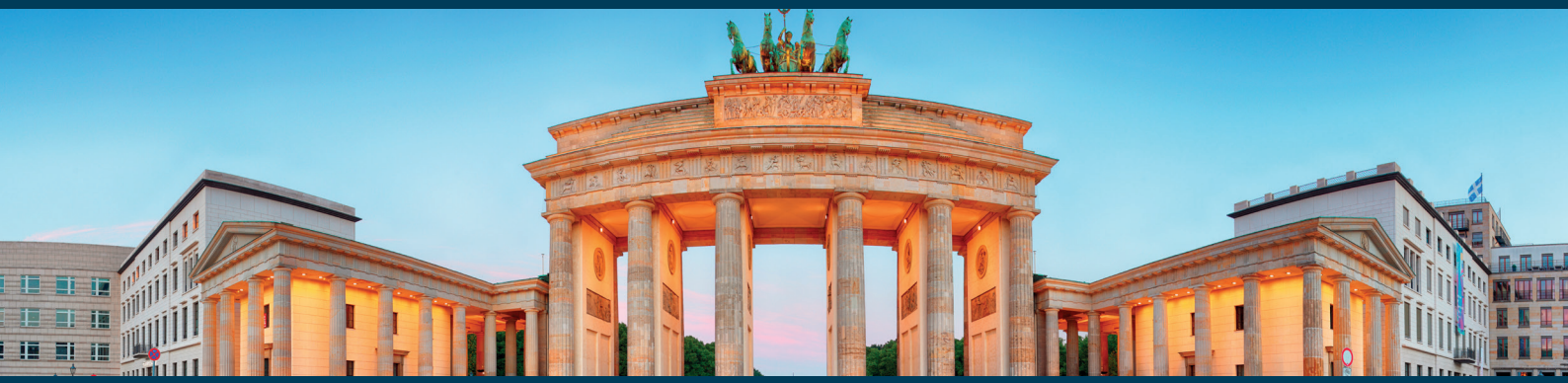
REGULATORY UPDATE



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eurofi

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CONTENT

CHALLENGES AND CONDITIONS FOR RELAUNCHING GROWTH IN THE COVID CONTEXT

Conditions for relaunching investment and growth in the EU in the post Covid context?

Real Gross Domestic Product (GDP) growth and productivity gains in the euro area have failed to catch up with US, China and Japan over the past two decades.

In 2018, the EU invested EUR158 billion in climate change mitigation. At 1,2% of GDP this figure is marginally less than the United States (1,3%) and little over a third of China's performance (3,3% of GDP). Moreover, the Investment Report of the EIB (2019/2020) shows that the European Union is risking a gradual loss of global competitiveness with slow innovation, adoption of digital technologies and productivity growth. Europe has too few start-ups and scaleups, with the United States having four times as many per inhabitant as the European Union. As of the end of 2019, Europe was not home to any of the world's 10 largest internet companies and only one European company was in the worldwide digital top 20.

The Covid-19 pandemic and the induced global lockdown have caused a sharp slump in the global and EU economies. This crisis also threatens to worsen economic disparities across the EU. In such a context, the big fiscal deal is a welcome and significant step forward which should strengthen the European Union.

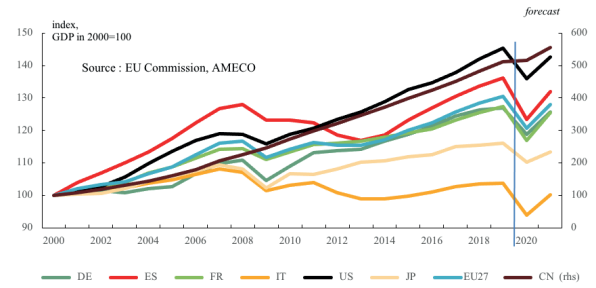
However, the game changer will remain national. Member States need to accelerate their homework and implement strong and credible domestic reforms in order to improve the business environment, the competitiveness of SMEs, facilitate the shift to renewable energies, promote digital services, education and skills and attract private investors.

1. The EU faces an investment and growth weakness

1.1. At the end of 2019, the EU and in particular the euro area had not recovered from the deep economic crisis compared with global competitors

Euro-area average annual GDP growth since 2014 has been 1,9%, while that of the United-States has been 2,4% (*see Chart 1*). The bulk of the lagging euro-area performance is attributable to Italy and France where the GDP has grown by 0,8% and 1,45% in average since 2014, respectively. Meanwhile central and eastern European countries 'growth rates have exceeded the EU average.

Chart 1 Real GDP growth, index



1.2. Productivity gains are much higher in the US, China and Japan than in the EU

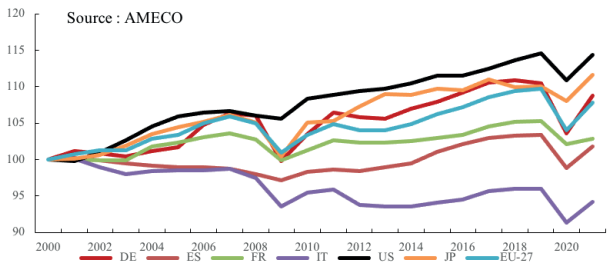
On productivity growth, Germany has been performing strongly over the past years, whereas productivity growth in other euro area countries such as France and Italy is well below that in China, Japan and the US (*see Chart 2*).

Looking at the past decades, there is a slowdown in productivity growth in Europe compared with previous decades, especially in France and Italy. This has led to higher potential growth in the United States than in the EU. It also explains the gap in the modernisation and innovation of companies. Indeed, productivity growth ultimately depends on the capacity to innovate and to improve business processes.

The example of Italy shows the major problems a country finds itself with when labour productivity is stagnant over a long period: stagnant purchasing power (i.e. stagnant per capita incomes), declining competitiveness, declining profitability and corporate investment, stagnant tax revenues and a reduction in efficient public spending[1].

All economic policies in the EU should have the explicit objective of lifting productivity (education, training, development of tech companies, efficient public investment).

Chart 2 Total Factor Productivity growth



Moreover, digitalisation, artificial intelligence and the data and platform economy are all key drivers of European productivity, growth and employment. In the long term, maintaining economic growth and employment will depend on the ability of business and industry to make full use of the potential offered by digital technologies. According to McKinsey[2], if Europe on average develops and diffuses AI according to its current assets and digital position relative to the world, could add some €2,7 trillion or 20 percent, to its combined economy output, resulting in a 1,4% compound annual growth through 2030.

1.3. Corporate, infrastructure, energy investments and R&D are higher in large economies than in Europe

Corporate investment is much higher in China, Korea, and Japan than in the EU and the US. And there is considerable variation across EU countries (*see Chart 3*).

[1] P. Artus, Zero productivity gains: is the euro zone heading in the direction of Italy?, Flash Economics, Natixis 15 February 2019.

[2] J. Bughin, J. Seeing, J. Manyika, L. Hämäläinen, E. Windhagen and E. Hazan, AI in Europe, MCKinsey, February 2019.

Recent years have seen **a marked decline in infrastructure investment**. At 1.6% GDP, investment activities in 2017 were markedly below their pre-crisis levels.

Despite the European Union's ambitious climate and energy targets, the bloc's investments also fall short of projected **energy investment needs**. The European Union's early focus on decarbonisation put it in a good position for current energy efficiency investments compared with the United States and China. However, it falls short in climate investments in transport and Research and Development, and the United States and China continue to overtake the European Union in this regard.

Although these economies are not fully comparable, China's climate change investments as a share of GDP is three times higher than those of the European Union, partly reflecting China's efforts to catch up. At current investment levels, the European Union runs the risk of missing its climate targets, failing to sufficiently adapt its economy and citizens to the impacts of climate change and losing its first mover advantage in clean energy.

The European Union's energy-related investments will have to double to meet its 2030 climate and energy targets.

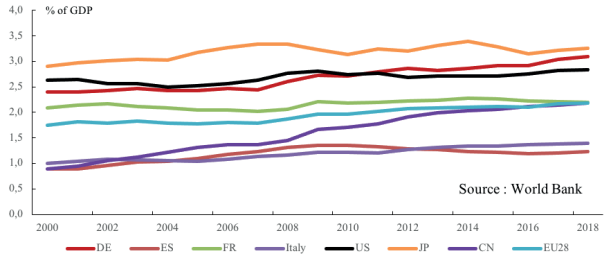
On Research and Development (R&D), the European innovation scoreboard for 2019 is quite positive since it shows that the EU's average innovation performance has increased by 8,8 % between 2011 and 2018, one point above the US.

However, while remaining at the frontier of innovation, the European Union is investing less in R&D, as a percentage of GDP, than other major economies.

