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Financial Stability in the Euro Area: Assessment of Risks and Policy Options

Compilation of papers

Policy Department for Economic, Scientific and Quality of Life Policies
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This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

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From Climate Change to Cyber-attacks: Incipient Financial Stability Risks for the Euro Area

Zsolt Darvas, Marta Domínguez-Jiménez and Guntram B. WOLFF (Bruegel)

Abstract

The November 2019 European Central Bank *Financial Stability Review* is a very comprehensive report, covering the key risks to financial stability in the euro area. We summarise the report's main conclusions and complement them with our analysis of housing markets, market interest rate expectations and safe assets, from a financial stability perspective. We emphasise financial stability risks related to climate change and cybersecurity. We compare housing market vulnerabilities and the implementation of macroprudential policies in euro area countries.

This document was provided by Policy Department A at the request of the Committee on Economic and Monetary Affairs.

CONTENTS

LIST OF ABBREVIATIONS

CCoB	Capital conservation buffer
CCyB	Counter-cyclical capital buffer
CDS	Credit Default Swaps
ECB	European Central Bank
EFSF	European Financial Stability Facility
D/LTI	Debt/loan-to-income
DSTI	Debt-service-to-income
EIB	European Investment Bank
ESM	European Stability Mechanism
ESRB	European Systemic Risk Board
FDI	Foreign Direct Investment
FED	Federal Reserve
GDP	Gross Domestic Product
LTC	Loan-to-collateral
LTV	Loan-to-value
IMF	International Monetary Fund
OECD	Organisation for Economic Co-operation and Development
P/E	Price/Earning (ratio)
RRE	Residential real estate
S&P	Standard & Poor's
SyRB	Systemic risk buffer
WEO	(IMF) World Economic Outlook

EXECUTIVE SUMMARY

- **We analyse critically the European Central Bank's November 2019 *Financial Stability Review***, which highlights the downside risks to economic growth in an environment of global uncertainty. It also discusses sovereign-debt concerns in case interest rates increase, and risks stemming from household and corporate debt. It provides an assessment of the risks arising from a possible overvaluation of asset prices and especially stock prices. Finally, the report evaluates risks within the banking and non-banking system, and risks related to climate change.
- On the whole, **we think the ECB report is very comprehensive and covers the key risks to euro area financial stability**. While radical uncertainty makes the prioritisation of risks difficult, we broadly concur that one of the main current risks to financial stability is the risk of a macroeconomic downturn in both the global and EU economies. The global economy has seen an upswing of unprecedented length, which has been supported more recently by continued monetary and fiscal accommodation in the US and in the EU. Should this upswing end, either because of political risks or external shocks, asset prices and interest rates could change. Such developments would put a strain on the balance sheets of financial and non-financial companies and institutions, and could create financial instability.
- **We discuss in some detail the aspects of financial stability that in our assessment deserve more attention** than they receive in the ECB report, and augment the discussion with new evidence.
- First, we argue that **the assessment of risks in the housing market needs to be more nuanced**. A striking feature of current housing markets relative to those pre-crisis is that they seem to be far less driven by mortgage credit. This is possibly good news for financial stability because an eventual house price correction would transmit less into mortgage defaults. Moreover, we find that the size of the construction sector hasn't increased with recent house price increases, unlike in the pre-crisis period. An eventual correction to house prices might therefore be less likely to lead to corrections to economic activity.
- Second, we argue that **there should be greater emphasis on changes in market expectations of interest rates**. In recent years, changes in forward-looking market expectations have been very significant. Such changes, especially when interest rates are close to zero, can have substantial effects on asset prices because they might change substantially the discount rate of expected future profits. This could be particularly relevant if interest rate changes are not driven by real-economy developments.
- Third, **the financial system crucially relies on a safe asset as a reference for its entire pricing curve of all assets**. We show that the supply of safe sovereign assets in the euro area has fallen dramatically in the last 10 years, and is expected to fall further. This fall has been driven by two main factors. On the one hand, countries have seen their credit ratings deteriorate. On the other hand, the safest countries and in particular Germany, have decreased their absolute supplies of bonds as they reduced their debt levels. An increase in the supply of safe assets via greater issuance by Germany, structural reforms that lift productivity growth and ratings in the weaker euro area countries, and greater supply from EU institutions such as the European Investment Bank, would support financial stability, in particular if additional borrowing was used in economically productive ways.
- Fourth, **we strongly support the ECB in its assessment that climate risks to financial stability need to be taken seriously**, and we would advise the European Parliament to prioritise work on

this. We also argue that it is not advisable to reduce risk weights on green assets since they still contain normal financial stability risks. Instead, the debate should concentrate on increased risk weights for brown assets.

- Fifth, **we worry that the ECB does not consider cybersecurity and hybrid threats in its financial stability assessment**. These threats are significant operational risks for individual financial institutions. But more worryingly, the EU is badly prepared to deal with such threats should they materialise at a more systemic level. The financial consequences thereof would be substantial.
- **One important set of policy instruments to address financial stability concerns is macroprudential measures**. While assessment of macroprudential policy measures adopted in various euro area countries is hindered by lack of experience with the impacts of these measures, we discover notable discrepancies between Member States: countries with the same levels of housing price overvaluation have adopted markedly different macroprudential measures. This suggests that some countries might have done too much, while others have done too little. We call for a thorough cross-country analysis of macroprudential policy measures, in light of the vulnerabilities countries face.
- **When it comes to preventing the next recession or at least reducing its impact on financial stability and the economy more broadly, we argue that EU policymakers need to be better prepared to use discretionary fiscal policy earlier and more forcefully**. The ability of monetary authorities to react to the next cyclical downturn is very limited because rates cannot be reduced much further and the effectiveness of bond purchase programmes might also be more limited. The main remaining tool to respond to a downturn is fiscal policy, and its earlier and more proactive use would be necessary.

1. INTRODUCTION

In this Monetary Dialogue paper, written at the request of the European Parliament, we critically analyse the European Central Bank's (ECB's) November 2019 *Financial Stability Review*. On the whole, we think that the report is very comprehensive and covers the key risks to financial stability in the euro area.

As always in such assessments, it is relatively easy to argue where risks could emerge but it is much more difficult to quantify the size of the risks and rank them in terms of importance. In addition, given the radical uncertainty resulting from the unpredictability of politics and socio-economic and natural developments at the current juncture, totally unexpected risks could emerge. Unfortunately, we cannot solve this problem in our short paper. Nevertheless, through a combination of literature review, data analysis and interviews, we complement the ECB's analysis in a number of ways.

Housing markets have historically often been one of the key factors in financial crises, as was the case, for example, in the great crisis of 2008-11. We therefore decided to take a deeper look into housing in Section 3. In Section 3, we also discuss in some detail changes to market expectations and their consequences. We zoom in on the importance of a safe asset for financial markets. Finally, we emphasise two risks that the ECB and the European Parliament should prioritise: climate risks and cyber risks to financial stability. We then provide an overview of one of the key policy instruments for achieving financial stability, so-called macroprudential policies. The last section concludes.

We highlight that in our note, we have not discussed the risks related to the incomplete set-up of monetary union and in particular banking union. Certainly, the current system will be better equipped to deal with shocks from failing or likely-to-fail banks than before banking union, but the set-up remains fragile. Questions of liquidity provisioning in resolution and differences of insolvency regimes are key concerns. We also have left aside the question of whether the currently high degree of monetary accommodation in itself is contributing to or reducing financial stability – a hotly debated topic.

2. A SUMMARY OF THE ECB'S ASSESSMENT OF KEY RISKS

The November 2019 ECB *Financial Stability Review* (hereafter ECB, 2019c) is a comprehensive and useful report assessing various aspects of financial stability risks in the euro area. We summarise the key messages of the report, and augment the assessment of some issues with our own findings in the next sections.

2.1. Prominent downside risks to economic growth, global environment

The euro area is experiencing an economic slowdown and the ECB expects near-term growth to remain modest. Growth and inflation projections have been revised downward. Manufacturing has been particularly affected and this vulnerability appears to be spreading. Current ECB projections expect growth in real GDP to be 1.1 % in 2019, 1.2 % in 2020 and 1.4 % in 2021. This slight and gradual recovery is expected to be aided by accommodative monetary policy, which could strengthen lending to corporates, and a mildly supportive fiscal stance. Global demand is also expected to improve, not least because of the January 2020 trade agreement between China and the United States, which could help exports.

That said, global geopolitical risks remain the most prominent downside risks. The January 2020 China-US trade deal might just be a temporary pause in escalation of the trade conflict, with the deal leaving most of the recently introduced tariff measures in place. According to the October 2019 International Monetary Fund (IMF) *World Economic Outlook*, US-China trade tension will cumulatively reduce the level of global GDP by 0.8 % by 2020, which was a major reason for the downgrade of the global economic outlook. The IMF argued that subdued growth is a consequence of rising trade barriers, elevated uncertainty surrounding trade and geopolitics, idiosyncratic factors causing macroeconomic strain in several emerging market economies, and structural factors, including low productivity growth and aging demographics in advanced economies.

In Europe, a no-deal Brexit has been avoided. Under the EU-UK Withdrawal Agreement, the transition period during which the United Kingdom will remain a member of the EU's customs union and single market will last until the end of 2020. However, there are major uncertainties about whether and what kind of trade and financial services agreement will be concluded between the EU and the UK for the period following the transition period. While European and British institutions have made comprehensive preparations for an eventual abrupt end to the passporting rights enjoyed by UK-based financial firms, an eventual failure of the EU and UK to agree on arrangements beyond the transition period would likely affect growth negatively on both sides of the channel. The growth effects would be concentrated in specific EU countries with close ties to Britain. However, the direct financial risks may be more limited.

The evolution of the US economy will be a key determinant of European economic and financial developments. US growth has remained robust, spurred on by record-low unemployment, ample consumption and an appealing fiscal and monetary environment. However, the current economic expansion is by far the longest in the US's post-war economic history and political developments (such as the election of a Democrat in the 2020 US presidential election) might change economic sentiment and bring the current US economic cycle to an end.

Similarly, while the Chinese slowdown has so far been gradual, risks to growth are negatively skewed and could result in a sharper decline, especially given the weakness caused by the trade conflict, the lack of clarity over available stimulus policies and the very high level of private debt.

A global economic slowdown could threaten financial stability in the euro area. Slower euro area economic growth resulting from a global slowdown would reduce household incomes and corporate

profits, and could threaten the ability to meet debt obligations, especially given high non-financial sector debt in some Member States. More vulnerable sovereigns could also come under strain. Global stock prices might also contract, spilling-over to the euro area, leading to a negative wealth effect.

2.2. Sovereign debt concerns

Sovereign debt positions appear largely sustainable. The euro area's fiscal position is expected as expansionary in 2019 and subsequent years. While debt-to-GDP remains above 85 %, well above the Maastricht 60 % benchmark, it is expected to fall given the generally large positive differential between the economic growth rate and the interest rate (see Darvas *et al*, 2019, for a quantification and discussion of the growth-interest rate differential for all EU countries). Countries with sufficient fiscal space are counselled to make use of it, while for those with less-sustainable debt positions, prudence is the order of the day, according to the ECB report.

Sovereign debt sustainability is aided by benign financing conditions. Many euro area countries have used recent low interest rates (across the yield curve) to extend the average maturities of their debts, reducing refinancing needs. Most hold ample liquidity buffers.

That said, a more pronounced downturn could pose risks for countries with medium to high levels of debt. Debt sustainability could suffer especially if risk premiums rise as a result. Political and policy uncertainty could also expose sovereign debt to greater vulnerability, especially for Member States in need of a significant share of debt refinancing. Overall global pessimism could undermine the current favourable financing conditions.

2.3. Household resilience & a growing housing market

Household real disposable incomes are growing, given the favourable labour market outlook. Bank lending to households, especially mortgage lending, remains solid in some parts of the euro area, while in other parts (typically in countries with higher public debts, weaker banks, weaker growth outlooks) credit is hardly growing. Throughout the euro area, a slowdown appears to be on the horizon with indicators beginning to paint a more pessimistic picture.

Household debt remains broadly stable throughout the euro area, standing at 95 % of disposable income and 58 % of GDP (though this hides substantial variation, from 40 % of disposable income in Latvia and Lithuania, to 200 % in the Netherlands). That said, the Netherlands has seen recent deleveraging, as have Spain, Portugal and Ireland. France, by contrast, appears to be re-leveraging. Household repayment capacity remains robust, especially given the interest rate environment. But a significant downturn could put this into question.

There are signs of over-valuation in the residential housing markets according to the ECB report (on average above 7 %, although divergence is widespread). In contrast, commercial real estate appears to be in a downturn, although the market continues to grow in countries that were most heavily affected by the crisis, including Greece and Spain.

Overall, according to the ECB's assessment, property markets pose a growing risk to financial stability. The low-rate environment and strong labour market outlook could increase pressure on prices in the medium-term. At the same time, the negative growth outlook and risk of deteriorating financing conditions could place a strain on the sustainability of household and corporate debt. Foreign investors are more significantly affected by the evolution of global financial markets.

2.4. Corporate debt

Corporate profits have been negatively affected by the growth outlook, with declining business sentiment and increasingly competitive markets. These profits and the subsequent fall in retained earnings could affect future investment and medium-term profits. Retained earnings remain the main overall source of finance expansion.

The level of corporate debt is high but stable (and has been for several quarters), although divergences between countries remain significant (and some surpass the 75 % of GDP threshold implied in the Macroeconomic Imbalance Procedure). That said, the performance of credit default swaps (CDS) for corporate bonds would indicate the market believes credit risk is small.

Low interest rates and liquidity buffers recently accumulated by companies further increase the sustainability of corporate debt. Furthermore, the increase in market financing reduces dependence on the banking sector and the risks to corporations of banking sector vulnerabilities.

While overall risks remain under control, specific companies should be carefully monitored according to the ECB. Companies with high-yield corporate bonds seem to have increased both their gross and net leverage, while investment grade companies have slightly deleveraged. Furthermore, the increase of risk premiums in case of downturn is troubling. There has been increased issuance of BBB-rated corporate bonds in the past five years, as well as of corporate bonds with an already high leverage ratio. The possible downgrade of these in case of aggregate economic weakness would cause a large increase in risk premiums and threaten debt sustainability. The average maturity of corporate bonds is also increasing, as shown in Chart 2.10 of ECB (2019c).

We add that the IMF's October 2019 *Global Financial Stability Report* (IMF 2019b) concluded that worldwide, including in Europe, the profits of non-financial companies would be insufficient to service their increased debts if a downturn takes place that is only half as severe as the 2008-2009 financial crisis.

We also highlight the study by Couaillier *et al* (2020), which highlighted the deteriorated interest coverage ratio in France, which together with the high degree of leverage in the corporate sector, result in vulnerabilities. By the end of 2018, vulnerable French companies had an aggregate gross debt of EUR 187 billion, which could rise by 60 % if their costs of financing increase by 100 basis points.

2.5. Risky assets and low rates

The prices of riskier assets remain dependant on low rates. The prices of equities and corporate bonds have risen steadily, bar fluctuations arising from political uncertainty (the trade war, the possibility of a no-deal Brexit). This performance is well above growth in expected earnings or business sentiment. Using a dividend discount model, ECB (2019c) concludes that half of the increase in aggregate equity prices since the end of the euro area sovereign debt crisis can be attributed to lower benchmark yields (Chart A on page 44).

The search for higher yield has resulted in increased demand for longer-maturity and lower credit-quality assets. While some risk-taking is an objective of loose monetary policy, continued low yields can result in misaligned valuations and increase the possibility of a stark price correction. US equity prices seem overvalued using both the unadjusted and the cyclically adjusted price/earnings (P/E) ratio, while the euro area P/E ratio is close to the upper end of the historical distribution when using raw data, but well in the middle of the distribution when using cyclically adjusted data, suggesting fair valuation (Chart 2.9 on page 43 of ECB, 2019c).

Low funding costs due to a very low and very flat term structure further incentivise companies to leverage themselves. This may amplify the degree of re-pricing in a downturn.

2.6. The banking sector

ECB (2019c) highlights cyclical and structural factors that contribute to weak profitability, and evaluates the resilience of the banking system in adverse scenarios.

Bank profitability remains low in a historical comparison, driven by slowly growing net interest income, while net fee and commission income fell. Euro area banks have high cost-to-assets and cost-to-income ratios. Some banks have sought to reduce branches and personnel and invest in digitalisation, yet a sub-sample of significant institutions (SIs) showed IT expenses were the main drivers of operating costs increases in 2014-18. Poor profitability performance remains widespread, yet banks in EU countries where the effects of the financial crisis were more significant remain weaker.

The evaluation of resilience uses a baseline and an adverse scenario. The adverse scenario assumes a significant downturn in 2021 (GDP fall by 1.7 %, unemployment rate rises to 10 %), a 16 % residential real estate price fall, and an increase in 130 basis points of the weighted average euro area 10-year bond yield.

The baseline scenario sees a small fall in bank profitability, small changes in lending to non-financial corporates, while bank solvency improves with the aggregate Common Equity Tier 1 (CET1) capital ratio rising by almost 1 percentage point to 15.3 % in 2021.

The adverse scenario implies significant losses surpassing 15 % of bank equity, big falls in lending to non-financial corporates, and a fall in CET1 by 3.1 percentage points to 11.3 %.

The ECB's overall assessment is that the banking system remains largely resilient to major risks. The question is of course the likelihood of a scenario which is more adverse than the adverse scenario considered by the ECB.

2.7. Non-bank financial sector

The non-bank financial sector includes insurance corporations, pension funds, investment funds, money market funds and other financial institutions. The combined balance sheet of these non-bank financial institutions grew in the first half of 2019, because of inflows and valuation gains, and now represents 56 % of total financial sector assets.

While valuation gains and inflows imply good news for the sector, their profitability is challenged by low yields. Nearly three-quarters (72 %) of insurers' and pension funds' bond holdings yield less than 1 % (Chart 4.2 in ECB, 2019c). The low yield environment stimulates demand for riskier, longer-duration and less-liquid assets from non-bank financial entities, which can pro-cyclically affect prices and increase vulnerability, while maturity mismatch increases between liabilities and assets, leading to increased vulnerability to any re-pricing. Emerging market exposure is also increasing, though this remains small and also entails foreign-exchange risk.

Despite these increasing vulnerabilities and risks, the ECB foresees a stable outlook for the sector.

2.8. Climate change

The May 2019 ECB *Financial Stability Review* included a comprehensive assessment of the channels through which climate change can affect financial stability. It illustrates with various data the exposure of euro area financial institutions to risks from climate change (see pages 120-133 of ECB 2019b). Notwithstanding the limited data availability, the analysis shows that climate change-related risks have

the potential to become systemic for the euro area, in particular if markets do not price these risks correctly. The ECB report further highlighted the need for a forward-looking framework to improve the estimation of risks, and for better databases.

The November 2019 ECB *Financial Stability Review* included a box on climate-related disclosures by banks and insurers and a brief analysis of their market impact (see pages 64-66 of ECB 2019c). This box tackled the difficulty in gauging climate risks inherent in financial assets, which in turn complicates the assessment of how these risks could affect financial institutions. The Greenhouse Gas Protocol includes three 'scopes' of emissions for voluntary disclosure (direct, indirect from energy use and other indirect). However, financial firms disclose less than 30 % of climate risks embedded in their financial assets (Chart A on page 65 of ECB 2019c), even though emissions related to financial assets of financial firms are very significant. The ECB argues that inconsistent reporting might explain why disclosures appear to have no effect on market valuations for banks, in contrast to pension funds, for which the ECB finds a statistically significant correlation (Chart B on page 66 of ECB 2019c).

3. FINANCIAL STABILITY ISSUES REQUIRING SPECIAL ATTENTION

We broadly agree with the key messages of the ECB's comprehensive analysis. In this section, we augment the ECB report by focusing on certain issues we believe require special attention.

3.1. The housing market

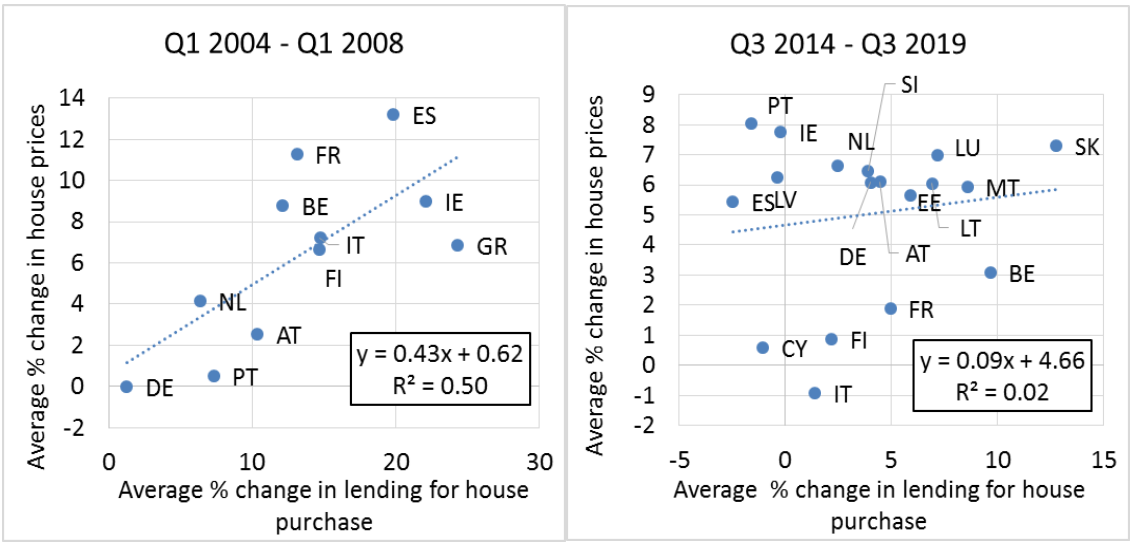
We complement the ECB's analysis by comparing pre-crisis developments, which were unsustainable in some countries, with the recent episode of house price increases. Housing loan developments are available from the ECB only starting in January 2003, while the housing boom started earlier in some euro area countries. Nevertheless, two important conclusions can be drawn from Figure 1.

First, before 2008 there was a positive correlation between the speed of credit growth and house-price increases, suggesting that credit growth might have fuelled house-price growth. But this has not been the case in the past five years, since the correlation is rather weak. Certainly, there are some exceptions, such as in France in the pre-crisis period, where house prices increased very rapidly but credit growth was limited. Slovakia is an exception in the past five years since fast house-price increases there have coincided with rapid credit growth. But the big picture remains: in most euro area countries credit growth does not appear to be the most important driver of house-price increases in the past five years. This finding suggests reduced financial stability concerns compared to the pre-crisis period, because an eventual house-price correction will affect fewer borrowers and therefore impact less on bank profitability.

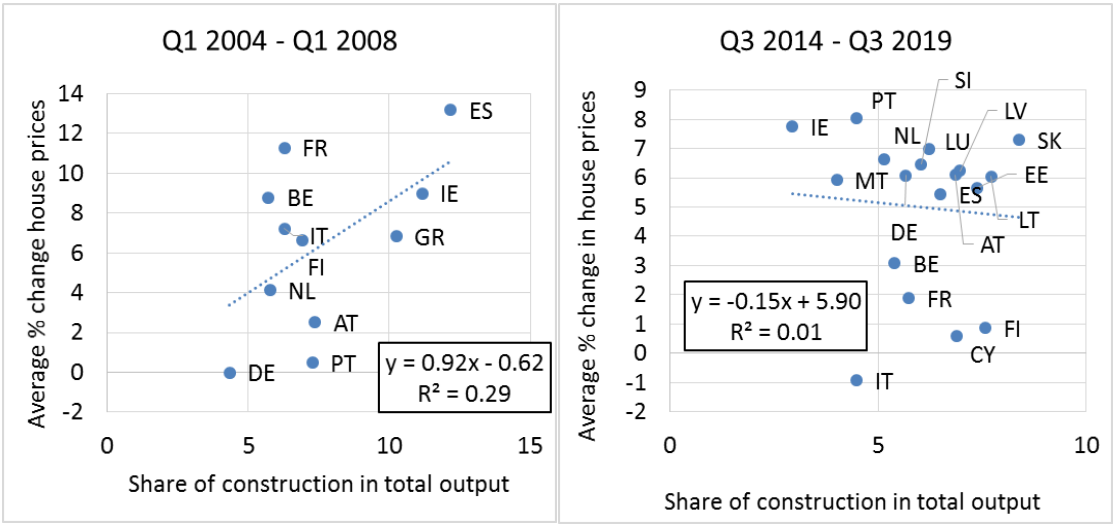
Second, in the pre-crisis period the share of construction in output increased to over 10 % in Ireland, Spain and Greece. Employment in the construction sector, and public-sector revenues related to construction, were therefore significant. The global and euro area financial crisis led to massive contraction in construction, with increased unemployment and loss of fiscal revenues. By contrast, in France, the share of construction in output remained almost unchanged in the pre-crisis period, despite the very fast pace of credit growth, and thereby the global and euro area crises did not cause major disruption. In the past five years, construction has not expanded much, suggesting again that an eventual housing bust would be less disruptive than it was in Greece, Ireland and Spain after 2008.

Figure 1: House price increases, housing loans and construction share of output, 2004Q1-2008Q1 and 2014Q3-2019Q3

(A) House price increase and housing loans



(B) House price increase and construction share in output



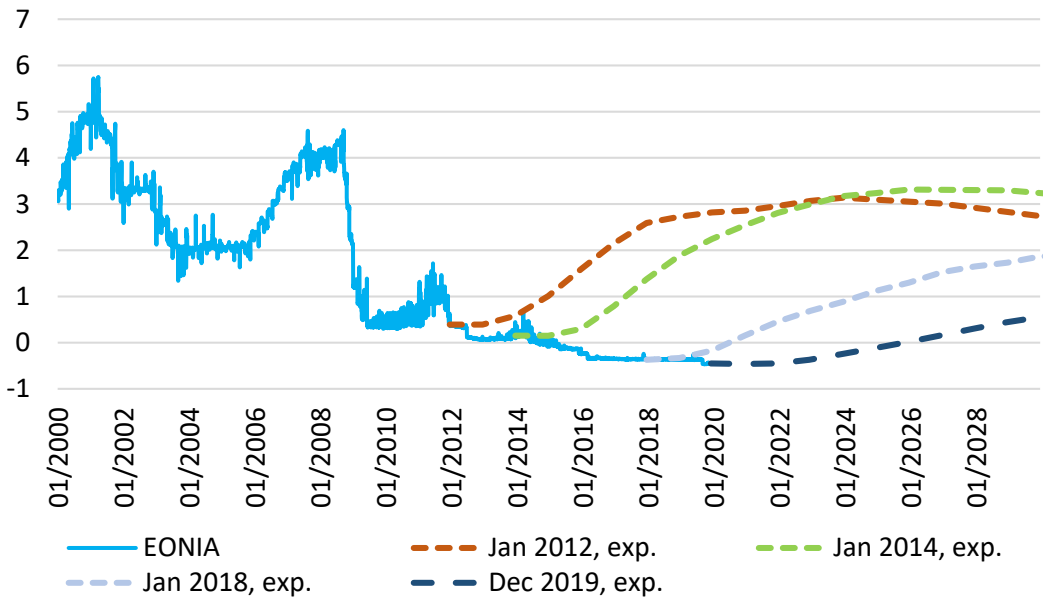
Source: Bruegel using data from OECD for 2003-2008 house prices; Eurostat for 2014-2019 house prices and gross valued added for the total economy and for construction; ECB for house loans.

