

//ZEW expert brief 20-11 · 13.07.2020

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# **SLIDING DOWN THE SLIPPERY SLOPE? TRENDS IN THE RULES AND COUNTRY ALLOCATIONS OF THE EUROSISTEM'S PSPP AND PEPP**

**Study with support from the Brigitte Strube Foundation**

## EXECUTIVE SUMMARY

Over the last decade, the Eurosystem has become one of the crucial players in the market for euro area government bonds. After first substantive purchases through the Securities Market Programme (SMP) in 2010, the Eurosystem's involvement has reached a new breadth and magnitude with the establishment of the Public Sector Purchase Programme (PSPP) in 2015. On top of this, the ECB Council has set up the Pandemic Emergency Purchase Programme (PEPP) in March 2020 in order to stabilize the euro area economy in the crisis and to contain the rise of sovereign risk premia.

This study analyzes trends in the rules, volumes and country allocations of the two active sovereign purchase programmes, the PSPP and the PEPP. Programme rules and the effective country allocations are of legal and economic relevance. In their PSPP rulings, both the European Court of Justice and the German Federal Constitutional Court have emphasized the importance of initial programme constraints. Both Courts agree that that rules like issuer limits or the orientation of country allocations to the country shares in the ECB capital key are important safeguards against a possible infringement of Art. 123 TFEU with its ban of monetary financing of governments. For the economic assessment, it is of importance to which extent the purchase programmes are of an asymmetric nature and whether the Eurosystem increasingly accepts the role of a strategic creditor who has veto power in debt negotiations.

The comprehensive synopsis of the purchase rules proves that constraints have become laxer over time and over various dimensions. The loosening relates to eligible issuers, minimum credit quality, maturity restrictions, yield restrictions, issue and issuer limits, and the capital key orientation. This trend was already observable until 2019, i.e., well before the Corona-induced economic crisis. However, the relaxation of rules and the capital key orientation has become more radical with PEPP in 2020. Since then, the Eurosystem has, de facto, fully abandoned the issue and issuer limits for both programmes and now accepts the role of a strategic creditor with a blocking minority in future creditor negotiations.

The quantitative analysis focuses on the country allocations relative to the national central banks' shares in the ECB capital key. The initial PSPP rules had formulated a strict capital key orientation without any distinction between stocks and flows. Later, the ECB Council shifted the rule's emphasis stressing flexibility for the flows of purchases giving leeway for temporary deviations. For the PEPP, the ECB has once more confirmed that the capital key, in principle, remains a relevant yardstick for the stocks but has even further emphasized the Eurosystem's freedom to deviate temporarily in its allocation of the flows of net purchases.

The analysis provides evidence for a stable upward trend and a growing distance of PSPP purchases from the capital key for high debt countries like Belgium, France, Italy, and Spain. This divergence has not been a merely temporary phenomenon of flows but clearly describes a stable trend for the resulting stocks. Hence, the ECB's increasing emphasis on the stock dimension of the PSPP's capital key rule has not solved the issue that the PSPP does not fully comply with its own rules. Importantly, this upward trend has already been systematic and significant before the pandemic, as early as at the end of 2018 when the ECB temporarily paused the PSPP purchases. However, the divergence of PSPP stocks

from the capital key has further increased in 2020 and for two countries, Italy and Spain, even to a very large extent.

The analysis includes data for the first three months of the PEPP (March to May 2020) and, thus, can assess first tendencies for the new programme. The expectation that the Eurosystem will embark on compliance arbitrage and exploit the higher flexibility of PEPP to be more compliant with the capital key rule under PSPP is not confirmed. On the contrary, divergence in net purchases from the capital key has increased dramatically for the PSPP since March 2020 with the Italian purchases overshooting the country's capital share by more than 10 percentage points.

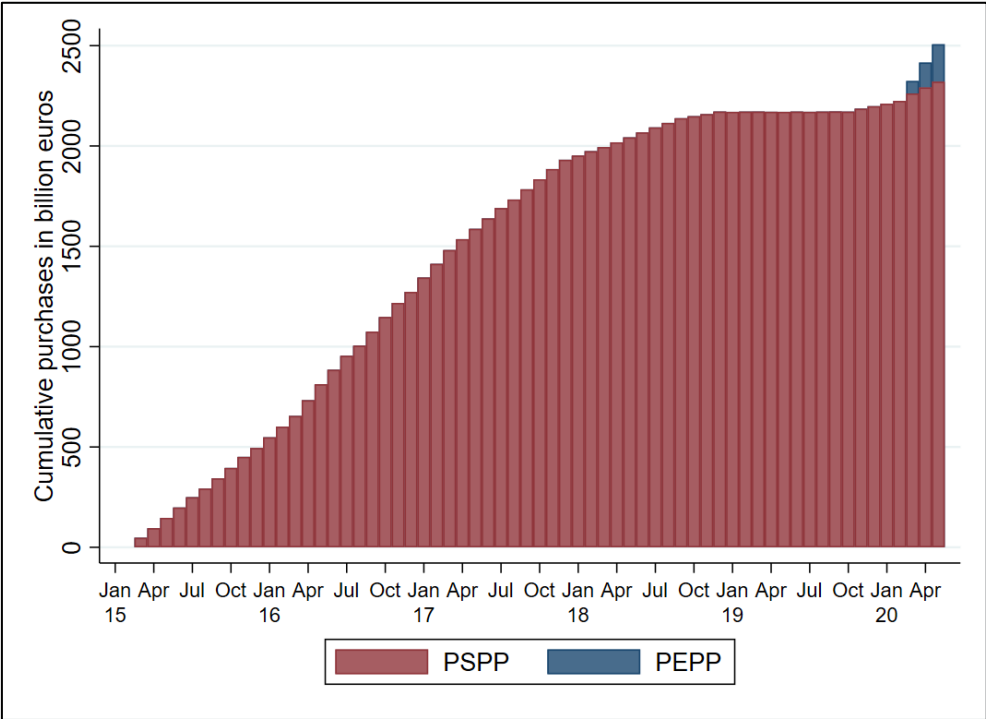
The final part of the empirical analysis puts the Eurosystem's sovereign purchase into relation to country GDP, debt level and government deficits in order to assess their macroeconomic dimension and their relevance for the (indirect) financing of euro area governments. National differences in the importance relative to GDP are huge. In Spain, Italy, and Portugal, total cumulated PSPP and PEPP purchases until May 2020 amounted to more than 20% of GDP 2019, for others it only reached 10% or less. Purchase flows in 2020 are also substantial relative to the very high borrowing requirements in the deepest European post-war recession. For a couple of national governments, the Eurosystem's net purchases in this year can be projected to be of a similar magnitude or even higher than the governments' net borrowing needs. This could be the case for Cyprus, Portugal, Greece, and Austria. For Italy, Lithuania, Belgium and Spain the Eurosystem support comes close to the full size of the deficit projection.

The study concludes that the special and extreme circumstances of the very severe current economic crisis are likely to provide the ECB with a temporarily convincing justification for its flexible use of its two active sovereign purchase programmes. However, once the crisis subsides, central bank interventions in the euro area government bond markets of the current structure and magnitude would be highly problematic in light of the monetary financing prohibition.

# 1. INTRODUCTION

Over the last decade, the Eurosystem has become one of the crucial players in the market for euro area government bonds. Through several programmes (see Box), the ECB and the national central banks of the euro area have bought public sector securities. While purchases already started ten years ago during the unfolding euro area debt crisis with the Securities Market Programme (SMP), central bank involvement in the European markets for government bonds has reached a new breadth and magnitude only with the PSPP, established in 2015. Since March 2020, the PEPP is the second active programme, which has been set up to counter the economic consequences of the Covid-19 pandemic. Not only have the magnitudes of government bond purchases increased. Also the initially restrictive rules with respect to purchase limits, issuer groups, credit quality, and maturity range have been continuously loosened, both over the course of the PSPP and, in a more radical way, with the establishment of PEPP.

**Figure 1: Cumulative net purchases of PSPP and PEPP**



Notes: All data on PSPP and PEPP purchases are taken from the ECB website.<sup>1</sup>

By end of May 2020, the Eurosystem’s cumulated net purchases of public sector securities amounted to €2,542 billion<sup>2</sup> (€35 billion SMP<sup>3</sup>, €2,320 billion PSPP and €187 billion PEPP, see also Figure 1 for PSPP and PEPP). The pace of the ongoing further accumulation is high with monthly net purchases currently at around €150 billion. Assuming a constant speed in the coming months, the Eurosystem’s

<sup>1</sup> PSPP purchases: [www.ecb.europa.eu/mopo/implement/omt/html/index.en.html](http://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html)  
 PEPP purchases: <https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html>  
<sup>2</sup> All figures on government bond purchases are taken from the ECB website.  
<sup>3</sup> SMP figure refers to 19 June 2020.

holdings will reach a magnitude of €3,600 billion by the end of this year. This will then amount to 32% of the euro area's GDP in 2020 and 31% of total euro area government debt. Not only the magnitudes of the purchase programmes have been changing but also their rules. While, initially, the ECB Council had defined a battery of constraints, these have been substantially modified and relaxed since then.

**Box: The Eurosystem's public sector purchase programmes**

**SMP:** Central bank purchases started with the **Securities Market Programme (SMP)** established in May 2010 as a crisis instrument in the evolving euro area debt crisis. The holdings of the Eurosystem under the SMP reached a maximum of €218 billion when it was terminated in September 2012. The SMP purchases only included the countries most affected by the debt crisis: Italy, Spain, Greece, Portugal, and Ireland.

**OMT:** Since September 2012, the **Outright Monetary Transaction (OMT)** programme offers support for euro area countries that have an agreement with the European Stability Mechanism (ESM). So far, it has never been activated.

**PSPP:** Since 2015, the ECB and the national central banks have massively increased their purchases under the **Public Sector Purchase Programme (PSPP)**, which is by far the quantitatively most important sub-programme in the ECB's Asset Purchase Programme (APP). The PSPP started in March 2015 and continues until today, with a pause of net purchases between January and October 2019. By the end of May 2020, the cumulated PSPP net purchases of the Eurosystem reached €2,320 billion. The PSPP buys bonds from all euro members with the exception of Greece. Currently, APP net purchases amount to €20 billion per month plus purchases from an additional Corona crisis-related envelope of €120 billion. Effectively, PSPP net purchases currently (average March to May 2020) amount to €32 billion a month.

**PEPP:** With the **Pandemic Emergency Purchase Programme (PEPP)**, the Governing Council has added a second purchase programme that complements the ongoing APP. PEPP is an asset purchase programme of private and public sector securities. Initially, it was set up with a target of €750 billion until the end of 2020, but the ECB Council increased the envelope further in June 2020 to €1,350 billion and extended the horizon for net purchases until at least June 2021. As in the APP, purchases of government bonds are by far the most important item under PEPP. The PEPP buys bonds from all euro members including Greece. By end of May 2020, the Eurosystem PEPP holdings of public sector securities amounted to €187 billion, which is 80% of all PEPP purchases. In April and May 2020, the two first full months of the PEPP, the average monthly net purchases of public securities reached almost €90 billion.

