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Proceedings

European Economic and Monetary Union: The first and the next 20 years. 46th Economics Conference 2019 of the OeNB in cooperation with SUERF

SUERF Conference Proceedings, No. 2019/2

Provided in Cooperation with:
SUERF – The European Money and Finance Forum, Vienna

Suggested Citation: Oesterreichische Nationalbank (Ed.) (2019) : European Economic and Monetary Union: The first and the next 20 years. 46th Economics Conference 2019 of the OeNB in cooperation with SUERF, SUERF Conference Proceedings, No. 2019/2, SUERF - The European Money and Finance Forum, Vienna

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THE EUROPEAN MONEY AND FINANCE FORUM

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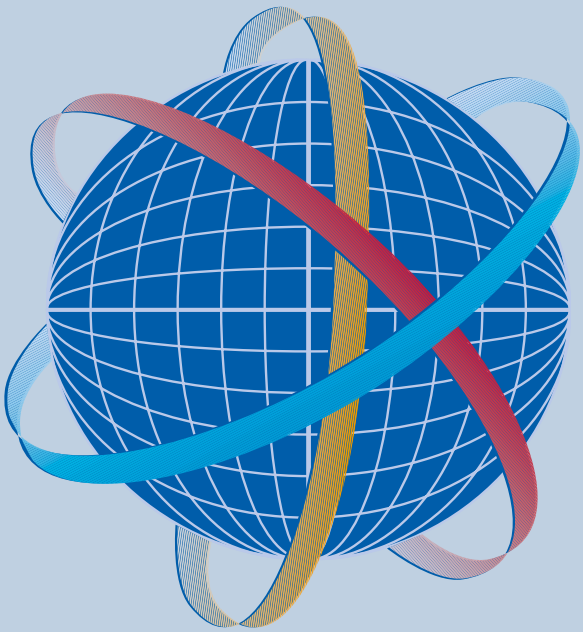
46th ECONOMICS CONFERENCE 2019
of the OeNB in cooperation with SUERF

European Economic and Monetary Union:
The first and the next 20 years



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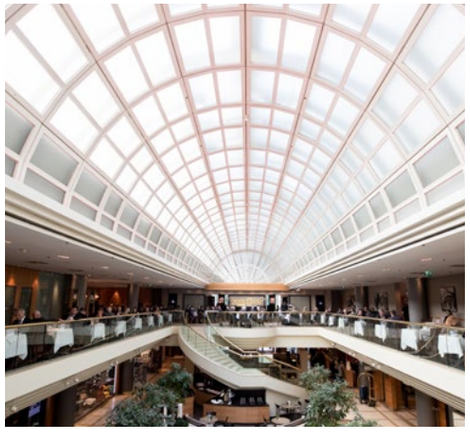

46th ECONOMICS CONFERENCE 2019

Ewald Nowotny
Governor
Oesterreichische Nationalbank

Opening remarks

Ladies and gentlemen,
It is my pleasure to welcome you to the 46th Economics Conference of the Oesterreichische Nationalbank, organized in cooperation with SUERF, the European Money and Finance Forum. Two decades after its introduction, the euro is arguably the most tangible result of the European unification process – a token for the European project that we use day in, day out; something that we share with our fellow citizens – as many as 340 million people living in 19 countries of the continent.

Since the start of Economic and Monetary Union (EMU), the number of euro area countries has gradually increased from 11 to 19. As the common European currency, the euro swiftly established itself as the second most important currency of the world and has come to serve as a stable monetary anchor for most of our neighbouring countries in Central, Eastern and Southeastern Europe.

In a recent survey, 74% of Europeans said they were in favour of EMU, with one single currency, the euro. This is the highest level of support for the euro ever recorded. It is also testimony to the success of the Eurosystem in fulfilling its mandate of maintaining stable prices and in providing an environment for economic growth and high employment over the past 20 years. It is not by accident that approval rates for the euro declined when unemployment rose during the recession and crisis of 2008–2013 and thereafter rebounded significantly when the euro area returned to a path of stable growth.

So the euro has been a success – hasn't it? We are well aware that the past 20 years have seen one of the worst financial and economic crises at the global level since the 1930s; as well as a second, specifically European crisis, which posed a severe – and one might even say "existential threat" – to the single currency, as ECB Vice-President Luis de Guindos recently put it in front of the European Parliament.[1] It was only thanks to the joint efforts of European governments and institutions that the crisis has been overcome, as well as thanks to the support that the European citizens have been lending to fiscal consolidation and the sometimes severe adjustment programmes and structural reforms that were necessary. The ECB for its part has contributed by backstopping the financial system and providing monetary stimulus.

Some of the shocks that led to this crisis were exogeneous. Many were not specific to the euro area. But quite a few observers have attributed certain aspects – as well as the depth of the crisis – to a faulty design of the monetary union: its "lopsided" nature, with monetary integration lacking a fiscal counterpart and institutions that allowed unsustainable imbalances between member countries to emerge.

But while the single currency was certainly not perfect when it was introduced 20 years ago, it would be wrong to blame the crisis on its existence alone. The challenges the euro area has faced and that we continue to face are very similar to the challenges – if not the very same ones – that led to the creation of the single currency in the first place.

The single currency was not invented as the political symbol, the most tangible result, of European unification it is today. To be sure, the single currency was from the beginning also part of the political desire to express a European

[1] *Euro at 20 years: the road ahead. Address by Luis de Guindos, Vice-President of the ECB, at the European Parliamentary Week, Brussels, February 19, 2019. https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp190219~6f4c9be85b.en.html.*

identity on the international scene. But first and foremost, monetary cooperation in Europe was the response to the challenges of creating an integrated economic area in the face of international monetary instability. At the time the project of European integration was born in the 1950s, exchange rates were still governed by a stable Bretton Woods system. The risk that exchange rate fluctuations would distort trade and undermine common policies was largely inexistent, or at least under tight control. Once the Bretton Woods system entered into crisis, however, European unification risked being derailed as well. The first proposals for monetary cooperation in Europe were thus not the expression of a genuine desire for a European currency but a response to an unstable U.S. dollar: This is true of the Barre memoranda in the 1960s; the Werner plan of 1970 as well as the attempts to have the European currencies fluctuate together against the U.S. dollar in the so-called snake. When Nixon cut the U.S. dollar's link to gold in the summer of 1971, it became clear that the future world monetary order would be based on fluctuating fiat currencies. Tying one's currencies to the U.S. dollar was no longer an option. If Europe wanted to be sovereign in monetary affairs, it needed to manage its money itself. As a result, the single European currency acquired the double role as the backbone of European economic integration as well as the face of European identity it still has today.

As the following decades would show, close monetary cooperation was difficult to implement and even more difficult to maintain. On the one hand, economic integration made the maintenance of fixed exchange rates increasingly tenuous. With the liberalization of capital flows, negotiated exchange rate realignments – the safety valve foreseen in the Bretton Woods framework – became a source of instability, as the mere possibility of future realignments would trigger speculative capital flows. The point was proven by the crisis of the European Monetary System (EMS) in 1992. Now the message was: float or peg once and for all. Paradoxically, the EMS crisis thus strengthened the cause for monetary union, which European governments had just agreed upon a couple of months earlier, at Maastricht.

Destabilizing capital flows were not the only factor behind the failure of the different experiments in fixed exchange rate regimes that were tried in Europe. Instability also resulted from incompatible national policies. In the 1960s and 1970s, the consensus that monetary policy should target stable prices had not yet evolved. Cooperation between fiscal and monetary policies was limited, and mechanisms that would help enforce the agreed scope of adjustment were lacking. A recurrent theme was the perceived asymmetry in adjustments, forcing the deficit countries to implement austerity policies without surplus countries providing their fair share. Surplus countries, in turn, argued that they were pursuing sound anti-inflationary policies that they did not want to put at risk. With Germany typically being the key surplus country, the decisions on European monetary policy came to be taken de facto in Frankfurt and Bonn, and not jointly by all members of the Snake or the EMS, thus creating political discord and discontent among the European partners.

The consequence that policy makers drew from these recurrent challenges was the introduction of the joint currency, the euro. In some respects, the euro is a technical solution for the repeated exchange rate crises in Europe: the euro simply did away with the existence of several currencies, thereby eliminating the possibility for de- and revaluations in the first place. But more importantly, the euro is also a political solution in that it provides a framework with the help of which possibly diverging political interests can be brought together, discussed and resolved. While before, countries had to prove that they were willing to follow the leadership of the German Bundesbank, responsibility for monetary policy is now shared within the European System of Central Banks. Within the European System of Central Banks we pursue together the overarching objective of stable prices, as agreed upon by the European governments, laid down in the EU treaties and broadly approved upon by the European citizens, as I have shown in the beginning.

While the euro provides a framework for resolving political and economic disagreements, we cannot realistically expect it to make them disappear. Certainly, a common monetary policy helps. So does real convergence, as do structural reforms that increase the flexibility of economies to weather asymmetric economic shocks. Further help is provided by an integrated capital market that redistributes and buffers income shocks affecting specific countries or regions. Together all these factors make the euro area more of an optimal currency area. But countries will continue to be hit by asymmetric shocks, and the question how to deal with trade- offs in economic policy will continue to be at the core of political debates. Imbalances within the euro area will continue to arise from time to time, and so will pressures to adjust. Debates on how such adjustment is best engineered are here to stay, as was already the case in the 1960s, 1970s, 1980 and 1990s.

The key difference to earlier decades and the crucial advantage we have nowadays is that today we have institutions and procedures in place that help Europe to resolve these conflicts while eliminating the economic and political costs of earlier exchange rate crises. Since 1999 the common monetary policy for the euro area has been defined jointly by the ESCB. In the wake of the crisis, EU economic governance has been reformed and strengthened in several important respects. First, national fiscal policies are now subject to stricter European rules that place more weight on the stage of the business cycle and the level of public debt. Moreover, the European Commission's role in monitoring Member States' budget preparation (European Semester) and in imposing sanctions has been strengthened considerably. Second, a broader set of macroeconomic indicators, going beyond fiscal indicators, is now regularly evaluated at the European level to identify, and counteract, macroeconomic imbalances at an earlier stage. Third, banking union brought about the introduction of a single supervisory mechanism for euro area banks and a framework for resolving insolvent banks. Fourth, macroprudential supervision targets the stability of the financial sector as a whole.

To make the euro area even more resilient to shocks and increase its ability to act, deepening EMU will remain

a key task in the years ahead. In mid-2015, Jean-Claude Juncker, President of the European Commission, presented the "Completing Europe's Economic and Monetary Union" report. Four pillars are meant to ensure the smooth functioning of EMU: a fully-fledged economic union that fosters prosperity and convergence; a financial union that provides for cross-border banking and capital market regulation; a fiscal union that ensures sustainable public finances; and a political union that secures democratic accountability and legitimacy for a complete EMU.

So the euro has been a success? I would argue that it is indeed a reflection of the strength of the euro that the debate for which we have come together today will focus on the next 20 years of our common currency. After taking stock of the achievements of the past 20 years, this conference will therefore focus on the important areas just mentioned. Today, we will talk about the structural adjustments that shall make EMU more robust in the future, the role of fiscal policy as well as about banking union and financial stability. In the afternoon, we will then come back to the euro's role as a bulwark in a challenging international environment, which reminds us of the concerns and hopes of the masterminds of a common currency in the 1960s and 1970s. As President Draghi has said in a recent speech: "True sovereignty is reflected not in the power of making laws – as a legal definition would have it – but in the ability to control outcomes and respond to the fundamental needs of the people."[2] To ensure that the euro area is able to effectively shield Europe from future crises in times of growing geopolitical tensions, the European Commission recently proposed to strengthen the international role of the euro and for the EU to stand together to promote its interests in shaping global affairs. We will discuss progress here in the afternoon today. Tomorrow we will then turn towards the consequences of digitalisation for monetary policy before closing the conference again on the topic of "Completing monetary union".

Let me conclude. The European Union is often likened to a house, providing home and shelter for Europe's people. I believe the best way to celebrate the first 20 years of the euro is to debate together how our European house can be adapted, enlarged and refurbished to keep it ready for the next 20 years. I wish us all insightful, stimulating and productive one-and-a-half days here in Vienna.

[2] *Mario Draghi: Sovereignty in a globalised world. Università degli Studi di Bologna, Bologna, 22 February 2019. https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp190222~fc5501c1b1.en.html.*

Jean-Claude Trichet
Former President of the European Central Bank

European Economic and Monetary Union: from the past into the future

Dear Governor Nowotny, Dear President de Haan,

It is a great honor and a great privilege to be invited by the central bank of Austria in cooperation with SUERF to participate in this very important 46th Economics Conference, here in Vienna.

I have to recognize in the audience many close friends. I have also the very vivid memory of having been often in Vienna over the past 25 years at the invitation of yourself, Ewald, and of your predecessors Maria Schaumayer and Klaus Liebscher.

I also note that I have been invited by SUERF many times and that I have always been impressed by the scientific quality of the many conferences organized under SUERF auspices.

It is having in mind this long-term relationship and, I will add, close companionship in turbulent times, in particular with you, Governor Nowotny, that I am starting this lecture.

When reading academic works, published observations, articles signed by specialized journalists as well as articles for a large public, coming particularly from non-European countries, there is often the remark that the euro had been a disappointment. The single currency economic performance is supposed to be very poor, particularly in comparison with the USA. The impact of Economic Monetary Union (EMU) on public opinion in member countries is deemed negative, dividing countries and eroding confidence in the European project.

I think that this is a wrong view, which does not represent reality, is deeply misleading and can drive foreign governments, leaders, economic agents and market participants to make wrong decisions. The fact that there is a significant international view which is not correct does not really surprise me: the existence of a negative bias against the single currency has been observed since the inception of the euro.

I will make the three following points:

1. Contrary to many negative predictions, the euro, as a currency, is a remarkable success in terms of *credibility, stability and resilience*. This resilience is due, in particular, to a large popular support.
2. The euro area is more of a success in terms of real growth measured during the period starting from its inception until today. But the appreciation must be more nuanced as regards nominal and real convergence inside the single currency area.
3. In a medium- and long-term perspective, EMU calls for further significant reinforcing its economic, fiscal and financial governance.

Overall, the success of the euro and of the euro area in terms of *credibility, resilience, flexibility, popular support and real growth* during its first 20 years is impressive. It justifies *reasonable optimism* as regards the long-term success of this unique, ambitious, historic endeavor of the Europeans. To consolidate this long-term success, a lot of hard work remains to be done as is always the case when a bold historic endeavor is in the making. The single market with a single currency of the United States of America was not achieved in a short span of time. Neither in 20 years, nor even in 40 years! From the Coinage Act of 1792 to the Federal Reserve Act of 1913, there is a maturing process of around 120 years. And since the issuance of the first federal note in 1914 and today, an additional period of 105 years.

1 A success in terms of currency credibility, stability and resilience

1.1 Credibility

In January 1999, the euro started from scratch. The exchange rate was USD 1.17 for 1 EUR. There was no doubt for most of the observers and economists outside continental Europe that the euro would not stand at par with the dollar in terms of credibility, medium and long-term capacity to keep its domestic and international value. The idea that a currency born in particular from the merger of the Dutch guilder, the DM, the escudo, the peseta and the lira would overtime inspire a high level of confidence, appeared then to be very presumptuous.

At the time I am delivering this lecture, the euro-dollar exchange rate is approximately at its entry level (USD 1.12 today versus 1.17 at its inception). The overwhelming majority of economists and market participants have no more any doubt on the capacity of the euro to keep its international value. During part of the first 20 years of the new currency, remarks were made on the fact that the euro was much too solid and too strong, which was highly paradoxical for a currency deemed to lack credibility at its inception!

The international credibility and success of the new currency are confirmed by facts and figures: the euro is by far the second international currency after the dollar. According to the ECB[1], it represents 23% of the "international debt outstanding" (62% for the US dollar, 2.4% for the Japanese yen).

In terms of "*global payment currency*", it represents 35.7%, approximately ten times the percentage for the yen and not so far from the dollar (39.9%).

It amounts to around 20% of foreign exchange reserves, approximately one third of the dollar foreign exchange reserves and four times the yen reserves.

The euro is the unchallengeable second most important international currency. I would only add that the International Monetary System is called to change structurally with the growing presence and use of the renminbi which is likely to contribute to significant changes both for the US dollar and for the euro.

1.2 Stability

The international credibility of the euro is echoed by its domestic, pan-European stability. The ECB made clear from its inception that it had a definition of price stability that would be the yardstick to judge its capacity to deliver stable prices: less than 2%, quickly clarified in 2003 as "less than 2% but close to 2% in the medium run".

Since its inception from 1999 up to 2018, the average euro inflation is around 1.75%. It is an impressive result over around 20 years, in line with the definition of price stability.

This does not mean that inflation should be close to 2% every year. The delivery of price stability has to be judged over a medium/long-term period. For instance, the most recent period was marked by threats of deflation and years of very low inflation, which the ECB fought with determination. When I left the ECB at the end of 2011, average 2011 inflation rate was 2.72%, significantly higher than 2%. What counts from the central bank standpoint – whatever external and domestic circumstances are – is to take the right decisions aiming at stabilizing medium-term inflation expectations and effective inflation in line with our definition of price stability.

1.3 Resilience

In very turbulent times, the euro, as a currency, and the euro area proved remarkable *resilience*.

At the inception of the euro, a significant global analysis, outside continental Europe, was not only that the single currency would not inspire confidence, but also that it would be short-lived, as a kind of audacious experience deserving respect for its boldness but incapable to sustain the difficulties of hard times. In this early view, the capacity of the currency to hold in the worst economic and financial circumstances would appear as a miracle. This explains why so many eminent economists predicted the end of the European endeavor after the start of the financial crisis and, particularly, after the start of the sovereign risk crisis, the epicenter of which was in the euro area.

It was clear that the localization of the sovereign risk crisis epicenter in the euro area was due to specific European errors as well as the localization in the USA of the epicenter of the subprime and the Lehman Brothers crises were due to mistakes made in the USA. I see six main reasons why the euro area had to cope with this specific sovereign risk crisis:

- First, refusal to fully apply the rules of the Stability and Growth Pact (SGP) before the crisis. Important in particular are the responsibilities of France and Germany, under the presidency of Italy, in the years from 2003 to 2004, where they refused that the provisions of the SGP be applied to them;
- Second, absence of close monitoring of the evolution of the cost competitiveness of member countries and of associated domestic and external imbalances. This was one of the major lacunae in governance of the EMU from the start;
- Third, absence of banking union;
- Fourth, absence of a specific instrument to fight against speculation (no European Stability Mechanism at the beginning of the crisis);
- Fifth, poor implementation of needed structural reforms all over the euro area;
- Sixth, absence of full achievement of the single market, particularly in the service sector.

The underlying concept of the euro area was EMU, namely Economic and Monetary Union. The "Monetary Union" was undoubtedly there: one single currency, one exchange rate vis-à-vis other currencies, one single credibility, one inflation for the whole single currency area. The "Economic Union" had *lacunae* in its design and was poorly implemented before the crisis. All taken together, the economic, fiscal and financial governance of the whole euro area was suboptimal.

That being said, many highly pessimistic external observers missed three points when the sovereign risk crisis erupted in 2010 and 2011.

The first mistake was to consider that all member countries were in a crisis situation. As a matter of fact, out of the 15 countries members of the euro area at the time of the Lehman Brother bankruptcy, 5 (namely one third) had very serious economic, fiscal and financial problems. The paradox of the euro area was that the area included both the worst public signatures in the eyes of market participants (for instance Greece, Portugal, etc.) and the best ones (Germany, Netherlands, Austria, etc.). The euro, as a currency, was reflecting the average situation of the euro area and not only the part of it which was in crisis, which represented

[1] *The international role of the euro, June 2018. https://publications.europa.eu/en/publication-detail/-/publication/62eb1ad2-78ec-11e8-ac6a-01aa75ed71a1.*

a minority. Seen from this standpoint, the remarkable resilience of the euro, as a currency, was not a miracle.

The second mistake was to underestimate the capacity of the euro area to be flexible, to correct its weaknesses in terms of economic governance and to demonstrate both solidarity at the level of the area and strong national capacities to adjust in the crisis countries. In the crisis, the Stability and Growth Pact (SGP) was reinforced, the Fiscal Stability Treaty was signed and ratified, the Macroeconomic Imbalance Procedure (MIP) was set up, Banking Union was created and the European Stability Mechanism Treaty signed and ratified. All four first weaknesses mentioned earlier were addressed. Ireland, Portugal and Spain, in particular, demonstrated a real capacity to adjust.

The third mistake was to neglect the attachment of people in the euro area to the single currency. It is this popular support that explains the capacity of the euro area to adapt and to prove a remarkable resilience.

To make a long story short, let me mention the fact that 15 countries were members of the single currency area on September 15, 2008, the very day of the bankruptcy of Lehman Brother. All 15 are still members today, including Greece. And 4 new countries (Slovakia, Estonia, Latvia and Lithuania) came in, after the start of the global financial crisis, so that the euro area includes now 19 countries. Is there a better refutation of the fragility of the area than a significant expansion in a period of major financial crisis?

1.4 Popular support

The conventional wisdom was, and still is, that popular support is dramatically lacking for the European integration project. This belief was reinforced by the unexpected success of a political populist persuasion in the UK and in the USA. It appeared quite natural that a political wave characterized by nationalism, protectionism and xenophobia would be present in continental Europe and would have also a strong anti-European Union component, as was the case in the UK for instance.

It is unchallengeable that the frustration of public opinion, generalized in the advanced economies, is also present in the European Union and in the euro area. But the paradox is that this dissatisfaction is directed significantly more towards national governments, parliaments and national institutions, than towards the European institutions (Commission, Council and European Parliament).

The surveys "Eurobarometer" are particularly interesting[2]. 42% of citizens members of the European Union "tend to trust the European Union", significantly more than those who "tend to trust their national governments or parliaments" (35%). This is even more impressive when comparing the percentage of citizens who "tend not to trust": 48% for European Union compared to 59% for national governments and 58% for national parliaments.

[2] *"Standard Eurobarometer 90 – Public opinion in the European Union", November 2018.*

Comparisons are also remarkable when directly comparing confidence in the European parliament with confidence in national parliaments: 48% versus 35% for "confidence" and, overall, 39% versus 58% for "no confidence". This means a difference of +9% for the European parliament and –23% for the national parliaments. The same difference is observed as regards comparison between the European Commission and national governments: 43% versus 35% for "confidence" and 39% versus 59% for "no confidence", namely +4% for the Commission and –24% for national governments.

Finally, it is equally noteworthy that the support to the European Union is presently higher than during all the period starting with the great financial crisis. The bottom line is that nothing is satisfactory: our fellow citizens are giving a weak confidence level to all institutions whether national or European. Still the confidence *vis-à-vis* Europe and its institutions is significantly higher than confidence in national institutions.

As regards the euro, the support given by the European citizens inside the euro area to the single currency is high and much higher than the perception of global observers. 75% of citizens of member countries approve the sentence: "A European economic and monetary union with one single currency, the euro", while 20% are against the sentence. The fact that the question is pertinent is confirmed by the response of the UK citizens (28% approve, 59% disapprove). The present proportion of 75% in the euro area member countries is the highest in the survey since its inception in 2003.

One of the most frequent errors made by observers outside the euro area was that the euro was rejected by public opinion. I was often confronted to the view that the Greeks were massively in favor of leaving the euro to avoid the economic adjustment ("austerity") and that the Germans would massively take advantage of the crisis to get back to their previous national currency, the Deutsche Mark. Nothing could be further from the truth! The Greeks were massively in favor of preserving their euro-participation (67% are approving the previous sentence on the euro). And the Germans were (and are) strongly in favor of the euro (81% are approving that sentence in the last survey).

As said before, this popular support, so far away from the conventional wisdom outside Europe explains largely the remarkable resilience of the euro and of the euro area.

2 The euro and the euro area are posting significant real growth in comparison with other advanced economies, even if real convergence between member countries is insufficient

2.1 A real economy growth

Even if the average global observer can be reasonably convinced that, all taken into account, the single currency was a success in terms of stability and credibility, that the euro area demonstrated strong resilience in exceptional circumstances and that a surprising but unchallengeable popular support is accompanying this historic European endeavor, there is a negative dimension which will immediately be presented as the ultima ratio: the euro and the euro area are supposed to be indisputable real economy failure!

Comparing the euro area to the United States, the economic weakness of the single currency area appears at first look unchallengeable. But it is because of two optical illusions.

First, the nature of the comparison of the real growth figures: usually done in absolute terms, not taking demographics

into account. Then the comparison is always to the advantage of the USA which benefits from a yearly positive demographic growth differential of around + 0.7%. Second, in the most recent period, real growth in the euro area was hampered not only by contagion of the global financial crisis in 2007–2008 but also by the sovereign risk crisis in 2010–2013, the euro area being at its epicenter. The recovery started in the USA mid-2009 while the sustained recovery in the euro area started several years afterwards, in 2013.

The correct judgment should, in my view, start with the setting up of the euro – January 1999 – up to now, namely the same period of almost 20 years already mentioned. It seems the most pertinent period of time for three reasons: first, it corresponds precisely to the period of the euro; if the euro is responsible for economic failure, it should be visible in that period. Second, it is a period sufficiently long to cover more than an economic cycle. Third, the starting point and the endpoint are sufficiently far from the start of the global financial crisis for the period not to be too influenced by the various steps of the crisis on the real economy of the USA and of the euro area.

That being said, where do we stand?

To be sure that my comparison between the USA and the euro area would be as sure and correct as possible, I will rely upon IMF and World Bank figures. According to the IMF[3], the 1999 GDP per capita of the euro area was around USD 22,300 compared to USD 34,500 in the USA. According to current estimates, the respective GDP per capita in 2018 was around USD 40,100 and USD 62,600. The dollars are current dollars over the period.

These IMF figures suggest multiplication of the GDP per capita by 1.80 in the euro area and 1.81 in the United States. The difference is very modest and does not suggest a significant advantage for the United States. In any case, it does not confirm at all the growth failure of the euro area that is often part of the conventional wisdom.

These results are significantly depending on the chosen starting year. The period 1998–2018 is more favorable to the USA, while the period 2000–2018 is more at the advantage of the euro area. The bottom line is that there are no IMF figures that would suggest that the growth capita of the euro area as a whole is significantly different from the US growth per capita since the setting up of the euro.

Data have always to be examined carefully. Even if an overwhelming majority of the GDP of the euro area was set up at the inception of the euro (the first "11" and then "12" with Greece), the additional 7 (Slovenia, Malta, Cyprus before the Lehman crisis and Slovakia and the three Baltic States after the Lehman crisis) are contributing positively to growth of the whole area despite the fact that they are small economies. The reason is that they started from lower levels in terms of GDP per capita. But this cannot explain the significant difference I am stressing between perception and reality of the euro area growth per capita.

The results from IMF data are confirmed by the World Bank data on real growth per capita in the euro area and in the USA. To make a long story short, World Bank data on real growth per capita from 1999 up to 2017 are the following: annual growth of 1.1% in the euro area and 1.2% in the USA, namely the same order of magnitude on both sides of the Atlantic.

It is also suggested from time to time that countries outside the euro area did better, and even much better, than countries inside the single currency, since its inception. It is always possible to find a very bright European economy out of the euro area: Norway or Switzerland, for instance. But I had the curiosity to compare the euro area with the UK over the 20 first years of the euro. Contrary to common belief, the IMF data are giving an advantage to the euro area vis-à-vis the UK in terms of growth of GDP per capita, whatever the starting year is. If we trust the IMF figures, the catching up process of the euro area vis-à-vis the UK is visible. At the inception of the euro (1999), the GDP per capita of the euro area was around 21.6% below the UK level. In 2018, the IMF estimates put the euro area around 6% below the UK level.

This overall encouraging situation of the euro area in terms of real growth per capita does not mean that the Europeans can rest on their laurels. The GDP per capita of the euro area remains significantly lower than in the USA (36% lower) and a vigorous catching up process should be at stake. The euro area has to do better and much better in many areas. Due to lack of appropriate structural reforms, unemployment, particularly youth unemployment, is still much too high. Europe and the euro area are not innovative and creative as they should and as the USA – and also China – are in terms of High-Tech and IT new businesses. Also in the domain of education and universities of excellence at a global level, the euro area is at a disadvantage in comparison with both the United States and the UK.

2.2 Economic convergence between Member States must make further significant progress

If growth per capita in the euro area is comparable to the growth per capita in the USA since the inception of the euro, another dimension of the euro area must be examined, namely convergence between members countries in terms of nominal evolution of inflation and interest rates, of synchronization of the timing of business and financial cycles, and of real convergence in terms of growth and standard of living. From this stand point, according to the IMF[4], the situation of the euro area is nuanced and depends on the convergence criteria analyzed.

- Nominal convergence of inflation and interest rates took place in the period of convergence before the setting up of the euro. There has been a significant reversal during the financial crisis, particularly as regards interest rates at the time of the sovereign crisis, but nominal convergence has been significantly reestablished since.
- As regards business cycles, the synchronization of the timing has improved but the amplitude of those cycles has diverged. As regards the timing of financial cycles, they have largely diverged during the pre-crisis boom period in several countries but have since been reestablished. As noted with the business cycles, the amplitude of financial cycles has become more uneven.
- It is as regards the real economic convergence of growth and standard of living that the results are most contrasted. Real convergence has not really occurred among the original 12 euro members (including Greece which entered in 2001). In that

[3] *IMF Data Mapper, GDP per capita current prices – WEO, April 2019.*

[4] *IMF Working Paper – Economic convergence in the Euro area: coming together or drifting apart, January 2018.*

constituency, GDP growth and productivity growth have not reduced income disparities between high and low revenue per capita countries. In contrast, there has been an impressive convergence for those 7 countries that have joined the euro after it was set up. This puts into question the pertinence of the early economic governance of the euro area and the effectiveness of the implementation of this governance in those early-entry countries which didn't converge.

If there is no doubt that the single currency offers additional new economic opportunities and additional new potential for growth to all member countries, it clearly doesn't mean that belonging to a single currency is a guarantee to attaining the highest-level GDP per capita. As the USA example suggests strongly, a State's economic success still depends heavily on the quality of the economic management, on the progress made in terms of productivity and on the level of investment in that State. For instance the State of Mississippi has not the same standard of living as Massachusetts (respectively USD 33,558, USD 71,456 in 2017, according to the US "Bureau of Economic Analysis" in chained 2012 US dollars), even if the USA has a single currency, together with an achieved political federation, a federal budget and a functioning single capital market. By the way, according to 2017 IMF figures, the Portuguese or the Greek standards of living (respectively USD 23,116, USD 23,027) are displaying approximatively the same gap vis-à-vis Germany (USD 46,747) than Mississippi *vis-à-vis* Massachusetts. This is only comparing average standards of living. A full-fledged comparison, taking also into account the level of unemployment, would accentuate the differences observed in Europe because unemployment is comparatively high in Greece a relatively low in Mississippi.

Still there is an important issue in inequalities in Europe, inside each country and between member countries (like, in the USA, within and between States). Economic convergence inside the euro area must be improved, being understood that it is convergence towards full employment with the highest possible GDP per capita which is the goal. Reinforcing convergence inside the euro area is of the essence and calls for consolidated and strengthened economic, fiscal and financial governance of that area.

The long-term goal of Europeans should be to run optimally their single currency economy, avoiding the kind of sustained divergences that created the sovereign risk crisis and, at the same time, give all their chances to member countries and to the area as a whole to catch up in terms of job creation and standard of living.

3 We have to strengthen the economic, fiscal and financial governance of the euro area

The *success* of the euro, as a currency, and of the euro area in terms of *credibility, resilience, flexibility, popular support and real economy success* does not mean that the Europeans should or can rest on their laurels! It is exactly the contrary. They have a lot of very hard work to do to make a full historic success of their extremely bold strategic endeavor. The first 20 years are, in my view, demonstrating that they were right in engaging on what is probably the most audacious economic and monetary structural reform ever attempted in times of peace.

A long-term historic endeavor is necessarily history in the making. I see many avenues for European progress in the years to come. President Macron[5] listed recently major multidimensional reforms for the medium-term future of European Union.

First, indeed, one should not forget that European Union has many other dimensions than the economic and monetary ones. Culture, domestic and external security, fight against terrorism, control of the borders, monitoring of immigration, and defense are all areas where it is obvious that there are no pertinent national solutions but possible European correct responses at the level of the continent. It is also comforting to note that there is a large popular support to make progress in these fields, according to the Eurobarometer survey: for instance, a "common defense and security policy" is approved by 76% against 18%; a "common foreign policy" is approved by 65% against 26%.

Second, in the specific domain of Economic and Monetary Union, I see six major recommendations to improve both responsibility and solidarity within EMU and to reach the ultimate economic goal for all national economies and for the single currency area as a whole: sustained growth, full employment and catching up the most advanced economies in terms of standard of living.

1. *Rapidly achieve what has already been decided as regards Banking Union,* both in its deposit guarantee and single resolution dimensions. It is also necessary to eliminate the prudential obstacles that are still hampering cross border banking restructuring. There is unfortunately neither in the European Union nor in the euro area a genuine single market of banking services. The European banking sector is lagging behind the US banking sector. I would compare this unfortunate situation to what we are observing in the domain of digital technologies and digital platforms. As a matter of fact, the lack of significant banking restructuring, both domestic and cross border, explains largely the significant differences observed on both sides of the Atlantic in terms of solidity and profitability.

2. *Apply seriously and rigorously the provisions of the two main pillars of economic and fiscal governance: the Stability and Growth Pact (SGP)* – reinforced by the "fiscal compact" – and the *Macroeconomic Imbalance Procedure (MIP)*. I think personally that MIP is as important as SGP: it is of the essence in a single currency area to correct the persistent divergences between national competitiveness and national and external imbalances. It is perhaps regrettable from that standpoint that too many criteria are examined by the Commission when monitoring MIP. It contributes to neglect one absolutely essential element: in a single currency area where monetary realignment is excluded, persistent growing divergences between national cost competitiveness

[5] *Emmanuel Macron, President of the French Republic – Initiative for Europe – A Sovereign, United, Democratic Europe, Sorbonne Speech, September 26, 2017.*

cannot be durably tolerated. If maintained, they will trigger either accumulation of permanent large-scale unemployment or abrupt and sharp macroeconomic corrections that would be necessary to redress competitiveness of the country concerned, but are always very painful for the disadvantaged fellow citizens, particularly the young.

3. *Improve the decision making inside the European Stability Mechanism (ESM)* with the introduction of a qualified majority instead of unanimity as is the case presently. It is also to be noted that the importance and the size of the European Stability Mechanism are often underestimated: this institution was given a callable capital of 624 billion EUR on top of its paid in capital of 81 billion EUR. With a subscribed capital of 705 billion EUR, the ESM is the international institution which possesses the highest level of subscribed capital.
4. *Design a Minister of Economy of the euro area* who would preside over the Euro Group of Ministers of Finance and would concentrate exclusively on the economic, financial and fiscal governance of the euro area, without being simultaneously Minister of Finance of a particular country. I made this proposal already in 2011 on the occasion of my Charlemagne prize speech in Aachen[6]. In a medium-term perspective, one could also think of giving the Minister of Economy the responsibility of being Vice President of the Commission upon the model of the High representative of Common Foreign and Security Policy who simultaneously chair the Council of Foreign Ministers and is Vice President of the Commission. Running the economy, budget and finance of the euro area is less and less a legislation function (traditionally given to the Commission) and more and more our executive function exerted with close cooperation of both the Commission and the Council.
5. *Reinforce the democratic legitimacy of EMU* by giving the last word to the members of European parliament (elected in the euro area) in case there is a conflict between the government of a particular country and the European institutions (Commission and Council) on the implementation of the euro area governance. It is an ambitious idea for which there is presently no consensus. Still it seems to me that it is necessary to envisage ex ante the possibility of a conflict between the democratic legitimacy of a member country challenging the European recommendations with the backing of his national Parliament on the one hand and the European institutions which were created by a democratic process at the level of Europe as a whole, on the other hand. It is what we have experienced in an acute episode of the Greek crisis. It seems to me that in such a situation, the country challenging the pertinence of the recommendations of the Commission and Council should have the possibility to call for arbitration by the European parliament in a euro area format. The latter would have the last word, after close consultation with the National parliament of the country concerned. I made this proposal in 2013[7].

[6] *Jean-Claude Trichet, Building Europe, Building Institutions, Karlspreis speech, June 2, 2011.*

[7] *Jean-Claude Trichet, International Policy Coordination in the Euro area: towards an economic and fiscal federation by exception In: Journal of Policy Modeling (2013).*

6. *Setting up a budget of the euro area. Such a budget could have several different functions.*
   First, it could finance public spendings that are national today and would be federal tomorrow. Several ideas have been proposed in this respect, for instance financing at the level of the euro area part of the unemployment insurance expenses. It is also possible to consider expenses in defense, security, border control and in that case, the budget could cover such federal expenses at the level of the European Union as a whole and not only of the euro area.
   Second, the euro area budget could play the role of an anticyclical cushion which would accumulate capital through resources coming from member countries in the favorable episode of the euro area economic cycle in order to utilize it to correct the depressive episode of the cycle. This particular budget function could help counter a possible recession hitting the euro area as a whole, whether associated with the normal economic cycle or triggered by a global shock. Such a mechanism would not normally operate fiscal transfers from country to country and would be neutral over the cycle.
   Third, it is possible to set up a budget which would be earmarked to the financing of large pan-European infrastructure investments, technology investment and R & D spendings which would have a pan-European dimension. For this particular function, the budget should be able to finance expenses at the level of the European Union and not only the euro area.
   Fourth, the budget of the euro area could be designed to help countries badly in need of structural reforms in order to have an economy more flexible and efficient inside the single currency area. This financing would be particularly well adapted for difficult and costly structural reforms, giving positive results after a relatively long delay. The use of such financing could be normally earmarked to euro area countries to the extent that, indeed, the best functioning of the euro area calls for significant reforms in a number of member economies.

The European Council has taken a decision in principle to set up a budget. I understand from statements of Heads and Ministers that this budget will probably materialize by concentrating on the third and fourth possible functions (financing in particular pan European investments and structural reforms, and therefore helping a better convergence between the member countries).

I would personally advise not to forget the importance of the anticyclical cushion (second possible function) from the economic standpoint, even if we are still far away from a consensus on that matter.

