the monetary policy decisions (12:45 GMT), the market yield on Italian debt had already jumped. This was probably due to the ECB's expansionary initiatives being weaker than generally expected. As the press conference started (13:30 GMT), the yield progressively increased and jumped even further after Mrs. Lagarde's statement.

¹⁶ The ECB also decided to leave unchanged interest rates on the main refinancing operations, the marginal lending facility, and the deposit facility.

Figure 1: Italian ten-year yield (12 March 2020; GMT)



Source: Bloomberg.

Finally, an event study analysis can only capture short-run effects of the events identified on the variable of interest. It cannot capture persistence, which instead should be investigated in the case of the monetary policy decisions undertaken by the ECB.¹⁷ We provide more suggestive analysis of the persistence of policies in the next Section.

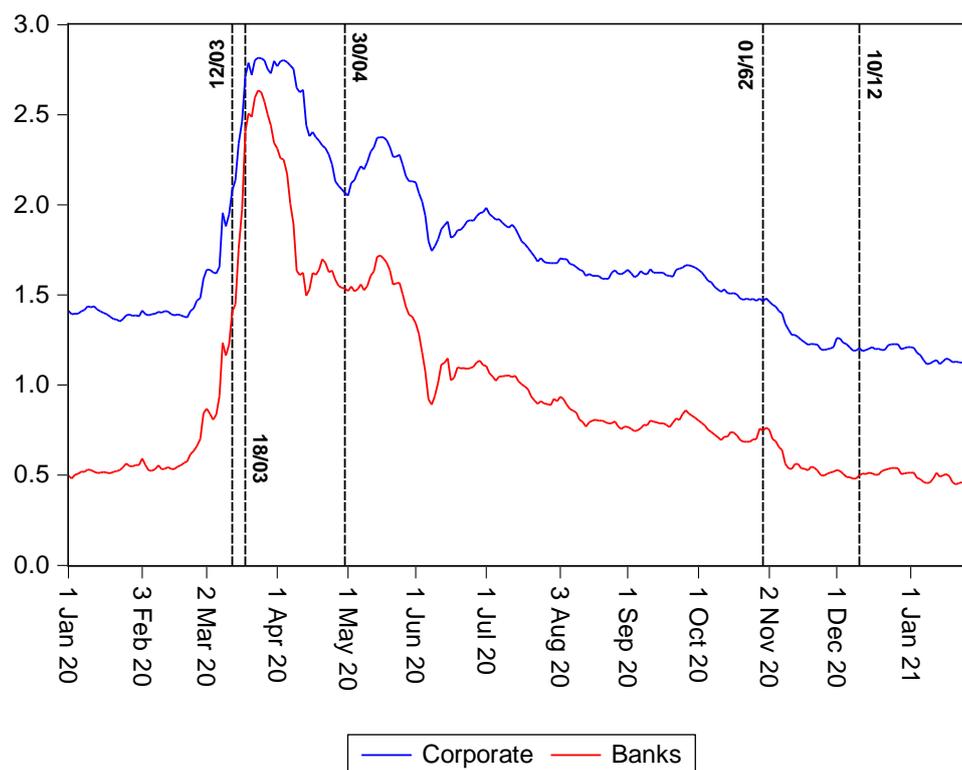
¹⁷ More precisely, the underlying assumption is that new information is incorporated into the financial variables immediately and permanently (cf. Gurkaynak and Wright, 2013).

4. QUALITATIVE ANALYSIS

In this Section, we provide a broader view of the behaviour of relevant spreads in financial markets after the beginning of the pandemic crisis. This analysis is only illustrative of the persistent effects of policy on longer horizons while a thorough evaluation should rely on a proper econometric analysis, which falls outside the scope of this policy paper.