Clearly, these developments raise challenging questions on the intended and unintended consequences of government bond purchases. We contribute to this discussion with a specific focus on trends in the programme rules and the allocation of purchases across countries over time and by comparing the PSPP with (the first months of the) PEPP.

A careful scrutiny of both the rules and the breakdown of purchases across countries is both of economic and legal relevance. Rules like issue and issuer limits, credit standards or the role of the ECB

capital key as a guiding compass were installed as safeguards against accusations that the Eurosystem becomes a crucial or even dominant player for the financing of euro area governments. The extent of capital key orientation signals economically, to which extent the ECB bond purchases serve a symmetric or an asymmetric purpose. By their nature, ECB's traditional interest rate instruments are of a symmetric nature since interest rates cannot differentiate between economies in a currency area with free capital movements. Equally, symmetric government bond purchases would just target the euro area as a whole and tailor purchases in proportion to country size. Any such consistently symmetric use of the purchase programmes offers much less points of criticism. A central bank that operates at the zero lower bound and an interest rate below the target level has good arguments to make use of just another symmetric instrument.

However, disproportionate purchases that systematically over- or underweight certain countries indicate an asymmetric use and would require a particular justification. A continuous trend of both relaxations of rules and growing asymmetries in the country allocations would increasingly face concerns that purchases might not be in full compliance with the ban of monetary financing of governments according to Art. 123 TFEU. Art. 123 TFEU prohibits direct purchases of government debt instruments. None of the ECB programmes implies direct purchases where central banks acquire securities when they are issued on the primary markets. However, secondary market purchases may be qualified as infringing Art. 123 as well if the specific features of purchases suggest a mere circumvention of the ban of direct purchases.

Legal concerns about asymmetric allocations or a relaxation of rules do not only arise from the recent ruling of the German Federal Constitutional Court (FCC).<sup>4</sup> The European Court of Justice (ECJ) itself has stressed the importance of constraining rules and the capital key orientation for its own Art. 123 compliance test. In its PSPP judgment from 11 December 2018 (C-493/17) that answered the FCC's request for a preliminary ruling, the ECJ discusses a possible infringement of Art. 123. In this context, the European Court asks whether the PSPP might reduce the impetus to conduct a sound budgetary policy. Here, the ECJ explicitly acknowledges the argument that the ECB buys bonds "in accordance with the key for the subscription of the ECB's capital" rather than "with other criteria such as, for example, the level of the respective debts of each Member State" (C-493/17, nb. 140). The Court further acknowledges that this safeguard avoids the risk that countries could provoke higher purchases of their debt with increasing public deficits. In its PSPP verdict from 5 May 2020 that contests the compliance of the PSPP with ECB monetary policy competences, the German court did not challenge the ECJ's view on Art. 123, also emphasizing precautions like the capital key orientation or issuer and issue limits that keep PSPP at a still sufficient distance from circumventing the ban on direct purchases. It is thus remarkable, that the ECJ and the German FCC, who are in conflict on the proportionality of purchases, largely seem to agree in their views on a possible Art. 123 infringement and the role of safeguards like the capital key compass.

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<sup>4</sup> In its Judgment of 5 May 2020, the German FCC has ruled that the ECB exceeded its monetary policy competences with its decision on the PSPP. The Court argued that the ECB failed to provide a sufficient proportionality check on possible negative side effects of PSPP. The court emphasized that its PSPP ruling does not concern new measures taken in the context of the coronavirus crisis (Federal Constitutional Court, Press Release No. 32/2020 of 05 May 2020).

We do not assume that any asymmetric use (relative to the capital key) is always and necessarily a deficiency or inconsistent with the ban of monetary financing. It may be justified in an emergency on grounds of monetary policy if, for example, the transmission of monetary policy is not equally smooth in all euro economies. This can be the case with a strongly asymmetric economic shock as it has occurred with the Corona pandemic. The ECB argues<sup>5</sup> that under the conditions of the Corona crisis, the transition of changes in risk-free interest rates to sovereign yields is disturbed and that this hampers the monetary transmission mechanism. The ECB justifies the high flexibility of PEPP explicitly as an instrument against the widening of risk premia.

However, systematic divergence from ECB capital keys already before the crisis or a relative overweight of high debt countries in particular – any such result strengthens concerns that the Eurosystem might increasingly enter the blurred territory of a possible Art. 123 infringement according to the shared criteria of the ECJ and FCC. Moreover, a view that *any* increase in risk premia of highly indebted euro countries must be prevented in the current crisis can be questioned. The Corona shock constitutes a fundamental solvency shock for the particularly affected euro countries. If the ECB prevented any increase in spreads, even if this increase fully reflects the objective deterioration in credit risk, this could be seen as an undue distortion of the market pricing of risk. Such a behavior might entail an implicit monetary policy subsidization of sovereign borrowers with sustainability risks.

Whatever position is the most convincing one in this controversy, the debate needs to be informed of the actual state and trends in the rules and asymmetries for both PSPP and PEPP, which is the contribution of our study.

In the following, we will analyze in a first step trends in the rules of public sector purchases under the PSPP and PEPP. Subsequently, we analyze country allocations of PSPP since its start and of PEPP for its first three months in existence (March to May 2020). Moreover, we compare the magnitudes of aggregate purchases to GDP, national debt levels and the financing requirements in the current year, followed by conclusions on the legal and economic risks of the observable tendencies of both programmes.

## 2. PSPP AND PEPP RULES

Table 1 presents a synopsis of rules for the PSPP as of 2015 (column 1), for the current PSPP rulebook after all amendments to date (column 2), and for the public sector purchases under PEPP (column 3). These rules determine risk sharing between ECB and NCBs, eligibility of securities, creditor status, and allocation rules including the relevance of the ECB capital key.

A characterizing feature of both programmes is the decentralized conduct. The ECB itself is responsible for only 10% of PSPP/PEPP purchases and invests its share exclusively into issues from national jurisdictions and agencies. With 90%, the NCBs do the bulk of transactions, from which they invest 10 percentage points into supranationals. Apart from these supranationals, NCBs buy securities from

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<sup>5</sup> Philip R. Lane: The ECB's Monetary Policy Response to the Pandemic: Liquidity, Stabilisation and Supporting the Recovery, Speech 24 June 2020; Philip R. Lane: The Market Stabilisation Role of the Pandemic Emergency Purchase Programme, the ECB Blog, 22 June 2020.

issuers of their own jurisdiction, a principle that shall limit risk sharing across NCBs (see note 4 of Table 1).

A couple of PSPP/PEPP rules are of relevance for the conduct of possible future orderly debt restructurings that can result from negotiations with bondholders. For both programmes, the Eurosystem accepts a “pari passu” treatment, i.e., it excludes any privileged treatment compared to private investors in case of a debt restructuring. This rule is set to avoid the destabilizing market expectation that the holdings remaining with private investors will bear the full burden of any future haircut. The issue limits of the PSPP correspond to the existing Collective Action Clauses (CAC) and their majority rules for a collectively agreed debt restructuring. Since the standardized CACs of euro area governmental issuance define a blocking minority of 33%<sup>6</sup>, this threshold, under PSPP, has been the upper limit of the aggregate Eurosystem holdings. The rationale is that the Eurosystem wants to avoid a decisive role in any debt restructuring, as this situation would further emphasize the Eurosystem’s role as a strategic creditor and further increase the concerns of an Art. 123 infringement. The Governing Council itself that has given this motivation and has emphasized the importance of this rule (explaining that the issue limit wants to “avoid obstructing orderly debt restructurings”, ECB Decision 2020/188 (recital 7)).

Table 1 demonstrates that, throughout all eligibility and portfolio rules, there is a tendency to loosen the initial PSPP constraints. From the Governing Council’s perspective, this loosening is a technical necessity, as, with the increasing purchase volumes, the Eurosystem would otherwise run out of eligible securities. However, the relaxation or full suspension of rules comes at the cost of shifting the Eurosystem further into the position of a crucial and strategic creditor for euro area governments. At the same time, legal risks are likely to increase as more and more precautions that have been stressed in the ECJ’s PSPP verdict are being abandoned.

The list of relaxations is long. It includes the rules for eligible issuers, minimum credit quality, maturity restrictions, yield restrictions, the issue and issuer limits, and the binding character of the ECB capital key for country allocations alike. While the initial PSPP only invested in securities of national jurisdictions, purchases under PSPP and PEPP now encompass also regional and local jurisdictions. While the PSPP until today excludes Greek bonds due to their limited credit quality, the PEPP rules include an explicit waiver for the Hellenic Republic. Initial PSPP rules prohibited the purchases of bonds with maturities below two years while PEPP allows purchases almost until maturity (i.e., 70 days before). Central bank investments into bonds with a negative yield to maturity have been possible from the start of PSPP but, initially, not below the rate of the deposit facility. Today, both PSPP and PEPP allow negative yields to maturity further below. Issuer and issue limits have been lifted over the course of the PSPP programme and are fully suspended for the PEPP. The suspension of issue and issuer limits for the PEPP de facto also renders issue and issuer limits for PSPP irrelevant since the Eurosystem’s aggregate holdings from both programmes are now allowed to increase above the PSPP limits. Hence, the Eurosystem has de facto accepted to become a strategic investor with a blocking minority in any possible future debt restructuring negotiation.

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<sup>6</sup> Economic and Financial Committee: EFC Sub-Committee on EU Sovereign Debt Markets Collective Action Clause Explanatory Note, 26 July 2011. [https://europa.eu/efc/efc-sub-committee-eu-sovereign-debt-markets/collective-action-clauses-euro-area/euro-area-model-cac\\_en](https://europa.eu/efc/efc-sub-committee-eu-sovereign-debt-markets/collective-action-clauses-euro-area/euro-area-model-cac_en)



Equally, the Governing Council has loosened the rules on the binding orientation of country allocations to the ECB capital key. The first PSPP ECB decision from March 2015 stipulates that the distribution of purchases across jurisdictions shall be according to the NCB’s subscriptions to the ECB’s capital. The first version of the rule did not make any explicit distinction between flows and stocks. This initially strong statement signaled a continuous relevance of the capital key in any phase of the programme’s operation. Today, the ECB only describes the capital key orientation of PSPP as referring to the stock of security holdings, opening leeway for temporary divergence in the flow of net purchases. The PEPP goes even further. It still upholds the principle importance of the capital key to guide the distribution “on a stock basis”. However, it explicitly states that purchase flows may fluctuate.

It is difficult to understand to which extent the new PEPP formulation still attributes any relevance of the capital key at all. The wording seems to suggest that, in the long run or towards the (unknown) end of PEPP, the distribution of stocks should converge to NCBs’ shares in the ECB’s capital, but is irrelevant until then.