In conclusion turning to one of the founding brain of the European Union, I will quote Jean Monnet. I think what he said is not only true for Europe but also true in some respect for the constituency of Central Banks and for the international community as a whole, in a period of extraordinarily rapid structural changes: “Premature ideas do not exist, one must bide one’s time until the right moment comes along.”

Session 1
Toward a better EMU:
past lessons, structural adjustments

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Director for Policy Studies
OECD

Making the most of the EMU: Challenges and opportunities for structural reforms

Much progress has been made over the last two decades to consolidate the monetary union. Nevertheless, further reforms are needed to ensure a faster convergence in living standards within the euro area and to strengthen the architecture of the monetary union in a manner that can enhance its resilience to downturns and ensure its long-term sustainability.

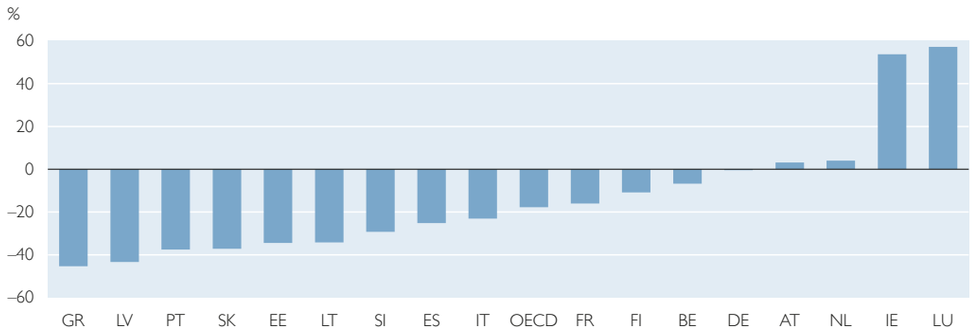
Achieving faster convergence in living standards requires structural reforms to enhance productivity and labour resource utilisation, which are the key drivers of growth in GDP per capita. The analysis reported in the latest edition of the OECD's Going for Growth (OECD, 2019) shows that the euro area countries, and the European Union more generally, have much to gain from further efforts to complete the common market, which is important to reduce transactions costs, facilitate labour mobility across international borders and remove regulatory obstacles to enterprise growth.

As argued in the latest OECD Economic Survey of the Euro Area (OECD, 2018), resilience and longer-term sustainability can be improved through concerted efforts in several policy areas. These include progress with the banking union, balancing risk reduction and risk sharing; the establishment of a fiscal stabilisation tool for the euro area to absorb country-specific

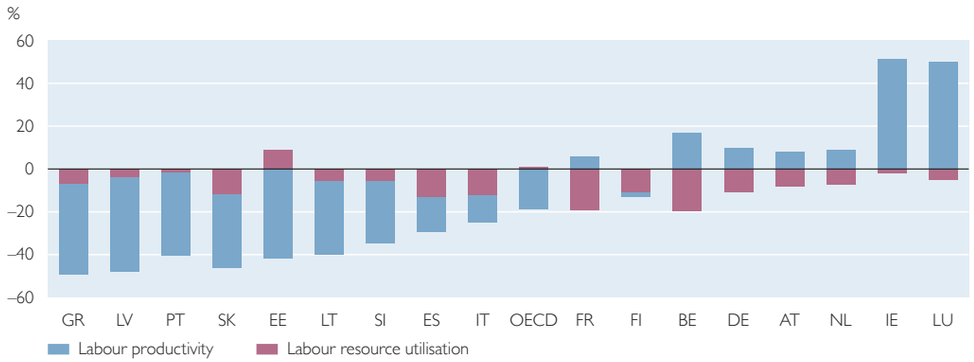
Chart 1

Gaps in living standards and productivity among euro area countries

A. Percentage difference in GDP per capita vis-à-vis the upper-half of OECD countries, 2018



B. Percentage difference in labour productivity and labour resource utilisation vis-à-vis the upper-half of OECD countries, 2017



Source: OECD, National Accounts, Economic Outlook and Productivity Databases.

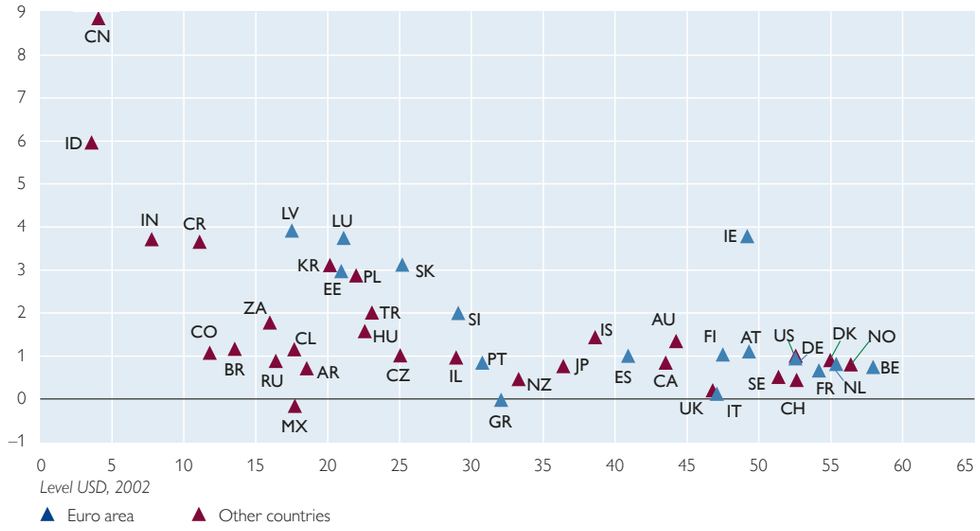
[1] *The comments and analysis reported in this chapter are the author's own and do not necessarily reflect those of the OECD and its member and partner countries. Thanks go to Tomasz Kozluk and Jan Stráský for helpful comments and Agnès Cavaciuti and Patrizio Sicari for research assistance.This chapter is based on a presentation at the 46th Oesterreichische Nationalbank Conference on European Economic and Monetary Union that took place in Vienna on 2–3 May 2019.*

Chart 1 continued

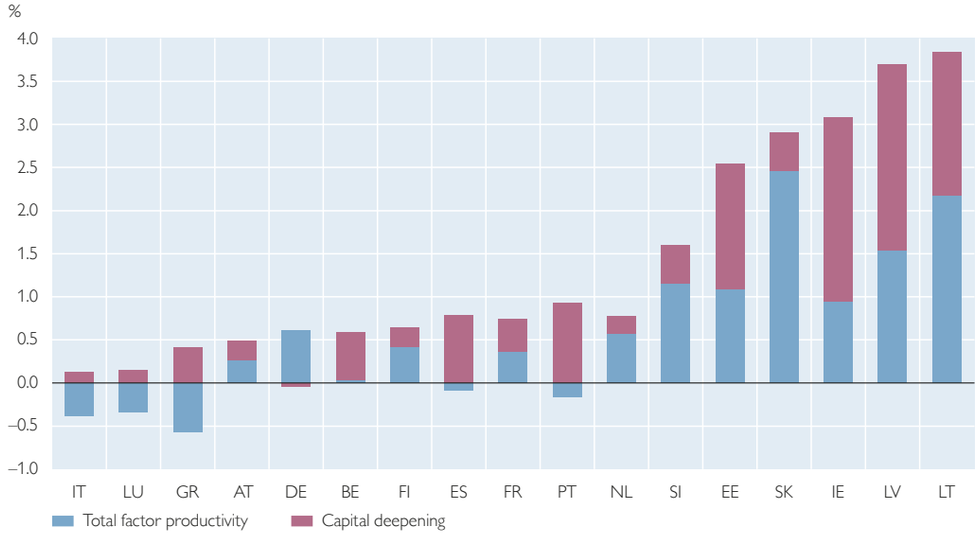
Gaps in living standards and productivity among euro area countries

C. Productivity growth versus levels, comparison with other countries

Average productivity growth over 2002-17, %



D. Average annual growth rate over 2002–18



Source: OECD, National Accounts, Economic Outlook and Productivity Databases.

and common euro area shocks, complementing member states fiscal policies; and creation of a genuine capital markets union.

This note highlights the key issues and directions for policy action in these two main areas, starting with the challenges and policy options to enhance income convergence among the euro area countries and moving on to discuss the policy requirements to enhance resilience and longer-term sustainability.

1 Structural challenges and policy options to facilitate income convergence

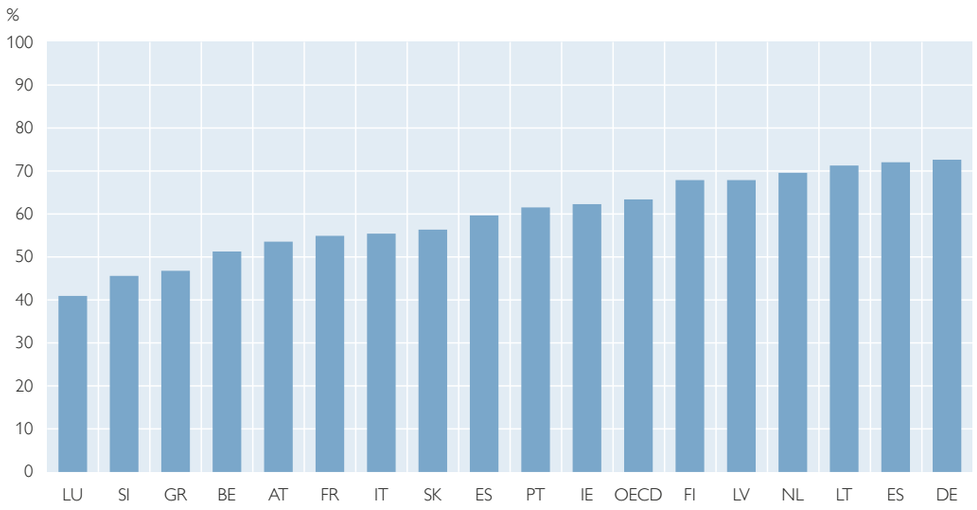
Gaps in living standards remain sizeable among the euro area countries, despite twenty years of gradual economic and financial integration. This suggests that more needs to be done to secure effective convergence in productivity, and ultimately income levels, in the euro area. Indeed, a simple decomposition of differences in GDP per capita between the euro area countries and the best performers among OECD countries shows that differences in labour productivity, rather than resource utilisation, account for the lion's share of gaps in living standards within the euro area (chart 1).

In addition, productivity growth, which is the key driver of long-term growth, differs considerably among the euro area countries. This divergence takes place against a backdrop of a gradual decline in productivity growth in the

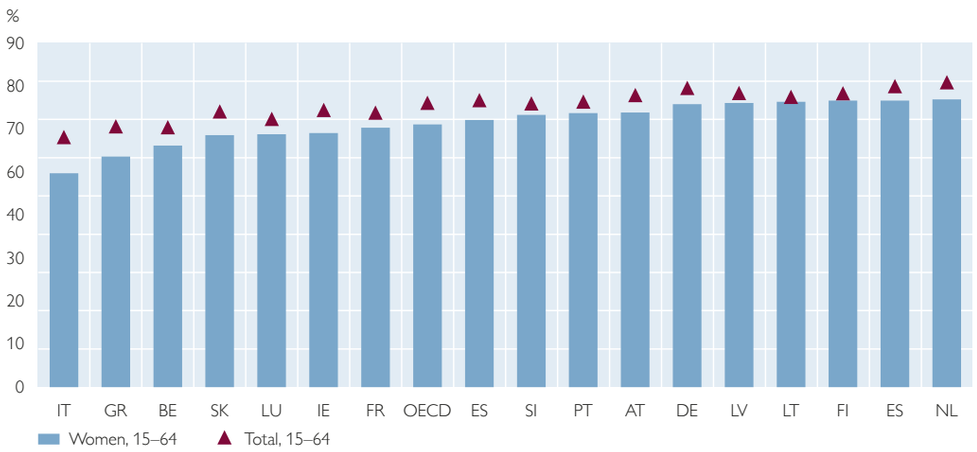
Chart 2

Gaps in labour utilisation among euro area countries

A. Labour force participation rate of workers aged 55 to 64, 2017



B. Labour force participation rate of workers aged 15 to 64, 2017



Source: OECD, Labour Force Statistics Database.

advanced economies as a whole, and since the global financial crisis, even in the faster-growing emerging-market economies.

Convergence has been relatively swift over the last 20 years in the new euro area members of Central and Eastern Europe, but this has not been the case among the Southern members, such as Greece, Italy, Portugal and Spain. Differences in total factor productivity have been the main culprit. Capital deepening (an increase in the capital stock per worker) has been taking place in tandem with total factor productivity growth in the converging economies. In the non-converging countries, capital deepening has not been sufficient to compensate for falling total factor productivity.

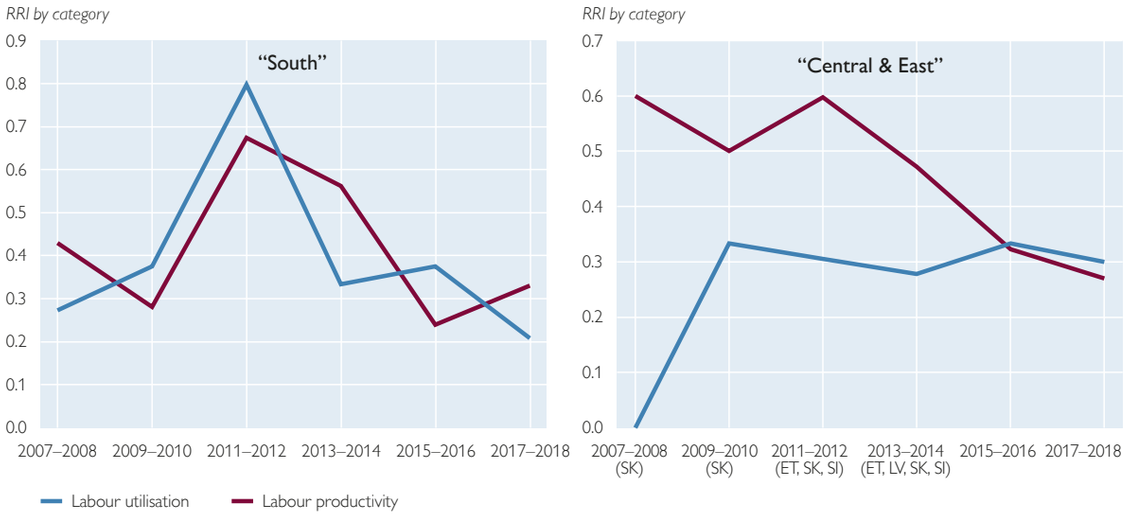
In addition to varying productivity performance, the euro area countries also differ in terms of labour resource utilisation, albeit to a lesser extent, as noted above. This is especially the case of social groups whose labour supply tends to be lower than average, such as older workers and women. Indeed, in the case of workers in the 55–64 age bracket, labour supply is lower than the OECD average in the Southern euro area countries that have so far been failing to catch up.

Efforts are being made to address these challenges, although emphasis differs across countries. Indeed, the euro area countries that have been catching up, essentially those in Central and Eastern Europe, have been focusing on structural reforms that can be considered to aim primarily at productivity enhancement (chart 3).

Chart 3

Distribution of reform responsiveness and top 2019-20 priorities by category

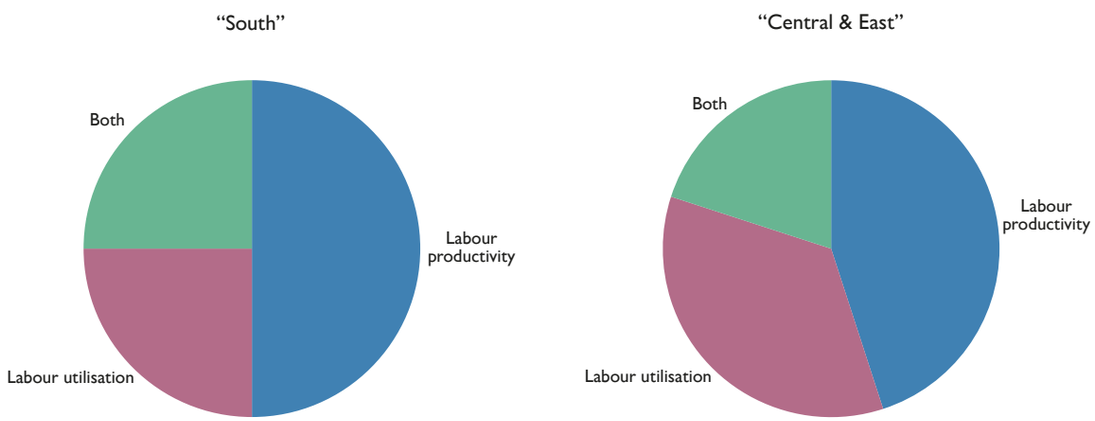
A. Reform responsiveness rate to Top 5 OECD Going for Growth priorities



Source: OECD, Labour Force Statistics Database.

Note: Based on the Going for Growth Reform Responsiveness Indicator (RRI). Does not account for quality of reforms. RRI measures the responsiveness to recommendations in the Top 5 priority areas for each country, as identified in OECD Going for Growth. The priorities are identified every two years, hence the two year reporting period. For Central and Eastern Europe, the coverage in the early years is based on a subset of countries that were covered in Going for Growth at the time.

B. Distribution of Top 5 Going for Growth 2019-20 priorities



Source: Extracted from the OECD ECO Reform Tracker.

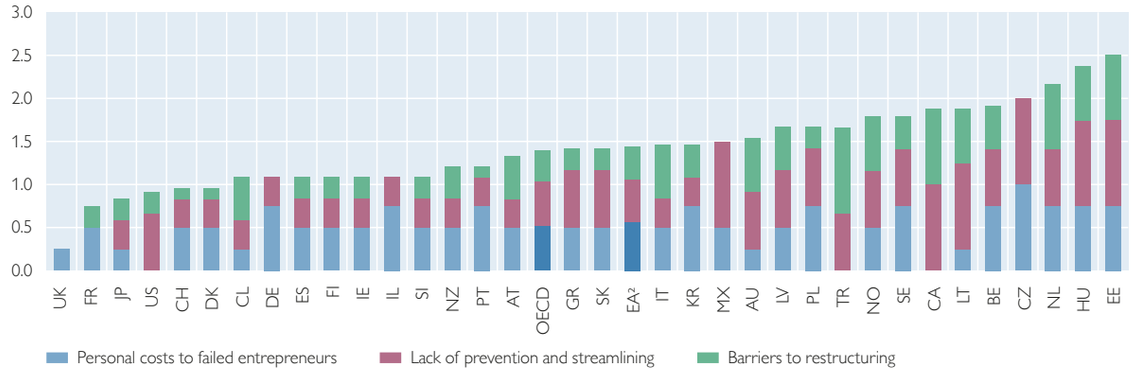
Note: Based on the Going for Growth 2019 priorities. "Both" denotes priorities targeting both labour productivity and labour utilisation, primarily in the area of education and skills.

Chart 4

Insolvency regimes and regulation of professional services

A. Insolvency regimes differ considerably across countries

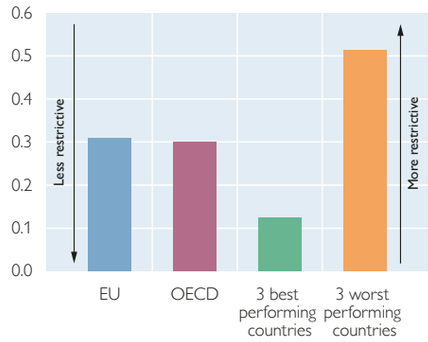
Index scale from 0 to 3, from most to least efficient insolvency regime[1]



[1] A higher value corresponds to an insolvency regime that is most likely to delay the initiation of insolvency proceedings and/or increase their length.
[2] Euro area member countries that are also members of the OECD, excluding Luxembourg, plus Lithuania; unweighted average.

B. Gaps remain in the regulation of professional services

Index scale from 0 to 1, from least to most restrictive, 2017



Source: OECD calculations based on the OECD questionnaire on insolvency regimes; Adalet McGowan, M., D. Andrews and V. Millot (2017), Insolvency Regimes, Zombie Firms and Capital Reallocation, OECD Economics Department Working Papers, No. 1399, OECD Publishing, Paris; Adalet McGowan, M., D. Andrews and V. Millot (2017), Insolvency Regimes, Technology Diffusion and Productivity Growth: Evidence from Firms in OECD Countries, OECD Economics Department Working Papers, forthcoming; OECD (2018), OECD Service Trade Restrictiveness Index (database).

Despite these country-specific efforts, there are several actions of a structural nature that can contribute to improving performance in the euro area as a whole, as discussed in detail in the OECD's Going for Growth exercise. They include, for example, the need to enhance support for innovation, which together with technology diffusion, are essential for stronger productivity growth. Actions have been taken to this end, including the updating and strengthening of the Better Regulation Guidelines and its toolbox in 2017 to decrease administrative burdens that hinder innovation by firms. To make further progress in this area it would be useful to increase R&D spending in the EU budget, as well as taking additional measures to harmonise insolvency proceedings through minimum European standards allowing simpler early restructuring, shortening the effective time to discharge, and more efficient liquidation proceedings.

Another area where policy action can go a long way to support growth is related to competition in service and network sectors. This is because restrictive regulations in service sectors hinder cross-border competition and investment, and network sectors remain fragmented along national lines in the euro area. The 2017 service package is a recent step in the right direction that facilitates the mobility of professionals and streamlining cross-border administrative procedures in construction and business services. Nevertheless, additional barriers in business services can be addressed through simplified administrative formalities for the establishment and provision of cross-border services and guidance on implementing EU legislation. It is also important to pursue the planned cross-border cooperation on power system operation and trade in electricity, including interconnection capacity calculations and reserve margins.

Further support for investment and growth could be financed through a reallocation of EU budget resources by, for example, reducing producer support to agriculture. Production-based payments in the Common Agricultural Policy also distort markets for some agricultural products. Reform efforts in this area could be complemented by a reassessment of direct support, which could be better targeted to environmental and climate change mitigation and adaptation objectives.

Structural reform efforts should also be focused on removing remaining barriers to labour mobility within the European Union. Labour mobility remains low among the European Union countries, hampering the absorption of country-specific shocks and a more efficient allocation of resources across borders. Recent efforts to address this challenge include a European services e-card simplifying administrative formalities required to provide services throughout the European Union. Proposals have also been put forward to reform the regulation of professional services and introduce a proportionality test before adoption of new regulation on professional services.

However, more could be done, for example by increasing investment in mobility programmes, such as Erasmus+, and facilitating access to these programmes irrespective of socio-economic background. Initiatives in this area could be accompanied by measures to foster the harmonisation of professions' curricula, make the electronic European services e-card available to all sectors, and coordinate among the member states the design and organisation of joint cross-border labour and tax control activities.

2 Improving risk-sharing and improving longer-term sustainability

Risk sharing is important in a monetary union to deal with large common or asymmetric shocks. However, risk sharing is limited in the euro area, on account of the incomplete banking union and fragmented capital markets. At the same time, public risk sharing through fiscal transfers currently is virtually non-existent on account of the small share of the European Union budget in relation to the size of the common market.

As discussed in the OECD Economic Survey of the euro area, since financial intermediation in the euro area remains predominantly bank-based, efforts to improve private risk sharing depend on actions on several fronts. This includes the establishment of a backstop for the resolution fund to ensure its credibility in the event of large systemic shock, a role that could possibly be played, in a fiscally-neutral way, by the European Monetary Fund, as recently proposed by the European Commission. Further progress on risk reduction could also be achieved through a common deposit insurance scheme, which is necessary to complete the banking union. Moreover, initiatives to reduce the concentration of sovereign debt in banks' portfolios would reduce the link that exists in the euro area between banks and their sovereign. A combination of policies, including a gradual introduction of higher capital charges on excessively high debt holdings of one country and the introduction of a European safe asset should be considered.

More integrated capital markets can facilitate private risk sharing by allowing for more diversified financing and more substantial cross-border investment. Progress on harmonising insolvency regimes would remove an important barrier to cross-border financial intermediation, by reducing legal uncertainty and facilitating the efficient restructuring of companies and resolution of non-performing loans. The tax preference for debt financing over equity financing should be reduced, preferably in the context of the Common Consolidated Corporate Tax Base proposal. Fast-paced financial innovation in the non-banking financial sector and the departure of the United Kingdom from the EU also provide a rationale for further convergence of supervisory regimes.

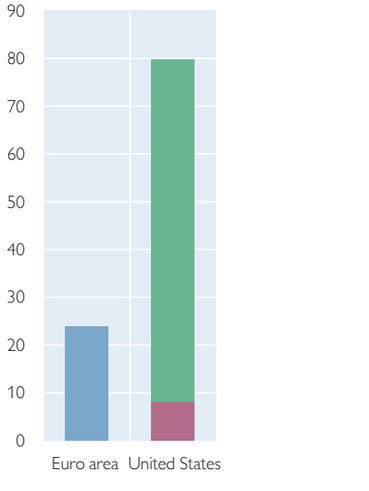
Public risk sharing would help to counter large negative shocks, both at the euro area and country level. The Five Presidents' Report correctly calls for the creation of a fiscal shock-absorption capacity at the euro area level to complement national fiscal policies. This could be achieved through a fiscal stabilisation function, such as a euro area unemployment benefit re-insurance scheme that would be activated in case of large negative shocks (OECD, 2018; Claveres and Stráský, 2018a and 2018b). While financed by all euro area countries, financing costs would over time be raised for countries that repeatedly draw on the fund. This would mitigate the risk of permanent transfers and provide a fiscal incentive to each country to pursue its own stabilisation policies. To strengthen countries' fiscal incentives further, the access to the stabilisation capacity should be conditional on compliance with fiscal rules prior to the shock.

Chart 5

Cross-border risk-sharing

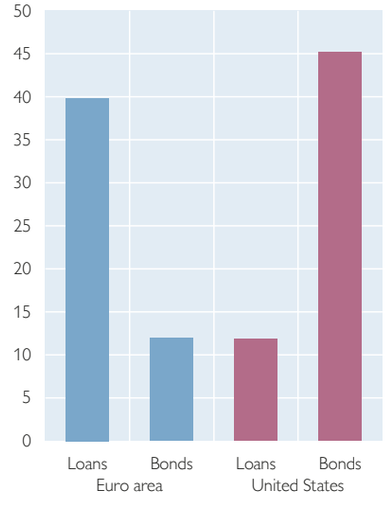
A. Cross-border risk sharing is limited

% of absorbed shocks through private and public risk sharing



B. European capital markets have much room to expand

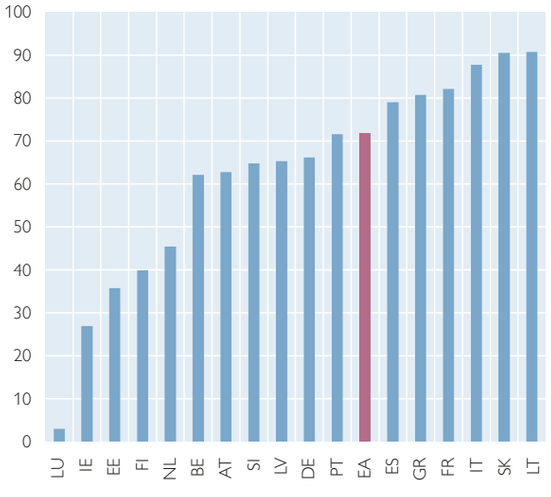
Outstanding loans and bonds of non-financial corporations as a % of GDP, average 2015–2017



Risk sharing through private financial flows
Risk sharing through fiscal transfers

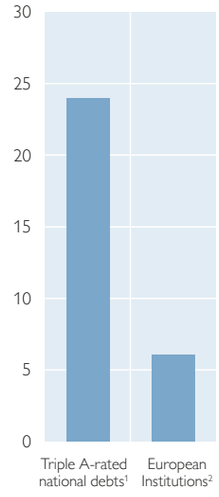
C. Links between banks and their own state remain high

% share of domestic sovereign bonds in banks' portfolios, March 2018



D. The supply of European safe assets is limited

Debt securities issued by governments and European institutions as a % of euro area GDP, 2016



Source: European Commission (2016), Cross-Border Risk Sharing after Asymmetric Shocks: Evidence from the Euro Area and the United States, Quarterly Report on the Euro Area 15(2), Brussels (Panel A). Eurostat, European Central Bank, US Bureau of Economic Analysis, Board of Governors of the Federal Reserve System, and Securities Industry and Financial Markets Association (Panel B). OECD calculations based on ECB (2018), Balance Sheet Items statistics, Statistical Data Warehouse, European Central Bank (Panel C). Source: Brunnermeier, M. K., Langfield, S., Pagano, M., Reis, R., Van Nieuwerburgh, S. and Vayanos, D. (2017). ESBies: Safety in the tranches. Economic Policy, 32(90), 175–219; OECD calculations based on public information released by European Institutions (Panel D).

[1] *Sovereign debt securities issued by the governments of Germany, Luxembourg and the Netherlands.*
[2] *Triple A-rated securities issued by the European Investment Bank (EIB), as well as those issued by EU authorities through the European Stability Mechanism (ESM), the European Financial Stabilisation Mechanism (EFSM), the Balance of Payment facility and the Macro-Financial Assistance Programs.*

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20 years of EMU, 10 years in crisis mode: What might the future "new normal" of monetary policy look like?

Having contributed to the organization and the design of the OeNB's Economics Conference for more than 20 years, these more than 20 years in Central Banking and the Eurosystem coincide almost exactly with the first 20 years of the euro. This gives me a perfect background to review the developments over this period from a monetary policy perspective, complementing the previous stimulating presentation by Luiz de Mello which concentrated on real developments as well as important institutional features of European Economic and Monetary Union (EMU) over the last two decades.

The simplest EMU timeline ever: extended version

If one is asking for the simplest possible timeline of EMU since its (formal) start in 1999, here it is![1] There were the ten early years, which might be called "the golden years" in parallel to "The Great Moderation" (Bernanke, 2004), when macroeconomic policy objectives – from growth to inflation – were, with the benefit of hindsight, achieved to a remarkable extent globally. Most of these "golden years" – from 2003 on – were "Trichet years", with the European economy in very good shape, quite in contrary to a number of pessimistic predictions for the euro area, mainly coming from the USA (see for example Feldstein, 1992 and Krugman, 1993). Not surprisingly, Jean-Claude Trichet was very proud of this successful start and first decade of EMU and at the ECB press conferences and in his speeches he always mentioned to which extent the defined objective of the ECB's monetary policy – a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below, but close to, 2% over the medium term – was almost exactly reached since the start of Monetary Union.[2]

Contrary to this, the second part of the first 20 years was characterized (i) by the crisis first – most significantly attached to the bankruptcy of Lehman Brothers on September 15, 2008 – and the subsequent economic crash in 2009 and (ii) by the economic, financial and political crisis mode afterwards. From today's perspective, more than 10 years after Lehman, the fundamentally critical point is that the euro area was not able to leave the crisis mode (Corsetti et al., 2019).

There are two elements, which need to be added to this well-known picture from my point of view. The first one, the future, is covered by the title of this conference as well. It's the simply asked but difficult to answer question: "Where do we go?" But there is also a second very important but mostly overlooked element, which needs to be taken into account explicitly, the preparatory phase of EMU. What has happened in this phase under the regime of the European Monetary Institute (EMI)

[1] *See Bernanke (2015) and Hartmann and Smets (2018) for a much more detailed – and serious – account of the last 2 decades.*

[2] *See, for example, Jean-Claude Trichet: Two successes of the euro – the single monetary policy and European financial integration, speech by Jean-Claude Trichet, President of the European Central Bank, at the Conference on experience with and preparations for the euro, organised by the Oesterreichische Nationalbank and the Austrian Federal Economic Chamber together with the Austrian Federal Ministry of Finance and the European Commission, Linz, May 11, 2006.*

mainly during the years 1997 – 1998, well before 11 countries formally entered into Monetary Union with the beginning of 1999 is in fact of crucial importance even today to understand how monetary policy has reacted and to put many elements into context correctly. Many things had to be set and were prepared before the operational start of the single monetary policy, which turn out to be rather significant for what has happened over the last 10 years in the crisis mode and they will for sure be re-discussed intensively in the future again and again.

Obviously, the pending challenge of Eurosystem monetary policy at the moment is the prospective exit from the crisis mode, when and how to exit. Because this is a much too difficult and too sensitive topic for a simple economist, I will not touch upon this issue in my contribution but leave it, as it should be, to the Governing Council of the ECB and the Governors as well as to the related preparations by the ECB Executive Board. Therefore, in this short note, I will refrain from talking about monetary policy strategy, the mandate of the ECB and the definition of it's (primary) objective. The focus here will be on the future, on the long-term view, or in more simple words on the question "Where to exit?", based on the current state of monetary policy in the Eurosystem and how it has developed from its beginning until today. This is carried by the conviction, that we will achieve a situation which we then can call the "new normal"[3] of ECB monetary policy at some point in time.

By the way, what do we know about the attitude regarding the future of the European population? There was an interesting study published by Bertelsmann Stiftung (2018) which reveals that 67%, more than two thirds of the EU-28 population think that the past was a better place to live in, and in the age groups over 35 years more than 70% gave this answer. Given the level of overall welfare, the absence of big wars and the long-term improvement in many economic and non-economic indicators this is difficult to understand. One explanation given in the study is that nostalgia provides stability in moments of uncertainty and obviously there was a lot of uncertainty, change and innovation in many economic and social areas at high speed over the last decades. These challenges might have asked for too much adaptive capacity by the people.

Nevertheless, this illustrates that the Europeans seem to be more backward oriented like Stefan Zweig, who – for very good reasons – in 1942 wrote about "the golden age of security" before the First World War, in particular, also under the impression of the horrible circumstances of the Second World War. Eventually, this situation forced him to commit suicide in February 1942 in the Brazilian exile, having sent the manuscript of "Die Welt von Gestern" ("The World of Yesterday") to his publisher just the day before. In contrast, looking into the future, historical experience confirms what Yuval Harari has argued, that we don't know how the world will look like in 2050, but what we know for sure is that it will be completely different from the one we are used to today (or in the past).[4] It is essential to keep this basic approach in mind when the task is to tackle future issues, as successful historical episodes of "Restauration" are almost non-existent.

What follows in the subsequent three sections of this note is (i) a review on how monetary policy-making has changed compared to the "golden years" before the crisis, (ii) a short reminder on the importance of the preparatory phase, and (iii) a summary in eleven points what to expect from the future and what elements will be relevant in any forthcoming "new normal" of monetary policy.

Two decades which couldn't be more different

How has monetary policy making in the Eurosystem changed over time? It is interesting to note as a starting point, that all (major) central banks globally have reacted to the 2007/2008 world financial and economic crisis in a rather similar way – perhaps with one significant exception, the People's Bank of China. However, it is easy to demonstrate that framework conditions in China not only were markedly different but also the dynamics and the intensity of the crisis differed from the more advanced economies, which was also true for a significant number of developing countries and countries like Australia and Canada for example. Keeping this limitation in mind, all big central banks in the advanced economies have taken more or less the same measures to tackle the crisis in a surprisingly similar way, given the not negligible differences in starting conditions, institutional setups and historical traditions.

It is very relevant to consider that this common international pattern of monetary policy interventions has taken place in a significantly changed environment. At this point I'd like to mention only two important factors which shaped monetary policy making already before the onset of the crisis: structurally low inflation and a secular low interest rate environment. Together with other influences[5], e.g. financial market developments in particular, this has resulted in significant changes in monetary policy implementation and operation long before the introduction of unconventional measures as a consequence of the crisis. The Bank of Japan is the outstanding – even if extreme – example to illustrate that these fundamental changes in monetary policy were there long before and, in the Japanese case, stem from a (purely) national crisis in the early 1990s. However, if you study these changes in the conduct of monetary policy in more detail, you recognize that most of the heated public discussions on monetary policy issues in fact concentrate on operational or instrument related issues – like to buy or not to buy assets, especially government bonds.