We present our discussion following the same variables of Section 3. Starting from the borrowing conditions in the banking and corporate sector, Figure 2 plots the long-term spreads on corporate and bank bonds as in Section 3. In the figure, we underline with vertical lines the same events identified in that Section. As the pandemic crisis erupted at the beginning of March 2020 with the first lockdown in Italy, spreads increased substantially, reaching levels higher than 250 basis points. Both spreads are now at the pre-crisis levels, suggesting that ECB policies have been important in reducing them.

Figure 2: Spread on corporate and bank bonds yields



Source: Datastream.

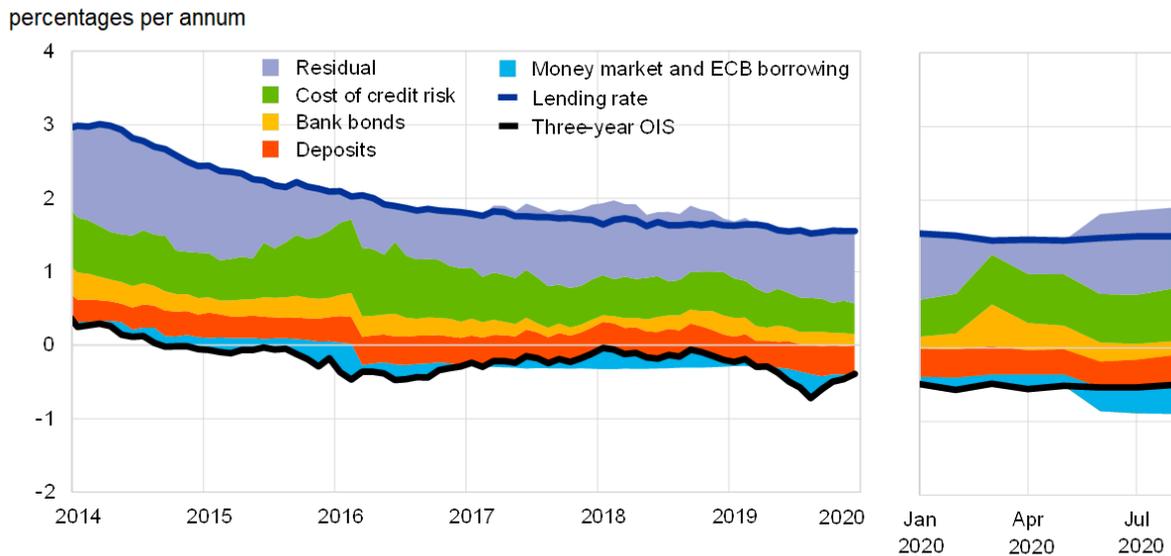
An examination of this figure produces interesting observations. Following the 12 March event, an analysis of Section 3 shows a positive effect (that is, a reduction) – even if marginal – on both spreads. However, this positive impact was immediately reversed during the days after the announcement (an increase in both spreads), when the market panicked as it digested Mrs. Lagarde's press conference remarks. Only the policy measures taken on 18 March were able to reverse the trend. Interestingly, the downward pressure on spreads became effective only after some time, consistently with the mild short-run reaction found in Section 3, perhaps suggesting the importance of other channels or policies not captured in our analysis.

Looking at the market of bank loans, the ECB's overall action has helped to keep lending rates near historically low pre-pandemic levels by easing the terms and conditions on bank lending, thereby avoiding a credit crunch, despite an increase in the credit risk. This is illustrated by Figure 3, which reports the time series of the average euro area lending rate. The figure highlights the intermediation

wedge, i.e. the spread between the lending rate for non-financial corporations and the risk-free rate captured by the three-year swap rate. In the figure, the lending rate is broken down into the factors that banks consider when pricing a loan, i.e. the risk-free rate, the funding costs, the credit risk, the cost of capital, and the residual factors.