Indeed, the annual R&D investment gap in the European Union is estimated at EUR 145 billion, based on the Europe 2020 target of 3% of GDP spending on R&D. Accounting for 2,18% of the GDP in 2018, R&D expenditure in the EU is smaller than other global competitors (*Chart 3*). The US spends almost one percentage point of GDP more than the EU, while it overreaches 3,2% in Japan (*see chart 3 below*).

Across the region, Germany is leading, spending 3,26% of its GDP in 2018. By contrast, Italy and Spain are far at the bottom.

Chart 3 Research & Development Expenditures



"Many European companies are major players in global R&D, but many of them are in the automotive sector (which is undergoing structural change) and relatively few in the fast-growing technology and digital sectors. European companies account for only 13% of those joining the group of leading R&D investors since 2014, compared with 34% for the US and 26% for China", the EIB stressed in this issue[3].

In addition, the EU only represents 12% of R&D expenditures in the tech sector, compared with 52% for the United States. This deficit has been associated with the lower average rates of return on R&D investment for EU firms than in the United States. This could be due to different business conditions, including access to finance and a regulatory environment that does not support young European firms undertaking risky and innovative investments[4].

Investment in intangible assets is higher in the United States than in the European Union

In 2019, US firms allocated 41% of total investment to intangibles (software and databases, training of employees, and organisational and business process improvements), compared with 36% in the European Union, according to data in the EIB Investment Survey. The difference in the importance of intangibles between the United States and the European Union is also in line with estimates from macroeconomic statistics on intangible capital. Within the European Union, the share of investment spent on intangibles is lower in Central and Eastern Europe (28%) than in Western and Northern Europe (37%) or Southern Europe (38%).

Europe is adding an Artificial intelligence (AI) gap to its digital gap

Digital adoption rates in the European Union are lower than in the United States and China and the gap is widening rapidly.

- As of the end of 2019, Europe was not home to any of the world's 10 largest internet companies and only one European company was in the worldwide digital top 20, according to Forbes.
- In June 2020, Europe had only 5% of the world's 483 unicorns – private companies with a value of at least $1 billion – compared with 47% for the US. China had 25% of unicorns (CBInsight, 2020). Only four European companies were in the top 100 global AI start-ups: Onfido and Tractable in the UK, Shift Technology in France, and Sherpa from Spain (CB Insights 2017).

According to a note issued by Mc Kinsey[5],

- As of the end of 2017, the US has invested around €220 per capita. In Europe, Sweden invested €123 per capita (the highest in the region) and Finland €58, but per capita investment was only €3 in Italy. In the provision of AI, Europe attracted only 11% of global venture capital and corporate funding in 2016. At this time, 50% went to US companies, with the balance going to Asia – mostly China (MGI 2017).
- In 2018, Europe had still not caught up (CB Insights 2017). In that year, China attracted almost half of global investment in AI start-ups, ahead of the US with 38%.

According to the EIB, in Europe, the take-up of digital technologies is slow and the digital divide between businesses is widening. Firms adopting digital technologies tend to invest

[3] EIB, Investment report (2019-2020).

[4] For instance, the venture capital market is smaller in Europe than in the United States or Asia – where it has grown rapidly in recent years, especially in China.10 From 2006 to 2018, the share of Chinese tech companies rose from 0.1% to 13%, taking market share mainly from other Asian countries.

[5] Jacques Bughin, How to develop enough European AI startups?, VOX, CEPR Policy Portail, 26 February 2019.

more, be more innovative and grow faster, taking advantage of their position as frontrunners. However, the share of digital companies in the EU manufacturing sector is 66%, lower than the 78% share in the US. The gap is even greater in the services sector, with 40% of businesses going digital in Europe, compared to 61% in the United State. Accordingly, firms that have implemented digital technologies tend to perform better than non-digital firms: they have better management practices, are more innovative, grow faster and create higher paying jobs.

This low level of research and development in Europe may have negative implications for innovation and long-term growth. The EU specialises less in the new technology sectors, which may explain the digital and technological gap with its global competitors. The shortfall in R&D spending may also explain the economic weaknesses described previously in terms of productivity and economic growth.

In such a context, the success of European states will necessarily entail a shared strategy. Technological challenges require a European industrial policy and strategy for technology funding. The EU should also improve cross-border capital flows between EU countries - i.e. completing the Banking Union and implementing the Capital Market Union), should encourage the development of equity instruments and support more actively disruptive technologies that are crucial for maintaining Europe's role in innovation and global competition.

2. The Coronavirus crisis worsens economic disparities across the EU

The countries of the euro zone entered the Covid crisis with heterogeneous economic and financial performances. This heterogeneity has led to significant differences in the means used by the Member States to deal with this crisis. The uneven fiscal responses to the Covid crisis could exacerbate the economic disparities.

2.1. The countries of the euro zone entered the Covid crisis with heterogeneous economic and financial performances

Over the past two decades, public debt (*see Chart 4*) has soared in some Members countries, due to the accumulation of large public deficits. Between 2014 and 2019, France, Italy and Spain experienced the largest public deficit in average, with 3,2% of GDP, 2,3% and 3,9% respectively.

Only Germany and the Netherlands have ensured a fiscal surplus over the period, with 1,2% of GDP and 0,04% respectively. These fiscal imbalances are often the result of the high current expenditures (*see Chart 5*) accumulated over years that have not fueled economic growth. With 55% of its GDP in 2019, France holds the record in the euro Area. Most of this spending is directed toward pensions and social security.

Moreover, high reliance on current expenditure implies high tax pressures, especially on companies, lifting their production costs. On this issue, France is also leading the Union, with 46% of GDP as tax revenue in 2018. The capital income tax rate stood at 34% in 2019, far above its neighbours - 26% in Italy, 23% in Spain and 26,4% in Germany, according to the OECD.

Chart 4 Euro Area Members Gross Public Debt, % of GDP

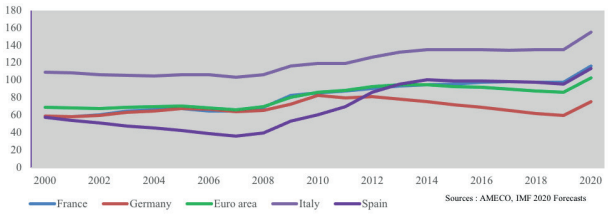
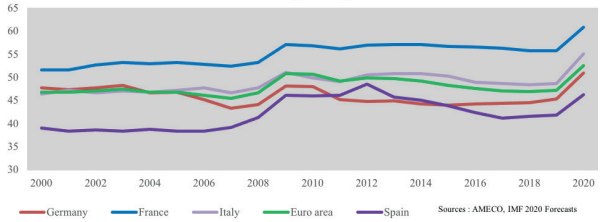


Chart 5 Public Spending, % of GDP

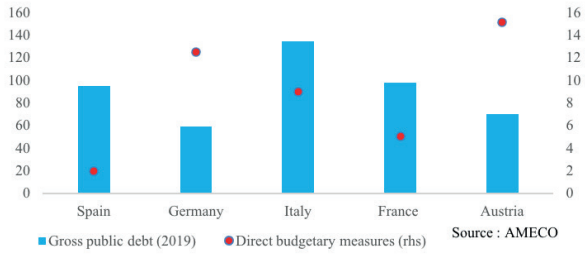


2.2. This heterogeneity has led to significant differences in the means used by the Member States to deal with this crisis

The Covid crisis has shown us that countries with the healthiest public finances have been the most efficient in tackling the economic consequences of the virus. We can see how much the policy, particularly in Germany, of reducing the public debt-to-GDP ratio to the level prescribed by the Maastricht rules, has paid off.

Starting with 60% of public debt, compared with more than 100% in other countries, Germany has been able to embark on a massive programme of aid to the economy, accounting for 12,6% of GDP, while its European partners are tackling the crisis with debt ratios at the limits of sustainability and therefore do not have the same margin for manoeuvre: Italy (9,1%), France (5,1%) and Spain (2%),as of July 23 (*see Chart 6*).

Chart 6 Direct Fiscal intervention relative to the national gross debt, % of GDP



Such economic disparities across the EU members may also have been the reason for the different distributions of the death toll. The pandemic has been the deadliest in Italy, France and Spain, where nearly 30,000 people have died. In the meantime, Germany may have been best to contain the pandemic, as the death toll has remained below 10,000, as of August 4.

2.3. The uneven fiscal responses to the Covid crisis exacerbate the economic disparities

Given uneven fiscal space and depending on their sectoral specialisation (reliance on tourism, share of unemployment in SMEs…) the member states have been hit unevenly by the pandemic and have responded to it differently. Both fact risk deepening the economic divide inside the EU.

The major fiscal consequence of the crisis is that the gap of public indebtedness across the EU members will widen. Then-indebted countries, such as France, Italy, and Spain, will end up far worse than those with the most accurate public finances, such as Germany, Austria and the Netherlands (*see Annexes 3 and 4*).