The 2020 ECB Decision gives the following explanation (ECB Decision 2020/440 of 24 March 2020, recital (6)): “A flexible approach ... is nonetheless essential to prevent current dislocations in the aggregate euro area sovereign yield curve from being translated into further distortions in the euro area risk-free yield curve.” Although this official formulation appears somehow cryptic, it seems to suggest that the divergence of PEPP’s country allocations from the capital key is justified by fighting sovereign risk spreads that appear distorted. ECB chief economist Philip Lane has confirmed that the ECB wants to prevent risk premia from diverging from their fundamentally justified level in the situation of the acute crisis.<sup>7</sup> So far, however, the ECB has not made this risk premia targeting explicit nor has it made specific how it quantifies fundamentally justified risk spreads for countries with high and currently quickly increasing public debt levels that objectively point to a severe deterioration in fundamental creditworthiness.

**Table 1: Synopsis rules PSPP 2015, PSPP 2020, PEPP**

|  | <b>PSPP – initial rules<br/>March 2015<sup>1</sup></b>   | <b>PSPP – current rules<br/>June 2020<sup>2</sup></b>  | <b>PEPP<sup>3</sup></b>  |
|--|--|--|--|
| <b>Start</b>                                 | March 2015 (paused between January and October 2019)   |  | March 2020   |
| <b>Credit quality minimum requirements</b>   | Minimum Credit Quality Step 3 in Eurosystem’s harmonized rating scale, excluding Greece and Cyprus | Minimum Credit Quality Step 3 in Eurosystem’s harmonized rating scale, excluding Greece (Cyprus eligible due to rating increase) | Waver for Hellenic Republic whose securities are eligible under PEPP although the country continues not to fulfill Credit Quality Step 3 |
| <b>Risk sharing ECB and NCBs<sup>4</sup></b> | 20% of purchases with risk sharing   | 20% of purchases with risk sharing   | 20% of purchases with risk sharing   |

<sup>7</sup> Philip R. Lane: The Market Stabilisation Role of the Pandemic Emergency Purchase Programme, the ECB Blog, 22 June 2020. See also: Mark Schrörs: Dauerhafte Staatsfinanzierung gehört nicht zur Rolle der EZB, Interview mit Volker Wieland, Börsenzeitung Nr. 104 vom 3. Juni 2020.

|   | <b>PSPP – initial rules<br/>March 2015<sup>1</sup></b>   | <b>PSPP – current rules<br/>June 2020<sup>2</sup></b>   | <b>PEPP<sup>3</sup></b>   |
|---|--|---|---|
| <b>Treatment of Eurosystem relative to private investors</b>  | Same treatment ('pari passu')  | Same treatment ('pari passu')   | Same treatment ('pari passu')   |
| <b>Issuer groups</b>  | Central government, international organizations, multilateral development banks  | Central, regional and local government, continuously increasing list of eligible agencies, international organizations, development banks                                       | Same as PSPP 2020.  |
| <b>Issue share limit: maximum amount per ISIN</b>   | 25%  | International organizations/multilateral development banks: 50% per issue<br><br>National/regional/local/agency: 33% per issue (25% for non-standard collective action clauses) | No limits   |
| <b>Issuer share limit: aggregate limit for issues of one issuer, consolidated across all Eurosystem central banks</b> | 33%  | International organizations/multilateral development banks: 50%<br><br>National/regional/local/agency: 33%  | No limits   |
| <b>Remaining maturity</b>   | 2 years to 30 years  | 1 year to 30 years  | 70 days to 30 years   |
| <b>Negative yield below rate of deposit facility</b>  | Not permitted.   | Permitted "to the extent necessary"   | Permitted "to the extent necessary"   |
| <b>Allocation supnationals/nationals</b>  | 12/88  | 10/90   | 10/90   |
| <b>Role of ECB capital key</b>  | Distribution of purchases across jurisdictions 'shall be' according to capital key. No distinction between flows and stocks. | Distribution of purchases across jurisdictions guided, on a stock basis, by capital key.  | Distribution, on a stock basis, guided by capital key. Purchases "allowing for fluctuation in the distribution of purchases flows ... among jurisdictions." |

<sup>1</sup>ECB Decision 2015/774 of 4 March 2015. <sup>2</sup>ECB Decision 2020/188 of 3 February 2020. <sup>3</sup>ECB Decision 2020/440 of 24 March 2020. <sup>4</sup>Risk sharing results from supranational bonds (amounting initially to 12% of total PSPP purchases and 10% since March 2016) and national bonds purchased by the ECB (initially 8% of total PSPP purchases and 10% since March 2016). The risks of securities from national, regional and local jurisdictions bought by NCBs (80% of total PSPP) are not shared.

In the following, we focus our analysis on the country distribution of PSPP and PEPP purchases. The analysis clarifies to which extent, in the course of the PSPP and for the first months of PEPP, the ECB capital key has been an effective orientation. Corresponding to the ECB's shifting emphasis from a

comprehensive guiding role of the capital key to a stock orientation, we provide data both for the flows and the stocks.

## 3. EFFECTIVE NATIONAL ALLOCATIONS

### 3.1. PSPP

In a first step, we calculate how the PSPP's breakdown across euro countries compares to the capital key. We do so for both the flows (monthly purchases) and the stocks (cumulated net purchases at end of year).

Greece is non-eligible for the PSPP. Hence, we adjust the capital key analysis by focusing on the remaining 18 euro states. In the following, our reference capital share is each euro area NCB's share in the total capital share of these 18 euro countries.<sup>8</sup> According to the regular five-year adjustment, there has been a change in the capital key that took effect with the year 2019 with some substantive changes like a downward correction of the Italian and Spanish shares and an upward correction of the German one. When calculating country shares in total sovereign purchases, we exclude purchases of supranational securities (e.g., European Union, European Investment Bank, European Stability Mechanism). Hence, 100% represent the purchases of national jurisdictions' and agencies' securities.

For this country analysis, we pick exemplary graphs for two countries. Graphs for all countries are provided in the Appendix. Figures 2 (a) and (b) show the development of PSPP purchases of Italian government bonds for the period from March 2015 to December 2018 and the period from November 2019 to May 2020, respectively. Between January and October 2019, the programme was not active. Figures 2 (c) and (d) show the same for Ireland.

Each graph depicts measures for the country shares for flows of net purchases and the total resulting stocks of Eurosystem holdings at a given point in time. For the flows, we show both the share in monthly purchases (red line) and the share in annual purchases (blue line). The annual averages are informative for the medium-term trends in the purchasing shares, whereas monthly shares are more volatile. The dashed green line represents a country's share in the stock of PSPP holdings at a certain point in time. Finally, the black and time-invariant line represents the ECB capital key for the specific country and the respective period. That means that graphs (a) and (c) show the capital key in place before 2019, and graphs (b) and (d) show the capital key in place after the regular 2019 adjustment.

In the years from 2015 to 2017, Italy's PSPP share in monthly and yearly purchases significantly increased with a peak divergence from its capital key mid-2017, when the share in monthly net purchases exceeded the capital key by more than two percentage points. In 2018, there were some fluctuations around the capital key, while the yearly share of purchases was below but close to the capital key. Even though the share of purchases of Italian government bonds was thus reduced in 2018, this was not enough to significantly reduce the deviation from the capital key on a stock basis before the programme was temporarily discontinued at the end of 2018. The first months of 2020 have witnessed a dramatic overshooting in the Italian PSPP flows relative to the capital key with a share of

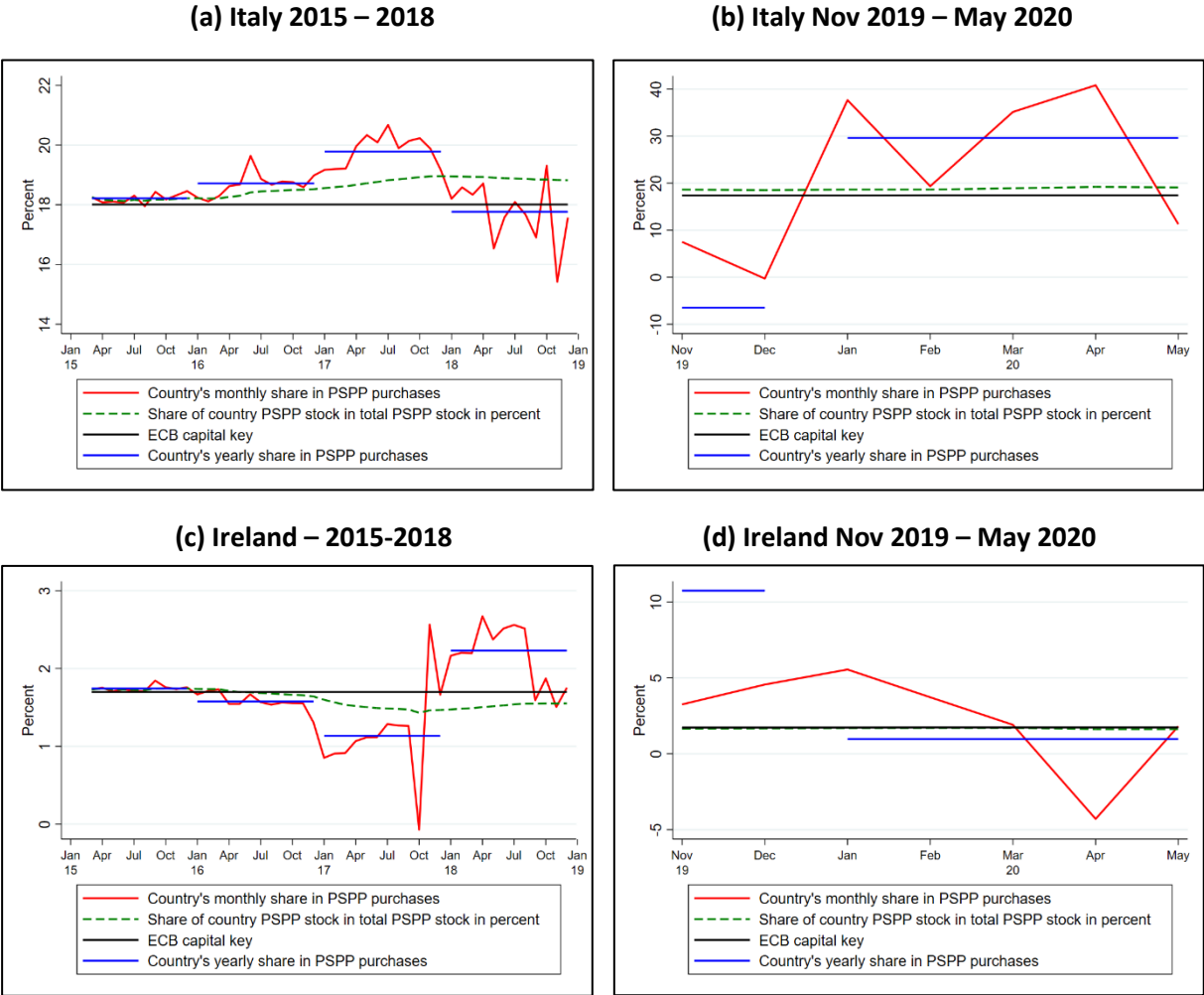
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<sup>8</sup> Cyprus was non-eligible in the beginning but became eligible after a rating-upgrade in September 2018: <https://greece.greekreporter.com/2018/09/28/ecb-begins-cyprus-bonds-purchases-following-investment-grade-upgrade/>

29.6% in net PSPP purchases as compared to the adjusted Italian capital share of 17.4% (Italy’s capital share relative to the total capital share of the 18 euro area NCBs, without the National Bank of Greece).

