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Rules, discretion and market stabilisation in the euro area

An assessment of the European Central Bank's sovereign stress instruments

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Abstract

This paper assesses the European Central Bank's country-specific market-stabilisation instruments (SMP, OMT, PEPP flexibility and TPI) with a focus on the balance between rules and discretion in their design and use. While this study does not aim to provide an overall assessment of these instruments, it examines the clarity of access criteria, the impact of ambiguity in shaping market expectations, and the extent to which deployment of these tools has succeeded in reducing sovereign stress and thereby safeguarding monetary policy transmission.

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CONTENTS

LIST OF ABBREVIATIONS

APP	Asset Purchase Programme
ECB	European Central Bank
EFSF	European Financial Stability Facility
ESM	European Stability Mechanism
FED	Federal Reserve
GDP	Gross domestic product
OMT	Outright Monetary Transactions
PEPP	Pandemic Emergency Purchase Programme
PSPP	Public Sector Purchase Programme
QE	Quantitative easing
SMP	Securities Markets Programme
TPI	Transmission Protection Instrument

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EXECUTIVE SUMMARY

Since its creation, the euro area has combined a centralised monetary policy with largely national fiscal frameworks and, initially, national banking supervision. This institutional asymmetry, coupled with the prohibition of monetary financing, created a sovereign-bank 'doom loop' in the early 2010s, followed by 'market fragmentation' during the pandemic and at the start of the monetary tightening cycle in 2022. In response, the European Central Bank progressively expanded its toolkit beyond interest-rate instruments, deploying balance-sheet-based interventions to stabilise sovereign markets when spreads diverged from fundamentals and threatened monetary policy transmission.

Key findings

- The rules-versus-discretion trade-off affects both conventional and unconventional monetary policy tools. Neither of these extremes is suitable and an appropriate balance needs to be found. Since theoretical and empirical knowledge about balance-sheet tools remains far less developed than for interest rate policy, balance sheet tools inevitably rely more on discretionary judgement.
- This paper assesses the ECB's four main market stabilisation instruments: the Securities Markets Programme (SMP), Outright Monetary Transactions (OMT), flexibility in the Pandemic Emergency Purchase Programme (PEPP) and the Transmission Protection Instrument (TPI), focusing on how transparent their access criteria are, their operational clarity and the possible impact of ambiguity on the effectiveness of these instruments relative to the stated objectives.
- The SMP lacked clear conditionality, there was uncertainty about the potential size of interventions and it created moral hazard, exemplified by Italy's backtracking on earlier commitments after the Eurosystem began purchasing Italian government bonds. While academic research suggests that the SMP temporarily lowered government bond yields in vulnerable euro-area countries, pressures on sovereign debt markets continued to intensify. The failure to stabilise markets was not necessarily the consequence of SMP design flaws, but rather a result of uncertainty around the treatment of unsustainable Greek debt (increasing the risk of a euro-area break-up), of inadequate measures to address sovereign-bank interdependence and cross-country spillovers, and of a loss of credibility because of insufficient and reactive policy responses.
- The OMT introduced major improvements compared to the SMP by clearly establishing the implementation of a European Stability Mechanism (ESM) financial assistance programme as a necessary condition, and by removing *ex-ante* limits on purchases. ESM conditionality also helped provide political backing for OMT and enhanced its legal soundness. Beyond this necessary condition, the ECB has retained full discretion over deciding when to start and when to terminate the use of OMT. Sovereign stress receded after the introduction of OMT but this would not have happened had Greece's debt problems not been properly addressed and had the European banking union not been started. The OMT's strong conditionality on an ESM programme will limit its potential use, which might have been a reason for the development of PEPP flexibility and the TPI.

- PEPP flexibility, which allows purchases to deviate from the ECB's capital key, tended to favour countries with larger spreads. We also discovered some unexplained patterns, such as the underweighting of French and overweighting of German bonds, which appear to contradict the stated purpose of PEPP flexibility, which is to safeguard the monetary policy transmission mechanism. Insufficient transparency prevented the public from understanding these practices, and market assessments of the clarity and effectiveness of PEPP flexibility were mixed.
- The four main TPI eligibility criteria are clearly specified, and the delegation of the assessment of three of these criteria to the European Commission and the Council of the EU provides political backing for the instrument. However, the criteria are neither necessary nor sufficient, leaving the ECB with ample discretionary space. There is also a lack of clarity about the conditions under which a TPI intervention can be discontinued, while lasting use of this instrument would blur the line between monetary and fiscal policies. Early evidence suggests that the tool has been effective in reducing fragmentation risk even without being activated. Market assessments of the clarity and effectiveness of TPI are mixed.
- Some degree of ambiguity on when market stabilisation instruments will be deployed is the inevitable counterpart to preserving the ECB's discretionary power. However, clearly defined minimum eligibility criteria, with assessments at least partly delegated to the Council for political backing and legal reasons, and maintaining of the ECB's full discretionary power to deploy such instruments, together with clear objectives and transparent communication, remain essential to inform markets and the public about the potential use of these instruments, thereby enhancing their effectiveness and maintaining trust.

1. INTRODUCTION AND MOTIVATION

The euro area is a unique monetary union, with a centralised monetary policy managed by the European Central Bank (ECB) and largely national fiscal (and, initially, financial) policies. The ECB was granted a clear mandate to maintain price stability in the euro area and was given full independence in pursuing this mandate, supported by the prohibition of 'monetary financing' – a ban on extending of central-bank credit facilities to public bodies and on purchases of public debt instruments on the primary market[1]. National fiscal policies remain constrained by European fiscal rules, the effectiveness of which has, however, proven questionable. Although common rules apply to the financial system, bank supervision, resolution and deposit guarantees remained national when the euro was launched.

This institutional setup resulted in a structural fragility of the euro area. National monetary policies and the ability to create unanticipated inflation or devalue the currency were eliminated, limiting the scope for national economic stabilisation policies and reducing the likelihood of sovereign defaults, but no centralised fiscal stabilisation instrument was introduced. The lack of a common fiscal capacity is also problematic given the heterogeneous nature of the euro area, which increases the likelihood of asymmetric shocks, or asymmetric effects of common shocks, that are difficult to address with constrained national stabilisation policies.

Meanwhile, national budgets served as backstops for national banking systems, while banks' sovereign debt portfolios were often dominated by the securities of their home countries. Thus, when sovereign debt markets came under stress, most dramatically in Greece in 2009, fears of default spread quickly to domestic banks because of their heavy exposure to government bonds[2]. Conversely, massive bank losses prompted government bailouts, which strained public finances, as seen most notably in Ireland and Spain. This interdependence of vulnerable public finances and banking systems became known as the 'doom loop' or 'diabolic loop' (Brunnermeier *et al*, 2016)[3].

A specific feature of the euro-area crisis of the early 2010s was the 'redenomination risk' – fears of a possible breakup of the euro area – which intensified in the first half of 2012. According to Cœuré (2013), this risk contributed to a significant and rapid widening of sovereign bond spreads within the euro area, divergences that could not be explained by changes in fiscal or macroeconomic fundamentals. As De Grauwe (2012) argued, the euro area was vulnerable to a potential self-fulfilling sovereign debt crisis.

To counter increases in government borrowing costs not justified by macroeconomic fundamentals, the ECB has introduced tools to stabilise sovereign debt markets: the Securities Markets Programme (SMP) in 2010, Outright Monetary Transactions (OMT) in 2012 and the Transmission Protection Instrument (TPI) in 2022. These instruments were intended to address the malfunctioning of securities markets

[1] Council Regulation (EC) No 3603/93 of 13 December 1993 clarified that secondary market purchases of public debt, which are not prohibited, must not be used to circumvent the objectives of the prohibition on monetary financing.

[2] Foreign banks could also be impacted in case of cross-border holdings. For example, Cypriot banks had large exposures to Greek government bonds and faced major losses during the 2012 Greek debt restructuring.

[3] A macroeconomic channel also links governments and banks: both banking and fiscal stress negatively affect the economy, while weaker economic activity reduces bank profits and tax revenues, further straining both sectors. However, the bank-sovereign relationship can also stabilise markets. An increase in banks' domestic sovereign exposures during a crisis, when government bond demand weakens, can help stabilise bond markets, while governments' implicit bailout guarantees can support financial stability.

and to restore the effective transmission of monetary policy. Their common operational feature was the potentially intensive use of the central-bank balance sheet.

The SMP, launched in May 2010, did not involve any specific conditionality for its application, nor any guidance about the possible magnitude of interventions. It resulted in the Eurosystem purchases of public and private securities from Greece, Ireland, Italy, Portugal and Spain, totalling €218 billion by 2012.

However, in summer 2012, market pressure on some vulnerable euro-area government bond markets intensified. In July 2012, ECB President Mario Draghi famously declared that the ECB was ready to do "*whatever it takes*" to preserve the euro. This was followed by the introduction of the Outright Monetary Transactions (OMT) programme, which replaced the SMP. The OMT also aimed to safeguard monetary policy transmission, but with potentially unlimited purchases of stressed euro-area sovereign bonds under certain conditions – most importantly, the conditionality attached to a financial assistance programme.

Beyond market stabilisation tools, various unconventional monetary policy instruments were introduced to counter persistently low inflation following the euro crisis. These included negative deposit rates, longer-term refinancing operations and, from 2014 (and more substantially from 2015), the Asset Purchase Programme (APP)[4]. These asset purchases aimed to lift inflation without country-specific targeting, as their geographical distribution followed the ECB's capital key [5].

The outbreak of the COVID-19 pandemic in Europe was swiftly followed by the launch of the Pandemic Emergency Purchase Programme (PEPP) in March 2020, a primarily monetary policy tool. While the benchmark allocation across euro-area members followed the capital key, the ECB's Governing Council statement stated that purchases under the new PEPP might deviate from the capital key, though no hint was offered on how this flexibility would be used.

As the shocks of 2022 pushed euro-area inflation close to 10 percent and expectations of monetary tightening resurfaced, borrowing costs in some vulnerable EU countries rose faster than in fiscally stronger members. Fears of unjustified increases in risk premia were answered with the Transmission Protection Instrument (TPI) in June-July 2022. TPI is subject to various eligibility criteria, though the ECB's statement on the instrument suggests that these criteria are neither necessary nor sufficient for activation of the TPI, creating some ambiguity. As of today, OMT and TPI have not been activated.