[3] *Because there is no common definition of the term „new normal" at the moment and people might have quite different things in mind when talking about the „new normal", it will be used in quotation marks throughout this text.*

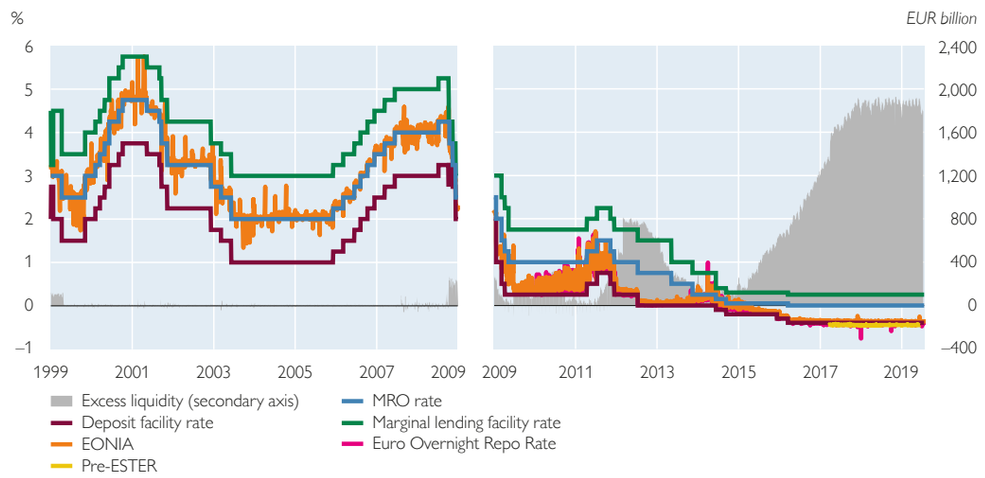
[4] *See Yuval Noah Harari (2018a) 21 Lessons for the 21st Century and, in particular, Harari (2018b) Change is the only constant.*

[5] *Of course, it is very difficult if not impossible to assess, which factors were (and are) the most important ones in this respect. Significantly lower potential growth, globalization of financial markets, increased financial instrument complexity, higher systemic and contagion risk and a new regulatory environment would also qualify as part of the relevant set of factors obviously.*

20 years of EMU illustrated in 4 pictures

Chart 1

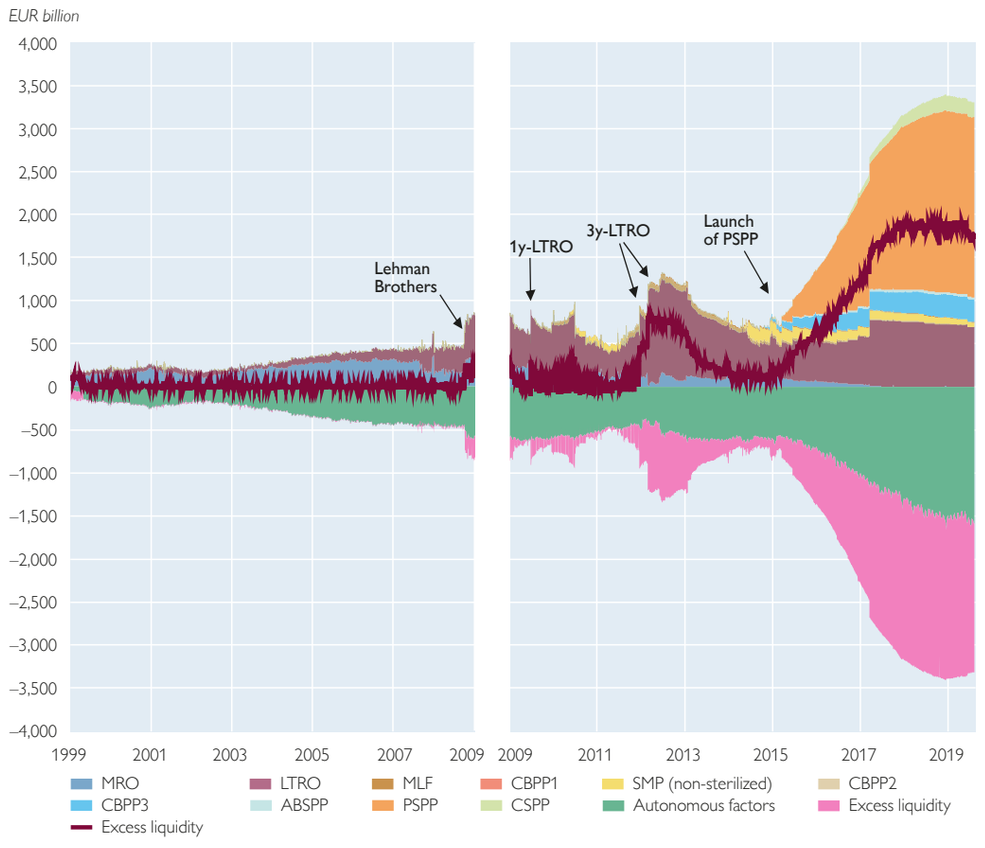
ECB policy rates



Source: ECB, Macrobond.

Chart 2

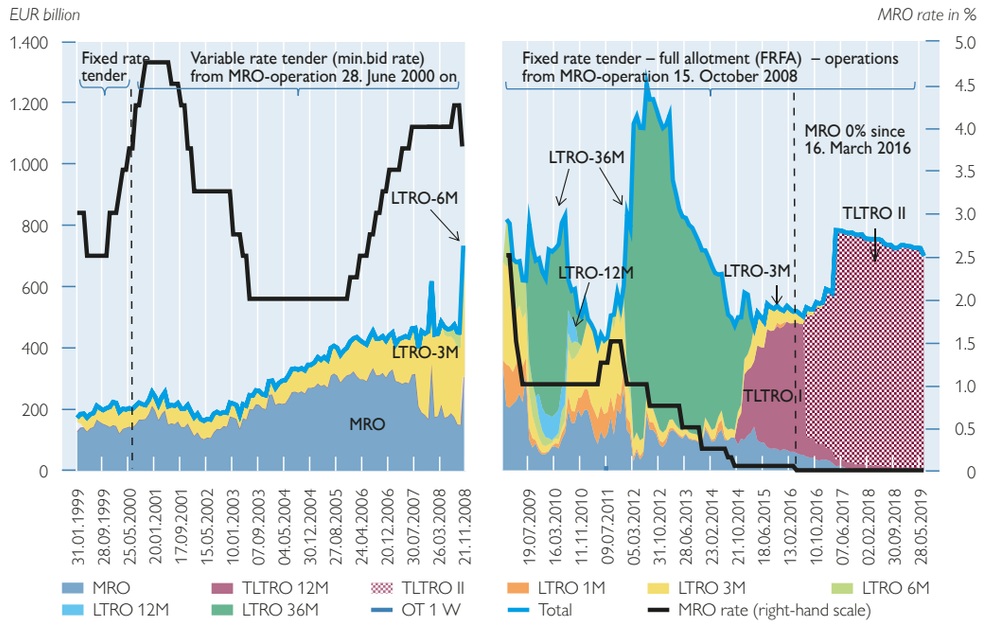
ECB overall liquidity provision



Source: ECB, OeNB.

Chart 3

Structural changes in ECB tender operations

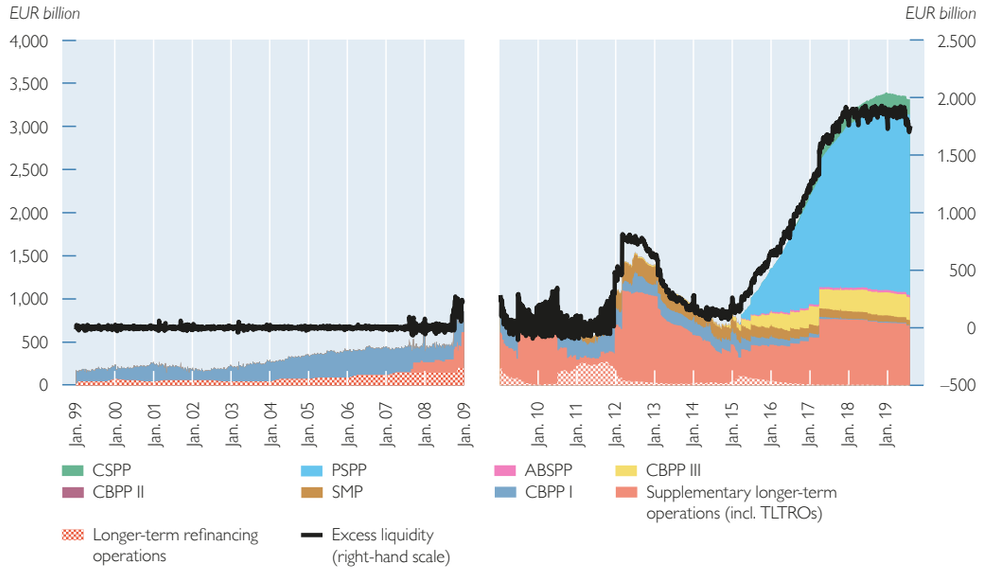


Source: OeNB.

Note: Data on 30 day-basis, incl. June 2019.

Chart 4

The (E)APP – Quantitative easing ECB style



Source: Deutsche Bundesbank, OeNB.

Note: Data on 30 day-basis, incl. June 2019.

Let's now undertake a short experiment on illustrating 20 years of EMU in four pictures only (see charts 1 to 4 for details). Directly comparing the roughly defined first ten years up to 2007 and the second ten years from the crisis onwards, it becomes immediately visible how different the world has become and in which particular way it has changed.

- Regarding ECB policy rates more or less textbook like small variations in key interest rates – almost exclusively the interest rate on the Main Refinancing Operations (MRO) – were standard before the crisis. In the course of the crisis policy rates were brought down in rapid speed and to previously unexpected low levels. Since then they are anchored even below the nominal zero lower bound (in case of the Deposit Facility Rate (DFR) at –0.4%). This has completely changed our understanding how the transmission process of interest rate policy works, and which transmission channels are active and – hopefully – effective.
- Regarding liquidity provision, the picture is very similar. From nowadays' perspective there was almost no liquidity provision by the ECB in the first ten years of Monetary Union. This was even true during the time of the Lehman Brothers collapse. No doubt, there were enormously difficult decisions to take, but in quantitative terms, compared to today's volume of liquidity provision, it was almost nothing.
- In parallel, lot's of structural changes took place in ECB liquidity provision and tender operations since the start of the Monetary Union. Main refinancing tender operations with a dominance of the weekly tender were the overriding instrument during the first ten years. Today almost all tender operations are targeted long-term tenders, no quantitatively important short-term tenders any more. This is to say the main refinancing operations have disappeared.
- Last but not least and perfectly known, in the second decade of the Monetary Union quantitative easing "European style" is still dominating the volume of liquidity provision in contrast to the period before the crisis, in particular since the start of the ECB's Asset Purchasing Program (APP) in 2015. In more detail many measures of different kind and of different characteristic were taken to address different intermediate objectives over this period.[6]

All in all, looking at these – extremely simplified – empirical illustrations it might come as a surprise even for monetary policy experts how fundamentally the monetary policy setup has changed over the first 20 years of EMU. Of course, all this happened in small steps and for very good reasons, but eventually the world looks very much different in almost all monetary policy dimensions now, which is of utmost relevance when thinking about any forthcoming "new normal" to be defined.

Determinants of monetary policy design: past and present

Looking back, it is useful and necessary to remember the important but largely forgotten role of the intense preparatory phase for the start of monetary policy in the newly established Monetary Union to come. This first took place to a large extent in the institutional setting of the European Monetary Institute (EMI) – established in 1994. Since June 1, 1998 EMI has been integrated in the institutional structure of the established ECB.

[6] *See Hammermann (2019) for a detailed stocktaking of the Eurosystem's asset purchase programmes; for the US Bernanke (2009) lists more than 25 different measures taken and specific programs introduced at the very beginning of the crisis only.*

During this preparatory phase, in essence from approximately early-1997 to the end of 1998, many concepts for the forthcoming single monetary policy had to be developed and agreed upon. To be able to start with monetary policy operations right at the beginning of 1999, all relevant and important preparations had to be made not only before the end of 1998 but early enough to leave time for the ECB, the National Central Banks operationally in charge as well as the counterparts, the so-called Monetary Financial Institutions (MFI's), to prepare technically for this operational start into a completely new world. This constituted a real challenge for all institutions and people involved, as very different national traditions of monetary policy making had to be merged into a new harmonized Eurosystem monetary policy setup.[7]

Against this historical background, it is important to recall that the ECB was – and still is – the youngest of the major central banks in the world. Therefore, the most modern monetary policy design of that time was given to this new institution – in terms of mandate, in terms of instruments, in terms of the operational setup, in terms of everything – and this was also reflected in the in-depth evaluation of its monetary policy strategy undertaken in 2003 (Issing, 2003). Where did these elements of modern design come from? Of course, everything in the academic literature at that time was taken into account and is reflected in the design of the ECB since the beginning (Hahn and Mooslechner, 2000; Mooslechner, 2000). Important factors in this respect are independence, a focus on the price stability mandate, short-term interest rate setting as the dominant instrument, market-oriented policy as a general understanding and many things more that were not really prevalent before in the "old normal" of central banking internationally. This approach was also mirrored in the principles of monetary policy operations, in particular (i) the orientation on market principles and (ii) the harmonization of instruments in the toolbox of the ECB.

In this respect, it is essential to remember that when these preparations were discussed not only the later participants of EMU were sitting at the table but also the representatives of i.e. the Bank of England, Sveriges Riksbank and Denmarks central bank negotiated until the end of the EMI period. Even if it was clear right from the beginning, that these countries would not join the euro area, their central banks were not only very active but had a big say in the discussions. In the Monetary Policy Sub-Committee[8], which was the one of the EMI committees to prepare the monetary policy strategy as well as the operational framework for the forthcoming Eurosystem single monetary policy (Stage 3 as it was called at that time), these central banks had an important influence on which instruments became part of the potential toolbox and how these instruments and their use were defined. This turned out to be especially important, because this influence came on top of the already different monetary policy traditions regarding the later 11 participants in the single monetary policy. Their approach was characterized by a different institutional history and a somewhat more pronounced orientation on US monetary policy standards.

[7] *See Scheller (2004) and James (2012) for a detailed account of these issues.*

[8] *Since November 1996, I had the privilege to participate in the meetings of the Monetary Policy Sub-Committee first and subsequently the Monetary Policy Committee of the ECB.*

The set of policy instruments defined in 1998 as a blueprint for the start of Monetary Union indicates, how much "cultural compromise" was necessary to get to a sufficiently harmonized toolbox proposal. One example in this respect are outright transactions. These outright transactions became an agreed part of the ECB portfolio of instruments already at that time (see table 1 where outright purchases/sales are listed under fine-tuning operations as well as structural operations; ECB, 1998). They were not created or "invented" due to the crisis situation in 2008/2009 and also not at the time when the large-scale APP was introduced in 2015. Mainly because of the influence of the Bank of England[9] during the preparatory phase, who has a long historical tradition of using outright purchases as a standard tool of monetary policy and refinancing, they were included in the toolbox of policy instruments for the ECB right from the beginning.[10]

Outright transactions were by no means the only critical issue to compromise on. Similar challenges were decisions on the use of minimum reserves as well as the criteria for eligible collateral and the concrete auction model to be used in tender operations, to name only a few. However, from today's perspective and after all the hot discussions on the ECB's purchasing programs, outright transactions are of course the most prominent example to illustrate the importance of this initial phase for the conduct of the single monetary policy.

Table 1

ESCB monetary operations toolkit: EMI blueprint of 1998

Monetary policy operations	Types of transactions		Maturity	Frequency	Procedure
	Provision of liquidity	Absorption of liquidity			
Open market operations					
Main refinancing operations	• Reverse transactions	–	• Two weeks	• Weekly	• Standard tenders
Longer-term refinancing operations	• Reverse transactions	–	• Three months	• Monthly	• Standard tenders
Fine-tuning operations	• Reverse transactions • Foreign exchange swaps	• Foreign exchange swaps • Collection of fixed-term deposits • Reverse transactions	• Non-standardised	• Non-regular	• Quick tenders • Bilateral procedures
	• Outright purchases	• Outright sales	–	• Non-regular	• Bilateral procedures
Structural operations	• Reverse transactions	• Issuance of debt certificates	• Standardised/ non-standardised	• Regular and non-regular	• Standard tenders
	• Outright purchases	• Outright sales	–	• Non-regular	• Bilateral procedures
Standing facilities					
The marginal lending facility	• Reverse transactions	–	• Overnight	• Access at the discretion of counterparties	
The deposit facility	–	• Deposits	• Overnight	• Access at the discretion of counterparties	

Source: ECB (1998).

[9] *To be fair, it needs to be mentioned that the Bank of England was by no means alone in its demand to include outright transactions but supported by a number of other central banks.*

[10] *Of course, the EMI had no final decision power to decide on these issues, but given the enormous time pressure on the ECB once established in the second half of 1998, it had to rely on these EMI preparations and proposals to a large extent. For illustration: The operational details regarding the minimum reserve system were published on July 8, 1998 already. The entire set of monetary policy instruments and procedures was revealed on September 18, 1998.*

11 factors that will probably shape any forthcoming "new normal"

Against the background of 20 years of single monetary policy and its at least two quite different episodes since the start of Monetary Union, what to expect for a future "new normal" of monetary policy in the euro area? Briefly, only three operational aspects are taken here as examples, for what would demand a much broader and deeper analytical discussion: These aspects will be (i) interest rate policy, (ii) liquidity provision and (iii) forward guidance.

Altogether, the following assessments and views need to be taken only with a clear "disclaimer"! Each and every point presented below would warrant a lecture of its own and a much deeper and encompassing discussion of its entire features.[11] Although I will try to be as factual as possible, bearing in mind that there are many different opinions and intentions on all these issues, there will be a broad range of different conclusions regarding the "desirable design" of any future "new normal".

1. It's obvious that in the aftermath of the crisis monetary policy has newly defined what was previously understood as the "zero lower bound" (ZLB). Even the simple nominal ZLB is no longer at zero, it's somewhere below and the whole ZLB issue (real ZLB, effective ZLB…) has become much more complex but also relevant for practical monetary policy making at the same time.
2. Interest rate policy cannot any longer be understood in the simple textbook sense of monetary policy. Even simple and everyday interest rate adjustments nowadays have to be seen against a much broader set of financial and economic interlinkages and prospective consequences.
3. The simple interest setting (and fine-tuning) mechanism of the past no longer applies, because the transmission process of monetary policy as well as its potential effectiveness have become much more complicated and difficult to understand. On the one hand, this much more complicated and diverse transmission processes can also be used by monetary policy to address its operational target(s); on the other hand, these diversities are based on unstable transmission regimes and volatile behavior of market participants, which are difficult to identify and to predict.
4. Absolutely unthinkable to many/most monetary policy makers before the crisis, interest rate policy now increasingly intends to steer the entire yield curve, the slope of the term-structure. In the previous mainstream view monetary policy restricted itself to steer the (very) short-term rate(s) only and the term-structure was seen to be the result of the subsequent market transactions only. This understanding has changed completely, not at least in the context of large asset purchase programs.
5. Monetary policy today is permanently acting in a structural liquidity surplus situation that has triggered a structural change from the previous liquidity shortage-based corridor system to a floor system. In the traditional corridor system the main refinancing rate was the (only) one key monetary policy rate to transmit the intended monetary policy signal, while in the

[11] *Ulrich Bindseil's impressive 2014 book gives some perception of the general complexity of the issues.*

now prevailing floor system the negative Deposit Facility Rate (DFR) steers the entire monetary policy transmission process through the interest rate channel.

6. The process and design of liquidity provision has fundamentally altered its characteristic from the "old normal", where the central bank was providing a limited amount of peak liquidity to a limited number of banks only. The subsequent distribution of liquidity was done via the money market(s) mechanism according to the liquidity demands of individual banks. Due to the crises and lasting, since then banks are now directly addressing the central bank permanently to get the liquidity they need and want, which as a consequence resulted in a very high demand for central bank liquidity. And one of the reasons for this structural change is that the unsecured money market in its role as an allocator of central bank liquidity has disappeared. There is still a lack of trust and much too much risk aversion in the market, therefore banks are still not willing to lend each other money in unsecured terms.
7. With respect to the developments mentioned above and, in particular, the introduction of non-conventional monetary policy measures, balance sheet size management has become a globally accepted new monetary policy instrument of its own and is used by the Fed, by the ECB and many other central banks now. Primarily introduced as an emergency crisis measure at the beginning, balance sheet size variation is recently discussed as a substitute for interest rate policies, compensating for the limited leeway central banks have in this respect in many countries (Federal Reserve, 2019b; Praet, 2018).
8. It is necessary to recall that from a historical perspective, the operational setup for liquidity provision, for example, by the Eurosystem, the Federal Reserve and the Swiss central bank was quite different. Central bank liquidity was provided from different sources: in the U.S. the bulk of liquidity provision came from what we in Europe call asset purchases now, mainly from purchasing treasuries; in Europe – with the main exception of the Bank of England – liquidity was created traditionally through repo-operations, whereas in the case of the Swiss National Bank capital inflows and FX-interventions are the dominant channels of liquidity creation. This has continuously changed in the course of the crisis and there is a tendency towards harmonization of operational traditions in central banks globally.
9. The markedly higher amount of liquidity provided by central banks today comes together with a significant longer maturity of central bank liquidity. In the case of the ECB, almost all liquidity provided is long-term, less than EUR 6 billion out of more than EUR 2,000 billion outstanding is what central banks usually did in their main refinancing operation and the weekly tender. Short-term liquidity supply and demand in the MRO has deteriorated to an almost unattractive instrument demanded only by few banks for very specific idiosyncratic reasons.
10. As a new monetary policy instrument "forward guidance" (FG) was added to the monetary policy toolbox in an explicit and systematic way. Of course, central banks have talked to the markets and to the public in the past also, but understanding this as a separate monetary policy instrument, thereby addressing different transmission channels has increasingly become relevant during the recent crisis mode phase. Talking to market participants and influencing their expectations, but also the expectation formation of economic agents in general, has developed into an equally important and accepted policy instrument, used rather frequently nowadays. Take the example of Mario Draghi's press conference on March 7, 2019. What he presented there was the whole portfolio of forward guidance: (i) Forward guidance on interest rates: how future interest rates, how the future policy path might develop; (ii) FG on ECB re-investment policy regarding the stock of APP purchases; (iii) FG on long-term financing operations like the newly started TLTRO III and (iv) FG on FRFA (Fixed Rate Full Allotment). In the light of this last point, when talking about today's monetary policy stance and what has changed during the crisis, it should be emphasized that since October 2008[12] – from shortly after the Lehman collapse and for more than 10 years now – the ECB has been conducting no tender operations in their classic form anymore. Every eligible bank gets as much liquidity as it demands, as long as it is able to provide enough collateral and complies with all the defined criteria of eligibility; completely different from the "old normal" we were used to and which is still represented in the textbooks.
11. Eleventh and last point. Forward guidance, how successful or how damaging can or will it be and will it stay? On the negative side, there is Ben Bernanke's famous taper tantrum episode, where in a few days only the long-term interest rate in the U.S. jumped by more than 100 basis points because of – expressed in a cautious manner – mistaken communication or a wrong perception of forward guidance lead to an unwanted and unfavorable outcome. A second interesting and more actual FG case is that the FOMC members – via their famous dot-chart – are still signaling that they may raise interest rates over the forthcoming years. At the same time, market expectations-based calculations show that market participants expect interest rates to fall significantly in the foreseeable future. This two US examples illustrate how challenging the task is to use FG efficiently to get the intended (market expectations) outcome.

It is interesting to note, that for the time being FG by the ECB has been successful in avoiding similar mistakes like these. And, on the clearly positive side, there is the

[12] *See ECB press release, Changes in tender procedure and in the standing facilities corridor; October 8, 2008.*

tremendously important "Whatever it takes" speech by Mario Draghi in London on July 26, 2012 (Draghi, 2012) dealing with the future role and profile of the OMT, which turned out to have become the most effective and indispensable example of FG, having probably saved the sheer existence of the euro at this decisive point in time.

Any future "new normal" will for certain be significantly different

Are there any conclusions to be drawn from this? At least I try to offer some personal conclusions, which are mainly in line with what Harari thinks how the

future will look like. Given all the fundamental changes in monetary policy orientation and implementation we have seen over the last decade, the future "new normal" of monetary policy will very likely look much different from the "old normal" from which the current crisis mode has developed. Overall, it is hard to imagine that all these instruments and measures employed during and in the aftermath of the crisis will simply disappear. It is nearly certain that in a forthcoming definition of a "new normal" all these instruments will be present (Praet, 2019). Of course, this does not automatically mean that they will be used in the same way and in the same intensity all the time. But they will be part of the standard monetary policy toolkit and they will be regularly used in the "new normal" if necessary and appropriate. The same applies for other significant elements of the crisis mode, for the balance sheet size, the steering mode of policy rates and forward guidance, to mention only a few of these newly introduced features.

Unfortunately, given latest developments, we seem to be far from the point of being able to define this "new normal" in a meaningful way yet and not at all to enter into it quickly. At the same time, this means that on any account these crises mode features of monetary policy will be in place for a considerable further period of time, which will increase their likelihood to stay. No doubt, from a general macroeconomic as well as economic policy perspective, this persistent need for policy stimulus more than a decade after monetary policy went into the crisis mode must be seen as a very unpleasant European crisis heritage.

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[13] *As the literature on ECB monetary policy since the crisis is enormous, this represents a very restricted selection of sources of direct relevance for this paper only and leaves out many more other sources of a general nature.*

Session 2
Monetary and financial stability

Andreas Ittner
Vice Governor
Oesterreichische Nationalbank

Macroprudential policy complements ECB monetary policy[1]

Ladies and Gentlemen,
Many players contribute to financial stability. If you take a broad view, financial stability policy encompasses macroprudential policy as well as microprudential supervision and regulation, recovery and resolution frameworks as well as deposit guarantee schemes. All these areas provide important contributions to financial stability, but it is the broad consensus – at least since the Financial Crisis – that macroprudential policy is the most important area in preventing – or at least mitigating – financial stability risks (Bank for International Settlements, 2011; International Monetary Fund, 2013; Smets, 2014).

Monetary and macroprudential policy complement each other

A lot has been said on the similarities, the differences, and the interplay on these two policy fields. I would like to compare their relationship to a game of doubles in tennis. To be successful, both players need to adapt to the other player's game. If one player storms to the net, the other player must follow as soon as possible. Otherwise, they risk not being able to put the ball away or even getting passed. Both players share the same goal – in tennis it is the win, in monetary and financial policy it ultimately is a long-term and stable increase of people's prosperity and well-being. However, this common goal is reached via different intermediate objectives.

In my opinion, monetary and macroprudential policy areas are complementary. Price stability contributes to financial stability and vice versa. Nevertheless, monetary policy has potentially unintended consequences that can be tackled with adequate macroprudential measures. Currently, there are two main examples for this interplay.

First, low or even negative interest rates squeeze interest rate margins of banks due to the so-called zero lower bound on deposits and thereby negatively affect bank stability. This assertion is corroborated by research by colleagues of the OeNB (Kerbl and Sigmund, 2016). In Austria, for example, the structurally low profitability of Austrian banks was one reason – among others – for implementing the systemic risk buffer (Financial Market Stability Board, 2018).

Second, the current low interest rates fuel booms in various asset markets: e.g. equity markets, bond markets, and real estate markets. In the euro area, macroprudential policy allowed a number of countries to address these partly unintended consequences, as borrower-based measures and higher risk weights for mortgages were introduced to deal with systemic risks stemming from real estate markets (European Systemic Risk Board, 2019).

Moreover, the revised ESRB Regulation now explicitly stipulates that implications of monetary conditions for financial stability fall under the ESRB's macroprudential oversight mandate to ensure that there are no taboo topics in the ESRB in the future. This is an important precedent for macroprudential policy in general.

Monetary and macroprudential policy have different intermediate objectives

Consistent with their complementary function, monetary policy and macroprudential policy have different interme-

[1] *Co-authors David Liebeg and Peter Strobl, Oesterreichische Nationalbank, Financial Stability and Macroprudential Supervision Division. The views expressed in this paper are exclusively those of the authors and do not necessarily reflect those of the OeNB or the Eurosystem.*

diate objectives. That of monetary policy in the euro area is price stability: Prices should increase at a rate of below, but close to 2% year-on-year. That of macroprudential policy in the euro area is the reduction and mitigation of systemic risks.

To be more specific, monetary policy impacts the debt funding rates of banks, while macroprudential policy primarily impacts the spread between banks' debt funding costs and their loan rates (IMF 2013). Initially, monetary policy targets the risk-free rate of interest via the so-called interest rate channel. Recently, asset purchase programs have extended the objective function to the risk premium of bonds, including bank bonds, via the so-called risk-taking channel. Contrary to that macroprudential policy aims at shifting the costs of systemic risks back from the public to the banks, i.e. it wants to make sure that loan rates cover all costs of capital, liquidity and risks. Thereby it influences the spread between debt funding and loan rates.

Macroprudential policy supports monetary policy's transmission mechanism

Some argue that there is a conflict between macroprudential measures – most importantly capital buffers – and the transmission mechanism of monetary policy. They suggest that higher capital requirements impede banking lending. Quite a few studies show that this is not the case. Gambacorta and Shin (2016) found that a presumed tension between increasing bank capital and bank lending is more apparent than real and that better capitalized banks improve the bank lending channel of monetary policy transmission: Higher bank capital is associated with greater lending. This is because better capitalized banks have substantial lower funding costs. Schmitz et al. (2017) estimated that a 100 basis points increase in regulatory capital ratios is associated with a decrease of bank funding costs of about 105 basis points. Another recent paper by the Periès et al. (2019) strikes a similar note by finding that countercyclical macroprudential interventions are supportive of monetary policy conduct through the cycle. Therefore, an allegedly apparent and often raised conflict does in fact not exist.

Different objectives require separate sets of instruments

To sum up, the complementary nature of both policies justifies separate objectives. This implies that I favor that both objectives are pursued by two separate sets of instruments – also known as "Tinbergen Rule". Alternatively, "leaning against the wind" would overburden monetary policy with a dual objective of maintaining consumer price stability and preventing asset price bubbles. To achieve the latter, interest rates would have to increase quite sharply, which is very likely to endanger the former at this juncture.

The principle of separate sets of instruments is even more important in a monetary union where asymmetric financial cycles across member states exist (Periès et al. 2019). Therefore, the national mandate of macroprudential policy is essential to allow national authorities to deal with country-specific consequences of a single monetary policy for the euro area.

Closing remarks

Monetary policy and macroprudential supervision can be combined very effectively. However, as in a team of tennis doubles – to come back to the initial metaphor – excellent communication, the clear allocation of responsibilities and team spirit are preconditions.

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Monetary and financial stability: the implications for prudential supervision

Good afternoon, it is a pleasure to speak to you today. The theme of the conference '"European Economic and Monetary Union: the first and the next 20 years" gives us wide scope to share some of our thoughts. We have much to learn from the last twenty years.

If we look back to 2007, problems had started to crystallise and accelerated in 2008, particularly post Lehmans, as market participants retreated towards safe assets. This tendency was intensified by the complexity and lack of transparency in the financial system. In other words, due to the complexity of the market, participants could not establish with confidence which risks would end up with whom and how they might be exposed to the ultimate holder of certain types of risks. Consequently, the market moved away from many higher risks. This included Irish banks with their large property exposures. The move away from the higher risks due to concerns about solvency took the form of a withdrawal of short-term liquidity, leading to the failure of the Irish banks and many others.

The crisis exposed a long list of contributing factors including:[1]

- Underestimation of the riskiness of securities created with financial engineering;
- Misaligned incentives;
- Excessive funding of long term assets with short-term liabilities;
- Ratings agencies failures;
- Flawed assumptions regarding house prices;
- Elevated household debt;
- A belief by bankers that their institutions were too big to fail;
- Global imbalances;
- Appropriate accounting of financial assets;
- Excessively loose monetary policy;
- Inadequate or flawed micro and macroprudential regulation; and
- Deep flaws in supervision.

The crisis also highlighted the fundamental importance of financial stability to protecting consumers and investors and that it is a collective responsibility to safeguard financial stability. Of the financial firms themselves, of regulators and supervisors of all segments of the financial sector, of central banks, of macroprudential authorities, of resolution authorities, and indeed of governments to ensure the right legislative and institutional frameworks and incentives exist for a stable financial system. And the architecture of Banking Union has been built to reflect this collective responsibility. The global monetary policy response since 2008, for example, has dampened volatility and addressed system-wide liquidity concerns. The continued monetary accommodation has – in addition to incentivising banks to lend – afforded banks the time and space to build buffers, repair their balance sheets and deal with legacy issues.

In his remarks, Andreas Ittner mentioned the interaction of monetary policy and macroprudential policy. I will pick up the baton there. I will conclude by giving my thoughts on the Banking Union. But in the first part of my remarks today I will endeavor to address how new measures to address financial stability have changed how we supervise banks and discuss how in turn, our supervision promotes and contributes to safeguarding financial stability. The Central Bank of Ireland has a wider and more

[1] *See David Aikman, Jonathan Bridges, Anil Kashyap and Caspar Siegert. 2018. Would macroprudential regulation have prevented the last crisis? Bank of England Staff Working Paper No. 747.*

diverse mandate than most Central Banks. We are including the National Central Bank, National Competent Authority for credit institutions, investment firms, funds and insurance firms, National Macroprudential Authority, National Resolution Authority and have important roles in conduct, consumer protection and Anti-Money Laundering (AML).

Given this wide mandate and relatively large financial sector in Ireland, we therefore must consider financial stability in a holistic fashion across different segments of the financial sector. Moreover, given the nature of financial services operating in Ireland, we necessarily must take a wider European and global view. We concern ourselves, directly and through our work in the regulatory and supervisory ecosystem, with the functioning of the financial system with the aim of ensuring that it is serving the needs of the economy, consumers and investors.

My key message today is a comprehensive approach to financial stability is needed – not just at national level, but also at a European level. Not just for banks, but also other segments of the financial system. This will require closer coordination, more information sharing and deeper embedding of macro-financial analysis and policy into prudential supervision. More also needs to be done in Europe with respect to resolution, deposit insurance, capital markets union and the cultures within financial institutions. I will return to this towards the end of my remarks. Lastly, the effect of the "regulatory pendulum" has been a feature of financial booms and busts. It is important then that we do not let memories fade. We must recognise the important role of strong regulatory and supervisory frameworks in delivering a resilient and stable financial system.[2]

Macroprudential policy, financial stability and prudential supervision

To promote financial stability, macroprudential policy aims to strengthen the resilience of the financial system so that it can withstand adverse movements in credit and property prices, and other macroeconomic shocks.

Policy measures are forward-looking and seek to reduce the potential for imbalances to accumulate, given that they could lead to financial distress.

Intermediate objectives are:

- To prevent excessive credit growth and leverage;
- To prevent excessive maturity mismatch and market illiquidity;
- To limit direct and indirect exposure concentration; and
- To reduce the potential for systemically important banks to adopt destabilising strategies and to mitigate the impact of such actions.[3]

These are also of fundamental concern for microprudential supervisors – we just look at it from an individual institutional perspective. In the main, supervisors are involved in National Macroprudential Authorities.[4] But the advent of macroprudential policy has also coincided with a change in banking supervision.

Macroeconomic assessments

First, macroeconomic assessments have become a fundamental component of microprudential supervision. Stress testing, for example, is now a key tool of supervisors with the recent EU-wide banking sector stress test showing the variety of macroeconomic variables considered including GDP, inflation, unemployment, asset prices and interest rates.[5] Stress tests involve macro considerations in identifying risks and setting out a plausible scenario while the results showing how banks are affected are a key input into setting individual bank capital requirements.

Business model analysis also takes macro-financial factors into account when assessing risks faced by banks. Last year, for example, ECB Banking Supervision published a thematic review on profitability and business models, which highlighted that low profitability and pressure on revenues from the economic environment, among other factors, affect the European banking sector.[6] The findings from the thematic review feed into the Supervisory Review and Evaluation Process (SREP).

Capital requirements

Second, broadly speaking, capital levels have increased markedly in Europe over the past decade. At the end of 2009, the average Tier 1 capital ratio stood at 10.2% while at end-2018, this had improved to 16.3%.[7] Today, capital requirements of banks are decided by different authorities and institutions. This reflects the various elements that need to be taken into account when assessing bank capital requirements.

Different macroeconomic and financial cycles, different structures of economies and different structures of financial systems, among other factors, justify different capital requirements. Banking union does not render these differences inconsequential – just as single supervision does not mean that every institution has the same capital requirements, banking union does not mean that every banking system has the same level of capital requirements.

Thus, capital requirements are determined through decisions taken by microprudential supervisors with respect to pillar I and pillar II requirements, but also through the polices implemented by macroprudential authorities with respect to the Other Systemically Important Institutions (O-SII) buffer and the Countercyclical Capital Buffer (CCyB), for example. Another aspect of banks' capital requirements that is relevant is the Minimum Requirement for own funds and Eligible Liabilities (MREL), which is decided upon by resolution authorities.

Supervisors must therefore cooperate and coordinate effectively with macroprudential authorities and resolution authorities – whilst respecting their differing mandates – to ensure the resilience and stability of the banking system.

[2] *See Dagher, Jihad. 2018. Regulatory cycles: Revisiting the Political Economy of Financial Crises. IMF working Paper (18/8).*

[3] *See details on macroprudential policy https://www.centralbank.ie/financial-system/financial-stability/macroprudential-policy.*

[4] *See List of national macroprudential authorities and national designated authorities in EU Member States and List of National Supervisors.*

[5] *See Adverse scenario for the EBA 2018 EU-wide banking sector stress test.*

[6] *See SSM thematic review on profitability and business models.*

[7] *See EBA Risk Dashboard Q3 2013 and EBA Risk Dashboard Q4 2018.*

Ed Sibley

Borrower based measures

Third, borrower based measures such as loan-to-income limits (LTI) and loan-to-value limits (LTV) make both banks and borrowers more resilient.

Increased Co-ordination

Wider institutional fora are important when thinking about the joint responsibility "authorities" have for financial stability. These vary in composition and mandate at national level.

At European level, the ESRB was established in 2010 to oversee the financial system of the European Union (EU) and prevent and mitigate systemic risk. It is an important forum which brings together representatives of EU institutions, Governors of National Central Banks, and high level representatives of the National Competent Authorities.[8]

For the euro area, the Macroprudential Forum is composed of the Governing Council and the Supervisory Board of the ECB and it is a platform for regular, high-level discussions, bringing together microprudential and macroprudential perspectives from across Europe.[9]

The advent of macroprudential policy has therefore coincided with and reinforced an important change in thinking about microprudential supervision. This is embedded in our framework for supervision and our tools for stress testing.

Effective cooperation and coordination given the multi-level and joint responsibility is critical to preserve financial stability.

Resolution, financial stability and prudential supervision

The establishment of national resolution authorities and the Single Resolution Board has been an important institutional development since the crisis. However, the introduction of the Bank Recovery and Resolution Directive (BRRD) and Single Resolution Mechanism (SRM) goes well beyond this, and has also had a wider impact on how we supervise banks.

The BRRD was introduced to provide authorities with a regulatory toolkit to manage bank failure, with the objectives of ensuring the continuity of critical economic functions, minimising the impact on the economy and financial system, avoiding the destabilisation of financial markets and limiting the cost to taxpayers.

Resolution is therefore fundamentally a financial stability issue.

The BRRD has also importantly changed how we supervise banks.

Resolution authorities have the primary responsibility for resolution planning and execution. Nonetheless, supervisors should be actively considering the resolvability of a firm, alongside financial resources (for example, supervisors review institutions' internal capital and liquidity adequacy assessment processes), business model sustainability and governance, culture and risk management. Ultimately, whether a firm can be resolved should be reflected in our supervisory risk appetite.

The supervisor is consulted on resolution plans, prepared by resolution authorities, which gives us a deeper knowledge on legal structure, critical functions, internal and external interdependencies (i.e. essential services etc…), IT systems, access to financial market infrastructures, preferred resolution strategies, and separability to name just some of the contents. Moreover, supervisors should be actively working with resolution authorities to address impediments to resolvability. This is not without its challenges, but if a bank is only surviving because it is not resolvable, it is not viable, and requires appropriate supervisory intervention

Supervisors now also review recovery plans, prepared by banks which map out what they will do if they get into difficulty.