In Ireland, the dynamics were opposite. Over the years 2015 to 2017, the country’s share in monthly purchases decreased with the capital key being higher than the PSPP purchases. This development reversed in 2018, when the share in monthly purchases increased significantly and surpassed the capital key. In Ireland in the first months of 2020, the purchases have decreased again to a level below the capital key.

**Figure 2: National shares PSPP**



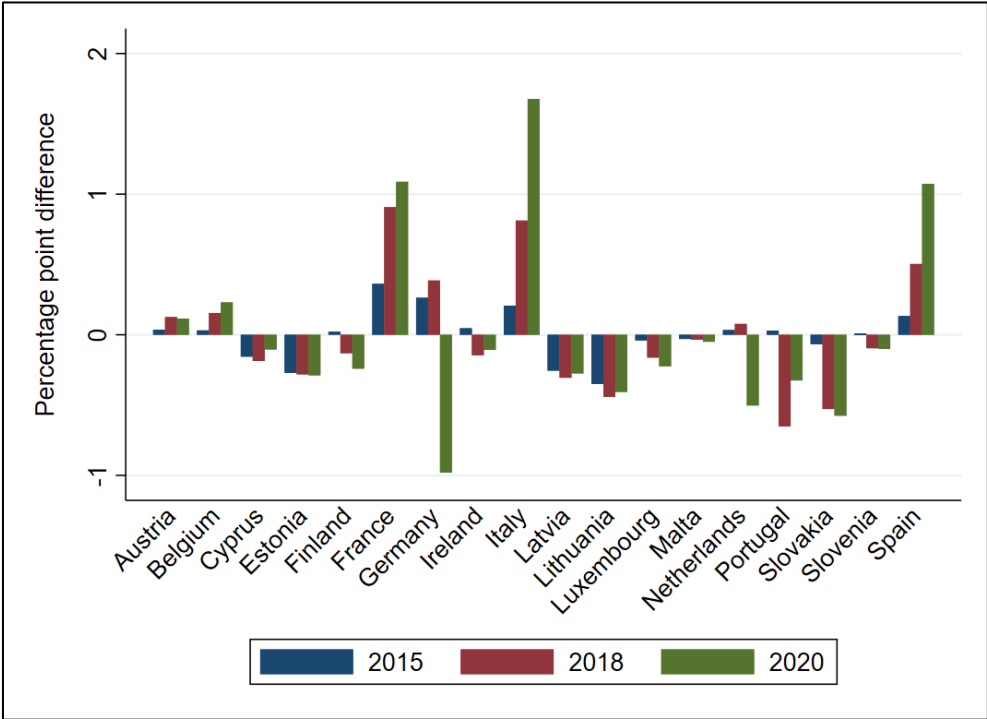
Notes: All data on PSPP purchases and the capital keys are taken from the ECB website.<sup>9</sup> The capital key depicted in the graphs always represents the concurrent one; i.e., the capital key in graphs (a) and (c) is the one before the change in 2019 and the one in graphs (b) and (d) is the one after the change. A country’s NCB’s capital key is depicted relative to the share of the total share of the 18 euro area NCBs whose countries are eligible for PSPP (Greece excluded from PSPP).

Figure 3 provides an overview of the dynamics in shares for all countries involved in PSPP (Euro-19 with the exception of Greece). Each bar represents the percentage point difference of the country’s

<sup>9</sup>PSPP purchases: [www.ecb.europa.eu/mopo/implement/omt/html/index.en.html#pspp](http://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html#pspp)  
 Capital key: <https://www.ecb.europa.eu/ecb/orga/capital/html/index.en.html>

share of the total PSPP stock accumulated from the programme start in March 2015 until the respective point in time (December 2015 for the starting phase, December 2018 when the programme was paused, and May 2020 for the full PSPP lifetime so far) from the country's capital key. Over all three different points in time, Belgium, France, Italy, and Spain had positive and growing deviations from the capital key, i.e., PSPP purchases of their government bonds exceeded the shares that were intended (the Austrian upward trend ended in 2018). The particularly big increase from 2018 to 2020 in Spain and Italy was a combined effect of high purchasing shares and a downward adjustment of ECB capital shares for both countries taking effect in 2019. Germany also had significant positive deviations at the end of 2015 and 2018, but it also had the highest negative deviation of all countries in 2020, that is a PSPP stock share that is one percentage point lower than Germany's capital key. Other countries with significant negative deviations from the capital key are Portugal<sup>10</sup> and Slovakia both in 2018 and 2020, the Netherlands in 2020, and Estonia, Latvia, and Lithuania in all years.

**Figure 3: Comparison of country PSPP stock in total stock and ECB capital key**



Notes: All data on PSPP purchases and the capital keys are taken from the ECB website (see footnote 9). The capital key was adjusted 2019, hence the one underlying the calculations for the year 2020 is not the same as for 2015 and 2018.

A clear conclusion from this analysis of the PSPP is the following one: The Eurosystem has not been successful in its attempt to steer the programme in line with capital keys. The systematic upward trend and the growing distance of shares from the capital key for high debt countries like Belgium, France, Italy, and Spain demonstrates that the divergence was not merely a temporary phenomenon of flows but clearly describes the trend for the resulting stocks. Hence, the ECB's increasing emphasis on the

<sup>10</sup> Although Portugal is a country with a public debt-to-GDP level above the euro area average, the available material in the market is limited as a consequence of the ESM borrowing.

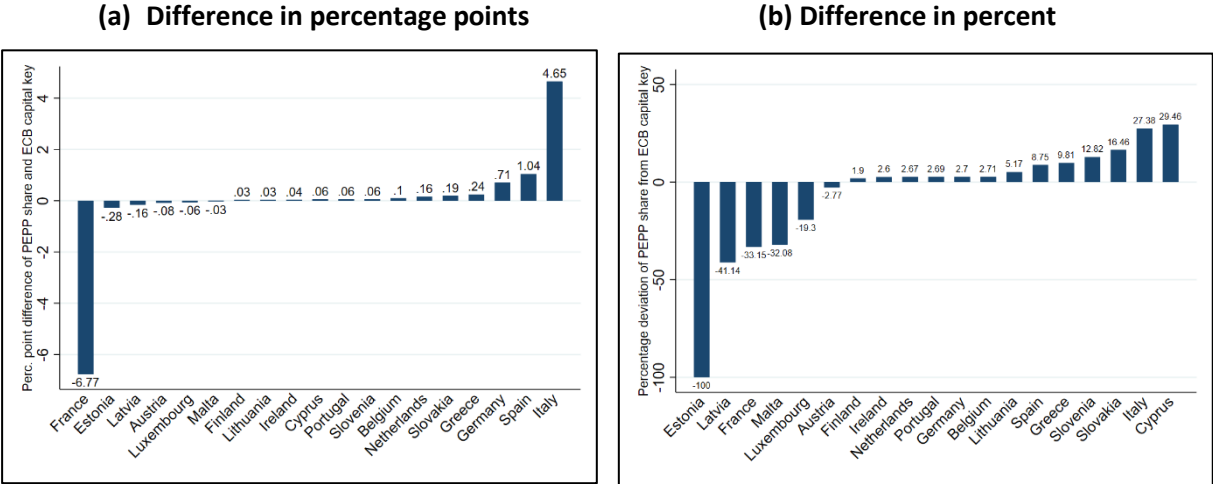
stock dimension of the capital key rule did not solve the issue. The mismatch between purchase shares and the capital shares is an empirical fact that is particularly visible even for the shares in stocks. The special circumstances and intervention needs of the Covid-19 pandemic cannot explain this tendency, as the trend was already clearly under way before the pandemic and was already pronounced when the ECB temporarily discontinued purchases at the end of 2018. However, the divergence of PSPP stocks from the capital key has further increased in 2020 and for two countries, Italy and Spain, even to a very large extent.

### 3.2. PEPP

For PEPP purchases, the ECB does not provide the same transparency as for the PSPP. So far, the ECB has only revealed the aggregated purchases from the start of the programme in March 2020 to the end of May by country, but no monthly data. Consequently, and as the programme only started in March, we cannot yet provide an analysis that differentiates between stocks and flows. However, we are able to assess the initial tendency. It was to be expected, given the explicit further downgrading of the capital key orientation, that the PEPP shares would show a larger divergence from the capital key than the PSPP. The resulting picture, nevertheless, results in some very pronounced results.

Figure 4 (a) displays the deviation of a country’s PEPP share in total PEPP purchases from the national shares in the ECB capital. For most countries, this deviation is very small with less than a quarter percentage point. The largest deviations are observed for France, where the PEPP share is 6.77 percentage points lower than the capital key, and Italy, where the PEPP share is 4.65 percentage points higher than the capital key. The relative positive deviations from the national capital key (Figure 4 (b)) are highest for Cyprus (+29%), Italy (+27%), Slovakia (+16%), Slovenia (+12%), Greece (+10%) and Spain (+9%). Also Germany is bought above proportion under PEPP, but the relative deviation is relatively small (+3%).

**Figure 4: Difference of countries’ shares in PEPP and ECB capital key**

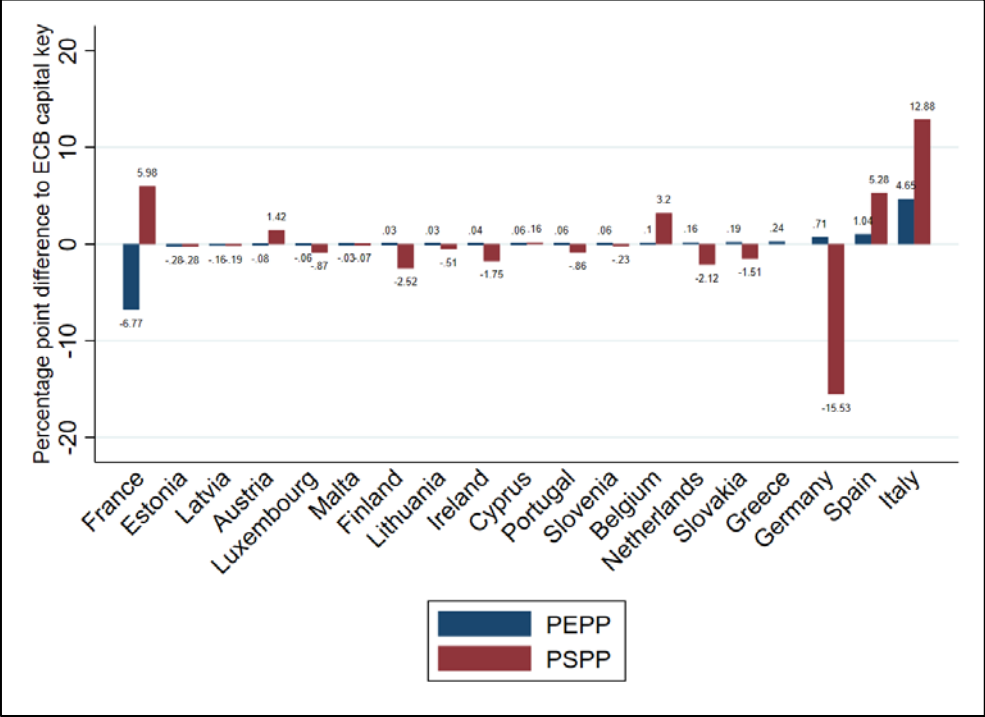


Notes: All data on PEPP purchases and the capital keys are taken from the ECB website. (see footnote 3 and 9)

In Figure 5, we explore whether PSPP purchases were conducted closer to the capital key as soon as PEPP started. This might be expected since the capital key is more binding for PSPP than for PEPP so that the flexibility of PEPP might help the Eurosystem to be more compliant with the PSPP rules. We therefore compare the sum of the respective programmes’ purchases from March to May as country shares in total purchases per programme. The graph depicts the difference of these shares to the capital key for each country. The graph does not indicate any such compliance arbitrage. On the contrary, the PSPP shares for Italy, Spain, Belgium, and France were even higher (and further away from the capital key) in the crisis months than the PEPP shares for these countries.