This paper assesses the ECB's country-specific market stabilisation instruments in terms of the degree of ambiguity in their access criteria and how such ambiguity may have affected their effectiveness and may continue to affect them. We analyse the discontinued SMP and two instruments still in place: the OMT and the TPI. While the PEPP was a temporary instrument and its main goal was to influence the euro area's overall monetary policy stance, its flexibility option allowed country-specific market-stabilisation action. The way PEPP flexibility was applied could be informative about similar flexibility in future asset purchase programmes and therefore we also analyse this instrument. The APP is not

[4] https://www.ecb.europa.eu/mopo/implement/app/html/index.en.html.

[5] The capital key determines the share that each national central bank contributes to the ECB's capital. It reflects two equally weighted determinants: the country's population and its GDP. The capital key is reviewed every five years (and whenever EU membership changes).

covered in this study, as it aimed to influence the overall monetary stance across the euro area and involved no ambiguity in the cross-country allocation of asset purchases[6].

As for more traditional interest rate policy, one overarching issue is the optimal role of rules and discretion in designing and applying these tools. While the issue of rules versus discretion in the conduct of monetary policy has been present for more than a century, the widespread use of the balance sheet as a complementary monetary policy tool has put it among the 'unconventional measures'. Ultimately, both 'conventional' and 'unconventional' monetary policy tools are aimed at achieving the ECB's primary objective of price stability and, provided this objective is maintained, the other objectives set by the Maastricht Treaty.

The question of the appropriate balance between rules and discretion arises with respect to both conventional and unconventional instruments, including balance-sheet policies. This is the scope of the next section, which is followed by our assessment of the ECB's toolkit.

[6] There were some deviations in the cross-country allocation of the Public Sector Purchasing Programme (PSPP), a component of APP, from the capital key, as observed by Birkholz and Heinemann (2021). According to the ECB (https://www.ecb.europa.eu/mopo/implement/app/html/ecb.faq_pspp.en.html), these deviations resulted from differences in the timing of redemptions, from reinvestments that were distributed over time to ensure a balanced market presence, and from liquidity conditions prevailing in each country during the month of purchase.

2. THE RULES VERSUS DISCRETION CONTROVERSY IN THE CONDUCT OF MONETARY POLICY

To assess the transparency and operational clarity of the ECB's market-stabilisation instruments, and the possible risks linked to ambiguity over the conditions and timing of their use, it is useful to start by recalling a long-standing debate in monetary policymaking: the controversy over rules and discretion. In designing its market-stabilisation instruments, has the ECB chosen the right position between these two polar approaches?

2.1. Rules vs discretion in interest-rate management

The controversy about whether monetary policy, in particular the management of the interest rate, should be conducted based on rules or discretion, is longstanding.

One early case was the dispute, in England in the nineteenth century, between the so-called Banking School and Currency School supporters (Dellas and Tavlas, 2022). The issue was finally settled when the Currency School, more in favour of rules rather than discretion, prevailed. Taylor (2017) went further back in time to Adam Smith's Wealth of Nations (1776), which argued for a *"well-regulated paper-money"*.

The controversy has been revived since the 1960s, after Friedman presented his famous 'K rule' prescription, whereby the central bank should let one monetary aggregate grow at a constant pace (K) to ensure price stability (Friedman, 1960). The K rule received much theoretical support but was applied little in practice, with the partial exception of the Bundesbank, which followed a monetary rule from about 1973 to 1999. Even the more flexible version of the K rule, based on controlling a broad monetary aggregate, is currently seen as unable to guide monetary policy except for cases in which a too-high inflation rate must be brought down.

Monetary policy rules for interest rate management are supported by a longstanding academic literature. Already at the end of the nineteenth century, when Wicksell published his groundbreaking book, *Interest and Prices* (*Geldzins und Güterpreise*, 1898), it was accepted that raising interest rates would tighten monetary policy and exert a downward effect on both economic activity and inflation, and vice versa for an interest rate reduction. Furthermore, the quantitative links between interest rates and these two main macroeconomic variables have been studied extensively and thus the central bank has a reasonable expectation about the quantitative effects of interest rate changes.

The most widely studied recent monetary policy rule is that proposed by John Taylor (Taylor, 1993). Taylor's rule ignores monetary aggregates and concentrates instead on interest rates. Taylor argued that the central bank should increase its policy interest rate more than proportionally when price developments deviate from its inflation objective, and should reduce it when economic activity is lower than economic growth potential. Subsequent research has shown that, in many cases, actual policies have followed patterns similar to those indicated by one or other version of the Taylor rule. Taylor himself argued that, while not being formally adopted, his rule was followed after the Volcker Federal Reserve (Fed) brought inflation back to stability at the beginning of the 1980s, until 2003, when

deviations from it led to the real-estate excesses that finally caused the Great Financial Crisis of 2007-2008. Controversy persists[7] about how strictly the rule should be followed.

Taylor's views on these two issues seemed to have evolve after he wrote in 1993 that *"An objective of the paper is to preserve the concept of such a policy rule in a policy environment where it is practically impossible to follow mechanically any particular algebraic formula that describes the policy rule" (Taylor, 1993).* Some years later he confirmed that it is not *"necessary to limit the definition of rules-based policy to situations where the policy instruments are set perfectly in line with an algebraic formula. Rather, the distinction between rules and discretion is more a matter of degree" (*Taylor, 2017). He added that legislation should require the Federal Reserve to establish and report on a monetary policy rule and justify deviations from it.

The potential breadth of the concept of 'rules', as applied to monetary policy, is illustrated by some authors arguing convincingly that inflation targeting, with its credible commitment to fight inflation, can be qualified as a rule (Dellas and Tavlas, 2022; Clarida *et al*, 1999; Taylor, 2017). However, inflation targeting provides more a framework than a rule, as it does not aspire to guide every step of monetary policy, leaving space for operational discretion.

The concept of monetary policy rules can be extended to a fixed link to an external variable instead of a money supply or interest rate constraint. The gold standard, with its link to gold, and currency boards, with a link to a foreign currency, are obvious examples in this respect. The former prevailed at the turn of the twentieth century but was eventually abandoned because of the vulnerability generated by its rigidity. Currency boards, on the other hand are relatively rare, and are typically adopted by small countries. Other types of fixed exchange rate regimes (with unchanged parity) exist in several dozen countries, including Denmark, where the regime targeted first the Deutsche Mark and then the euro. However, there are even more cases of fixed exchange rates being devalued or fixed exchange rate systems being abandoned.

Unlike monetary policies that strictly observe a rule, fully discretionally monetary policies were implemented over quite long periods: for instance, in the United States in the 1960s and 1970s, and in Italy after the fall of the Bretton Woods system in 1973. In these, as in other cases when full discretion dominated, negative macroeconomic performance followed: high inflation and economic instability (Taylor, 1999; Bernanke, 2003; Papadia, 2014).

In conclusion, history shows cases of lasting fixed exchange rate regimes, but very few cases of other types of rigidly implemented monetary policy rules, while discretionary monetary policies are often associated with unsatisfactory macroeconomic experiences. Also based on these historical experiences, it is easy to caricature to the point of irrelevance the two extreme positions of rules vs. discretion. Finding the right balance between rules and discretion is the crucial choice.

[7] The exchanges between Taylor (1993, 1999, 2007, 2010, 2013, 2017) and Bernanke (2003, 2010, 2020a, 2020b) are very illustrative in this respect.

2.2. Rules vs discretion in balance sheet management

The rules vs. discretion controversy can also be applied to unconventional measures, in particular those consisting of balance sheet management. Because recourse to these types of tools happened only recently, discussions among academics and policymakers have a much shorter history and there is much less material on the issue. It is clear that there are no proposals for rules for unconventional measures, such as asset purchases, as precise as the Friedman or the Taylor rules. Such rules for unconventional measures would potentially give quantitative guidance to the conduct of monetary policy. Conversely, there are clear indications that transparency, accountability and appropriate governance setups should accompany any recourse to these measures (Adrian *et al*, 2024; Committee for the Global Financial System, 2019). Indeed, transparency could act as a partial substitute for formal rules, while communication creates implicit reaction functions and state-contingent frameworks (such as PEPP flexibility) operate in a rule-like way, even without an explicit formula.

One specific issue for which transparency and accountability are regarded as very important has arisen from central banks' exposure to interest rate risk caused by the joint effect of a very large portfolio of assets and the fall in bond prices resulting from the tightening of monetary policy. The view here is that central banks should be very open on the issue, explain why such losses are generated and what their consequences – mostly manageable – are (Hall and Reis, 2015).

While finding the right balance between rules and discretion is difficult for interest rate management, it is even more difficult for balance sheet management. The reason is that the stock of empirical and theoretical knowledge is so much smaller in this area. The effectiveness of the different variants of central bank balance sheet management is still disputed, even after extensive experience. For instance, Taylor clearly advised the US Congress Subcommittee on Monetary Policy and Trade that: "*In answer to the questions raised for this hearing, this testimony argues that the Fed's unconventional monetary policy is not really working*" (Taylor, 2013). Bernanke reached the opposite conclusion (Bernanke, 2020): "*Based on a review of a large and growing literature, I argue that the new tools have proven quite effective, providing substantial additional scope for monetary policy despite the lower bound on short-term interest rates.*"

Some economists take an intermediate view, according to which the effectiveness of these kinds of measures wears out quickly: while there is an immediate surprise effect, this dissipates over time. This criticism was levelled towards subsequent waves of quantitative easing (Borio, 2009; Goodhart and Ashworth, 2012). The divergence in views is even more striking when the costs, and not only the benefits, of these measures are considered.

While the absence of a unanimous view about the effectiveness of unconventional monetary policy tools is an intrinsic hurdle to the establishing of rules guiding their implementation, the difficulty is aggravated by the limited stock of knowledge about their effects, compared with what is known about the effects of interest rate policy. The clear conclusion is that, in carrying out monetary policy, it is better to stay closer to the discretion side of the continuum between discretion and rules. The fact that no precise rule like the Taylor rule has been proposed for balance sheet tools so far is no accident. Rather, it is the inevitable consequence of insufficient theoretical and empirical knowledge. This conclusion also applies to the ECB's market stabilisation instruments, of which two, OMT and the TPI, impacted the bond yields of vulnerable countries even without any actual purchases.

As noted above, systemic research on the effects of interest rate changes on the economy is more than a century old. Table 1 provides a more recent indication of the much deeper stocks of knowledge accumulated over time about interest-based, compared to balance-sheet based, monetary tools.