- We now assess detailed recovery options, scope and timelines for action for each bank.[10]
- We have financial impact assessments and feasibility assessments which include financial, operational, reputational, legal and business model risks, as well as a consideration of a much wider range of factors.
- Plans are required to include the assumptions underlying effects, governance and implementation, impact on critical shared services, critical functions and core business lines, impact on stakeholders and systemic consequences, communications plans, and preparatory measures.

Last year, ECB Banking Supervision undertook a review of recovery plans to learn from best practice and experience to help further shape operational success of plans going forward.

Whilst much has been achieved, there is still considerable room for improvement in terms of feasibility, credibility and options for recovery.

This new EU recovery and resolution framework is not a panacea. It remains a work in progress. But important work in progress.

Much work therefore remains to be done to ensure financial stability going forward.

The measures introduced to date however, have already changed how we supervisors think about risk and risk mitigation.

Non-bank financial intermediation, financial stability and prudential supervision.

To maintain financial stability, we cannot solely focus on banks.

Non-bank finance has become an increasingly important source of financing of economic activity. Since the crisis in 2008, globally (as reported by the Financial Stability Board (FSB)), banks' share of total global financial assets has declined from 45% to 39%, as so-called "OFIs" or other financial intermediaries take larger shares (from 26% to 31%).[11]

This evolution can bring with it different types of systemic risk which can threaten financial stability, be they via direct exposures or indirect exposures – for example when common assets are held or move together.

Just one salient example of this is Commercial Real Estate (CRE).

- The size, interconnectedness and use of high leverage makes CRE important

[8] *See details of ESRB governance https://www.esrb.europa.eu/about/orga/board/html/index.en.html.*

[9] *See details of Macroprudential Forum https://www.ecb.europa.eu/ecb/tasks/stability/framework/html/index.en.html.*

[10] *See ECB Banking Supervision Report on Recovery Plans, July 2018.*

[11] *See FSB Global Monitoring Report on Non-Bank Financial Intermediation 2018.*

for financial stability, and hence important for supervisors. This is particularly important in today's monetary policy environment with low interest rates and search for yield dynamics which are increasingly pushing up prices.[12]

- On the one hand, the fact that CRE financing is moving outside domestic banking systems is positive for financial stability – potential losses can be shared more widely, liquidity is increased and foreign investors may exit an overheating market sooner, thereby dampening a boom.[13]
- On the other hand, given growing interconnectedness boom-bust cycles could be amplified as CRE markets become more synchronised globally. Authorities need to be ever more vigilant in monitoring leverage and maturity mismatches of non-bank entities.
- Forthcoming research by staff at the Central Bank of Ireland highlights these risks and vulnerabilities and that market-based finance can be a source of disruption of services to the real economy in and of itself.[14]

What does this mean for supervision?

- It means all sectoral supervisors must have a wider view of the financial system in which firms are operating.
- It means supervisors must increasingly focus on macro-financial dynamics.
- It means financial stability assessments must be fully embedded in supervisory risks frameworks.
- It means that where National Competent Authorities for banking are separate from funds or insurance for example, they must cooperate more intensively.

This is not easy to achieve. However to maintain financial stability we must take a holistic perspective and pursue an integrated approach. This is important to ensure that the entire financial system serves the best interests of consumers and wider society.

Banking Union and CMU

So where does this leave us? Much progress has been made to increase financial stability in the EU and euro area, initially with the establishment of the European System of Financial Supervision encompassing the European Supervisory Authorities and the ESRB, and then with the establishment of the Banking Union – notably with the establishment of the Single Supervisory Mechanism (SSM) and Single Resolution Mechanism.

The first 20 years of EMU have been chequered; the culmination of a 30-year upswing in the global financial cycle, and the worst economic crisis since the 1930s.[15]

The crisis resulted in many important legislative and institutional innovations, with the introduction of the SSM and SRM being the most visible.

However, the job is not yet complete.

To list a few areas of priority:

- Significant work is required in the banking sector to ensure adequate risk reduction in the level of non-performing loans and a build-up of MREL.
- The issue of liquidity in resolution will need to be addressed within Banking Union to ensure there is a lender of last resort to provide liquidity support if and when required.
- More is needed to ensure that banks are resolvable without recourse to the taxpayer.
- Therefore, the second pillar of banking union remains incomplete.
- The third pillar of the banking union – a European deposit insurance scheme (EDIS) – remains missing. Deposit protection should transfer to the European level, as has already happened with banking supervision and bank resolution.
- Completing Capital Markets Union (CMU) should also be a priority. Deep and liquid capital markets have the potential for private risk-sharing to smooth economic shocks, thus increasing stability.

Much has changed for prudential supervision in response to the measures enacted to preserve financial stability going forward. And what does the next twenty years have in store? Well, a lot of work: from regulators and supervisors of all segments of the financial sector, from central banks, from macroprudential authorities, from resolution authorities, and indeed from governments to ensure the right legislative and institutional frameworks and incentives exist for a stable financial system.

We have the infrastructure but the effectiveness of the interaction between macro and micro needs to be continually worked on, reinforced and improved. Without effectiveness of both, the financial system is prone to excessive risk taking, short-termism, and failure. This does not serve the longer term needs of the European economy nor its citizens.

Thank you, I look forward to the discussion.

[12] *See ESRB Report on vulnerabilities in the EU commercial real estate sector, November 2018.*

[13] *See Non-bank involvement in the Irish commercial property market, Central Bank of Ireland, Financial Stability Note (forthcoming).*

[14] *Ibid.*

[15] *See Europe and the euro 20 years on, address by Mario Draghi, at Laurea Honoris Causa in Economics by University of Sant'Anna, Pisa, 15 December 2018.*

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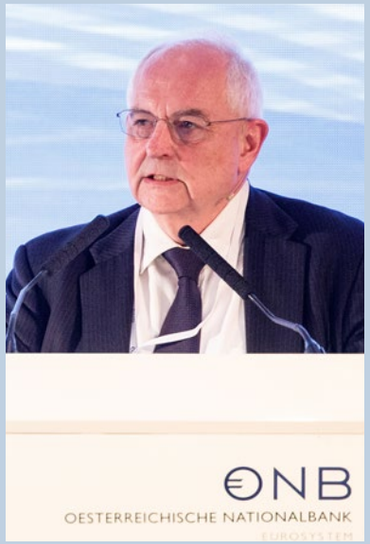


Escaping the trap: secular stagnation, monetary policy and financial fragility

"Some say the world will end in fire, Some say in ice." (Robert Frost[1])

These brilliant lines by the poet Robert Frost capture the world's current economic prospects. Some warn that today's world of high debt and low interest rates will end in the fire of inflation. Others prophecy that it will end in the ice of deflation. Others, again, such as Ray Dalio of Bridgewater, are more optimistic: the economy will turn out to be neither too hot nor too cold, just like the baby bear's porridge, at least in countries that have had the fortune (and wit) to borrow in currencies they can create freely.

If we are to make any sense of the strange place in which the world economy is today and the even stranger places in which it might be tomorrow, we need a story about where it came from. By "here", I mean our world of ultra-low real and nominal interest rates and populist politics. The simplest story about how we ended here is one about the interaction between real demand and the ups and then downs of global credit. Crucially, the story is not yet over.

The discussion below will begin by delineating today's strange world. It will then look at how it got there. A discussion of what comes next will follow.

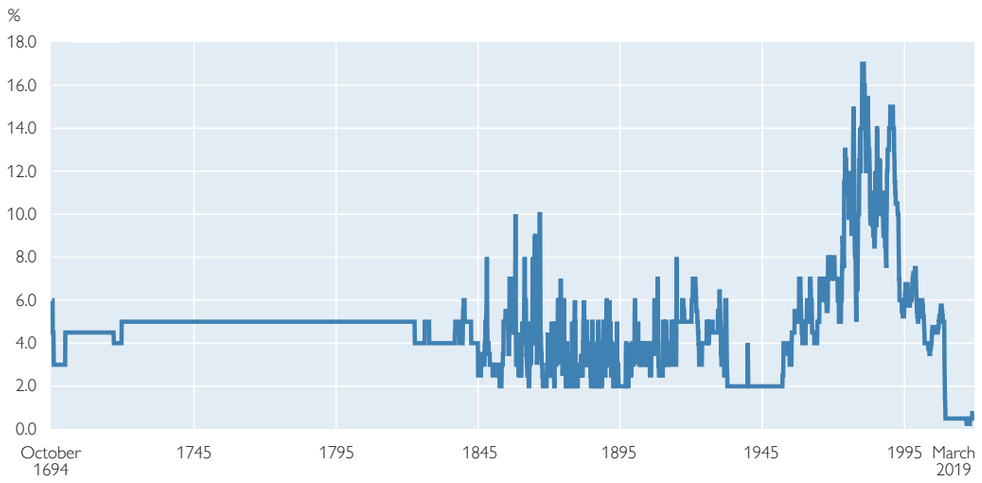
Our strange world

We need to start by recognising just how strange the world in which we now are actually is. Prior to 2009, the Bank of England never lent to banks at a short-term rate of less than 2%. That had been low enough to cope with the Napoleonic wars, two world wars and the Great Depression. Yet, for a decade its base rate has, remarkably, been very close to zero (chart 1.)

Equally striking is the extraordinarily low level of long-term real interest rates. UK data are again very useful, because it has been issuing index-linked "gilts" (longer term government bonds) since the 1980s. The real yield on 10-year index-linked securities has been zero, or less,

Chart 1

Bank of England lending rate since 1694

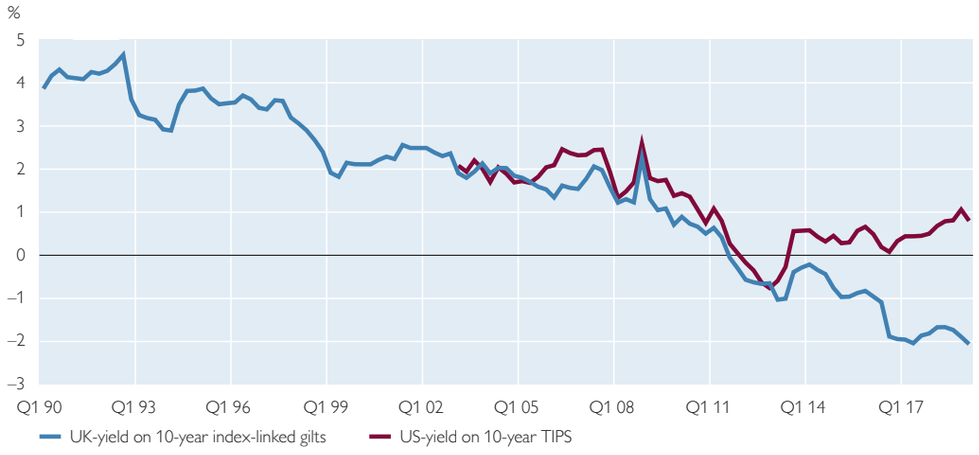


Source: Bank of England.

[1] *https://www.sparknotes.com/poetry/frost/section9/.*

Chart 2

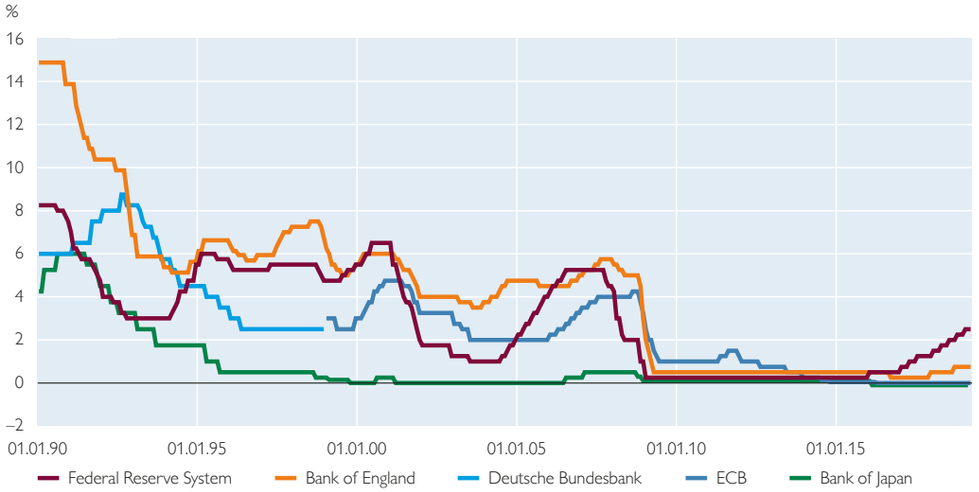
The decline of real interest rates



Source: Refinitiv, FT analysis.

Chart 3

Central bank intervention rates



Source: Refinitiv.

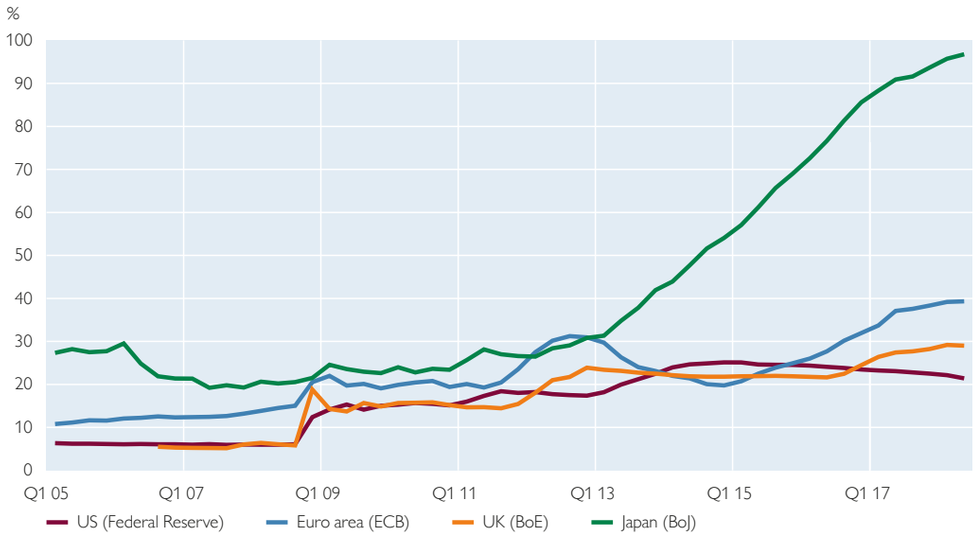
since 2011. In the USA, the equivalent real yield has recovered somewhat, but it has been close to 1%, or less, since 2011 (chart 2).

The Bank of England's ultra-low nominal interest rates are not unique. The US Federal Reserve has managed to raise its federal funds rate to 2.5%, but only with difficulty and already, at this very low rate by historical standards, is shifting towards easing.[2] The European Central Bank's rates are still close to zero, as are the Bank of Japan's. The latter's rate has actually

[2] *James Politi, 2019, Fed chair cements case for cut in interest rates, Financial Times, 10 July, https://www.ft.com/content/8bf10bf0-a30c-11e9-974c-ad1c6ab5efd1.*

Chart 4

Central bank balance sheets over GDP



Source: Refinitiv, Bank of England, FT analysis.

Chart 5

Core inflation rates

Source: Refinitiv.

been close to zero since 1995. Furthermore, central bank balance sheets have also expanded hugely since the crisis, especially the BoJ's. Yet the BoJ has still been unable to get inflation much above zero. Weak inflation is not Japans's problem alone. It remains strikingly low elsewhere, too (charts 3, 4 and 5).

We should not be too surprised by this world of ultra-aggressive monetary policies, including outright asset purchases by central banks and favourable long-term lending to banks, and yet weak inflation. Ray Dalio of Bridgewater has laid out the logic in his important recent book *Principles for Navigating Big Debt Crises*.[3]

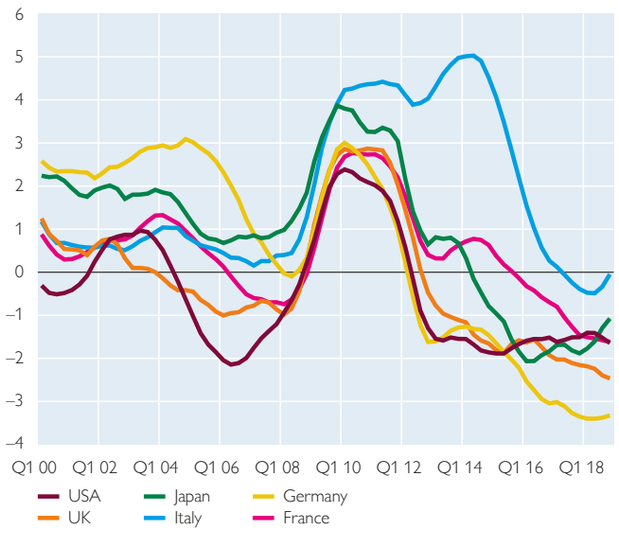
[3] *Ray Dalio, 2018, Principles for Navigating Big Debt Crises, Bridgewater.*

Mr. Dalio's central point is that governments of countries whose debts are denominated in their own currencies are able to manage the aftermath of a crisis caused by excessive credit. Above all, they can spread out the adjustment over years, thereby preventing a huge depression induced by a downward spiral of mass bankruptcy and collapsing demand. Mr. Dalio calls this a "beautiful deleveraging". It is achieved by a mixture of four elements: austerity; debt restructuring and outright default; money "printing" by central banks, not least to sustain asset prices; and other transfers of income and wealth. An important part of such deleveraging is keeping long-term interest rates below growth of nominal incomes. That has now been achieved, even in Italy (chart 6).

Chart 6

Debt sustainability

10-year bond yields less annual growth in nominal GDP



Source: Refinitiv, FT analysis.

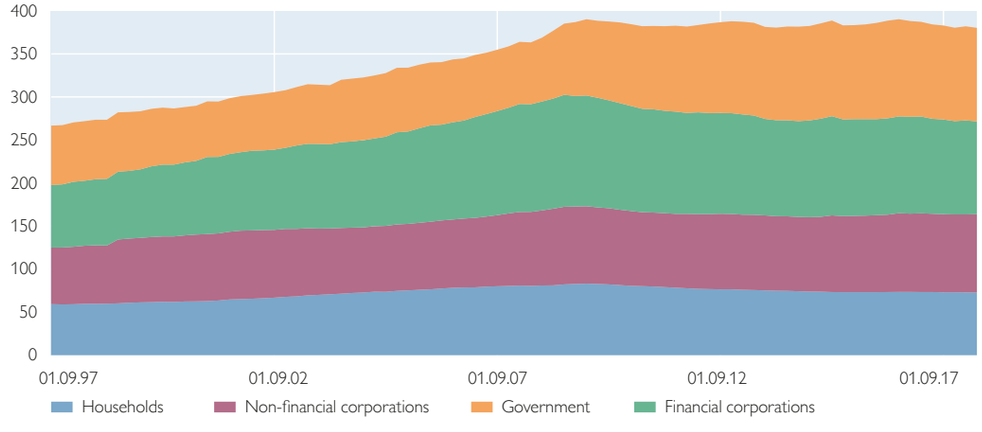
US policymakers were the most successful in reacting comprehensively. Back in the 1990s, Japan took too long to adopt the right combination of policies. So did the euro area after 2008, largely because of obstacles to active fiscal policy in the currency union, but also because of ideological resistance to using the full capacities of the central bank. The UK's response fell between that of the USA and that of Japan and the euro area.

Even if the needed policies are successfully adopted, they are always unpopular. So, not least, is the aftermath of any financial crisis. Sharing out losses generated by a financial crisis, followed by the inevitably weak recovery, always creates public rage.

Chart 7

Debt over GDP of mature economies

% of GDP

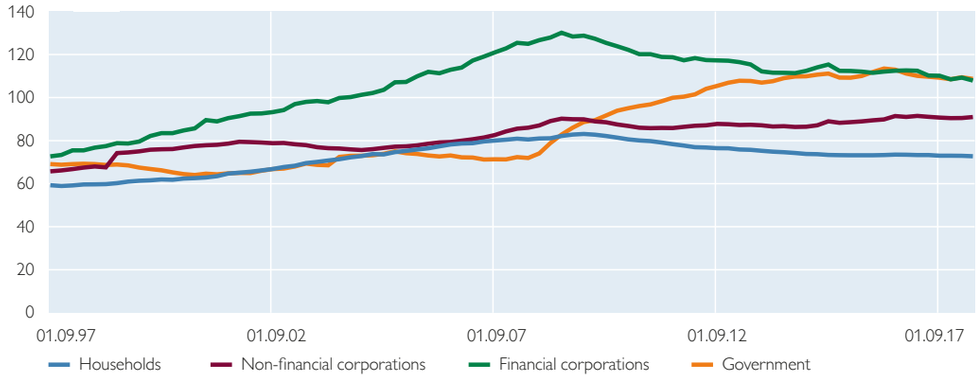


Source: Institute of International Finance.

Chart 8

Ratios of sectoral debt to GDP in mature economies

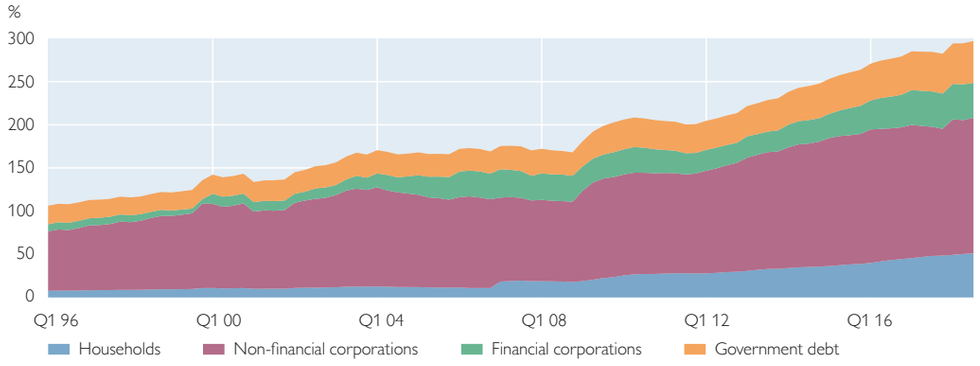
% of GDP



Source: Institute of International Finance.

Chart 9

China's indebtedness over GDP



Source: Institute of International Finance.

Where has this left us today? Not where we would like to be, is the answer, in three respects. First, while financial and household debt have fallen relative to incomes in mature economies, that is not true for debts of governments or non-financial corporates (charts 7 and 8).

Second, the transatlantic crisis triggered offsetting debt explosions elsewhere, notably in China (chart 9). That debt explosion was no accident: the surge in credit in China was needed to make higher investment offset the disappearance of the huge current account surplus, which had peaked at close to 10 % of gross domestic product prior to the global financial crisis. Third, crisis-hit economies are still far below pre-crisis trend output levels. Productivity growth is also low. Finally, the populist politics of left and right remain in full force. All this is in keeping with past experiences with big debt crises. They have always thrown long shadows into the future.

Understanding our strange world

So how did we end up in this strange world? Crucially, the world of falling real

interest rates on safe assets preceded the crisis. Larry Summers has described that phenomenon as "secular stagnation" that is, a world of structurally weak aggregate demand.[4]

A decisive moment was the Asian financial crisis, after which the world's most dynamic economies became net exporters of capital. But there are other significant factors: high gross savings rates in important emerging economies, above all, China; persistently weak productivity growth in high-income economies; ageing in many economies and so a declining demand for physical capital; and deindustrialisation in high-income economies. Also important have been rapid falls in the relative prices of capital goods and shifts in the distribution of income towards profits and the highly paid. The overall effect has been to shift the balance between potential income and desired spending, against the latter. The result has been the falling real interest rates we have experienced.

The financial crisis was itself the consequence of this environment.[5] Low (nominal and real) interest rates triggered rising property prices and an associated credit explosion, especially in the USA and peripheral Europe. This was not accidental: these credit bubbles were needed to drive demand in the early 2000s. They proved unsustainable, so bequeathing the post-crisis world we have lived in since 2008. But that post-crisis world has not ended. The persistently ultra-low interest rates we see today demonstrate that.

We can divide the last two decades into two periods. "Pre-crisis secular stagnation" was a world characterised by low and falling real interest rates and hugely destabilising credit and property-price-cum-investment bubbles. It was a world in which credit bubbles offset the underlying forces of secular stagnation.

"Post-crisis secular stagnation" has been a world of near-zero real interest rates, partial deleveraging, weak growth and pervasive populist politics, also assisted by the huge post-crisis Chinese stimulus. It is a world in which, at first, extreme fiscal and monetary policy kept demand going and then just extreme monetary policy. Hyper-aggressive monetary policy has been needed since the crisis because the credit channel no longer works very well. Central banks have had to rely on the less efficient asset-price channel instead. That in turn has driven them to policy extremes. No central bank actually wanted to run the monetary policies they have been following. They had no acceptable alternative. Deflationary debt-destruction is politically intolerable. They know that.

In sum, pre-crisis secular stagnation in the West looked like the Japan of the 1980s. Post-crisis secular stagnation in the West looks like Japan of the 1990s and 2000s. The developed world as a whole has, alas, followed the Japanese trajectory.

[4] *Larry Summers, 2018, The threat of secular stagnation has not gone away, Financial Times, 6 May, https://www.ft.com/content/aa76e2a8-4ef2-11e8-9471-a083af05aea7.*

[5] *This is a core argument of Martin Wolf, 2015, The Shifts and the Shocks: What We've Learned – and Have Still to Learn – from the Financial Crisis, London: Penguin.*

Where might the world economy go next?

William White, former chief economist of the Bank for International Settlements, presciently warned of financial risks before the 2007–09 financial crisis. Last year, he warned of another crisis, pointing to the continuing rise in non-financial sector debt, especially of governments in high-income countries and corporations in high-income and emerging economies.[6] Those in emerging countries are particularly vulnerable, because much of their borrowing is in foreign currencies. This causes currency mismatches in their balance sheets. Meanwhile, monetary policy fosters risk-taking, while regulation discourages it – a recipe for instability.

Consider first the risks of inflationary fire. Much of what is going on right now in the USA recalls the early 1970s: an amoral US president (then Richard Nixon) determined to achieve re-election, pressures the Federal Reserve chairman (then Arthur Burns) to deliver an economic boom. He also launched a trade war, via devaluation and protection. A decade of global disorder ensued. This sounds rather familiar, does it not? In the late 1960s, few expected the inflation of the 1970s. Similarly, a long period of stable and low inflation has calmed fears of an upsurge, even though unemployment rates have fallen to 50-year lows in the USA. Some suggest that the Phillips curve – the short-term relationship between unemployment and inflation – is dead, because low unemployment has not raised inflation. More likely, it is sleeping. Inflation expectations may now be anchored. But a strong surge of demand might still sweep that anchor away.

Such a rise in inflation could even be helpful. It would reduce debt overhangs, notably of public debt, as the inflation of the 1970s did. Moreover, central banks know what to do in response to a surge in inflation. Yet higher inflation would also lead to a rise in long-term nominal interest rates, which front-load the real burden of debt service. Short-term rates would ultimately jump, as they did in the early 1980s. Inflation- and term-risk premia would surely rise. High-flying stock markets could well collapse, as they did in the 1970s. Labour relations would inevitably become more strife-prone, as would politics. This disarray would hit unevenly, causing bouts of currency disorder. The loss of confidence in public institutions, notably central banks, would be severe. In the end, the likely stagflation would end in severe recession, as in the 1980s. None of this would be fun. It could even be politically disastrous.

Now turn to deflationary ice. This might begin with a sharp negative economic shock: a worsening trade war, a war in the Middle East or a crisis in private or public finance, possibly in the euro area, where the central bank is relatively constrained in its ability to respond effectively. The result could be a deep recession, even a lurch into deflation, so worsening the debt overhang. The big difficulty would be knowing how to respond given that interest rates are already so low. Conventional policy (lower short-term rates) and conventional unconventional policy (asset purchases) might well be insufficient.

A range of other possibilities exists: still more negative rates from the central bank; lending to banks at lower rates than the central bank pays on their deposits; purchase of a much wider range of assets, including foreign currencies; monetisation of fiscal deficits; and even "helicopter drops" of money. Much of this would be technically or politically

[6] *William White, 2018, Bad Financial Moon Rising, Project Syndicate, 3 October, https://www.project-syndicate.org/commentary/global-economy-weak-fundamentals-by-william-white-2018-10?barrier=accesspaylog.*

problematic. Some of it would require close co-operation with the government. Meanwhile, if governments acted too slowly (or not at all) a depression might ensue, as in the 1930s, via mass bankruptcy and debt deflation. Many fools recommended just those policies in 2008.

Yet none of these disasters is inevitable. They would be chosen catastrophes. As Mr. Dalio argues, a golden mean is also conceivable. Fiscal and monetary policy would then co-operate to generate non-inflationary growth. Changes in fiscal incentives could be used to discourage debt and encourage equity. Government fiscal policy could shift income towards spenders, reducing reliance on debt-fuelled asset bubbles for sustaining demand. More debt could be moved out of the balance sheets of financial intermediaries directly on to the balance sheets of households.

Even if real interest rates rose, perhaps because productivity growth strengthened durably or income shifted towards spenders, the impact of robust non-inflationary growth on the debt burden would almost certainly outweigh a move to somewhat higher interest rates. The world would, above all, be moving out of "secular stagnation" into something less bad. That shift might be tricky to manage But it would at least be to a much better world.

It is not necessary to repeat the mistakes of either the 1930s or the 1970s. But we have made enough mistakes already and are, collectively, making enough more mistakes right now to risk such outcomes. A breakdown of the global economic and political order now seems conceivable. The impact on our debt-encumbered world economy and increasingly fraught global politics is impossible to calculate. But it could be horrendous. Above all, the nationalistic strongmen now in power – in the USA, above all – would be unable to co-operate if things went seriously wrong, as they might, perhaps even soon. A fragile world economy needs sober and co-operative policymaking. But that seems highly unlikely, in another crisis. That is, arguably, the single most worrying feature of our world.

Session 3
Monetary and fiscal stability

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Monetary and fiscal stability – a post-crisis view on a complex relationship

It is with good reason that a conference dealing with the first and the next 20 years of EMU devotes a session on the relationship between monetary and fiscal stability. To begin with, it is common knowledge that in a heterogeneous monetary union like the euro area, fiscal policy is needed to cushion asymmetric economic shocks in the various euro area countries which cannot be dealt with by the single monetary policy. This is to say, fiscal policy should be designed in a way that countercyclical fiscal policy at the national level – at least through the working of automatic stabilizers, if appropriate also through active discretionary measures – is feasible, without endangering fiscal sustainability. The experience of the first 20 years of EMU has shown that this fundamental aim has not been achieved: fiscal policy was at various stages procyclical during economic upturns, implying that the opportunity to build buffers for downturns was not (fully) used. In turn, fiscal policy had to be restrictive during downturns and in several countries even during the crisis because of serious threats of fiscal crises and even state bankruptcies. So, it seems fair to say that fiscal policy has not consistently supported macroeconomic and financial stability during the first two decades of EMU. Did this come as a surprise? Yes and no.

Yes, in the sense that the EU Treaty legislator would not have knowingly and on purpose have designed a euro area policy set up that could be expected not to work. And in principle, the framework could have worked (and could still) if only all players consistently adhered to the agreed rules. And indeed, during the first 10 years of EMU, while not perfect, EMU seemed to function quite smoothly.

No, in the sense that already during the negotiations for the Maastricht Treaty, many well-renowned economists and policy makers had warned to set up a currency union without a political union. Given the lack of readiness for political union by most Member States (even during the Maastricht negotiations in the late 1980s/early 1990s, prior to the EU's „Scandinavian" and „Eastern" enlargement rounds), the compromise that emerged was a framework that sought to provide fiscal stability and counter-cyclical room for maneuver through preventive mechanisms that should ensure deficit and debt levels in normal times.

Economic history is full of examples where fiscal instability was the source of financial and currency crises. Thus, the concern that fiscal latitude might endanger the euro's price stability was at the root of various provisions in the EU Treaty aiming to ensure that the fiscal policies of individual Member States should be „sound". On the one hand, various provisions (prohibition of monetary financing, prohibition of privileged access, inclusion of government bond interest risk premium in the converge criteria for EMU participation) aimed to strengthen market discipline. On the other hand, the Excessive Deficit Procedure, which was enhanced by various vintages of the Stability and Growth Pact (SGP), aiming at creating the leeway for countercyclical policies, if need be, and at preventing fiscal crises by setting rules that constrain national governments' fiscal policies.

The first 20 years of EMU have shown that market forces alone, while in principle seemingly useful, in practice work late and then very abruptly, thus missing to provide a reliable disciplinary force on governments' policies during

calm times, while exacerbating fiscal and financial fragility in crises situations. Hence, fiscal rules are an indispensable complement to market discipline. At the same time, the track record so far has also shown the limits to fiscal rules. EU governments and even EU institutions at times seem not to fully identify with them. The preventive arm of the SGP failed on various occasions to prevent breaching of the quantitative deficit and debt levels. The mechanisms to ensure corrective action at times create tensions between countries threatened with sanctions and the EU Commission and other Member States. In fact, recent experience may suggest that in the event of non-compliance with the fiscal rules, it may in turn be rising risk premiums (and thus market mechanisms) that ultimately prompt governments to take corrective action. So, it might be a combination of market forces and fiscal rules that work best to avoid gross fiscal mistakes.

At the same time, the experience since the global financial crisis, the Great Recession and the European Debt Crisis has also shown that even the combination of market forces and fiscal rules may not prevent fiscal crises – ultimately even threatening the euro itself – if only the shocks affecting countries' banking and economic systems are sufficiently destructive. Besides some other refinements in fiscal rules, the main response taken by EU authorities has been to create new mechanisms for mutual assistance between the euro area Member States. The European Stability Mechanisms (ESM) has over time developed into the main instrument to provide such assistance, and is currently in the process of developing its portfolio of roles in this respect (see Chapters 39 and 40 in ESM, 2019). Various measures to install „shock absorption mechanisms" and „fiscal stabilisation mechnanisms" among euro area countries are currently being discussed (see Katterl and Köhler-Töglhofer, 2018; Prammer and Reiss, 2018). The idea to create Eurobonds, European Safe Bonds (ESBies) or Sovereign Bond Backed Securities (SBBS), which are fully or partly issued jointly by euro area governments, and numerous variations therof, have been debated for several years. Finally, there is also the idea to create a „central European fiscal capacity", in other words to pool a much larger fraction than the current EU budget's 1% of Member States' GDP in a central euro area budget, with a „European Minister of Finance" being in charge (Juncker et al., 2015).

All these proposals have so far found their limits in the tradeoff between effectiveness and relevance in terms of orders of magnitude, on the one hand, and incentives for moral hazard and lack of willingness for (additional) fiscal centralization and fiscal transfers (particularly permanent ones) between euro area Member States, on the other hand. It is not clear at this point, how far such initiatives for "euro area fiscal deepening" will lead, and within which time horizon.

Against this background, for practical purposes, attention might usefully focus on how fiscal policy, within the existing frameworks, can contribute to

macroeconomic and monetary stability, while supporting potential growth as best as possible. This would imply that the SGP's prescription to safeguard balanced structural fiscal balances should be taken seriously by all Member States. This would create fiscal space for downturns. Procyclical policies during booms and pre-election periods would be avoided. Debt to GDP ratios would gradually be wound down in countries that exceed the Maaastricht rules substantially, thus preserving market confidence. Asset price booms in those Member States in which monetary conditions resulting from the single monetary policy may be (too) easy would be contained by macroprudential policies, which may also include some fiscal measures. The structure of fiscal revenues and expenditures would be adjusted to support potential growth and environmental sustainability, while not losing sight of social acceptance. Fair compensatory mechanisms to cushion costs for reform losers would help to extend policy reform space.

The recent years have seen a marked improvement in euro area countries' fiscal positions, which was partly due to sizable fiscal savings, partly facilitated by an extended and broad-based economic recovery, and not least strongly aided by ultra-low long-term interest rates due to the Eurosystem's unconventional monetary policies. Nevertheless, debt to GDP levels in most euro area countries have not declined noticeably. This raises several questions and concerns with regard to future fiscal sustainability:

- First, how should Member States' fiscal policies respond to an economic cooling off, if it turned into a recession? How much fiscal space do various euro area countries actually have before concerns about fiscal sustainability resurface?
- Should the use of fiscal space be coordinated within the euro area, implying that countries with balanced budgets or surpluses should be „encouraged" to run deficits, while countries with a fragile fiscal position should refrain from stretching their fiscal space even further?
- How should the above questions be assessed given that euro area monetary policy already is operating at or close to the effective lower bound for interest rates? Particularly, as in such a situation fiscal policy is in principle more effective (as long as it is considered sustainable by markets).
- How to assess the interplay between (unconventional) monetary policy (in particular sovereign bond purchases) and fiscal space? Is it a mere side effect that central banks' sovereign bond purchases, besides their aim to loosen financing conditions for the economy at large, ease governments' budget constraints through lowering debt servicing costs and by absorbing a substantial fraction of new bond issuance and outstanding stocks? Or have we slipped into a regime where, faced with the effective lower bound on interest rates, monetary policy operates through extending governments' fiscal space? If this was the case, what could the long-run consequences for macroeconomic and price stability be?
- Finally, once inflation moved back to target, could a normalization of monetary policies (hike in official interest rates, melting down of central banks' sovereign debt holdings) threaten fiscal sustainability? In other words: how to prepare public finances for monetary policy normalization?

This introduction only touched upon some issues, with many more being neglected. The two presentations in this session pick out two themes. First, Ludger Schuknecht addresses one aspect

of the complex fiscal-financial stability nexus, which has been highlighted by the financial and sovereign debt crisis, namely how to mitigate fiscal risks from the financial sector. The second contribution by Gottfried Haber explores a topic briefly mentioned above, namely potential tensions between fiscal discipline and economic stabilization, an issue which has been with the EU's fiscal stability framework from the start and will remain relevant also in the years to come.

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Strengthened EU fiscal framework: fiscal discipline versus economic stabilization[1]

After a peak in 2014, the continuous reduction of general government's gross debt to GDP ratios within the euro area and the EU-28 and the improvement of the structural budget balance during the last decade might be linked – among others – to the evolvement and strengthening of EU's fiscal framework in the aftermath of the crisis. However, the legally based requirement of fiscal discipline in the EU might have reduced macroeconomic stabilization facilities of general governments. Fiscal sustainability on the one hand and fiscal space, both on the national levels and the EU level, on the other hand have led to a discussion about the design of fiscal rules and the pros and cons of a (central) fiscal capacity.