An interesting observation can be made for France and Germany. For both countries, the proportionality analysis leads to different signs for PEPP and PSPP. While France is bought far below proportion under PEPP, it is given a heavy overweight under PSPP. While Germany is bought slightly above proportion under PEPP, it is currently heavily underweighted under PSPP. Hence, the results for France and Germany for their PEPP shares should not be seen in isolation. Looking at both programmes together, shares are much closer to the capital key than the PEPP alone signals.

**Figure 5: Comparison PSPP and PEPP March to May 2020 to capital key**



Notes: All data on PEPP and PSPP purchases and the capital keys are taken from the ECB website (see footnote 3 and 9).

It is too early to judge to which extent the higher flexibility of the PEPP will be used by the Eurosystem to “repair” the PSPP’s non-compliance with the capital key rule. However, one clear result is emerging: The PEPP continues and reinforces a trend that was already stable under the PSPP: The share of purchases is increasingly shifted towards some of the euro area’s high debt economies: Italy, Spain, and Belgium. For Greece that is non-eligible under PSPP, PEPP is immediately used to buy the countries’ government bonds significantly above proportion relative to the capital key.

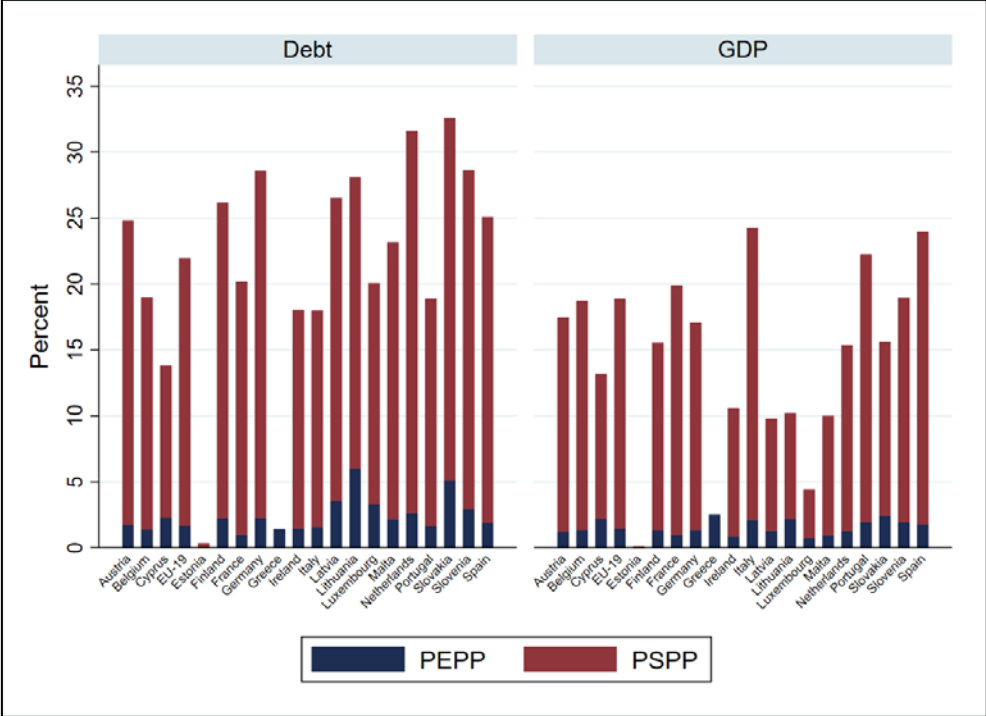
### 3.3. MACROECONOMIC MAGNITUDE

Finally, we look at the magnitude of PSPP and PEPP relative to important macroeconomic and aggregate fiscal indicators. Figure 6 shows the ratios of PSPP and PEPP stocks at the end of May 2020 over debt and GDP. National differences in the relative importance are huge. In Spain, Italy, and Portugal, total cumulated PSPP and PEPP purchases until May 2020 amounted to more than 20% of GDP 2019. In five countries, PSPP and PEPP corresponds to roughly 10%. This is the case for Ireland, Malta, Latvia, Lithuania, and Luxembourg. In Luxembourg, the share is even lower than 5%.

Due to the much longer history of PSPP, PEPP’s magnitude is still much smaller. However, already now, the highly differing importance across euro area countries becomes visible for the new programme. Figure 7 zooms in on the ratio of the PEPP holdings to GDP. The “top positions” in the new programme are currently held by Greece, Slovakia, Cyprus, Lithuania, and Italy who all have shares of PEPP in GDP of more than 2%, markedly above the eurozone average somewhat below 1.5%.

In Figure 6, we observe the highest share of total PSPP/PEPP holdings to public debt for Slovakia. The metric relative to public debt also leads to high ratios for countries like the Netherlands, Germany, and Finland that have debt-GDP-ratios below average.

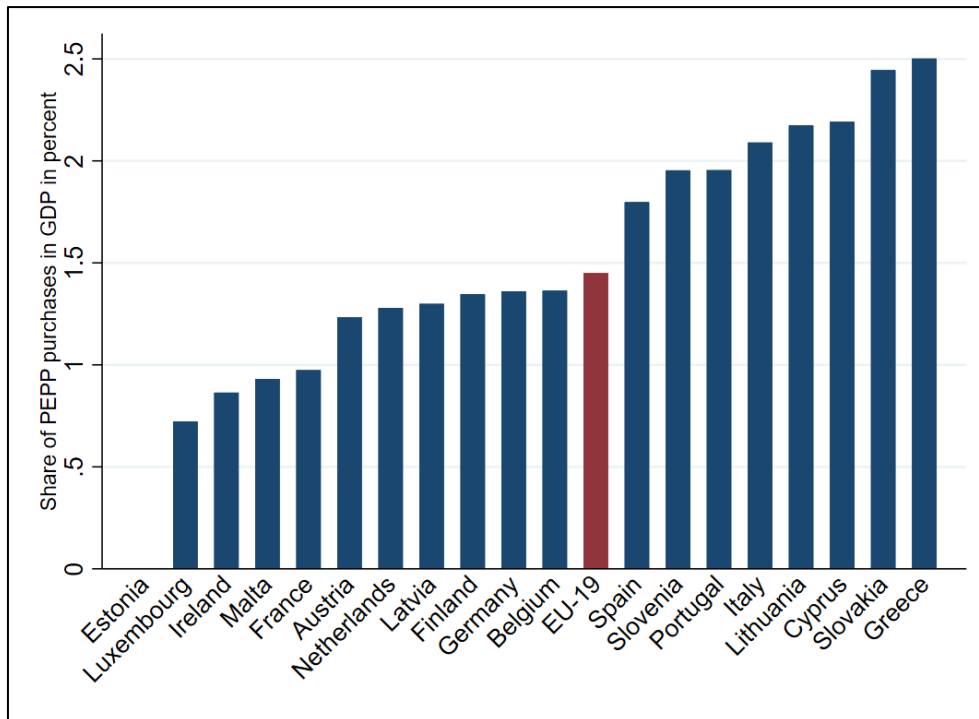
**Figure 6: PEPP and PSPP stocks (May 2020) as a share of government debt and GDP 2019**



Notes: Data on debt and GDP is taken from the AMECO database by the European Commission. The variable debt is defined as general government gross debt. All data on PSPP and PEPP purchases are taken from the ECB website.



**Figure 7: Share of PEPP purchases March to May 2020 over GDP 2019**

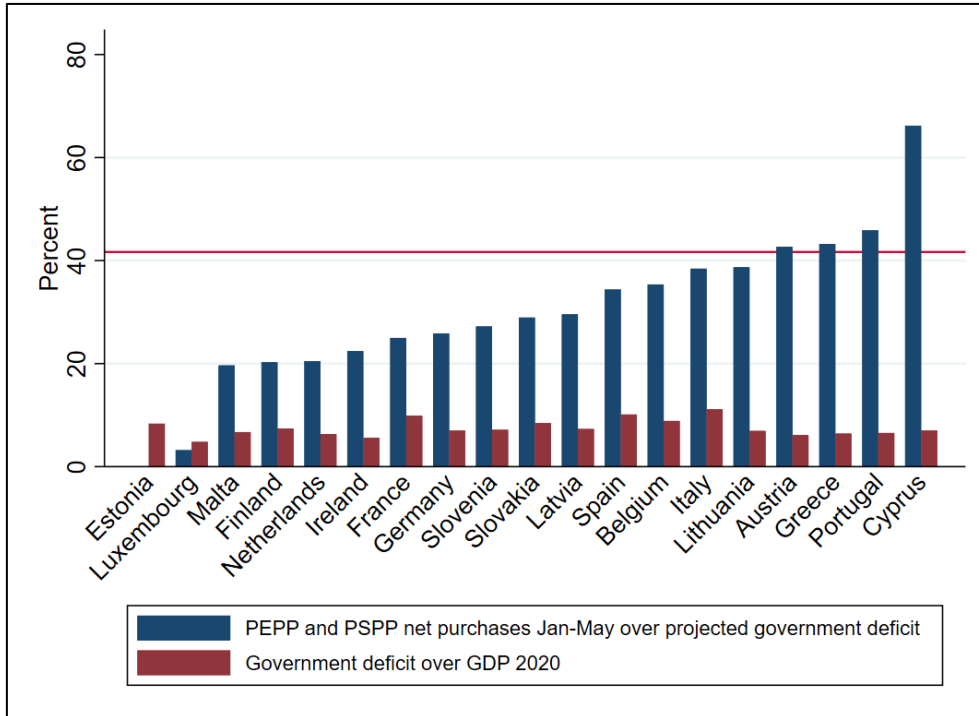


Notes: Data on GDP is taken from the AMECO database by the European Commission. The underlying GDP variable is defined as GDP at current prices. All data on PEPP purchases are taken from the ECB website.