Table 1: Frequency of mentions referring to interest rate or balance sheet monetary tools in central bank speeches and top economic journals

Source	Period	Interest rate mentions (1)	Balance sheet mentions (2)	Mention ratios (3)=(1)/(2)
Central bank speeches*	1990-2007	1914	3	638
Central bank speeches*	2008-2025	7003	1951	3.6
Top economic journals**	1990-2007	366	10	37
Top economic journals**	2008-2025	941	193	4.9

*Based on search on BIS Central Bankers' Speeches database. **Based on Google Scholar search on: American Economic Review, Econometrica, Review of Economic Studies, Quarterly Journal of Economics.

Table 1 shows that there were practically no mentions of balance sheet-based tools in economic journal or central bank speeches before the Great Financial Crisis, while mentions of interest-based tools were very frequent. The situation only partially changed after the start of the Great Financial Crisis in 2008. The frequency of mentions of balance sheet-based tools remains a fraction of those of interest rate-based tools.

3. A COMPOSITE VIEW

The independent central banks of advanced economies, including the ECB, the Fed, the Swiss National Bank, the Bank of Japan, Sveriges Riksbank and the Bank of England, have settled for a composite view in the rules versus discretion controversy. They have done so adopting monetary policy strategies with the following main components:

- A clear quantitative final objective to be obtained over the medium term. This is mostly defined as an increase in consumer prices of 2%, which strongly anchors expectations.
- Subject to respecting the inflation objective, particularly in the case of the ECB, the pursuit of other objectives determined by the democratic process (if any), in particular maintaining financial stability.
- Extensive communication about the reading of current and expected economic developments, targeted at economic professionals but also, increasingly, at the general public. Forward guidance has also been widely used by major central banks, including the ECB until December 2021. However, forward guidance can undermine credibility if it is not adhered to in practice, as happened to the ECB in 2022[8].
- Clarity about the central bank reaction function, i.e. how it would react to different economic developments, and consistent adherence to it.
- Accountability in the face of public opinion and democratic institutions in relation to compliance with the basic mandate assigned to the central bank – in the European Union, the price stability objective established by the Maastricht Treaty.
- Mention of the tools that can be used to conduct monetary policy, with a predominant role assigned to the short-term interest rate.

In common language, one can say that the monetary policy framework requires honest and independent central bankers who keep their word and are transparent in how they exercise the great responsibility and power entrusted to them by society.

The overall framework designed by advanced economies' central banks in their monetary policy strategies is mostly set based on the inflation-targeting approach. The conclusion, recalled above, that the inflation-targeting approach can be subsumed in the 'rule' category, coupled with the obvious remark that a good dose of flexibility and constrained discretion (in the terminology of Bernanke) is used in the practical conduct of monetary policy, shows that the central banks of advanced economies work according to a view that is a composite of rules and discretion. This is further confirmed by the absence of explicit references to 'rules' in the strategy statements of the above-mentioned central banks, while conveying the message of a well-structured approach to monetary policy. A composite approach is also consistent with the conclusion of McCallum (1999) that *"When it comes to practical*

[8] At its December 2021 meeting, the Governing Council set two potentially conflicting forward-guidance conditions on the timing of an interest rate increase, - a conflict that ultimately materialised. One condition was data-dependent: the medium-term staff forecast for headline inflation had to rise to 2%, and actual core inflation had to increase. The other was date-dependent: interest rate increases would occur only after the end of net asset purchases. At the same meeting, the ECB specified monthly asset-purchase amounts under the Asset Purchase Programme (APP) for the whole of 2022, including a pace of €20 billion "*from October 2022 onwards* [...] *for as long as necessary to reinforce the accommodative impact of our policy rates*". This implied that asset purchases would continue beyond October 2022 and that interest rates would be raised even later. However, the rapidly accelerating headline and core inflation required earlier interest rate increases, thereby forcing the ECB to break the forward guidance given in December 2021. See Darvas and Martins (2022) for further discussion.

application to the behaviour of actual central banks, however, the distinction [between rules and discretion] *cannot be easily drawn"*.

4. THE ECB APPROACH

The ECB has so far designed four specific market-stabilisation tools to address stress in sovereign debt markets without altering the monetary policy stance (Table 2)[9]. A common feature of these instruments is their main goal of safeguarding monetary transmission, which is directly linked to price stability, the ECB's primary objective. Uneven monetary transmission across euro-area countries could undermine the ECB's efforts to achieve and maintain price stability, could require larger interventions than would otherwise be necessary and might also force countries with well-functioning transmission to over-adjust in order to compensate for weaker transmission elsewhere.

Other similarities include the *pari passu* treatment with other creditors and the stated intention not to affect the overall monetary policy stance. The latter was achieved through the sterilisation of SMP purchases, would likewise have been ensured through sterilisation under OMT and would be preserved under TPI through comparable mechanisms (see the exact wording of the ECB statement in column 4 of Table 2), while PEPP flexibility did not alter the overall volume of PEPP purchases during the net-purchase period, or the level of holdings during the rollover period. In our view, this approach was appropriate: these tools had a specific objective, to reduce stress in sovereign bond markets when movements were not justified by fundamentals; the tools were not designed to adjust the monetary policy stance. This feature should not diminish their effectiveness, and indeed academic research shows that these instruments succeeded in reducing spreads, at least in the short term.

Beyond these shared features, however, there were major differences between the four instruments in terms of activation conditions and the composition of targeted securities. Although none of the instruments had country-specific limits, there were perceived differences in their potential size and therefore in their stabilising capacities.

Table 2: Main characteristics of the ECB's market stabilisation instruments

Instrument	Stated objective	Conditions for activation	Key features
Securities Markets Programme (SMP), May 2010 – August 2012	*"to address the severe tensions in certain market segments which are hampering the monetary policy transmission mechanism"* https://www.ecb.europa.eu/press/pr/date/2010/html/pr100510.en.html	• Not disclosed • Activation at ECB discretion	• Target securities undisclosed • Purchases are fully sterilised; pari passu treatment to all creditors applies. • No ex-ante limits on purchase volumes.
Outright monetary transactions (OMT), since August 2012	*"safeguarding an appropriate monetary policy transmission and the singleness of the monetary policy"*	• Requires an ESM/EFSF macroeconomic or precautionary programme. • Country must comply with programme conditionality	• Targets short-term maturities bonds (1–3 years). • Purchases are fully sterilised; pari passu treatment of all creditors.

[9] The PEPP had a dual role: supporting the euro-area recovery from the COVID-19 pandemic and thereby influencing the monetary policy stance through the overall volume of asset purchases, and reducing 'fragmentation' through its flexibility, which in itself did not alter the monetary policy stance. We evaluate only this latter aspect.

	https://www.ecb.europa.eu/press/pr/date/2012/html/pr120906_1.en.html	• Activation at ECB discretion, even if criteria are met.	• No ex-ante limits on purchase volumes.
Flexibility in the Pandemic Emergency Purchase Programme (PEPP), March 2020 – December 2024	*"to counter the serious risks to the monetary policy transmission mechanism and the outlook for the euro area posed by the outbreak and escalating diffusion of the coronavirus, COVID-19"* https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200318_1~3949d6f266.en.html	• Not disclosed (for flexibility; PEPP was triggered by the Covid-19 pandemic). • Activation at ECB discretion	• Eligible assets included those under the APP plus non-financial commercial paper with a minimum maturity of 28 days. • Purchases could deviate from the capital key across countries, asset classes, and time - providing flexibility to counter fragmentation. • Ex ante limits on total PEPP purchases, but no country-specific limits • Purchases are not sterilised; pari passu treatment of all creditors. • Net PEPP purchases ended in March 2022; reinvestments continued flexibly until the end of 2024.
Transmission Protection Instrument (TPI), since July 2022	*"to counter unwarranted, disorderly market dynamics that pose a serious threat to the transmission of monetary policy across the euro area … to make secondary market purchases of securities issued in jurisdictions experiencing a deterioration in financing conditions not warranted by country-specific fundamentals"* https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220721~973e6e7273.en.html	• Requires compliance with EU fiscal rules, debt sustainability, and sound macroeconomic policies. • Country must not be under EDP/EIP unless corrective action is taken. • Activation at ECB discretion.	• Allows sovereign (and, if needed, private) bond purchases with maturities of 1–10 years. • No pre-set limits; pari passu treatment of all creditors. • Possibly sterilised: "*the Governing Council will address the implications of the TPI purchases for the scale of the aggregate Eurosystem monetary policy debt security portfolio and the amount of excess liquidity*". • ECB can suspend or end purchases if eligibility criteria are breached.

Sources: the ECB weblinks indicated in the table.

4.1. The Securities Markets Programme – SMP (2010-2012)

4.1.1. Market developments leading to the introduction of the SMP

As the extent of the Greek fiscal crisis became clearer in spring 2010, the first financial assistance programme – part of a joint package with the IMF – was agreed by the Eurogroup on 2 May. By the end of April, the Greek 10-year government bond spread over Germany had reached almost 5 percentage points, while the spreads of Italy and Spain approached 1 percentage point (Figure 1), which seemed

high compared to the close-to-zero spreads in the period before the global financial crisis[10]. To prevent a further rise in spreads, the ECB launched the Securities Markets Programme (SMP) on 10 May 2010. Rapidly widening sovereign spreads threatened to impair monetary policy transmission and destabilise the financial system. The SMP enabled the ECB and national central banks to intervene in secondary sovereign bond markets to restore orderly conditions and to ensure that its monetary policy continued to be transmitted evenly across the euro area. From May 2010 to August 2012, the Eurosystem purchased public and private securities from Greece (€34 billion), Ireland (€14 billion), Italy (€103 billion), Portugal (€23 billion) and Spain (€44 billion), reaching a total of €218 billion (at nominal amounts) by 2012.

4.1.2. The SMP's design features

Unlike later programmes, the SMP did not include a clearly articulated system of conditionality. Rather, the ECB communication stated that the Governing Council had "*taken note of the statement of the euro area governments that they "will take all measures needed to meet* [their] *fiscal targets this year and the years ahead in line with excessive deficit procedures" "and of the precise additional commitments taken by some euro area governments to accelerate fiscal consolidation and ensure the sustainability of their public finances*". In addition, ECB President Jean-Claude Trichet and the relevant national governors sent letters to the prime ministers of Italy and Spain requesting specific measures to correct macroeconomic imbalances – an informal form of conditionality. However, there was lack of clarity about when the ECB would start and cease government bond purchases.