Note: the share of construction in output refers to the maximum value reached during the sample period.

3.2. The unreliability of market expectations

While there has been a secular decline in safe real interest rates since the early 1980s (Del Negro *et al*, 2019), markets have been surprised by the continued fall in euro area interest rates, as indicated by **Error! Reference source not found.**.

Figure 2: Euro area interest rates and expectations



Source: Bruegel using data from Bloomberg.

Given that market expectations have been wrong many times in recent years, current expectations might turn out to be inaccurate too. The euro area AAA-rated yield curve is below zero up to 14 years of maturity[1]. We regard an unexpected increase in the yield curve as more likely than an unexpected decline.

Since the current low rates have raised valuations of equities, a key question is how much equity valuations will change if and when interest rates rise. The direct effect of an interest rate rise would be a fall in equity prices. However, the crucial factor would be the reason for the interest rate increase.

Developments in the United States serve as a useful example. The Federal Reserve stopped net asset purchases in October 2014 and raised interest rates from December 2015. The effective federal funds rate increased from 0.1 % in November 2015 to 2.4 % in December 2018, while since October 2017, the Fed has even started to shrink its balance sheet, withdrawing liquidity. Despite these significant monetary tightening measures, US stock markets have not crashed and volatility has hardly changed. Most likely, robust US economic growth (boosted by a fiscal stimulus and weakened by the trade disputes and weaker global growth) increased expected corporate profits, which counter-weighted the impact of interest rate increases and Fed balance sheet contraction.

In Europe, too, the expected impact on equity prices of interest rate rises will likely depend on economic developments: if the economic outlook improves, higher interest might not lead to large equity price falls. But if interest rate increases are not accompanied by an improved economic outlook, equity prices could fall significantly. Equity prices could also fall significantly if the currently expected mild slowdown turns out to be a more protracted slowdown, or even a recession, even if interest rates do not change. An eventual major US stock price fall would likely cause European equities to fall too.

A crucial issue is the possibly heterogeneous recovery from the current economic slowdown in the euro area. There is the risk of differentiated growth – for example, western and northern euro area members could grow faster than southern European countries. Since western and northern euro area members account for a large share of the euro area while the ECB considers the euro area average, such an asymmetric development would lead to area-wide interest rate increases, leading to interest rates that are too high for southern European countries. Such a situation would depress equity prices in the south and make economic recovery in southern countries even more difficult.

An asymmetric recovery could also have implications for public debt sustainability. If countries with higher public debt levels do not grow as much as countries lower debt levels, the currently favourable growth/interest rate differential might turn less favourable for countries with higher public debt levels. Coupled with domestic political risk, that might lead to an increase in risk premiums in some countries with weaker fiscal positions, which could further undermine fiscal sustainability, economic growth and financial stability, given the large government bond holdings of the banking system and the weaker economic performance.

3.3. The shortage of safe assets

A sufficient supply of safe assets is essential for the smooth functioning of the financial system. The pricing of financial instruments and their valuations depend on returns on safe assets, while safe assets are also used as collateral in various transactions, including repurchase agreements. A low supply of safe assets is an important contributing factor to low interest rates. We miss a discussion in the ECB *Financial Stability Review* of the possible shortage of safe assets in the euro area.

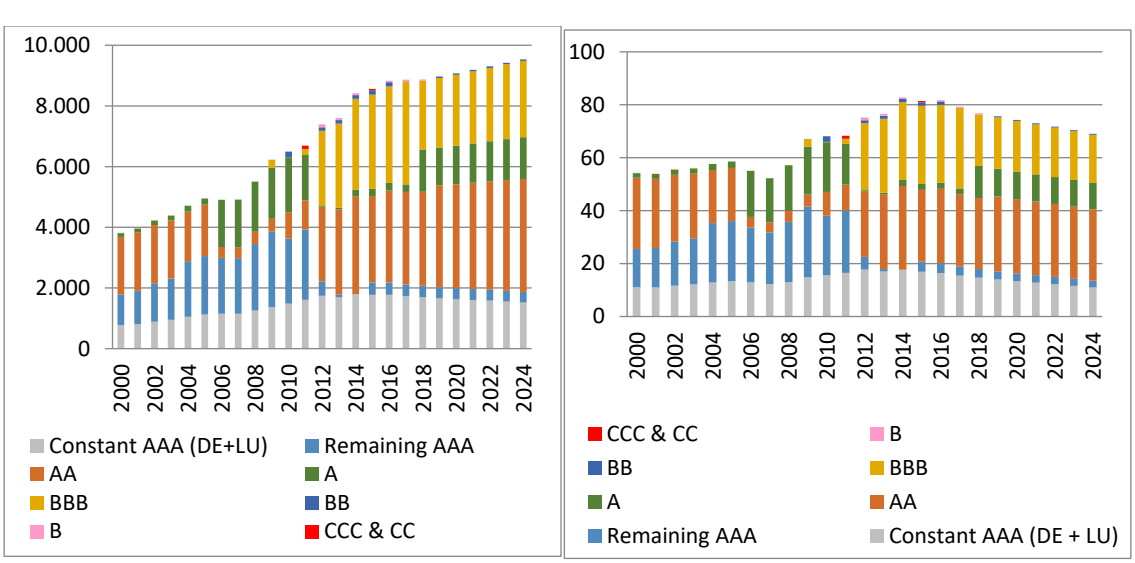
[1] See https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/euro_area_yield_curves/html/index.en.html.

Safe assets can be issued by governments and EU institutions.

As regards general government debt securities, currently only three countries (Germany, Luxembourg and the Netherlands) have AAA credit ratings for their long-term debt. Figure 3 shows that their outstanding stock is expected to decline in euro terms (because of budget surpluses) and even more as a share of GDP (because of the increase in nominal GDP).

The AA-rated countries are Austria, Belgium, Estonia, Finland and France, while the A-rated countries are Ireland, Latvia, Lithuania, Malta, Slovakia, Slovenia and Spain. Italy's current rating is BBB, along with Cyprus and Portugal. Greece is at B.

Figure 3: Debt security liabilities of euro area general governments by credit rating

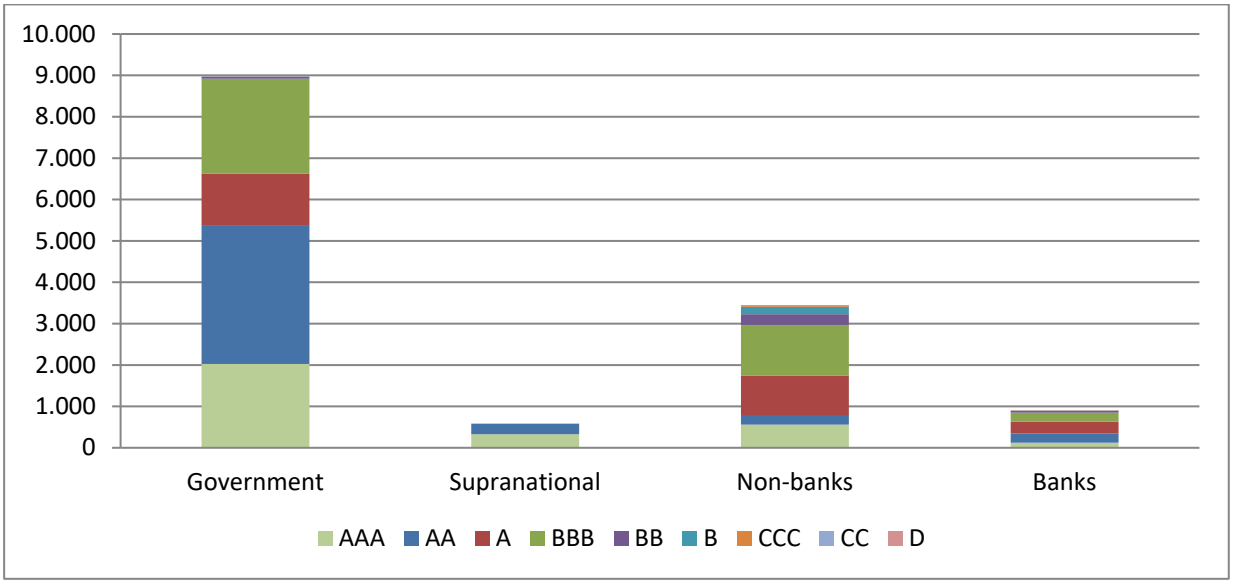


Source: Bruegel using data from Eurostat for government debt securities and IMF WEO for gross public debt and GDP, S&P ratings.

Note: Eurostat data on government debt securities is available for 2018. For our projections for 2019-2024, we assumed that the 2018 ratio of government debt securities to gross public debt remains the same and we use the IMF WEO projection for public debt in 2019-2024.

Meanwhile, the supply of safe assets from EU institutions such as the European Investment Bank (EIB) is relatively modest and has also been shrinking (Figure 4).

Figure 4: Outstanding stock of euro-denominated debt securities by credit rating, € billions



Source: Bruegel based on Bloomberg data for the outstanding stocks, and their S&P rating, of euro-denominated bank and non-bank debt securities (irrespective whether the issuer is domiciled in the euro area or not); Bloomberg data for the stock of supranational entity's bonds (which include the EU, EIB, European Stability Mechanism, and European Financial Stability Facility). For government debt securities we use our projection for 2019 as explained in the note to Figure 3.

To address concern about the low supply of safe assets, we would encourage European policymakers to pursue three avenues. First, the top-rated euro area countries, in particular Germany, should not further reduce their absolute levels of debt. In a negative interest-rate environment, there surely must be projects with positive returns which could be funded by borrowing. Second, Figure 3 also shows that the supply of safe assets would be significantly increased if the ratings of less-well-rated countries improved. To a significant extent, this is a question of boosting long-term productivity growth. We consider therefore reforms boosting such growth to be fundamental also for the smooth functioning of the financial system. Third, it would be desirable for the euro area in particular to issue a common bond. If the EIB and other institutions could increase their supplies of bonds to fund economically and publicly sensible investments, for example green projects, financial stability would improve. The key argument is that credible fiscal actors should increase the supply of bonds to contribute to rising rates. Moreover, if less-well-rated bonds became safe assets, this would also increase the supply of safe bonds, helping to increase the interest rates on safe assets on which much financial market pricing is based.

3.4. Climate change

Financial risks can also result from climate change and its expected and unexpected consequences. The ECB's report calls for mandatory and harmonised firm-level reporting. This would allow better pricing and monitoring of financial institutions' exposures to climate-related risks, even if assessing firm-level risks to climate change is a complicated exercise.

Bolton *et al* (2020) regard price and financial stability as the primary mandate of a central bank, but fulfilling the mandate is challenged by climate-related risks. Therefore, they call for a more pro-active approach to coordinating central banks' responses to climate-related risks. Coordination with other public authorities and with the private sector also seems necessary for sufficient preparation in the face of climate risks.

We recommend that Members of the European Parliament push the ECB and other financial supervisory authorities to pay significantly more attention than currently to the impact of climate risks on financial stability. In the near term, we see a concrete task for Members of the European Parliament: fostering legislation on mandatory and harmonised firm-level reporting of emissions (and of climate-change related risks more broadly). Only comprehensive reporting by firms will enable the proper monitoring of financial institutions' exposures to climate-related risks. Proper reporting would allow better pricing of non-financial firms and banks. We would also like to stress that in terms of regulation, increasing capital requirements for 'brown' assets is in our view the appropriate way to capture the additional risk resulting from climate change. Decreasing the capital requirements on 'green' assets could undermine the credibility of green finance, since other risks remain unchanged.

3.5. Cybercrime

ECB (2019a) presents a banking risk assessment, which includes cybercrime and IT disruption as one of three main drivers of risk in the banking system. Such risks could potentially disrupt the functioning of financial markets. However, the November 2019 ECB *Financial Stability Review* (ECB 2019c) referred to the issue only once – and briefly. Demertzis and Wolff (2019) documented the rise in cyber-attacks throughout the EU, highlighting the fact that while some institutions have implemented significant safeguards (the efficiency of which is as of yet unclear), very little has been done at Eurosystem level to ensure all financial institutions are adequately protected. Demertzis and Wolff (2019) further called for the integration of the EU's broader security architecture, for example with centralised screening of FDI flows.

In our assessment, the ECB and European policymakers more broadly need to pay significantly more attention to the risks arising from cyberattacks for the stability of the EU's financial system. We recommend that MEPs emphasise this point in their hearing.

3.6. Digital currencies

The ECB report does not mention digital currencies. Digital cryptocurrencies have seen significant volatility in recent years. In our assessment, the market for digital currencies is still relatively small, so financial stability concerns are limited. Nevertheless, there have been warnings of the risks to financial stability that could arise from the proliferation of digital currencies in the future, including from Mark Carney (as reported by Reuters, 2019), Randal K. Quarles (2019) and the BIS (2019). Central bank digital currencies could result in cyclical runs on banks (given popular access to central bank reserves) and reduced financial intermediation (Claeys and Demertzis, 2019). We would therefore recommend that increased attention should be paid to various forms of digital currency from the point of view of financial stability.

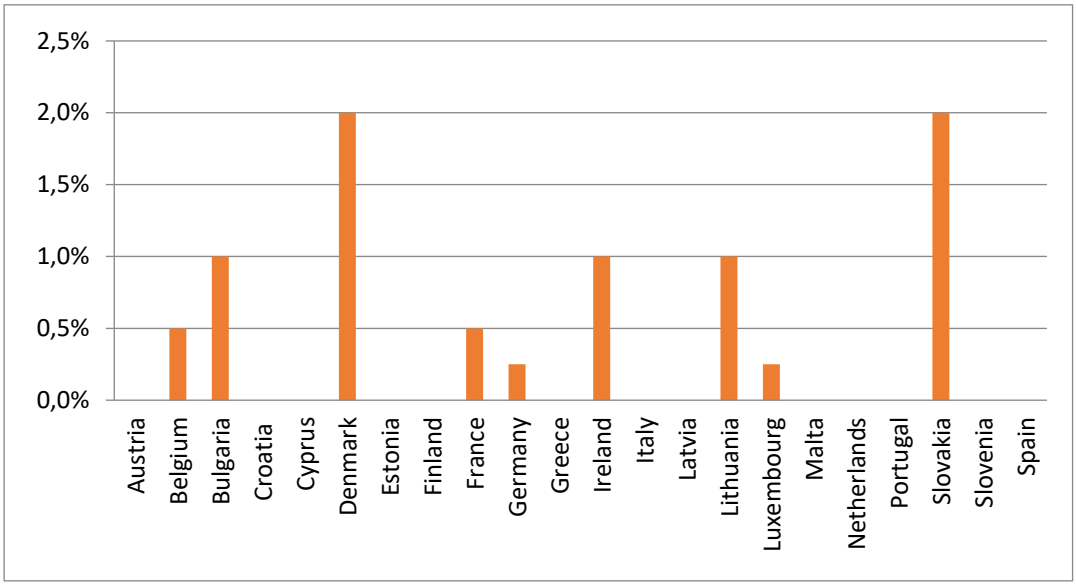
4. MACROPRUDENTIAL MEASURES TO ADDRESS RISKS

Macroprudential measures adopted in euro area countries can be roughly divided into two primary groups: capital-based and borrower-based measures. Capital-based measures introduce minimum regulatory capital requirements, while borrower-based measures focus on lending conditions and impose a maximum threshold on credit. These measures have recently been employed to target potentially over-heated residential real-estate markets.

The primary capital requirement macroprudential measure employed in the euro area is the capital conservation buffer (CCoB), a capital buffer on banks' total exposure that works as an additional safeguard to the 4.5 % requirement of Common Equity Tier 1 capital[2].

Additionally, counter-cyclical capital buffers (CCyB) have been introduced to counter the pro-cyclicality inherent to the financial system. This buffer is activated when cyclical systemic risk is increasing in the banking sector. The subsequent build-up of capital during booms should support the credit supply in the cycle downswing. Figure 5 shows which euro area countries have introduced counter-cyclical capital buffers.

Figure 5: Countercyclical capital buffer requirements, % of bank total exposure



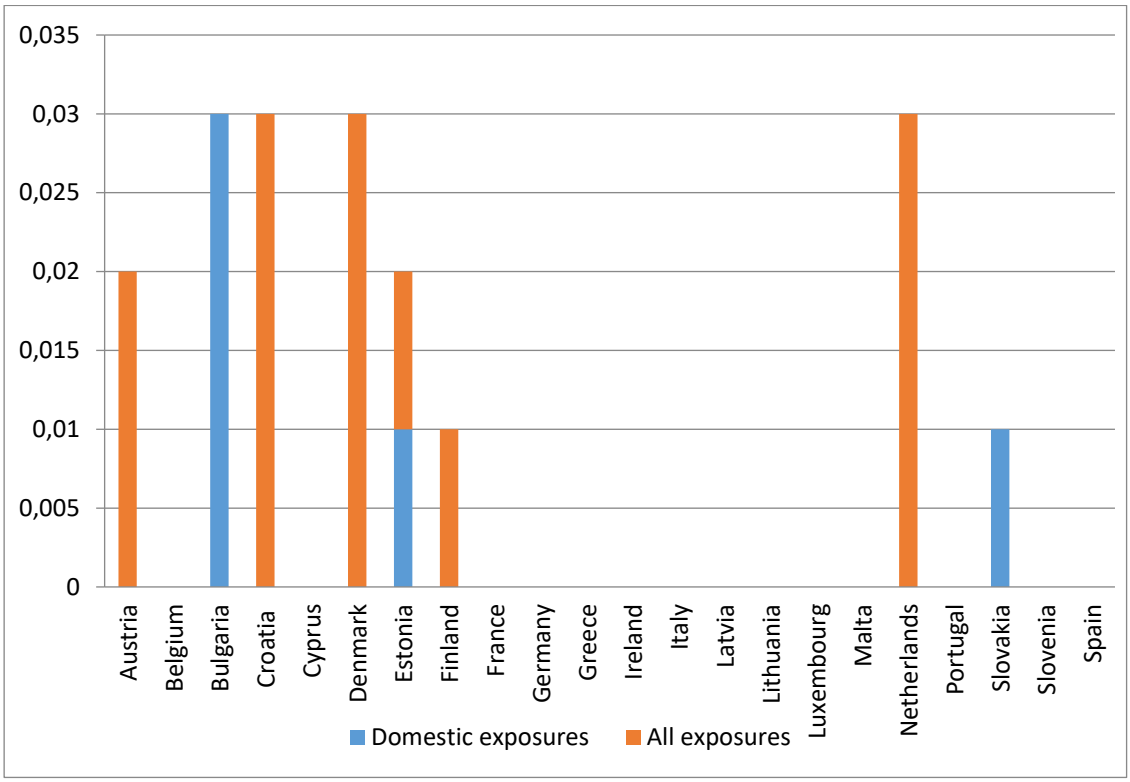
Source: Bruegel using data from ESRB.

Note: Decision rates up to end of 2020 (as of December 2019).

A third capital requirement in place in some euro area countries is the systemic risk buffer (SyRB), which protects the financial system against longer term and non-cyclical risks. It may be applied at different levels to all institutions or a group of institutions, on all exposures or a collection of exposures. Current rates are shown in Figure 6.

[2] https://www.esrb.europa.eu/national_policy/capital/html/index.en.html.

Figure 6: Systemic Risk Buffer requirements, % of total bank exposure

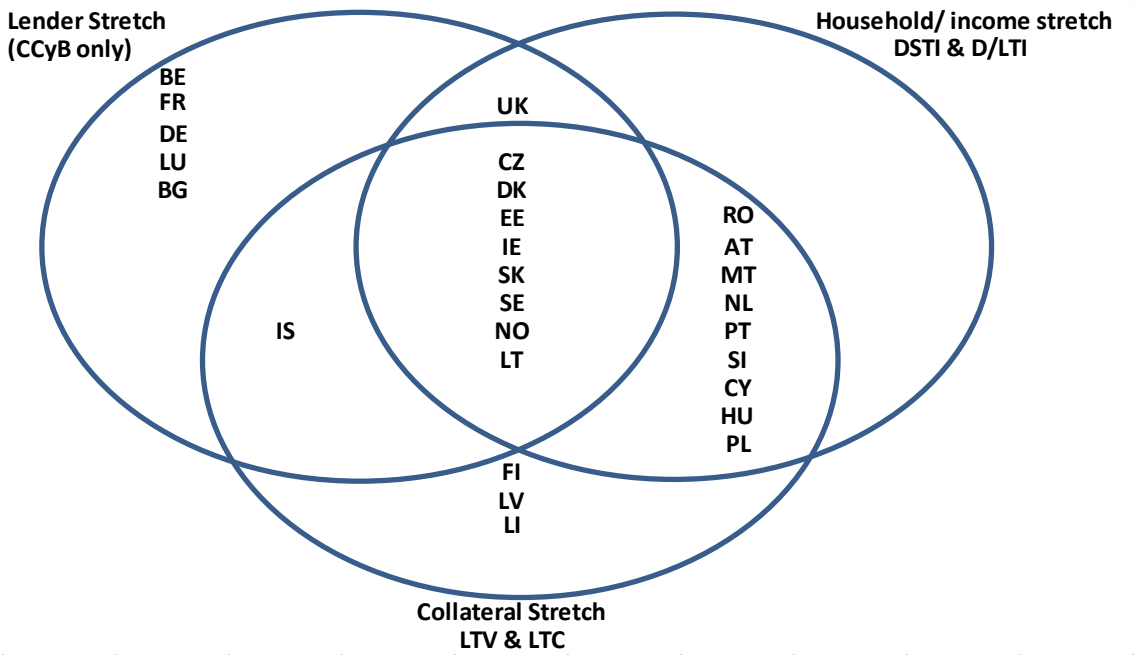


Source: Bruegel using data from ESRB.

Finally, global systemically important institutions (G-SII) have a compulsory additional surcharge or buffer that raises the amount of Common Equity Tier 1 capital they have to hold. Similarly, other systemically important institutions (O-SIIs), designated by member states, must also meet supplementary requirements to their Tier 1 Capital.

Additionally, risk assessments of residential real estate markets sometimes lead to the introduction of measures that focus on three aspects, as argued by ESRB (2019): the collateral stretch (concentrated on price misalignments and house-price evolution), the lending stretch (assesses the evolution of lending) and the household stretch (concentrates on household balance sheets and their potential vulnerabilities). Two types of borrower-based measures have been employed to prevent residential real estate from over-heating. First, loan-to-value (LTV) and loan-to-collateral (LTC) measures limit credit, based on collateral to address the collateral stretch. Second, debt-service-to-income (DSTI) and debt/loan-to-income (D/LTI) measures limit credit based on household income to address the household/income stretch. Additionally, counter-cyclical capital buffers address the lender stretch.

Figure 7: Use of residential real estate instruments

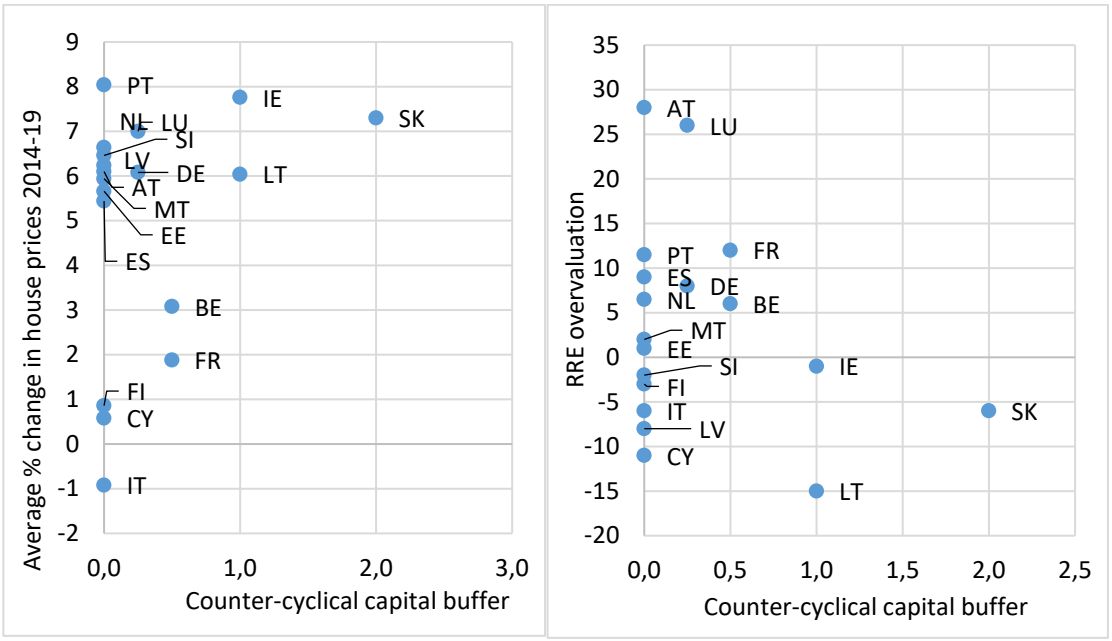


Source: Bruegel using data from ESRB, updating and extending from slide 11 of Dierick (2018).

Given this state of play, it is worth comparing the deployment of these macroprudential measures with indicators of residential real estate vulnerability. Measuring the latter is difficult. We use two indicators: house-price increases between 2014 and 2019, and the over/under-valuation as estimated by the ECB (see Chart 1.14 of ECB, 2019c). The left panel of Figure 8 shows that Slovakia adopted the highest counter-cyclical capital buffer (CCyB). Some other countries had similar, or even faster, house-price increases, but adopted lower CCyB, or have not adopted buffers at all.

A possible explanation for these differing responses in different countries could be that the house-price increase does not reflect well whether the housing market is overheated. For example, fast growth from a low level might not reflect a problem. We therefore also use the ECB's estimate of house-price overvaluation in the right panel of Figure 8. The message from this panel is even more controversial: while the ECB estimates that Austrian and Luxembourgish house prices are overvalued by about 25-30 %, Austria has not introduced any CCyB, while the Luxembourgish value is very low at 0.25 %. In contrast, Slovakian housing prices are seen undervalued by the ECB, yet Slovakia implemented the largest CCyB.