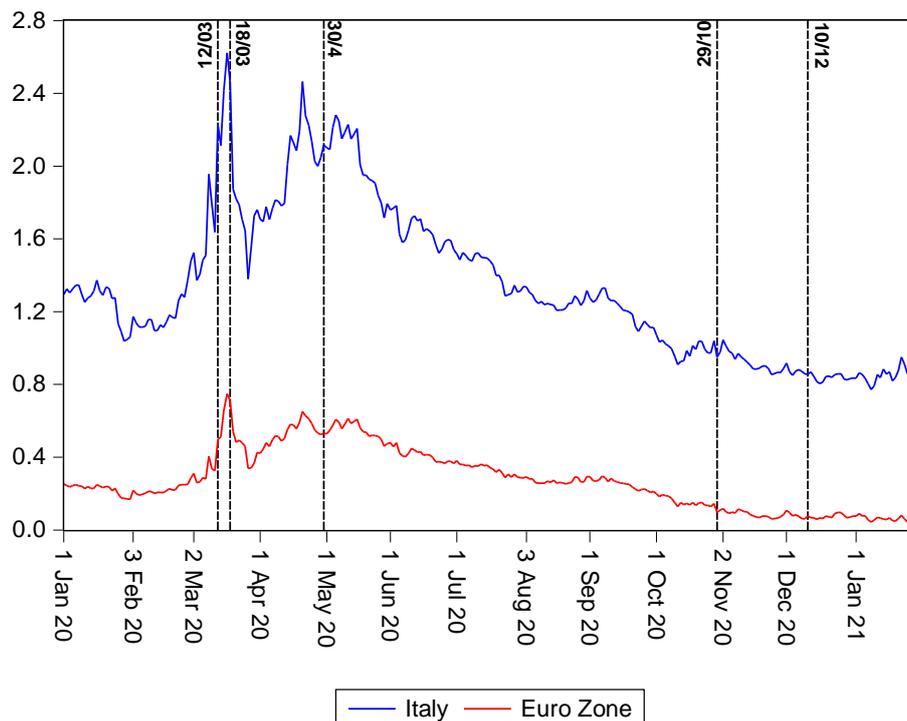
Consistently with Section 3, we evaluate the impact of ECB policies on government borrowing by looking at the dynamic of sovereign bond spread with respect to the risk-free counterparts at the same maturity. This is shown in Figure 4 for Italian debt and for the composite euro area sovereign debt.

Figure 3: Lending rate to non-financial corporations and its components



Source: Lane (2020b) [Original source: ECB, Moody's and ECB calculations].

Figure 4: Euro area and Italian sovereign 10-year maturity spreads (January 2020-January 2021)



Source: Datastream.

The observed convergence of the spreads can suggest that ECB policies have provided a stabilising force for this segment of the financial markets. As noted, spreads substantially increased after the start of the pandemic shock and even more so following the unfortunate press conference of 12 March 2020. However, the impact of the decision to introduce the PEPP (18 March 2020) on reducing the spreads in a persistent way is evident. Overall, the APP scaling-up on 12 March 2020 and the ECB's decisions on the PEPP (18 March and June 2020) are conservatively estimated to have reduced the euro area GDP-weighted ten-year sovereign yield by almost 45 basis points (ECB, 2020: Box 3).¹⁸

As stressed by Mrs. Lagarde on several recent occasions,¹⁹ the introduction of the PEPP and the PELTRO, within the strategy already designed by the ECB,²⁰ has provided crucial support for the resilience of inflation within the euro area, preventing a much larger disinflationary shock and a risk of triggering a deflationary spiral at the end of 2020.

Figure 5 plots the two market-based measures of expected long-run inflation in the euro area that have already been used in Section 3. Inflation expectations have strongly declined since the outbreak of COVID-19. In fact, they reached a historic minimum of 0.72% for the 5-year horizon and 1.05% for the 10-year horizon on 23 March 2020. After the 12 March press conference, the introduction of the PEPP on 18 March and the PELTRO on 30 April were associated with a sharp increase in inflation expectations, especially for the very long-run component. As Section 3 has shown, however, it took some days for these announcements to impact the indicators in the "right" direction, perhaps suggesting that additional information was needed for financial markets to process the magnitude of the monetary policy stimulus.