Because of this unclear conditionality, the SMP was also subject to moral hazard, exemplified by the Italian government's backtracking on promised reforms in the summer of 2011, after the ECB began purchasing Italian bonds. As a response, on 5 August 2011, ECB President Trichet and Banca d'Italia Governor Mario Draghi sent a confidential letter (later leaked) to Prime Minister Berlusconi, urging him to adopt rapid reforms and implement previously announced commitments without delay[11]. This episode underscored the weakness of informal and non-transparent conditionality in preventing beneficiaries from reversing earlier commitments.

There was also a lack of clarity about the potential size of interventions. For example, at the 8 December 2011 press conference[12], ECB President Draghi stated that "*the SMP is neither eternal nor infinite. We must keep this in mind and we do not want to circumvent Article 123 of the Treaty, which prohibits the monetary financing of governments*"[13].

4.1.3. The SMP's limited and short-lived effectiveness

Empirical studies generally find that the SMP reduced government bond yields (Eser and Schwaab, 2016; Ghysels *et al*, 2017). However, the effects tended to dissipate relatively quickly, and the

[10] The average ten-year government bond yield spread to Germany on average in 2003-2006 was 0.24 basis points in Greece, 0.22 basis points for Italy, and 0.04 basis points for Spain.

[11] Reuters report about the confidential letter: Michel Rose, 'Trichet's letter to Rome published, urged cuts', *Reuters*, 29 September 2011, https://www.reuters.com/article/world/trichets-letter-to-rome-published-urged-cuts-idUSTRE78S4MK/. After the letter was leaked, the ECB published it on its website: https://www.ecb.europa.eu/ecb/access_to_documents/document/pa_document/shared/data/ecb.dr.par2021_0001lettertoItalianPrimeMinister.en.pdf.

[12] See ECB 'Introductory statement to the press conference (with Q&A)' of 8 December 2011, https://www.ecb.europa.eu/press/press_conference/monetary-policy-statement/2011/html/is111208.en.html.

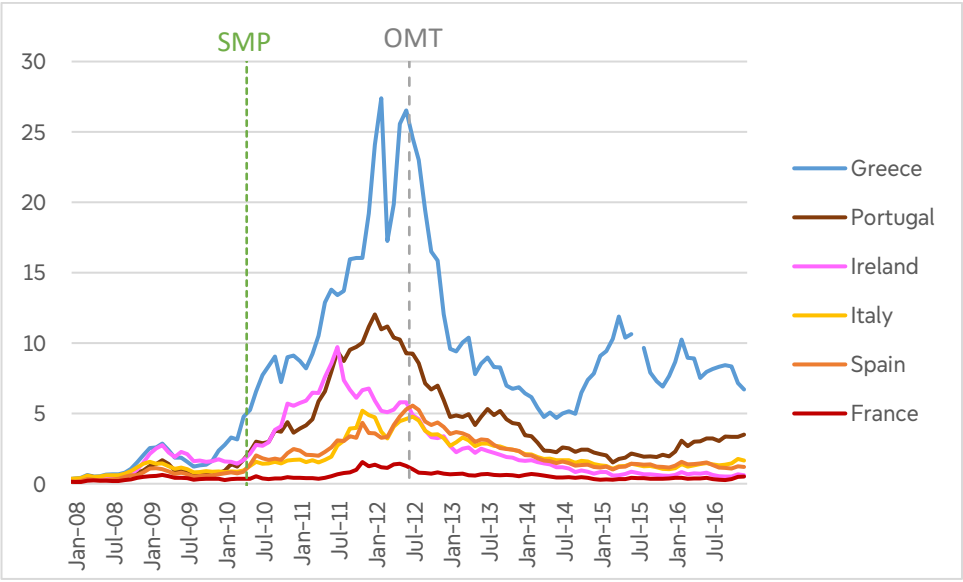
[13] Moreover, the Bundesbank (2012) wrote: "*The justification given for the Securities Markets Programme (SMP), which was set up in 2010 and recently terminated, was that it was limited in terms of both scope and volume.*"

programme did not anchor expectations in a durable way. Pressures on sovereign bond markets continued to intensify. By July 2012, Greek spreads had reached 25 percentage points, while the spreads of Italy and Spain had risen to around 5 percentage points (Figure 1). These developments underscored the lack of success of the crisis-management strategy pursued up to that point.

4.1.4. Our assessment

In our view, the inability to stabilise government bond markets was not the consequence of a flawed design of the SMP, but rather of other, fundamental factors. The most important was the insistence by the ECB, the European Commission and the IMF that Greek public debt be treated as sustainable, and their denial of the need for debt restructuring. However, analysts and markets recognised that Greek public debt was unsustainable. For example, in February 2011, Darvas *et al* (2011) argued that EU policies had been insufficient for three main reasons: they failed to acknowledge the possibility of insolvency and treated all crises as pure liquidity crises; they did not address in a systematic way the interdependence between banking and sovereign crises and the cross-country spillovers; and they were reactive rather than proactive, thereby squandering credibility through inadequate responses. Uncertainty about how Greece's unsustainable debt would ultimately be addressed fuelled fears of a chaotic Greek exit from the euro area, with potentially severe consequences for the rest of the monetary union. No design of the SMP, however refined, could have counterbalanced these fundamental problems.

Figure 1: Government bond yield spreads relative to Germany, January 2008 – December 2016



Source: Eurostat's "EMU convergence criterion series - monthly data [irt_lt_mcby_m]" dataset for yields, ECB for the announcement dates of SMP and OMT.

4.2. The Outright Monetary Transactions – OMT (since 2012)

4.2.1. Market developments leading to the development of the OMT

The limitations of the EU's crisis-management strategy, as well as the that of the SMP, became clear as the crisis deepened. The SMP's discretionary and temporary nature, in the absence of *ex-ante* conditionality, and the lack of an explicit commitment to unlimited purchases, led markets to doubt its long-term effectiveness. Investors remained unconvinced that the ECB would, or legally could, act with sufficient force to prevent self-fulfilling runs on sovereign debt. As Cœuré (2013) noted, spreads in stressed countries had become excessively detached from economic fundamentals, undermining the transmission of its monetary policy.

4.2.2. The 'whatever it takes' moment and the creation of the OMT

The SMP's deficiencies prompted the ECB to design a more robust and transparent framework. The Outright Monetary Transactions (OMT) programme, first hinted at in President Draghi's "*whatever it takes*" speech on 26 July 2012, and later formalised in August-September 2012, introduced unlimited but strictly conditional purchases linked to a European Stability Mechanism (ESM) programme (or under its predecessor, the European Financial Stability Facility – EFSF).

This conditionality, as a necessary condition, is clear. The ECB statement noted that the Governing Council may consider OMT "*as long as programme conditionality is fully respected, and terminate … when there is non-compliance with the macroeconomic adjustment or precautionary programme.*" The ESM programme conditionality is crucial for ensuring compliance with the Treaty-based prohibition on monetary financing both from a political and a legal perspective (Wolff, 2014; Maduro *et al*, 2021; Court of Justice of the European Union, 2015)[14]. An ESM programme is preceded by a debt-sustainability analysis conducted by the European Commission, in liaison with the ECB and, if applicable, the IMF. Thus, an ESM programme is approved only when debt is assessed to be sustainable. Approval requires unanimous agreement of all euro-area countries, providing political backing for the debt sustainability assessment and demonstrating trust that the country intends to honour its obligations.

However, the ECB maintained its discretionary power over activating OMT when the necessary condition is met by declaring that OMTs might be considered when "*they are warranted from a monetary policy perspective*" and could be terminated "*once their objectives are achieved*".

Moreover, the ECB limited its purchases to shorter maturities of between one and three years, rather than buying across the entire curve. Importantly, the ECB statement clarified that "*No ex ante quantitative limits are set on the size of Outright Monetary Transactions.*"

4.2.3. Empirical research on the impact of the OMT

Empirical studies suggest that the mere announcement of OMT had a strong calming effect on markets. For example, Altavilla *et al* (2016) found that OMT announcements reduced Italian and Spanish two-

[14] The ECB's press release noting the European Court of Justice decision on OMT emphasised that the Court found the programme to fall within the scope of the ECB's mandate of maintaining price stability and that it contained sufficient safeguards to prevent monetary financing. See ECB press release of 18 June 2015, ' ECB Governing Council takes note of ruling on OMT', https://www.ecb.europa.eu/press/pr/date/2015/html/pr150618.en.html.

year yields by around 200 basis points, with little impact on German or French yields. In a joint analysis of SMP and OMT, Krishnamurthy *et al* (2018) found that government bond yields fell considerably due to reduced market segmentation effects (accounting for 50% of the fall), lower default risk (37%) and reduced redenomination risk (13%). Acharya *et al* (2019) also found that OMT had a positive impact on periphery sovereign bonds and argued that this indirectly recapitalised European banks. However, they noted that the stability restored in the banking sector did not translate fully into economic growth. Broeders *et al* (2023) argued that the ECB's sovereign bond purchase programmes — including the SMP, OMT, the Public Sector Purchase Programme (PSPP) and the Pandemic Emergency Purchase Programme (PEPP) — acted as market-stabilisation instruments, essentially functioning as an implicit put option written by the central bank to bondholders, which lowered investors' perception of sovereign default risk.

4.2.4. Our assessment

However, while the OMT's design represented a major improvement over the SMP, it would not have been sufficient to address stress in euro-area sovereign debt markets without two fundamental developments. First, on 29 June 2012, the euro-area summit statement[15] began by asserting that "*We affirm that it is imperative to break the vicious circle between banks and sovereigns*" and called for the Commission to promptly present a proposal for a single supervisory mechanism. This marked the first formal decision to launch common supervision as a fundamental component of the European banking union, an essential tool to reduce banking system fragility and restore financial stability in the euro area. Second, the restructuring of Greek debt, together with a new and more credible financial assistance programme, was agreed in several steps, ultimately offering a realistic outlook for Greece to remain in the euro area[16].

These measures, along with the OMT, were successful in reducing the spreads of Greece, Italy, Ireland, Portugal and Spain (Figure 1) and in winding down discussions about a potential euro-area break-up: the number of press mentions of related expressions in major English-language newspapers declined substantially in 2013 and 2014 (Figure 2). The renewed spike in 2015 in mentions of break-up and the escalation of the Greek spread over 10 percentage points were the result of the snap Greek election in January of that year. This election was won by Syriza, a party that had announced it would not comply with the previously negotiated bailout terms and would instead demand a renegotiation, including debt relief.