Another interesting aspect is to analyze the importance of the Eurosystem’s (indirect) financing of the public deficit of euro countries in the current year. Therefore, we aggregate total PSPP and PEPP purchases from January to May 2020 per country and put them in relation to the current deficit forecast for 2020 (deficit projections taken from the European Commission’s Spring Forecast). Figure 8 shows the results for all countries. We add a line at 5/12 (41.7%) to account for the fact that the PSPP and PEPP data are only available for the first five months of the year. Ratios around that value indicate that the Eurosystem has been on course in the first months of 2020 to (indirectly) fully finance the Corona crisis year’s deficits for the respective country.

The results show that the Eurosystem’s involvement is substantial also relative to the very high borrowing requirements in the deepest European post-war recession. For a couple of national government bond markets, the Eurosystem’s net purchases in this year will be of a similar magnitude or even higher than the general government’s deficit. This could be the case for Cyprus, Portugal, Greece, and Austria. For Italy, Lithuania, Belgium, and Spain, the Eurosystem support comes close to the full size of the deficit projection.

**Figure 8: PEPP and PSPP net purchases relative to expected public deficit 2020**



Notes: The horizontal red line represents 5/12 that is the share of January to May of the full year. It signals whether a pro rata temporis PSPP/PEPP intervention in the further year will lead to a full financing of a country's deficit. Own calculations. Sources: GDP and deficits: AMECO database; PSPP and PEPP: ECB.

## 4. CONCLUSIONS

This analysis has provided important insight on the rule and allocation trends of the Eurosystem's sovereign purchases.

First, there is a clear trend of a substantive relaxation in constraints that, in some cases, even amounts to a full suspension of initial safeguards, as they had been established when the PSPP started in 2015. The suspension of the issue and issuer limits under PEPP, which also renders these limits irrelevant for PSPP, is one of these very far-reaching steps. With this modification, the Eurosystem has implicitly accepted to take over the role of a strategic investor. In future, debt restructuring according to the collective action clauses agreed upon in the ESM Treaty will no longer be possible against a veto of the ECB Council. The capital key is still confirmed as an important benchmark also for PEPP, however, only as a long run orientation "for stocks" with a lack of precision what this framing really means in practice.

Second, the empirical analysis of the national allocations shows that not only the PEPP but also the PSPP has been used in an increasingly asymmetric way, with over-proportionate purchases of the high debt euro area countries. It should be stressed that the bias towards high debt country is not at all a phenomenon of purchases just in the recent months of the Corona crisis. The trend was already strong in the first PSPP phase until the end of 2018 when the PSPP was temporarily discontinued.

A third result is that the importance of the programmes has become substantial also in relation to GDP, total government debt stocks and deficits. Because of the high and increasing speed of accumulation,

the Eurosystem could hold as much as 1/3 of total euro area national debt already early next year. The financial support that is currently provided by the NCBs and the ECB in the crisis is of remarkable generosity as, for several countries, it reaches a level equal to the full annual government deficit in 2020, although this deficit is expected to reach record highs for most euro area countries.

It is an open debate to which extent all these trends have already brought the Eurosystem's involvement in government bond markets close to an Art. 123 infringement. Clearly, the special and extreme circumstances of the very severe economic crisis because of the Covid-19 pandemic provide the ECB with a temporarily convincing justification also for very unusual monetary policy instruments. However, the analysis has clarified that the public purchasing programmes were already gliding a slippery slope into dangerous territory before the crisis. Many of the safeguards that have been emphasized in the ECJ's 2018 ruling that PSPP is no Art. 123 infringement do no longer exist today. Hence, the analysis strengthens the view that central bank interventions in government bond markets of the current magnitudes and in non-compliance with all its initial sensible limits will hardly be justifiable once the current economic crisis subsides. These results, once again, point to the joint responsibility of European fiscal policy and private investors. It is not the central bank that should and that would legally be entitled to solve the problem of highly indebted or possibly even over-indebted euro area member states.

AUTOREN

**Annika Havlik**

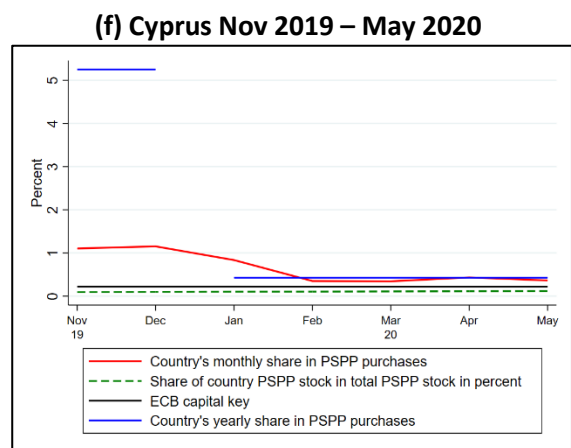
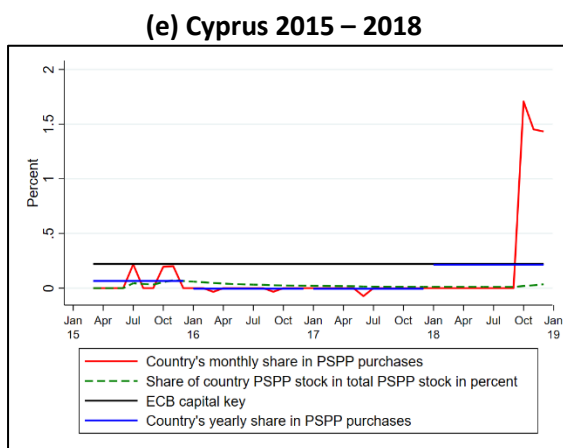
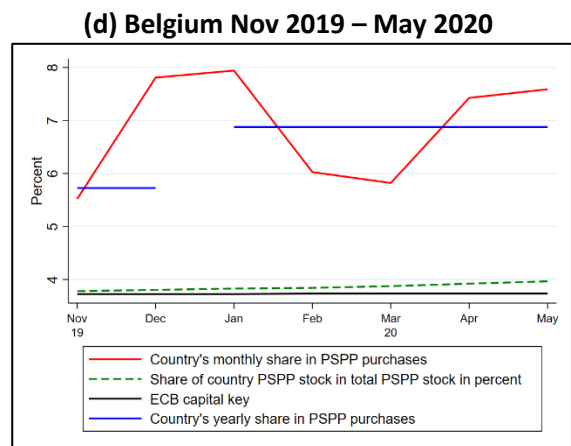
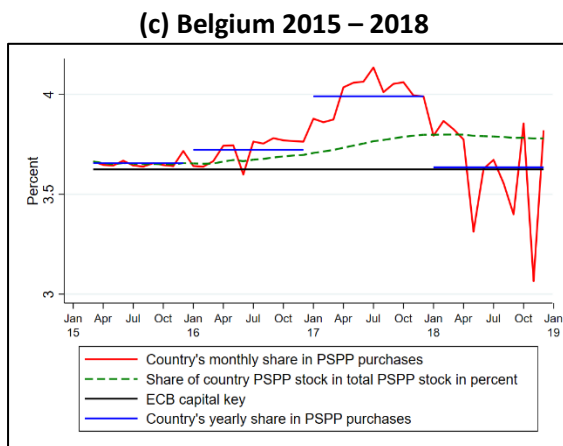
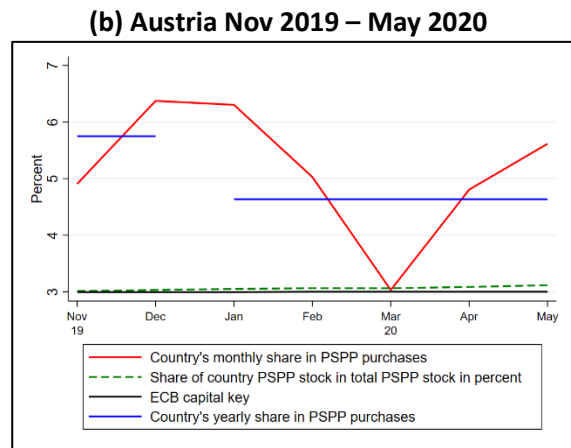
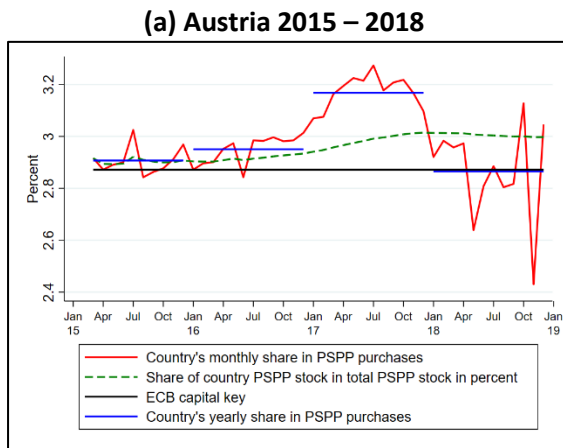
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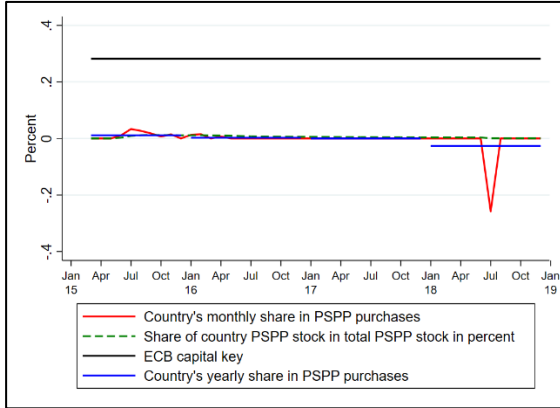
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# 5. APPENDIX