In addition, the most indebted countries of the EU, such as France, Spain, and Italy in particular, should endure the harshest hit in term of growth and unemployment in 2020 (see Annex1). The fall of GDP growth has been harshest in these last three Members, quarterly data show. Over the first quarter of 2020, France, Italy and Spain's GDP collapse have been more than twice as high the size of the German one.

Concerning the GDP growth yearly forecast for 2020, those of Italy, France and Spain may shrink to double-digit levels. By contrast,

Germany GDP growth may fall by 6,6 per cent, according to the OECD (*see Annex 1*).

Concerning the recovery and the potential output lost, the European Commission[6] pointed out that "over the forecast horizon the recovery is expected to be incomplete in a large majority of euro area countries, as the level of GDP at the end of the last quarter of 2021 is forecast to be inferior to what it was in the last quarter of 2019.

Among the largest euro area economies, this difference is forecast at about -4 ¾% in Italy, -4% in Spain and -3 ¼% in France. In Germany, output is forecast to return to its pre-crisis level."

In addition to the output lost, this crisis is also having different impacts on EU labour markets. According to the OECD forecasts (*see Annex 2*), the unemployment rate in Germany may reach 4,5 per cent in 2020, and not exceed 6 per cent in Austria and the Netherlands. On the contrary, unemployment rate in France, Italy and Spain should evolve into double-digit levels, especially in Spain where nearly 20% of the working population would be unemployed.

These data and forecasts show that this current crisis is going to exacerbate the existing economic vulnerabilities within the EU.

3. The fiscal deal agreed by the EU Council is a significant step forward, but the name of the game remains national

In such a context, the fiscal response to the Covid crisis agreed in July at the European Council is a significant step forward which should strengthen the European Union. But the game changer remains national. Member states need to accelerate their reforms and implement strong and credible domestic reforms in order to improve the business environment the competitiveness of SMEs promote digital services, facilitate the shift to renewable energies, encourage education, skills and attract private investors.

Europe has also to do more. Technological challenges require a European industrial strategy and the EU should also improve capital flows between EU countries and encourage in particular the development of equity instruments. Promoting efficient financial intermediation across the EU is of the essence.

3.1. A big fiscal deal

As in earlier crises, the virus's economic ravages have split the EU's members given their uneven profiles. Rich countries with low government debt (such as Germany and the Netherlands) could cope fiscally mainly on their own. Some of the heavily indebted and infected countries (such as Italy and Spain) could not. Without fiscal aid, they have faced a recession deep enough to damage the whole of the EU economically putting at risk the European project.

In such a context, the EU leaders reached a deal on the recovery package and the European budget in order to support the recovery and resilience of the Member States' economies. Indeed, EU leaders have agreed to a comprehensive package of €1 824.3 billion which combines the new seven-year €1.074 budget and the €750 billion recovery programme under the Next Generation EU (NGEU) instrument.

The €750 bn recovery plan titled "Next Generation EU" will strengthen the Union. The total is equivalent to 5 % of the EU's annual GDP[7]. For the first time, the EU will collectively borrow the plan's full amount from the financial markets and repay it from the EU budget over almost 40 years. The shock absorbing role for the EU is a real novelty and this EU fiscal deal may set a precedent for future crises to be met with collective debt.

The move towards fiscal cohesion and solidarity is reassuring: the European Commission acting on behalf of the member states becomes the legal borrower responsible for the servicing and the repayment of the issued bonds and no more a simple intermediary between the market and the borrowing state. In addition, €390bn of the €750bn will be distributed as grants[8], and hence will not add to governments 'debt loads. Spain and Italy could receive non-repayable grants accounting for about 4,5 per cent of their GDP over three years.

As the Treaty imposes the balancing of European budgets, the ultimate guarantee on the bonds issued by the Commission will eventually fall on all Member States. If a country, or several, were to default, other Member States would have to step in as ultimate and joint guarantors - a first European move towards the "Hamilton moment".

THE HAMILTON MOMENT

As Secretary of the Treasury (1790-1795), **Alexander Hamilton** acted in an incomparably bolder fashion than the present European Commission.

His main objective – as a "Federalist"-was to secure a strong and financially sound Federal State. Throughout history, the trend towards a strong federal State has been spectacular. Out of total revenues, the Federation accounts for 54%, the States for 25% and municipal entities 21%.

In terms of share of GDP, the federal budget has jumped from 4% in 1790 to 40% today.

His financial achievements - under the fierce opposition from the tenants of sovereign independent states - can be summarized in five points:

1) **He consolidated, at the federal level, the debt issued by the 13 states during the Independence War** as well as the debt issued by the Federal government : the result was one single federal debt (the assumption of states debt by the Federation was justified, in Hamilton's words, by the fact that those debts "were the price of liberty");

2) The Constitution (that he had actively influenced) **had granted the Federal Government the exclusive right to collect import duties**;

3) To make sure that the US debt would be trusted by the public and eventually extinguished, **Hamilton created a sinking fund financed by post office revenues**;

4) He decided that **the outstanding foreign debt** - which bore relatively low (4 to 5%) interest rates - **would be paid in full, whilst the domestic debt would be restructured**: its high yield would be reduced in exchange of the new rock solid quality of the bonds in question;

5) **The States were expected to balance their budgets without being bailed out by the Federation: However, this principle ran into many exceptions during the first part of the XIXth century. It was in the 1840's that the "no bail out" rule was established under the interpretation of the 10th amendment.**

The "moment" was crucial: without Hamilton's fiscal achievements, there would not have been a powerful US federal state.

The EU should reflect on these issues.

Source: Extract from: J. de Larosière, Is Europe reaching a « Hamilton moment »?, EURO 50 GROUP 13th June 2020

[6] European Economic Forecasts, July 2020.

[7] Calculated on the basis of the 2019 EU GDP without including the UK GDP.

[8] The plan ensures the money goes to the countries and sectors most affected by the crisis: 70% under the grants of the Recovery and Resilience Facility will be committed in 2021 and 2022 and 30% will be committed in 2023.

The "Next Generation EU" recovery plan is the second part of the EU's response to the pandemic. In mid-April the European Heads of State agreed on a three-layer safety net for workers, businesses and sovereigns totaling €540 billion.

A temporary solidarity Instrument (SURE) has been established to support protecting workers and jobs in the current crisis. Loans, backed by the EU budget, can be provided up to €100bn. The EIB is to create a pan-European guarantee fund of €25bn to support €200 bn of EU businesses, in particular SMEs throughout the crisis [9]. The ESM has also provided with pandemic crisis support, in the form of precautionary credit lines not subject to macro-economic policy conditionality. A Member State that draws under these Enhanced Conditions Credit Line (ECCL) will commit to using the money only to cover corona related costs. Each Eurozone country can benefit from this support up to the benchmark amount of 2% of GDP[10].

However, Europe needs much more to fill its infrastructure gap, the goals of climate change, and other sustainable goals. Given its size and its duration, the Next Generation EU plan will only partly cover these needs. More will be needed for Europe to escape the current trap of low trend growth. The EU plan is not designed to cover all investment needs but to help low-income countries narrow their gap. Among other key policies that must be delivered are the European Banking Union and Capital Market Union (CMU) without which the EUs' key political priorities will not be able to be implemented.

Faced with the "technological war" between the United States and China, Europe must lay the foundations of its sovereignty for the next 20 years. In the field of security and defence, reinforcing technological autonomy is essential. Sovereignty must also be exercised in the field of green technologies, and Europe must become the leader in this area. Technological challenges require a European industrial policy and strategy for technology funding. A holistic industrial policy marrying finance, research, industry, competition, trade, existing local eco systems and education is vital and urgent.

3.2 But the name of the game remains national

The EU safety net and the Next generation EU plan will help counter strains in the single market by allowing all governments to support workers and businesses through the recovery.

But the deal has come at a cost to other parts of the budget which will harm the EU in the longer term. To accommodate the insistence of the "frugal four" – Austria, Denmark, the Netherlands and Sweden- for limited grant funding, leaders agreed to slash top-up money for research and the green transition which are normally priorities for northern governments. For example, the European Defence Fund, which is intended to provide EU co-financing for joint industrial projects, will receive only EUR 7 billion, compared with EUR 13 billion requested. The "HorizonEU" – research and innovation programme is endowed with EUR 81bn, not the EUR 100bn initially expected. The Erasmus+ programme, will be less supported than expected.

The Frugal Four were also promised much bigger rebates on their budget contributions. By one calculation, France for example will now have to pay an extra €15bn into the budget due to this[11].

There is also no agreement on the ways for the EU to have revenue sources that are genuinely its own. Feasible options to help finance debt include new environmental levies (e.g. a levy on plastic waste, a "carbon border adjustment mechanism) and digital taxes but the EU July agreement offers only slivers of hope. Finding agreement on increasing the EUs own resources will be very difficult. As a result, debt servicing costs could well fall on the EU's normal Multi – annual Financial Framework (MFF).