Thus, in our view, the eligibility criteria for OMT are clear, and its design represented a significant improvement over the SMP. Like the SMP, the OMT announcements led to reductions in sovereign market stress. Unlike the SMP, however, this effect proved to be lasting, supported by other

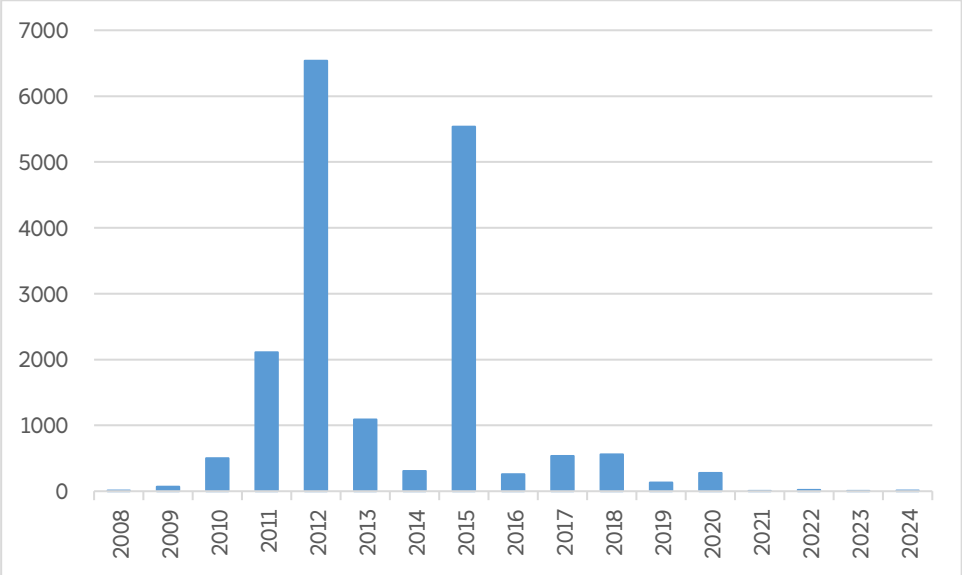
[15] Euro-area summit statement of 29 June 2012, https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/131359.pdf.

[16] The second financial assistance programme for Greece was agreed in March 2012 and included debt restructuring. See Zettelmeyer *et al* (2013) for a detailed chronology, culminating in debt relief equivalent to over 50% of 2012 GDP in March/April 2012. The Greek parliamentary elections in June 2012 put national commitments to implement the adjustment programme at risk and led to an acceleration of capital outflows. However, a coalition government was eventually formed with a mandate to secure Greece's future in the euro area, though with an attempt to renegotiate the terms of the financial assistance programme, including the timetable for budget cuts. In November 2012, euro-area finance ministers and the IMF agreed to extend the fiscal adjustment path by two years and slow the pace of adjustment, implying that the 4.5% of GDP primary surplus target would now be reached by 2016 instead of 2014, with a new intermediate target of 1.5% of GDP for 2014. Ministers also agreed on new measures to lower the cost of official loans.

institutional developments such as the launch of the European banking union, the creation of the ESM, a permanent financial assistance mechanism and the adoption of a more realistic adjustment programme for Greece, which included major debt restructuring. These developments ultimately ended fears of a Greek euro exit (at least until the next Greek election in 2015) and facilitated the gradual resumption of economic growth.

While the OMT announcement was decisive during the euro crisis in 2012, it has never been activated, perhaps because this announcement was needed to move away from a self-fulfilling 'bad equilibrium' to a 'good equilibrium', according to the conceptual framework of De Grauwe (2012). It is unlikely to be used in the future: an ESM programme is a last-resort option for governments that lose market access, yet no government wishes to request one and submit itself to close scrutiny. This limitation may also have been a factor behind the ECB's decision to introduce PEPP flexibility and the TPI.

Figure 2: Press mentions of 'euro area break-up' and related terms in articles and news reports about the euro area



Source: Bruegel based on Factiva. Note: we searched for ("euro break-up" OR "euro break up" OR "euro breakup" OR "break-up of the euro" OR "break up of the euro" OR "breakup of the euro" OR "break-up of the euro area" OR "break-up of the eurozone" OR "euro exit" OR "exit from the euro" OR "exit from the euro area" OR "exit from the eurozone" OR "redenomination risk" OR "risk of redenomination" AND (euro OR "euro area" OR eurozone OR EU OR "single currency")). We searched newspapers considered tier1 and tier2 (as defined by the Bruegel communications team) and published in English language, and articles on economic news and that tagged as being about region Europe.

4.3. Flexibility in the Pandemic Emergency Purchase Programme (2020-2024)

4.3.1. Market developments leading to the development of PEPP flexibility

The outbreak of the COVID-19 pandemic in Europe in early 2020 caused severe disruption to economic activity and created major uncertainty about the economic outlook, including risks to price stability. A potentially deep recession threatened to push inflation well below the ECB's then prevailing objective, i.e. close to, but below, 2% over the medium term. At the same time, some euro-area countries with a high share of contact-intensive industries – such as tourism – and vulnerable fiscal positions

experienced rising borrowing costs relative to countries with less contact-intensive sectors and stronger fiscal fundamentals. In response, the ECB acted swiftly to introduce the Pandemic Emergency Purchase Programme (PEPP) to support the euro-area economy and to preserve the smooth transmission of monetary policy by preventing an undue increase in sovereign borrowing costs in the more vulnerable countries[17].

An important characteristic of the PEPP was its flexibility in implementation over time, across asset classes and among jurisdictions. However, the ECB did not disclose details on the actual use of this flexibility, beyond what could be inferred from bi-monthly data publications (Rahmouni-Rousseau and Schnabel, 2024). PEPP purchase data at country level was published with a delay, only every two months (after the end of January, March, etc). Moreover, in December 2024, the previous bi-monthly data was removed and replaced retroactively with monthly data, to align PEPP data transparency with that of the APP[18].

Flexibility across jurisdictions implied that asset purchases could deviate temporarily from the Eurosystem's capital key, even though the capital key continued to serve as the benchmark for the allocation of public sector purchases. Rahmouni-Rousseau and Schnabel (2025) identified two distinct episodes in which this flexibility was actively exercised. The first occurred at the launch of the programme in 2020, when public sector purchases were concentrated in jurisdictions most exposed to pandemic-related financial fragmentation risks. The second took place during the reinvestment phase in mid-2022, following the re-emergence of similar risks, as expectations of ECB interest rate increases resurfaced. This flexibility was discontinued following the establishment of the Transmission Protection Instrument (TPI), which potentially provided a more structured framework for addressing renewed fragmentation pressures.

Assessing the extent of this flexibility is complicated by the scarce supply of eligible public debt instruments in some countries (for example, Estonia's public debt-to-GDP ratio was only 9% in 2019). Moreover, from April 2022, when net purchases ceased but maturing securities were fully reinvested, until June 2024 (and only partially from July to December 2024), the ECB adopted a so-called 'double-smoothing' procedure (Rahmouni-Rousseau and Schnabel, 2024, 2025). In some jurisdictions, redemptions are concentrated in one or a few months of the year, whereas the ECB preferred to remain consistently active in markets throughout the year. Consequently, monthly purchases were smoothed within each country to ensure that they summed to the total annual redemptions – this constituted the first layer of smoothing.

However, without further adjustment, this 'single-smoothing' approach would have led to fluctuations in the overall PEPP portfolio over the course of the year. To prevent this and to maintain the aggregate PEPP holdings constant from April 2022 to June 2024, the ECB introduced a second smoothing layer across countries. This double-smoothing procedure is the main reason why Rahmouni-Rousseau and

[17] Alberola-Ila *et al* (2022) calibrated a counterfactual scenario without the PEPP and showed that the programme reduced spreads. However, because other crisis-management tools, such as NextGenerationEU, also likely influenced spreads, their results should be interpreted in a broader context: the absence of the full set of crisis-management efforts in 2020 would almost certainly have resulted in higher spreads.

[18] ECB press release of 13 December 2024, 'Decisions taken by the Governing Council of the ECB (in addition to decisions setting interest rates)', https://www.ecb.europa.eu/press/govcdec/otherdec/2024/html/ecb.gc241213%7Eb501b82aaf.en.html.

Schnabel (2024) argued that, during the reinvestment phase, the use of flexibility under the PEPP cannot be directly inferred from changes in net PEPP holdings across countries.

Nevertheless, our analysis focuses on the net purchase period from March 2020 to March 2022, when the Eurosystem purchased securities from almost all jurisdictions[19]. This phase was largely unaffected by the double-smoothing adjustments related to maturing debt, as there were no significant redemptions shortly after the programme's launch, which was the first major episode of flexibility use. The volume of net purchases dominated any subsequent redemptions, meaning the ECB could have adhered to the capital key had it wished to do so.

Unfortunately, the ECB only publishes country-specific data on net purchases and aggregate data (not country-specific) on redemptions on a monthly basis. The lack of higher-frequency, country-specific purchase and redemption data prevents us from formally testing whether PEPP flexibility was driven by a numerical rule or was more discretionary[20]. This limitation in data availability reflects a lack of transparency and may contribute to misunderstandings among market participants and the general public regarding the ECB's PEPP flexibility component.

4.3.2. Country-specific deviations from the capital keys

Italy and Spain were the main beneficiaries of PEPP flexibility, accounting for larger shares of PEPP purchases than their capital key weights (Figure 3)[21]. For many other countries, deviations of monthly purchase shares from the capital key were relatively small, frequently alternating between positive and negative values. However, by the end of the net-purchase period in March 2022, some very large deviations were accumulated for countries with low debt ratios, likely because of the scarcity of available securities (Table 3). For example, for Estonia, only 6% of the amount implied by the capital key was purchased.

There was a very large deviation in net purchases in May 2020: the volume of French public sector PEPP purchases was unexpectedly low at €7.6 billion, approximately half of the amount recorded in the previous month, even though total Eurosystem purchases increased. This French share, representing only 8.4% of total monthly net purchases in total national public sector purchases, deviated substantially from the capital key benchmark (20.4% for the EA19 – panel A in Figure 3). We have not been able to identify any publicly available explanation for this unusually low French share. As the counterpart to France's underweight, almost all other countries recorded shares above their capital key weights in May 2020, including Germany, where the share was 2.5 percentage points higher than its capital key. The French share remained somewhat below its capital key in June-August 2020 as well.

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[19] Because of the scarcity of eligible Estonian securities, no Estonian public securities were purchased during more than half of the period between March 2020 and March 2022. There were also several months with no purchases of Maltese public securities.