A key driver of the positive reflationary reversal could perhaps be traced back, at that time, to the start of concrete conversations on implementing a common European fiscal policy reaction, thus providing a boost to the monetary policy stimulus. It is important to underline, however, that market-based inflation expectations are still largely below the ECB's 2% target, suggesting that all the policies undertaken have come short of reaching the ECB's long-term price objective.

The ECB's post-pandemic policies have also addressed the uncertainty generated by the COVID-19 crisis. The pandemic shocks are in fact significant sources of uncertainty, which in turn may impact the European economies along several dimensions. Higher uncertainty causes substantial declines in output, consumption, investment, and hours worked (Bloom, 2014; Baker et al., 2016; Basu and Bundick, 2017). In the case of the current COVID-19 crisis, the uncertainty may also generate additional adverse conditions, impeding a rapid recovery from the recession if it is not offset by appropriate policies (Benigno et al., 2020).

Figure 6 shows two different measures of uncertainty concerning the euro area: the European Economic Policy Uncertainty Index (EPU) and the Systemic Stress Composite Indicator (SSCI). The former is a broad measure of uncertainty computed from newspaper articles.²¹ The latter is computed by the ECB by using several indicators of the financial sector which capture systemic stress in different market segments.²² Compared to the EPU, the SSCI is useful for policymakers because it captures conditions of financial stress and offers early signals on the growing risk of systemic crises.

¹⁸ See also Lane (2020a, 2020b).

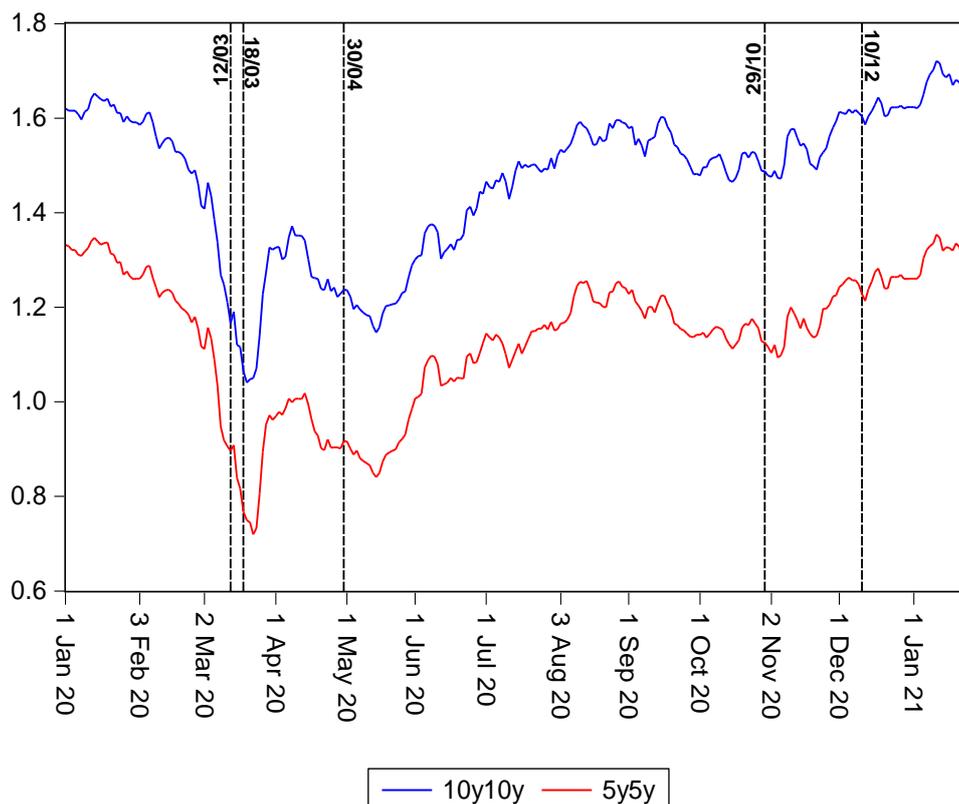
¹⁹ Cf., e.g., Lagarde (2020a, 2020b).