The EU safety net and the Next generation EU plan represent a fiscal response of around 8% of the EU's GDP , made available over several years and with loans and guarantees comprising the bulk of the support. This is a significant amount but not a game changer. The main name of the game still remains national.

By means of comparison, Member States have provided support for their economies to the tune of 25,5% of GDP, including direct expenditures, financing measures and public guarantees. These measures will push public deficits to deeper levels. Italian, Spanish and French public sector deficits are going to increase by EUR 139, 83 and 141 billion respectively in 2020. Their public debts are going to jump by more than 20 percentage points of GDP in 2020 to reach respectively 123% of GDP, 166% and 125% of GDP in 2020, according to the IMF June forecast. This is not sustainable, underlining the need for broad-based structural reforms.

Another benchmark is the size of the recent German fiscal plans: all in all, the national stimulus in 2020 would amount to 6% of GDP. So, the name of the game still remains predominantly national.

Public Finances of the main EU members, as volume and share of GDP

bn EURO	GDP		Fiscal deficit		Gross Public Debt	
	2019	2020*	2019	2020*	2019	2020*
Germany	3 435,76	3 167,77	41,8	- 339,0	2 053,0	2 445,5
France	2 419,00	2 116,62	- 74,3	- 287,9	2 383,8	2 660,6
Italy	1 787,66	1 558,84	- 39,1	- 198,0	2 409,2	2 589,2
Spain	1 245,33	1 085,93	- 29,1	- 150,9	1 188,9	1 344,4

% of GDP	Fiscal deficit		Gross Debt	
	2019	2020*	2019	2020*
Germany	1,2	-10,7	59,8	77,2
France	-3,1	-13,6	98,5	125,7
Italy	-2,2	-12,7	134,8	166,1
Spain	-2,3	-13,9	95,5	123,8

*IMF June 2020 Forecasts

3.3 Designing and implementing an ambitious structural reform agenda remains an urgent priority for EU member States.

Monetary policy cannot do everything. Pushing too hard and too long on the monetary pedal generates financial vulnerabilities and imbalances and fodder eventually for the preparation of future crises. Likewise, there are limits to how far the boundaries between fiscal and monetary policies can be pushed without running the

[9] At least 65% of the financing will go for small and medium sized businesses. Up to 23% to companies with 250 or more employees, with restrictions applying to companies with more than 3,000 staff. Up to 5% to public sector companies and entities active in the area of health or health-research or providing essential services related to the health crisis. Up to 7% to venture and growth capital and venture debt.

[10] Should all 19 euro-area countries draw from the credit line, this would amount to a combined volume of around €240 billion.

[11] In the final summit agreement, Austria managed to double its rebate to €565m a year, while the Netherlands won an increase from €1,5bn to €1,9bn, and Denmark from €222m to €377m.

risk of undermining the central bank's credibility. High sustainable growth in Europe can only be achieved by reducing reliance on debt and reinvigorating productive economic activity through sensible investment.

This means that to restore growth in the EU, governments must stand ready to take corrective action to ensure a path of primary fiscal balances consistent with fiscal sustainability. It also means implementing structural reforms to lift potential growth rates, mitigating failures of healthy firms, orienting fiscal policies towards sustainable and digital investment…

This means that for restoring investment and growth in the EU, governments must stand ready to take corrective actions to ensure a path of primary fiscal balances consistent with fiscal sustainability. Indeed, ensuring the sustainability of public finances after the pandemic is essential. The persistence overtime of the current public debt levels would reduce the fiscal policy headroom for addressing adverse shocks, would expose the economies of the member states over-indebted (e.g. Italy, Spain, France, Belgium…) to a situation of chronic vulnerability ahead of changes in sentiment of financial markets and it would weigh down their investment and growth capacity.

This also means implementing structural reforms to lift potential growth rates, mitigating failures of healthy firms, orienting fiscal policies towards sustainable investment.

Only domestic structural reforms - e.g. reducing the regulatory burden on firms, taking steps to encourage innovation and technology diffusion, facilitate the shift to renewable energies, tackling barriers to the entry and growth of young innovative firms, shifting taxes away from labour, encouraging apprenticeship programmes and improving human capital, modernizing social safety nets to reduce disincentives to work, addressing pension system reforms, improving quality in national, regional and local government and administration, enhancing public procurement frameworks … - can solve structural weaknesses in Member States, raise output and productivity growth, contribute to a healthy business environment, and reduce competitiveness problems and recourse to debt.

The psychodrama of so-called austerity has to be arrested which has undoubtedly weakened certain States of the Union. In fact, it is the fiscally virtuous countries that have best prepared their economies for the challenges of this pandemic crisis.

In countries with too much debt, decisions must now be made to stop "walking on their heads"; and to reduce fort with unproductive and inefficient public spending. This is the only way to release the necessary resources for the productive sector. Just a few years of efforts mobilizing all the energies are all that is needed. Such fiscal policy requires a spirit of cooperation among different political parties and on a bi-partisan basis; examples abound in the Northern European Member States.

Written by Didier Cahen, Eurofi

ANNEX

Annex 1 GDP growth

	GDP Growth, %			
	2019	Q1 2020	Q2 2020	2020 (Forecast)
Germany	0,6	-2,0	-10,1	-6,6
France	1,5	-5,9	-13,8	-11,4
Italy	0,3	-5,4	-12,4	-11,3
Spain	2,0	-5,2	-18,5	-11,1
Netherlands	1,8	-1,5	NA	-8,0
Austria	1,5	-2,4	-10,7	-6,2
Euro Area	1,3	-3,6	-12,1	-9,1

Source: OECD, June 2020

Note : GDP change over previous quarter

Annex 2 Unemployment rate

	Unemployment rate % of working population	
	2019	2020 (Forecast)
Germany	3,2	4,5
France	8,4	11,0
Italy	9,9	10,1
Spain	14,1	19,2
Netherlands	3,4	5,9
Austria	4,5	5,8
Euro Area	7,6	9,8

Source : OECD June 2020

Annex 3 Public Gross Debt

	Gross Debt, % of GDP	
	2019	2020 (Forecast)
Germany	59,8	77,2
France	98,5	125,7
Italy	134,8	166,1
Spain	95,5	123,8
Netherlands	48,3	58,3
Austria	70,8	84,6
Euro Area	84,1	105,1

Source : IMF June 2020

Annex 4 Fiscal Deficit

	Fiscal deficit, % of GDP	
	2019	2020 (Forecast)
Germany	1,2	-10,7
France	-3,1	-13,6
Italy	-2,2	-12,7
Spain	-2,3	-13,9
Netherlands	1,7	-6,2
Austria	0,4	-7,1
Euro Area	-0,7	-11,7

Source : IMF June 2020

Is the EU response to the Covid-19 economic crisis fit for purpose?

A big fiscal deal

As in earlier crises, the virus's economic ravages have split the EU's members given their uneven profiles. Rich countries with low government debt (such as Germany and the Netherlands) could cope fiscally mainly on their own. Some of the heavily indebted and infected countries (such as Italy and Spain) could not. Without fiscal aid, they have faced recession deep enough to damage the whole of the EU economically putting at risk the European project.

In such a context, the EU leaders reached a deal on the recovery package and the European budget in order to support the recovery and resilience of the Member States' economies. Indeed, EU leaders have agreed to a comprehensive package of €1 824.3 billion which combines the new seven-year €1.074 budget and the €750 billion recovery programme under the Next Generation EU (NGEU) instrument.

The €750 bn recovery plan entitled "Next Generation EU" strengthens the Union. The total is equivalent to 5 % of the EU's annual GDP[1]. For the first time, the EU will collectively borrow the plan's full amount from the financial markets and repay it from the EU budget over almost 40 years. The shock absorbing role for the EU is a real novelty and this EU fiscal deal may set a precedent for future crises to be met with collective debt.

The move towards fiscal cohesion and solidarity is reassuring: the European Commission acting on behalf of the member states becomes the legal borrower responsible for the servicing and the repayment of the issued bonds and no more a simple intermediary between the market and the borrowing state. In addition, €390bn of the €750bn will be distributed as grants[2], and hence will not add to governments 'debt loads. Spain and Italy could receive non-repayable grants accounting for about 4,5 per cent of their GDP over three years.

As the Treaty imposes the balancing of European budgets, the ultimate guarantee on the bonds issued by the Commission will eventually fall on all Member States. If a country, or several, were to default, other Member States would have to step in as ultimate and joint guarantors - a first European move towards the "Hamilton moment".

The "Next Generation EU" recovery plan is the second part of the EU's response to the pandemic. In mid-April the European Heads of State agreed on a three-layer safety net for workers, businesses and sovereigns totaling €540 billion.