Figure 8: Counter-cyclical capital buffers against house price increase (left panel) and residential real estate overvaluation (right panel)



Source: Bruegel using data from Eurostat for house prices (data is for 2014Q3 to 2019Q3), ESRB for the counter-cyclical capital buffer, and the ECB Financial Stability Review November 2019 (Chart 1.14) for residential real estate (RRE) overvaluation.

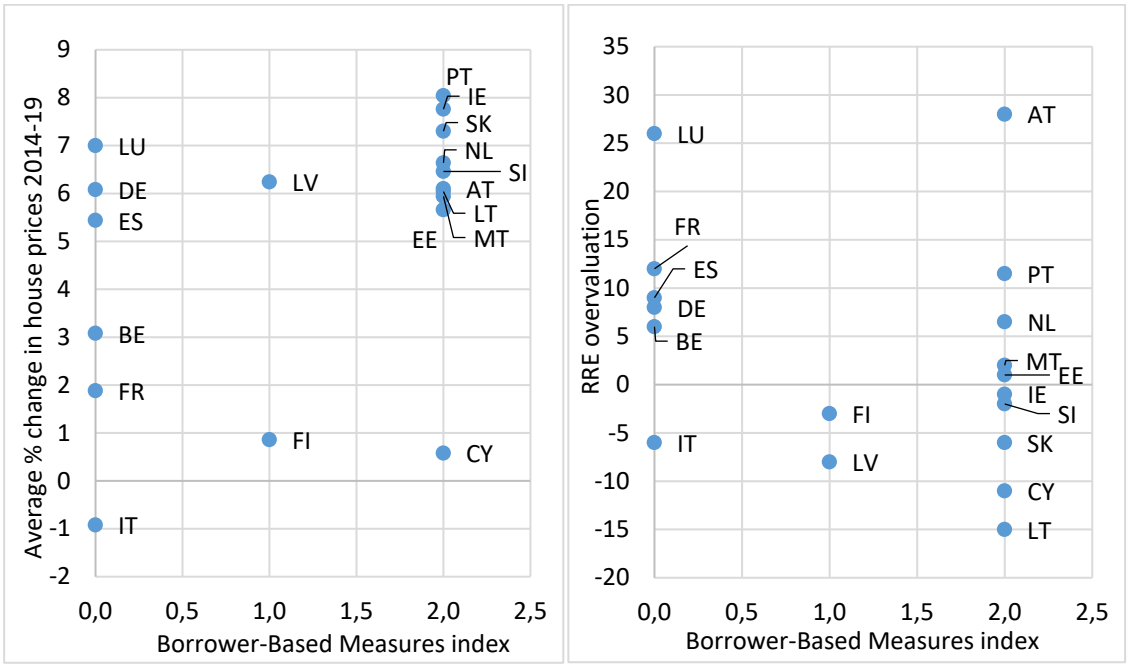
Notes: Counter-cyclical capital buffer (CCyB) values correspond to decided rates (as of December 2019), while implementation can start later.

A similar picture is evident when one considers borrower-based measures (Figure 9). We calculated a new index, which has a value of zero if no measures have been introduced, one if either measures addressing the collateral stretch (LTC and LTV) or the household stretch (DSTI and D/LTI) have been introduced, and two if measures addressing both of these have been introduced. Certainly, the strictness of measures could vary from country to country, even if they have the same score, which is a limitation of our index.

Luxembourg, Germany and Spain have not introduced any borrower-based measures, even though these countries experienced relatively fast house-price increases (left panel of Figure 9), and overvaluation is particularly high in Luxembourg, but also sizable in Germany and Spain (right panel of Figure 9). Furthermore, Spain has adopted no CCyB, while Luxembourg implemented one of only 0.25 % in January 2020 and Germany is due to implement only 0.25 % as of July 2020. France and Belgium have not adopted borrower-based measures even though their residential real estate markets are also overvalued.

The inconsistencies between residential real estate vulnerability indicators and adopted macroprudential measures call for a comparative assessment of cross-country vulnerabilities and adopted macroprudential measures.

Figure 9: Borrower-based macro-prudential measures against house price increase (left panel) and residential real estate overvaluation (right panel)



Source: Bruegel using data from Eurostat for house prices (data is for 2014Q3 to 2019Q3), ESRB data to calculate the borrower-based measures index, and residential real estate (RRE) overvaluation is from Chart 1.14 of ECB (2019c).

Note: House price data is for 2014Q3 to 2019Q3. The Borrower Based Measure index exhibits a value of zero if no measures have been introduced, one if either measures addressing the collateral stretch (LTC & LTV) or the household stretch (DSTI & D/LTI) have been introduce, and two if measures addressing both of these have been introduced.

5. CONCLUDING REMARKS

EU policymakers need to be informed about risks to financial stability and the ECB report (ECB, 2019c) provides a great overview of key concerns.

We have highlighted a few areas that deserve special attention from policymakers based on our analysis: housing markets, the low interest-rate environment, climate-related risks and cyber risks. Concrete measures can be put in place to address these concerns.

We would also like to emphasise two major macroeconomic topics that interact with financial stability. The first is possible risks related to sovereign debt. We concur with the view that risks to sovereign debt are rather limited because rates are very low and therefore the budgetary burden of debt is very limited. We would also argue that rate increases in normal circumstances are unproblematic. In fact, governments have lengthened the maturity of debt, insuring them against the effects of rate raises. More importantly, rate raises are usually connected with higher real growth, which should also boost tax revenues to service the debt. In the euro area, however, the main concern is that rates could increase because of an average increase in real growth, but some countries will not share in the growth increase. We therefore caution against fiscal expansion in countries with high debt burdens and low growth potential.

Second, we would like to stress the importance of more proactive fiscal policies to guard against the next downturn. Any major macroeconomic downturn will increase financial stability risks. Macroeconomic management is therefore not only beneficial for growth and jobs but also for financial stability. Policymakers need to understand clearly that there will be little scope to use monetary policy tools in the next recession, and should prepare accordingly. In fact, interest rates cannot be cut much further and other monetary-policy instruments are more limited in their effectiveness. It is therefore the responsibility of fiscal policymakers to prepare for the next recession with significantly more proactive fiscal policies than they have traditionally pursued.

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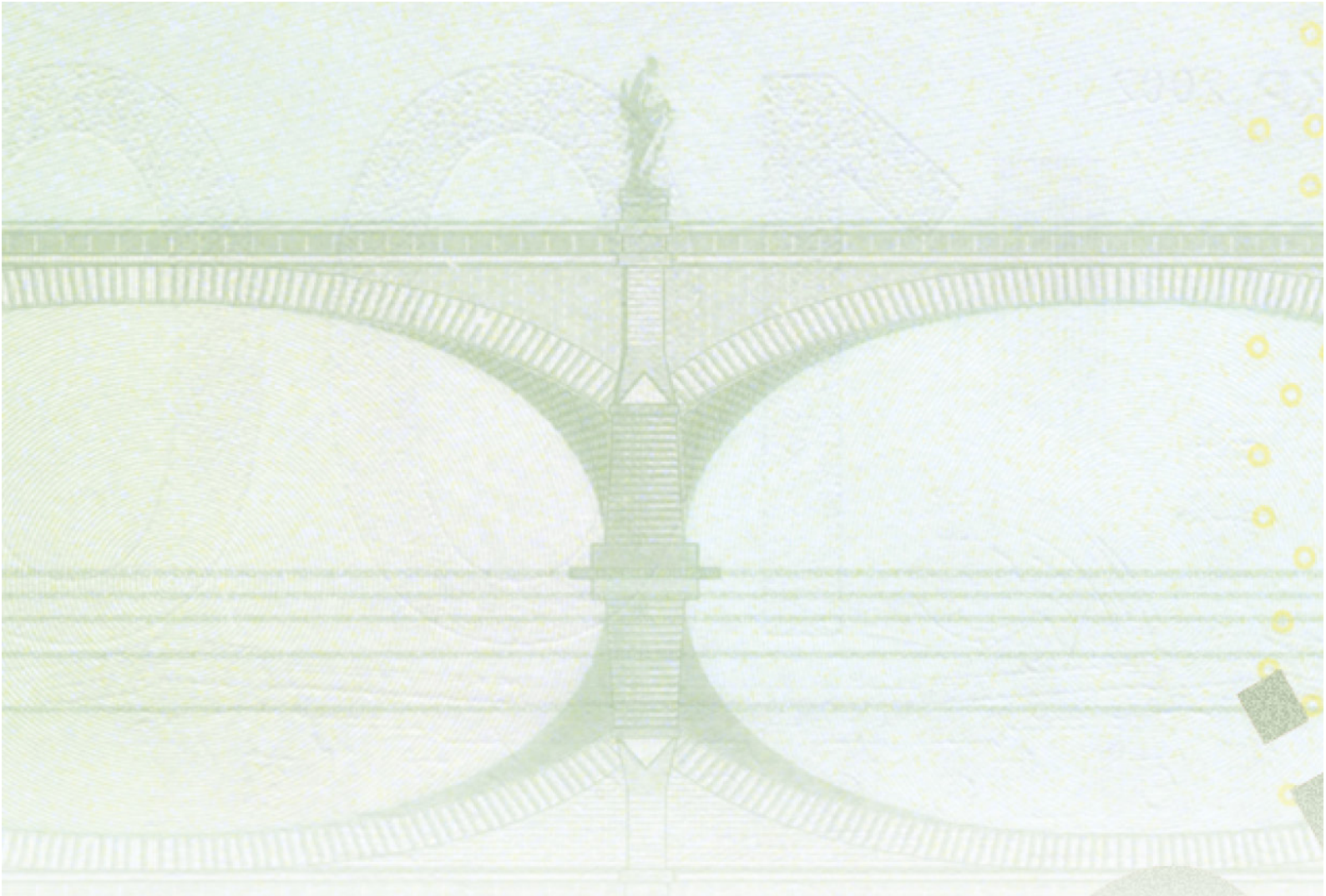


Financial Risks in Europe: The End of the Beginning

Christopher A. HARTWELL (CASE)

Abstract

It appears that recession may be on the way for the EU as a whole and the euro area in particular. Having used all of its instruments in the previous crisis, the European Central Bank has little left that can be helpful when the inevitable happens. This brief examines the financial risks facing the euro area and details how flexibility and non-intervention – the direct opposite approach from the global financial crisis – should characterise the response to the next crisis.

This document was provided by Policy Department A at the request of the Committee on Economic and Monetary Affairs.

CONTENTS

LIST OF ABBREVIATIONS

ECB	European Central Bank
EFB	European Fiscal Board
ESRB	European Systemic Risk Board
EU	European Union
GFC	Global Financial Crisis
NPL	Non-performing Loans
PMI	Purchasing Manager's Index
RoE	Return on Equity

EXECUTIVE SUMMARY

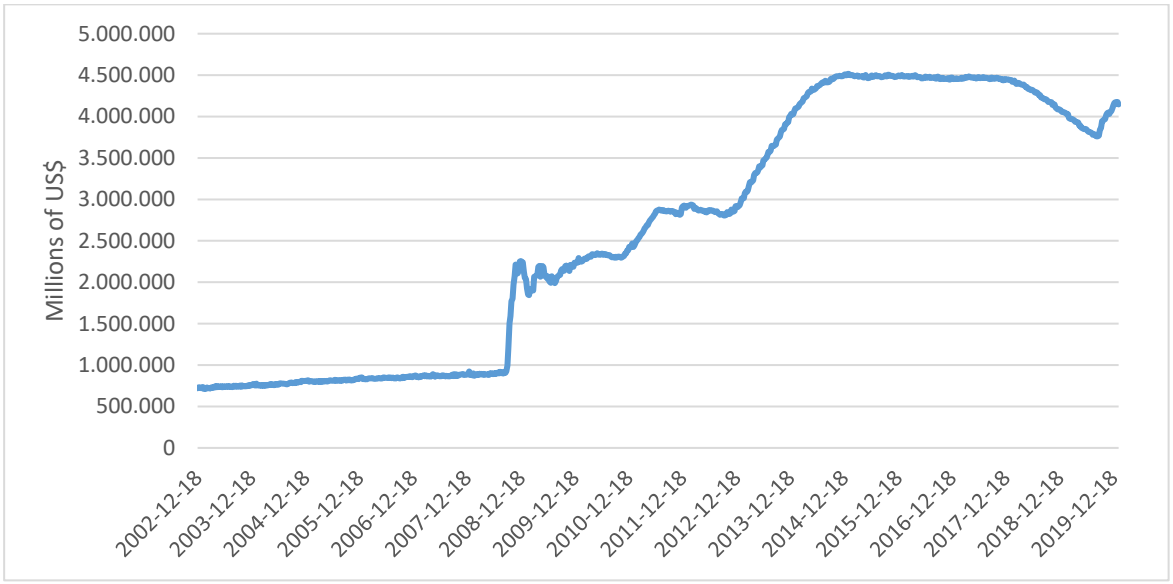
- **The global economy appears to be heading for a recession in 2020, and the euro area is not immune**. Indicators throughout Europe show slowing growth, slack demand, and a number of risks both internally and externally.
- **The financial sector in the euro area has been operating on the edge for the past decade**, buoyed by excessively loose monetary policy but without fundamental improvements within the euro area to make the recovery sustainable. Any recession could strike the financial sector quite harshly, albeit with effects differentiated across Member States and to different degrees.
- **This paper examines the internal and external risks to the euro area financial sector**, concentrating on the broader macroeconomic threats but also focusing on the political issues globally which could push the financial sector over the edge.
- **Internally, banks in the euro area are facing a higher and similar risk profile**, occasioned by the regulations put in place in response to the global financial crisis. At the same time, unconventional monetary policy has made many banks far less profitable, reducing their own buffers to be able to weather an economic downturn. Compounding this all is continued political uncertainty, including still surrounding the aftermath of Brexit but extending to the ECB's own policies, which is holding back real progress.
- **Externally, a phalanx of threats are arrayed against the financial sector in the euro area**. Possible slowdowns in the US, precipitated by a crash of asset prices, and in China, as it reaches the limits of growth, have negative consequences for the entire euro area. Meanwhile, the populist wave which has hit the world post-global financial crisis may have crested but it shows no sign of heading out to sea, meaning more protectionist and anti-growth policies to threaten the global economy.
- **These internal and external threats may do more damage than is usual in an economic downturn due to the fact that both the ECB and Member States have little ammunition to fight.** With the ECB's foot on the gas pedal throughout the tepid recovery of the past decade, the only monetary solutions that can go beyond current levels are patently absurd. On the fiscal policy side as well, governments have been expanded in the midst of a recovery, leaving little that can be done in terms of spending.
- This paper recommends that **the coming recession should be seen as an opportunity for re-normalisation of monetary policy**, a **re-set of monetary expectations**, and in particular a **pullback from the ECB as the driver of the euro area economy**. This means letting the chips fall as they may, as occurred in the United States during the 'forgotten depression' of 1920 to 1921. This will entail some painful adjustments, especially in the financial sector, but the euro area economy which emerges will be stronger for it.

1. INTRODUCTION

Since early 2018, consumer confidence and overall sentiment regarding the state of the European economy has reversed itself abruptly. Looking solely at the benchmark Economic Sentiment Index (ESI) put together by Eurostat, declines in both EU-wide and euro area GDP have led to an abrupt decline of the ESI and a reversion to its long-term average as of the fourth quarter of 2019; at the same time, additional indicators such as industrial sentiment have turned negative and persisted throughout 2018. Not all is gloomy, as unemployment has reached new lows across the continent and household consumption has been high, but this could be due to inflated asset prices (according to the Flossbach von Storch Research Institute in Germany, total euro area assets have increased in value by 19.2% since 2014). However, such sanguine results cannot be expected to continue given that firms Europe-wide anticipate cutting back on investment (European Commission, 2020). Within the financial sector, in Europe's south in particular, banks have become very reliant on central bank funding while at the same time price/earnings ratios are far above immediate pre-crash levels from 2007. Clearly, the warning signs are present that the mild recovery experienced across Europe since the end of the euro crisis in 2013 is now at an end and recession may be imminent.

While the old joke - that economists have predicted 12 out of the last 8 recessions – is an important caveat to our forecasting, these unmistakable signs of weakness in Europe are compounded by global fragility. In the largest example, the US Federal Reserve (the Fed), *primus inter pares* when it comes to central banking, has essentially resumed quantitative easing via both lowered interest rates and renewed monetary injections (primarily in the repo market, see Figure 1). Indeed, operations of the Federal Reserve, after a brief taper away from the unconventional, once again spiked in September 2019 and have remained at supra-normal levels: Fed assets are approximately 85 % greater at this moment than they were at the depths of the crisis in 2008 and have grown by 10 % from September 2019 to January 2020 alone.

Figure 1: Assets of the Federal Reserve, 2003 to 2020: the slightest taper reversed



Source: Federal Reserve Bank of St. Louis FRED indicators.

At the same time, slowing growth in China (forecasted at 6 % in 2020), due to its trade war with the United States, protests in Hong Kong, and recent biomedical disruptions, has the ability to bring the

global economy to an abrupt halt. The IMF, while projecting global growth of 3 % (its lowest level since the global financial crisis), has warned of a synchronised slowdown across developed economies, creating a 'precarious outlook' for global markets (IMF, 2019). Given the inherent fragility of the euro area's economic performance since the global financial crisis, any external shock has the ability to push the monetary union over the edge and into recession.

Of course, it should come as no surprise that business cycles still exist (despite the halcyon predictions of some in the 1990s, see especially Weber [1997]), and that the current era of expansion, no matter how mild, had to come to an end at some point. Where the difficulties begin, however, is in the reality that the EU has very little ability to cushion the blow of the coming recession; the fact of the matter is that the key economic policymakers are still engaged in fighting the previous crisis, having never pulled back from the tools utilised since the depths of the global financial turmoil. Indeed, the ECB has been engaged in 'unconventional monetary policy' for so long that it is in fact the new normal. The downside to such a permanent loose monetary policy (among other things) is that, if one believes that monetary solutions are feasible for cyclical or, worse, structural issues, then when the economic tides turn there is very little left beyond the bizarre, truly unorthodox, or overtly damaging that can be attempted. With business cycles and economic trends persisting even with a central bank doing 'whatever it takes', the reality is that, simply put, the ECB has very little wiggle room left for when the inevitable occurs.

This paper argues, continuing a theme from earlier briefings for the Monetary Dialogue (Hartwell 2019a), that unconventional monetary policy has made a painful recession more, not less, likely; more importantly, however, this paper goes beyond this observation to explore how Europe's financial sector has also become more fragile rather than more robust. More than anything, the global financial crisis (GFC) demonstrated the power of problems in the financial sector to impact the real economy, and thus the health of the financial sector has been on the minds of policymakers almost constantly since the GFC. Unfortunately, the tools which have been in place in Europe (and elsewhere) over the past decade have created greater systemic risks, similar risk profiles, and an overall fragility which could be exposed by the next recession. For policymakers who have exhausted both their standard and unconventional tools, the financial sector should be the main worry of European policymakers.

Building on this theme, this paper delves deeper into the specific risks to financial stability that the EU faces, focusing on both the risks internal to the euro area and those which are external. As can be gleaned from the more macroeconomic overview thus far, not all of the issues related to financial stability are exclusively derived from the financial sector, nor are they generated entirely within the EU. In fact, the EU's integration into the global economy, coupled with the prospect of a global synchronised slowdown, means that financial risk can come from any direction, and no grouping of countries (no matter how powerful in terms of aggregated GDP) is an island.[1] Only by understanding how internal and external risks may interact may we have a better sense of where the difficulties will come in an economic downturn.

The rest of this paper is structured as follows: the next section goes in-depth into the internal risks facing the euro area, while Section 3 focuses on the global and external risks to the European financial sector. Section 4 discusses the bind policymakers find themselves in, while Section 5 concludes with recommendations and a way forward.

[1] At the same time, even the most optimistic (and, in many ways, overwrought) forecasts of the impact of emerging markets beyond the G7 show an impact of no more than 25 % (Carstensen and Salzmann 2017), and it's likely that even these results are far overstated for the euro area (as well as the US and the UK).

2. THE ENEMY WITHIN

As noted above and in Hartwell (2019a and 2019b), the economic recovery in the euro area has been precarious at best, with euro area growth of barely more than 1 % being driven almost entirely by household consumption. With Germany experiencing effectively zero growth (and seeing two quarterly contractions in the past year), one of the drivers of the euro area has been effectively put out of service. As the real economy slows, the financial sector of the EU (and in particular the euro area) is likely to feel much more stress; the purpose of this section is to focus in on the areas internal to the EU and the financial sector in particular which may be problematic for the future.

2.1. More risk, more problems

A key portion of the overall response to the GFC by policymakers globally was an attempt to reduce risk within the financial sector. Such an objective drove multilateral initiatives such as Basel III capital requirements and buffers, as well as underpinning the move towards macroprudential policies. The prospect of 'too big to fail' also drove a more proactive stance towards financial regulation, with regulators scrutinising at both the individual institutional and systemic level the health of banks.

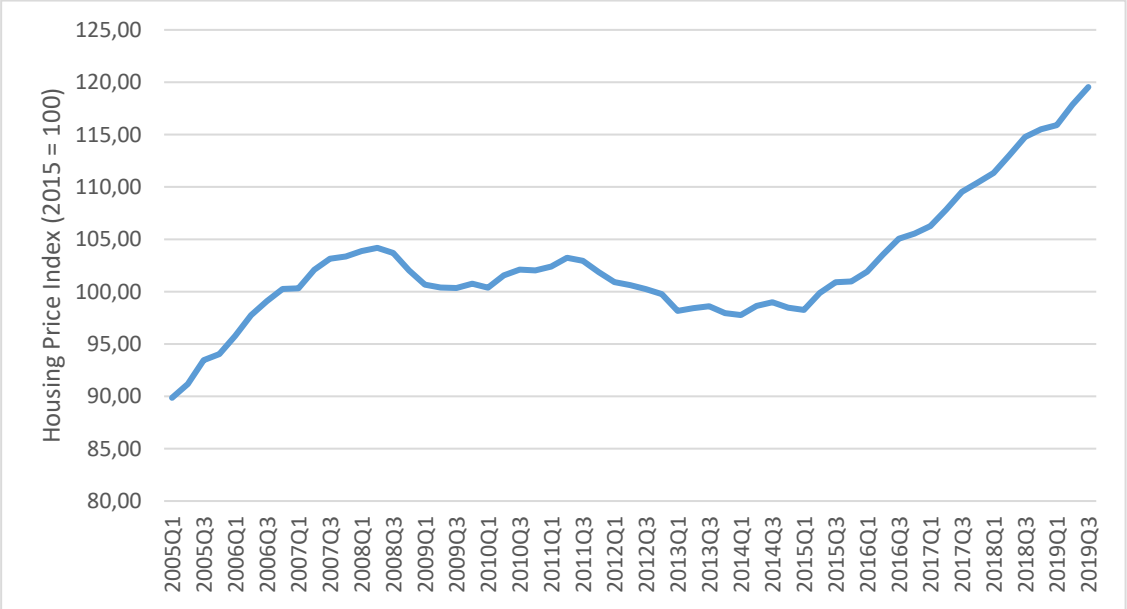
A look at the standard risk indicators, such as non-performing loans (NPLs), shows some improvement, as NPLs have shrunk to 3.41 % as of Q3 2019 from 7.48 % in Q2 2015, according to the ECB, although the persistence of 'zombie loans' from smaller players is somewhat worrying (as Kapounek *et al.* 2017 note, small banks are highly sensitive to demand-side factors, and thus rolling over bad loans is a way to hold on until external conditions improve). At the same time, credit derivative swap (CDS) spreads have been on the decline throughout 2019 while loan to deposit ratios have remained high (albeit uneven across the euro area) over the past three years. By these metrics, the financial sector is, for the most part, showing signs of resilience.

However, some of the policies adopted in order to lessen risk at the individual institution level have paradoxically increased systemic levels of risk. One of the key drivers in this regard has been the increasing requirements for greater 'zero risk' holdings such as government bonds. There is ample evidence that the regulatory changes accompanying the post-financial crisis response created incentives for firms to both deleverage and move into government bonds; according to Naceur *et al.* (2018:8), higher capital ratios created 'greater incentives for banks to strengthen their capitalisation encourage substitution out of retail-and-other-loan assets, and into risk-free, more liquid government bond securities.' While the move away from retail credit has been problematic enough for the real economy, regulations in this vein have had the additional effect of forcing disparate financial institutions into almost uniformly similar risk exposure to government operations. Put another way, if additional sovereign debt crises were to occur in the euro area, the financial sector would be exposed in an area where no risk was assumed. While some Member States have recognised that this is a real possibility given current regulations, reforms on more accurately calculating sovereign risk have been discouraged by the ECB as perhaps disadvantaging European banks.

Additionally, as is often the case in a monetary-fuelled boom (Tempelman, 2010), the easy access to liquidity created by low interest rates has allowed banks to lend when they normally might not. This is not to say that credit standards have changed appreciably: according to the latest risk dashboard from the European Systemic Risk Board (ESRB), credit standards have undergone a slight easing over the past year across the entire euro area (with a substantial decline in standards in the Netherlands), but not one of any significance. And, over the whole of the crisis period, bank lending declined across Europe with deleveraging (as noted above, accompanied by a move into bonds). On the other hand, there is a signal that not all is well, as recent trends have shown that similar effects are occurring in

Europe since late 2018 as happened in the United States in 2004 and 2005, mainly a move away from firm investment and into consumer residences, with growth of loans in this area over 20 % in late 2019 alone (ECB 2020).[2]

Figure 2: Housing prices in the euro area at new highs

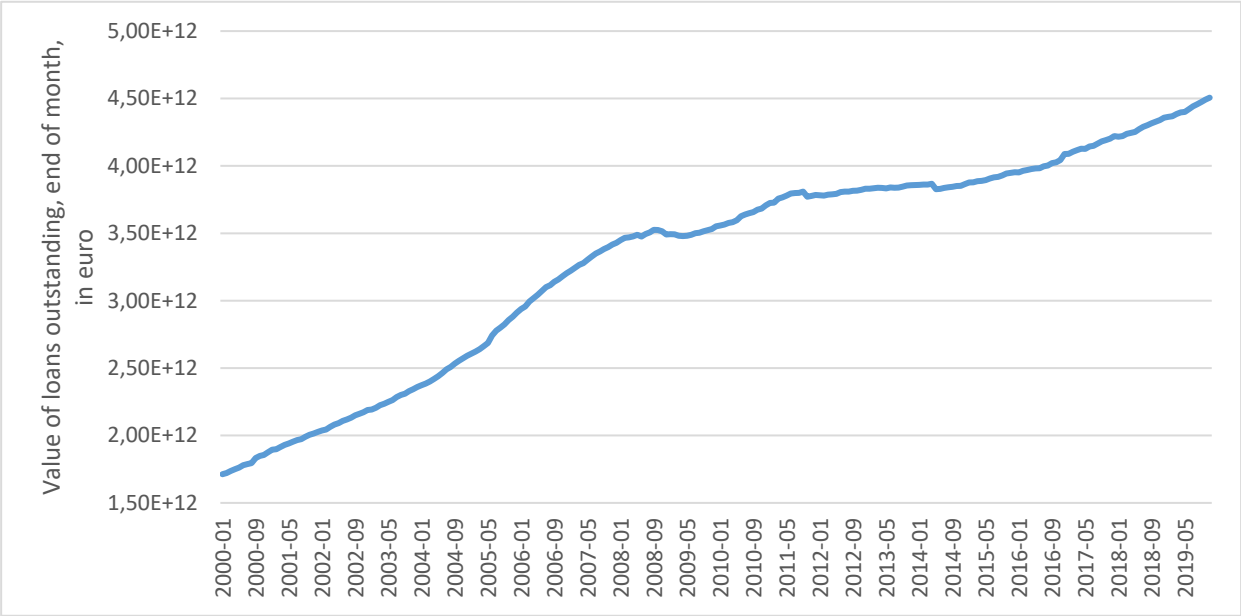


Source: Eurostat.