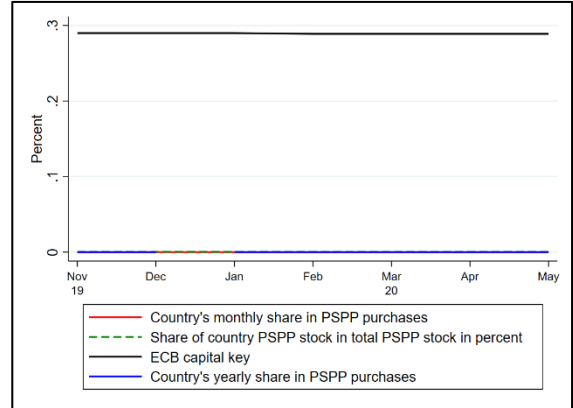
**Figure A1: National shares PSPP**



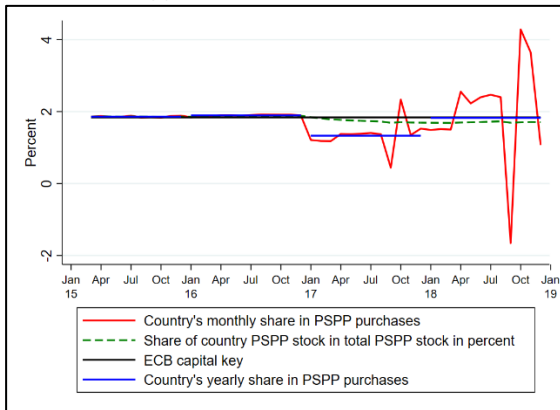
**(g) Estonia 2015 – 2018**



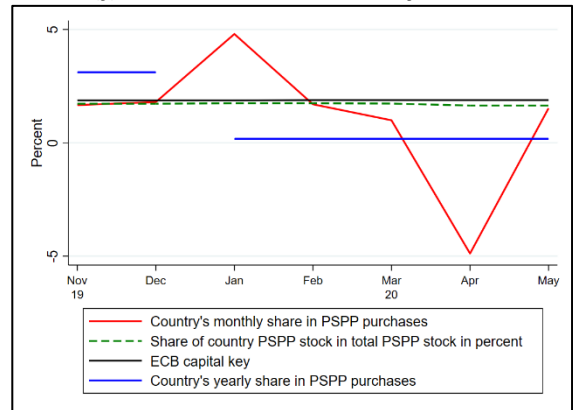
**(h) Estonia Nov 2019 – May 2020**



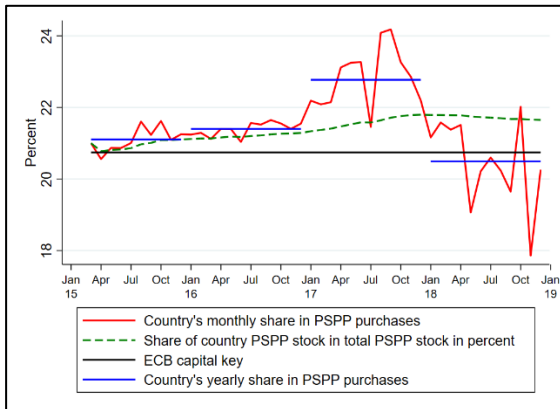
**(i) Finland 2015 – 2018**



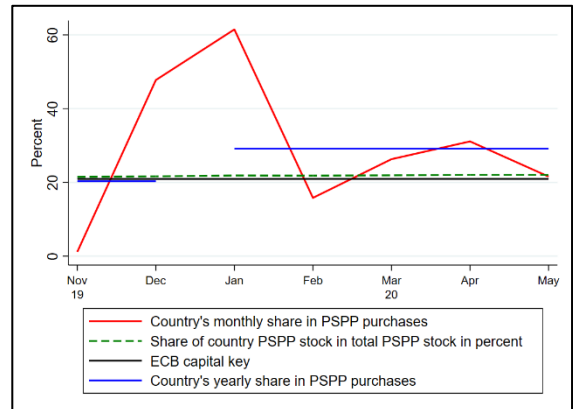
**(j) Finland Nov 2019 – May 2020**



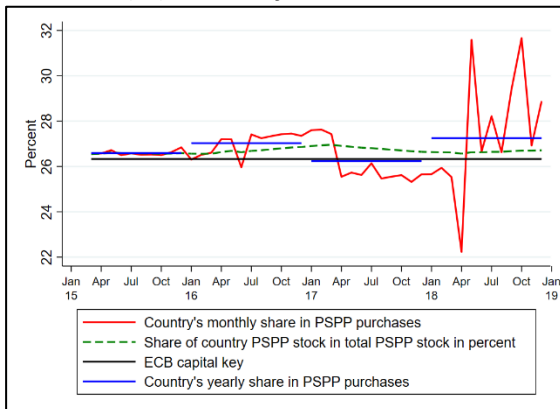
**(k) France 2015 – 2018**



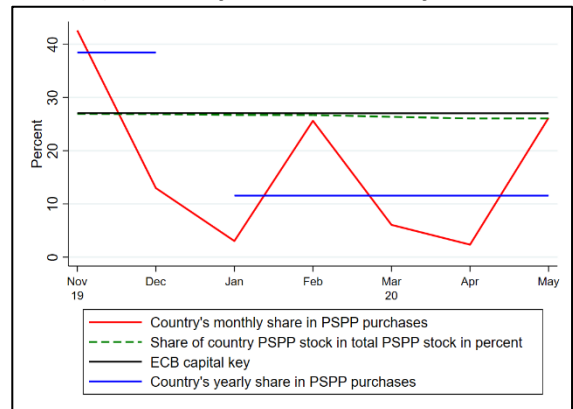
**(l) France Nov 2019 – May 2020**



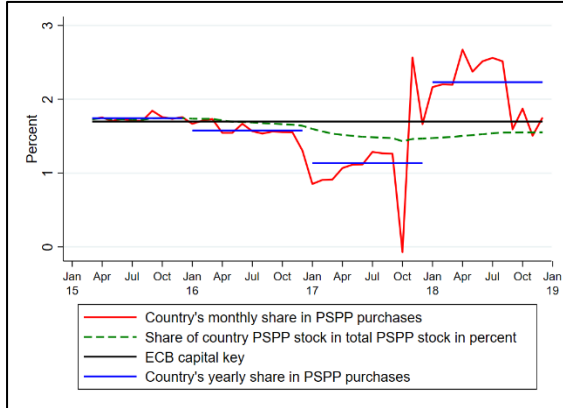
**(m) Germany 2015 – 2018**



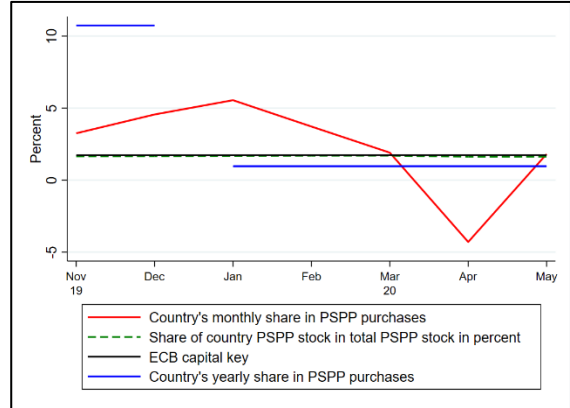
**(n) Germany Nov 2019 – May 2020**



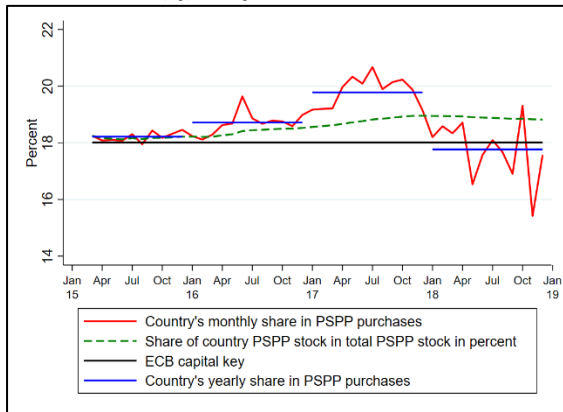
**(o) Ireland 2015 – 2018**



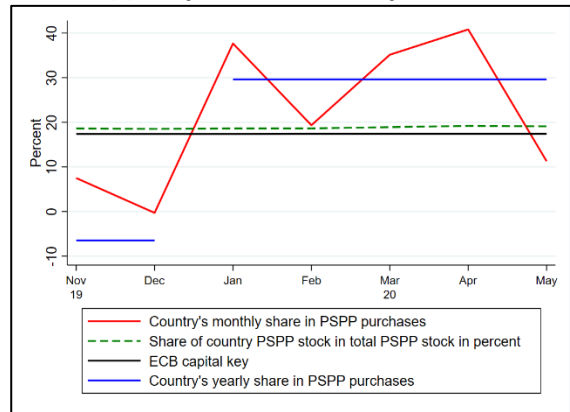
**(p) Ireland Nov 2019 – May 2020**



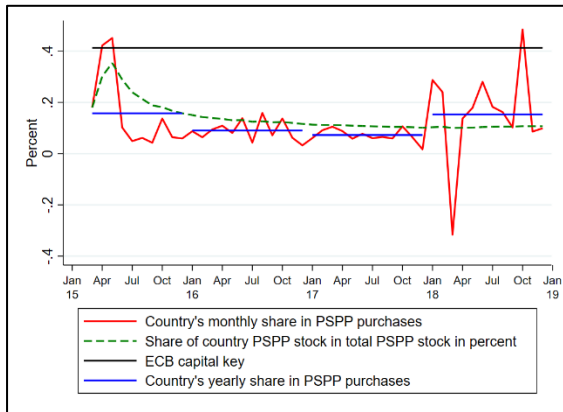
**(q) Italy 2015 – 2018**



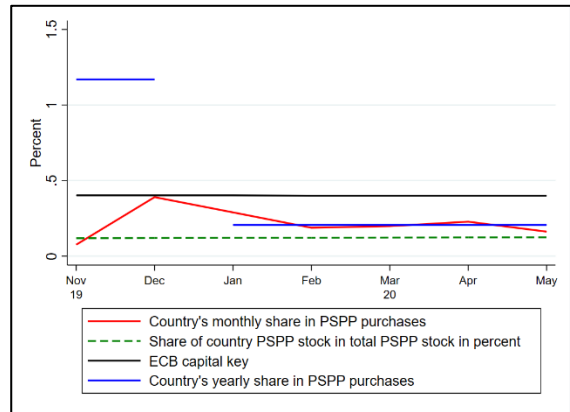
**(r) Italy Nov 2019 – May 2020**



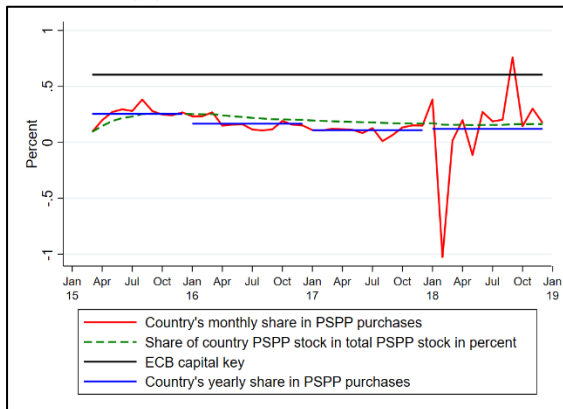
**(s) Latvia 2015 – 2018**



**(t) Latvia Nov 2019 – May 2020**



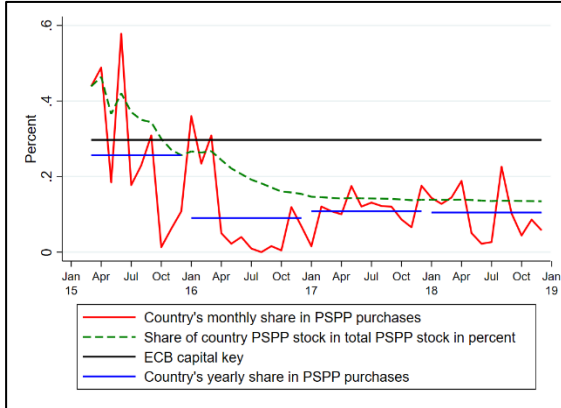
**(u) Lithuania 2015 – 2018**



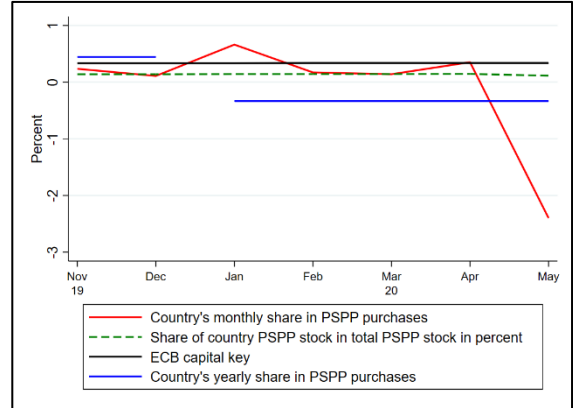
**(v) Lithuania Nov 2019 – May 2020**



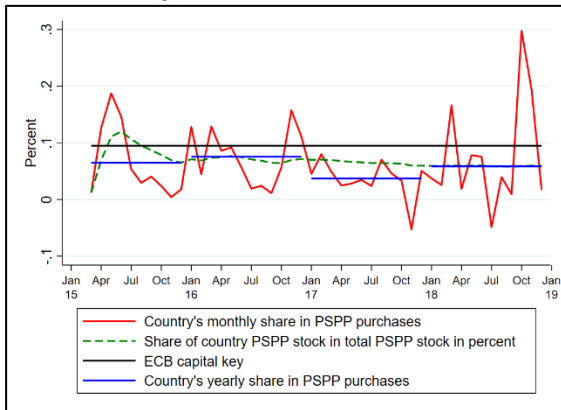
**(w) Luxembourg 2015 – 2018**



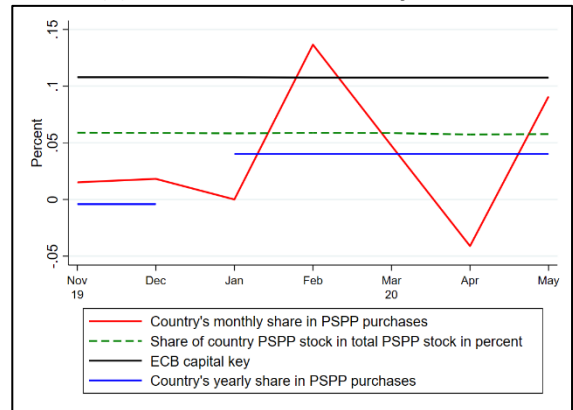