[20] Nevertheless, we regressed monthly PEPP flexibility – defined as the gap between a country's share in net purchases and its capital-key share – on the previous month's yield spread to Germany and the lagged public-debt-to-GDP ratio (intended to proxy both limited supply in low-debt countries and greater vulnerability in high-debt countries). In pooled OLS, both variables are significant at least at the 10% level, but neither remains significant once standard errors are clustered. In fixed-effects panels, the debt ratio is never significant, and the significance spread weakens. Most variation is absorbed by fixed effects, with a very low within-R^2 (2-6%). We therefore find no stable relationship, though this does not imply ECB discretion, as monthly data cannot capture high-frequency interactions between PEPP purchases and spreads. Results are available from the authors on request.

[21] Italy's PEPP net purchase share was larger than its share in the capital key in the full period of net purchases from March 2020 to March 2022, while for Spain, this was the case in all but one (April 2020) months.

The unusually low May 2020 French net purchase share resulted in a permanent deviation of the outstanding stock of French PEPP holdings (panel B in Figure 3). Even though France's net purchase share slightly exceeded its capital key from September 2020, this was insufficient to offset the large shortfall recorded in May 2020. As a result, France's share of the accumulated stock of public-sector securities remained well below its capital key weight until net PEPP purchases ended in March 2022.

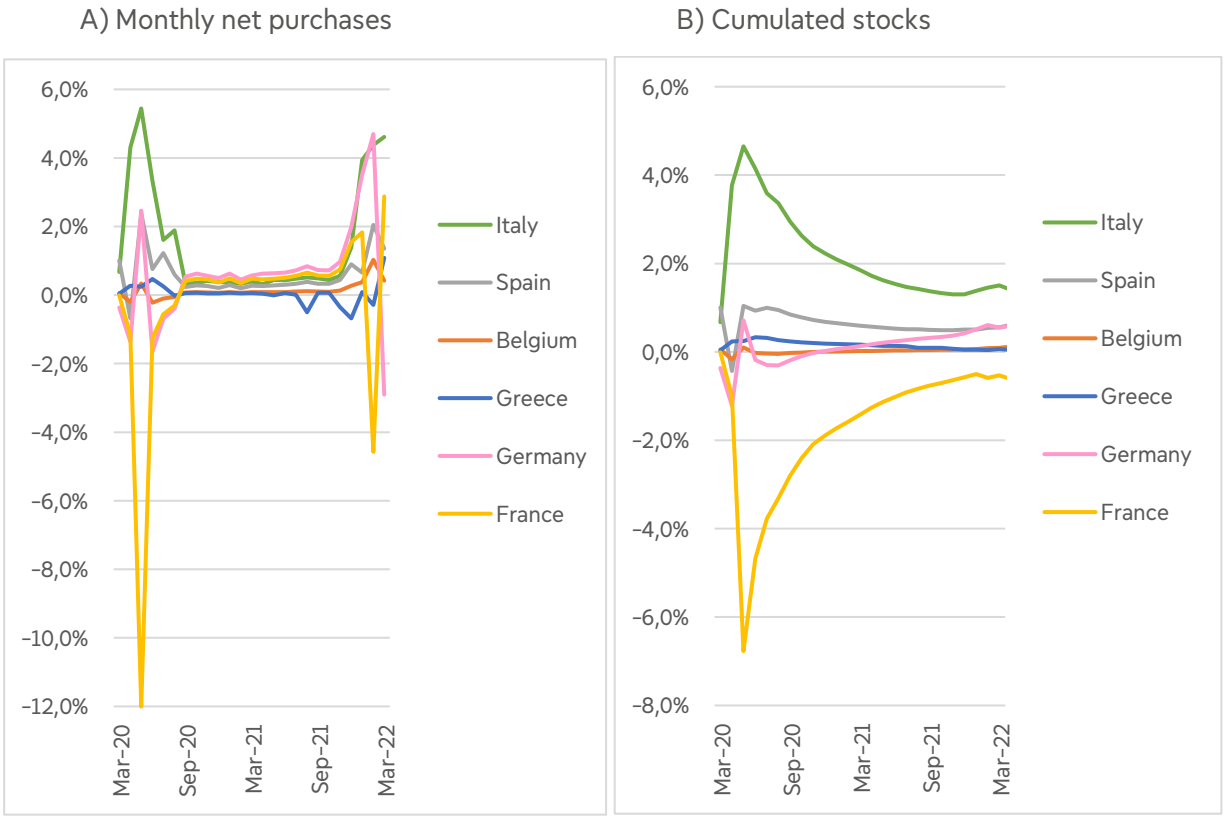
Germany's share of both monthly net purchases and of the accumulated stock exhibit a pattern that is difficult to rationalise in terms of PEPP flexibility from September 2020 to February 2022. After rising above its capital key share in May 2020 (likely as the counterpart to France's unusually low share), Germany's purchase share fell below its capital key in June-August 2020, a pattern consistent with the goals of flexibility: Germany, arguably the country with the strongest fiscal position, would be expected to be underweighted when more vulnerable countries are overweighted. However, from September 2020 to February 2022, Germany was persistently overweighted (i.e. higher share of net purchases than in the capital key), with deviations reaching an exceptionally high 4.7 percentage points in February 2022, matching Italy's overweight (panel A in Figure 3). This sustained overweight caused Germany's share in the accumulated stock to rise 0.6 percentage point above its capital key – the same as the Spanish value, whereas for countries such as Belgium, a country with a relatively high public debt ratio, the accumulated shares closely tracked their capital key weights (panel B of Figure 3)[22].

4.3.3. Our assessment

In our assessment, although the overweighting of Italy and Spain aligns with the rationale of PEPP flexibility, given their vulnerability to fragmentation risks, the overweighting of Germany in May 2020 and from September 2020 to February 2022, and the underweighting of France during this period, seems to contradict the stated purpose of PEPP flexibility, which is to safeguard the monetary policy transmission mechanism. As the country with the lowest interest rates and presumably the least fiscal risk, Germany should have been the last to be overweighted. The ECB did not provide any justification for Germany's overweight, while some other countries were underweighted or purchased broadly in line with their capital-key shares. Insufficient transparency prevented the general public from understanding these PEPP flexibility practices.

[22] During the reinvestment period of April 2022 to December 2024, Germany became underweighted relative to its capital key. France remained underweighted until December 2023 at broadly the same level as in March 2023, while in 2024 the country oscillated between being underweighted and overweighted.

Figure 3: Deviation of PEPP net purchases and cumulated stocks from the capital key (percentage points), March 2020–March 2022



Source: Bruegel based on European Central Bank data on asset purchases (https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html) and capital key (https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200130_2~59d6ffffe1.en.html). Note: we report values for the March 2020 – March 2022 period when net PEPP purchases were made.

Table 3: PEPP flexibility by March 2022

Member State	(1) Capital key among the first 19 euro MS (%)	(2) Actual cumulative net PEPP purchases (EUR millions)	(3) Share in actual net purchases	(4)=(3)-(1) Excess purchase over the capital key (percentage points)	(5) Capital key-implied cumulative net PEPP purchases (EUR millions)	(6)=(2)-(5) Flexibility (EUR millions)	(7)=(6)/(5) =(4)/(1) Flexibility (percent)
Italy	17.0%	281,026	18.5%	1.5%	258,178	22,848	8.8%
Spain	11.9%	189,663	12.5%	0.6%	181,221	8,442	4.7%
Germany	26.4%	408,942	26.9%	0.5%	400,622	8,320	2.1%
Belgium	3.6%	56,799	3.7%	0.1%	55,367	1,432	2.6%
Greece	2.5%	38,503	2.5%	0.1%	37,591	912	2.4%
Finland	1.8%	28,182	1.9%	0.0%	27,915	267	1.0%
Ireland	1.7%	25,531	1.7%	0.0%	25,735	-204	-0.8%
Austria	2.9%	43,979	2.9%	0.0%	44,481	-502	-1.1%
Cyprus	0.2%	2,634	0.2%	0.0%	3,270	-636	-19.5%
Slovenia	0.5%	6,499	0.4%	-0.1%	7,318	-819	-11.2%
Portugal	2.3%	34,744	2.3%	-0.1%	35,569	-825	-2.3%
Malta	0.1%	609	0.0%	-0.1%	1,594	-985	-61.8%
Luxembourg	0.3%	1,834	0.1%	-0.2%	5,006	-3,172	-63.4%
Netherlands	5.9%	85,173	5.6%	-0.3%	89,062	-3,889	-4.4%
Estonia	0.3%	256	0.0%	-0.3%	4,281	-4,025	-94.0%
Latvia	0.4%	1,886	0.1%	-0.3%	5,922	-4,036	-68.2%
Lithuania	0.6%	3,215	0.2%	-0.4%	8,796	-5,581	-63.4%
France	20.4%	302,286	19.9%	-0.5%	310,393	-8,107	-2.6%
Slovakia	1.1%	7,964	0.5%	-0.6%	17,404	-9,440	-54.2%
total	**100.0%**	**1,519,725**	**100.0%**	**0.0%**	**1,519,725**	**0**	**0.0%**

Source: Bruegel based on European Central Bank data on asset purchases (https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html) and capital key (https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200130_2~59d6ffffe1.en.html). Note: the euro area had 19 members during the net purchase period of the PEPP and thus only these countries are included in the table. Countries are ordered according to data column (4). We consider March 2022 values because net PEPP asset purchases ended that month.

4.3.4. Market views

Reports from selected banks welcomed the launch of PEPP as a powerful tool to counter the adverse economic and financial effects of the COVID-19 pandemic (ING, 2020a and 2020b; Nordea, 2020; KBC, 2020; BNP Paribas, 2021). Some specific design features were also assessed positively, most notably the absence of issuer limits for PEPP purchases, which was particularly important for countries where Public Sector Purchase Programme (PSPP) holdings were already close to the 33% self-imposed ceiling (ING, 2020; Nordea, 2020). The decision to make short-term public securities (with maturities from three months onwards) eligible for PEPP purchases was also viewed favourably.

Assessments of PEPP flexibility were more nuanced. While BNP Paribas (2021) and ING (2020a, 2020b) generally expressed positive views, both ING (2020b) and Nordea (2020) raised concerns about limited transparency, given that the ECB published only aggregate purchase volumes without breakdowns by asset class or country, making it difficult to monitor the use of flexibility. KBC (2020) also cautioned that deviations from the capital key in favour of specific countries could resemble monetary financing, without the ECB acknowledging this explicitly.