In fact, while the overall economic outlook appears gloomy for the EU, one curious statistic stands out in the ESI report for end 2019: the construction industry across Europe is optimistic for the future. It is not hard to see how this might be the case, as case after case of pre-recessionary booms has been characterised by a construction frenzy, whether one looks at Thailand in the late 1990s or the Gulf States or the United States in the mid-2000s (Mark Thornton has coined this phenomenon 'the skyscraper curse', see Thornton [2005]). Although these earlier booms in skyscrapers were linked more to commercial real estate than residential, the shift towards residential lending in Europe has many of the same attributes as these previous bubbles, including lower quality of loan applicants (the ECB notes that loan rejections for both residential loans and consumer credit have been on the rise) and increasing size of loans commensurate with a dramatic increase in home prices (see Figure 2). All of these factors mean that the financial sector is increasingly exposed to the residential market across the euro area (Figure 3), an increasing risk given the faltering real economy. Can the next recession also hammer both the financial sector and the real economy via the housing market, just as the previous one did?

[2] Although asset prices are not counted as "inflation" in the conventional definition, and although some economists cling stubbornly to ideas such as the belief that inflation is attributable to oil prices, this increase in home prices coincides rather neatly with the most interventionist activities of the ECB. It seems that inflation is still a monetary phenomenon.

Figure 3: Volume of euro area loans for house purchases



Source: ECB.

2.2. Banks at the water line

In addition to the standard metrics for risk and the composition of risk, another consequence of unconventional monetary policy has been to decrease the cushioning banks need to absorb changes in their external environment. Indeed, the unnaturally low interest rates across Europe over the past decade have had another effect in increasing financial sector fragility, mainly by keeping bank profitability incredibly low. According to the European Banking Authority (EBA, 2018) and 2019, return on equity (RoE) for the EU decreased from 7.2 % to 7.0 % over 2018 and 2019, below their average cost of capital of between 8 and 10 %, with even these results driven by the high-yield countries of Central and Eastern Europe (principally the Czech Republic and Hungary, neither of course not part of the euro area). Return on assets also remains low at less than 0.5 % in 2019, meaning that euro area banks may have capital buffers for their outstanding loans and/or liabilities, but as a business they are struggling to stay afloat.

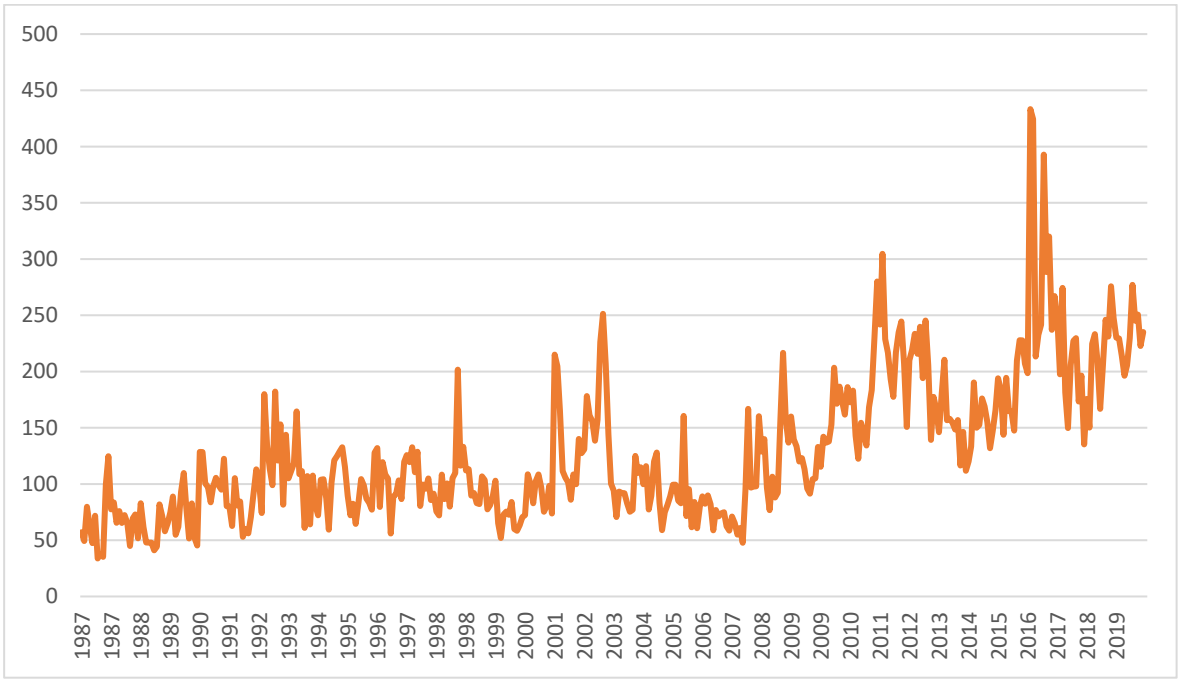
Given this low level of profitability even during an expansion, any economic downturn is certain to push some banks at the margin into bankruptcy; as Albertazzi and Gambacorta (2009) show, bank profitability is procyclical due to net interest income (which comes via lending activity and is much more active in a good economy) and loan loss provisions (which is linked to credit portfolio quality, which suffers in a recession). The question is, how widespread would such a wave of failures be? Some failures are to be expected and, as we will show below, even welcomed in a recession, as the strongest capital providers are able to consolidate their business and emerge leaner and stronger. However, a severe recession would take down some banks which, during normal and conventional times, might still be solvent; more troublingly, the spatial effects of bank failure would not be the same across Member States, as banks in Germany, Greece, Portugal, and Belgium have had the lowest levels of RoE (EBA 2018). There may be some space in larger markets such as Germany to absorb bank failures, but for Greece or Portugal, declining profitability means weaker banks which means greater risks (and more prospect for need of a bail-out) during a downturn.

2.3. Continued policy uncertainty in the EU

Finally, the experience of the post-GFC world has been one of heightened uncertainty driven by both economic policies and political events. The extraordinary events of the past decade in this regard have included the populist wave in Europe and elsewhere (and which shows little sign of abating), as well as the momentous decision of the United Kingdom to 'Brexit' the EU., which have led to policy uncertainty hitting new heights (Figure 4). With data running through January 2020, the Baker-Bloom-Davis uncertainty index (Baker *et al.* 2016) shows that Europe continues to see levels of uncertainty at the level of, or in some instances higher than, the depths of the global financial crisis.

These events, far from being discrete moments easily absorbed by markets, have instead sown the seeds of future uncertainty and created longer-term unease about the rules of the game within the EU. This is true even if one assumes that the worst of the Brexit uncertainty has finally been surmounted with the majority election of Boris Johnson in the United Kingdom and the clarification about the UK's exit at the end of January 2020. Of course, Brexit is not a one-off event and will continue to entail large bouts of uncertainty for firms and trade channels, as well as affecting financial sector institutions in coming years (not least of which regarding the divergence in financial regulation and/or difficulties encountered by customers affected by the disruption of trade). The issues surrounding Brexit may crystallise in coming months, but by no means has the policy uncertainty around Brexit abated, meaning financial sector institutions may continue to need to keep additional buffers against uncertainty. As Howarth and Quaglia (2017) also note, the fact that the UK kept financial regulation in the EU more pro-market may mean that additional moves from the EU will also create an uncertainty shock for the financial sector.

Figure 4: Economic policy uncertainty in Europe



Source: 'Measuring Economic Policy Uncertainty' by Scott R. Baker, Nicholas Bloom and Steven J. Davis at www.PolicyUncertainty.com.

This last point regarding financial regulation should call our attention to a crucial point, namely that policy uncertainty is not an exogenously generated shock for an economy, it is endogenously generated by policymakers themselves. Early signs for 2020 have not been good in terms of lessening the avoidable uncertainty which can harm business planning, as ill-advised and peripheral policies like a European Green Deal (aided and abetted by an ECB which has become unfocused and eyeing policy debates well outside of its mandate) create more problems than they might conceivably solve. Moreover, the fiscal weapons need to be brought to bear to achieve such goals as set out under the Green Deal would be difficult in the best of times, in an era of uneasy recovery and looming recession they seem foolhardy at best.

Finally, and crucially, policy uncertainty has been magnified by the reality of institutional uncertainty. Despite a decade of efforts, the Institutions of the EU are no better off than they were in 2008 for forging coordination amongst Member States. Indeed, Member States have diverged on some key issues (immigration being one, but also defence and foreign policies) and, despite the proliferation of European-wide bodies, there still remain crucial challenges in even coordinated macroeconomic policy. It is difficult to say whether a financial crisis in Greece or Portugal would create the same sort of coordinated response as in, say, Italy, and this reality also sows uncertainty in markets. How then should financial institutions respond? Avoid high-risk jurisdictions? Diversify across the entire euro area? Limit offerings in some countries? The lack of common policy, as well as the example of Greece, does not instil confidence and instead creates its own uncertainty.

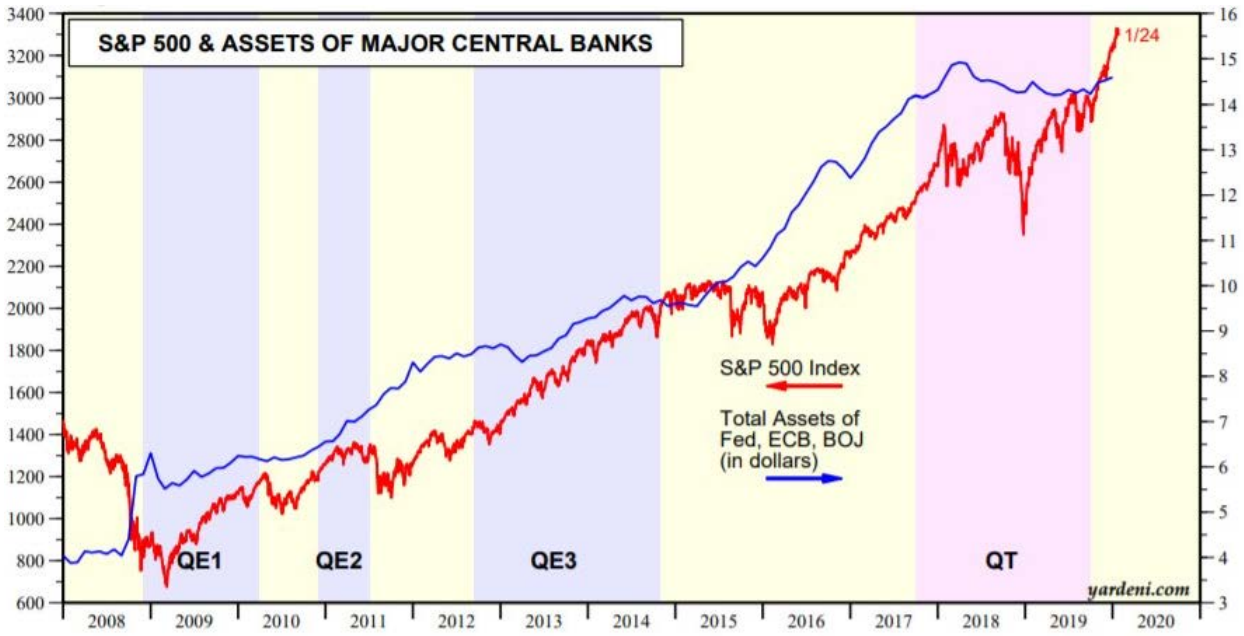
3. BARBARIANS AT THE GATES

In a globalised world of finance and trade, movements of capital or goods across borders can have just as important an impact on a country's financial system as domestic demand or conditions. Without a doubt, the GFC showed just how important the global financial system was, as a problem localised in American mortgage markets soon reached into financial sectors of countries with no exposure and threatened the real economy everywhere. Given the weaknesses in the euro area noted above, risks emanating from outside Europe also have the potential to create difficulties for the euro area financial sector.

3.1. Asset price collapses in the United States

The Dow Jones Industrial Average and the S&P 500, the main indices of equity markets in the United States, have been on a massive climb since the GFC: from its low point in March 2009, the S&P 500 has risen 332 %, while from the same point the Dow has gained 313 % (with the steepest gains coming from January 2017 onward). While the US economy has grown appreciably faster than the euro area, it is difficult to argue that the performance of US corporates justifies such a tremendous increase in valuation. Moreover, much like valuations in Europe, the US stock markets have gone hand-in-hand with loose monetary policy, as shown in Figure 5 from market-watcher and economist Edward Yardeni, meaning any tapering would lead to a deflation of asset bubbles.

Figure 5: S&P 500 & assets of major central banks



Note: QE1 (11/25/08) = Fed starts buying $1.24tn in mortgage securities. QE1 expanded (3/16/2009) = Fed starts buying $300bn in Treasuries. QE2 (11/3/10) = Fed starts buying $600bn in Treasuries. QE3 (9/13/12) = Fed starts buying $40bn/month in mortgage securities (open ended). QE3 expanded (12/12/12) = Fed starts buying $45bn/month in Treasuries. Fed terminated QE net purchases (10/1/14). Fed reduced holdings (10/1/17-9/30/2019).
Source: Federal Reserve Board, Standard & Poor's and Haver Analytics.

Source: Yardeni.com, used with permission of Edward Yardeni.

Indeed, much like Europe, it is doubtful that markets can continue to run fuelled on monetary stimulus alone. By the end of 2019, the main manufacturing index in the US, the purchasing manager's index (PMI), contracted to 47.2 %, its lowest level since June 2009, signalling slowdowns in production and

an increase in input prices. Meanwhile, while the headline unemployment rate holds firm at an incredibly low 3.5 %, as throughout the Obama years, the participation rate in the workforce remains worryingly low at 63.2 % (December 2019), a number below all of the EU Member States (Croatia is the lowest at 66.3 %, according to OECD data).

The prospect of a slowdown in the US, as in Europe, is compounded by the reality that the Fed has not been shy about keeping the monetary taps fully open, meaning that the US as well is exposed to a downturn. In such a situation, with a decline in US asset prices and its concomitant effects on the financial sector in the US, European banks with exposure to the US market would once again suffer as in 2008. While the US has far greater fiscal space (see below) to combat a recession, due mainly to decentralisation and greater buffers (and a much more homogenous yet giant market), this is not to say that any financial downturn in the US will not harm Europe – and Europe's banks - first and foremost.

3.2. Slowing growth in China

An additional macroeconomic variable with potentially grave consequences for the global economy is any slowdown of growth in China. China played a valuable role in during the GFC, a role it continues to play, through vigorous consumer demand and fiscal stimulus supplied to the developed world via bond and asset purchases. However, in 2019, Chinese growth slowed to approximately 6 %, its lowest growth rate in 30 years, with investment plummeting (albeit still the envy of developed economies), domestic demand weakening, and exports falling (in part due to the trade war with the US). China's growth more than anything has probably been responsible for the tepid recovery in the euro area and the growth seen in the US, as it is unlikely that monetary stimulus alone could have created the conditions for resumption of growth. Once monetary stimulus has reached its limits in effectiveness, however, as it seems to have, and China's version of fiscal stimulus is withdrawn, how will the global economy react?

The EU has acknowledged these risks in its 'EA and EU Outlook' as early as 2015, noting that 'Apart from direct trade and financial linkages between the EU and China, there are indirect channels operating via countries heavily exposed to China. Vulnerable emerging markets and commodity producers may face a combination of lower export demand and low commodity prices and may see some downward adjustment in their exchange rates as global capital flows respond to the shifting environment' (European Commission, 2015:56). The ECB has also noted that slow growth in China might directly affect the financial sector via increasing interbank spreads, driven by increasing risk in Beijing, leading to a dampening of liquidity and an increase in costs within the euro area (ECB, 2017). None of these consequences would be good for the euro area financial sector, even though, as the ECB also noted, direct exposure of the euro area to Chinese banks are limited. Rather, the real effects and especially a slowdown in global growth brought on by China would be the main conduit for financial stress in Europe.

3.3. Continued policy uncertainty globally

With impeachment hearings in the US hurtling to an almost-inevitable conclusion (President Trump still in office), the uncertainty does not end there for the US economy, as when it ends there is still an election this year – and if someone like Congressman Bernie Sanders is able to ascend to the highest office in the land, it is highly likely that the US economy (and especially the financial sector) will take an outstanding hit from anti-growth, populist/socialist policies. Uniformly across the Democratic party, candidates have taken strident anti-financial sector stances, with the largest being the wish to repudiate over a trillion dollars' worth of student loan debt. The consequences of such a write-off, either

to the fiscal position of the US or to individual financial corporations, has not been costed but can create severe stress (as well as moral hazard for the future).

In addition to the normal, formal political volatility seen in the US, there are other informal political issues which have the potential to disrupt the global economy. First and foremost, the continuing protests in Hong Kong can have longer-term ramifications for China and the region, especially if they are resolved in a violent manner. Moreover, Middle East tensions have escalated throughout 2019 and early 2020, typified by increasing violence against Israel, the war of words (and missiles) between Iranian proxies and the US in Iraq, and the persistence of conflict in Syria. While it is a fallacy to believe that long-run inflation is driven by oil prices predominantly – inflation remains a monetary phenomenon (De Gregorio *et al.,* 2007) - any increase in oil prices can instead affect the real economy via inputs and thus have the potential to create disruptions. This too can then rebound to the financial sector's detriment, both in terms of distressed loan recipients (harmed by the rising price of inputs) and in terms of volatility around exchange rates and commodity prices.

3.4. Domestic political alignments and the rise of populism

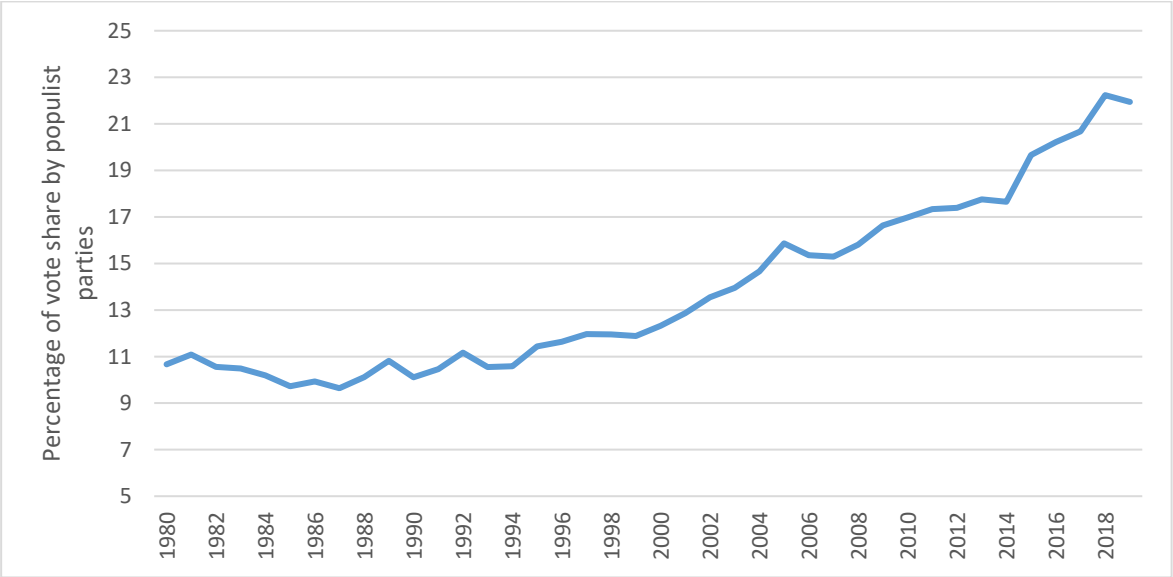
Finally, the biggest source of continued policy uncertainty globally has been rise of populism across Europe and in the US (Figure 6), which, if not directly attributable to the response to the global financial crisis (although I argue it is, see Hartwell [2019b]), is a reality of the post-GFC world. Shifting political alignments globally have pushed left-wing governments more leftwards and, in terms of fiscal policy at least, have pushed right-wing governments leftward as well.[3] This has resulted in a wave of anti-business, anti-growth policies such as the trade disruptions and explicit call to end free movement of Brexit, the trade war with China initiated by the United States, bans on foreign ownership in countries as disparate as New Zealand and Poland, and outright nationalist/protectionist policies in Latin America and Africa.

The continuing popularity of populism means that various policies undertaken by governments prior to the global financial crisis, policies with demonstrable benefits for the populace such as trade liberalisation, flexible labour markets, and capital account liberalisation, may be halted or reversed, with an eye towards protecting indigenous industry. This may also entail a rise in industrial policies, the use of public funds for private actors, and a general deterioration in the quality of governance worldwide; all of these macroeconomic trends are a threat to real growth and, thus, a threat to the financial sector in Europe.

The way in which this may play out in the financial sector is much more specific than populism's effect on real variables however, as the financial sector is also often a *bête noire* of populists, with 'bankers' or 'speculators' seen as the source of society's ills (Kazin, 2016). With particular ire directed against bankers for their role in exacerbating inequality or supporting failed policies or whatever the fashionable theme is, policies can be put in place to either break-up larger banks (Thirkell-White, 2009) or to bring the financial sector under control of political-friendly operators (Ellner, 2005). Such a continued move in countries where European banks have a strong presence (as in Latin America, where Spanish banks prevail) could further threaten bank profitability, create unneeded additional uncertainty, and threaten specific institutions.

[3] Thanks to Paul Vaaler for this phrasing.

Figure 6: The rapid ascent of populist parties in Europe



Source: Author's calculations based on Timbro Authoritarian Populism Index. Line is average of the vote share of all populist parties in Europe over 20 to 33 countries from 1980 to 2019. Europe broadly defined to include the EU and Eastern Partnership countries.

4. REACHING THE LIMITS

Not all of these risks detailed in the preceding two sections may come to pass, and there may plausibly be combinations of these risks or various permutations which can play out over the coming years. But regardless of which of these risks turns into reality, the truth of the matter is that the EU is ill-prepared for any downturn. This is due mainly to the fact that policymakers have had their foot on the gas pedal all the way to the floor for a decade, leaving no more power to help the car go faster. This is true in both monetary and fiscal policy.

4.1. Monetary policy at its limits

Leaving aside the question on if the unconventional monetary policy has been a net negative for the Eurozone, the threat to the European economies in case of a recession is that there is little recourse to additional monetary tools. As noted above and in Hartwell (2019a), the unconventional monetary policy that the ECB has been pursuing since the GFC has not abated and, in fact, has continued up to and including the most drastic measures.

The main problem that the ECB will face in confronting a new recession is that it has already tried to control the two main levers of monetary policy over the past decade. That is, central banks have long faced the constraint of targeting monetary growth (and then letting interest rates adjust where they may due to monetary supplies) or, as done more recently, setting interest rates and dealing with the monetary supply consequences. Indeed, interest rates have been the preferred method of policy control over the past 20 years, as money growth was an admittedly noisy and chaotic (Solomon and Solomon, 1991) tool (but Benhabib *et al.* [2002] showed that interest rate targeting could also be chaotic). However, the scale of the global financial crisis, and the charge towards 'whatever it takes', led central banks to believe that they were able to control both levers simultaneously, using their 'normal' interest rate levers and then switching over to explicit monetary growth targets.

This can be seen in the actions of both the Fed and the ECB, as the plummeting of interest rates to zero or lower was accompanied by quantitative easing, asset buy-backs, and other direct injections of liquidity; while some have breezily dismissed the idea that money growth is no longer part of any monetary policy, such a view ignores the explicit goal of ECB (and Fed) policy over the past ten years (and of Japan for the past twenty years at least). Massive injections of liquidity directly have all targeted money supplies, meaning that central banks have tried to have the best of both worlds and use both a 'targeted' interest rate tool and blunt monetary targeting.

Of course, this attempt to circumvent laws of economics was enabled by swathes of the academic community and its reliance on atheoretical models such as vector autoregressions or cointegration, which merely modelled past relationships as if they would hold forever and ever (with the warning of Lucas [1976] not heeded if nebulous 'expectation functions' were included) without any understanding of the underlying economic incentives or interactions. Getting into the weeds of the statistical properties of the data but without understanding the economics of human action led to papers in respectable journals such as Christensen (2006), using new techniques to tease out policy recommendations which were wholly worthless: Christensen's (2006) entire last paragraph says that perhaps excess liquidity was too high in the euro area, or perhaps it was not, depending upon where one arbitrarily set the reference point.[4] With such wide margins of confidence emanating from academic circles, central banks joined in the hubris to believe that there were ways in which they could

[4] As it turned out, Christensen (2006) appeared to come down on the side that excess liquidity in the euro area was not an issue, a prediction on the eve of the global financial crisis which, in hindsight, seems as misguided as Irving Fisher's assertion of a 'permanently high plateau' for stocks in October 1929.

simultaneously abnegating the time value of money while also inflating money stocks but without having it translate into price inflation. Research such as Belongia and Ireland (2018) supported this, promising that central banks could have it all (interest rate decreases and monetary targeting), especially once the zero lower bound had been reached.