A temporary solidarity Instrument (SURE) has been established to support protecting workers and jobs in the current crisis. Loans, backed by the EU budget, can be provided up to €100bn. The EIB is to create a pan-European guarantee fund of €25bn to support €200 bn of EU businesses, in particular SMEs throughout the crisis[3]. The ESM has also provided pandemic crisis support, in the form of precautionary credit lines not subject to macro-economic policy conditionality. A Member State that draws under these Enhanced Conditions Credit Line (ECCL) will commit to using the money only to cover corona related costs. Each Eurozone country can benefit from this support up to the benchmark amount of 2% of GDP[4].

However, Europe needs much more to fill its infrastructure gap, the goals of climate change, and other sustainable goals. Given its size and its duration, the next Generation EU plan will only partly cover these needs. More will be needed for Europe to escape the current trap of low trend growth. The EU plan is not designed to cover all investment needs but to help low-income countries narrow their gap. Among other key policies that must be delivered are the European Banking Union and Capital Market Union (CMU) without which the EUs' key political priorities will not be able to be implemented.

But the name of the game remains national

The EU safety net and the Next generation EU plan will help counter strains in the single market by allowing all governments to support workers and businesses through the recovery.

But the deal has come at a cost to other parts of the budget which will harm the EU in the longer term. To accommodate the insistence of the "frugal four" – Austria, Denmark, the Netherlands and Sweden- for limited grant funding, leaders agreed to slash top-up money for research and the green transition which are normally priorities for northern governments. For example, the European Defence Fund, which is intended to provide EU co-financing for joint industrial projects, will receive only EUR 7 billion, compared with EUR 13 billion requested. The "HorizonEU" – research and innovation programme is endowed with EUR 81bn, not the EUR 100bn initially expected. The Erasmus+ programme, will be less supported than expected.

The Frugal Four were also promised much bigger rebates on their budget contributions. By one calculation, France for example will now have to pay an extra €15bn into the budget due to this[5].

There is also no agreement on the ways for the EU to have revenue sources that are genuinely its own. Feasible options to help finance debt include new environmental levies (e.g. a levy on plastic waste, a "carbon border adjustment mechanism) and digital taxes but the

[1] Calculated on the basis of the 2019 EU GDP without including the UK GDP.

[2] The plan ensures the money goes to the countries and sectors most affected by the crisis: 70% under the grants of the Recovery and Resilience Facility will be committed in 2021 and 2022 and 30% will be committed in 2023.

[3] At least 65% of the financing will go for small and medium sized businesses. Up to 23% to companies with 250 or more employees, with restrictions applying to companies with more than 3,000 staff. Up to 5% to public sector companies and entities active in the area of health or health-research or providing essential services related to the health crisis. Up to 7% to venture and growth capital and venture debt.

[4] Should all 19 euro-area countries draw from the credit line, this would amount to a combined volume of around €240 billion

[5] In the final summit agreement, Austria managed to double its rebate to €565m a year, while the Netherlands won an increase from €1,5bn to €1,9bn, and Denmark from €222m to €377m.

EU July agreement offers only slivers of hope. Finding agreement on increasing the EUs own resources will be very difficult, meaning that the burden could well fall on the Multi-annual Financial Framework (MFF) in the future.

The EU safety net and the Next generation EU plan represent a fiscal response of around 8% of the EU's GDP, made available over several years and with loans and guarantees comprising the bulk of the support. This is a significant amount but not a game changer. The main name of the game still remains national.

By means of comparison, Member States have provided support for their economies to the tune of 25,5% of GDP, including direct expenditures, financing measures and public guarantees. These measures will push public deficits to deeper levels. Italian, Spanish and French public sector deficits are going to increase by EUR 139, 83 and 141 billion respectively in 2020. Their public debts are going to jump by more than 20 percentage points of GDP in 2020 to reach respectively 123% of GDP, 166% and 125% of GDP in 2020, according to the IMF June forecast. This is not sustainable, underlining the need for broad based structural reforms.

Another benchmark is the size of the recent German fiscal plans: all in all, the national stimulus in 2020 would amount to 6% of GDP.

So, the name of the game still remains predominantly national. Monetary policy cannot do everything- pushing too hard and too long on the monetary pedal generates financial vulnerabilities and imbalances - fodder eventually for the preparation of future crises. Likewise, there are limits to how far the boundaries between fiscal and monetary policies can be pushed without running the risk of undermining the central bank's credibility. High sustainable growth in Europe can only be achieved by reducing reliance on debt and reinvigorating productive economic activity through sensible investment.

This means that to restore growth in the EU, governments must stand ready to take corrective action to ensure a path of primary fiscal balances consistent with fiscal sustainability. It also means implementing structural reforms to lift potential growth rates, mitigating failures of healthy firms, orienting fiscal policies towards sustainable and digital investment…

The psychodrama of so-called austerity has to be arrested which has undoubtedly weakened certain States of the Union. In fact, it is the fiscally virtuous countries that have best prepared their economies for the challenges of this pandemic crisis.

In countries with too much debt, decisions must now be made to stop "walking on their heads» and to reduce fort-with unproductive and inefficient public spending. This is the only way to release the necessary resources for the productive sector. Just a few years of efforts mobilizing all the energies are all that is needed. Such fiscal policy requires a spirit of cooperation among different political parties and on a bi-partisan basis; examples abound in the Northern European Member States.

Written by Didier Cahen, Eurofi

Addressing the dangers of the monetary policy deadlock

Central Banks played a crucial role in stabilizing the financial system and restore confidence during the Lehmann Brothers, EU sovereign debt and Covid crises. They expanded their toolkit, reacted swiftly and forcefully to prevent a potential economic collapse. This policy has allowed the financial markets to continue functioning and being liquid. In addition, in Europe, the measures taken by the ECB have avoided fragmentation in the dynamics of bond prices, particularly for sovereign bonds. The volatility observed in April- May has receded and financial conditions are again rather loose.

That being said, one has to recognise that Central Banks have paved the way to financial crises which they tried to contain thereafter. Monetary policy is further moving into unchartered territory and faces many questions and trade-offs. The 2% target, which has become the absolute guide to monetary policy has led Central Banks to implement an overly accommodating monetary policy. Striving to reach, whatever happens, an inflation target that has proven to be too high in relation to fundamentals leads to serious distortions. It is an illusion to believe that monetary policy of zero interest rates for long favours aggregate demand and the whole economy.

The fact is that such policy has steadily been supporting credit and indebtedness, and persistently low interest rates have encouraged liquidity hoarding at the expense of productive investment. The price paid in terms of crises, decline in corporate dynamism and productivity growth, bubbles and instability has been high. Monetary policy cannot replace the reforms needed for long-term growth. Other budgetary and structural instruments must be implemented.

But it is a fact that central banks have been overly involved in these areas in recent years. It is high time to return to a more reasonable conception of monetary policy: that of the stability of the currency and the financial system: there is a path to get out of the monetary policy deadlock in Europe.

1. The fundamental problem of monetary policy over the past years is that it seeks to achieve an unattainable 2% inflation target. Discretionary changes in interest rates cannot affect the structural factors which explain the downward trend in inflation

Over the past decade, the 2% inflation target has been the main guide to the ECB monetary policy although inflation of consumer goods has become much less responsive to changes in interest rates. This inflation target has trapped monetary policy in a systematic and asymmetric accommodation.

The questionable 2% inflation target

Over the past decade, the excessive accommodative stance of monetary policy taken by the Fed and the ECB stem from the objective for central bankers to bring inflation *"close to, but below"* their target of 2%[1].

However, does this figure of 2% really reflect the balance that should underlie the notion of stability? According to the proponents of this concept, below 2% there would be risks of deflation. In other words, economic agents would expect future prices to fall, which would encourage firms and households to postpone investment and consumption. Indeed, the former would be concerned with future low returns on investment and the latter would hope to take advantage of lower prices later. Hence, deflationary anticipations would become self-fulfilling and add risks to the growth path.

But it is very difficult to establish that 2% is the norm below which deflation would occur. In fact, the equilibrium inflation rate is the one that gives a sufficient margin to avoid the risk of deflation and is low enough not to generate hyperinflation dynamics. This rate is determined by a multitude of time-varying factors. Some of these factors are cyclical (changes in oil and raw material prices, the influence of changes in inventories and demand for consumer goods, etc.) but others are structural and have been at work for some twenty year.

Several structural factors are at work in the direction of reducing trend inflation

These include:

- The ageing of our societies who consume and invest less but save more.
- The opening of international trade to imports from countries with very low wage rates (China in particular), that has led to the introduction of cheaper products on the market.
- The changes observed in labour markets behaviours; as well as productivity gains resulting from new technologies.