4.4. The Transmission Protection Instrument – TPI (since 2022)

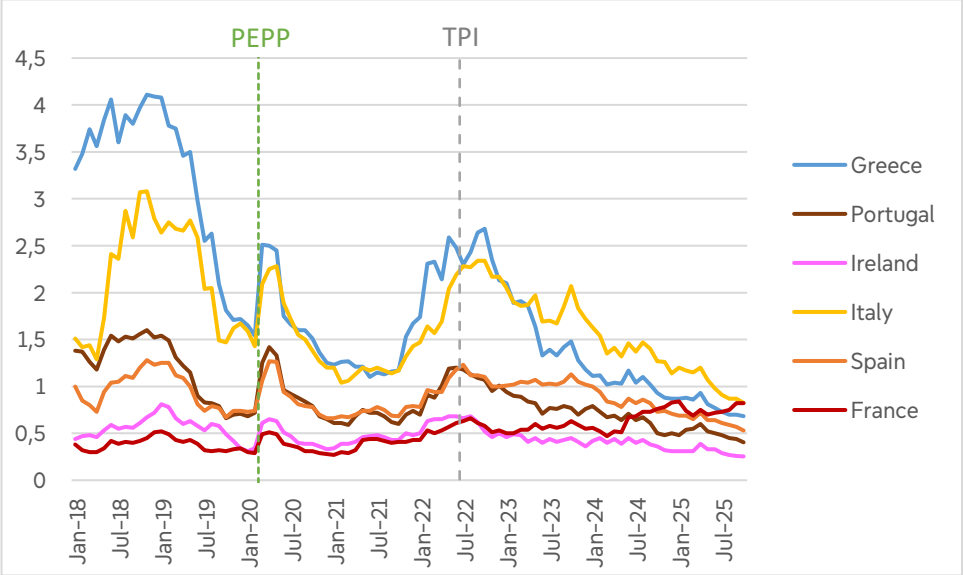
4.4.1. Market developments leading to the launch of the TPI

While the persistence of inflation below the ECB's 2% benchmark was the main concern from the euro crisis of the early 2010s until the pandemic, inflationary pressures began to increase from mid-2021. By mid-2022, inflation had climbed to 10%. As expectations of interest rate hikes strengthened in the first half of 2022, longer-term yields started to rise (Figure 4). The increase was disproportionately higher in some fiscally more vulnerable countries, such as Italy and Spain, than in fiscally stronger countries, such as Germany – a phenomenon often described as 'fragmentation' when such a differentiated impact is not driven by fundamentals[23]. The OMT could not be used to address this situation because it is conditional on an ESM programme, yet the fundamentals of the fiscally more vulnerable countries did not justify financial assistance, and fragmentation had not reached a level that would have made such a programme unavoidable[24]. Calls for the ECB to introduce an anti-fragmentation instrument were mounting (see, for example, Sapir, 2022; and Claeys *et al*, 2022).

[23] The ECB does not have a single definition of market fragmentation, and the term is used differently across various segments of the financial system. For credit spreads, the ECB's 2022 Financial Stability Review provided the following overview of fragmentation: "*As long as market functioning is orderly, credit spreads reflect macroeconomic fundamentals and risks. However, history has shown that spread-widening dynamics can become self-reinforcing. In the euro area, such adverse market dynamics have often been termed 'fragmentation'. This is often associated with impaired market liquidity conditions, ultimately resulting in impaired market functioning. In such conditions spread differences may start to diverge from fundamentals. However, differences in spreads alone do not necessarily point to fragmentation … In integrated and efficient markets, risk premia on similar assets, such as sovereign debt, tend to co-move to the extent that such movements are driven by common, systematic risk factors. By contrast, when markets are more fragmented, differences in risk premia can emerge beyond those that can be explained by an asset's fundamentals and some market segments displaying divergent dynamics.*" Quoted from Nander de Vette and Benjamin Mosk, 'Euro area spread divergence, risk premia and financial stability', Financial Stability Review, November 2022, https://www.ecb.europa.eu/press/financial-stability-publications/fsr/focus/2022/html/ecb.fsrbox202211_01~aa858bcbea.en.html.

[24] The political unpopularity of borrowing from the ESM is underscored by the failure of the ESM's 2020-2022 'Pandemic Crisis Support' instrument, a credit line of up to 2% of GDP at very low interest rates, with the sole requirement that funds be used for public health related costs (https://www.esm.europa.eu/sites/default/files/migration_files/20200508-pcs-term-sheet-final.pdf). No country requested the use of this instrument.

Figure 4: Government bond yield spreads relative to Germany, January 2018 – October 2025



Source: Eurostat's "EMU convergence criterion series - monthly data [irt_lt_mcby_m]" dataset for yields, ECB for the announcement dates of PEPP and TPI.

4.4.2. TPI decision and its four main criteria

At an *ad-hoc* (not previously scheduled) meeting on 15 June 2022, the ECB Governing Council called for acceleration of "*the completion of the design of a new anti-fragmentation instrument for consideration by the Governing Council*"[25]. On 21 July 2022, the Governing Council decided on the Transmission Protection Instrument (TPI), designed "*to counter unwarranted, disorderly market dynamics*" through "*purchases of securities issued in jurisdictions experiencing a deterioration in financing conditions not warranted by country-specific fundamentals*"[26]. The goal was "*to support the effective transmission of monetary policy*", thereby helping to achieve the ECB's primary objective of price stability.

Since market discipline is a crucial component of fiscal discipline, the ECB did not aim to prevent spreads from widening altogether, but rather to contain increases in spreads when they were not caused by macroeconomic fundamentals. The ECB also sought to eliminate the risk associated with purchasing the government bonds of insolvent countries. Therefore, the ECB established four main TPI eligibility criteria:

"*(1) compliance with the EU fiscal framework: not being subject to an excessive deficit procedure (EDP), or not being assessed as having failed to take effective action in response to an EU Council recommendation under Article 126(7) of the Treaty on the Functioning of the European Union (TFEU);*

(2) absence of severe macroeconomic imbalances: not being subject to an excessive imbalance procedure (EIP) or not being assessed as having failed to take the recommended corrective action related to an EU Council recommendation under Article 121(4) TFEU;

[25] ECB press release of 15 June 2022, 'Statement after the ad hoc meeting of the ECB Governing Council', https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220615~2aa3900e0a.en.html.

[26] ECB press release of 21 July 2022, 'The Transmission Protection Instrument', https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220721~973e6e7273.en.html.

(3) fiscal sustainability: in ascertaining that the trajectory of public debt is sustainable, the Governing Council will take into account, where available, the debt sustainability analyses by the European Commission, the European Stability Mechanism, the International Monetary Fund and other institutions, together with the ECB's internal analysis;

(4) sound and sustainable macroeconomic policies: complying with the commitments submitted in the recovery and resilience plans for the Recovery and Resilience Facility and with the European Commission's country-specific recommendations in the fiscal sphere under the European Semester."

4.4.3. Our assessment

In our assessment, these criteria are clear. There is no ambiguity in criteria (1), (2) and (4), which are decided by the Council on the basis of assessments and proposals from the European Commission[27, 28]. Such decisions are made infrequently, which would not pose a problem for the implementation of TPI, because the ECB can consider a decision valid (e.g. a country complies with EU fiscal rules according to the Council) until it is revised by the Council. Delegating these assessment decisions to the Council is appropriate: it provides political backing for the TPI, creates incentives for EU countries to comply with these rules, and shields the ECB from potential accusations that it is supporting a country that is not compliant with the EU's fiscal and macroeconomic imbalance rules. At the same time, the requirements under criteria (1), (2) and (4) may create incentives for both the European Commission and the Council to lean toward more favourable assessments, in order to reduce the risk of a country being deemed ineligible for the TPI.

Criterion (3) is also well defined, as the debt sustainability methods of the listed institutions (including the ECB itself) are publicly available, and these institutions publish their results regularly. By setting this criterion, the ECB protects itself from potential accusations that it is supporting a country with an unsustainable public debt position. The relatively infrequent (typically annual) debt-sustainability assessments are not a constraint on the implementation of the TPI. This is partly because the key determinants of debt sustainability, such as the government's primary balance and the country's long-term growth outlook, do not change rapidly, and partly because the ECB has in-house debt-sustainability expertise. The ECB can update its internal models very quickly should any fundamental data change and a prompt assessment be required. Nevertheless, as Darvas and Zettelmeyer (2023) argued, this condition is either redundant (because debt sustainability is a necessary condition for compliance with the proposed framework under criterion (1)), or there should be a presumption that the ECB will follow the Council and Commission when deciding on debt sustainability.

However, while the four specific criteria are rather clear in our view, they may not always be required, as the ECB's statement says: "*These criteria will be an input into the Governing Council's decision-*

[27] A small degree of ambiguity may arise in the assessment of compliance with European Semester fiscal recommendations, because the Commission evaluates compliance on a five-level scale: full implementation, substantial progress, some progress, limited progress, and no progress. Whether 'substantial progress' or 'some progress' qualifies as compliance for the activation of the TPI remains an open question. However, we consider this ambiguity to be of limited relevance, given that for countries under an excessive deficit procedure (EDP), the main country-specific recommendations are essentially the same as the EDP requirements, and compliance with the EDP is already covered by criterion (1). For non-EDP countries, the main fiscal recommendation is similarly to follow the approved net expenditure growth path of the fiscal framework. In addition, countries often receive recommendations concerning the tax system, defence spending, the sustainability of age-related spending, and the cost-effectiveness of public expenditures. Nevertheless, the dominant recommendation relates to the fiscal stance embedded in the net expenditure growth path, which coincides with criterion (1).

[28] The Recovery and Resilience Facility will expire in 2026. The criterion requiring compliance with the national recovery plan commitments could be removed after this date.

making and will be dynamically adjusted to the unfolding risks and conditions to be addressed." The expression "*will be dynamically adjusted*" – not even "*could be*" – suggests that these criteria are not necessary and might be changed. The ECB statement did not provide any clarity on how or to what extent this might be done.

On the other hand, the criteria are not sufficient either. The ECB statement also notes: "*A decision by the Governing Council to activate the TPI will be based on a comprehensive assessment of market and transmission indicators, an evaluation of the eligibility criteria and a judgement that the activation of purchases under the TPI is proportionate to the achievement of the ECB's primary objective.*" Thus, even if the four criteria are all met and the increase in spreads is not fully justified by macroeconomic fundamentals, the ECB might still decide not to activate the TPI.

To put it differently, while the four main criteria provide fairly clear guidance on the conditions that may be required for the activation of the TPI, the Governing Council has retained the right to override these criteria and make a discretionary decision on activation or non-activation. We believe this reflects an appropriate balance between rules and discretion. The four criteria offer clear guidance on what would be needed for a country to benefit from the instrument, and even if some of the criteria were overridden in a crisis, it is unlikely that the ECB would disregard all of them.