Review of the strengthened fiscal framework in the European Union

The deficit bias – leading to a potentially unsustainable increase of public debt – is supposed to be a trigger for a strengthened fiscal framework. The deficit bias is based on disincentives particularly caused by moral hazard or common pool problems that will lead to a mismatch of self-interest versus common welfare and/or short versus long-term perspectives. For example, policymakers tend to focus on discretionary measures in the short term, paying insufficient attention to their budgetary impact in the medium and the long term. Possible ways forward to counteract excessive discretionary behavior of policymakers are to raise reputational and electoral costs of unsound fiscal policies, to increase transparency and quality of the budgetary process or to implement a comprehensive surveillance mechanism (see e.g. Calmfors and Wren-Lewis, 2011). Two main features of an effective surveillance mechanism are numerical fiscal rules and Independent Fiscal Institutions (IFIs) to monitor the compliance with fiscal rules.

The enforcement of these two elements has played an important role during the economic governance process of the EU[2], that has been stepped up due to the crisis since 2011 (chart 1):

- The application of numerical fiscal rules has been expanded in the context of the second amendment of the Stability and Growth Pact[3] in 2011 (*Sixpack*) when the expenditure benchmark and the debt reduction benchmark were introduced. In addition, fiscal rules have been further developed in terms of concretion and flexibility (e.g. in 2015 the implementation of the "matrix", representing the scope of different required annual fiscal adjustments of the structural budget balance that depend on the overall fiscal position and the economic situation).
- IFIs became a compulsory part of the (national) fiscal framework based on the Fiscal Compact (2012) and the *Twopack* (2013) and were complemented with the European Fiscal Board (EFB) that was established in 2016.

IFIs are involved in the European Semester – providing or endorsing macro and/or fiscal forecasts, assessing compliance with (national and EU) fiscal

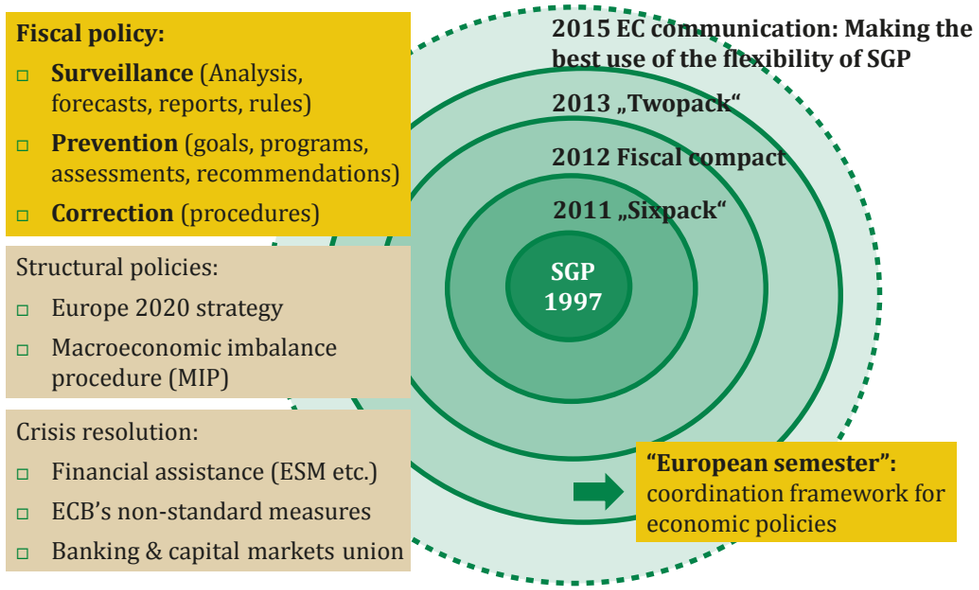
[1] *Co-author: Bernhard Grossmann, Head of Office, Austrian Fiscal Advisory Council.*

[2] *See https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction_en.*

[3] *The first amendment of the SGP included the introduction of a country-specific midterm budgetary objective (MTO) in structural terms as of 2005.*

Chart 1

Economic governance process of the EU in the aftermath of the crisis



Source: Authors' illustration.

rules and adopting recommendations that refer to national fiscal policy. However, IFIs represent "competence centers" related to national fiscal policy and serve as link between Member States and the EU as well.

IFIs' and fiscal rules' impact on increased fiscal discipline: some evidence?

In general, the fiscal positions have significantly improved in the Member States of the EU and the euro area (Euro-19) in the recent past: general government's gross debt decreased from its peak of 88.3% respectively 94.4% of GDP (2014) to 81.5% respectively 87.1% of GDP (2018). Since 2010, the structural budget deficit has been decreasing from 4.2% of GDP (Euro-19) and from 4.5% of GDP (EU-28) to 0.7% respectively 0.9% of GDP in the year 2018. Among other factors like market pressure or the policy makers' increased awareness of financial vulnerability and contagion effects, the evolvement and strengthening of EU's fiscal framework in the aftermath of the crisis has been crucial for that development. From an IFI's point of view, the impact of fiscal rules and of established or underpinned independent monitoring institutions on fiscal discipline is a matter of particular interest. A brief survey of literature indicates strong evidence of a positive relationship referring to IFIs and of some evidence in the case of numerical fiscal rules:

While Beetsma and Debrun (2016) identified a more general potential impact of IFIs to discourage excessive deficits as they can increase the likelihood of electing competent governments, some studies investigated the direct link between the existence of an IFI and the fiscal performance of EU Member States. However, the impact of an IFI depends on certain conditions:[4] Debrun and Kinda (2014) elaborated that IFIs can promote stronger fiscal discipline if they are well-designed. Thus, certain characteristics of IFIs are associated with stronger fiscal performance but the mere existence of a council is not. An operational independence from politics, the provision or public assessment of budgetary forecasts, a strong presence in the public debate, and an explicit role in monitoring fiscal policy rules are key for effective fiscal councils. Coletta, Graziano and Infantino (2015) found empirical support for the hypothesis of a positive impact of IFIs on fiscal performance, in cases of a strong legal status that ensures institutional and financial independence and access to inside information. But it is worth to mention that such empirical results might be subject to reverse causality issues and affected by omitted determinants (e. g. see Beetsma et al., 2018). These findings – concerning the mandate and design of an IFI – are very in line with the Austrian Fiscal Advisory Council's experience. In addition, the Austrian Fiscal Advisory Council suggests high transparency and quality standards for IFIs in order to support its credibility and effectiveness.

Effective fiscal rules help to reduce the deficit bias and – with respect to the government's macroeconomic stabilization function – usually should ensure tax smoothing as defined by Barro and counter-cyclical fiscal policy as defined by Keynes (Portes and Wren-Lewis, 2014). Against this backdrop effectiveness corresponds to the reliability of fiscal rules:

- to keep or reduce debt-to-GDP ratio at or to a sustainable level;
- to generate budgetary room of maneuver to absorb shocks.

Thus, the design of fiscal rules is crucial to ensure that rules work properly and to avoid sub-optimal outcomes (i.e. to hamper automatic stabilizers' work). At this stage, it is worth to mention the existing trade-off between effectiveness to reduce the deficit bias and simplicity of rules: the more inherent flexibility of a fiscal rule – as to achieve optimal outcomes – the more scope is left for deficit bias. Local ownership, political will and (complementary) monitoring by IFIs are further criteria – separate from the design[5] – to support the effectiveness of fiscal rules.

From an empirical point of view, we have recognized an increasing number of numerical fiscal rules in force in the EU Member States since 1990 with an obviously higher dynamic in the period of austerity to (re)gain sound public finances since 2010 . Based on the European Commission's Fiscal rules database (2019), the number of national fiscal rules almost doubled from around

[4] *General principles for IFIs to be effective (e. g. local ownership, broad-based political support, technical expertise, consistent communication etc.) were defined by the OECD (2017).*

[5] *See Kopits and Symanski (1998) for criteria of good practice. Following the fiscal rules should be – among others – well defined, transparent, simple, flexible and enforceable.*

Gottfried Haber

60 (2010) to around 110 (2017) in the EU-28. During that time period, the number of EU Member States under the Excessive Deficit Procedure (EDP) according to the SGP decreased continuously from 24 EU-Member States to less than 10.[6] This negative correlation might be a simple indication for effectiveness of fiscal rules but subject to causality issues as well. However, more sophisticated empirical analyses suggest some evidence: In general, unconstrained discretion might lead to neglect public sector solvency (Debrun et al., 2018). Heinemann et al. (2017) used meta-regression analysis to show a constraining effect of rules on fiscal aggregates, but their results are limited by the endogeneity problem and publication bias. Bergman et al. (2016) worked out that rules are effective in reducing structural primary deficits, but their positive impact on the government's efficiency is even larger. Conversely, Caselli and Reynaud (2019) could not find any statistically significant impact of rules on fiscal balance on average, once endogeneity was adequately controlled for.

To sum up at this stage, there is no clear-cut evidence of an optimal rule and its effectiveness. This result – usually based on the relationship between the existence of rules and sound public finances – should be seen with respect to different causes of non-compliance. Hence, unsound fiscal developments might arise even in the case of existing numerical rules. For example, non-compliance could be caused by an extraordinary bad situation of a comprehensive exogenous crisis, but could be an issue of weak enforcement of rules as well (based on the SGP there have not been any financial sanctions yet, except in the context of statistical reporting issues). The latter indeed matters from the IMF's point of view: high debt levels and the record of weak compliance and lax enforcement argue for a fundamental reform of the EU fiscal rules providing simpler and more transparent rules and a better aligning of political incentives with rule compliance (Gaspar and Amaglobeli, 2019).

Space for macroeconomic stabilization and shock absorption instruments

A resilient economic system is characterized by low vulnerability to adverse shocks and a high degree of flexibility when absorbing shocks to avoid high adjustment costs. Sound financial and fiscal policies, as well as structural policies to improve the growth potential in the long run, and an efficient and well-functioning national legal system (contractual certainty and safeguarding of property rights) are crucial for Member States to be less vulnerable to shocks (Katterl and Köhler-Töglhofer, 2018). Thus, a sound policy mix ensures both a wide-ranging regulatory system that directly affects the degree of vulnerability on the one hand and the establishment of fiscal buffers to absorb (at least to some extend) shocks on the other hand. To be more specific, in a monetary union the impact of country-specific shocks can be smoothed through the following different channels (Alcidi and Thirion, 2017):

1. counter-cyclical national fiscal policy
2. labour mobility[7]
3. market mechanisms (risk-sharing through access to international capital markets and inter-temporal consumption smoothing through credit markets), as well
4. a central/federal fiscal capacity or insurance mechanism

Structural budget balance rules usually help to ease the trade-off between promoting fiscal discipline and permitting macroeconomic stabilization. This type of numerical fiscal rules lets automatic stabilizers work and ensures sustainable debt levels as well. Thus, it is no surprise that such kind of rules-based fiscal policy reflects the core element of the European SGP. In comparison, expenditure rules are likely to reduce excessive deficits and hardly hamper automatic stabilizers that are predominantly existing on the revenue side. Increased attention has been paid to these expenditure rules in the recent past (e. g. Bruegel, IMF, OECD) as they might moderate expenditure pressure stemming from different interest groups by pre-defined expenditure limits. However, OECD's estimations show that expenditure rules are not sufficient to significantly reduce the deficit bias (Fall and Fournier, 2015). Furthermore, the objective to reduce the volatility of output can be more easily achieved by rules on balanced budgets, rather than on expenditures, revenues or debt (Sacchi and Salotti, 2015).

Macroeconomic stabilization generally needs counter-cyclical fiscal policy but the necessary achievement of mid-term budgetary objectives (MTO) based on the SGP might cause pro-cyclicity. Monitoring with the aid of fiscal stance analysis[8] can help to evaluate the relevance of this issue. The European Fiscal Board (EFB, 2019) concluded in its recent assessment of the fiscal stance for the

Table 1

Fiscal rules with regard to fiscal discipline and room for macroeconomic stabilization

Objective: long-term sustainability of public finances			
Operative rules	Strengthening of fiscal discipline	Support to macro-economic stabilization	Risks and implications
Nominal budget balance rule	• Boosts fiscal discipline	• No flexibility for economic stabilization • Tends to procyclical fiscal policy	• Consolidation might worsen quality of public finances
Structural budget balance rule	• Boosts fiscal discipline • Defines room for discretion	• Let automatic stabilizers work	• Uncertainty of potential output/output gap measures impede planning and monitoring
Expenditure rule	• Boosts fiscal discipline • Possible integretion into budgetary process • Directly influenceable	• Limited development of automatic stabilizers on the expenditure side	• Does not ensure balanced budget • Possible evasions
Debt rule	• Boosts fiscal discipline • Usually no operative rule but anchor	• Tends to procyclical fiscal policy	• Often distorted by special items • Possible evasions

Source: Authors' compilation.

[6] *In June 2019 – taking the council's decision on the abrogation of Spain's EDP into account – all the excessive deficit procedures dating from the crisis were closed.*

[7] *Labour mobility will not be considered in more detail: In theory it is an important channel for adapting to asymmetric shocks, in practice, it has had only a limited effect and this is unlikely to change in the future (Alcidi and Thirion, 2017).*

[8] *As applied by the EFB, a measure of the direction and extent of discretionary fiscal policy defined as the annual change in the structural primary budget balance in the context of the economic situation (represented by the output gap).*

euro area that "in an economy operating around potential and in view of economic and geopolitical uncertainty, a neutral fiscal stance is appropriate for the euro area as a whole in 2020." This can be achieved with differentiated fiscal stances at the country level to respect the differentiated fiscal requirements of the SGP for Member States at the same time.[9] In contrast, that flexible approach was no option in the years 2011 to 2014. Due to necessary corrective measures based on the ongoing EDPs after the crisis on the one hand and the still bad economic conditions (negative output gaps) on the other hand, the fiscal stance within the euro area was pro-cyclical and restrictive. However, feasible pro-cyclicity might be no single matter of fiscal rules with regard to OECD countries (excluding EU Member States) that are supposed to be subject to less binding rules, while our calculations show a high degree of pro-cyclicity of fiscal policies as well.

To conclude at this stage, fiscal rules like structural budget balance rules are designed to ensure sustainable debt levels while they allow for automatic stabilization and create room for some (additional) discretionary fiscal policy measures during downturns. Thus, fiscal rules determine the dimension and possible use of national fiscal shock absorbers in terms of the general government's budget. "Fiscal space" literature (e. g. ECB, 2017; IMF, 2018) deals with this topic and tries to define the existing room of maneuver without violating (rule based) budget constraints. Referring to the ECB (2017) definition, fiscal space represents the scope for budgetary maneuver while preserving overall fiscal soundness.[10] However, there is no commonly agreed approach to estimate fiscal space. Based on recent policy discussions, the ECB identified three approaches, depending on different sources of constraints on fiscal policy. Following these considerations, constraints on fiscal policy might arise from:

- fiscal frameworks, particularly fiscal rules,
- a comprehensive debt sustainability analysis (DSA), or
- debt limits.

A simple measure of fiscal space, e. g. derived from the SGP (fiscal framework approach) can be the distance of the structural balance to the MTO. This distance can also take flexibility instruments – depending on cyclical and other „relevant" factors – into account. DSA reflects debt dynamic projections and the identification of stable debt levels in a most likely (benchmark) scenario and in the presence of various adverse shocks. Each scenario corresponds to an underlying primary balance. The distance between realized primary balances and those that ensure sustainable debt levels defines – very similar to the first approach – the fiscal space. The debt limit approach estimates fiscal space as a distance of the current debt-to-GDP ratio to a debt level beyond, bearing the risk that sovereigns will not fulfill their debt obligations.

Based on the experience so far, fiscal space in the euro area is very heterogeneously distributed among EU Member States and for this reason very limited to overcome the crisisat the national levels. Against this backdrop, national fiscal or regulatory buffers (automatic stabilizers, institutional set up, market flexibilities etc.) have been supplemented by macroeconomic stabilization and shock absorption instruments in the EU and the euro area to overcome the financial crisis in 2008 and 2009 and to be prepared for exceptionally strong economic and financial crises in the future as well. Some important fiscal policy related instruments[11] have already been implemented, e. g. the macroeconomic imbalance procedure (MIP) that was part of the "Sixpack" and was introduced in the year 2011, and the European Stability Mechanism (ESM) was established as a lender of last resort (and as a successor to the European Financial Stability Facility – EFSF) in October 2012. In addition, the EU's budget can contribute to macroeconomic stabilization via its redistribution and convergence efforts among Member States and direct provision of public goods.

These systemic and institutional instruments have been accompanied by strong non-fiscal policy measures: the development of a European financial union (banking union, capital markets union, macroprudential supervision) and monetary policy measures. Although the comprehensive financial union has not been completed yet, the ECB has already recognized an increased shock-absorption capacity in the euro area related to the higher financial and credit market integration (i.e. cross-border loans and holdings of financial assets) in the period 1999 to 2015, apart from other factors like the activation of the EFSF or ESM (Cimadomo et al., 2018). This is a field of intensified discussion and research, usually coming up with the conclusion that more risk sharing is needed for a resilient and sustainable monetary union (e. g. OECD, 2018; Ioannou and Schäfer, 2017) and that the completion of the banking union, capital markets union and a fiscal capacity would notably contribute to this. In a currency union, risk-sharing takes place mainly through the savings (credit) and capital market channels as well as through fiscal transfers between Member States. While international credit markets smooth the impact of shocks on consumption through the continued credit supply, international capital markets are prone to smooth the impact of an asymmetric shock on income in a member state. Public transfers between Member States or stemming from a central budget could ease both shocks on consumption and/or income. The recent literature gives no indication on how those channels supplement or complement each other. However, to find the right balance between risk reduction and risk sharing, and public and private risk sharing, remains a challenge. Especially, increased risk sharing might lead to moral hazard effects as well.

In addition, it is worth to mention that monetary policy, without the conventional and unconventional measures during and after the financial crisis in general (e. g. Targeted Longer-Term Refinancing Operations – TLTRO; Asset Purchase Program – APP), significantly contributed to gain fiscal space of euro

[9] *Nevertheless, the EFB expects a pro-cyclical expansionary fiscal stance in the years 2019 and 2020 taking into account the fiscal measures that Member States have already adopted or sufficiently documented.*

[10] *The IMF (2018) defines fiscal space as room for undertaking discretionary fiscal policy (fiscal stimulus or slower pace of consolidation) relative to existing plans without endangering market access and debt sustainability.*

[11] *For more detailed information see e. g. Katterl and Köhler-Töglhofer, 2018.*

Table 2

Interest savings of the Austrian general government – comparison of different estimations

	Bundesbank	FISK	OeNB	OeBFA
Interest savings	**EUR 35 billion**	**EUR 9.3 billion**	**EUR 3.5 billion**	**EUR 17 billion**
Considered entities	General government (ESA) (no correction for reclassifications)	Federal government excl. off-budgetary entities	General government (ESA) (corrected for reclassifications)	Federal government excl. off-budgetary entities
Considered time horizon	2008–2016	2009–2016	2012–2016	2009–2016
Counter-factual	Implicit interest of 2007 (4.9%)	Implicit interest of 2008 (4.31%)	Re-financing based on forecast assumptions (06/2012)	Re-financing rel. to average interests 1999–2008 (4.17%)

Source: Bundesbank, Office of the Austrian Fiscal Advisory Council (FISK), Oesterreichische Nationalbank (OeNB), Austrian Treasury (OeBFA).

area Member States via lower interest payments. In the case, of Austria interest savings achieved significant volumes ranging from EUR 3.5 to EUR 35 billion, depending on the different entities and time horizons taken into consideration (table 2). However, those savings in the past go along with increasing fiscal risk in the future due to expected interest changes. Indirect monetary financing of public debt has also to be taken into account as a possible issue, which is under discussion.

The wide range of national and international instruments for macroeconomic stabilization and shock absorption in the EU and euro area are regularly subject to reforms and further developments. For instance, Gros (2014) argues: "What the eurozone really needs is not a system that offsets all shocks by some small fraction, but a system that protects against shocks that are rare, but potentially catastrophic." Thus, minor cyclical shocks that do not impair the functioning of financial markets can be dealt with via borrowing at the national level while full coverage by a common shock absorber. This could be sort of a "reinsurance" for national unemployment insurance systems and might be established above a certain threshold. The idea of an additional fiscal capacity to absorb asymmetric shocks is not new and gained momentum at the EU level in the recent past, for instance outlined in the 2017 European Commission's Reflection Paper, in the OECD's Economic Surveys for the euro area (2018) or in the European Fiscal Board's first Annual Report (EFB, 2017). While the European Commission promotes a European Investment Stabilization Function (EC, 2019), others support options concerning the creation of a euro area budget with some stabilization properties or focus on unemployment benefits (see e. g. Andritzky and Rocholl, 2018). There is no single answer, whether and how to establish an additional fiscal capacity in order to strengthen the resilience of the euro area against asymmetric shocks, nor is there consensus on the need for such a fiscal capacity. In any case, pros and cons (i. e. macroeconomic stabilization versus moral hazard issues) must be considered.

Concluding remarks

Fiscal measures do matter to ensure economic smoothing. While sound public finances define the scope for (discretionary) fiscal stimulus in general, automatic stabilizers hold an important macroeconomic stabilization function. As automatic stabilizers should not be restricted by a fiscal (rules) framework, the design of fiscal rules is crucial. Basically, structural budget balance rules could ensure all of the desirable properties, such as fiscal discipline, a pre-defined room for discretion and unlimited functioning of automatic stabilizers. Referring to the experience of implementing the SGP in the past, it seems to be preferable in terms of credibility to explore the existing flexibility of rules rather than to change rules periodically in case of any adjustment necessities.

From a longer term perspective, fiscal policy should be framed by fiscal rules, complemented by a well-designed institutional framework, where fiscal councils play a key role to safeguard sustainable public finances. In such a framework, an additional central fiscal capacity might counteract asymmetric shocks without violating fiscal rules. However, inherent moral hazard issues must be addressed. Hence, it is not an easy task to find the right balance between risk reduction and risk sharing, and public and private risk sharing.

Transparency of national budgets, simple and strict rules but still allowing for necessary stabilization measures as well as strong and independent monetary institutions and fiscal councils play a key role in ensuring sustainability of public finances.

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Mitigating fiscal risks from the financial sector

The debate on future risks for public finances so far mainly focusses on budgetary risks from population aging. In many advanced countries, these risks are in fact already materialising in rising social spending ratios, deficits and debt. There is, however, another very important fiscal risk dimension. This emanates from the financial sector. It has been present in developing and emerging economies for decades. However, it has also become visible and relevant in advanced countries with the global financial crisis. During the crisis, public deficits and debt ballooned as banks needed bailouts and real economies declined.

However, there has been no systematic analysis through which channels financial developments affect public finances and which risks could materialise in the future. A first risk map and exploration of the transmission channels was developed in Schuknecht (2019). This policy note summarises the channels and elaborates on the policy implications.

1 Budgetary effects of financing conditions and asset prices

There are five channels that link the fiscal and financial sphere:

1. Direct effects on budgets from higher financing costs and changes in asset prices.
2. Indirect effects via the real economy, through automatic stabilisers, guarantees and growth effects.
3. Fiscal obligations from bank and non-bank financial sector difficulties.
4. Risks with central banks, and
5. International obligations either via international credit exposure or via international bailout programs.

As regards the first channel, there is an important risk from potentially higher costs for the financing needs of government when interest rates change. Governments with higher debt and financing needs may face a stronger reaction of financing costs as they may face both higher rates and higher risks spreads. This is particularly the case when the risk environment changes. The risk premium relative to government deficits and debt had increased by the factor of 4–8 in the context of the global financial crisis in comparison to earlier years (Schuknecht, von Hagen and Wolsiwjk, 2011). Even sudden stops occurred in countries like Greece, Ireland or Portugal.

The sensitivity of public finances to changes in financing costs is palpable. Seven advanced country governments had to finance more than 10% of GDP in 2018. The figure exceeded 20% in Italy and United States and even 40% of GDP in Japan (table 1). In the case the United States or Italy, for example, a 1% higher average interest rate would have implied almost ¼% of GDP higher interest payments just in the first year. Over time, the refinancing effect would compound.

Moreover, fiscal balances in advanced countries in 2017/18 were significantly worse in most G7 countries than 10 years earlier (table 2). The average debt ratio had increased from 80% to almost

Table 1

Government financing needs, selected advanced economies in 2018

	Maturing debt	Deficit	Total financing need
	% of GDP		
Euro area			
Belgium	17.0	1.3	18.3
France	10.4	2.4	12.8
Germany	5.0	–1.5	3.5
Italy	20.6	1.6	22.2
Portugal	12.7	1.0	13.7
Spain	15.9	2.5	18.4
Other advanced economies			
Japan	37.2	3.4	40.6
USA	18.7	5.3	24.0

Source: IMF Fiscal Monitor Oct. 2018.

Table 2

Fiscal buffers: General government deficit and debt

	2007		2017			
	Deficit	Debt	Deficit	Debt	Deficit	Debt
	% of GDP				*Change (pp) 2017–2007*	
USA	–2.9	64.6	–4.6	107.6	–1.7	43
Japan	–3.2	175.4	–4.2	236.4	–1.0	61
Canada	1.8	66.8	–1.0	89.8	–2.8	23
United Kingdom	–2.6	41.9	–2.3	86.9	0.3	45
Germany	0.2	63.7	1.1	63.7	0.9	0
France	–2.5	64.4	–2.6	97.4	–0.1	33
Italy	–1.5	99.8	–1.9	131.8	–0.4	32
G7	–2.2	80.6	–3.4	118.6	–1.2	38

Source: Ameco.

120% of GDP in 2017. The average deficit was above 3% of GDP in 2017, also higher than in 2007 before the global financial crisis. Most G7 countries had debt ratios near the level that Italy posted in 2007. Hence, the vulnerability of governments to a worsening financial environment has increased.

Another noteworthy channel for financial developments affecting fiscal balances is via asset prices. When asset prices (notably house and equity prices) boom, governments yield extra revenue from transaction taxes, capital gains and wealth effects on consumption. These revenue windfalls tend to reverse when boom turns to bust (Eschenbach and Schuknecht, 2004). After 2007, declines in revenue ratios in the countries most affected by the global financial crisis were between 1% of GDP for the UK and 6% of GDP for Spain. By contrast, countries that did not face a housing bust in the crisis, like Germany, Italy or France, did not report any significant decline in the revenue ratio (Schuknecht, 2019).

What are the policy lessons? First, it is important to have sufficient fiscal buffers so that higher financing costs do not constitute major fiscal risks and sudden stops do not reoccur. Second, debt managers should seek long term financing for public debt (which has to some extend happened over the past decade). Third, tax systems should be made less sensitive to asset prices and, perhaps more importantly, not contain biases that are conducive to debt financing and asset price boom bust cycles.

2 Fiscal risks via the real economy

Fiscal balances are sensitive to real economy developments via so-called automatic stabilisers. As revenue fluctuate broadly with real economic activity and public expenditure remain unchanged, the budget deficit falls and widens with economic upswings and downturns. In fact, budgetary sensitivities to changes in economic growth are quite significant and amount to almost ½% of GDP for each percent of higher or lower growth. While this implies a large stabilisation effect of budgets without any active intervention of the state, it can also mean a significant deterioration in budget balances over an economic downturn. A major recession, like in 2009, with growth of say 5% below trend worsens the deficit by 2 or 2 ½% just via automatic stabilisers.

Financial factors can be a major driver of economic downturns. In the global financial crisis, the growth decline was much larger than tightening financing conditions would have suggested. This is because economic confidence collapsed. However, we do not understand well when we "switch" from "regular" to non-linear relations between finance and the real economy.

Financial effects on the real economy and the availability of finance can also affect public budgets through the calling of government guarantees. For example, public-private partnership contracts may contain public support provisions. Or governments may have to step in when providers go bankrupt. Surprisingly, there are no studies on such fiscal risks that materialised in the past and data on the exposure to such risks in the future is patchy.

Finally, financial developments affect the allocation of capital which, in turn, can affect potential growth and, thereby, public finances. Borio, Kharroubi, Upper and Zampolli (2015) argued that overinvestment in the real estate and financial sector in the boom, and underinvestment in human capital (as young people started working in construction instead of studying) resulted in less human capital. When the crisis hit, the misallocated capital had to be written off. This resulted in an overly optimistic assessment of the economic and fiscal situation in boom times and less potential growth thereafter (Borio, Disyatat and Juselius, 2013).

Policy implications from these transmission channels are complex. First, there is a potential trade-off between the automatic stabilisation role of government and the risks from cyclical fluctuations for the budget. This is a tough choice: more progressive taxes and counter-cyclical spending policies would enhance economic stability while reducing that of the budget. Second, balanced budget rules may result in more pro-cyclical behaviour unless countries have accumulated sufficient buffers in good times. Third, governments should be very careful with assuming private sector risks. They need to understand what they are doing in investment projects, in public enterprises or in the financial sector so that explicit or implicit guarantees do not threaten fiscal stability. Fourth, financial sector and monetary policies can contribute to lower fiscal risks indirectly via money and credit developments that smoothen boom bust cycles and the related overinvestment and misallocation of capital.

3 Fiscal risks via the banking sector

Since the global financial crisis, there has been growing awareness of fiscal risks from the banking sector. In fact, the crisis resulted in huge costs for government finances (table 3). The magnitude ranged from 4% (United States) to 35% of GDP (Greece) in advanced countries, and several countries posted double-digit losses. By 2015, gross costs had risen to over USD 2 trillion. Costs were also often very large as a share of banking assets. This prompted governments across the globe to demand more capital and liquidity (amongst other things) from their banks.

Table 3

Financial crisis support post 2009

	Gross Impact	Gross impact
	% of GDP	*% of end 2009 banking assets*
Austria	6.2	5.6
Belgium	7.2	8.9
Cyprus	20.0	..
Germany	12.3	10.4
Greece	34.9	33.1
Ireland	36.3	20.4
Netherlands	17.3	13.5
Slovenia	12.0	13.2
Spain	7.4	3.9
United Kingdom	11.6	5.9
United States	4.3	6.4
Average	7.4	..
USD billion	2,114.0	..

Source: IMF, Fiscal Monitor, April 2015; World Bank, Global Financial Development Database.

Definition: Total assets held by deposit money banks as a share of GDP. Assets include claims on domestic real nonfinancial sector which includes central, state and local governments, nonfinancial public enterprises and private sector. Deposit money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.

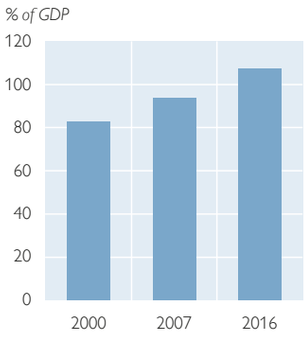
There are a number of factors that raise fiscal costs of banking sector difficulties. These include high and rising debt in/credit to the private sector, government guarantees (especially blanket deposit guarantees), open-ended liquidity support, regulatory forbearance, debt biases in the tax system and banking crises mutating to fiscal crises (see Schuknecht 2019 for a survey). Evidence on the quantitative relevance, however, is very limited.

As a result, banks everywhere increased their capital and contingent capital and their resilience as regards short and long term funding, and they designed resolution plans etc. Moreover, under the auspices of the G20 and the FSB, derivatives markets were regulated and rules for relations with market-based finance were developed. As the implementation of this agenda progressed, buffers and resilience of banks improved, especially for the systemic ones.

Still, the literature provides little guidance on risks in the financial system

Chart 1

Corporate sector debt ratio



Source: IMF Global Debt Database.

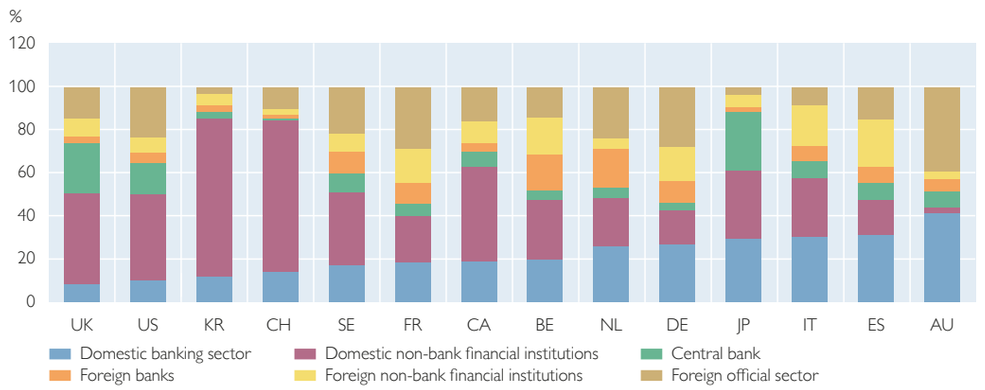
today. There are a number of vulnerabilities in the banking system that could again turn into budgetary costs down the road especially if financing costs start rising rapidly and significantly again. Just as regards risks to public financing costs, snapback risks could derive from an increase in the level of rates and from the risk appetite reflected in spreads. First, a number of European countries posted significant shares of non-performing loans even 10 years after the crisis started. The list included in particular Greece and Cyprus, but non-performing loans also exceeded 10% of all loans in Portugal, Italy and Ireland at the end of 2017. Such risks continue to prevail.

Second, private corporate sector debt, which had been one of the reasons for financial sector difficulties in the crisis, was significantly higher on average in the late 2010s than before the global crisis (chart 1). Only few countries, including notably Spain and the United Kingdom have reported significant declines in corporate debt ratios.

Third and perhaps most importantly, banks hold significant amounts of government debt on their balance sheets. This exposure can reach five or eight times the capital of bank, notably in Europe. Such an exposure could be particularly problematic when the debt is from

Chart 2

Holders of government debt by sector in 2016



Source: BIS.

poorly rated governments. The absence of concentration limits and the exemption from risk weighting (as well as other privileges) are the reasons for such a distorted portfolio allocation in favour of government debt.

The magnitude of exposure is huge (chart 2). In Japan and Italy, the banking sector holds about 30% of all domestic government debt – about 60% and 40% of GDP respectively. In France, Canada and Belgium, the ratio to total debt and GDP is about 20%. Any major rating downgrade or re-assessment of government debt could undermine the banking system's health via accounting losses. Given the link between financing conditions of banks and sovereigns, the real economy would also suffer via tighter financing costs and availability (CGFS, 2011).

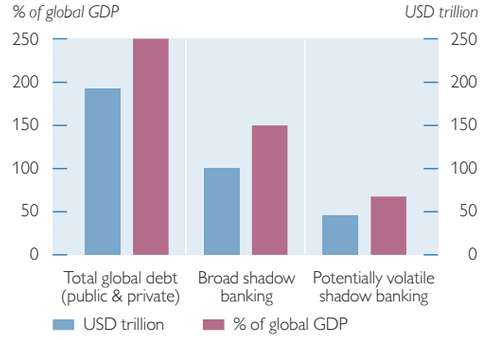
The policy implications are clear and well known. Implementation of the G20/FSB regulatory agenda for banks remains essential and, fortunately, progress is significant (FSB, 2019). Moreover, the reduction of non-performing loans, and the reduction in regulatory privileges for government debt would enhance the health and resilience of the banking system so as to reduce implicit and contingent fiscal risks (see also BIS, 2017). Reducing public debt and deficits further and, thereby, improving the financial health of governments themselves would, however, be the best contribution for stopping the bank-government "doom-loop".

4 Fiscal risks from the non-bank financial sector

The non-bank financial system has grown much faster over the past decade than

Chart 3

Total global debt and the role of shadow banking



Source: IMF, 2018 GFSR (debt), BIS (size of shadow banking).

Note: Size of shadow banking refers to credit/assets managed by non-bank financial sector in FSB member countries (85% of global GDP). "Potentially volatile" implies potentially run-prone.

the banking system. The BIS estimates the run-prone part of "shadow banking" to be USD 50 trillion or about 70% of global GDP. This is about one quarter of total global debt which is at a record historic high (chart 3; see also IMF, 2018, FSB 2018). Given the role of non-banks in the global financial crisis, the G20 also agreed on a regulatory agenda for this part of the financial system. Progress has been significant as well but it is on the whole less well advanced than in the banking sector (FSB, 2019).

There are a number of vulnerabilities in this industry, that could burden budgets in the future. First, pension funds in many countries are seen to be underfunded even at 2018/2019 asset valuations (OECD, 2019). Rauh (2018) sees the underfunding in the USA to amount to 20% of GDP. In a major stress scenario, funding gaps could be significantly larger in some countries. It is hard to conceive that governments would not be "asked" to share into funding shortfalls when the incomes of millions of pensioners are at stake.

Second, not only has corporate debt on average increased in the past decade but the quality of this debt has declined when it was financed via the market. The size of the corporate bond market has tripled to almost USD 13 trillion over the past two decades. Over 50% of advanced country corporate bonds in the investment grade range were rated BBB in 2018. The corresponding figures in the past were in the 25%–45% range. A much larger share of bonds was in the covenant light category, giving creditors significantly less rights. It is hard to conceive that a major downgrading wave would leave markets without turmoil which, in turn, would lead to calls for government support to fend of credit crunches and corporate bankruptcies.

Third, there continue to be risks from increasing concentration of derivative trading in Central Clearing Parties (CCPs). This is despite better rules and regulation and the fact that such clearing has increased transparency and reduced risks. Failure of an important CCP is unlikely to leave the CCP market unscathed, and calls for government/central bank bailouts/guarantees could follow. AMB was saved in 2009 to prevent a melt-down in derivative markets.

As regards policy implications, the full implementation of the G20/FSB regulatory agenda for non-banks remains essential. Again, more resilient governments are likely to help maintain stability in non-bank financial markets as well.

Still, it is worth asking whether this is enough. Do we perhaps need circuit-breakers in bond markets just as in stock markets to halt future runs? Moreover, clearer rules in government bond markets with collective action clauses and circuit breakers against runs such as standstills and prolongations would reduce the economic and fiscal costs of government debt problems. Moreover, such provisions would increase market monitoring and, thereby, governments' incentives to build sufficient fiscal buffers (Weder and Zettelmeyer, 2018).