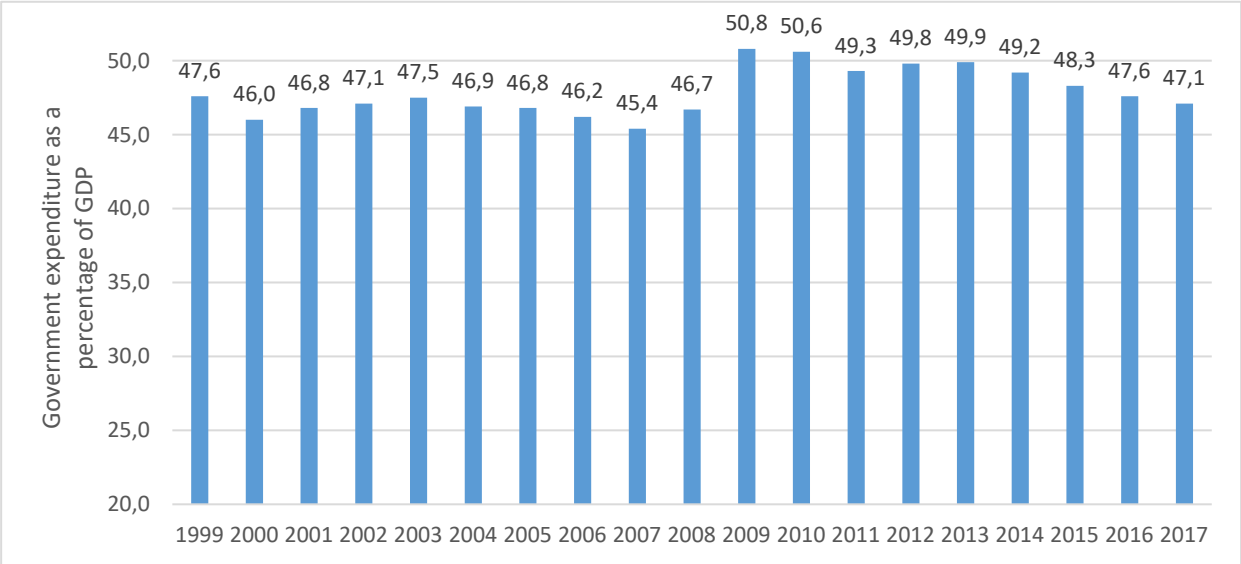
However, what these analyses overlooked was precisely what Lucas (1976) predicted, in that the fundamental relationships among variables would change due to policy (a reality which was explicitly eschewed in the models that econometricians were using). In particular, single-shot models of 'money demand functions' ignored the cumulative effect of utilisation of so many instruments, with little ability to say what a package of policies at time *t* might do to expectations or demand at time *t+5*. More critically, these models had little predictive power if external conditions were to change dramatically, say if economic growth were to slow or other exogenous shocks were to strike.

Unfortunately, this eventuality is precisely what the euro area is confronting as its next recession looms. With central bankers having run out of instruments via continuing to try and influence monetary supplies *and* interest rates, the only solutions which have been mooted have been in the realm of the fantastical: 'helicopter money', continued asset purchases, or a recourse to 'modern monetary theory' (where unlimited streams of fiat money are issued forth to flood the real economy). All of these 'solutions' have even more deleterious consequences for the real economy and cannot be expected to rescue the euro area. But the fact that they are seriously even contemplated shows just what a bind the ECB has put itself in by exhausting all possible realistic options *during an expansion*.

4.2. The search for fiscal space

At the same time, the other commonly used lever of stabilisation policy, fiscal policy, is showing similar limits. Much as monetary policy was kept going at maximum levels during the most recent expansion (for fear of lapsing into another recession), fiscal policy across the euro area has also been highly expansionary and procyclical. For the most part, Member States continued their spending ways throughout the crisis, with slight increases in spending and, despite worries about 'panic-driven austerity' (De Grauwe and Ji, 2013), no real cutback in their large public sectors (Figure 7). This approach, of course, satisfied no one – not the Keynesians who wanted to see the purse strings loosened entirely nor the budget hawks who saw the bloated public expenditures in the euro area as part of the problem.

Figure 7: Government spending in the euro area: well-hidden austerity

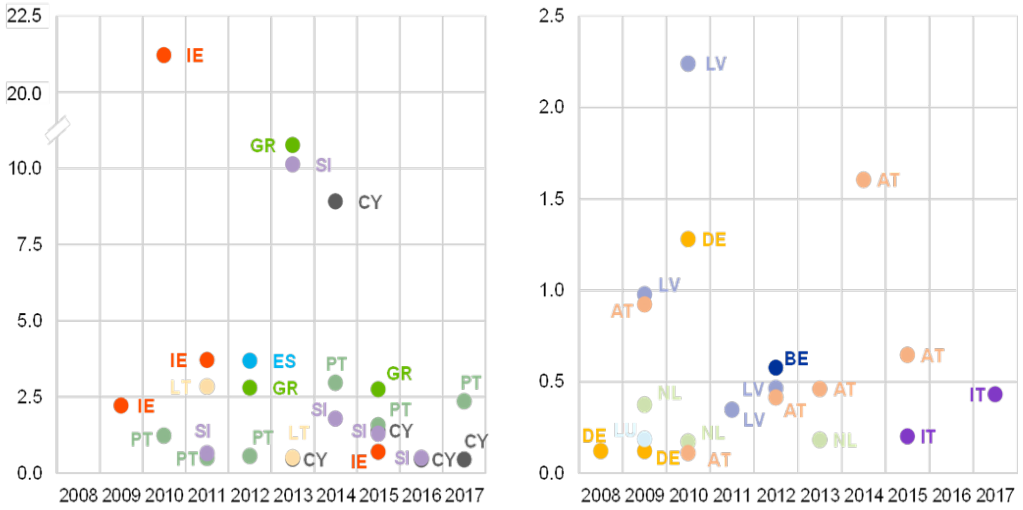


Source : Eurostat.

Meanwhile, with expenditures still running high across most euro area governments, the ability to turn on the fiscal taps during a recession will be circumscribed. This is especially true when one considers that expenditures may actually increase in coming years. The ECB itself noted in a 2019 paper (Attinasi *et al.*, 2019:10) that, despite the slowdown in the euro area, it was anticipated that 'austerity' measures on public sector wages were soon to be scrapped:

> *'In Italy, after being frozen during 2010-15, wages are accelerating again in 2018, due to the application of the 2016-18 wage negotiation round. In Spain, an increase in wages is projected on the back of the wage increases legislated in the 2017 and 2018 budgets. In France, wages accelerated in 2017 reflecting the increase in the remuneration of teachers and the estimated impact of the reform of the public sector general salary grid for both 2017 and 2018. In Germany, public wages have started to grow at a robust rate due to labour supply bottlenecks and composition effects related to skill upgrade of the public sector workforce. Among the small countries, public wages have also accelerated significantly in Ireland in 2017, as a result of the new national pay agreement lasting until 2020 and aimed at unwinding the pay cuts enacted during the crisis. A gradual acceleration of public wages is ongoing also in Cyprus, where wages indexation to the cost of living allowance (COLA) has been re-introduced as of 2017 after a period of wage freeze.'*

Figure 8: Net impact of financial sector support measures on the general governmental deficit in the euro area



Source : ECB Economic Bulletin, Issue 6/2018, Chart B.

With financial sector clean-up left to the monetary side – and outsourced to the ECB – and social and public sector spending remaining high during the expansion, the reality remains that Member States have very few buffers available to cushion the financial sector in event of a severe downturn. These costs may be substantial, especially for the countries of southern Europe and smaller euro area members, as the impact of financial sector support measures for some countries such as Ireland ran to 21 % of GDP at the height of the crisis (Figure 8). At the same time, as the European Fiscal Board (EFB) noted in 2019, eleven of the euro area countries had not yet achieved their medium-term budgetary goals (EFB, 2019), with the largest outlier in terms of debt also being the biggest threat to financial stability in the euro area (Italy). Without fiscal space in precisely the countries which need a buffer the most, this unfortunately means that monetary policy will likely once again be called on to do the heavy lifting during the next recession, even if (as already shown) it too has reached its limits.

5. CONCLUSIONS: WELCOMING THE COMING RECESSION

In no uncertain terms, European policymakers and in particular the ECB have dug themselves a hole that would be difficult to climb out of in the best of situations. With risks of recession looming from both internal and external sources, the needs of the exposed financial sector may be far beyond what the ECB is able to cover from monetary policy (in addition to being beyond what national governments can cover via fiscal policy). In this sense, by reducing resilience and pushing stabilisation policies into overdrive during an expansion, one cannot say that unconventional monetary policy has been good for the euro area; the only question with regard to fiscal stability is whether or not the financial sector can survive the next economic downturn.

If a recession were to hit in the next 12 to 18 months, the only way ahead would be for normalisation and a return to economic fundamentals, which would necessarily mean a negative monetary shock to the financial sector. This would also mean that the financial sector as it exists today would no doubt not exist after the recession, as the frailties of certain institutions (and in particular larger banks) would be exposed and exploited. And policymakers, rather than promising no pain for all gain must prepare the public for a period of disruption. Is this good politics? No, it certainly is not. But neither is promising a decade of holidays from economic rules.

To put it in more formal economic terms, expectations must be re-set within the euro area, not necessarily regarding inflation (these expectations are already plummeting and the 5 year forward expectations measure of the ECB bottomed out at 1.12 % in October 2019), but of expectations regarding monetary policy. To this point, investors and financial markets in general have been following a second-order set of expectations akin to Keynes' 'beauty contest': as the reader may recall, Keynes (1936) castigated capital markets as being similar to a newspaper beauty contest where readers had to guess which contestant other readers thought was most beautiful. Thus, it was not one's own subjectivity which was part of the rankings but how one perceived the subjectivity of others. Keynes argued that this was how the stock market worked, with investors trying to out-game each other, and thus equity markets were unmoored from fundamentals and instead based on mass psychology, delusions, and of course 'animal spirits'.

In Europe today, however, it is not 'irrational' capital markets who are creating unrealistic expectations but instead the ECB, as all market participants constantly try to guess the ECB's intentions towards monetary policy – and, as noted, have built in assumptions that the ECB will not be changing any time soon. At the same time that market participants are watching the ECB, the ECB itself is trying to survey market expectations and fashion policy (and monetary demand function) off of participants who have already set expectations based on prior ECB behaviour. In this way, the ECB has inserted itself wholly and permanently into expectations formation. Never has the Lucas Critique rung so true, in that ECB policy has truly altered the fundamental relationship of variables, making its forecasts and its own policies less and less effective. Additional hysterical tools such as helicopter money, deeper negative interest rates, and the like would only continue to push back the day of reckoning and ratchet expectations downward even further. Only by re-setting expectations of normalisation – and, following from the credibility literature, following through with it – can the ECB hope to climb out of the hole that it has created for itself. And such an approach can also allow for better targeted assistance (both monetary and fiscal) if needed during the recession.

It is always difficult to fashion counterfactuals when it comes to economic policy, but the coming recession could likely be similar to the Depression of 1920 to 1921 in the United States. In the wake of the Great War, monetary policymaking in the US refused to normalise, and inflation rates regularly topped 15 % (reaching over 20 % at the end of the war in November and December 1918). This great

inflation necessarily led to a reckoning in the real economy, as the bubble burst and the US entered an incredibly sharp and painful Depression: output fell by approximately 30 % (O'Brien 1997), the stock market declined by 50 %, and unemployment rose in a period of nine months to 8.7 % from 5.2 % (Romer, 1986). At the same time, according to Meltzer (2004), M1 contracted by 10.9 % from March 1920 through January 1922 and the monetary base shrunk by 6.4 % from October 1920 to January 1922.

In response, with capital scarce, the Fed priced it accordingly, raising the interest rate to a high of 7 % in 1920 from 4 % in 1919, while government spending was slashed and the federal government refused to contemplate bailouts (Grant, 2015). With no safety net, the market worked itself out and the economy bounced back within 18 months from the start of the downturn. The financial sector did not suffer unduly simply because the automatic stabilisers in the market allowed the crisis to resolve itself quickly; any protracted crisis (as in 1929 onward) could have threatened banks more generally, but the non-response to the reversal of easy monetary policy allowed for expectations to re-set and the strongest banks to weather the storm. This did not mean that the financial sector did not suffer, as '505 banks failed in 1921, and the number of failures continued to rise, averaging 680 per year from 1923 to 1929', but the vast majority of these banks were 'small banks in small rural communities', isolated from any diversification (Gorton and Metrick, 2013:50). And although the monetary contraction deepened the decline (Pilgrim, 1974), it hastened the recovery, meaning that the financial sector was soon to enjoy the ensuing demand from relatively vibrant economic conditions; Anderson (1979) also noted that the lack of government intervention – i.e. the setting of appropriate expectations – led to banks working overtime to identify their core customers and readjust strategy accordingly.

It would likely be politically difficult to undergo a similar response to the next European recession, but it is something that needs to be contemplated in order to normalise monetary policy and expectations. Indeed, the next recession will be an opportunity for the ECB to unwind itself from a decade of easy money and re-think its strategy, much as the banks of 1920-1 did. As an astute reader would have no doubt noted, the title of this paper comes from Winston Churchill's famous speech in 1942 after pushing back the German advance in Egypt, where he cautioned 'now this is not the end. It is not even the beginning of the end. but it is, perhaps, the end of the beginning'. The relevance for the future of the euro area economy in the face of recession should be obvious: just as El Alamein did not mean the end of the Second World War, the massive rescue operation by central banks in the wake of the GFC did not mean that the structural imbalances and deficiencies underpinning the global monetary system were solved. Instead, the coming recession will show just how much needs to be done at the structural level in order to return the global economy to a sustainable path. That is the next phase, the beginning of the end, and in order to successfully complete it, the ECB and other monetary players will need to re-orient their strategies… and be prepared to accept some casualties.

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Financial Stability in the Euro Area

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Abstract

Risks to financial stability in the euro area appear to be contained for the time being, but could be substantial in the longer run. The European financial system is still not crisis-proof. We argue that a deposit insurance schemes are not a good option to increase overall financial stability and higher equity ratios for banks are the appropriate approach to make the financial system safer.

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CONTENTS

LIST OF ABBREVIATIONS

ECB	European Central Bank
EDIS	European Deposit Insurance Scheme
ESM	European Stability Mechanism
US	United States
Fed	Federal Reserve System

EXECUTIVE SUMMARY

- Diminishing expectations for growth and inflation have led to an easing of monetary policies and a significant reduction in government bond yields. **Improved financing conditions across the euro area are mitigating debt sustainability concerns in the public sector as well as in the private sector**, for the time being.
- **The combination of extremely low interest rates and elevated asset prices implies risks for financial stability** as banks and non-banks have increased their exposure to the risk of a reversal of interest rates and an eventual sudden repricing of assets. These risks appear to be contained for the time being, but could be substantial in the longer run.
- While banks in the euro area have increased their resilience in recent years, **capital buffers could prove insufficient in case of a serious downturn**, and **bank profitability continues to be a major concern**.
- **We are not convinced that the plethora of regulatory changes for the financial sector since the last crisis will be able to prevent another one from occurring**, partly because they potentially lead to higher correlated risks. Bank runs are a major source of financial trouble and are caused by banks financing long-term illiquid assets with short-term fixed-value liabilities.
- **Deposit insurance schemes lead to excessive risk-taking in the banking system and are not a good option to increase overall financial stability**. While credible deposit insurance schemes can prevent certain types of bank runs, empirical evidence suggests that this advantage is overwhelmed by the excessive risk-taking due the moral hazard introduced by these schemes, such that their net effect is negative. Beyond that, a European Deposit Insurance Scheme would come with additional drawbacks: its implementation would mean significant fiscal transfers between Member States and guaranteeing all European bank deposits also threatens to eventually exceed the capacities of those Member States that still are in a relatively good fiscal position.
- **Higher equity ratios for banks are needed to make the financial system safer**. Equity provides a cushion against losses on the balance sheet and is unable to run in a panic. The amount of equity required to make banks safe is still subject to debate, but it is most likely considerably higher than today.
- **Currently, monetary policy does not have good options to produce significant additional expansionary impulses without major side-effects**. While a financial crisis in general may increase the effectiveness of monetary policy, it may also further erode the quality of the assets held by certain euro area banks, such that they would not be able to post acceptable collateral to take advantage of central bank loans.
- **The potential of fiscal policy to actively support growth is currently also restrained with fiscal space available only in a few countries**. Pushing national governments to engage in fiscal policy oriented at an aggregate euro area fiscal stance in order to substitute for fiscal risk-sharing institutions that are not available is not going to work, however.
- **Apparently, traditional macroeconomic demand management policies have come to a limit**, suggesting that more structural policy responses may be necessary to shore up confidence and arrest an eventual decline in activity.

1. INTRODUCTION

The economic outlook for the euro area has deteriorated in 2019 and expectations for growth in the coming two years remain subdued. Economic policy uncertainty remains elevated, and risks to the outlook are still perceived to be tilted to the downside. In response, the European Central Bank (ECB) has loosened monetary policy again, in tandem with the US Federal Reserve.

Against this backdrop, the ECB has published its 2019 autumn Financial Stability Review, acknowledging a number of risks for the stability of the euro area financial system, although they appear contained for the time being. In the event that some of these risks materialised, or in case of a major negative shock to external demand or private sector confidence, the euro area economy could slip into recession, raising the question of appropriate policy response.

In this Monetary Dialogue paper, we briefly discuss the findings in the Financial Stability Review (Section 2). Subsequently, we deal with the question which direction policy should go in order to increase financial sector resilience. In this, we concentrate on the discussion of two principle strategies to reduce the probability of bank runs, namely the proposed introduction of a European Deposit Insurance Scheme and an increase of bank equity (Section 3). In Section 4, we discuss the question of the potential of monetary and fiscal policies to effectively counter an eventual recession. Section 5 concludes.

2. SHORT-TERM FINANCIAL RISKS IN THE EURO AREA

Growth in the euro area has slowed amid elevated global policy uncertainty, and downside risks to the outlook have increased. The ECB produced its Financial Stability Review against the backdrop of subdued growth amid a slowdown in global trade and increased global policy uncertainty. The escalating trade conflict between the United States and China, persistent uncertainties around Brexit and sluggish growth in the emerging economies resulted in a pronounced downturn of activity in manufacturing, while output in the services and construction sectors remained relatively robust. The Commission forecast for GDP growth in the euro area has been revised down in the 2019 Autumn Forecast to 1.1 % from 1.9 % expected one year before (European Commission, 2019). Growth is expected to remain modest at 1.2 % in both 2020 and 2021.[1] Downward risks to the outlook continue to be substantial, although a further deterioration of the US-Chinese trade relationship has recently become less likely with the successful negotiation of first chapter of a comprehensive bilateral trade agreement. A further significant slowdown of the euro area economy, or outright recession, could lead to a deterioration of the financial situation in the private sector, weigh on public finances and trigger adjustments in asset prices, potentially putting the financial sector under severe pressure.

Diminishing expectations for growth and inflation have led to an easing of monetary policies and a significant reduction in government bond yields. In the United States, the Fed signalled an end to its policy of gradual tightening around the end of 2018 in reaction to an increasingly shaky external environment and bearish equity markets, and started to lower interest rates in summer 2019 by cutting the target range for the Federal Funds Rate in three steps to the current level of 1.5–1.75 %. The ECB reacted to the deterioration of the outlook by implementing a number of measures intended to support growth, including a resumption of net asset purchases from November onwards and a reduction of the rate on the deposit facility from –0.4 to –0.5 %. Government bond yields have declined sharply during 2019 as a result of both lower short-term rate expectations and a significant decline of premia to historically extremely low levels. In this process, yields on government bond yields have become negative in an increasing number of euro area countries.

The bullish effect of accommodative monetary policy has spread to other asset markets. Together with falling government bond yield, prices of other assets increased, partly as a reflection of investors shifting their positions in search for yield. Corporate bond prices appreciated and equity prices rose trendwise, notwithstanding occasional episodes of sell-offs in times of escalating policy uncertainty. Against this backdrop, investors increasingly also returned to emerging markets, alleviating downward pressure on the exchange rate and allowing authorities in many countries to also reduce interest rates and support economic recovery. Equity prices in emerging economies nevertheless underperformed as the negative repercussions of the US-Chinese trade conflict are likely to be felt disproportionally in these economies. Not least, low interest rates have also underpinned the expansion in the real estate sector. In a number of countries, there are concerns that residential real estate is already overvalued and in combination with strong mortgage lending growth and high household indebtedness represent increasing vulnerabilities. Meanwhile, commercial real estate prices seem to have already started to slow, partly reflecting decreased appetite of foreign investors, especially US investment funds.

Improved financing conditions across the euro area are mitigating debt sustainability concerns in the public sector as well as in the private sector, for the time being. Government debt positions in the euro area vary widely across countries, but are generally on a downward trend. On average the

[1] ECB staff macroeconomic projections are similar, with only slightly higher growth of 1.4 % expected for 2021.

debt-to-GDP ratio in the euro area is still elevated, at 86 % in 2019, but should continue to decline, albeit slowly, as the negative impact of slower nominal GDP growth on the government finances will be cushioned by lower financing costs. Financing conditions have markedly improved also for countries with higher sovereign risk allowing them to extend average maturities and build up liquid assets, thus improving their resilience to short-term fluctuations in market sentiment. However, a prolonged increase of risk premia in response to a further deterioration of the economic outlook or political uncertainties could reinvigorate debt-sustainability concerns in a number of countries. Favourable financing conditions are also supporting the financial condition of private households and the corporate sector, underpinning a solid credit growth. While the situation again varies substantially from country to country, the repayment capacity of households has generally continued to improve amid low interest rates and robust income growth, even in countries with relatively high household debt. In the corporate sector, the economic slowdown has led to a deceleration of earnings and credit growth, and a slight tightening of credit standards. However, financing conditions are still relatively good and gross interest payments are at a record low. The risk that corporations may be forced to abruptly deleverage in the event of temporary problems with funding is further reduced by high levels of liquid assets. However, the report points to emerging risks from increased leverage in the group of high-yield corporates and lower-rated investment-grade corporates.

The combination of extremely low interest rates and elevated asset prices implies risks for financial stability. In the current environment of depressed yields of risk-free assets and high prices of risky assets, the situation could become challenging if benchmark yields were to increase. While such a scenario may currently seem unlikely to unfold in the near-term with growth and inflation expectations subdued and the ECB committed to maintain its expansive stance for the foreseeable future, there is still the possibility that pessimism with respect to the outlook has been overdone and economic recovery will surprise to the upside. Sentiment indicators most recently have started to improve and bond yields have partially reversed the declines of last summer. Rising benchmark yields could lead to a correction of asset prices, which may be the more pronounced the longer the rally in risky assets goes. In a different scenario, a substantial further deterioration of growth could lead to a wave of downgrades of corporate ratings and earnings expectations and hence to a correction of risky asset prices. Arguably, valuations become more vulnerable to adverse macroeconomic shocks in a situation where the potential of monetary policy to counteract the shock and of risk-free rates to decline is limited (ECB, 2019: Box2). In addition to an increase of credit risk associated with increased holdings of riskier corporate bonds, the duration risk of bond holdings has risen with the reduction of the average level of coupons paid by bond issuers in the euro area.

Banks in the euro area have increased their resilience in recent years. The asset quality of banks in the euro area has increased further with non-performing loans continuing to decline, although at a decelerated pace due to the economic slowdown. Capital ratios on average remained at a level assessed to be 'comfortable' in the report, at around 3 % above minimum requirement levels, although banks' management capital buffers have decreased due to an increase of minimum requirements in 2019. Simulations with the ECB's euro area macro-micro model suggest that the aggregate Common Equity Tier 1 ratio will increase by the end of 2021 in the baseline scenario (assuming ECB staff central projections for growth), but will decline substantially in an adverse scenario (assuming a serious recession in the euro area with a peak-to-trough fall in output by 1.7 %). In the adverse scenario, banks accounting for around 20 % of total euro area banking sector assets would have to bite into their regulatory capital buffers. Against the backdrop of a sustained economic expansion and signs of overheating in parts of the economy, particularly in the property market, counter-cyclical capital buffers have been triggered, with rates ranging from 0.25 to 2.00 %.

However, bank profitability continues to be a major concern. Bank profitability remains low in the euro area by international standards which is reflected in low market valuation. Progress with improving cost-efficiency and reducing overcapacity has been slow and misconduct costs continue weighing on profits. While the low interest rate environment supports banks by strengthening loan growth, lowering credit risk and increase in asset prices, a shrinking lending margin and negative interest rates on excess liquidity have been an increasing burden. With its decision in September 2019 to reduce the rate on the deposit facility further into negative territory, the ECB introduced a two-tier system for reserve remuneration aimed at reducing the negative impact of the negative interest rate policy on banks profitability, which potentially could undermine the pass-through of low policy rates to lending rates.

Non-bank financial institutions have stepped up risk-taking amid strong headwinds for profitability from low interest rates. Non-bank financial institutions, such as pension funds, insurance companies, and investment funds are struggling to keep investment returns at a sufficient level faced with the secular decrease in government bond yields. While, for the time being, capital gains from falling yields are a substantial offset to the lower level of yields, in the longer term, the negative effect of lower yields on income will prevail. Funds and insurers have reacted by increasing their exposure to riskier segments of the corporate and sovereign sectors and increasing the duration in their portfolios, thus assuming more credit, liquidity and exchange rate risks. The growing risks in the non-bank financial sector, coupled with higher leverage in investment funds, threaten to work as an accelerator in the event of a major repricing of assets causing additional stress to the wider financial system.

All in all, risks to financial stability appear to be contained for the time being, but could be substantial in the longer run. In the short term, low interest rates, in combination with policies such as full allotment and asset purchases, support growth and asset prices, which in itself is also conducive to financial stability. At the same time, however, in response to lower income from safe assets, banks and non-banks increase their exposure to risks associated with a repricing of assets that could materialise in the event of an eventual increase of interest rates or a substantial negative macroeconomic shock.

3. POLICY OPTIONS TO DEAL WITH FINANCIAL STABILITY CONCERNS

3.1. Introduction

It is unclear whether the policy changes with respect to financial regulations since the last crisis will be able to prevent another one from occurring. There are a large number of different regulations that were introduced with the stated aim of preventing future financial crises. These range from capital and liquidity requirements, across stipulations for banks' risk-management and stepped up supervision, down to the last details such as caps on bankers' bonuses. There is considerable doubt about how helpful these regulations are. For instance, capital requirements now include countercyclical buffers that are to be increased by regulators in the upswing of a business cycle and released in a downturn so that banks build up an equity cushion in good times to help them weather bad ones. However, the size of these buffers is quite small (in many cases far below even 1 percentage point even in outright boom periods) and in any case, regulators will have a hard time setting appropriate levels, not least because it is hard to know an economies position in the business cycle in real-time. As another example, restricting bonus payments makes it more difficult to implement schemes that align the interests of an individual banker with those of the bank as a whole. There is also no guarantee that regulators and supervisors will always implement the most appropriate measures, either because they simply do not have the required information or because they are subject to certain outside pressures (in this respect we may note that even after the European sovereign debt crisis, government bonds still are allocated official risk weights of zero). A further danger is that by implementing the same requirements across the whole banking sector, the risks on the balance sheets of different banks become more correlated with each other, which then exacerbates systemic crises.

This chapter focuses on two principle proposals that might further increase banks' resilience. Section 3.2 explains bank runs as a fundamental source of danger to financial stability. Section 3.3 discusses the proposed introduction of a European Deposit Insurance Scheme, and cautions that such a guarantee is a liable to actually increase risks in the banking system. Rather than implementing a new European scheme, it would be advisable to remove the requirement for Member States to operate such systems. Section 3.4, finally, presents the case for substantially higher shares of equity financing.