**(x) Luxembourg Nov 2019 – May 2020**



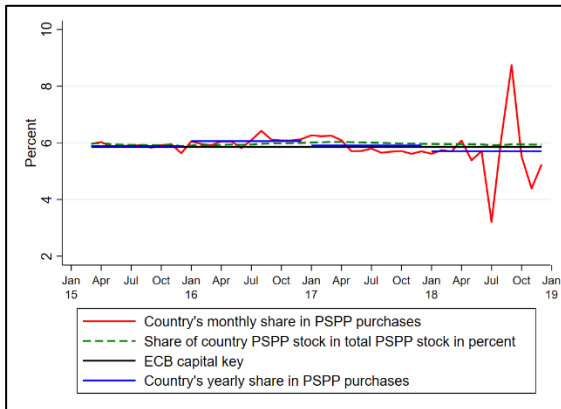
**(y) Malta 2015 – 2018**



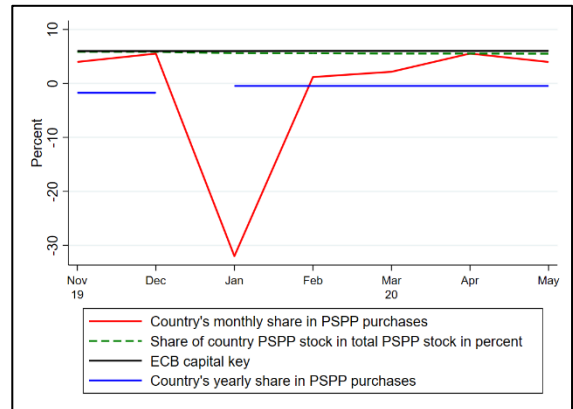
**(z) Malta Nov 2019 – May 2020**



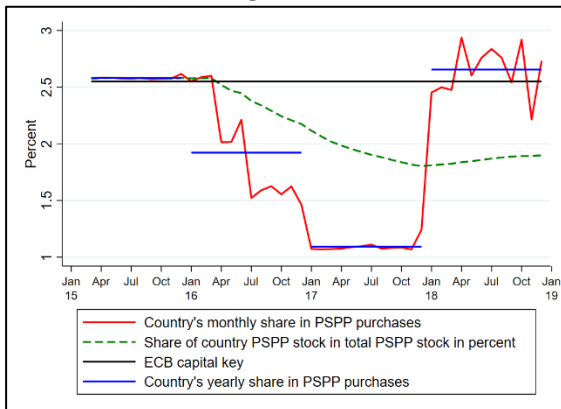
**(aa) Netherlands 2015 – 2018**



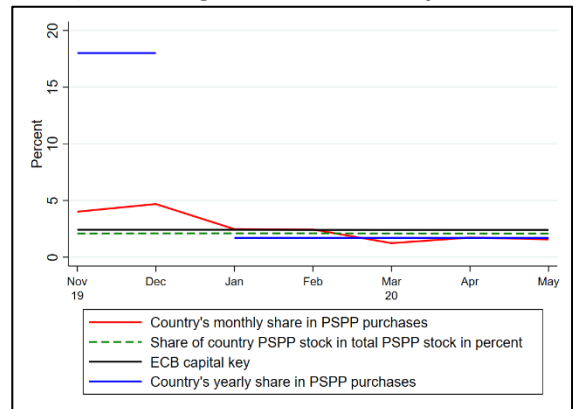
**(bb) Netherlands Nov 2019 – May 2020**



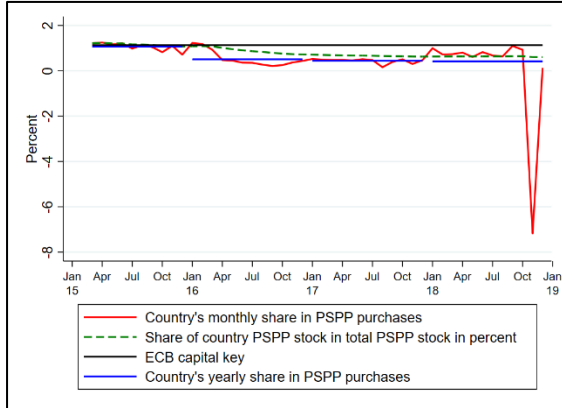
**(cc) Portugal 2015 – 2018**



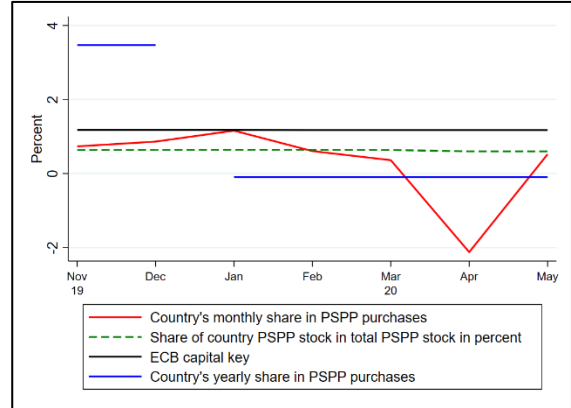
**(dd) Portugal Nov 2019 – May 2020**



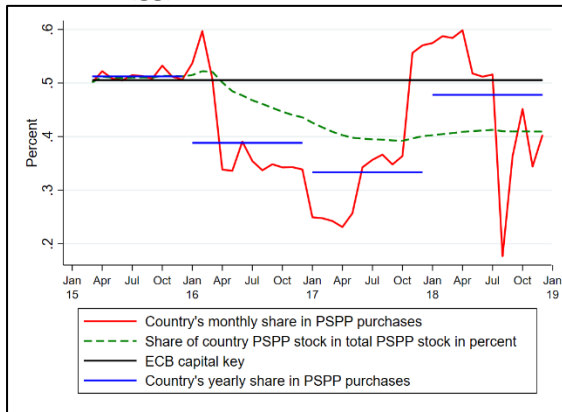
**(ee) Slovakia 2015 – 2018**



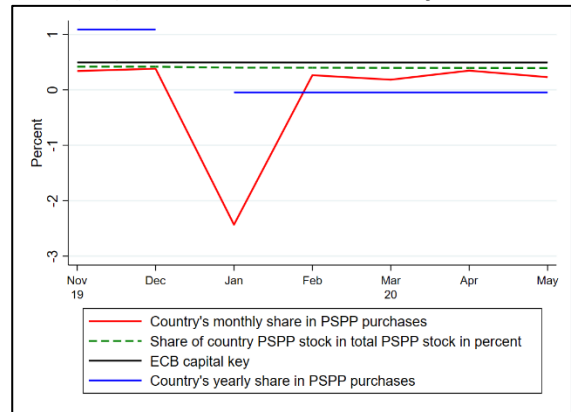
**(ff) Slovakia Nov 2019 – May 2020**



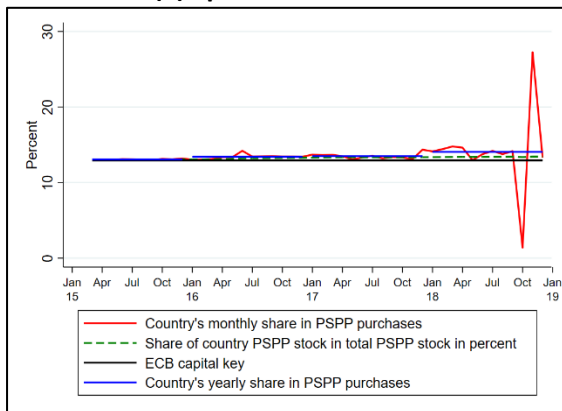
**(gg) Slovenia 2015 – 2018**



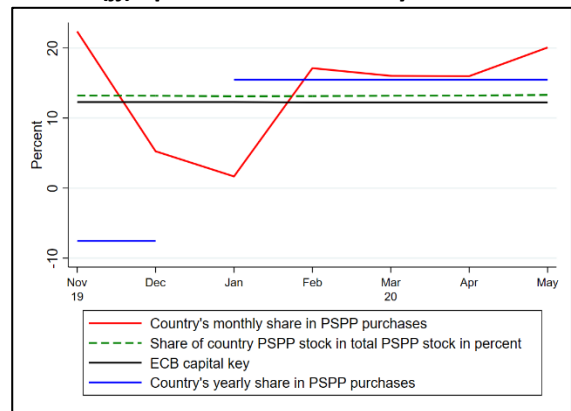
**(hh) Slovenia Nov 2019 – May 2020**



**(ii) Spain 2015 – 2018**



**(jj) Spain Nov 2019 – May 2020**



Notes: All data on PSPP purchases and the capital keys are taken from the ECB website. The capital key depicted in the graphs always represents the concurrent one; i.e., the capital key in graphs (a) and (c) is the one before the change in 2019 and the one in graphs (b) and (d) is the one after the change. A country's NCB's capital key is depicted relative to the share of the total share of the 18 euro area NCBs whose countries are eligible for PSPP (Greece excluded from PSPP).