²⁰ See, e.g., Neri and Siviero (2018), and Rostagno et al. (2019).

²¹ The index is based on two newspapers per country (Le Monde and Le Figaro for France, Handelsblatt and Frankfurter Allgemeine Zeitung for Germany, Corriere Della Sera and La Stampa for Italy, El Mundo and El Pais for Spain, and The Times of London and The Financial Times for the United Kingdom). The index is built as the average of the relative number of monthly uncertainty-related articles from each of these ten newspapers. See https://www.policyuncertainty.com/europe_monthly.html.

²² See Hollo et al. (2012).

Figure 5: Inflation expectations in the euro area at 5- and 10-year horizons (January 2020 – January 2021)



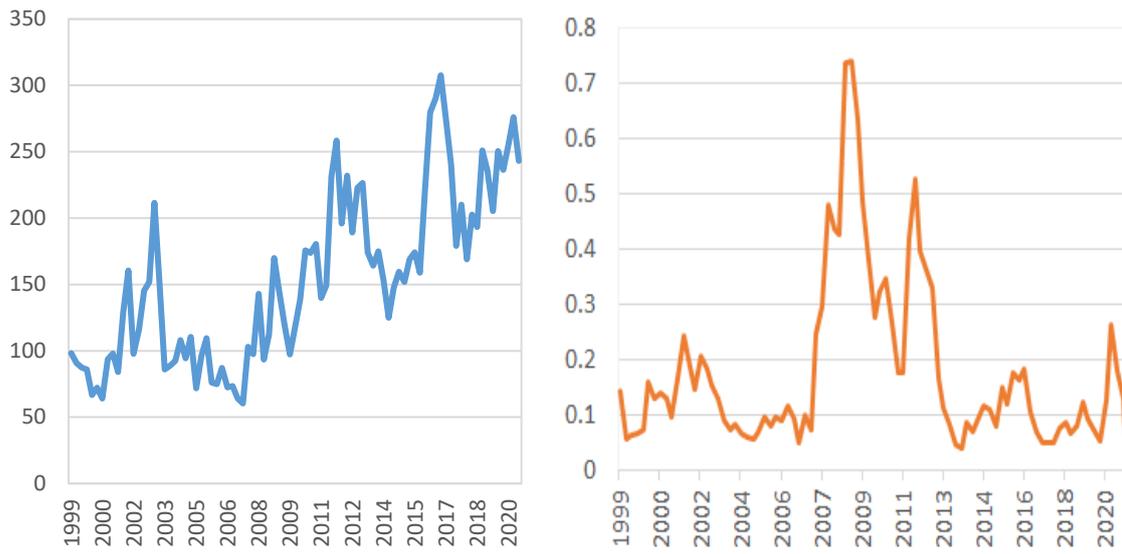
Source: Datastream.

According to Benigno et al. (2020), in 2020 the EEPUI displayed a spike due to the COVID-19 outbreak exceeding the peaks reached during the 2007 financial crisis and the sovereign debt tension in 2011-2012.²³ The SSCI presents a different view, i.e. a different ranking across the different episodes. The SSCI reached its maximum peak during the 2007-2009 international financial crisis. Then, the second peak occurred during the 2011-2013 European sovereign debt and banking sector crises. The pandemic crisis is ranked only as the third peak; and the value of the increased uncertainty is largely below the first two. The figure tends to provide evidence in favour of a prompt reaction of European monetary and fiscal policies to the COVID-19 crisis.²⁴ Other economic indicators and financial data confirm that the jump in volatility ascribable to the first pandemic shock has been contained with respect to those connected to the two recent crisis episodes (see Benigno et al., 2020).