3.2. The Danger of Bank Runs

Because there is a mismatch between the maturity and liquidity of banks' assets and liabilities, they are susceptible to bank runs. To a large extent, banks finance themselves via short-run liabilities such as deposits, which may be called in at any time at a fixed value by their creditors, but hold assets that mature over longer time horizons. In a situation where the short-run liabilities can no longer be rolled over because creditors demand to be paid out their money, banks need to sell their illiquid assets to raise the required cash. The revenue from these sales may then be substantially below the assets' book values, in particular if many banks are looking to quickly sell at the same time. The losses thus incurred can be so large that the raised cash would be insufficient to satisfy all short-run creditors. Anticipating this, every creditor benefits from calling in their claim as quickly as possible in order to secure a pay-out as long as there is still some money left.[2]

Such a bank run is inefficient insofar as the creditors in aggregate would be better off if they all did not call in their claims and took their payments from the normally maturing assets instead

[2] Diamond and Dybvig (1983) introduce a scientific model for bank runs.

of from fire-sales into illiquid markets. Furthermore, bank runs can spread contagiously between different institutions, e.g. because fire-sales by one bank depress the valuations of the assets held in other banks' books as well. In the worst case, such disruptions can develop into a full-blown financial crisis with large costs across the whole economy, e.g. because banks need to suddenly decrease credit provision to the real economy in an attempt to shore up their financial positions which in turn leads to unemployment, additional loan delinquencies, and a further escalating probability of bank runs.

3.3. European Deposit Insurance Scheme

Credible deposit insurance systems can prevent bank runs because in case of looming trouble, it would no longer be necessary for depositors to empty their accounts as soon as possible. If a bank's depositors could be assured that they would be reimbursed for any losses on their claims in case of a bankruptcy, they would no longer need to withdraw funds early. This would allow an opportunity even for an insolvent bank to be wound down orderly, minimising fire-sale losses. For this reason, it is a general practice in most developed economies to operate some form of deposit insurance by the government, where once the funds of the bank in question as well as those of whatever private insurance system is in place prove insufficient to cover all claims of certain depositors the taxpayer will make them whole. Note that because existing deposit insurance schemes do not cover all creditor types (deposits are not the only type of short-run liabilities and they are only covered up to certain amounts by government deposit insurance), bank runs can still occur even if the promises by the government are completely credible.

The crisis in the euro area threw doubt on the ability of certain governments to protect depositors of their countries' banks against losses. Banks in crisis countries were faces with two simultaneous problems. For one, due to their home bias, they held large amounts of government bonds of struggling sovereigns and large shares of their loans became non-performing. Thus, the value of their assets decreased considerably. At the same time, it was doubtful whether the governments in question would be able to muster the resources necessary in case depositors would want to be bailed-out. This lead to a depositor flight from crisis countries' banks towards core countries whose sovereigns are seen as a safe haven. Financing for this flight often came ad-hoc in the form of international rescue packages as well as from the Eurosystem, which provided central bank money against collateral of increasingly questionable quality.

A European Deposit Insurance Scheme (EDIS) is supposed to prevent such deposit flights. Proponents of EDIS want to unify deposit insurance on the European level. Then, all deposits across the area would ultimately be backed by the strongest sovereigns, making deposit flight between participating countries unnecessary.

The introduction of EDIS now would entail large de-facto fiscal transfers between governments. There are still large legacy costs and risks concentrated in the balance sheets of certain countries' banking systems, which have not been fully cleaned up. If unaccounted for, these costs would be reallocated retroactively to more prudent members. Furthermore, fiscal positions are quite heterogeneous across European sovereigns. Since those countries with the highest debt burdens are unlikely to in practice (be able to) contribute much whenever EDIS guarantees are called upon in the future, any future risks incurred in all countries will also fall on only a subset of sovereigns.

National compartments cannot fully heal this defect. An EDIS with national compartments means a system where, whenever a bank's depositors require a bail-out, a first tranche of the losses would be borne by a national deposit guarantee scheme. EDIS would then only become responsible for losses in excess of that first tranche. Still, this only reduces the costs shifted somewhat, but does not fundamentally change the picture. Furthermore, there is the question of what happens if a country fails

to meet the obligations from its national tranche. If they are then passed on towards the common EDIS level, the protection against excessive cost shifting would be weakened further. However, if they are not passed on, and thus are defaulted on, then depositors would once again have reason to participate in a bank run, because they would face losing some of their money if they did not withdraw early.

In the long run, even EDIS could be overwhelmed by losses. Just as some individual countries were unable to credibly guarantee deposits in the last crisis, a common European scheme is not guaranteed to always be able to meet its obligations. In that case, once again deposit flight towards third countries would occur, only on a much larger scale. Two factors in particular contribute to the risk of such a scenario occurring for EDIS. First, at the current juncture EDIS would entail a relatively small number of sovereigns with fiscal space guaranteeing bank liabilities for a much larger area, thus making it more likely that they are overwhelmed. Second, many policies that can make financial difficulties less likely, such as structural reforms, have to be implemented by individual countries. But, since EDIS helps them to shift onto others some of the costs of failing to follow such policies, they will be less likely and slower to adopt them.

All forms of deposit insurance directly introduce moral hazard problems. If banks are protected on the downside, they are incentivised to take on excessive risks, since they will be able to earn high returns if things turn out well but losses will be socialised in the adverse scenario (financial institutions are also incentivised to take on correlated risks, see also Acharya, 2009). For the same reason, deposit guarantees remove the incentive for depositors to choose less risky banks. In fact, a risky strategy might allow a bank to offer higher average interest rates and thus draw in more deposits. Note that financing deposit insurance via levies on the banking sector does not solve the moral hazard problem, because if a crisis erupts it may not be possible for governments to actually collect these levies. But, even if it were possible, every individual bank would still be incentivised to follow an excessively risky strategy since potential costs would be shifted to other banks.

There is support for the dangers of deposit insurance in the empirical literature. Anginer and Demirguc-Kunt (2018) provide a review of the literature. There is evidence that deposit insurance results in a higher probability of banking crises (Demirguc-Kunt and Detragiache, 2002), reduces the capital buffers held by banks (Nier and Baumann, 2006), and leads to a lower sensitivity of deposit rates to changes in a bank's riskiness (Demirguc-Kunt and Huizinga, 2004). Furthermore, it leads to higher loan-to-asset and debt-to-equity ratios, and results in more frequent defaults due to higher asset risk and leverage (Calomiris and Chen, 2016), and can make banks to initiate riskier loans without having to pay higher deposit rates (Ioannidou and Penas, 2010). The removal of government guarantees from some banks was also shown to result in a cut in credit lines to the riskiest clients and a shift away from certain risky debt instruments (Gropp et al., 2014). There are also some studies that do not find an increase in bank riskiness (Wheelock and Wilson, 1994; Alston et al., 1994; Karels and McClatchey, 1999; Martinez-Peria and Schmukler, 2001). Possible reasons for this include high bank charter values (meaning a bank has market power and can earn rents, e.g. because of its reputation or regulatory capture), the insurance not being credible, effective and sufficient monitoring by creditors other than depositors, and the cost of bank-runs being higher than those from the additional risk-taking. However, in the cases of Ngalawa et al. (2016) and Anginer et al. (2014) the costs due to moral hazard outweigh the benefits in times of bank-runs, making the net effect of deposit insurance negative. Explicit deposit insurance by itself can also reduce risks if it effectively introduces limits regarding the extent to which losses can expected to be covered (Gropp and Vesala, 2004) and when they reduce the incentives to put deposits in very large banks to profit from implicit 'too-big-too-fail' guarantees (Anginer et al., 2014). Note that these benefits only materialise insofar as the explicit insurance actually reduces the expectations for future bail-outs stemming from implicit guarantees.

3.4. Increased Equity Requirements

A straightforward way to make banks safer is to increase the share of equity vis-à-vis debt in their financing. Equity (or capital, as it is often called in the case of banks) is a floating value liability whereas other liabilities (such as deposits or other debt instruments) are usually fixed in value. Therefore, if a bank incurs losses, the value of its equity can simply fall and operations continue without major disruptions. However, if a bank fails to meet its fixed value debt obligations, the bank would either need to be bailed out or face bankruptcy. So equity cushions directly protect against bank failures in adverse scenarios. Furthermore, equity cannot run. Even if an equity investor in a financial panic doubted the soundness of a bank, he could no go to the bank and demand it exchange his shares for a certain amount of money. He could only sell his shares to other market participants. In contrast, debt investors are owed fixed sums, and short-term debt investors (such as depositors) in particular can call in these debts very quickly, thus initiating a bank-run.

The amount of equity required to actually make the banking system safe is still under debate, but it probably is considerably higher than under current standards. Admati and Hellwig (2013) suggest based on historical experiences that equity ratios for banks of 20 to 30 % might be sufficient, whereas Kotlikoff (2018) argues that only 100 % equity would be truly safe.[3] Cochrane (2014) also suggests 100 % equity for safety, but also argues that rather than fixed regulatory ratios it might be preferable to institute Pigouvian taxes on debt (which would internalise the risks from excessive debt) and have banks decide on the optimal levels themselves. He also elaborates that, if there truly were an economic need for bank debt, this could still be provided in a 100-percent-equity regime via a multi-tier system, in which holding companies hold fully equity-financed banks but issue both equity as well as debt themselves, since these holding companies would be much easier to resolve.

[3] It should be noted that even 100 % equity on a banks liability side would not make bankruptcy completely impossible by itself, since certain derivatives can also produce fixed payout obligations.

4. MACROECONOMIC POLICY OPTIONS IN CASE OF TROUBLE

4.1. Monetary Policy

Monetary policy in the euro area will probably remain restricted for the foreseeable future. The canonical approach to macroeconomic stabilisation policy is to have the central bank tighten (loosen) monetary policy in response to expansionary (contractionary) shocks to the economy. In the euro area, the ECB's mandate requires it, above all else, to provide price stability, which is operationalised as a year-on-year inflation target for the area-wide HICP of close to but below 2 % in the medium term. If inflationary dynamics weaken (strengthen), the ECB is supposed to reduce (increase) its key interest rates to offset this.

The Effective Lower Bound on nominal interest rates means that the ECB has almost run out of room for further interest rate cuts. Investors have the option to move into zero-yielding cash instead of keeping money in negative-yielding accounts. Because of storage and insurance costs associated with holding large amounts of cash, central banks can push interest rates a bit below zero (the Swiss National Bank's policy rate stands at -0.75 %, which is probably close to the generally achievable minimum). A further danger is to fall below the reversal interest rate. Interest rate cuts can help banks, e.g. via valuation gains on their long-term assets, but also hurt them, e.g. by compressing net interest margins. The reversal interest rate is the one below which the detrimental effects outweigh the benefits – below this threshold, loan provision by banks will fall rather than rise, leading to a contractionary impulse. There is even an argument that the reversal interest rate rises over time when a low interest rate policy stays in place for a prolonged period, since valuation gains will fade out over time as maturing assets on banks' balance sheets are replaced but the effect on net interest margins will not (cf. Brunnermeier and Koby, 2018). Due to these reasons, the ECB, whose headline[4] deposit facility rate currently is -0.5 %, most likely cannot provide much additional stimulus by further interest rate cuts.

In the face of the constraints with regard to interest rates, central banks including the ECB turned towards unconventional policy measures – and achieved mixed results. The most prominent of the unconventional measures are large-scale asset purchases. It is doubtful whether such purchases could make much of a contribution towards achieving central banks' inflation targets. For example, Fiedler et al. (2017) provide an overview of empirical estimates for the effects of quantitative easing in the United States as well as the euro area. According to these, even very large programmes have only very limited effects: excluding one outlier, the average peak effect of one trillion dollars' worth of asset purchases on consumer prices in the US was 0.5 percentage points. Furthermore, there are indications that any possible effects decrease over time and that unconventional measures can produce a number of negative side-effects (see e.g. Fiedler and Gern, 2019 for a discussion of relevant literatures). These possible side-effects include risks to financial stability due to increased risk-taking, misallocation of resources towards less productive firms, unwanted distributional consequences, reduced incentives for structural reforms and fiscal consolidation in certain euro area countries, and the danger of suboptimal future monetary policy by a central bank that tries to avoid losses on its substantial asset holdings.

Because of the current limitations of interest rate policy and unconventional measures, a number of proposals that are supposed to restore the effectiveness of monetary policy have

[4] The ECB, like other central banks before it, already introduced a tiered interest rate system with partial exemptions from negative interest rates, which suggests that unintended effects from its policy of low interest rates on banks are already a concern.

been made. A summary can be found in Constâncio (2017) and Fiedler et al. (2019) provide further discussion of the literature which will form the basis for the overview below. These proposals include:

1) **Raising the inflation target**

This was proposed by e.g. Blanchard et al. (2010) and Ball (2014). Since higher inflation leads to a larger spread between nominal and real interest rates, real interest rates could be pushed further below zero. However, this is only true if the new inflation target can credibly be reached (cf. Laubach and Williams 2015). Otherwise, central bank credibility may erode further, which should be a particular concern for the ECB, which is already failing to achieve its current, lower target. Furthermore, inflation produces a number of costs, including distortions due to changes in relative prices and due to the taxation of nominal returns, as well as menu and shoe leather costs, which would increase with a higher inflation target.

2) **Introducing a level target**

This would entail the central bank to set some target path (e.g. for the price level or nominal GDP) and promise to always return to it. Rather than letting bygones be bygones, any past shortfall would have to be made up. Proponents hope that such a commitment would aid central banks by increasing their ability to manage expectations (Vestin, 2006; Schmidt, 2011), which is especially relevant whenever the Effective Lower Bound is binding (Eggertsson and Woodford, 2003). However, this would only work if agents fully understand the regime, if they form forward-looking inflation expectations, and if the level target is credible (meaning *inter alia* that central banks would no longer look through temporary supply shocks, Wessel, 2018). Otherwise, a switch to level targeting could lead to worse results (Kryvtsov et al., 2008). Note also that a fully formed level targeting policy that wants to produce a credible commitment in order to steer expectations should make a statement about how fast the central bank would return to the target path.

3) **Abolishing cash**

Since the Effective Lower Bound exists due to the possibility to hold zero-yielding cash, there is the argument that its abolishment would help by allowing more negative interest rates (Buiter, 2009). However, this step would also remove a valued means of payment and could even induce people to switch away from central bank currency altogether.

4) **Helicopter drops**

Helicopter drops (Buiter, 2014) are a shorthand for policies by which the central bank brings additional money into circulation without taking any assets in return. This increases consolidated government debt and produces an expansionary impulse, in particular because issuing zero-yielding liabilities (money) should lower borrowing costs for many governments as long as their creditworthiness is not impacted by the additional debt (cf. Muellbauer, 2016). However, creditworthiness may well be affected. Furthermore, if inflation developments in the future demanded a reversal of the helicopter drops, the central bank would not have any assets to sell in order to drain this money back out of circulation, and would have to rely on fiscal policy makers to provide the needed contractionary impulse.

5) **Neo-Fisherian interest rate increases**

The policy prescriptions stemming from Neo-Fisherian theories are quite different (Bullard, 2010; Schmitt-Grohé and Uribe, 2017). Neo-Fisherians note that, at least in the long run, increasing interest rates go hand-in-hand with higher inflation, because the nominal interest

rate is the sum of the real rate and expected inflation. However, it is unclear how to turn this observation into practical monetary policy. For instance, García-Schmidt and Woodford (2019) and Garin et al. (2018) argue that Neo-Fisherian theories rely a lot on perfectly forward-looking expectations, which may well not hold in practice.

All in all, the ECB's options to provide additional stimulus currently appear very limited, in particular if costly side-effects are to be avoided. This means monetary policy will be less able to fulfil its macroeconomic stabilisation goals. The resulting additional volatility introduces a new concern for financial institutions' risk management. Note, however, that the effectiveness of (unconventional) monetary policy most likely varies over time. In particular, there is evidence that it is more effective in the aftermath of financial crises but less so once the acute phase is over (cf. e.g. Jannsen et al., 2015; Hesse et al., 2018). Since equilibrium short-term interest rates would be set to spike in case of a financial crisis, even keeping ECB policy rates unchanged could provide an expansionary impulse since this would increase the spread between the two. But, in order to be able to take advantage of additional central bank credit, banks would need to have sufficient assets that they could post as collateral. The Eurosystem already introduced policies that go beyond the classic case for the central bank as a lender of last resort, which is to lend at 'high rates' against 'good security' to prevent panics (Bagehot, 1873), and accepted a wide variety of assets of less than the highest quality. Due to a further reduction in the quality of assets held by banks, the next crisis may see them unable to post the collateral required for central bank loans.

4.2. Fiscal Policy

The potential of fiscal policy to actively support growth in the event of a recession is currently limited to a few countries with fiscal space available. Fiscal room to manoeuvre is still strongly restrained in many euro area countries by the rules laid down in the fiscal compact. In most countries, the structural budget balance is below its country-specific medium-term objective (MTO), implying further consolidation needs. These are even substantial in a number of cases, including Italy, France and Spain. Fiscal space, which is indicated by a positive differential between the estimated structural balance and the MTO, is significant among the larger economies only in Germany, the Netherlands and Austria and, surprisingly, also Greece, according to calculations by the ECB (2019: Chart 1.4).

Institutions for fiscal risk sharing (beyond the ESM) are currently not available and controversial. The European sovereign debt crisis has revealed problems in the architecture of the euro area with its combination of centralised monetary policy and decentralised fiscal policies and raised demands for increased fiscal risk sharing. Numerous ways to implement fiscal risk sharing have been proposed, including the introduction of a rainy day fund, common unemployment insurance, a more significant central budget, and joint debt instruments.[5] However, all of these proposals are contentious and cannot be expected to be implemented any time soon, given the lack of political consensus in Europe about how to proceed.

The idea of pushing national governments to engage in fiscal policy oriented at an aggregated euro area fiscal stance is flawed. In case of a severe cyclical downturn, not all countries will be in the position to employ the expansive fiscal stance that would be appropriate, as some of them are restrained by consolidation requirements (stemming from fiscal rules or capital market pressure).[6] Then the euro area fiscal stance (the aggregate of national fiscal stances) would also be inappropriate with respect to the euro area's aggregate cyclical position. As the European Commission has no budgetary

[5] For a brief discussion see Gern et al. 2019.

[6] See Pisani-Ferry (2019) for a concise description of the European fiscal framework,

power to accomplish the desired aggregate fiscal stance directly, in such a situation it would like to ask countries with sound debt positions to provide extra fiscal stimulus, with the intention to loosen the joint fiscal stance to the desired level and to indirectly help countries that cannot afford the appropriate (from a purely cyclical point of view) expansionary stance. In a similar vein, the ECB in its November Financial Stability Review requests 'governments with fiscal space to act in an adequate, effective and timely manner' (p.19). However, additional stimulus in a country beyond its own business cycle needs will reduce welfare there risking overheating the economy or compromising fiscal sustainability. In addition, in order to be effective this policy requires the size of spill-overs to be substantial, which is not the case according to most studies.

5. CONCLUDING REMARKS

Despite the deterioration of the economic outlook, risks to financial stability appear to be contained for the time being, but could be substantial in the longer run. Diminishing expectations for growth and inflation have led to an easing of monetary policies and a significant reduction in government bond yields. Improved financing conditions across the euro area are mitigating debt sustainability concerns in the public sector as well as in the private sector, for the time being. The combination of extremely low interest rates and elevated asset prices implies risks for financial stability as banks and non-banks have increased their exposure to the risk of a reversal of interest rates and an eventual sudden repricing of assets. While banks in the euro area have increased their resilience in recent years, capital buffers could prove insufficient in case of a serious downturn, and bank profitability continues to be a major concern. Against this backdrop, we have discussed potential strategies to increase resilience focusing on the banking sector.

In order to increase resilience of banks in the euro area, capital buffers should be raised substantially, whereas policy should not enforce the introduction of a European Deposit Insurance Scheme. Bank runs are a major source of financial trouble. Avoiding them is a central step to increase resilience of the financial sector. While credible deposit insurance schemes can prevent certain types of bank runs, empirical evidence suggests that moral hazard introduced by these schemes leads to excessive risk-taking to an extent that the net effect on financial stability is negative. Higher equity ratios for banks do not distort the decision to take on risk. They provide a cushion against losses on the balance sheet, and equity is unable to run in a panic. The amount of equity required to make banks safe is still subject to debate, but it is most likely considerably higher than today.

Macroeconomic policy options to respond in the event of a recession are still limited both on the monetary and the fiscal side, with no silver bullet available. The ECB's options to provide additional stimulus currently appear very limited, in particular if costly side-effects are to be avoided. The potential of fiscal policy to actively support growth is currently also restrained with fiscal space available only in a few countries. Pushing national governments to engage in fiscal policy oriented at an aggregate euro area fiscal stance in order to substitute for fiscal risk-sharing institutions that are not available is not going to work. Apparently, traditional macroeconomic demand management policies have come to a limit. In this situation, more structural policy responses may be necessary to shore up confidence and arrest an eventual decline in activity.

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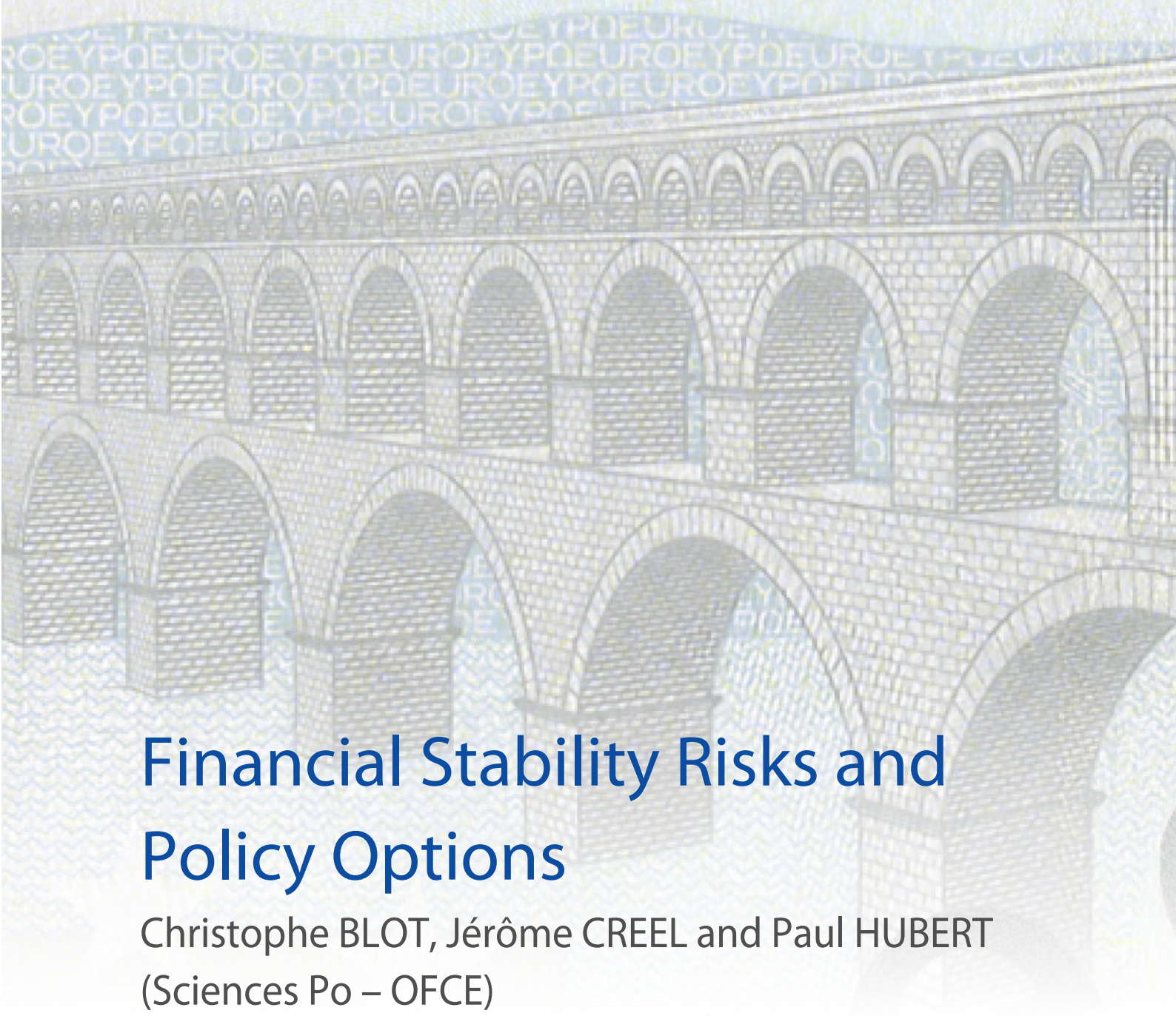

Financial Stability Risks and Policy Options

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Abstract

We pay special attention to the different types of financial risk discussed in the public debate: equity, housing, corporate debt, public debt sustainability, and banks and insurance companies' profits. Our assessment does not point to significant risks in the euro area even if attention should be drawn on some local or specific market segments. Even if monetary policy may not be the most appropriate tool to dampen these risks, the ECB has still some policy options to respond to an economic slowdown.

This document was provided by Policy Department A at the request of the Committee on Economic and Monetary Affairs.

CONTENTS

LIST OF ABBREVIATIONS

ABSPP	Asset-Backed Securities Purchase Programme
CBPP	Covered Bond Purchase Programme
ECB	European Central Bank
ELB	Effective Lower Bound
FRFA	Fixed Rate Full Allotment
HICP	Harmonised Index of Consumer Prices
LTRO	Long Term Refinancing Operations
MRO	Main Refinancing Operations
OMT	Outright Monetary Transactions
PCA	Principal Component Analysis
SMP	Securities Market Programme
TLTRO	Targeted Long Term Refinancing Operations
VLTRO	Very Long Term Refinancing Operations
ZLB	Zero Lower Bound

EXECUTIVE SUMMARY

- **It is crucial to monitor financial risks regularly** and to account for the multiple sources of these risks.
- **The valuation level of equity markets in the euro area is still 20 % below its peak of 2007**. Comparatively, the US Standard and Poors' index is twice its value of 2007.
- **Risks have emerged for corporate debt and notably leveraged loans, which share some similarities with the subprime market**. However, securitisation of these loans is less important than it was for subprime loans. These markets also differ in terms of the underlying nature of risk.
- **House prices in the euro area are synchronised and risks remain moderate** except in Germany where house price have sharply risen and are disconnected from house price cycles in other countries. However, credit dynamics in Germany remain subdued.
- The argument that banks' profitability is negatively affected by low interest rates is often made. Yet, **banks' and insurance companies' profits are steady and are recovering** since 2012.
- Although monetary policy is expected to influence asset prices, there is evidence that **central banks may affect stock price imbalances but no evidence that they could do so for housing markets**.
- **Policy options in case of a recession range from an extension of QE towards corporates and households** – to support investment and consumption – the **use of macroprudential tools** – to mitigate the effect of financial risks – and **fiscal policy** notably in an environment characterised by low interest rates.