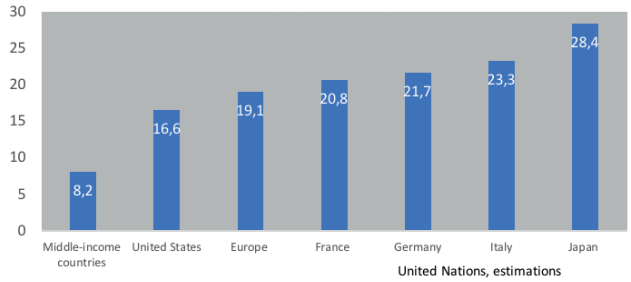
Concerning the deflationary pressures of demographics, populations in advanced economies are steadily growing older (*see Chart 1*). Such a demographic trend, which is more salient in Europe than in the US, undermines any growth prospects as older people do not have the same spending habits as the working age population. Consumption in capital goods declines.

A higher saving rate is a feature of ageing societies. Working people expect to live for longer due to a better standard of living - life expectancy has reached 83 in Italy, 82 in Germany and 78 in the US according to UN 2020 estimations. Consequently they tend to squeeze their consumption to save ever more due to the high cost when acquiring their home (linked to the steep increase of asset prices under the accommodative monetary conditions) and to prepare for longer retirement, all the more as prospects are uncertain, not to say adverse, concerning their retirement schemes. A lower fertility rate or birth rate for women is also a

[1] As early as 1998, the ECB provided a quantitative definition of price stability, which was refined in 2003: maintaining inflation rates below but close to, 2% over the medium term. Other central banks such as the US Federal Reserve and the Bank of Japan, in 2012 and 2013 respectively, have also adopted this.

deflationary factor: its declining trend reveals that future ageing and smaller populations will reduce the global demand.

Chart 1 Share of the population aged 65+ in 2020, %

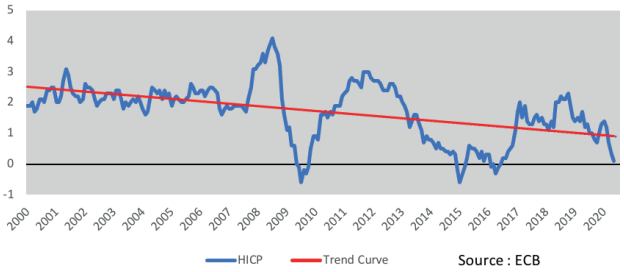


All these factors together explain why a 2% equilibrium inflation (the one that avoids deflation as well as hyperinflation) may no longer be a realistic baseline for monetary policy.

Even ultra-loose monetary policy cannot bring inflation at 2%

In the US, the four-year-quantitative-easing programme set up by the Fed in 2010 has had questionable effects on the consumer price index (CPI) which remained close but constantly below the target of 2%.

Chart 2 The Trend of HICP in the Euro Area



As for the euro area (*see chart 2*), the ECB has struggled to boost its harmonized Index consumption price (HICP) anchored at 1,3% in average over the same period despite its quantitative-easing programme launched in 2015 that has purchased EUR2,6tn as of January 2020.

The 2% inflation target is today becoming an enigma rather than a realistic guideline for monetary policies.

The 2% inflation target, although it has proven to be unattainable, has urged the ECB and Fed monetary policies to be asymmetric over the past 20 years

Economic theory and empirical studies explain that:

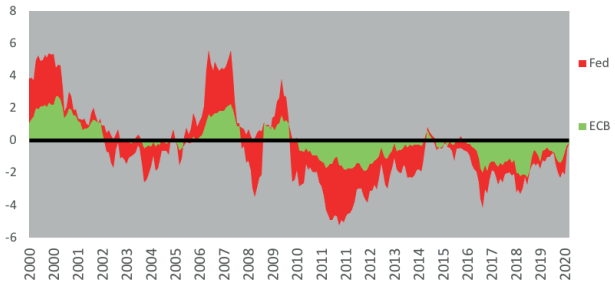
- When there is a threat of overheating, higher interest rates and reduced liquidity help dampen demand. In such a context, economic agents wishing to keep a minimum amount of cash in hand increase their savings to counteract the fall in liquidity.
- This reasoning is reversed in the event of an economic slowdown: when short (key policy) rates fall, the yield curve tends to flatten for all maturities, whatever market forces.

Instead of trying to be countercyclical, over the past two decades, monetary policy has broadly remained accommodative in order to achieve the 2% inflation target: it has therefore been conducted asymmetrically. Indeed, after negative shocks in OECD countries (in 2000-2002, 2008-2009, and 2020), the public debt ratio has increased and monetary policy has become more expansionary (rate cuts, increased money supply) leading to a fall in interest rates (even getting into negative territory) and to an increase in the monetary base.

But in the euro area especially, once the economic situation improved after the sovereign crisis, the ECB monetary policy has not been tightened or started to be normalized. In 2017-2018 for instance, the ECB kept its main rates at zero despite significant economic improvements. Moreover, the "sacralisation" of the 2% inflation target led to questionable decisions with significant unintended consequences for financial markets and the real economy (see section 2). Indeed, in September 2019, the Governing Council decided to resume the asset purchase programme (APP) at a monthly pace of €20 billion in response to the decrease of the HICP inflation by 0,3 percentage points between June and August 2019 to reach 1%! It would have seemed appropriate to start raising slightly interest rates in 2017 -2018 in Europe because growth was recovering. The Fed's interest rates hiked in 2017 and 2018 and this did not cause deflation nor market instability.

This asymmetry of Fed and ECB monetary policies over the past 20 years can be illustrated by the trajectory of their real short-term interest rate (*see Chart 3*).

Chart 3 Real main rates in the eurozone and US - Short term interest rate - Inflation



Sources: ECB, BIS, OECD
Notes: for the euro area, refinancing rate - HICP; for the US, federal rate - CPI

Since 2010, the real short-term rate has mainly evolved in the negative territory both in the Euro Area and the US. In the Euro Area, HICP has risen even at or above 2% between May and October 2018, whereas the key rate was left unchanged at zero. The explanation was that the price developments were assumed to result mainly from energy prices while core inflation remained subdued; hence inflation anticipations may not be altered in the short term. It seems that this line of reasoning has proved to be consistent with what happened next.

The reality is that overall monetary policy has become disconnected from the cycle: it has been accommodative over the two past decades. As interest rates were close to zero or even negative, Central Banks have also used quantitative easing programmes during as well as after the crises. They did not tighten monetary conditions when the economic situation improved thus limiting the ability to act decisively at the next turning point.

In short, by allowing nominal interest rates to stay at 0% for a decade or so, monetary policy has prevented the use of interest rate margins in an environment that would have called for cyclical responses in monetary policy. The lower bound has been the result of such accommodative monetary policy for too long.

The cause of this focusing on zero interest rate for long has probably to do with in the weak economic expansion over the years. As activity and inflation were low, monetary authorities believed that interest rates were bound to be low as long as inflation did not pick up.

That is the heart of the monetary impasse that we are facing. It may well be that neutral interest rates are very low for secular reasons (ageing, globalization…); But what is questionable is to

gear monetary policy to the single objective of 2% inflation and to press down interest rates, all along the yield curve, to set them as low as possible. For sure monetary policy is not the sole factor behind the "secular" lowering of interest rates. But it has been a significant and potent additional factor in that direction. In fact, inflation in its widest definition was higher than the CPI indexes show. Asset bubbles are a manifestation of inflation.

The fact that monetary policy has been exclusively geared to consumer prices and has turned a blind eye to asset price bubbles has led our system into over financialization and repeated crises.

There is not a magical neutral interest rate that will ensure a 2% inflation target and full employment by itself

The ECB justifies the use of very low interest rates and unconventional policy instruments because the neutral real rate is close to zero or even negative and there is a need to maintain price stability "close to, but below 2%".

The natural or neutral rate of interest is the real interest rate that would balance savings and investment in a context of full employment and stable prices[2]. The level of the real equilibrium rate is determined by a number of structural factors, such as a country's demographic situation or capacity to innovate.

This neutral real interest rate cannot be directly observed and needs to be estimated. As it is computed, this rate has fallen markedly globally and in Europe in particular over the past 20 years not only because of the monetary policy, but in reaction to structural changes.

Central banks tend to adjust their main policy rates to be in line with the neutral interest rate, as a way to best reflect and foster economic health. In order to maintain price stability and be in line with the trajectory of r*, central banks around the world resorted to a number of unconventional instruments in order to reach a level that is consistent with their medium-term inflation aim.

According to this low real neutral interest rate view, monetary policy can regain its ability to stabilize the economy only if it can get real interest rates low enough. And the solution is therefore to enable Central Banks to achieve more deeply negative real interest rates: QE programmes, forward guidance, enabling nominal interest rates to fall deeply negative, control of the yield curve.

But these solutions are not able to achieve a 2% inflation target or increase growth. Research shows that there are a number of reasons why aggregate demand may be less interest-sensitive at low nominal interest rates and/or at low real interest rates.