Table 4

International credit

	USD trillion	*% of global GDP*
Total	30.7	37.6
Bank loans	13.3	16.3
Cross border	8.0	9.8
Local in foreign currency	5.3	6.4
International debt securities	17.5	21.3
Held by banks	4.7	5.7
Held by non banks	12.8	15.6

Source: BIS Quarterly Review, September 2018.

5 Other fiscal risks

There are two further transmission channels: fiscal risks from central banks and international obligations. Central banks in 2018 held about USD 10 trillion worth of government bonds or about one fifth of the total market. Losses from government debt holdings could burden fiscal balances, unless countries were willing to run central banks with low or negative equity or hide losses in transitional accounts. In any case, it is hard to conceive that a central bank holding much debt of a government that is going broke can avoid fiscal and financial dominance.

As regards fiscal risks from international financial obligations, there is plenty of evidence from past banking and financial crises. In fact, part of the losses during the global financial crisis mentioned above were of an international nature, and large international creditors such as Germany suffered particularly large losses.

International credit includes banks' cross border and foreign currency credit and international debt securities (BIS). In 2018, international credit exceeded USD 30 trillion, which is almost 40% of global GDP. Almost 5 trillion worth of bonds are held by banks across border, another 13 trillion by non-banks/asset managers. Bank lending exposure (cross border or foreign currency) exceeded USD 13 trillion (table 4). Losses on these exposures could get banks and asset managers into trouble, with demands for government support potentially in its wake.

The greater global financial interdependence and international financial risks are reflected in ever bigger IMF support programs. These exceeded 10% of GDP in the case of Greece, Portugal and Ireland in the early 2010s, not counting the (even higher) regional European support. The Asian crisis programs around the turn of the millennium were all much smaller.

As regards policy implications, these facts have given rise to an extensive debate over the need for global financial safety nets. With a global GDP of USD 70 trillion, a safety net of USD 1 trillion (roughly 2018/19 IMF resources) can cover a 15% program for 10% of the global economy. This is not little but it is also not very much. Even a significant increase in safety nets would not change the fact that national fiscal buffers and financial resilience must be sufficient in the vast majority of the global economy.

Moreover, all the principles of financial sector prudence applying to the national level should apply in particular to the international level. International credit is an important instrument of risk mitigation across nations but this only works as long as buffers elsewhere are sufficient. Central banks should not neglect financial risks resulting from their monetary policy and liquidity measures.

The introduction of a sovereign debt-restructuring framework including prolongations and standstills could improve incentives and help make do with limited safety nets. It could limit fiscal financial risks by preventing that international governments pay for the private sector exiting a market without bail-in (Zettelmeyer, 2018; Destais et al., 2019).

Finally, we may want to be prepared to rethink the role of circuit breakers in international capital markets. Capital controls in the context of the Greece and Cyprus programs hold perhaps more lessons for the future than most people realise, and the OECD code on capital account liberalisation provides a rules-based international governance framework.

6 Conclusions

Financial developments can constitute significant fiscal risks via a number of transmission channels: Government financing costs, asset prices, real economy implications, banks and non-banks, central banks and international linkages. These risks, where measured and analysed, were often very large. However, we still understand too little about them and do not have a good sense of what could happen in the future. This is particularly true for risks from market-based finance and the compound effect of fiscal-financial vulnerabilities.

The note also provides a number of policy lessons: The implementation of the international regulatory agenda for banks and non-banks should continue. Regulatory privileges for governments need downscaling. Governments should reduce debt biases in their tax system.

More reflection should also be given to circuit breakers such as trading stops in bond markets, orderly capital controls, and debt-restructuring frameworks including prolongation and standstill procedures when debt sustainability is at risk. Credible limits on contingent and implicit liabilities in the financial sector (and beyond) protect government finances and reduce moral hazard.

Building sufficient fiscal buffers is probably the most important policy lesson. Fiscal resilience protects the stabilising role of public finances in downturns, it prevents the potential fiscal financial doom loop and it protects the credibility of central banks and international safety nets.

One way to gage the outer bounds of fiscal risks in the past is to look at public debt developments in very severe crisis episodes. It is likely that all of these effects came together in these episodes even though we do not know how much came through which channel. Amongst the European countries, the biggest debt increase affected Ireland (plus 95.7% of GDP between 2007 and the post crisis peak). The corresponding figures for Spain and Portugal were 64.9% and 62.2% of GDP. The United Kingdom saw debt increase by 47.1%. We saw earlier that the figures for the USA, Japan, France and Italy were above 30% of GDP. In some countries, fiscal deficits deteriorated by over 10% of GDP in just 2 or 3 years.

These figures are truly staggering and should be seen against a G7 average near 120% of GDP in 2017/18. Borio, Contreras and Zampoli (2019) suggest that fiscal buffers of up to 60% of GDP would have been needed to deal with 99% of the fiscal risks over recent decades. And the numbers above suggest that this might well have been barely enough.

It is not clear whether a similar further increase in the next crisis could be weathered easily even with central bank assistance. Long maturity public debt financing and the "good old" Maastricht thresholds of 60% for reasonably safe debt and of a "close to balance" budget in normal times might not be so stupid after all.

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Session 4
The international role of the euro

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The international role of the euro from different perspectives

Today, the euro is the currency of 19 countries with over 340 million citizens. It is the second most important currency in the world. In this session we would like to look deeper into the role the euro has played on an international scale as well as its future role as an international currency.

The international role of the euro is closely linked to the role of the European economy in the world. A wider global use of the euro can – for instance – lower trading costs for European businesses, it can become more attractive as a store of value and thus lead to decreased interest rates payed by European households, firms and governments. It stabilises access to finance for European businesses in turbulent times and makes the European economy less vulnerable to exchange rate shocks.

An increased international role of the euro, however, also means increased responsibilities. It has consequences for central bank mandates, for balance of payment issues and other policy fields.

Clearly, if we discuss the international role of the euro today, we must think in trade-offs, weighting the benefits an increased international role of the euro would have, against potential risks and costs that come with an increased global responsibility.

I am very happy that we could convince two outstanding speakers to come to our conference to discuss with us this complex topic, both with a deep and long experience in questions of international macroeconomics and international currencies:

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From start-up to scale-up: the global role of the euro

"Great powers have great currencies."
(Robert Mundell, Nobel Prize laureate)

The EU is a great power

The European Union (EU) covers over 4 million km² with 508 million inhabitants, which makes it the world's third largest population after China and India. The EU is also responsible for around 16% of global GDP. It is the biggest global market as well as the biggest trading block, and the top trading partner for 80 countries. A stable business and legal environment without capital account restrictions makes the euro area a particularly reliable and attractive partner.

The euro is a great currency

The euro area (EA) covers 19 countries. Around 60 countries have linked their currencies in one way or another to the euro. The euro area alone represents 340 million people. In its first 20 years of existence, the euro has become a leading reserve currency, invoicing currency and issuing currency. Since its beginning, Europe's common currency has been the second most important global currency. Nowadays it constitutes around 20% of global reserves and around 20% of debt issuance. What is more, 36% of global invoicing and settlement are processed in euro. Europeans identify the euro as one of the main symbols of the EU. The euro brings benefits like lower exchange rate and currency conversion costs, a reduced interest rate on euro denominated assets, price transparency and more robust access to funding in times of stress in the markets.

Yet, it is important to acknowledge that the financial crisis, which shook the world, also affected the international attractiveness of the euro. Since that time, the architecture of Europe's Economic and Monetary Union (EMU) has been significantly reinforced.

Is the euro "great enough"?

Here the answer is: not yet. If the euro played a more international role there would be less dependence on the US dollar and other currencies. But, a more prominent role on the global scene for the euro is not a question of "if" but rather of "when".

Strengthening the global role of the euro would have a positive impact on the countries of the euro area countries and on the other EU Member States, but also globally, by enhancing financial stability worldwide and offering stakeholders, particularly investors, more choice. That is why the European Commission issued a Communication "Towards a stronger international role of the euro" in December 2018.[2]

Let us try putting on "inventor lenses" for a moment and look at the euro from that perspective. Any invention starts with a great idea. We can thank Francois Mitterrand and Helmut Kohl for that. The idea needs capital (in our case, political capital) in order to go from proof of concept to market introduction. For the euro it meant building the institutions and creating the regulatory environment. There is no doubt that the first 20 years of the euro were a success.

Were the inventors of the euro zooming in on the global importance of the euro?

At the time of a creation of a single currency, the internationalisation of the euro was not the priority for policymakers. Given the strength of the multilateral rules-based order in the early

[1] *Kerstin.Jorna@ec.europa.eu. The views expressed in the text are the views of the author only and may not be interpreted as stating an official position of the European Commission. I wish to thank Martyna Chmiel and Ralph Schmitt-Nilson for their support in the preparation of this contribution.*

[2] *https://ec.europa.eu/commission/sites/beta-political/files/communication_-_towards_a_stronger_international_role_of_the_euro.pdf.*

2000s, European leaders considered that promoting the internationalisation of the euro was not a necessary condition to foster European economic growth and trade. But that picture has changed dramatically.

The EU economy was hit by the financial and sovereign crisis, which was triggered in the USA but had a global impact. Quick technological change is re-shaping the functioning of financial markets. The rules-based multilateral system is being challenged and new economic powers are emerging.

The world order appears to be shifting from a rules-based multilateral system towards a multi-polar world in which Europe needs to define its new role. This means also revisiting the global role of the euro. It is time for the euro to move from start-up phase to scale-up phase. This means zooming in on how to increase the global role of the euro and give it global impact.

How do you take a successful product from start up to scale-up?

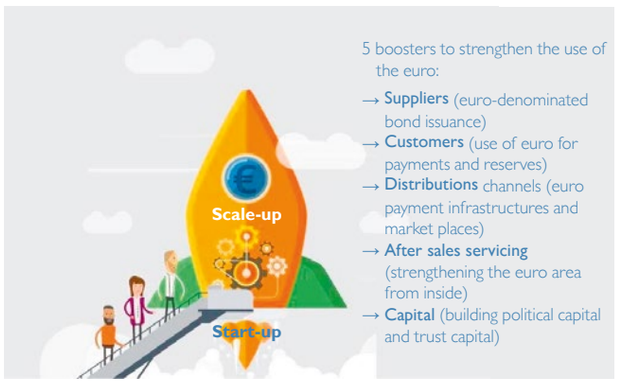
Let's put our inventor lenses on again. Scaling up a successful product means:

- working with your suppliers to do more,
- understanding how to engage your customers in a broader way,
- extending your distribution channels,
- improving your after sales service,
- above all, it means finding capital.

Let us look at each of these five in relation to the euro.

Chart 1

The global role of the euro: from start-up to scale-up



Source: European Union (2019).

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1 Suppliers

Suppliers are all those who bring euro-denominated products to the market. Among bond issuers, sovereign debt issuance stands out. ECB data show that on average 98% of the outstanding government debt securities issued by euro area member states is denominated in euro. Yet, there are large differences among the euro area member states, ranging from 100% to 69%. Unsurprisingly, the same data show much lower euro-denominated issuance in non-euro member states. Here, the average is that 22% of the debt issued in these countries is denominated in euro and some countries, like the UK or Denmark, do not issue euro-denominated government debt at all.

European organisations "owned" by the EU member states have a slightly less good record than their shareholders. The EIB and the EBRD issued respectively 34% and 50% of their debt in US dollars in 2018.

2 Customers

The customers are those who use the euro for payments/settlements as well as holding reserves. Despite the euro's relatively wide use in international payments, less than 60% of the euro area's external exports are actually invoiced in euro. This is in stark contrast with the United States, where about 90% of exports are invoiced in US dollars. Along with encouraging issuance in euro, promoting its use as an invoicing currency will also be important.

There is a sectoral dimension to this. Some markets such as energy, transportation (aircraft) and commodities are subject to very strong US dollar dominance, sometimes for mostly historical reasons. Tackling these possible inefficiencies in specific sectors could improve euro liquidity.

However, the example of the aircraft industry also shows the challenges and limitations of fostering an enhanced role for the euro. A consultation launched by the European Commission at the beginning of the year shows that companies tend to accept US dollars even when their cost base is largely in euro and even if it implies difficult and costly hedging operations.[3] One key reason for this is the prevalence of global supply chains and financing options that are predominantly denominated in US dollars.

Inertia in these markets is a significant barrier to greater use of the euro.

3 Distribution channels

Distribution channels are the euro payment infrastructures and market places. Recent EU reforms to Europe's clearing and settlement systems, as well as the introduction of an instant payments system last year, have equipped the euro with the safest and most efficient, open and large payment infrastructure in the world. For the development of the market place, completing the Capital Markets Union will be crucial. The ease with which financial assets can be bought and sold is essential for the financial system to work properly and to support investment and economic growth. The liquidity of a currency is therefore a significant characteristic of a healthy distribution channel.

In addition, there is an increasing competition for distribution channels. China, for example, is creating incentives along the Belt and Road Initiative (BRI) to allow for greater use of the Renminbi. In a recent bilateral agreement with Pakistan creating the China-Pakistan Economic Corridor, the two countries agreed to conduct bilateral trade transactions in their own currencies.

4 After sales servicing

Strengthening the international position of the euro will not be possible without strengthening the euro area from inside. This means completing the Economic and Monetary Union, including the Banking and Capital Markets Union.

Deepening EMU is critical for the international attractiveness of the euro for three key reasons. First, *confidence in the value of the euro is ensured by the predictability and credibility of the EU's monetary and economic policies*, as well as the medium- and long-term growth prospects of the euro area. By improving economic resilience and boosting growth potential, initiatives seeking to deepen the EMU can support the attractiveness of the euro to international investors. This is why we need to promote growth-enhancing reforms and take steps at national level to fully implement the

[3] *After the conference, the European Commission has published the results to the consultation: https://ec.europa.eu/info/sites/info/files/strengthening-international-role-euro-swd-2019_en.pdf.*

Country-Specific Recommendations. We need to be able to create predictability around investment. These considerations are also at the heart of the current discussions on a Budgetary Instrument for Convergence and Competitiveness.

Second, *a robust institutional set-up is essential to increase the confidence of "suppliers" and "costumers"*. This also depends on the strength of the institutions, and the way their competences are organised across levels of government. A stronger EMU requires stronger legitimacy and governance and a fair and balanced political representation of interests of all Member States. Those are the guiding principles underlying the current reform discussions on the European Stability Mechanism.

Third, *deep and broad financial markets are necessary to increase the attractiveness of the euro both as a currency for payments and as a store of value*. Investors looking for safety and liquidity need a broad variety of euro-denominated financial assets and well-developed secondary markets. In this respect, the completion of the Banking Union and the Capital Markets Union – building on the proposals made by the Commission in recent years – remains crucial. These are central initiatives for the further integration of financial markets in the EMU and its overall resilience, which will increase the liquidity and credit quality of euro-denominated assets.

5 Capital

That takes us to the capital part, the alpha and omega for any inventor seeking to scale up. For the euro, we are talking about political capital and trust capital. How can we present a convincing pitch?

There are some very strong arguments in the euro's favour. Article 63 of the EU Treaty prohibits all restrictions on capital movements and payments, not only within the EU, but also between EU countries and countries outside the EU. This is a (quasi) constitutional guarantee. The rule of law provides assurance for businesses' autonomy and capital flows. I already mentioned the size and economic weight of the euro area. Reforms on banking union and deepening EMU are already underway.

Two non-euro member states, Bulgaria and Croatia, have signalled recently their intention to join the euro area and are actively getting ready, which confirms that political and trust buy-in remains strong.

I note furthermore that the role of the euro caught the attention of political actors far beyond finance ministries, namely foreign ministries and chancelleries. This also means more "political capital".

All of this will affect market participants and support the development of "trust capital".

The glass is half-full as we enter the new political cycle in Europe.

What are the next steps?

After several targeted consultations on energy, foreign exchange markets, aircraft, maritime and rail respectively, the Commission will pull results together in a report that is scheduled for June. The Commission teams are still in the midst of analysing the data, but below are some first conclusions.

The take up of the consultation was very good, with more than 60 respondents covering the key market actors with around half of the participants coming from the banking sector, followed by industry associations. Other types of financial institutions such as exchanges, trading platforms, investment funds, insurance companies and credit rating agencies also participated in the consultation.

Overall, there is broad support for increasing the global role of the euro. Not surprisingly, there is broad agreement on the importance of liquidity for the global role of the euro. It matters in terms of volumes traded in foreign exchange markets, listing of currency pairs available and promotion of euro currency pairs by market makers. A majority of respondents highlighted that the market liquidity of currency pairs involving the euro was lower in comparison to those involving with the US dollar.

Concerning the cost of hedging, views are more differentiated. While 45% of respondents judge hedging costs to be broadly the same in euro and US dollars, 37% consider hedging more expensive in euro.

A main conclusion stemming from the sectoral contributions, is that the prominence of the US dollar is strongly linked to long-established market habits. In the oil sector, oil benchmarks are almost exclusively denominated in US dollars and all oil derivative products depend on these benchmarks. In the aircraft industry, the US dollar is dominant across the whole value chain. Moreover, banks and other investors are very reluctant to provide credit and liquidity in currencies other than the US dollar.

When asked about factors that could support a greater role of the euro, the consultation found strong support for the package of measures proposed by the Commission in its December 2018 Communication. Respondents supported coordinated action at three levels, i.e. the EU level, the national level and market participants. Completing the Banking Union and the Capital Market Union was widely considered as an element to enhance trust and confidence in the euro.

Conclusion

We are in the middle of a next project around the euro. The first 20 years were about starting-up. Now we are gearing towards scaling-up. The debate around the euro echoes a wider European debate: what is the place of Europe in the world? To what extent will other global actors influence our decisions about citizens, data and governance? How do we protect and leverage our internal strength globally? In this debate, the euro is one of the crown jewels.

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[1] *This paper represents solely the views of the author and not necessarily those of the ECB or the Eurosystem.*

The euro's global role: past, present and future

The creation of the euro 20 years ago aimed primarily to address Europe's own internal challenges. It aimed to complete the single market agreed to in the 1980s, and to secure its four freedoms: free movement of goods, services, labor and capital. Volatility in the legacy currencies was believed to lead to abrupt changes in national competitive positions and to disrupt transactions within the single market. Since exchange rates stability was hard to achieve under free movement of capital flows – as the 1992 Exchange Rate Mechanism crisis had epitomized – the solution, as it was proposed, was to adopt a single currency.

However, some of the euro's founding fathers had external ambitions in mind, too. They saw the euro as an opportunity to create a currency with a strong global footing. This was stressed, for example, in the Delors Report of the late 1980s: Economic and Monetary Union (EMU) would give "the Community a greater say in international negotiations and enhance its capacity to influence economic relations". The point was further stressed by France's President François Mitterrand: "the euro will be the strongest [currency] in the world, stronger than the dollar" (quoted in Troitiño et al., 2017, p. 143). And observers on the other side of the Atlantic, such as Fred Bergsten, also hailed the euro as "the most important development in the international monetary system since the adoption of flexible exchange rates in the early 1970s" and predicted that the dollar would now have "its first real competitor since it surpassed the pound sterling as the world's dominant currency during the interwar period."[2]

This paper sketches briefly the salient developments in the euro's international role since its creation twenty years ago, before turning to an assessment of progress made since 1999 in our empirical and conceptual understanding as to why international currency status matters in the first place. It concludes by providing insights into the currency's prospects as an international unit, in light of some lessons that can be gleaned from history.

1 Salient developments

Once the single currency came into being, it was quickly adopted in transactions between the euro area and other economies in its immediate neighborhood and also further afar in foreign exchange and international debt markets. Underlying this development, observers argued, laid economic logic of scale.[3] The euro area and the U.S. were roughly equal in economic size, and the two accounted for broadly comparable shares of global merchandise trade. Hence by the euro's tenth anniversary, a famous study by two prominent economists predicted that the single currency would overtake the dollar as a global reserve currency by 2020 under the – admittedly already then conservative – assumption that the UK would join the euro, especially the City of London, which to-date remains the main financial center doing business in euro outside the euro area (Chinn and Frankel 2007, 2008).

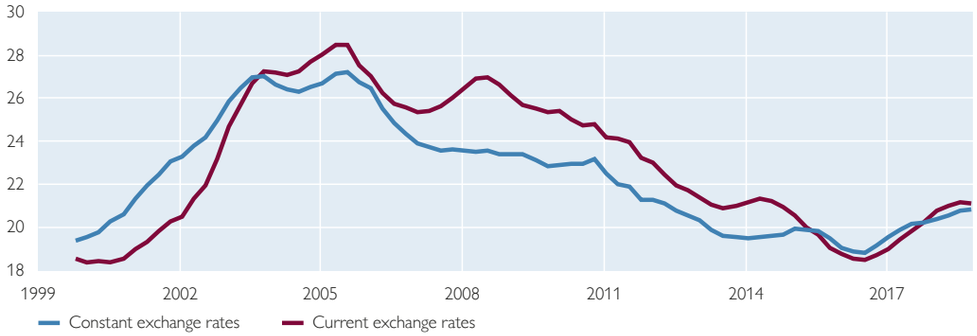
[2] *Bergsten (1997), p. 83. This, not completing the single market, was among the key objectives of the founding fathers of the euro, according to Feldstein, who stressed that "French officials have been outspoken in emphasizing that a primary reason for a European monetary and political union is as a counterweight to the influence of the United States both within European and in international affairs" (Feldstein 1997, pp. 72–73).*

[3] *We follow here the arguments presented in Bergsten (1997).*

Chart 1

Composite index of the international role of the euro

Percentages at current and Q4 18 exchange rates, four-quarter moving averages



Source: ECB (2019).

Note: Arithmetic average of the shares of the euro at constant (current) exchange rates in stocks of international bonds, loans by banks outside the euro area to borrowers outside the euro area, deposits with banks outside the euro area from creditors outside the euro area, foreign exchange settlements, global foreign exchange reserves and share of the euro in exchange rate regimes globally. Data at constant exchange rates were not available for foreign exchange settlements. Data for 2016 are used for 2017 and 2018 observations for the share of the euro in exchange rate regimes globally. The latest observations are for the fourth quarter of 2018.

However, after quickly establishing itself as a global currency, the euro gradually lost international standing from the mid-2000s onwards. This is visible in chart 1, which shows a composite index measuring the euro's international role – computed as a simple average of the shares of the euro as an international reserve, financing, settlement, and anchoring currency.

By 2015-16, the euro's international role reached an historic low (it has recovered tentatively in the past two years). Today, the euro is the second most used currency internationally by most measures. Somewhere between 20% and 30% of global foreign reserves, foreign exchange transactions, international debt and international trade transactions are denominated in euro. And over 50 countries or territories use or link their currency to the euro. But the euro often lags behind the dollar by a wide margin.

What is behind these developments? In short, the flaws in the design of Economic and Monetary Union exposed by the global financial crisis of 2007–09 and the euro area debt crisis of 2011–12 (see Coeuré, 2019, for a full exposition of this reasoning).

Empirical research suggests that alongside size and openness, stability is a key determinant of international currency use. For investors, stability comes in particular from a currency's ability to act as a safe haven in times of global financial stress.[4] Moreover, deep and liquid financial markets are fundamental to a currency's ability to attain international status. They reduce transaction costs, making the currency more attractive for international financing and settlement, and – as more liquid markets mitigate rollover risk – they are perceived as safer by investors.[5]

However, the euro did not act fully as a true, effective hedge during the crisis, unlike the dollar. The number of AAA-rated euro area sovereigns fell from eight to three. Today, AAA-rated euro area sovereign debt amounts to just 10% of GDP. In the United States it is

[4] *This is what some have coined the "exorbitant duty" of international currency status (see Gourinchas, Govillot and Rey, 2011).*

[5] *As shown e.g. in He et al. (2019).*

more than 70%. Moreover, the crisis aggravated financial fragmentation in the euro area, which also contributed to reduce the appeal of the euro as a global currency. And financial fragmentation has not fully reversed to-date.[6] Finally, structural factors, such as various legal and institutional barriers hinder the creation of a single pool of liquidity, and still fragment capital markets in Europe along national lines. Addressing this issues are therefore of prime importance to the euro's prospects, as we discuss below.

2 Why it matters

But the euro's first two decades did not only provide evidence as to how its global standing evolved. They were also characterized by significant progress in our conceptual and empirical understanding as to why international currency status matters in the first place. In particular, we now better understand that international currency issuers enjoy greater monetary autonomy; that international currency status strengthens the global transmission of monetary policy; and that geopolitics is one determinant of the global appeal of a currency.

Take monetary autonomy first. There is increasing empirical evidence that international currency issuers enjoy greater monetary autonomy than other economies. The US dollar epitomizes the point: owing to its pre-eminence in the global monetary and financial system, US monetary policy drives global financial cycles in capital flows and financial asset prices (along with fluctuations in global risk appetite).[7] Autonomy is not akin to isolation, however: there is also evidence, for instance, that official purchases of US Treasuries by China and other emerging market economies in the years prior to the global financial crisis contributed to compress US term premia – what Chairman Greenspan called the low bond yield "conundrum". But central banks in small open economies are typically more heavily exposed to foreign spillovers in setting interest rates than those presiding over an internationally dominant currency.[8]

Another aspect about which more evidence is now available is that international currency status strengthens the global transmission of monetary policy. This reflects the fact that stronger use of a currency as an international funding unit amplifies the international transmission of monetary policy. This channel is well documented for the US dollar and for US monetary policy. When US monetary policy eases, the US dollar depreciates; international lending in dollars grows, because the balance sheets of borrowers in emerging market economies, who often borrow in dollars, appear stronger in US dollar terms. This, in turn, encourages global banks

[6] *A quantity-based composite indicator of euro area financial integration remains at about half of its pre-crisis peak, while a price-based composite indicator is about 30% below.*

[7] *See Rey (2013) and Shin (2016).*

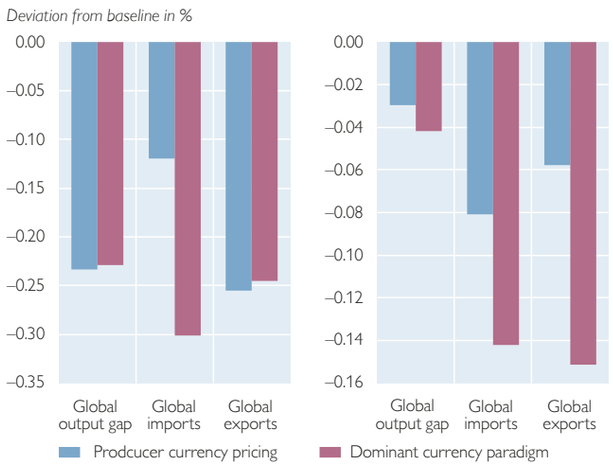
[8] *For a discussion of spillovers arising from US and euro area monetary policy shocks, see Ca'Zorzi et al., forthcoming.*

to provide the borrowers in question with US dollar-denominated credit.[9] The easing in US domestic monetary conditions reverberates globally.

Relatedly, currency choice in international trade invoicing matters for monetary policy transmission.[10] Chart 2 shows simulations using a calibrated structural macroeconomic model of the global effects of a tightening in US monetary policy. It compares the effects of policy tightening under two different scenarios – one assuming that international trade is invoiced in the exporters' currency, or "producer currency pricing", which is the conventional assumption in e.g. the Mundell-Fleming model, and one assuming that international trade is invoiced in US dollars, which is, in fact, what we mainly observe today, an assumption known as "dominant currency pricing". The simulations show that a tightening in US monetary policy elicits a much stronger slowdown in global trade and global demand when trade is invoiced in the dominant currency. The reason is that when global trade is mainly priced in US dollars, then even transactions that do not involve the US are affected. Tighter US monetary policy has again global outreach: it leads to a stronger US dollar exchange rate, hence a large share of global imports becomes more expensive in local currency terms, and global demand switches from imports towards local goods.

Chart 2

Dominant currency paradigm amplifies the effects of US monetary policy on US and global trade



Source: ECB (2019).

Note: Impact of a US monetary policy shock on the US economy (left panel) and the non-US global economy (right panel). The chart shows the average response over the first two years.

A third and final aspect vis-à-vis which our understanding is clearer now relative to twenty years ago is that geopolitics is one determinant of the global appeal of a currency. One recent debate is whether the issuer of a global reserve currency enjoys international monetary power, in particular the capacity to "weaponise" access to the financial and payments systems.[11] Moreover, recent research supports the view that the US dollar benefits from a substantial security premium. Nations that depend on the US security umbrella hold a disproportionate share of their foreign reserves in dollars. By one estimate, military alliances boost the share of a currency in the partner country's foreign reserve holdings by about 30 percentage points.[12] This suggests that European initiatives to foster cooperation on security and defence, to speak with one voice on international affairs, might also be important for the euro's global outreach.

3 Prospects in retrospect

All in all, the euro's first two decades may also provide insights into the currency's prospects as an international unit twenty years from now. Insofar as the decline in the euro's global attractiveness in recent years is primarily a symptom of the fault lines in Economic and Monetary Union, there exists a close alignment between the policies that could indirectly strengthen the euro's global role and the policies that are needed to make the euro area more robust.[13] The international role of the euro is primarily supported by a deeper and more complete EMU, including advancing the capital markets union, in the context of the pursuit of sound economic policies in the euro area.

But history might additionally offer insights as to whether policies can indeed indirectly support the global standing of a currency. One prominent example is above all the US dollar. Recent research suggests that the reason why the US dollar dethroned sterling as the main international currency after World War I was not just the war itself, but also two important reforms introduced in 1913. One such reform was the creation of the Federal Reserve system, which provided a lender of last resort in US dollars and enhanced the domestic and international appeal of the US unit. And the other reform was the abolition of the ban on foreign branching by US banks, which allowed them to use the US dollar to finance international trade and finance at lower costs. Results came rapidly: by 1929, the US dollar had already surpassed sterling as a global reserve currency and as an international financing currency, with e.g. a share of over 50% of global foreign exchange reserves. Yet another supportive policy was the Federal Reserve's active role as market-maker in US dollar debt securities markets. In particular, the Federal Reserve was a major player in the acceptances markets (letters of credit to international trade). This made those securities attractive to international investors and borrowers because they were liquid.[14] Obviously, history does not necessarily repeat itself. But whether it will be any guide for the euro's next 20 years, time will tell.

[9] *See Bruno and Shin (2015) for the argument that looser US monetary policy encourages global banks to leverage more in US dollars (on the supply side) and incentivises emerging markets to borrow more in dollars (on the demand side). Another channel for greater international transmission of liquidity shocks – also identified a few years ago – may reflect the role of international credit markets within global banking groups. Global banks respond to domestic monetary shocks by managing liquidity globally through an internal reallocation of funds, which affects their foreign lending. Cetorelli and Goldberg (2012) suggest that, in contrast, domestic monetary policy transmission may be dampened.*

[10] *See e.g. Casas et al. (2017).*

[11] *See, for example, Tooze and Odendahl (2018) and Coeuré (2019).*

[12] *See Eichengreen, Mehl and Chiţu, forthcoming.*

[13] *This is the main conclusion of Coeuré (2019).*

[14] *Before the Great Depression reduced liquidity in this market significantly.*

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Session 5
Digitalization of money: future challenges

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Remarks on digitalization of money and future challenges

Good morning ladies and gentlemen, today's first session will discuss the digitization of money and the future challenges. When thinking about the future of money, it's important to think about the history; and the history of money has always been linked with the history of technology.

A big invention was the idea of balance and double entry book keeping. This allowed for the emergence of banking and banks. Banks became places where all the various credits and debits of society came together in a single register. And again, banking led to the invention of central banking in the 17th century. In return for lending gold to the sovereign, the Bank of England acquired the right to print paper money, which could then be used by the people to pay their taxes. In a sense, this was the origin of the modern monetary system!

It would be fair to argue that over the last 300 years things didn't change that much. We have had ups and downs, booms and busts, but the basic principles of banking have remained remarkably similar.

Yet, over the last 10 to 15 years we are witnessing a spectacular development of computing technology. So now we have FinTechs, a global spread of innovations in electronic payments and – of course – crypto assets. What I am trying to say is that payment behavior has started to change.

This development in payment systems is extremely relevant for central bankers. So before I hand over to our speakers, let me say just a few words about the point of view of the Austrian Central Bank on this matter.

There are 3 key points:

1. At the top of our agenda is the implementation of an independent European Instant Payments System, a system which will help us to better control credit transfers in the euro area and to keep big data in Europe.
2. At the same time, we are convinced that we will still need cash in the future. Cash contributes to consumer protection – especially in a digitized world – and cash is great in a crisis.
3. What about bitcoins and central bank digital currencies? Well, the key word for our central bank – which might surprise you – is caution. Caution is the sense that we don't see crypto assets (bitcoins) as alternative to established currencies but more as vehicle for speculation. And caution in the sense that the issue of central bank digital currencies could interfere to much in – what you might call – commercial banking activities.

But let me now come to our speakers.

I'd like to welcome very warmly Mr. *Ulrich Bindseil*. Ulrich Bindseil has been Director General of Market Operations at the European Central Bank since May 2012. Before joining the ECB, he had worked for the Deutsche Bundesbank (1994-97) and the European Monetary Institute. He chairs the ECB's Market Operations

Committee, the Money Market Contact Group and the Bond Market Contact Group. He is professor at TU Berlin and is author of many academic papers. This morning, he will talk to us about one form of central bank digital currencies and discuss its pros and cons.

And our second speaker is *Andrei Kirilenko*. Andrei Kirilenko is currently the Director of the Centre for Global Finance and Technology at the Imperial College Business School (London). Before he joined the Imperial College in 2015, he was Professor of the Practice of Finance at the MIT Sloan School of Management and Co-Director of the MIT Center for Finance and Policy. His work focuses on the intersection of finance, technology and regulation. He is a recognized world expert on technology in markets, including algorithmic and high frequency trading. Between 2010 and 2012 Professor Kirilenko served as Chief Economist of the U.S. Commodity Futures Trading Commission (CFTC). Today he will present a risk-based classification of crypto assets. In particular, he is going to discuss the following:

- What fundamental economic problem do crypto assets solve that fiat currencies do not?
- Which assets will survive?
- What are the regulators up to?

Ulrich Bindseil[1]
Director General Market Operations
European Central Bank

Controlling CBDC through tiered remuneration

This paper discusses two concerns regarding Central Bank Digital Currency (CBDC), namely (i) risk of structural disintermediation of banks and centralization of the credit allocation process within the central bank and (ii) risk of facilitation systemic runs on banks in crisis situations. The paper proposes as solution a two-tier remuneration of CBDC. While the first tier would be attractively remunerated, the second would be not. By choosing the per capita allowance of tier 1 deposits, and by making the tier two remuneration sufficiently unattractive, the central bank could address risks of an unintended structural or cyclical ballooning of the central bank balance sheet at the expense of commercial banks.

1 Introduction

Both academics and central banks have recently started to analyze merits and dangers of introducing CBDC, i.e. some form of central bank money handled through electronic means and accessible to the broad public[2]. CBDC could therefore be considered a third form of base money, next to (i) overnight deposits with the central bank, currently available only to banks, specific non-bank financial firms, and some official sector depositors; (ii) banknotes, being universally accessible but arguably of limited efficiency and relying on old technology. Some publications distinguish the case of "wholesale" and "general purpose" CBDC, the former being only accessible to certain firms, while the latter universally accessible to all households. This paper discusses issues relating to general purpose CBDC implemented in the form of deposit money. A number of quite diverse benefits of CBDC have been put forward in the literature. The more important ones are briefly discussed below.

Efficient retail payments

CBDC offers a number of advantages with regard to the convenience, efficiency, stability and accessibility of retail payment. While electronic payments with all their efficiency gains have been possible for some decades on the basis of commercial bank money, offering electronic payments directly in central bank money could have additional advantages. A comprehensive analysis of these justifications of CBDC can be found for example in Sveriges Riksbank's (2018) second report on the e-krona project. Collapsing demand for cash in the absence of CBDC would imply that citizens would no longer have access to the central bank balance sheet. In that state of the world, trust in the currency would entirely depend on trust in financial intermediaries issuing and managing commercial money.

Prevent illicit payment and store of value with central bank money

This argument, which assumes a discontinuation or at least strong reduction in the role of banknotes, is developed in detail by e.g. Rogoff (2016). Obviously, this motivation of CBDC would not apply if CBDC circulates as anonymous token money even for high amounts. Some, like Häring (2018), who are strongly pre-occupied with the privacy of payments and fear that internet retailers and state authorities use payments data to

[1] *Opinions expressed in this paper are my own ones, and not necessarily those of the ECB. I would like to thank for their helpful comments Dirk Bullmann, Benoit Coeuré, Reimo Juks, Michael Kumhof, Clare Noone, Martin Summer, Jens Tapking, Fabrizio Zennaro, and participants to the 46th Economic Conference of the OeNB in co-operation with SUERF on 2 and 3 May in Vienna as well as participants to the conference on the Future of Central Banking in Talloires/France on 26 May 2019. All remaining errors are mine of course.*

[2] *Recent publications include Engert and Fung (2017), CPMI-MC (2018), Kumhof and Noone (2018), Sveriges Riksbank (2018), Armerlius et al. (2018), Juks (2018), Nessen et al. (2018) – see also the further literature referenced there. According to the survey of Barontini and Holden (2019, 7), 70% of responding central banks are currently engaged in CBDC work. Five central banks would be progressing on, or running pilot projects (p. 8).*

eventually curb the freedom of citizens, will not agree with this specific argument for CBDC.

Allows overcoming the ZLB as one may impose negative interest rates on CBDC

For example, Dyson and Hodgson (2016) argue that "if digital cash is used to completely replace physical cash, this could allow interest rates to be pushed below the zero-lower bound." Rogoff (2016) develops this argument in detail. By allowing overcoming the zero-lower bound ("ZLB") and therefore freeing negative interest rate policies ("NIRP") of its current constraints, a world with only digital central bank money would allow for – according to this view – strong monetary stimulus in a sharp recession and/or financial crises. This could not only avoid recession, unemployment, and/or deflation but also the need to take recourse to non-standard monetary policy measures which have more negative side effects than NIRP. Opponents of NIRP will obviously dislike this argument in favor of CBDC, and will thus see CBDC potentially as an instrument to overcome previous limitations of "financial repression" and "expropriation" of the saver.