1. INTRODUCTION

The dramatic consequences of the global financial crisis have renewed the interest in the financial cycle and the financial risk. It is now crucial to monitor financial risks regularly and to account for the multiple sources of these risks. The subprime crisis has highlighted the role of the housing market and its close connection to household debt. A few years ago, risk stemmed from equity markets and the burst of the dotcom bubble had triggered a significant slowdown – but not a recession – of the world economy. Besides, finance inevitably entails risk and institutions in charge of surveillance – central banks or financial regulators – must not only be able to evaluate and monitor the global level of risks but also be able to identify who is bearing the risk. A fine diagnosis of financial risks is also crucial for monetary, fiscal and financial policy. Financial stability has become a major policy objective and all relevant tools must be employed in order to reduce risks once they are identified. Regarding preventive actions, the role of monetary policy remains disputed and it is not clear that central banks should set the policy instruments – the short term interest rate and assets purchases – in order to account for financial stability.[1] Besides, the euro area may still be characterised by heterogeneities such that the common monetary policy may not be the most appropriate tool to deal with financial risks.

Ten years after the crisis, the euro area has not fully recovered and even if the unemployment rate has now reached its pre-crisis level, it is still high in some countries and estimates of the output gap still point to a global economic slack in the euro area as a whole. A new financial crisis would inevitably delay the ongoing recovery and in the worst case scenario trigger a new recession. Consequently, beyond preventive actions, monetary and fiscal space is needed to stabilise the economy in case of a negative shock. However, with the policy rate at the zero lower bound and with public debt at a higher level, it is crucial to assess whether there is still monetary and fiscal space.

In this Monetary Dialogue paper, we document the current financial risks in the euro area by investigating the equity, the housing and the debt markets (corporate and public debt). Banks' situation is also analysed not only because they play a crucial role in the issuance and propagation of risks. The role of the ECB is assessed through its ability to reduce risks and to make monetary policy more expansionary if the euro area suffers from a downturn. With interest rates at the zero lower bound, is the ECB able to further resort to unconventional measures?

[1] See Smets (2013) for a survey.

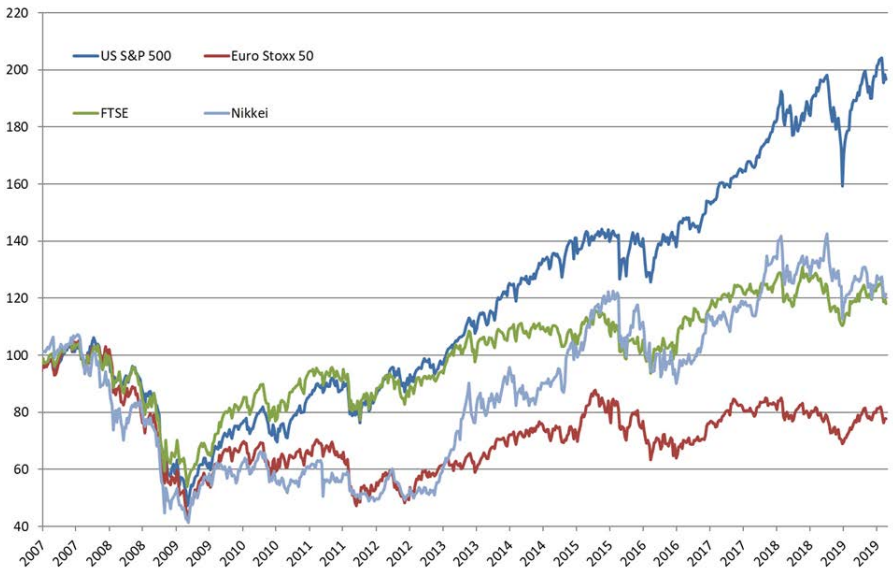
2. FINANCIAL STABILITY RISK DIAGNOSIS

In a challenging internal and global environment with downside risks to economic growth, asset valuation corrections in some euro area countries or in some markets may pose threats to financial stability. These threats are discussed in the following.

2.1. Equity market

Stock price developments over the last decade show at least three interesting features (Figure 1). First, the valuation level achieved before the global financial crisis has been exceeded everywhere except in Europe. Actually, the Euro Stoxx 50 is still 20 % below its peak in 2007. Second, the US Standard and Poors' index is twice its value of 2007, which is substantial in comparison with other advanced countries. Third, at first sight, the evolutions of the Euro Stoxx 50 and the UK FTSE are pretty much connected.

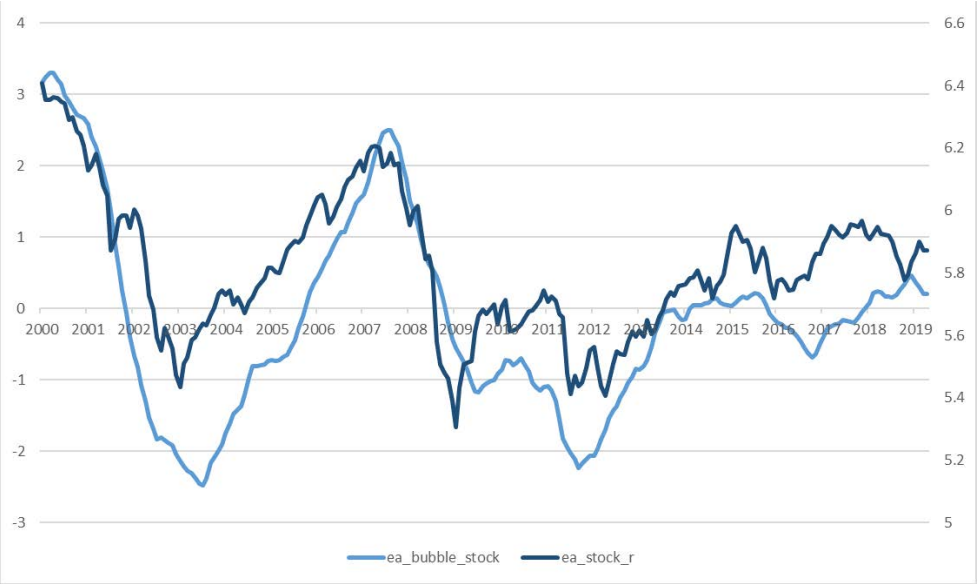
Figure 1: Euro area stock price indices



Source: Eikon Thomson Reuters. 2007 = 100.

Monetary policy stimulus could threaten financial stability by inflating asset price bubbles. Borio and Zabai (2016), for example, argue that the benefits of unconventional monetary policies diminish while the risks of financial instability worsen. They echo the criticisms made by Taylor (2009) concerning the Federal Reserve's low rate policy between 2001 and 2004 which would have fueled the boom in the real estate market and subsequently triggered the subprime crisis. With negative policy rates and asset purchases, most sovereign yields are negative in the euro area. Financial investors are looking for higher returns and are driving up stock and housing prices. However, share and housing prices remain well below the peak observed in 2007. Drawing on the method by Blot et al. (2018) shows no sign of strong imbalances in the prices of assets in the euro area (Figure 2). There may well be local imbalances, e.g. in the German housing market, but it cannot be argued that this feature is under the sole responsibility of the ECB monetary policy if other markets do not show similar signs of imbalances.

Figure 2: Euro area stock price imbalances



Source: Authors computations, see Blot, et al. (2018). Note: the y-axis corresponds to standard deviations of the difference between asset prices and their reference value. 'Stock_r' means the deflated price of stocks while 'bubble_stock' accounts for the stock price imbalances.

2.2. Corporate bond market

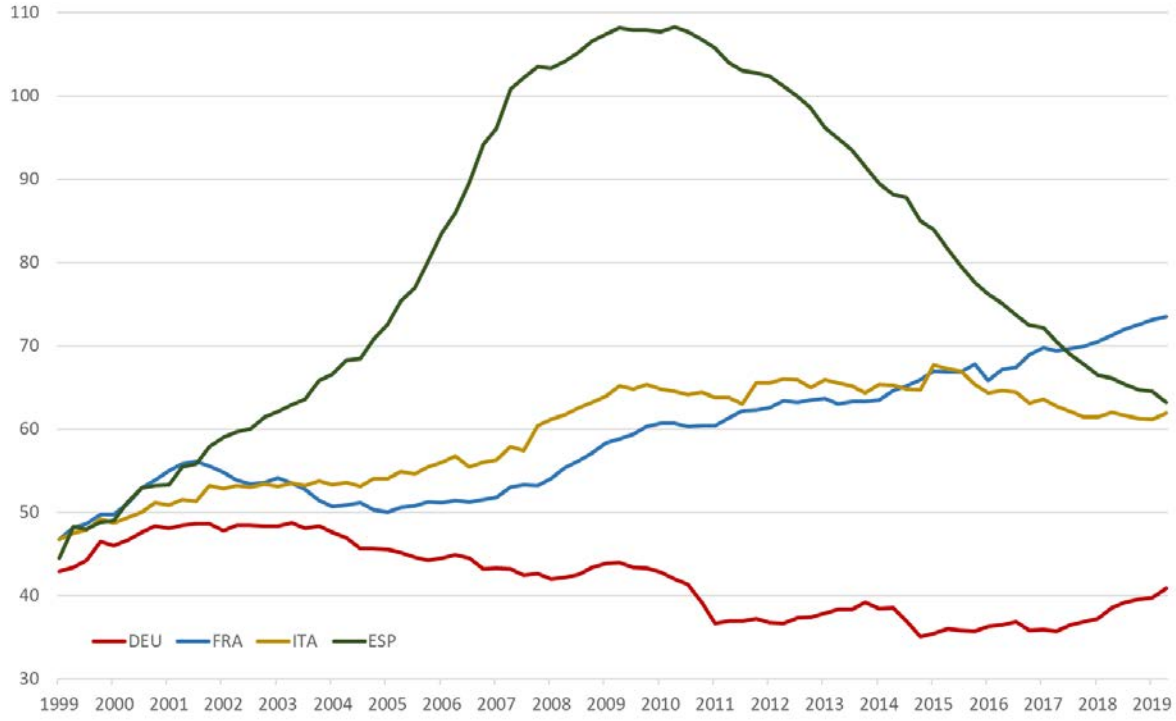
Whereas household debt has decreased after the global financial crisis, international institutions have now drawn their attention on corporate debt and especially on leveraged loans. According to the International Monetary Fund (IMF), this segment of the market is characterized by 'loans, usually arranged by a syndicate of banks, to companies that are heavily indebted or have weak credit ratings' and would be the current major source of risk for the financial system.[2] To some extent, leveraged loans share similarities with the subprime market, which was at the origin of 2008 crisis. First, it entails loans to lower quality debtors. Second, those loans have also been securitised and integrated in structured assets such as CLOs (collateralized loan obligations).

In the euro area, debt issued by non-financial corporations is still below the 2007 level (62 % of GDP in 2019 Q2 according to the Banque de France against 65 % in 2009 Q2). But this may hide important differences across countries since corporate debt has strongly decreased in Spain whereas it has steadily increased in France (Figure 3). Actually, risks may not stem mainly from European firms but rather from US corporate debt, which has increased from 40 % of GDP in 2011 to 47 % in 2019, a level which is less than half of the household debt.[3] More than the aggregate level of debt, it is the composition of this US corporate debt that has raised some concerns as the outstanding amount of those leveraged loans was estimated between 1 800 and 2 300 billion dollars. Though it would be much lower in Europe, the risk should not be minimised as those loans have been securitised and may therefore be held by European banks. As for the subprime crisis, the outburst of the crisis may be related to a macroeconomic risk in the US but then be propagated in the whole financial system.

[2] See https://blogs.imf.org/2018/11/15/sounding-the-alarm-on-leveraged-lending/.

[3] In 2019 Q2, the total debt of US households amounts to 101,5 % of GDP, 21 points below the peak reached in 2009 Q3.

Figure 3: Total debt of non-financial corporations



Source: Banque de France. Note: y-axis in % of GDP.

However, though it is important to monitor the source of risks in the financial system and to send warning signals to lead financial regulators to increase protection, there remain important differences compared to the pre-crisis period. According to the Banque de France, there is less securitisation of leveraged loans today : 'one third of leveraged loans are reportedly securitised, compared with 80% of subprime loans in 2007' representing 5.5 % of the US GDP in 2019 against 8 % of GDP for the subprime loans in 2006.[4] Besides, the nature of the underlying risk is not located on a single market (the housing market) but related to the macroeconomic risk. The rise in the default rate on corporate debt is related to the risk of downturn in the United States. Finally, collateral provided by firms that would be insolvent is also different as firms' assets are more diversified than households' assets.

2.3. Housing market

The 2007-2008 financial crisis has been notably triggered by imbalances in several housing markets and credit booms that have gone bust as labelled by Schularick and Taylor (2012). Literature on financial instability and financial crises have highlighted that recessions, which are preceded by a housing bubble and a credit boom are longer and deeper.[5] It is therefore of crucial importance to monitor the dynamics of housing prices and of mortgage credits. Since 2014, real house prices have grown by 2.1 % on average in the euro area as a whole (Figure 4), much less than the average yearly growth rate observed from 1999 to 2007. House prices have strongly recovered since the end of 2013, but are still lower than in 2007 Q3, the highest point observed since 1999.[6]

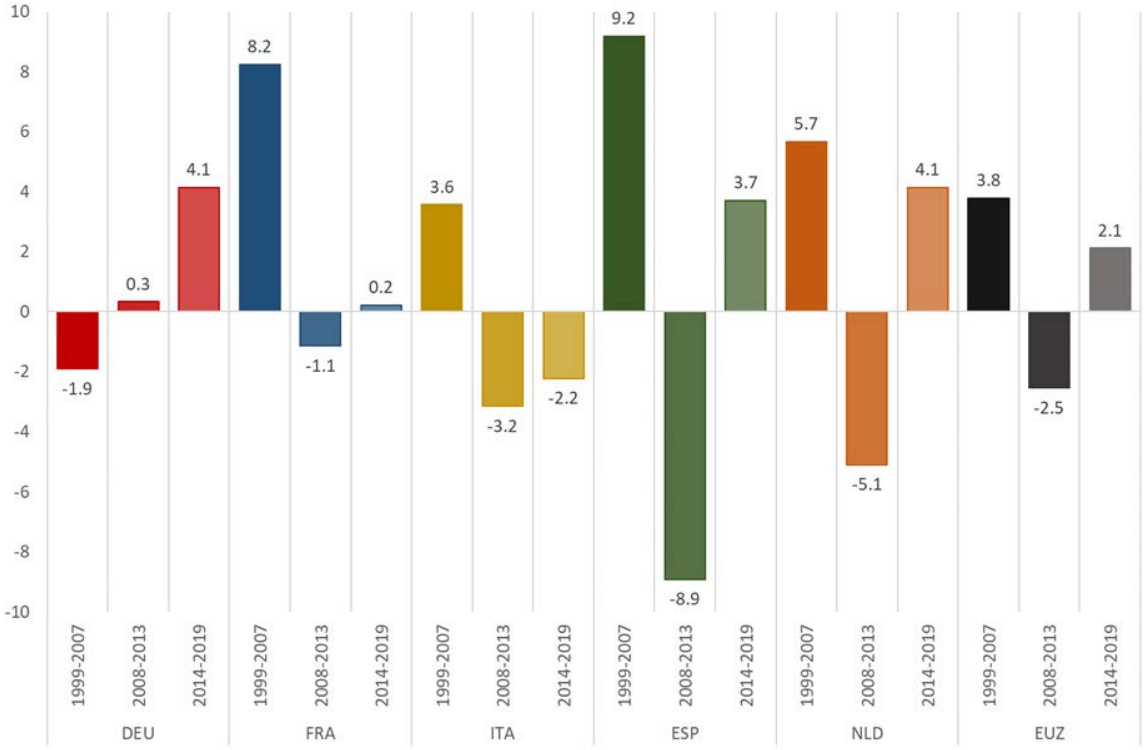
[4] See https://blocnotesdeleco.banque-france.fr/billet-de-blog/faut-il-avoir-peur-des-leveraged-loans-aux-etats-unis and OFCE (2019).

[5] See Claessens et al. (2009) and Jorda et al. (2013).

[6] The nominal value of house prices is yet 12 % higher than in 2008Q2.

Besides, it seems that house prices in the 5 biggest euro area countries are essentially driven by idiosyncratic dynamics rather than by a common factor. Whereas prices are increasing rapidly (4.1 % on average) in Germany, they are still declining in Italy and are stable in France. The German housing market seems notably strongly disconnected from other housing markets. Prices have decreased for almost 25 years (Figure A in appendix) and notably during the years 2000 whereas there was a boom in Italy, France, Spain and in the Netherlands.

Figure 4: House price dynamics (deflated by CPI)



Source: BIS (Property price database). Note: y-axis in %.

A simple statistical analysis highlights the lack of synchronicity of housing markets in the euro area. To that end, we follow Meller and Metiu (2017) and first estimate the housing price cycle using the Christiano-Fitzgerald statistical filter and then assess whether expansionary and contractionary phases coincide between 8 EMU countries for which data are provided by the Bank for International Settlements (BIS) at least since 1971.[7] We consider an expansionary phase (respectively contractionary) on the housing market when the price is above (respectively below) the trend. For each date (t), cycles are synchronized if country (i) and country (j) are in the same phase, whether expansionary or contractionary. A synchronicity index is calculated as the ratio of the number of periods when cycles are synchronised over the total number of periods. When the value of the ratio is below 0.5, it indicates that cycles are not synchronised for more than 50 % of time. Table 1 illustrates the synchronicity of house price cycles in the euro area and suggests that the German house price cycle is relatively

[7] The parameters of the filter are set such as to include medium-term cycles with frequency within the 45 and 120 months.

disconnected from other cycles.[8] It coincides with the cycle in the Netherlands for 62 % of periods. Conversely, the French, Italian and Spanish cycles are more synchronised.

Table 1: Synchronicity of house price cycles

	DEU	FRA	ITA	ESP	NLD	BEL	FIN	IRL
DEU	1.00							
FRA	0.38	1.00						
ITA	0.49	0.87	1.00					
ESP	0.45	0.84	0.77	1.00				
NLD	0.62	0.64	0.69	0.68	1.00			
BEL	0.52	0.85	0.97	0.80	0.70	1.00		
FIN	0.23	0.56	0.46	0.64	0.45	0.48	1.00	
IRL	0.54	0.63	0.66	0.60	0.88	0.65	0.43	1.00

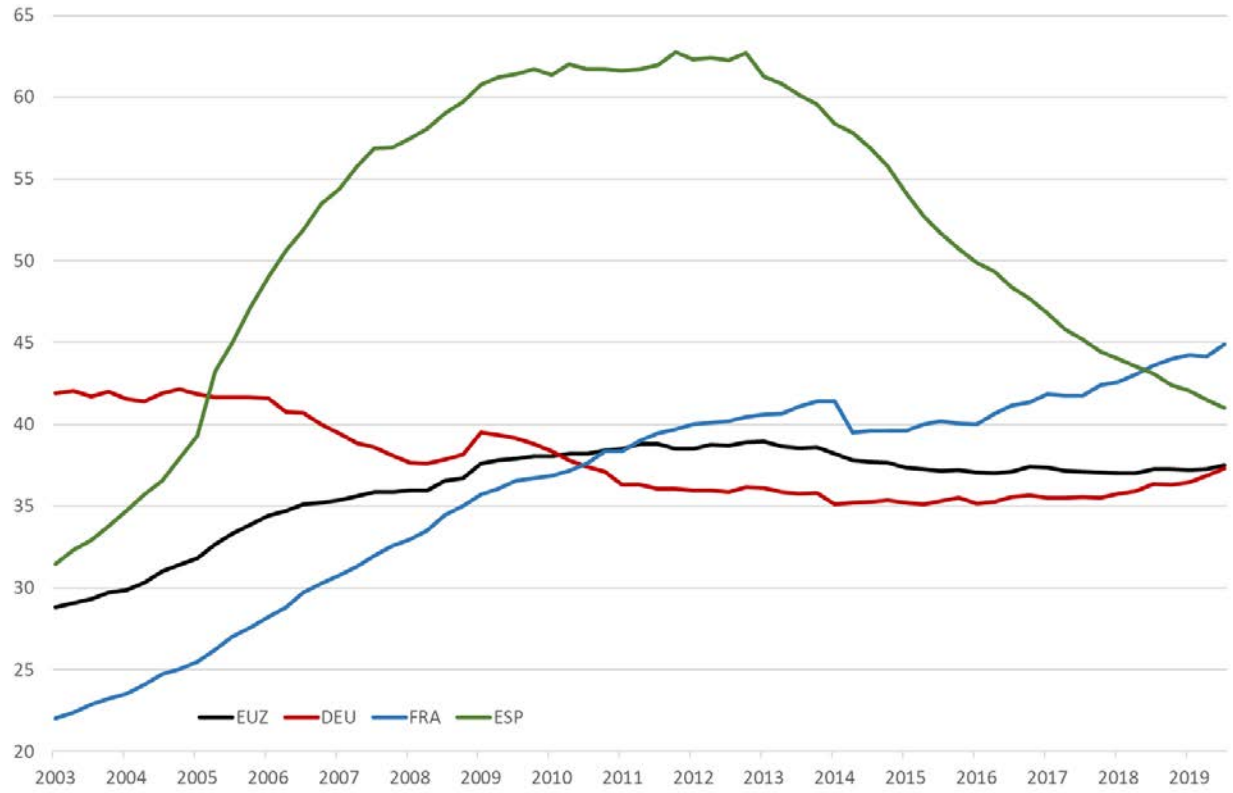
Sources: BIS (Property price database) and authors calculations.

These figures suggest that house prices in the euro area are strongly driven by domestic dynamics, which may raise more challenges for the common monetary policy, which may consequently not be the most appropriate tool for dealing with financial risk stemming from the housing markets. The risk associated with the housing market is also related to credit dynamics. The threat for financial stability is all the more important when a credit boom is simultaneous with a rise in house prices. For the euro area as a whole, the ratio of credit for house purchases to GDP has reached a peak of 39 % in 2013 Q1 and has slightly decreased since then to amount to 37.5 %. Here again, it may hide heterogeneity across countries. For instance, the ratio of credit to GDP has fallen sharply in Spain during the crisis from a peak at 62.7 % in 2012 Q4 to 41 % in 2019 Q2. Meanwhile, it has increased moderately in Germany and stands at 37.3 %, only one point higher than in 2011 Q2 and still below the pre-crisis period (Figure 5). For France, the ratio has increased continuously since 2003.

From the development of credit, it may be noticed that while house prices have increased recently in Spain, the ratio of credit to GDP is still declining. In Germany, the recent surge in prices is not accompanied by a rapid rise in credit. For France, prices stabilise but credit to households is still rising. On average, it seems that credit ratio for the euro area as a whole does not show signs of overheating. But the house and credit markets are characterised by important heterogeneity that may not be easily fixed by the common monetary policy.

[8] Table A in appendix shows the correlation of cycles.

Figure 5: Outstanding amount of credits for house purchase



Source: ECB. Note: y-axis in % of GDP.

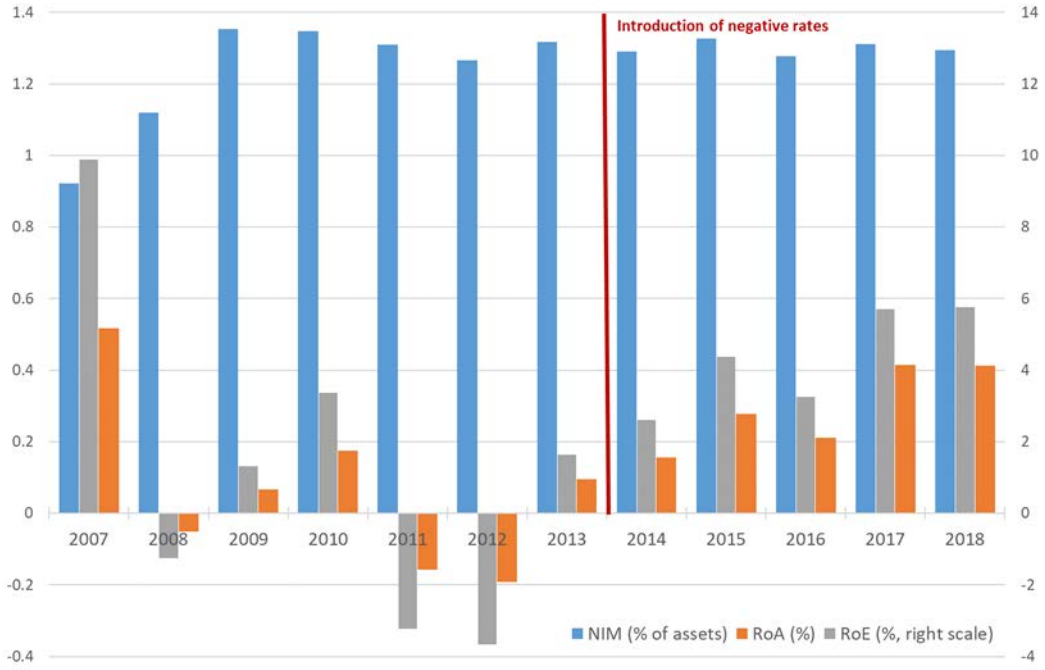
2.4. Bank profitability

Monetary policy has also been criticised by banks because it would limit the benefits of the intermediation business. Because of their deposit and lending activities, banks' profitability depends in part on the difference between interest rates on loans -usually long term- and interest rates on deposits -short term-, the so-called net interest margin. Asset purchases help flatten the yield curve, which reduce interest margins. The effect can be exacerbated by the negative interest rate policy if the effects of interest rate cuts on the interest rates on loans are greater compared to the interest rates on deposits. If the interest paid to households and businesses on their deposits cannot be at its own discretion - the bank is reluctant to lose customers - or, for legal reasons, the margins of commercial banks would decrease. However, the argument needs to be qualified because the TLTRO programmes allow banks to finance themselves at the central bank at negative interest rates. Profitability can also increase as lower interest rates decrease corporate and household interest expenses and the loan default rate.

The impact of interest rates on bank profitability is ultimately an empirical issue. However, there is no consensus in the literature. Dell'Ariccia et al. (2017) have found a negative effect, while Madaschi and Nuevo (2017) have found a positive one. Boungou (2019) specifically analysed the effects of the negative interest rate policy on a sample of 2 442 banks in the 28 Member States of the European Union. He notes that negative interest rates weighed on banks' margins, but not profitability, as banks were able to increase their non-interest income (commissions and fees). These conclusions are supported by the recent dynamics of earnings and margin indicators in the euro area. Indeed, there are no signs of a decline in profits and not even a decrease in net interest margins (NIM) since the introduction of

negative interest rates in the euro area (Figure 6) or in Germany (Figure 7), where criticism of the ECB's policies has been the most severe. The return on equity and assets was negative in 2011 and 2012 and has increased gradually since then.