Monetary stimulus may be ineffective at stimulating aggregate demand:

- The banking system is not always able to pass on to depositors the cost of negative interest rates;
- Observation shows that saving behaviour can be encouraged by lower interest rates: the lower the interest rates the higher the savings (as if households wanted to offset the negative yield they get by saving more);
- A strong accommodative monetary policy tends to bring forward consumption that has not yet taken place. Such an acceleration of potential consumption has of course its own limitations;
- With negative rates, it is difficult to promote private long-term bond insurance (savers prefer to hold liquid instruments that carry no yield but also no negative tax);
- Lasting zero or negative interest rates reduce economic dynamism (see 2.2);
- It is also often argued that effects of monetary policy may be asymmetric: while interest rate increases can contract the economy, interest rate cuts may be less effective at stimulating the economy.

The neutral real interest rate appears to be a poor guide for monetary policy and for stabilizing the economy. Changes in interest rates cannot affect the structural factors which explain the downward trend in inflation and cannot be the engine of growth. In other words, it seems clear that there is not a magical neutral interest rate that will ensure an inflation below but close to 2% and full employment by itself.

A 1% inflation in itself is not worrying

On average, having a "normal» core inflation of 1% per year (instead of 2%) is by no means a sign of deflation as (i) prices continue to rise and (ii) people's anticipations will expect them to do so. And it rather helps consumers to gain purchasing power, thus supporting demand.

Moreover, getting closer to the 2%-inflation target does not mean that growth problems would be solved. To reach the target, monetary creation would have to be so large that it would only increase the instability of the financial system without solving the structural problems facing the euro area countries: too high labour costs, labour market inflexibility, unskilled workforce, etc.

Only structural policies can solve structural problems. Keeping interest rates at a low level cannot increase potential growth. Rather, it creates financial stability issues and damage productive investment (see 2.2).

Wanting, at any cost, to raise inflation to 2% through monetary policy has, in fact, had very damaging consequences.

2. Pushing too hard and too long on the monetary pedal has severe negative consequences

Lasting loose monetary conditions contributed to the over-indebtedness of our economies which has steadily been the cause of all crises, discouraged productive investment, raised structural issues (e.g. disincentivized Member States for undertaking structural reforms which should lift potential growth, captured economic resources in inefficient uses), generated financial vulnerabilities and widened income and wealth inequalities.

The policy of lasting persistent low rates contributed to the over-indebtedness of our economies

For several decades, the loose credit conditions have systemically encouraged the growth of public and private indebtedness and have entailed a huge debt overhang. Indeed, since the financial crisis of 2008, global debt has continued to rise: Global debt reached a record high of 331% of GDP at the end of March 2020, up from 320% in 2019 and 200% in 2011 according to the IIF. Regarding the global debt in advanced economies, it has grown by 54 percentage points over the past two decades, to reach 266 per cent in 2018, according to the World Bank.

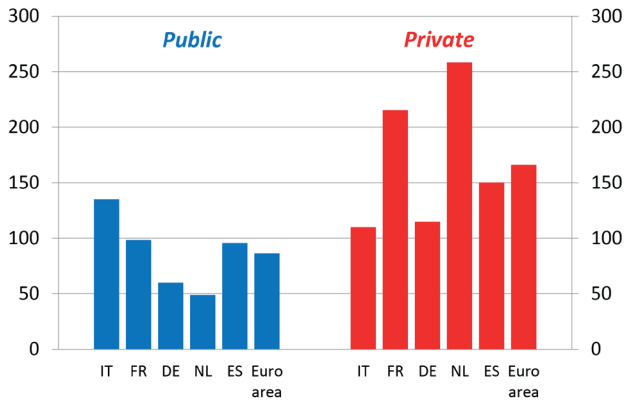
Such a level of indebtedness had never been reached before in peacetime.

The 2020 health crisis occurred in such an already very unstable financial context due to this increase and high level in debt[3]. In fact, as William White explained, "we had an unsustainable economy even before the pandemic hit. In effect, the patient had dangerous preconditions".

[2] This "r*" rate, described by the Norwegian economist Wicksell, is estimated to have fallen by between 150 and 200 basis points over the past 15 years

[3] The economic consequences of the current health crisis are worsening this situation. Indeed, with a view to supporting their economies, highly indebted governments set up massive countermeasures, totalling $8tn since March 2020, according to the IMF.

Chart 4 Public and private debt (per cent of GDP)



Sources: Based on data from Banca d'Italia, ECB, European Commission, Eurostat and Istat.
Note: End-2019 data. Private debt: households' and firms' financial debt.

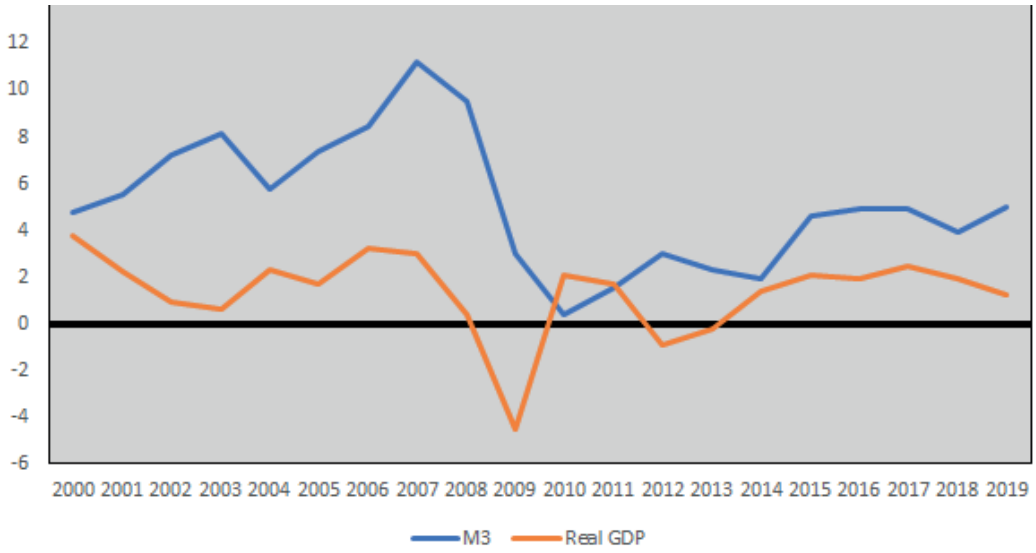
In the Euro Area, public and private debt have reached a new record-high in 2019, according to Banca d'Italia[4] (*see Chart 4*).The private sector in some Member states (e. g. nearly 215% of GDP in France, 260% in the Netherlands) entered the crisis with high levels of debt and necessarily borrowed more to navigate the crisis, raising solvency concerns for a significant number of borrowers[5].

Central Banks have not acted to control the credit growth during the past decades

Accommodative monetary policies over the past two decades have been widening the gap between the steady rise in debt and the more moderate economic growth, which has eventually been one of the main causes of the Grand Financial Crisis.

This gap can be illustrated by the divergent trajectory of real economic growth and the broad money (M3) growth in the euro area over the past two decades (*see Chart 5*). This significant difference reflects the over-financialization of the economy: additional debt has fueled asset bubbles and so erodes financial stability, in greater depth and faster than it contributes to economic growth[6].

Chart 5 Real GDP growt against M3 growth in the euro area, %



The significant increase of Central Banks 'balance sheets reflects this indebtedness issue

Lasting accommodative non-conventional monetary policies contributed to the significant increase of Central Banks 'balance sheets. The steady and bold non-conventional monetary policy operations on financial markets have led total assets held by Central Banks to steeply rise and reach unprecedented levels. Using QE as a permanent feature of monetary policy would eventually threaten the credibility of central banks.

Between 2008 and 2015, the Federal Reserve's balance sheets expanded from $ 0.9 to $ 4,5 tn (nearly 25% of GDP) after slashing its main rates to zero[7]. Non-standard measures have been experienced later in the euro area[8]. In 2015, three years after the EU sovereign crisis, the ECB launched its "assets purchase

[4] Annual report, May 29, 2020.

[5] As for corporates, low interest rates in the past decade have enabled firms with weaker credit profiles to access capital markets. As a result, according to S&P Global ratings, we entered today's crisis with 11% of European non-financial corporate ratings at "B-"and below, indicating high vulnerability to economic and financial cycles.

[6] In previous periods, economic growth and credit growth were moving more or less at the same pace).