Financial stability and banks' moral hazard

This argument in favor of CBDC relate to the vision that CBDC is a tool to make feasible the "sovereign money" idea, i.e. a monetary system in which banks would no longer "create" sight deposits and thus means of payment (Benes and Kumhof, 2012, Häring, 2018, pp. 214–223, Mayer and Huber, 2014). For example, Dyson and Hodgson (2016) consider that CBDC "can make the financial system safer: Allowing individuals, private sector companies, and non-bank financial institutions to settle directly in central bank money (rather than bank deposits) significantly reduces the concentration of liquidity and credit risk in payment systems. This in turn reduces the systemic importance of large banks and thereby reduces the negative externalities that the financial instability of banks has on society. In addition, by providing a genuinely risk-free alternative to bank deposits, a shift from bank deposits to digital cash reduces the need for government guarantees on deposits, eliminating a source of moral hazard from the financial system." (See also Huber, 1999, pp. 5–6).

Seignorage income redirected to state (and citizens)

For example, Dyson and Hodgson argue that CBDC "can recapture a portion of seigniorage and address the decline of physical cash…" Also e.g. Mayer and Huber (2014) give much prominence to the assumed fiscal advantages of sovereign money. They estimate that e.g. in the euro area annual additional state revenues would be in the order of magnitude of more than EUR 100 billion (assuming a pre-2008 interest rate level). Obviously, with the current low levels of interest rates, and the outlook on future interest rates as it is priced in yield curves, this argument has become rather irrelevant for the time being.

To isolate the more obvious, humble case for CBDC, namely that it could serve as an efficient retail mean of payment, from the perceived danger that CBDC leads unintendedly to a sovereign money financial system (as it would boost so much the relative attractiveness of central bank money relative to bank deposits) it seems essential to be able to steer the issuance of CBDC in such a way that it serves the efficiency of retail payments, without necessarily putting into question the monetary order by making CBDC a major form of store of value. It will be argued in this paper that such a steering is feasible, and with less fundamental change than inherent e.g. in the proposal of Kumhof and None (2018). The well-tested tool of tiered remuneration seems to be a way to ensure that the volume of CBDC will be well-controlled. A system of financial accounts calibrated towards the euro area will illustrate the mechanics and implications of CBDC and will allow presenting flow of funds implications.

2 The structural and cyclical bank disintermediation issue

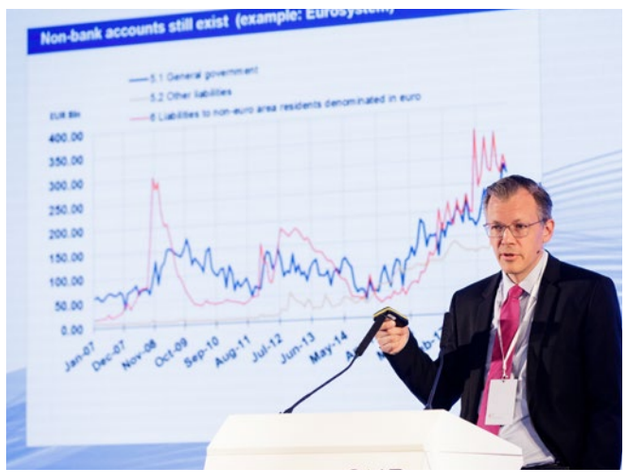
CBDC has both found support, and caused strong concerns, with regards to its impact on the structure and scale of bank intermediation. Advocates of "sovereign money" see bank disintermediation as precisely the goal of CBDC. Already Huber (1999, 18), a strong advocate of "sovereign money", had correctly identified the financial account implications of central bank money replacing bank-issued sight deposits. Others have equally strongly rejected the idea of CBDC inflating the central bank balance sheet at the expense of deposit funding of banks. For example, Pollock (2018), in a testimony to the Subcommittee on Monetary Policy and Trade of the Committee on Financial Services United States House of Representatives, argues that CBDC would lead to various distortions precisely because of bank disintermediation. In sum, according to Pollock (2018): on one side the central bank would benefit from an unfair competitive advantage in deposit collection and amass undue power and market share (also likely misusing its regulatory powers to further strengthen its unfair advantages), on the other hand it would have competitive disadvantages in credit provision, which it would however ignore, leading to inefficiency, conflicts of interest and financial losses that eventually the taxpayer would have to bear.

CPMI-MC (2018, 2) also express somewhat similar concerns that structurally, CBDC could have negative effects on credit allocation and thereby economic efficiency. Also Carstens (2019) reiterates such worries. Finally, CMPI-MC (2018, 2) emphasizes the cross-border issues that CBDC may create. Indeed, also for banknotes, foreign demand has been a major factor in recent decades (e.g. Jobst and Stix, 2017). According to this view CBDC, if offered in the same perfectly elastic way as banknotes, could facilitate further the cross-border access to central bank money.

Below the creation of CBDC is captured in a financial account system, which very broadly replicates the euro area financial accounts as of Q2 2018. The accounts are simplified in particular with regards to netting and that the non-bank financial sectors (OFIs and ICPFs, i.e. "other financial institutions" and "insurance companies and pension funds") have been left away, or been broadly integrated into the household sector. Also, the ECB's asset purchase program is not reflected.

If households substitute *banknotes* with CBDC, then central bank and commercial bank balance sheets do not

really change. However, if households substitute *commercial bank deposits* with CBDC, then this would imply a funding loss for commercial banks and could lead to "disintermediation" of the banking sector. In particular sight deposits with low remuneration could be expected to shift at least to some extent into riskless CBDC, leading to a loss of commercial banks' funding of equal size. Banks would have to try to offer better conditions on their deposits in order to protect their deposit base as much as possible – but this would imply higher funding costs for banks and a loss of commercial bank "seignorage". Below, the creation of CBDC has thus been split into two parts: CBDC1 which substitute banknotes and CBDC2 which substitute deposits with banks. It seems likely that indeed CBDC would do both of those, but it is unclear with what weights. The effect of CBDC1 on the rest of the financial accounts is neutral, but the effects of CBDC2 are not: CBDC2 lengthens the central bank balance sheet as central bank credit will have to fill the funding gaps of the banks. The central bank may want to avoid this effect by purchasing government and corporate bonds, whereby the source of the bonds could be either households or banks, being captured in the financial accounts by S1 and S2, respectively. In the former case, it has been assumed here that the households will not keep the money obtained in the form of bank deposits, but would purchase bank bonds that the banks would in addition issue (however, from a financial account perspective, it makes no difference if the purchases of bonds by the central bank from households imply additional deposits with banks or additional capital market investments of households into bank bonds).



Both S1 and S2 have positive effects in the sense that they reduce again the dependence of banks on central bank credit.

CBDC2 will obviously have effects on funding costs of the banking system, as typically central bank credit and bond issuance are more expensive than the remuneration rate of sight deposits (except in unusual circumstances, as the ones prevailing e.g. in the euro area since 2014, in which obtaining credit from the central bank was partially possible for banks at negative rates, while sight deposits of households with banks remained non-negative). Moreover, a larger recourse to central bank credit could lead to collateral scarcity issues and the question whether the central bank collateral framework becomes crucial from a credit allocation perspective implying its effective centralisation. Both effects will be analysed further in the next two subsections.

Effects on bank funding costs of CBDC2

Following Juks (2018, section 4.2–4.3), one needs to understand what impact CBDC will have on average funding costs of banks, and therefore on bank lending rates (see also e.g. Engert and Fung, 2017). In addition, it should be understood how this may impact monetary policy interest rate setting of the central bank and the seignorage income

Table 1

Financial accounts representation of CBDC

	EUR trillion		*EUR trillion*
Households, pension and investment funds, insurance companies			
Real assets	20	Household equity	40
Sight deposits	5–CBDC2		
Savings + time deposits	4	Bank loans	5
CBDC	+CBDC1+CBDC2		
Banknotes	1–CBDC1		
Bank bonds	4+S1		
Corporate/ Government bonds	7–S1		
Equity	8		
Corporates			
Real assets	13	Bonds issued	3
Sight deposits	2	Loans	8
Savings deposits	1	Shares/equity	5
Government			
Real assets	11	Bonds issued	9
		Loans	2
Commercial Banks			
Loans to corporates	8	Sight deposits	7–CBDC2
Loans to government	2	Savings + time deposits	5
Loans to HH	5	Bonds issued	4+S1
Corp/state bonds	5–S2	Equity	3
Central bank deposits	0	Central bank credit	1+CBDC2 –S1–S2
Central Bank			
Credit to banks	1+CBDC2 –S1–S2	Banknotes issued	1–CBDC1
Corporate/Government bonds	S1+S2	Deposits of banks	0
		CBDC	+CBDC1+CBDC2

Source: Author's compilation.

of the central bank. Bank funding costs will obviously increase because a cheap funding source (sight deposits) decreases, and more expensive funding sources (central bank credit or bank bond issuance) have to take over. The central bank would have to compensate the implied tightening of financial conditions caused by a decrease of cheap sight deposit financing of banks by lowering the monetary policy rate. The extent of the required lowering of short-term interest rates would depend on the size of CBDC2, on the relative share of bank funding in the economy, and on the spread between the other bank funding rates with the monetary policy operations rate. Moreover, substitution effects from bank-based to capital market-based financing of the economy would impact on the overall needed adjustment of central bank rates. The fact that bank funding is only one part of overall funding of the economy implies that the central bank will not reduce the short-term interest rates in a way that bank funding costs are stabilized, but only partially so. Therefore, in the new equilibrium, banks will have lost competitiveness and will lose some market share relative to other forms of funding (though capital markets and non-bank intermediaries).

Increase of banks' reliance on central bank credit, collateral constraints, and centralisation of credit allocation process?

To what extent could CBDC undermine the decentralised, market-based financing of the real economy by increasing massively the central bank balance sheet, and thereby making it, either via increased central bank securities holdings, or via an increased funding of banks through central bank credit, an important (but potentially inefficient) element of the credit allocation process?

State liabilities can be stores of value for households, in particular if they are matched, in the state balance sheet, by real assets that the state owns. However, probably the state would not want to become a financial intermediary for household savings, which would happen if the state re-invested proceeds from issuing debt to households in the form of financial assets, or in the form of real assets not linked to state tasks, just for the sake or re-investment. This logic may also be applied to central banks in a somewhat different way as central banking starts from the liability side: to the extent they issue means of payment, they need to re-invest the proceeds from doing do. However, the central bank probably does not want central bank money to become a large-scale store of value, i.e. investment vehicle, as this would mean that the central bank would become a financial intermediary. Turning to the asset side of the central bank balance sheet, one may note different views of central banks on what is the best match with its monetary liabilities: The Fed and the Bank of England systematically invested the proceeds from the issuance of banknotes into government paper. The Deutsche Bundesbank in contrast traditionally considered exposures of the central bank to the government as problematic and therefore preferred assets in the form of loans to banks collateralised with high quality securities or bills of exchange.

In view of the outstanding levels of government debt in developed economies (end 2018 levels for e.g. the euro area and UK around 85%; USA around 105%; Japan around 235%), and the much lower level of banknotes in circulation so far (around 10% of GDP for advanced economies, and 8% for emerging economies, see Riksbank, 2018, 6) it would appear that there would be some scope for CBDC2 to be matched on the central bank asset side with higher holdings of government bonds, such that neither (i) the reliance of banks on central bank credit would need to increase, nor (ii) would the central bank have to hold a credit risk intense portfolio of securities. In any case, currently at least the central banks of the UK, Japan and the euro area hold large QE related portfolios that created large amounts of excess reserves of banks, that would provide scope for CBDC2 of at least the size of banknotes in circulation before reserve scarcity would emerge (without any further purchases of government bonds). Moreover, once the potential for matching CBDC with government exposures would have been exhausted, the central bank can still try to minimise the impact of the lengthening of the central bank balance sheet on the credit allocation process by aiming at diversified exposures to the private sector (e.g. outright holdings of various securities types and issuers proportional to market capitalisation; credit operations with banks against a broad collateral set).

In so far, it could be argued that there is some scope for CBDC2 before the central banks would have to enter or extend particular credit exposures to the private sector, and thereby play a potentially larger role in the credit allocation of the economy, which may eventually be negative for the overall efficiency of the economy.

Cyclical bank disintermediation through CBDC

Mersch (2018), amongst others, has emphasized the destabilizing effects of CBDC in a financial crisis, namely by facilitating a run on the banking system. CPMI-MC (2018, 2) also supports the view that CBDC could make worse bank run dynamics in a crisis. A run on commercial banks can take three forms in principle[3], if one makes the distinction from the perspective of where the deposits flow to, namely: "R1", into deposits with other banks, i.e. within the banking system; "R2", into banknotes, i.e. the classical physical bank run where queues could arise in front of bank branches and ATMs; "R3", into non-bank deposits with the central bank, which in the past decades was limited to deposits of official sector institutions, but in the future could be facilitated by CBDC. Note that R2 and R3 are observable in aggregate accounts while R1 is not. Indeed, R1 does not become visible in the aggregate accounts until the bank benefitting from deposit inflows has paid back all of its central bank credit.

3 A two-tier remuneration system for CBDC

For example Kumhof and Noone (2018, p. 34) are well aware of the possibility to address CBDC's potential structural and cyclical bank disintermediation through applying unattractive and/or negative interest rates on CBDC. However, they are skeptical that the tool of

negative interest rates will always be sufficiently effective in crisis times, also because of political constraints on imposing highly negative rates. In this section, it is proposed to solve the problem of political acceptance of very low interest rates on CBDC by differentiating remuneration according to the amount of deposits held, i.e. "tiering". Actually, such reserve tiering systems have often been applied by central banks for the remuneration of deposits, and exactly for the purpose to control the total amount of deposits. Under such a system, a relatively attractive remuneration rate is applied up to some quantitative ceiling, while a lower interest rate is applied for amounts beyond the threshold. The Eurosystem has applied such tiering systems for deposit accounts of public sector institutions, notably of domestic government and foreign central banks or sovereign wealth funds. Regarding the remuneration of government deposits, for example, article 5 of the Eurosystem's DALM guideline[4] specifies that a two-tier system applies as follows:

1. Remuneration of government deposits shall be subject to the following

[3] *Juke (2018, section 5) also distinguishes three forms of runs, although not identical ones. Still the conclusions are rather similar.*

[4] *GUIDELINE OF THE EUROPEAN CENTRAL BANK of 20 February 2014 on domestic asset and liability management operations by the national central banks (ECB/2014/9), as amended by GUIDELINE OF THE EUROPEAN CENTRAL BANK of 5 June 2014 amending Guideline ECB/2014/9 on domestic asset and liability management operations by the national central banks (ECB/2014/22).*

ceilings: (a) for overnight deposits, the unsecured overnight market rate; (b) for fixed term deposits, the secured market rate or, if not available, the unsecured overnight market rate.

2. On any calendar day, the total amount of overnight and fixed term deposits of all governments with an NCB exceeding the higher of either: (a) EUR 200 million; or (b) 0,04 % of the gross domestic product of the Member State in which the NCB is domiciled, shall be remunerated with an interest rate of zero per cent. If the deposit facility rate on this day is negative, then an interest rate no higher than the deposit facility rate shall apply.

Similarly, the Eurosystem reserve management services (ERMS[5]), granting accounts to foreign central banks and public sector funds, also typically foresee the differentiation between a more attractive rate applying up to some limit, and a less attractive one without limits. If the remuneration rate for tier two deposits is sufficiently unattractive, then the amount of such deposits should be low. The central bank should also be able to counter, through an as aggressive as needed lowering of tier two remuneration rates, the inflow of additional deposits in a financial crisis.

In sum: central banks have ample experience with tiered remuneration systems. These could be readily applied to deposit-based CBDC and could address the structural and the financial crises related bank disintermediation issues without exposing households using CBDC for payment purposes to (perceived) final repression. Of course, an undue structural or transitionary increase in CBDC at the expense of banks could also be addressed by a single tier system in which the interest rate applying to CBDC in general would be sufficiently low (or temporarily lowered). However, a two-tier system seems to have important advantages:

- It allows assigning the payment function of money to tier one CBDC, while the store of value function would be assigned to tier two, and would essentially be dis-incentivized through an unattractive remuneration rate. Indeed, central bank money should probably not become a large-scale store of value, i.e. a major form of investment of households, as this eventually implies that the central bank would become an investment intermediary of the economy (for which it has no particular qualification).
- It ensures that CBDC is attractive to have in principle for all households, as reliance on tier one CBDC never needs to be dis-incentivized by a particularly low remuneration rate.
- Thereby tiering reduces the scope for popular criticism of the central bank (e.g. of financial repression, expropriation of money holders, etc.).
- A two-tier system allows better steering of the amount of CBDC, which provides additional confidence into the manageability of the introduction of CBDC.

The central bank would need to communicate clearly at an early stage that the remuneration of tier two CBDC may be made unattractive. For tier one CBDC, the central bank can commit to never charge negative rates.

The central bank could also provide a commitment with regard to the quantity of tier one CBDC. For example, it could promise to always provide per capita a tier one quota of e.g. EUR 3,000, implying an amount of total tier one CBDC for households of around EUR 1 trillion (assuming an eligible euro area population of 340 million; the allowances of minors could be either set to zero or they could be allocated to a parent's CBDC account). To recall: banknotes in circulation in the euro area are somewhat above EUR 3,500 per capita (summing up currently to around EUR 1.2 trillion); securities holdings of the Eurosystem (including both investment and policy portfolios) are currently around EUR 3 trillion; and the banking system has excess reserves close to EUR 2 trillion. Everything else unchanged, there would thus still be no need for large scale credit operations with banks if CBDC of a total amount of EUR 1 trillion would be issued now. The central bank could moreover commit to increase the tier one CBDC quota when the amount of banknote in circulation decreases. An amount of EUR 3,000 for tier one CBDC could be interpreted as covering the average monthly net income of euro area households, such that the normal payment function of money would be covered. CBDC tier one allowances *for companies* would not necessarily have to be high, as it could be argued that the main objective of CBDC is to serve citizens. When estimating how tier one CBDC allowances would be translated into total CBDC volumes, it should on one side be taken into account that not all CBDC accounts will be opened rapidly, and maybe some households will never open an account, or will not hold the full tier one allowance on the account. On the other side, some households will be willing to hold tier two allowances.

If *foreigners* would be eligible to open accounts, then they would always have a tier one ceiling of zero. Finally, a deposit based CBDC framework could in principle be complemented by an anonymous token-based CBDC. If so, then the anonymous token-based part would be remunerated at the same level as account-based tier two CBDC.

The tier 1 remuneration rate r1 could be set in principle at a relatively attractive level, which could be the rate of remuneration of banks' excess reserves, and it could in addition be specified that it could never fall below zero. The tier 2 remuneration rate r2 should be set such that tier 2 deposits are rather unattractive as store of value, i.e. less attractive than bank deposits or other short-term financial assets, even when taking into account risk premia. The two rates could co-move in parallel with policy interest rates, with in addition some special provision when the zero lower bound territory is approached. The rates would themselves not be regarded as policy rates. Moving the rates would simply serve keeping a similar spread over time to other central bank rates, and thus in principle to other market rates. This would stabilize over time the incentives to hold CBDC. Of course, the existence of banknotes, which are invariably remunerated at zero, creates a variable spread between the remuneration of banknotes and CBDC, which may also have quantitative effects on both.

Initially, for example the following remuneration could be considered by the ECB:

$$r_1 = \max(i_{DFR}, 0);\ r_2 = (i_{DFR} - 2\%),$$

i.e. r1 would equal the rate of remuneration of excess reserves, with however a zero lower bound applying, while r2 would be two percentage points below the remuneration of excess reserves, however without floor. Alternatively, the remuneration rate of tier two could be set to never exceed zero, but to get negative when the deposit facility rate falls below 2%, i.e.

$$r_2 = \mathrm{Min}(0, i_{DFR} - 2\%)$$

This would ensure that tier two CBDC is never more attractively remunerated than banknotes in circulation. Moreover, the remuneration rate of tier two

[5] *https://www.ecb.europa.eu/paym/erms/html/index.en.html.*

CBDC could be lowered exceptionally in crisis times, i.e. such as to be lower than what would be implied by the remuneration formulas mentioned above, such as to prevent a run on the banking system into CBDC.

4 Conclusions

This paper tried to further demystify CBDC, also by revisiting the question how to address the risk, rightly stressed in the literature, that CBDC could structurally, or cyclically (in relation to financial crises) disintermediate the banking system. A simpler and less innovative alternative to the approach of Noone and Kumhof (2018) is developed, which relies on a tiered remuneration of CBDC, in line with long-tested central bank logic and practice. It is acknowledged that the control of CBDC quantities is not equivalent to the control of the impact of CBDC on the financial system, since CBDC might be a catalyst for the further shrinkage of bank balance sheet at the benefit of non-bank intermediaries, in particular if CBDC accounts offer relatively comprehensive account services such that many households may no longer feel a need to have a deposit accounts with banks.

As remarked by Carstens (2019, p. 10), central banks are not there to "put a brake on innovations just for the sake of it", but to ensure that implications of major changes are well understood so "that innovations set the right course for the economy, for businesses, for citizens, for society as a whole". From this perspective, this paper may suggest that central banks could be somewhat open to studying CBDC, although the overall business case and the precise risks to change the financial system in a disruptive way need further analysis. This conclusion seems similar to the one of Juks (2018), although Juks is less assertive on the tools to address possible unwarranted effects of the introduction of CBDC. The overall business case for CBDC will also still depend on preferences of households as money users and voters. In progressive countries, in which the demand for banknotes falls rapidly and in which conspiracy theories about a deliberate attempt of authorities to strengthen control of citizens and/or enhance the ability to exert financial repression power through the discontinuation of banknotes may be less popular, a business case for CBDC seems relatively plausible.

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On crypto assets

About 541 million years ago, in the space of just 20 to 25 million years, life on earth went through a sudden and remarkable change. In what became known as the Cambrian Explosion, a few simple organisms were replaced by a huge variety of more complex life forms with compound eyes, multiple legs, and sharp teeth. Most of the Cambrian life forms went extinct, but pretty much all animals and plants living today started their evolutionary journey at that time.

It has been argued that a rise in the level of free oxygen above a certain threshold enabled different lineages of complex life forms to develop. These complex creatures used their eyes, legs and teeth to prey on other organisms, which had to quickly learn how to hide or grow shields lest they be consumed as food. The rest is history.

We have seen a similar explosion in crypto assets over the last 10 years. It started with Bitcoin, evolved to a more complex form with Ethereum, had a separate line with Ripple, and then splintered into thousands of crypto tokens.

Like the rising level of oxygen for early life forms, the crypto explosion may have been made possible by Moore's Law, an observation that over time, ever more computational power is available at the same cost. Due to Moore's Law, sometime in the late 2000s, computing power seems to have reached a critical threshold – it became possible to solve complex calculations on standalone personal computers, and communicate the solutions to other computers over the Internet.

The result was a decentralised, self-sustaining, computational ecosystem governed by a protocol that issued new crypto assets to those who provided computational resources – *blockchain or distributed ledger technology*. These assets could be thought of as crypto life forms inhabiting different blockchains. And as before, many crypto assets will not survive just as the post-Cambrian arthropods did not way back when. By some estimates, around two-thirds of crypto assets offered through an initial coin offering failed to survive 120 days. However, the ones that do will evolve into a class of financial assets more suitable to the digital era than many of the ones we have now.

As an asset class, crypto assets are probably closest to commodities. According to the U.S. Commodity Exchange Act, there are three types of commodities – agricultural, exempt (such as metals and energy) and excluded (interest rates, exchange rates, credit rates, indices, measures, etc.). Specifically, according to Section 1(a)19 of the Commodity Exchange Act, "excluded commodity" is

"(iv) an occurrence, extent of an occurrence, or contingency (…) that is
(I) beyond the control of the parties to the relevant contract, agreement, or transaction; and
(II) associated with a financial, commercial, or economic consequence."

Bitcoin, for example, fits into this definition quite well. It is an occurrence; is beyond the control of the parties to the relevant contract; and is associated with a financial, commercial, or economic consequence. However, some digital assets, including the very Bitcoin could also be considered exempt commodities (like precious metals). While the difference in classification matters for regulatory treatment, it is fair to say that the breadth of the existing statutory definition at least in the U.S. is sufficient for the purposes of regulating crypto assets.

The most important financial attributes of a physical commodity are (i) its storability over time and (ii) ease of its delivery in different locations and under different circumstances (future states of

the world). Think of gold – arguably the most financial of the physical commodities. Gold is capable of being stored over very long periods without any loss to its physical properties and it can be easily delivered without any infrastructure. In contrast, electricity – another commodity – is currently very difficult and costly to store and requires considerable (and also very costly) infrastructure for delivery.

Digital records are extremely highly storable and can be delivered over digital communication networks anywhere in the world at extremely low cost. However, while a physical commodity cannot be digitally cloned, a digital record can be, which makes it hard to distinguish between the original and a copy. Blockchain technology uses cryptography and encryption to create and transmit an immutable database of digital records. As a result, it becomes possible to use blockchain to create scarcity of digital objects, and, thus, create an entirely new class of digitally native financial assets – crypto currencies, tokens and coins.

Digital scarcity, however, is necessary, but not a sufficient condition for the survival of a supplied crypto asset. The key to the survival of a crypto asset is the probability of its adoption for some form of use.

In recent work with Silvia Bartolucci, we posit that on the supply side, crypto assets differ from each other by two essential features: security and stability. We argue that security of a crypto asset reflects its technological vulnerability to cyber fraud, manipulation, abuse, and attack. Other things equal, use of a more advanced encryption technology would render a crypto asset more secure relative to other crypto assets at a point in time. In other words, security is a cross-sectional attribute of a crypto asset.

In turn, stability of a crypto asset reflects its potentially faulty governance. Other things equal, greater reliance on elements of regulated or self-regulated governance with legal or procedural recourse would render a crypto asset more stable in terms of the value that can be recovered. Thus, stability is a time series attribute of a crypto asset that reflects its ability to retain value across time for a given level of security by adopting more legal, regulatory, and credible self-regulatory (e.g. consensus) mechanism.

On the demand side, we model the adoption of a crypto asset as a choice between security, stability, and the risk/return tradeoff for given investor preferences. Intuitively, in order to get adopted as quickly as possible, crypto assets have to offer higher expected return. Expected return, of course, is an economic and statistical construct – it is a sum of payoffs weighted by their perceived probabilities. Whether those payoffs actually materialise and whether those perceived probabilities match anything deemed rational is a big and, at times, very technical part of the research agenda in financial economics and should not in any way, be viewed as investment advice.

By plotting the expected return of crypto assets against the risk of their not being adopted, we're able to organise them into four large groups: *central bank issued digital currencies* (CBDCs), stable coins, cryptocurrencies, and crypto tokens.

CBDCs can be used to pay for any good, service or financial asset. Their technological advantage is being digitally native. Their economic advantage is access to a central bank-regulated payment system. The probability of non-adoption for such an asset could be kept very low as a central bank can simply mandate its use within its regulated jurisdiction.

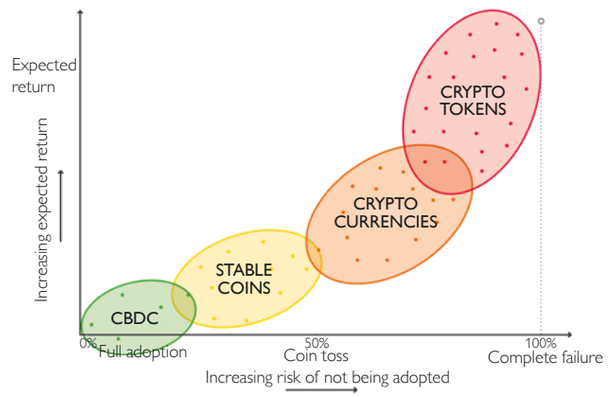
So far, there have been several examples of what could be considered CBDCs, but none in credible jurisdictions. In contrast, countries with credible national payment systems have publicly spoken against opening up CBDCs, often citing financial stability concerns.

I have been asked by a dozen regulators around the world for my views on crypto assets and CBDCs in particular. In my opinion, a CBDC really makes sense in an economic area where the added value is expected to increase in line with affordable computational power. To put it simply, if you have a global platform like Amazon, Alibaba, Google or Facebook operating in your economic jurisdiction, you should seriously study how to give them an ultraliquid, digitally-native asset with access to the payment system that's suitable for their Moore's Law driven business processes. Otherwise, don't worry about it.

Stable coins are so called because they are collateralised by existing financial assets or fiat currencies. Their technological advantage is their ability to be held in crypto wallets alongside existing crypto assets. Their economic advantage is the stability of the underlying collateral. The probability of non-adoption for a stable coin could range from moderate to a coin toss: they need to offer a positive expected return to attract potential users. In so far as a stable coin scales up with Moore's Law, it could offer a viable transition mechanism from a fiat currency to a crypto asset, provided it is able to reach the necessary adoption threshold.

Chart 1

Expected return against risk of crypto assets



Source: Author's compilation.

Crypto currencies were designed to scale up with Moore's law, but their continuing creation to reward the owners of computers that keep track of their use has been proving costly. Their probability of non-adoption fluctuates around 50% and their expected return is high. The adoption of *Ethereum* is benefitting from its use as a platform for other applications, but the more popular it becomes as a development platform, the higher are the chances that its perceptions of its purpose split, limiting widespread adoption. And, of course, whether or not crypto currencies are more fully adopted relies a lot on what regulators in key jurisdictions have to say about them.

Last of all are those crypto tokens. These include utility tokens, security tokens, and other types of crypto tokens. For the purposes of this article, tokens are for the most part viewed as future sales, investment and participation schemes designed to fund software development. Investment in crypto tokens

is a high-risk activity, vulnerable to outright fraud, failure, and inadequate performance. To mitigate these risks and profit from intermediation and future use, a vibrant ecosystem of crypto funds, crypto exchanges (where crypto tokens are listed) and crypto custodians (where crypto investments are held) has emerged. Some of these participants will go extinct along with their token investments, but others will survive – and make a lot of sense for a number of digital projects, especially those that have the potential to become global platforms.

In my view, crypto assets have a fundamental technological feature that separates them from previous generations of assets – as the affordability of available computing power increases, so too will their usefulness. This makes them much more suitable for financing activities such as software development, digital payment and settlement platforms, and e-commerce. In contrast, more physical economic activities such as mining, car manufacturing, or running a grocery shop, will do just fine without them.

Lastly, I have a few words on the regulation of crypto assets, which again should not be viewed as legal or investment advice. Regulation of crypto assets has proven to be a non-trivial challenge to regulators around the world.

First of all, regulators have to figure out what aspect of a crypto asset they regulate and why. Is it cryptography/encryption (AML/KYC), P2P (payments/intermediaries), consensus (governance), blockchain (entities/reporting)?

Second, the regulators need to answer why are they regulating crypto assets. Is it due to market failure/manipulation, asymmetric information/rent seeking, financial bubbles/systemic risk?

Third, regulators need to establish under which regulatory mandate is the plan to regulate crypto assets? Do they plan to regulate them under the monetary policy mandate, financial stability mandate, payments mandate, consumer protection, or fair and orderly markets mandate?

In my opinion, regulators ideally should try not to regulate a specific asset, crypto or otherwise. Rather, after defining broad attributes of an asset class, regulators should aim to regulate principled activity – issuance, brokerage, custody, etc. Furthermore, many crypto assets follow a zero trust architecture – "never trust, always verify any node or activity on the inside or outside the network" – so aspects of the regulation of crypto assets might could in fact evolve to follow a much lighter touch.

Session 6
Completing European Economic and Monetary Union

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Completing European Economic and Monetary Union: next steps

"Completing Europe's Economic and Monetary Union" is the title of a significant report authored by the five Presidents of the European Union (Commission, Council, Eurogroup, ECB and Parliament) published in 2015[1]. But what exactly makes European Economic and Monetary Union (EMU) incomplete? Some might joke that EMU lacks a 6th President. Indeed, the number of institutions responsible for economic policy already indicates that EMU might have a governance issue. To put it simply: What makes EMU unique is that it does not comprise just a single state. And since there is no political will to create the United States of Europe, the euro area must mimic the most essential functions of a state.

This is why the proposal of the five Presidents rests on four pillars: first, an economic union that promotes convergence, prosperity and social cohesion; second, a financial union that integrates banking and capital markets regulation; third, a fiscal union that guarantees sound public budgets and sufficient provision of public goods; and fourth, a political union that strengthens democratic accountability, legitimacy and institution building. Undoubtedly, "complete" does not necessarily mean perfect – even the dollar area is far from perfect. Nevertheless, the tone of the European Commission has become a bit more pragmatic as it now talks about "deepening EMU" rather than "completing EMU."

Since the crisis, a couple of measures have been taken to deepen EMU. As a case in point, the European Semester was established to better coordinate economic policies of euro area Member States. The greatest progress has probably been made with respect to the banking union, although the important element of a cross-border deposit insurance scheme is still under negotiation. Moreover, the process of creating a capital markets union has already been started, but its completion is likely to take decades. The strengthened Stability and Growth Pact has contributed to a decline in public debt in almost all Member States, while the newly created European Fiscal Board helps not to lose track of the optimal fiscal stance of the euro area as a whole.

Additionally, the European Commission suggested further innovations, such as Sovereign Bond-Backed Securities (SBBS), i.e. privately placed securities without joint liability. Furthermore, the Commission proposed two new instruments within the new Multiannual Financial Framework 2021–2027: a new Reform Support Programme with an overall budget of EUR 25 billion and a European Investment Stabilisation Function in the form of subsidized back-to-back loans of up to EUR 30 billion. Moreover, the Meseberg Declaration[2] of France and Germany proposed the establishment of a euro area budget to promote competitiveness, convergence and stabilization in the euro area, including investment in innovation and human capital. This budget line would be based on an intergovernmental agreement within the EU framework; its size yet needs to be specified. Putting aside any doubts about EU-wide agreement on these measures, the following question remains: Will they indeed be the game

[1] *Juncker, J.-C., D. Tusk, J. Dijsselbloem, M. Draghi and M. Schulz. 2015. Completing Europe's Economic and Monetary Union. European Commission.*

[2] *German Federal Government. 2018. Meseberg Declaration: Renewing Europe's promises of security and prosperity. June 19.*

changer wished for or merely "baby steps on eurozone reform" as financial observers called it?[3]

In December 2018, a Franco-German group made up of fourteen well-known economists[4], including *Isabel Schnabel*, our first contributor, proposed a comprehensive reform package calling for the following: first, introducing sovereign concentration charges for banks, common deposit insurance and strengthened mechanisms to bail in creditors of failing banks; second, replacing the current system of fiscal rules with a simple expenditure rule guided by a long-term debt reduction target; third, establishing the economic, legal and institutional underpinnings for orderly sovereign debt restructuring of insolvent countries; fourth, setting up a euro area fund that helps participating Member States absorb large economic disruptions; fifth, creating a synthetic euro area safe asset as an alternative to national sovereign bonds; and sixth, designing a new euro area institutional architecture, with institutional surveillance being separated from political decision-making by creating an independent fiscal watchdog within the European Commission.

Our second contributor, *Bruno Cabrillac*, presents other bold and visionary approaches. His discussion focuses on the following questions: Will a resilient EMU take more than the consensual measures voiced by the Commission and the Franco-German group of economists? Will the Five Presidents' Report be implemented, or will it be replaced by another vision? What are the major political disagreements and technical obstacles to achieving our goals? How can we overcome them? And last but not least, one of the main questions for central bankers: How can the euro help Europe contribute to a financially more stable and economically more prospering world?

Finally, let me briefly introduce this section's contributors: Bruno Cabrillac is Deputy Director General of Economics and International Relations at the Banque de France. Between 2008 and 2016, he was Director of Economics and International European Relations. He entered the Banque de France in 1984, serving as economist initially in the Foreign Relations Department, then in the Research and Forecast Department. He was seconded to the Ministry of Finance as Financial Counsellor in Cairo and Tokyo, having worked as a foreign exchange and bond trader for eighteen months prior to that. In 1997, he was appointed Head of the African Department (Zone Franc) of the Banque de France. In the early 2000s, he became Trade Commissioner and Banque de France representative in Hong Kong and Macau, and later Financial Counsellor for Africa at the French Ministry of Finance.

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[3] *https://seekingalpha.com/article/4226361-eurozone-filibuster-eurozone-reforms-continues.*

[4] *https://voxeu.org/article/how-reconcile-risk-sharing-and-market-discipline-euro-area.*

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Integration and convergence in the EMU: a complex dynamic[1]

Economic real convergence is enshrined in the founding Treaties of the European Union, as the Community should aim "at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions" (Art. 158). While real income convergence, measured by the GDP per capita, among the twelve euro area first joiners has increased in the two decades before the euro, it has come to a halt in the last two decades. Since the Great Financial Crisis, these countries are even drifting apart, to use the words of a recent IMF paper.[2] Looking at long-term potential growth, this divergence could go on.

Real income convergence is neither a necessary condition, nor a by-product of a deeper integration of the EMU, as shown by the example of the USA. However, as the Delors Report already pointed out in 1989, long-term income divergence could be detrimental to the whole EMU project as long as this project has not been finalized yet, first, because the incompleteness of the EMU as an Optimal Currency Area (OCA) limits the possibilities to mitigate real income divergence or its effects and second, because it can weaken the political narrative around the EMU and hence, its credibility.

While deeper integration through strengthening the single market and increasing intra euro area labour and capital mobility could increase agglomeration effects and contribute to real income divergence, it could, as well, mitigate its effects. At the same time, what has been (and could be) done to foster cyclical convergence in the euro area can contribute to reduce structural divergence. Eventually, the political unsustainability of long-term real income divergence can only be dealt with more integration, including fiscal integration.

1 Real income divergence among euro area first joiners could go on

Since the introduction of the euro, both ß-convergence, which measures whether countries with lower GDP per capita grow faster than those with higher GDP per capita (so-called "catching up effect) and σ-convergence, which measures the decline in dispersion of countries' GDP per capita, have improved among EU members, but this improvement has slowed compared to the two prior decades. Moreover, most of that measured convergence is due to Eastern European countries, whether they joined the euro area or not. Recent studies[3] show that the Great Financial Crisis actually stopped convergence among EU Member States and regions.