Figure 6: Euro area banks' profits



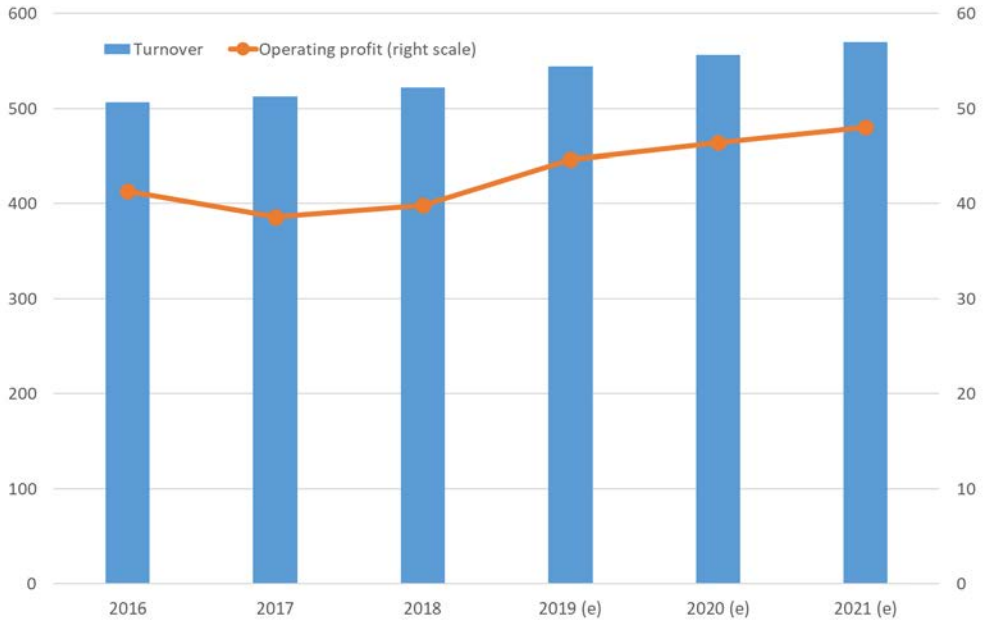
Source: ECB.

Figure 7: German banks' profits

Source: ECB.

The same argument was also used to suggest that insurance companies may incur major costs in terms of profitability and solvency in a low interest rate environment. This stems from the main feature of the insurance business model: these companies hold a large number of fixed-term investments in their balance sheets. The life insurance business in particular is often characterised by financial guarantees that provide the insured with a minimum return. These guarantees could pose a threat to life insurers who have sold many of these products in the past. However, the front-end loads and management fees account for a significant portion of insurance companies' revenue (in addition to revenue that is not bank interest), which can offset the decline in interest rates. Figure 8 shows the sales and profits of the 13 major insurance companies in the euro area - a highly concentrated market in which the largest provider, Allianz, generates more than 10 times the turnover of the 13th actor Ageas. Overall, the impact of low interest rates on insurance companies' profits does not seem to be noticeable, at least for their future prospects. The operating result of one of the most important players in the industry, Axa, rose from EUR 4.7 billion in 2013 before the introduction of negative interest rates to EUR 6.2 billion in 2018. Finally, risks associated with low interest rates for insurance companies and for banks seem to be overestimated.

Figure 8: Turnover and profits of major euro area insurance companies



Source: Zonebourse.com. Note: Expectations for 2019, 2020 and 2021 are the average of market analysts' expectations. The sample comprises Aegon, Ageas, Allianz, Axa, CNP Assurances, Generali, Hannover Re, Mapfre, Munich Re, NN Group, Scor, Talanx, and Unipolsai.

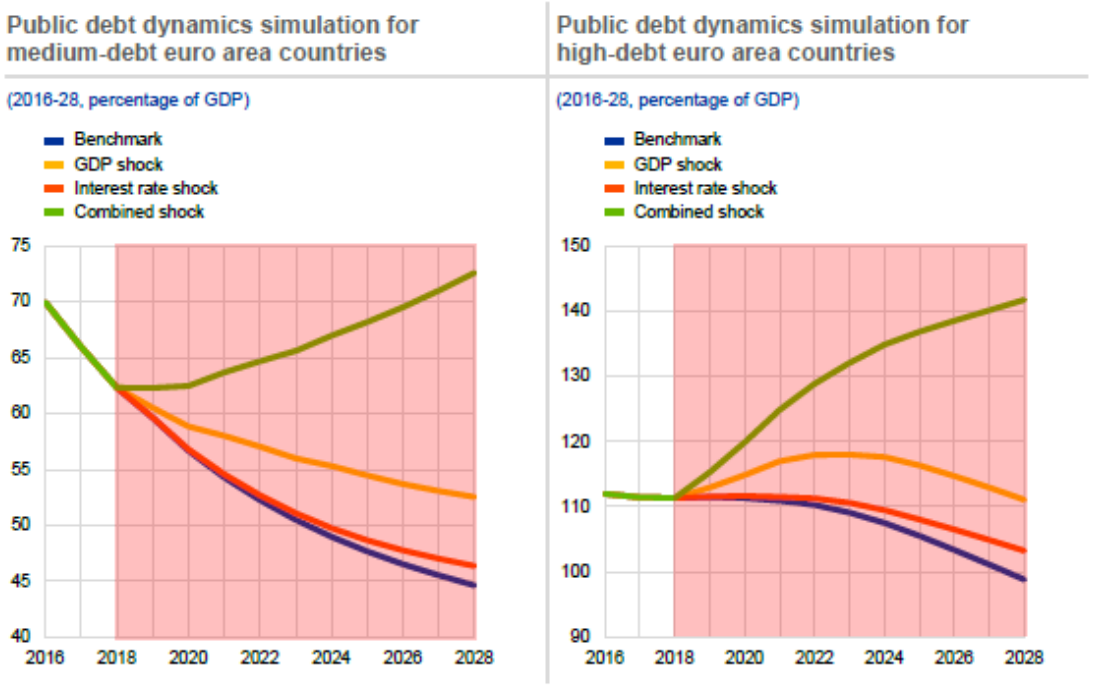
2.5. Public debt sustainability

The latest ECB Financial Stability Review raises doubts on the capacity of euro area high-debt countries to achieve or maintain debt sustainability if a severe and prolonged economic downturn occurred. Although low interest rates have spurred longer debt maturities to reduce sensitivity to possible changes in market sentiment, the ECB analysis shows diverging trends in debt-to-GDP ratios between medium-debt euro area countries and high-debt ones after output and interest rate shocks and a fiscal

stimulus (Figure 9). The scenario raises two concerns, bearing in mind that it excludes fiscal reactions to the shocks.

First, there has been a long tradition since Barro (1986) and Bohn (1998) to assess public debt sustainability via fiscal reaction functions. According to the European Fiscal Board in its latest report (EFB, 2019, pp. 65-67), panel results for 36 developed countries (including the 28 EU Member States) show that higher public debt-to-GDP ratios produce fiscal consolidation. While point estimates are not reported, these results point in the direction of debt sustainability. Following Beetsma and Giuliodori (2010) and Cimadomo (2012), Aldama and Creel (2018) compared fiscal reaction functions for OECD countries obtained with *ex post* (revised) data and those obtained with real-time data. They report a positive reaction of either the primary surplus or the primary cyclically-adjusted surplus (both expressed in percentage points of GDP) to the debt-to-GDP ratios in the case of euro area and non-euro area countries whatever the data. According to the point estimates in Table 2 (p. 296), debt sustainability is achieved.

Figure 9: Public debt dynamics under different shocks



Sources: European Commission and ECB calculations.
Notes: Left panel: Euro area countries with government debt-to-GDP ratios over 60% but below 90% (i.e. Austria, Finland, Germany, Ireland and Slovenia) are considered as medium-debt countries. Right panel: Euro area countries with government debt-to-GDP ratios over 90% (i.e. Belgium, Cyprus, France, Greece, Italy, Portugal and Spain) are considered as high-debt countries. In the benchmark scenario, countries with a fiscal position below/above the medium-term objective (MTO) are assumed to undertake additional consolidation/stimulus to converge to the MTO. The GDP shock scenario represents a one percentage point lower real GDP growth rate over the period 2019-21. The interest rate shock scenario considers a 100 basis points higher average market interest rate from 2019 until the end of the projection horizon (2028). The combined shock captures the simultaneous impact of three individual shocks, the two shocks described above and in addition a lower structural primary balance by one percentage point from 2019 onwards. The shock scenarios assume no fiscal policy reaction to the shocks.

Source: ECB Financial Stability Review, November 2019.

Second, Blot et al. (2019a) question the ability of euro area Member States to achieve the 60 % debt limit at a 20-year horizon. They use the iAGS model for euro area medium term projections and simulate the path of public debt-to-GDP ratios to 60 % until 2040, which is the horizon of the debt rule in the

Stability and Growth Pact and the Fiscal Compact.[9] The simulations highlight countries that are not abiding by the rule and the required amount of additional fiscal consolidation while, for countries that abide by the rule, simulations give an assessment of their fiscal space. Blot et al. (2019a) show that without fiscal impulses beyond 2021 and under some important assumptions (no risk premia, inflation expectations anchored at 2 % per year and real interest rate equal to potential growth), some countries (Belgium, France, Italy and Spain) would exceed the debt limit in 2040. However, after this baseline scenario, they also compute the required fiscal impulses for all euro area Member States to reach the debt limit. This would necessitate countries with (resp. without) margins of maneuver to implement a fiscal stimulus (resp. contraction) of 0.5 % per year over horizons ranging from 2021 to 2023 (Finland, fiscal stimulus) to 2021 to 2032 (Italy, fiscal contraction). They report that in this second scenario, all euro area countries would meet the 60 % criterion in 2040. It remains that achieving debt convergence towards the 60 % limit via additional fiscal consolidation would be economically costly. Countries implementing additional fiscal consolidation would undergo lower output gaps than in the baseline scenario, despite the fiscal stimulus from countries with fiscal space. A trade-off between sustained economic recovery and debt sustainability remains.

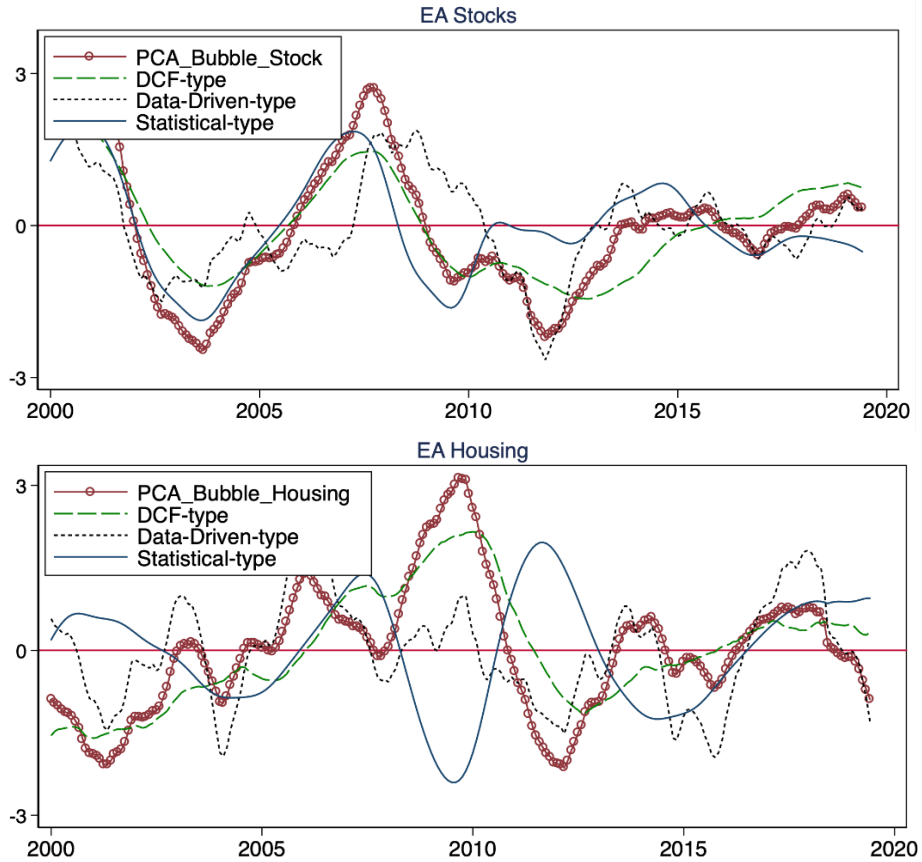
[9] Properties of the model are available at www.iags-project.org/documents/iags_appendix2013.pdf.

3. THE EFFECT OF MONETARY POLICY ON ASSET PRICES

Monetary policy – conventional and unconventional measures – is expected to influence asset prices as the reaction of financial markets plays a key role in the transmission of monetary policy. Empirical evidence suggests a positive link between expansionary monetary policy and asset prices, stressing the effectiveness of monetary policy.[10] However, asset prices may increase beyond the expected effect of monetary policy and trigger mispricing. It is then crucial not only to assess whether monetary policy influences asset prices but also if it fuels asset price bubbles.

Blot et al. (2020) deal with this issue. They first provide an indicator of asset price bubbles based on the estimation of several empirical approaches and assess the effect of monetary policy on those identified asset price bubbles in the stock and housing market of the euro area.

Figure 10: Asset price imbalances



Note: Authors' estimations described in Blot et al. (2020). The green long dashed line corresponds to price imbalances series of the discounted cash-flow model (the structural one), the grey dotted line corresponds to the data-rich model (the econometric model) and the blue line corresponds to the statistical model. The red circled line corresponds to the first principal component of all 3 other variables. All series are normalised.

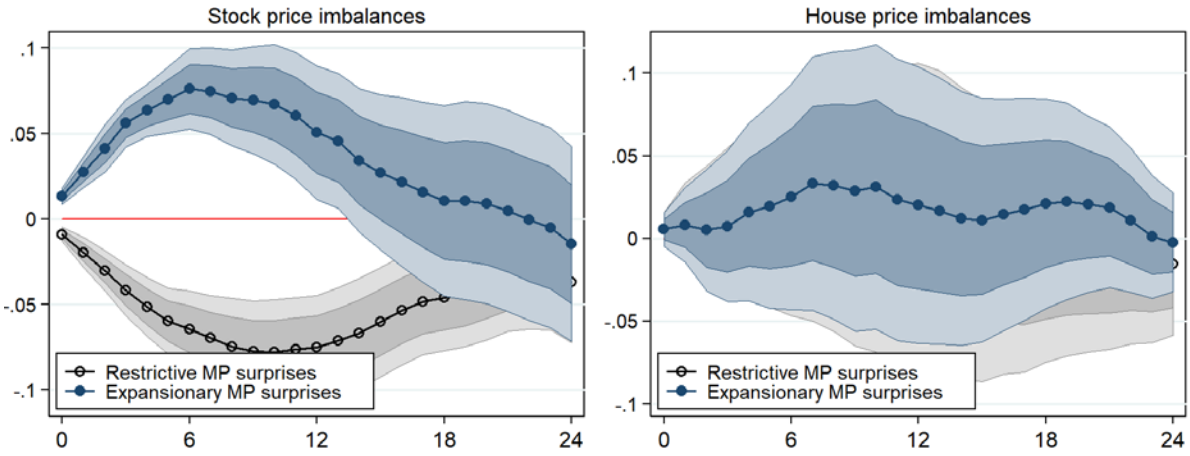
The synthetic measure of deviations of the house and stock prices in the euro area stem from three approaches: a structural model, a data-driven approach and a statistical model. Then Blot et al. (2020) compute a bubble indicator from the first principal component using a principal component analysis

[10] For the euro area, see Angeloni and Ehrmann (2003), Bohl et al. (2008), Andersson and Overby (2009), Filbien and Labondance (2012) and Altavilla et al. (2019).

(PCA) that summarizes the information provided by the three models.[11] The PCA summarising the deviations from the benchmark in the stock and housing markets are represented in Figure 10. For stock prices, imbalances have been significant in the early 2000 and in 2007 consistent with the dot.com bubble and the financial boom preceding the global financial crisis. Low points are observed in 2004 and 2012. For the housing market, deviations have become positive after 2005 and reached a peak in 2009.

Then, Blot et al. (2020) find that both restrictive and expansionary monetary surprises influence stock price imbalances (Figure 11). Expansionary monetary policy tends to inflate stock price imbalances while restrictive monetary policy tends to deflate these imbalances. The effects of monetary policy are now much more symmetric than for actual asset prices. Both responses become non-significant after around 14 months. The effect is overall small in magnitude. While they find that ECB monetary policy is transmitted to house prices in the euro area since 2008, they find no evidence of a significant impact of both restrictive and expansionary monetary on house price imbalances. Hence, this means that the effect of monetary surprises on house prices should be driven by the response of the benchmark value of house prices.

Figure 11: Non-linear responses of asset price imbalances to monetary surprises



Note: Non-linear responses correspond to estimates of equation (3). Shaded area represents the 1 and 2 standard errors confidence interval of the response of the monetary surprises. The dependent variables are the first principal component of the three asset price imbalances estimated in Blot et al. (2020). ECB monetary surprises are computed as the intraday change in the 2-year nominal German sovereign bond yield around the ECB monetary event. We have checked that the responses of house price imbalances to restrictive surprises (the black line with the grey confidence interval) is non-significant.

[11] The PCA consists in estimating a unique indicator which maximises the common variance of the individual series standing for asset price imbalances. More specifically, PCA seeks a linear combination such that the maximum variance is extracted from the variables.

4. POLICY OPTIONS IN CASE OF A RECESSION

4.1. QE for corporates

In a former Monetary Dialogue paper (Blot et al., 2019b), we argued that instead of buying public securities, the ECB could buy private assets, thereby redirecting QE to corporates. The ECB can draw on the Bank of Japan (BoJ) experience, which has implemented this strategy since 2010 with purchases of exchange-traded funds (ETFs). The ECB could thus provide monetary stimulus through a new channel. In fact, this strategy is already in the ECB toolkit with the CSPP (Corporate Sector Purchase Program).

On 12 September 2019, the ECB reactivated the CSPP. Adding a target for riskier purchases, including stocks, is an option for further monetary easing. There can be two channels through which QE for businesses would be effective. First, it would reduce risk premiums and the cost of financing businesses, stimulating investment. The increase in share values could also increase the collateral value of the assets held by companies, easing the funding constraint. Second, rising asset prices would trigger a positive wealth effect for households, stimulating private consumption.

Farmer (2019) has also suggested that central banks should target asset prices. Here, the objective may be not only to stimulate the economy by easing financing conditions and creating a positive wealth effect for households, but also to strengthen financial stability. Indeed, the central bank would aim at mitigating excessive valuations on stock markets.

4.2. QE to households

In the same paper (Blot et al., 2019b), we also argued that the ECB could implement direct measures in favour of households. There are various reasons why quantitative easing may have had limited effects on the decisions of household consumers via, e.g. the wealth channel, the collateral channel or the distribution channel.

One much-discussed option for the ECB to surpass these limits is to provide households with a transfer from the ECB via so-called helicopter money: 'print money and distribute it to the public!'. While nothing in the euro area rules prevents the ECB from taking such independent action, this policy would directly finance household spending by increasing their disposable income. The implications for the size of the balance sheet could be permanent or temporary depending on whether the central bank plans to debit a fraction of this amount in subsequent years or not. Regarding the implications for the central bank's balance sheet, it is important to add that the central bank could also offset the effect of this policy on the size of its balance sheet by selling bonds to the private sector for its assets.

An argument against quantitative easing for households refers to moral hazard of two types. First, in the case of an over-indebted private sector, households would reduce their deleveraging efforts by expecting that printing money would always go to the rescue, hence increasing future risks. Second, this policy could undermine incentives to work and amplify the inactivity trap. In the case of an occasional and unexpected transfer, the argument is rather flimsy. Furthermore, it overlooks that conventional monetary policy and QE yield asset price increases, which benefit the wealthiest households. The quantitative easing to households would rebalance monetary expansion towards the lower end of the distribution of income and wealth.

4.3. Macroprudential policies

Macroprudential policy has attracted attention from policymakers and researchers since the global financial crisis because of the deep roots of the crisis within the leverage and risk-taking of individual economic agents and banks. The objective of macroprudential tools is to ensure the stability of the

financial system by reinforcing its resilience and preventing systemic risks. The main focus is on credit growth and leverage, maturity mismatch and market illiquidity, direct and indirect exposure concentrations, moral hazard, and the resilience of financial systems. The main instruments include the countercyclical capital buffer and the loan-to-value ratio.

However, macroprudential policies raise various issues. First, Galati and Moessner (2018) assess whether these policies are effective at limiting credit growth and housing prices. Second, the question of how macroprudential policy interacts with monetary policy is open. The two policies can have adverse effects on the effectiveness or the objectives of the other. Garcia-Revelo et al. (2019) show that a restrictive monetary policy enhances the impact of macroprudential tightening on credit growth and that monetary policy helps to reduce the transmission delay of macroprudential policy actions. However, Cumming and Hubert (2020) show that tighter borrowing limits would reduce the effectiveness of monetary policy. Although macroprudential regulations seem effective, there seem to be strong interactions between monetary policy and macroprudential tools.

4.4. Public investment

At the Jackson Hole symposium in 2014, the President of the ECB, Mario Draghi, acknowledged that monetary policy could not be 'the only game in town' in sustaining the euro area recovery. With the policy rate at the zero lower bound, and the continuing large savings of the private sector, he argued that fiscal expansion needed to support monetary policy.

More recently, and against the backdrop of the economic slowdown, the European Commission (2019) and the OECD (2019) have advocated a fiscal stimulus in the euro area. The implementation of a fiscal stimulus raises two main issues though, one regarding the fiscal space to implement the stimulus and one related to the 'best' instrument to perform a fiscal stimulus. Section 2.5 already discussed fiscal space and debt sustainability. We may add that recent interest rate developments show that investors' appetite for European public debts remains high and suggest that an expansionary fiscal policy would not necessarily translate into higher risk premia. In this respect, Blanchard (2019) has highlighted the fiscal room for manoeuvre that stems from negative critical gaps (the difference between the nominal GDP growth rate and the apparent interest rate on debt).

While it is well-established that the macroeconomic impact of fiscal policy may be high, particularly during an economic crisis (Jordà and Taylor, 2016), the choice of the best instrument remains disputable. The meta-analyses of Gechert and Will (2012) and Gechert (2015) show that the spending multipliers are usually larger than tax multipliers, but the multiplier value depends on a number of factors such as the degree of openness of the economy, the exchange rate regime, the monetary stance and the output gap. Overall though, multiplier effects of public investment stimuli are generally on top of the distribution. This feature is confirmed by another meta-analysis (Bom and Ligthart, 2014).

Against the backdrop of the downward trend in public investment since the 1980s, and its acceleration during economic crises when governments try to curb deficits and debts through cuts in public investment (European Fiscal Board, 2019), a public investment stimulus in the euro area appears as a good option. It would not only foster real activity if the economic slowdown continues but it would also help addressing the issue of climate change. This new impetus may require amending European fiscal rules so that governments have more incentives to adopt long term strategies.

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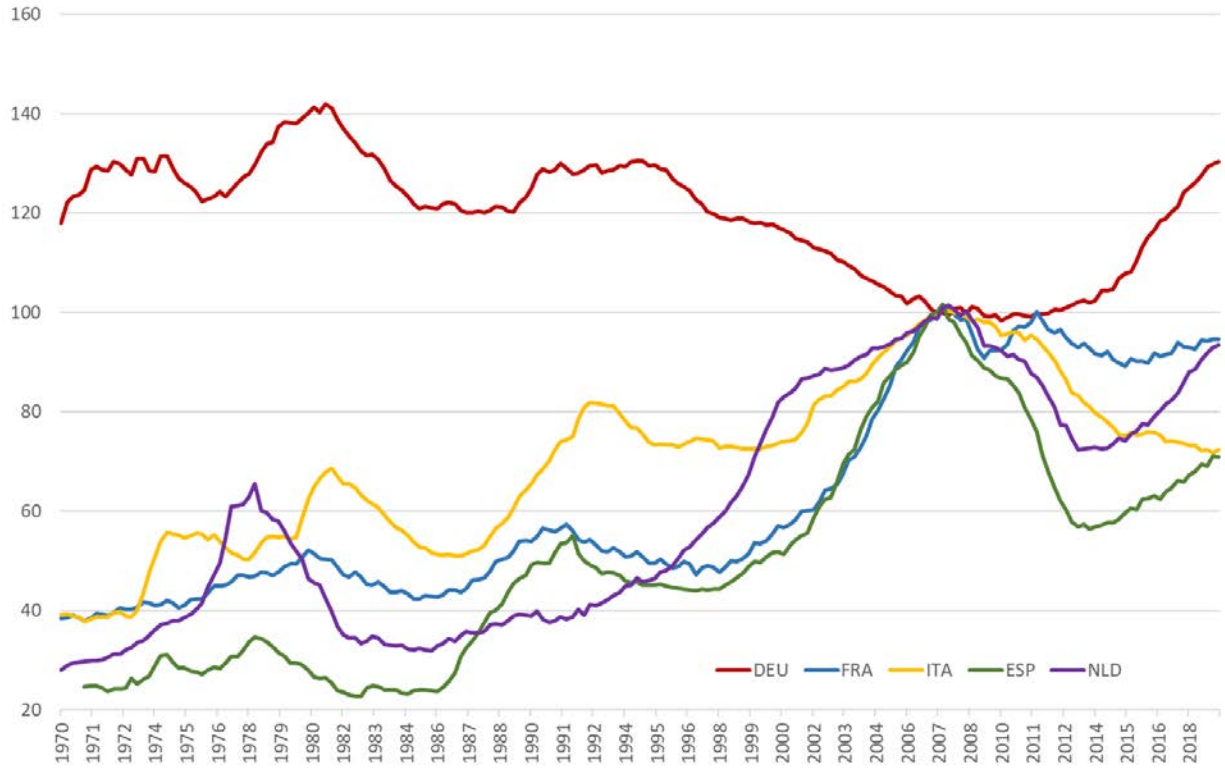
ANNEX

Figure A: House price dynamics (deflated by CPI)



Source: BIS (Property price database). Note: 2007=100.

Table A: Correlation of house price cycles

	DEU	FRA	ITA	ESP	NLD	BEL	FIN	IRL
DEU	1.00							
FRA	-0.42	1.00						
ITA	-0.03	0.86	1.00					
ESP	-0.21	0.91	0.77	1.00				
NLD	0.29	0.32	0.45	0.53	1.00			
BEL	0.23	0.68	0.92	0.64	0.56	1.00		
FIN	-0.81	0.37	-0.12	0.38	-0.17	-0.32	1.00	
IRL	-0.17	0.41	0.39	0.62	0.88	-0.37	0.01	1.00

Sources: BIS (Property price database) and authors' calculations.

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