Providing a more explicit rule for the activation of the TPI would be unwise. While one could imagine a mechanical rule determining whether the four main criteria are met, assessing whether a spread increase is out of line with fundamentals, and whether – and to what extent – ECB intervention would improve monetary transmission and contribute to the achievement of the ECB's price stability objective, is not a simple yes-or-no question. Addressing such issues requires a comprehensive assessment and judgment, which necessarily involves a significant degree of discretion.

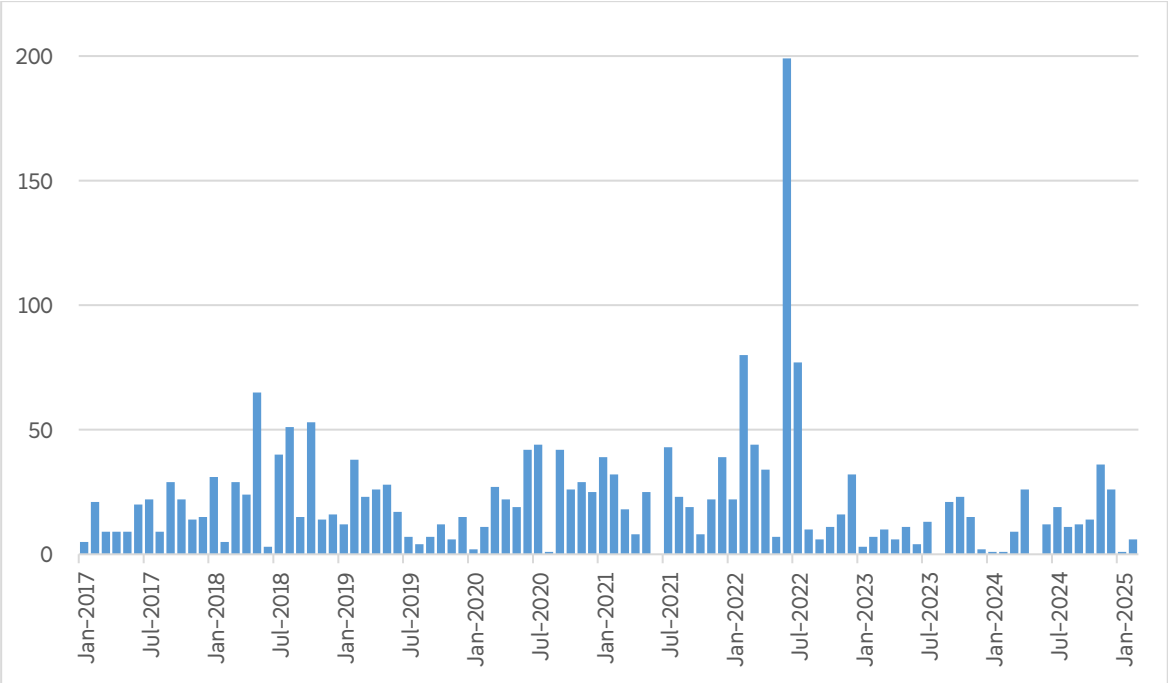
Does this ambiguity about TPI activation, or the ECB's discretionary power over it, undermine the effectiveness of the TPI? Early evidence suggests it did not:

- The analysis by Darvas *et al* (2025) demonstrated that the unexpected 15 June 2022 ECB announcement had a statistically significant impact in terms of lowering the riskiness of euro-area sovereigns, and the formal adoption of the TPI on 22 July 2022 also had measurable effects.
- Government bond yield spreads started to decline from the summer of 2022 (Figure 4), even though ECB interest rate increases continued until September 2023.
- Mentions of 'market fragmentation' and related expressions in press articles about the euro area spiked in June 2022 but receded thereafter (Figure 5), suggesting that the TPI announcement effectively reduced fragmentation risks in the euro area, even without any actual use of the instrument.

We also assess positively the ECB's aim to preserve market discipline. The statement emphasised that TPI interventions would occur only when increases in spreads are "*not warranted by country-specific fundamentals*". Thus, the ECB does not aim to eliminate spreads, but merely to reduce them when they deviate from fundamentals. The fact that the ECB has not made any TPI purchases, despite occasionally sizeable spreads, shows that it has kept its actions consistent with its objective of maintaining market discipline.

Nonetheless, a significant problem is that once the TPI is activated, it is unclear when it would be discontinued. The ECB statement only notes that "*Purchases would be terminated either upon a durable improvement in transmission, or based on an assessment that persistent tensions are due to country fundamentals.*" A potentially lasting use of the TPI would blur the line between monetary and fiscal policies.

Figure 5: Press mentions of 'market fragmentation' and related terms in articles and news reports about the euro area, January 2017 – February 2025



Source: Bruegel based on Factiva. Note: we searched for ("market fragmentation" OR "financial fragmentation" OR "fragmentation of markets" OR "fragmentation in the euro area" OR "fragmented markets" OR "transmission fragmentation" OR ("sovereign spread*" OR "bond spread*" OR "spreads widen*")) AND (euro OR "euro area" OR eurozone OR EU OR "euro area countries"). We searched newspapers considered tier1 and tier2 (as defined by the Bruegel communications team) and published in English language, and articles on economic news and that tagged as being about region Europe.

4.4.4. Market views

The views of selected market analysts were rather mixed in 2022, shortly after the launch of the TPI. Nordea (2022a) was sceptical about whether the existence of the TPI would be sufficient to calm Italian bond spreads and expected the spreads to widen further, while Nordea (2022b) even predicted that the ECB would be forced to activate the TPI. BNP Paribas (2022) was also sceptical about the TPI and expressed concern that it could increase the volatility of interest rates and sovereign spreads while investors tried to understand the ECB's reaction function.

Both Nordea (2022a and 2022b) and BNP Paribas (2022) shared the view that the activation criteria were vague. ING (2022a and 2022b) also highlighted the lack of detail about the TPI and emphasised that the ECB maintained a high degree of discretion in applying the criteria, which had not been spelled out in detail. However, ING's view was more neutral or even cautiously positive: they argued that the TPI could provide some stability to sovereign debt spreads, which in turn would support stability in credit spreads.

At the other end of the spectrum, KBC (2022) expressed confidence that the TPI, together with the PEPP flexibility, would effectively contain spreads.

These views were expressed shortly after the launch of the TPI, some on the day of the announcement, others just a few weeks later. The range of opinions suggests that the ECB was not fully effective in clearly communicating the modalities of the TPI. While the pessimistic market commentaries did not materialise – spread volatility did not increase, and the ECB was not forced to activate the TPI – the lesson is that clearer and more effective communication will be needed in the future.

5. CONCLUDING REMARKS

The ECB's need to resort to market-stabilisation instruments arose from exceptional shocks interacting with the structural features of the euro area, in which monetary policy is centralised but fiscal policy remains largely national, and banking systems are historically intertwined with domestic sovereigns. These features left the euro area vulnerable to self-fulfilling market stress and fragmentation episodes beyond what could be justified by macroeconomic fundamentals, thereby hampering monetary policy transmission and the achievement of the ECB's primary price stability mandate. This study, while not offering an overall evaluation, has examined how different stabilisation tools developed since 2010 onwards struck a balance between rules and discretion, and whether the degree of ambiguity in their activation criteria may have influenced their effectiveness.

We conclude with three main takeaways.

First, rules and discretion must be balanced differently for balance-sheet tools, compared to traditional instruments, such as interest rates. While interest-rate policy might be guided by a well-established rule, the lack of a unifying theory that can be applied to derive rules for balance-sheet measures, as well as their uncertain and heterogeneous effects, necessitates greater scope for discretion. Attempts to create fully algebraic rules for asset purchases in general, and for sovereign bond market stabilisation instruments in particular, would be misguided. Instead, the ECB's evolving approach reflects a pragmatic 'composite view' in which clear medium-term objectives coexist with constrained discretion. This balance is essential to preserve effectiveness while avoiding the pitfalls of both rigid rules and unfettered discretion.

Second, clarity about the conditionality of market-stabilisation instruments is crucial for credibility. The discretionary nature of these tools does not imply that they cannot be transparent and clearly defined. The comparison of SMP, OMT, PEPP flexibility and TPI illustrates that unclear, informal and non-transparent conditionality can undermine market confidence and create moral hazard risks. SMP's lack of defined criteria limited its long-term impact, whereas OMT's strict link to ESM conditionality anchored expectations despite the tool never being activated. This remains true even if Greek debt troubles and baking/sovereign interdependence hindered the success of the SMP, while addressing these concerns helped OMT. Yet the OMT's strong conditionality on an ESM programme will limit its potential use, which might have been a reason for the development of PEPP flexibility and the TPI. The TPI's four criteria gave structure and political and legal backing, even if they are not strictly necessary or sufficient. Clear frameworks, combined with the option to exercise judgement, strengthen the credibility and effectiveness of interventions. PEPP flexibility was the least transparent instrument: the lack of any communication about the observed deviations from the capital key prevented market participants and the public from understanding the principles and predictability of these practices, while the absence of sufficiently detailed published data hindered both real-time and *ex-post* assessments of the instrument.

Third, ambiguity can be unavoidable but requires transparent communication. Some degree of ambiguity, particularly around the activation of market stabilisation tools, can limit moral hazard and incentivise responsible fiscal and structural policies. Yet, the analysis of PEPP flexibility shows that insufficient transparency, such as unexplained country-level deviations, can hinder understanding and potentially undermine the trust in the effectiveness of the instrument. The early experience with the

TPI suggests that well-communicated discretionary tools can be effective without activation. However, lack of clarity about how TPI interventions would be discontinued might give rise to lasting interventions, blurring the line between monetary and fiscal policies.

It is unclear whether the ECB will need again to use market-stabilisation tools, partly because the emergence of sovereign stress unrelated to fundamentals is unpredictable, and partly because interest rate changes have again become the predominant monetary policy tool. In any case, the ECB should preserve its ability to exercise judgement, while improving clarity and transparency to enhance the effectiveness of its instruments and to ensure that ambiguity does not create confusion.

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This paper assesses the European Central Bank's country-specific market-stabilisation instruments (SMP, OMT, PEPP flexibility and TPI) with a focus on the balance between rules and discretion in their design and use. While this study does not aim to provide an overall assessment of these instruments, it examines the clarity of access criteria, the impact of ambiguity in shaping market expectations, and the extent to which deployment of these tools has succeeded in reducing sovereign stress and thereby safeguarding monetary policy transmission.

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