Indeed, when focusing on the 12 euro area countries which have joined the euro between 1999 and 2001 (euro area first joiners), real income convergence has stopped since 1999 and even reversed since the Great Financial Crisis. Greece, Portugal and Spain, which have a real GDP per head lower than the average EU, have stopped catching up; Ireland and Germany which have a higher GDP per head than average have enjoyed higher real income growth. It looks like the EMU has been "a source of a growing gap between a virtuous core and a sinful

[1] *Special thanks are due to Véronique Genre and Jean-Baptiste Gossé whose help was precious.*

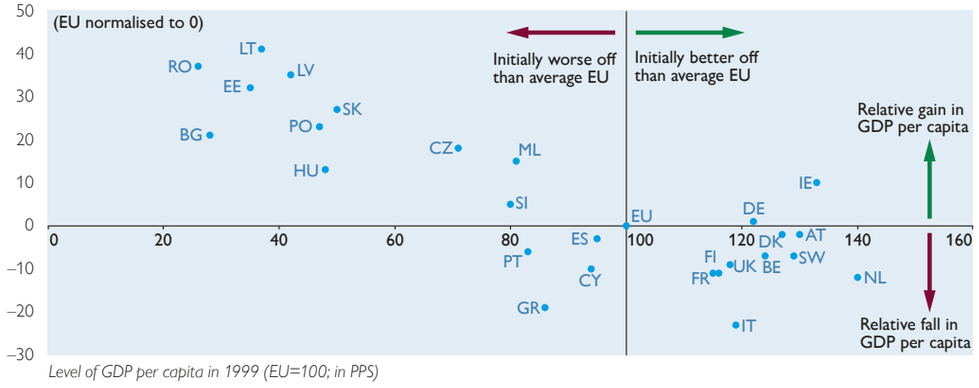
[2] *Economic Convergence in the Euro Area: coming together or drifting apart, J. Franks et al., IMF Working Paper 18/10, January 2018.*

[3] *Building a stronger and more integrated Europe OECD Economics Department Working Papers 1491, A. Caldera Sánchez, July 2018.*

Chart 1

EU Convergence: where do we stand?

Cumulative change in GDP per capita 1999–2017



Level of GDP per capita in 1999 (EU=100; in PPS)

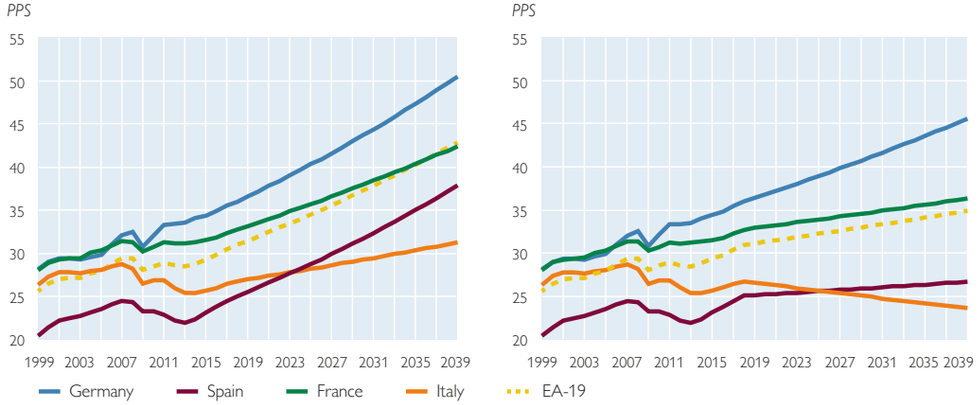
Source: Eurostat.

Chart 2

What could come next? GDP per capita trends applied forward

Option 1: 1999–2008 trend extended from 2018

Option 2: 2008–2018 trend extended from 2018



Source: Banque de France.

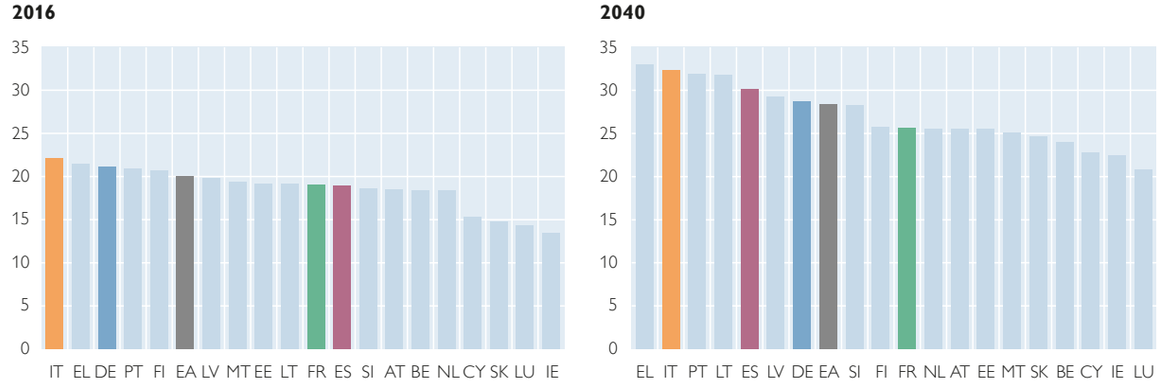
periphery".[4] France and Italy have contributed to convergence as they still enjoy a higher real GDP per head than the average EU (but not the euro area, for Italy). However should the relative slowdown of these two countries go on for the next decades, they would contribute to overall real economic divergence, first in the euro area, then in the whole EU.

Should the trend of the last two decades go on over the coming two decades, real GDP per head divergence would lead to an increasing gap between Germany and Italy, so that Italy's GDP per capita could represent 62% of Germany's by 2040 (chart 2). If we extend the trend of the last decade, this figure could decrease to 52%.

[4] *Patterns of Convergence and Divergence in the Euro Area, Á. Estrada, J. Galí and D. López-Salido, IMF Working Paper, 2013.*

Chart 3

Old-age dependency ratio in Europe



Source: European Commission (2019), 2018 Ageing Report.

Chart 4

Percentage of adults scoring at each proficiency level in literacy and numeracy

Source: PIAAC (2016).

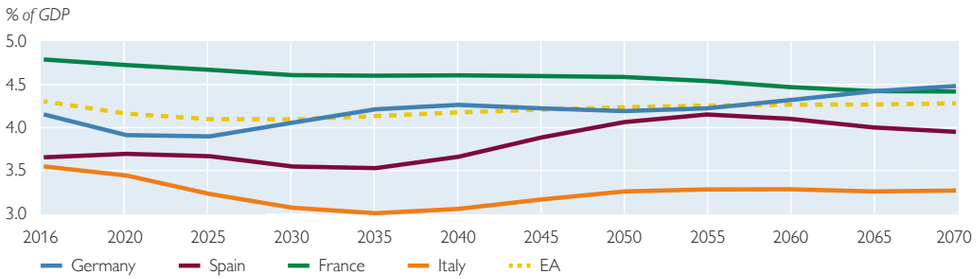
While projecting trends is not always relevant, notably when the period is encompassing an exceptional event, there is a rationale to do so:

- All 4 biggest euro area economies are ageing, albeit not with the same speed. According to the 2018 Ageing Report of European Commission, the old age dependency ratio will increase in all euro area countries, but more so in Italy (+10%) and Spain (+11%), and, to a lesser extent, in Germany (+7%).
- Rapidly diverging public debt-to-GDP ratios makes any catch up through public capital accumulation difficult, especially in France and Italy.
- The real economic divergence among the euro area first joiners and, in particular, among the 4 biggest economies, has been mainly due to total factor productivity growth divergence.[5] It is the reason why a hypothetical (and improbable) change of this trend would anyway take time. In addition, some underlying factors

[5] *Economic Convergence in the Euro Area: coming together or drifting apart, J. Franks et al., IMF Working Paper 18/10, January 2018.*

Chart 5

Education spending



Source: OECD.

are not playing in favour of a path reversal.

- Let us take education. Looking backward, performances measured by the PISA survey have been increasingly disappointing in most euro area countries, and the initial gap between the four big countries has not been reduced. According to a Eurostat survey, the percentage of people aged between 16 and 64 and lacking basic digital skills is still very different across euro area countries (from 15% in Luxembourg to 55% in Italy) and is significantly higher in Spain and Italy than in Germany.

Looking forward, according to the Ageing Report of the EU Commission, the gap between Germany on one hand and Italy and Spain on the other hand on education spending will increase significantly in the next two decades.

2 Is real divergence among euro area countries an issue?

It is widely recognized that real income long-term convergence is not a necessary condition for a functioning monetary union. As an illustration, most of the proposals made to fix the euro area flaws do not target directly real income divergence. As noted by a recent ECB paper[6] this evidence is supported by the fact that "income dispersion in the United States is still broadly comparable to that in the euro area, yet this has not materially affected the ability of the Federal Reserve to conduct monetary policy at federal level".

However, as underlined by the ECB[7]: *"although income dispersion in the US monetary union is still broadly comparable with that of the euro area, the latter is less able to cope with any failure to attain sustainable convergence. This is, ultimately, because the euro area performs relatively worse than the United States in the fulfillment of optimum currency area, as concluded by a wide body of literature."*

Furthermore, not only the EMU is an incomplete OCA, – which, as Daniel Gros is arguing[8], may not be the most important point –, but it remains perceived, for this reason and others, as more reversible than the USA. Hence, Daniel Gros is pointing out that the main difference between the Greece and Puerto Rico crisis is that the Greek Government had the possibility to leave the euro and introduce a national currency.

[6] *Real convergence in the euro area: a long-term perspective, Diaz del Hoyo et al., ECB Working Paper, December 2017.*

[7] *ECB Occasional Paper Series 203, December 2017.*

[8] *Puerto Rico and Greece: A Tale of two defaults in a monetary union, Daniel Gros 18 June 2015 (updated 30 June 2015), CEPS.*

Neither is real income convergence an automatic product of institutional, economic and financial integration. The US case is again supporting this assertion as both ß-convergence and σ-convergence have decreased among US states[9] since the 1990s. This confirms the famous 8 lessons of Massachusetts for EMU drawn by Krugman.[10] However, while the Solow exogenous growth paradigm has received mixed empirical evidence, the catch up of many emerging countries since the acceleration of globalization has given some credibility to a positive link between convergence and integration. One way to reconcile this paradox could be to underline that relative economic integration in the USA and the EU has decreased due to rapid progress of global economic integration both on trade and on capital flows. Net effects of specialization in the context of swifter integration at the global level could have changed the dynamic of agglomeration effects.

The issue of potential increase in regional income inequalities due to agglomeration effects, despite or even because of regional integration, has not been overlooked in the European integration project. The Delors report[11] for example stated in 1989 that: "Community policies in the regional and structural field would be necessary in order to promote an optimum allocation of resources and to spread welfare gains throughout the Community. If sufficient consideration were not given to regional imbalances, the economic union would be faced with grave economic and political risks". However, the "Community policies" in place, namely the EU cohesion policy could be made more effective and more redistributive[12], but is fundamentally lacking the critical mass.

3 Deepening the single market may not improve convergence but could mitigate the effects of real structural divergence

3.1 Trade in goods and services

Intra-euro area trade in goods, at 20% of GDP, is much lower than intra-US trade (35%) and has increased much less than extra euro area trade since the Great Financial Crisis (respectively +26% and +45% between 2008 and 2018). This could reflect a still unachieved but loosing its steam specialization process inside the euro area. Reversing this trend and achieving a more integrated goods market could have ambiguous effects on real income convergence as the specialization process could lead to structural terms of trade divergences.

Behind-the-border trade barriers remain significant in the services sector

[9] *Income convergence among US states: cross-sectional and time series evidence, J. C. Heckelman, The Canadian journal of Economics, 2013.*

[10] *Cambridge University Press, 1993.*

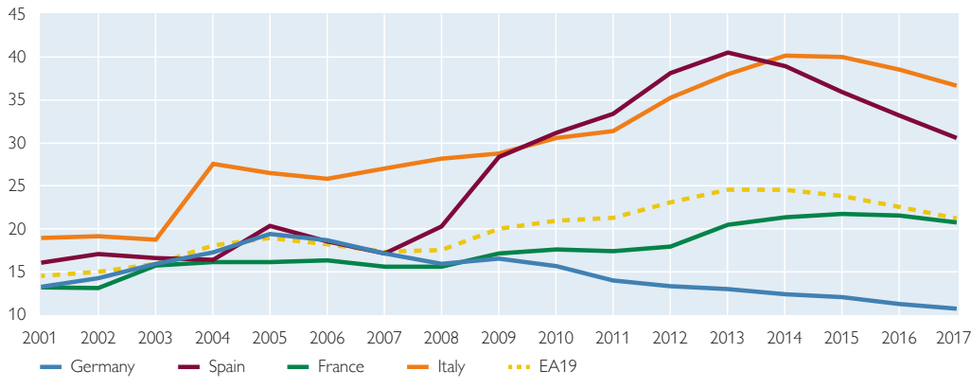
[11] *Report on economic and monetary union, April 17 1989, European Commission, Committee for the Study of Economic and monetary union, chaired by Jacques Delors.*

[12] *Building a stronger and more integrated Europe OECD Economics Department Working Papers 1491, A. Caldera Sánchez.*

Chart 6

Labour market slack in Europe

Index of underemployment (unemployed, discouraged, unvolontary partial time, % of labour force)



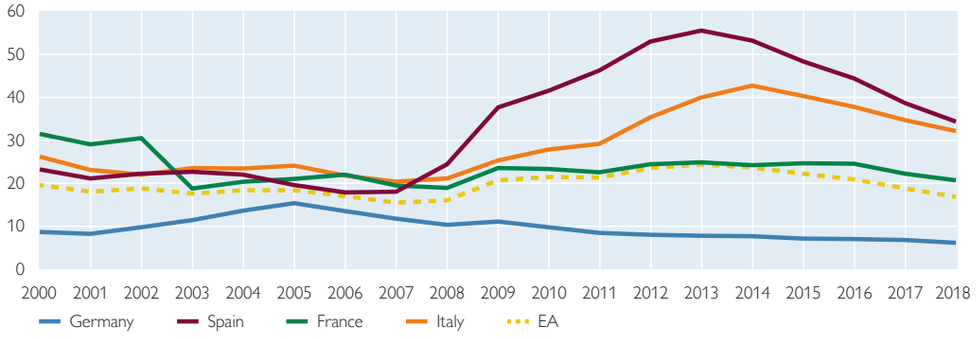
Source: Eurostat Labour Force Survey.

Note: Labour market slack is defined as the sum of unemployed, discouraged workers and involontary part-time work.

Chart 7

Youth unemployment rate

% of active population



Source: Eurostat Labour Force Survey.

even inside the single market. As illustrations, some estimates suggest that the full implementation of the services directive could add 1.7% to EU GDP[13] and the number of regulated professions remains high on the average compared to other OECD countries and significantly different in the core countries of the euro area (higher in France and Italy, than in Germany). While services trade restriction in the EU remain around the OECD average, a lot of these restrictions also concern other EU members. Deepening services trade liberalization inside the EU would hence increase the comparative advantage of the single market.

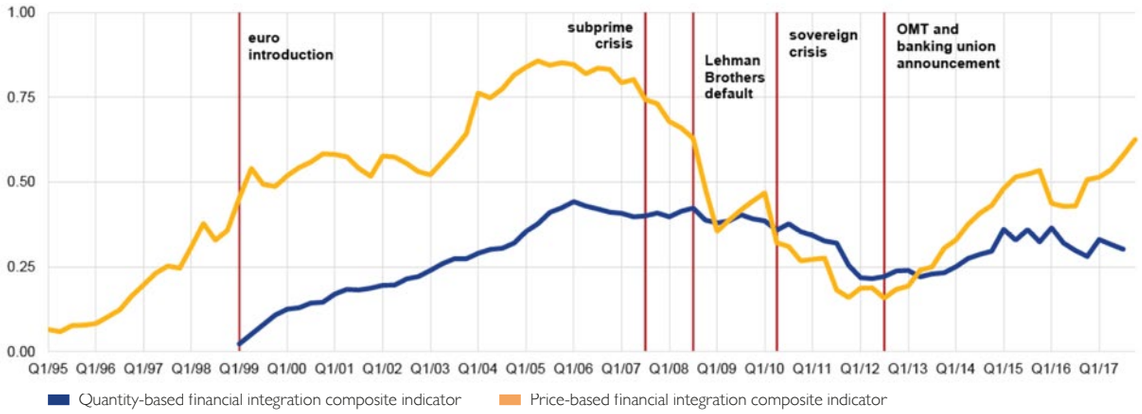
3.2 Labour market mobility

Labour mobility remains low in the EU. EU/EFTA foreign born population stood above 5% of the EU working age population in 2017, up from 3% in 1999 due mainly to migration from Central and Eastern Europe. It is still well below

[13] *European Commission, 2017, Proposal for a Directive of the European Parliament and of the Council on the legal and operational framework of the European services e-card introduced by Regulation", Commission Staff Working Document, 2017.*

Chart 8

Measures of financial integration in the euro area



Source: ECB.

inter-state mobility in the USA: year on year migration is ten times higher in the USA.

Unemployment rates and broader measures of labour slack have considerably diverged in the last two decades which reflects low labour mobility. This divergence has occurred in every phase of the cycle: during the Great Moderation, the Great Financial Crisis and the subsequent recovery. While youth unemployment rates divergence has somewhat receded since the beginning of the recovery, it remains at an incredibly high level.

Increasing labour mobility would accelerate specialization and agglomeration effects and hence, as a first step, geographical real income divergence. However, it would reduce inequality of opportunity among euro area countries and hence make income divergence more politically sustainable. In a second step, labour mobility could reduce real income divergence through reducing structural unemployment divergences. Eventually, with deeper labour and capital mobility, geographical income disparities would mainly become an issue of regional planning. It means more than semantics: it would reduce the size and the scope of permanent cross border transfers, notably potential social transfers, needed to mitigate real income divergence. The current European cohesion policy would then be more appropriate to deal with these challenges.

As low intra euro area/EU labour mobility is the most important factor of today's distance between the EMU and an optimum currency area, deepening labour markets integration would also help foster EMU credibility. What could be done in this field is much beyond the scope of this paper but it includes structural measures, notably to improve cross-border occupational pension portability rights beyond the

EU current legislation on social security coordination[14] and recognition of professional qualifications or to harmonise further education standards. Eventually, increased labour mobility gives a rationale for partly mutualising education spending.

3.3 Financial integration

Financial integration inside the euro area has deepened over the long run, but has dropped dramatically during the Great Financial Crisis and has not fully recovered since. A lot has been done since the crisis to increase financial integration: Banking and Capital Markets Unions are at the forefront of the euro area agenda since the European sovereign crisis. The Banking Union is still incomplete and need to be accompanied by more intra-euro area cross border banks consolidations. The capital markets union is still in its first phase and a lot remains to be done.

More financial integration could have a direct positive effect on real income convergence. It could facilitate net cross-border capital flows from countries with a structural higher saving rate to others, allowing for more convergent paces of capital accumulation. A more stringent discipline on macro imbalances should reduce the financial stability risks of higher net investment positions. To mitigate potential procyclical effects of increased capital mobility, crisis prevention and resolution tools have to be developed. On this point, the euro area has made very significant steps since the crisis. In addition, financial integration is an important ingredient of the optimality of a currency union[15] and hence contribute to its credibility. Finally, a deeper financial integration could also be a powerful driver of cyclical convergence through private risk sharing directly or indirectly (as financial integration of the euro area goes along with a decreasing home bias at the euro area level).[16]

3.4 Fostering stronger cyclical convergence

Differently from long-term real income convergence, cyclical convergence is a necessary condition of a functioning monetary union. Indeed, a common monetary policy has difficulties dealing with desynchronized business cycles and/or potential asymmetric shocks. As Anna auf Dem Brinke, Henrik Enderlein and Jörg Haas state: "cyclical convergence is a must have in the EMU".[17] In an economic and monetary union, risk sharing, ie the smoothing out of the consumption in case of an economic shock is normally higher. On this point, the USA is also working better than the EU. "While in the euro area around 80% of a shock is to GDP growth in a given country remained unsmoothed over the period 1999-2016, in the United States at most 40% of a shock to state-specific GDP was unsmoothed during this period".[18]

Cyclical convergence, economic and financial integration and real convergence are closely intertwined. First, specialization and agglomeration effects could increase both structural and cyclical divergence (as shocks would become more asymmetric). Second, cyclical divergence can lead, in a monetary but not fiscal union to overburdening the national fiscal policies[19] and to asymmetric adjustments where countries have less fiscal space, increasing structural divergence as it happened during the European sovereign crisis.[20]

A lot has been done for improving cyclical convergence. A lot remains to be done and the relevant proposals made by a group of 14 French and German economists[21] give an illustration of the heavy agenda to complete the work.

Since the beginning of the European project, real income convergence, albeit not being a necessary condition of the EMU, has been seen as one of its main deliverables. Deeper integration would not necessarily result in real income convergence, but it could help mitigate the effects of divergence. However, on the long term, the "whatever-it-takes" to mitigate real income divergence relies mainly on fiscal policy as Krugman put it: "In the US the heavily federalized fiscal system offers a partial solution to the problem of regional stabilization. Unless there is a massive change in European institutions, this automatic cushion will be absent." Today, structural real income divergence makes any step toward a euro area central fiscal capacity more politically difficult, not to mention a transfer union. To get out of this trap, there might be a way: strengthening the EMU to make it more alike an optimal currency area and to improve cyclical convergence. This would (i) increase the credibility of the EMU and its resilience, (ii) help mitigate divergence through private risk sharing and (iii) give rationale to more fiscal transfers. As an example, in the same manner a Banking Union justifies a common fiscal backstop for the Resolution Fund, a much more integrated labour market could justify a fiscal capacity at euro area level for some education spending.

[14] *And even beyond the amendment on which the European Parliament and the Council of the EU reached a provisional agreement in March 2019.*

[15] *Currency union with or without banking union, V. Bignon et al., International Economic Review, May 2019.*

[16] *Institutional investors and home bias in Europe's Capital Markets Union, Z. Darvas and D. Schoenmaker, Bruegel WP, February 2017.*

[17] *Why the Eurozone cannot agree on convergence and how structural reforms can help, Institut Jacques Delors, policy papers, May 2016.*

[18] *Risk sharing in the euro area, J. Cimadomo and S. Hauptmaier, A. A. Palazzo and A. Popov, ECB Economic Bulletin, March 2018.*

[19] *Design failures in the Eurozone, can they be fixed?, P. De Grauwe, LEQS Paper, February 2003.*

[20] *Causes of European Crisis, J. Frankel, in: The Eurozone Crisis: A Consensus View of the Causes and a Few Possible Remedies. R. Baldwin and F. Giavazzi (eds.). Center for Economic Policy Research, 2015.*

[21] *Reconciling risk sharing with market discipline: A constructive approach to euro area reform, 14 French and German economists, CEPR policy insight, 91, January 2018.*

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Reconciling risk sharing with market discipline: a constructive approach to euro area reform

A great European, Hans-Dietrich Genscher, once said: "Our future is Europe. We do not have another one." This is, in fact, an important and true statement, and it underlines the importance of thinking about reforms in Europe. This is why a group of seven French and seven German economists (the "7+7 group") published a comprehensive report on euro area reform last year (Bénassy-Quéré et al., 2018).

This report has received a lot of attention, and one of the reasons is that the group of authors of the report was quite heterogeneous. But in spite of some diverging economic views, it proved not so hard to find a consensus. This gives some hope that Europe can find a consensus on these issues in spite of the existing red lines. Two such red lines are debt mutualization and permanent transfers among Member States. Within the "7+7 group", those two red lines were respected. But further red lines exist that may have to be crossed to make the euro area stable.

Diagnosis: the euro area remains fragile

It is important to acknowledge that the euro area remains fragile. But many politicians have lost this sense of urgency that something needs to be done. The feeling is that the crisis is more or less over and no reforms are needed in the short run. This may be a misperception. The global economy currently experiences a slowing expansion, and the same is true for the euro area after a relatively long boom. Risks are rising. There is the trade conflict, the imminent Brexit, and the risk that the euro area crisis may return. Of course, a lot of progress has been made. Europe has created new or improved institutions: the European Banking Union, which is crucial for the stability of the banking sector, and the European Stability Mechanism for crisis management; the Stability and Growth Pact was reformed, and there are new regulations in the financial sector, like Basel III.

Nevertheless, there are several problems that have not been solved. Many Member States still show very high public debt levels. Public debt increased sharply in the global financial crisis, and the relatively good times afterwards have not been used sufficiently for consolidation in some Member States. This is partly due to the fiscal framework, which has proven to be procyclical, partly ineffective and politically divisive. So debt levels are still high and fiscal space in the next crisis or recession is limited in many Member States, excluding, most importantly, Germany.

At the same time, monetary space is limited. The macroeconomic situation would have allowed for an earlier normalization of monetary policy, but this has not happened. At the present situation slowing growth makes the exit from loose monetary policy unlikely. Consequently, the euro area may not be able to rely on the ECB to the same extent as it has done in the last crisis. This is not so much because there are no instruments left but rather because these instruments become more and more politically controversial, which may impact the ECB's independence.

The European banking sector remains relatively weak. Of course, capital ratios are higher than before the crisis. But especially in the light of the observed reduction in loan-loss provisions, they are still not high enough. Non-performing loans have decreased, but they may rise again fast in the next recession. There has

also been increased risk-taking, not least due to the low interest rate environment. Exposures to domestic sovereigns remain very high, and the profitability of banks is structurally low.

In comparison to the USA, there is relatively little risk sharing in the euro area. There was a sharp drop in financial integration after the financial crisis. Financial integration proved not to be resilient in the crisis because it was mostly interbank loans, which disappeared in the middle of the crisis. Hence, the risk sharing did not work when it was needed most. The banking and the capital markets are still segmented in Europe, and so there is little financial risk sharing and what is more, there is virtually no fiscal risk sharing.

In 2018, the importance of these issues became clear when there was a sharp rise in Italian government bond spreads in the context of the Italian government formation and budget negotiations. On the one hand, this is a good sign because it seems there was some market discipline, and it partly worked because the Italian government became a bit more careful when they saw these harsh market reactions. On the other hand, there are studies showing that this increase was partly driven by redenomination risk. This also shows up in the transmission of these increases to other euro area countries. Moreover, the shock was transmitted to Italian and other European banks, which shows that the sovereign-bank nexus is still alive and strong.

Meanwhile, the popularity of EU membership has risen, partly related to the imminent Brexit. However, there is a large heterogeneity across countries, political polarization and anti-European movements prevail in quite a few countries. It seems likely that crisis management has contributed to that. Interestingly, neither the debtor nor the creditor countries were very happy. While the creditor countries had the feeling, they were paying for other people's mistakes, the debtor countries had the feeling that austerity programs had been unfairly imposed on them.

Taken together, the status quo of the euro area remains unstable. The recovery has relied strongly on the ECB, which may not be possible to the same extent in the future due to limited monetary space. At the same time, there is limited fiscal space. Therefore, it will be much more difficult to deal with the next recession or crisis.

Risk sharing and market discipline are complements

At the same time, there is a deadlock that delays, or slows down, the reform process, which poses a threat to the stability of the euro area. As argued in the "7+7 report", this is partly due to different philosophies. The words "German" and "French" used below in order describe the opposing views should not be taken literally. Now, what is the "German" view? The "German" view emphasizes the unity of liability and control, the role of market discipline, incentive compatibility, fiscal discipline, enforceable rules, and the absence of a transfer union. The "French" view emphasizes the need to insure against asymmetric shocks, to avoid procyclicality, and to create safe assets. These different philosophies translate into different policy implications. The "German" view would prescribe a regime for the orderly restructuring of sovereign debt, credible fiscal rules with sanctions, and a removal of the regulatory privileges for sovereign exposures of banks, whereas the "French" view would argue for a fiscal capacity, European deposit insurance and safe assets.

The central point of the report is that it is a mistake to argue that these two views are contradictory. On the contrary, the report argues that risk sharing and market discipline are complements because they rely on each other. Note that the "7+7 paper" is not a political paper. It is not about forming packages that are acceptable for political reasons. It rather is an economic paper, which argues that a consistent approach to euro area reform has to have both elements – risk sharing and market discipline.

The argument in a nutshell is as follows. If there is no discipline, risk sharing will tend to lead to moral hazard, and this is not sustainable in the longer run. Hence, it is clear that some type of discipline is necessary. However, disciplining devices that are merely based on administrative or political procedures are hard to enforce for political reasons. This is where market discipline comes into play. However, market discipline alone will not be enough because market discipline without risk sharing will be destabilizing and therefore it cannot be credible. To give an example, the government cannot say that it no longer bails out banks if there are no stabilizing features that prevent a meltdown of the entire financial system. Therefore, risk sharing and market discipline belong together, and one cannot work without the other.

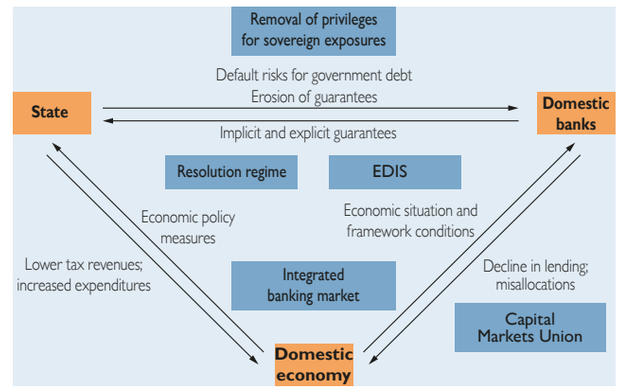
How to reform the euro area

There are three important elements of euro area reform. The first is that the financial architecture needs to be strengthened with two main features: breaking the sovereign-bank nexus and creating a European banking and capital market. The second is that the credibility of the fiscal framework has to be increased. This speaks in favor of an expenditure rule that is less procyclical and better enforceable. Moreover, rules are needed for a credible restructuring of sovereign debt as a last resort. And finally, more stabilization is needed through a European unemployment reinsurance scheme with an incentive-compatible design and without permanent transfers.

As to the financial architecture, there is one core question: How can the sovereign-bank nexus be broken or at least be mitigated? There are various connections between the state and the banks (see chart 1). First, there are direct connections. One of them is through implicit or explicit government guarantees, which is bank rescues on the one hand, and, what people tend to forget, deposit insurance on the other. Deposit insurance can only be credible if it has an implicit government backstop. But this creates a connection from the weaknesses of banks to the sovereign. In the other direction,

Chart 1

Illustration of the sovereign-bank nexus



Source: German Council of Economic Experts (2018). Based on Shambaugh (2012) and Schnabel and Véron (2018).

it goes through the holdings of sovereign debt by banks, and this again creates a direct connection between the problems of sovereigns and banks.

In addition, there are indirect connections running through the domestic economy. If there is a sovereign debt crisis or if there is a domestic banking crisis, this will have an impact on the domestic economy. In turn, this will feed back into problems at the sovereign or at the banks. How strong these feedbacks are, depends on whether there is an integrated European capital market, which implies that firms in need of funding can shift from bank funding to capital market funding. It also depends on how well the banking sector is integrated. A highly integrated banking sector allows firms to switch to other European banks if the domestic banks are in trouble. At the same time, if the European banking sector is integrated, a domestic problem will not affect the domestic banking sector to the same degree.

This points towards the most important banking sector reforms:

- First, this is a credible resolution regime, which includes a common fiscal backstop and, importantly, a special liquidity facility for banks in resolution.
- The second reform is a well-designed European Deposit Insurance Scheme (EDIS).
- The third issue is setting an end to the regulatory privileges for sovereign exposures.
- The fourth is a truly European banking market, which implies that options and national discretions need to be phased out and that obstacles to Pan-European mergers are removed rather than creating national banking champions.

In addition, a well-developed European capital market is desirable. Most importantly, resilient capital flows should be fostered, especially equity flows. This is one of the main goals of the Capital Markets Union, and it could be supported by removing the debt bias in taxation. Furthermore, it would be important to expand the competencies of the European Securities and Markets Authority (ESMA).

One issue the "7+7 group" did not agree on is whether there is a need for a European safe asset. There are quite a few arguments why one may need such an asset. One of them is related to the regulatory treatment of sovereign exposures. In order to ensure that there is more diversification in banks' sovereign bond holdings, this would currently mean that some banks would have to move into riskier assets. For example, German savings banks may have to shift into Italian government bonds. Not everybody may think that this is the best idea. So the question is whether a European safe asset may provide a solution.

Regarding the fiscal framework, there is now emerging consensus on the need to switch to a fiscal expenditure rule as the current rules are too hard to enforce and procyclical. They have too little bite in good times, while being too harsh in bad times. So the general idea in the proposals is that expenditures should not grow faster than long-term nominal GDP (i. e., potential growth plus expected inflation), and that they should grow more slowly if the country misses some long-term debt targets, which could be the 60% from the Maastricht Treaty. One very important question remains: How can such rules be enforced? The proposal in the report was that one could force countries to finance excessive expenditures through junior debts, what some people have called accountability bonds, in order to introduce an element of market discipline that can be enforced more easily.

The second important issue is the question of orderly sovereign debt restructuring, which is needed to make the no-bailout rule credible. Importantly, there should not be an automatic debt restructuring of the stock of debts because this could lead to self-fulfilling effects. However, there should not be ESM loans granted to insolvent countries without debt restructuring. Holdout problems should be mitigated through comprehensive collective action clauses, and some of this has already been agreed in the last summit. Importantly, this interacts with the question of sovereign exposures, because if bank holdings of domestic sovereign exposures are reduced, this lowers the costs of debt restructuring.

The third issue is fiscal stabilization. But why is there a need for fiscal stabilization in the first place? One reason is that national fiscal space can be insufficient in spite of responsible behavior. Some argue that, in such cases, it would be much better to have an insurance through the financial sector, namely through financial integration. However, looking at the progress made in financial integration, it is unlikely that the desirable level of risk sharing can be achieved in the medium run, and therefore a fiscal mechanism may still be necessary. It has also been argued that stabilization already exists through the ESM programs. However, it is not wise to use them as a substitute for macroeconomic stabilization. In fact, a major advantage of a fiscal capacity is that it can act as an automatic stabilizer.

Such an instrument should be designed in a way that takes into account moral hazard problems and helps to prevent long-term permanent transfers. This includes design features like the reinsurance principle, ex-ante conditionality, experience ratings and so on. But even if not all incentive problems can be dealt with perfectly, this does not necessarily mean that such instruments should not be introduced at all, because these downsides still have to be weighed against the potential benefits from stabilization. And, in fact, more stabilization may actually help to make market discipline more credible.

What types of stabilization instruments could be considered? One possibility is a European unemployment insurance against large shocks. The trigger would be a large shock, for example, to the unemployment rate, giving rise to a one-time transfer – not a loan but a transfer. It would not be repayable. It would be financed through national contributions, which would have an experience rating, meaning that if a country taps the funds, it will have to pay higher contributions in the future. Importantly, there should be no borrowing by the fiscal capacity. Finally, there should be ex-ante conditionality, meaning that a country would be allowed to access this fund only when it complies with the rules.

A second instrument, which is discussed and partly exists already, is a precautionary credit line at the ESM, which allows for access to short-term liquidity at relatively low rates, without having to apply for a regular ESM program. There is relatively strict ex-ante conditionality, but no or little ex-post conditionality. Some people fear that, under such circumstances, it will never be used. But such a liquidity line may help to stabilize expectations in a way that a country with sound fundamentals basically can-

not lose market access. Then this instrument could serve its purpose even if it is never used.

How is it possible to deal with the political resistance in reaction to this type of proposals? One has to start by convincing both politicians and the population that the euro area is unstable in its current form and that something has to be done. A stable euro area contributes to stronger economic growth and helps to strengthen the role of Europe in the world. Simply waiting and not doing anything, or waiting for the next crisis are very bad options. Clearly, it will always be hard to implement such reforms, because there will always be opposition from one side or the other. So it will be necessary to form packages, but not only for political reasons but also for economic reasons. This probably means that all sides will have to cross some of their red lines.

Maybe it would help if some of the issues were discussed in the public more objectively. When looking at the discussion about the European Deposit Insurance Scheme (EDIS) in Germany, there are many wrong stories being told about EDIS. This is a serious problem, and politicians should stand up and admit that, while there are some issues, there are also good reasons for implementing EDIS. A much less emotional debate is needed on these issues, and certainly such red lines should not be an excuse not to act. Firm commitments are needed on both sides. In the debate about risk reduction and risk sharing, many Member States in the euro area had the impression that risk reduction was a moving target, which was always adjusted at the time when some countries came close to achieving the goal. Hence, there is a need for commitments on all sides, determining what are the preconditions and what are the consequences.

Finally, one has to take into account the political developments when designing economic programs. For example, there are economic arguments why austerity programs were needed in the crisis. But these programs probably also contributed to political polarization, which now makes reform much more difficult. Therefore, these issues have to be taken into account more broadly.

Conclusions

After the political events in Italy some people have argued that no further steps should be taken towards more European integration because Italy is not playing according to the rules. But this is a bad idea. Italy should not be used as an excuse to delay the reforms but the opposite is true. It rather shows how urgent the reforms really are. It would be unwise, both from the French and the German perspective, to reject any further market discipline or risk sharing, instead one should put more energy into thinking about how to design incentive-compatible mechanisms for risk sharing. Some say that if the next crisis comes, none of these reforms will have been implemented. Therefore, they come too late anyway. This is partly true, of course, because reforms will take time. But one should be aware that reforms would have important implications for expectations. They may help to stabilize the expectations regarding the future of the euro area and the willingness to reform in order to make the euro sustainable. And this is the ultimate goal.

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46th ECONOMICS CONFERENCE 2019

The Economics Conference hosted by the OeNB is an international platform for exchanging views on monetary and economic policy as well as financial market issues. It convenes central bank representatives, economic policy decision makers, financial market players, academics and researchers.

Publisher and editor	*Oesterreichische Nationalbank* *Otto-Wagner-Platz 3, 1090 Vienna, Austria* *PO Box 61, 1011 Vienna, Austria* *www.oenb.at* *oenb.info@oenb.at* *Phone (+43-1) 40420-6666* *Fax (+43-1) 40420-046698*
Photographs	*OeNB/Niesner*
Editing	*Rita Glaser-Schwarz*
Design	*Information Management and Services Division*
Layout and typesetting	*Andreas Kulleschitz, Michael Thüringer*
Printing and production	*Oesterreichische Nationalbank, 1090 Vienna*

DVR 0031577

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