²³ However, it is worth noting that the EEPUI reached its maximum peak in 2016-2017, i.e. since the Brexit decision and the activation of art. 50 of the EU Treaty.

²⁴ The SSCI index is based on some specific components which are related to different segments of the financial markets. Evidence from these components also shows that by reducing uncertainty in some segments of the financial markets, appropriate monetary policies have implied an acceleration in the adjustment process after the pandemic shock, although they did not fully eliminate the peaks in volatility resulting from the shock (Benigno et al., 2020).

Figure 6: Uncertainty dynamics in Europe (EPU and SSCI)



Source: Benigno et al. (2020).

5. CONCLUSION

Our analysis emphasises that the ECB's monetary policy, implemented since March 2020 to contrast the negative impact of the pandemic, has obtained limited but significant and positive results. Notwithstanding this ultra-expansionary monetary policy, European firms and households are experiencing the dramatic consequences of the most severe economic and social crisis of the last two centuries: the devastation of important activities and the increasing unemployment rate. However, the huge amount of liquidity pumped into the economic system through the monetary channel has allowed the euro area's most fragile Member States to implement national expansionary fiscal policies that reduced the risk of general economic breakdowns and social collapse. The even larger amount of liquidity temporarily transferred by the ECB to the euro area's banking sector has decreased the number of firms and households hit by the quantity credit rationing. Hence, thanks to the ECB's extraordinary monetary policy, the euro area and the EU economies can overcome the emergency and aim at a recovery that will implement sustainable development in the upcoming years.

This positive and potential evolution remains fragile. It should be stated that Europe's evolution can establish several different equilibria (e.g., De Grauwe and Ji, 2012). In order to select "good" equilibrium and to avoid "bad" equilibria, an extraordinary and expansionary monetary policy is a necessary condition. However, it may be insufficient.

At least two elements support this statement.

First, monetary policies have a short-term impact on "real" economies that disappears in the long term; hence, to effectively contribute to the selection of "good" equilibrium in the current economic phase and in the following evolution, the ECB's expansionary and extraordinary monetary policy should be persistent over the short-medium term. This perspective, in turn, will become possible if a central bank does not meet any limit in the expansion and composition of its balance sheet. Second, even if the ECB was able to implement a persistent expansionary policy, the long-term impact of this monetary policy stance on national fiscal policies would remain unclear. The latter would clearly face an easier centralised fiscal constraint. Can we maintain that the majority of national policy makers would utilise this opportunity to efficiently support the future economic development of their economies so that increases in the national government debts would not threaten its future sustainability? We cannot get rid of the last question by means of a positive and unqualified answer.

In the light of the abovementioned problem, the third factor concerns the possible virtuous combination of an extraordinary monetary policy and an expansionary centralised fiscal policy within the euro area or the EU.

Let us note that even a centralised and expansionary fiscal policy is extraordinary in Europe. The pandemic impact has activated various EU and euro area initiatives that are pursuing that unusual direction. Hence, as we have already pointed out elsewhere (see Benigno *et al.* 2020), since spring 2020, the euro area has witnessed a policy innovation: for the first time, there is a convergence between expansionary monetary and fiscal policies.

We believe that one of the euro area's crucial problems, in terms of policy, is thus the method for defining an efficient and dynamic mix between fiscal and monetary policies. For instance, is it possible that, thanks to the positive incidence of a centralised fiscal policy, the ECB's monetary policy can become more prudent without penalising the search for a "good" equilibrium? Let us conclude by stating that this question is not just academic. The increasing long-term interest rates in the United States show that an increase in the inflation rates is not out of the grid.

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This paper illustrates and discusses the monetary policies activated in response to the COVID-19 crisis. We argue that these policy measures have stabilised the European economic and financial system by incentivising banks' lending to households and businesses and by indirectly creating short-term fiscal capacity also for those Member States of the euro area that have a very high government debt/GDP ratio.

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