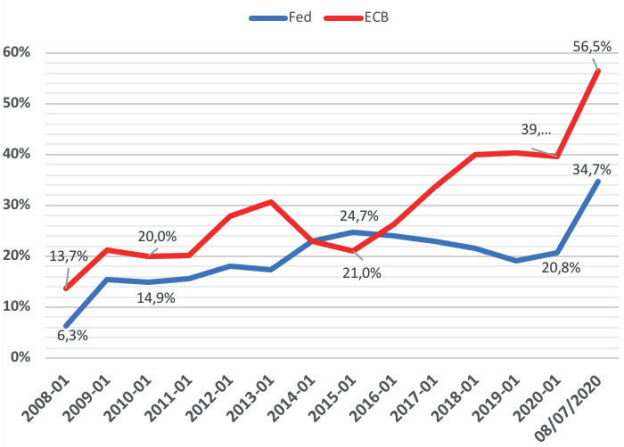
[7] US Treasuries bonds and especially mortgages-backed securities have been purchased to first remove toxic assets held by commercial banks, helping the housing market to recover, restoring trust and stabilizing the US economy. This bond-buying programme ended in 2014, after economic figures such as the unemployment rate falling below 6,5%- indicated significant signs of recovery and inflationary risks.

[8] In 2009, following the sovereign debt crisis, the ECB launched its first Covered Bond Purchase Programme (CBPP1). Under this initiative the Eurosystem purchased €60 billion worth of covered bonds between July 2009 and July 2010.

programme – Between January 2015 and December 2018, total assets held by the Eurosystem – ECB and national central banks – totalled EUR 2,6 tn (above 20% of GDP). In September 2019, Mario Draghi decided to resume with the quantitative easing programme by a monthly purchasing pace of € 20bn.

Following the Covid19 crisis, the Fed and the ECB have launched massive bond-buying programmes debt in purchasing public and private debt to stabilise financial markets. The Federal Reserve balance sheet increased from $4,2 to $7,1 trillion from early to mid-July 2020, to account for 34,7% of the US GDP. The Bank of Japan balance sheet has grown by JP¥ 68bn to JP¥ 649bn, approaching 120% of Japanese GDP. Over the same period, the consolidated Eurosystem assets (ECB + euro area national central banks) rose to € 6,3 trillion mid-July from € 4,7 trillion at the end of 2019.

Chart 6 Total Assets held by the ECB and Fed compared with GDP, %



Sources: ECB, Fed, AMECO

With this staggering rise in balance sheet size, both Central Banks have also taken a more significant place in their domestic economy: as of July 8, 2020, the Fed owned nearly 35% of the US GDP, while total ECB assets amounted to 56,5% of the eurozone GDP (*see Chart 6*). The share of public debt holdings also reveals how entrenched is becoming the Central Banks' path in real economy (*see Chart 7 in Annex*).

These persistent unconventional monetary measures do blur in particular the traditional boundaries between monetary and fiscal policies. Monetary policy function become subordinated to short-term fiscal needs (fiscal dominance). If using QE becomes a permanent feature of monetary policy, this may eventually threaten central bank independence and credibility and would affect stability and confidence in the currency (see 3.1).

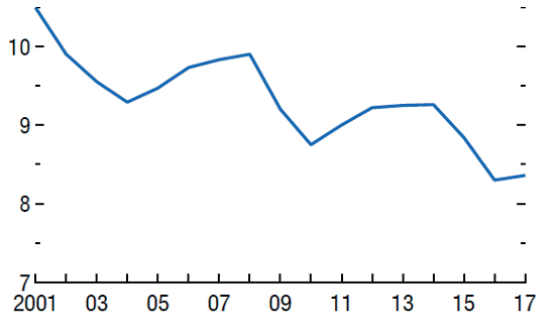
Lasting zero or even negative interest rates damage productive investment and growth in Europe

If at least, lasting accommodative monetary policy had boosted productive investment, one could be convinced by such a policy. But the reality is different. The investment trend has been disappointing. It can be characterized as follows:

- The level of gross non-residential investment in advanced countries as a percentage of GDP has declined significantly, from 10. 5% of GDP in 2001 to 8. 5% recently (*see Chart 8*);
- Fixed capital growth remains low;
- Growth in intangible investments (which contribute to productivity gains) hovers around 3-4% annually, which is significantly lower than in the early 2000s (around 6%).

Overall, the contribution of the capital stock to potential growth remains historically low despite very low interest rates over the past ten years (*see Chart 9*).

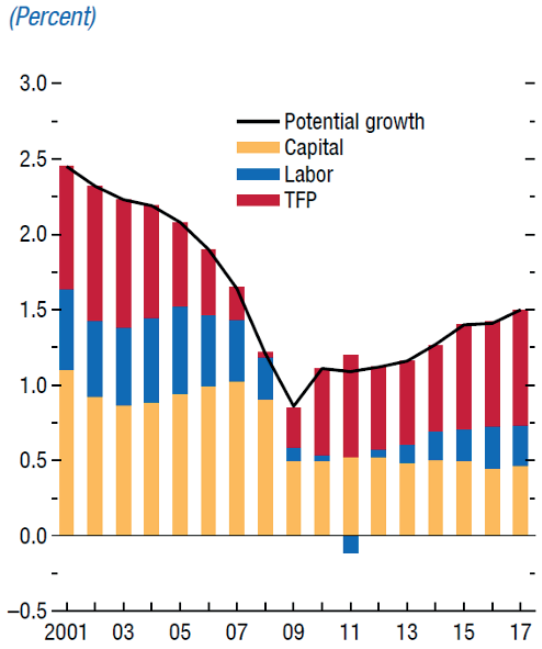
Chart 8 Decline in the level of non-residential investment as % of GDP



Source: IMF staff calculations.

Note: Advanced economies = Australia, Canada, France, Germany, Italy, Japan, Korea, Spain, United Kingdom, United States[1] Gross fixed capital formation data are used for Japan and Korea

Chart 9 Contribution to potential growth; capital share remains low



Source: IMF staff calculations.

Note: Advanced economies = Australia, Canada, France, Germany, Italy, Japan, Korea, Spain, United Kingdom, United States; TFP = total factor productivity

It is a mistake to believe that lasting low interest rates favour long term investment. On the contrary, they urge preference for liquidity behavior, particularly in Europe. Moreover, they encourage the survival of "zombie" firms and favours a misallocation of capital.

Preference for liquidity prevails over productive investment

The buying of sovereign securities squeezes the normal functioning of markets between savings and investment and

brings interest rates to levels close to zero which encourages the holding of liquidity detrimental to productive investment.

Indeed, loose monetary policies coupled with expected low return on earnings drive a preference for liquidity. The liquid share of financial assets held by all economic agents increased from 7 to 16% in Germany (1999 to 2017), from 7. 5 to 12% in Spain, from 5 to 12% in Japan, and from 5.8 to 7% in France (*see Chart 10 in annex*)[9]. Since investment by purchasing securities is taxed, investors tend to forgo illusory remuneration and retain liquid instruments which, at least, are not affected by the application of negative rates. But such a preference for liquidity (Keynes' "haunting") diverts savers away from long-term investment. They would face higher taxes if they invested long-term which is counterintuitive and bears heavy consequences. In the traditional investor trade-off between return, risk and liquidity, the notion of return loses its importance with low interest rates. The arbitrage is only between liquidity and risk.

Lasting easy monetary conditions favours a misallocation of capital

Lasting accommodative monetary policies encourage the survival of "zombie" firms - firms whose profitability is so low that they would not be viable if interest rates were higher-, widen productivity-gap between industry leaders and other firms and impedes the reallocation of resources necessary for innovation and growth.

There is now ample evidence that easy monetary conditions have encouraged banks (notably less- well capitalized ones) to make loans to zombie companies. Lasting low interest rates may reduce bank incentives to recognize write off non-performing loans to these firms, to avoid negative market perceptions or solvency issues. As well, "the search for yield" provides buyers for the bonds issued by these less productive firms.

W. White noted[10] that this maintains excess capacity in the low productivity growth sectors (e.g. retail and construction), hampering the reallocation of resources necessary for growth and innovation.

Low rates may also give industry leaders a strategic advantage over other companies. Indeed, E. Liu, A. Mian and A. Sufi recently explained[11] that the fall in long term interest rates has contributed to raise market concentration, reduce business dynamism, market competition and productivity growth.

The accumulation of very high public debt, negative interest rates and massive repurchases of public and private securities against the backdrop of an accelerating ageing population has been experienced for many years by Japan (47% of outstanding public debt is held by the BoJ as of June 2020), which shows that it is inseparable from a sharp fall in potential growth. G. Davies[12] recently stated that instead of restoring confidence and economic activity there appears to be a "reversal rate" of interest. "Below a certain point, really negative rates not only do not stimulate the economy, they weight it down".

Lasting low interest rates incentivize companies to take on cheap debt to buy back their shares rather than invest in future projects

Loose monetary conditions have encouraged corporate management in the US and UK especially to cut investment and to borrow in order to raise cash to finance share buybacks (*see chart 11 in annex*). In doing so, companies managers succeeded in raising the share prices and the value of the share options they owned of their companies to their advantage, as W. White stressed in a recent paper[13].

Lasting zero or even negative interest rates disincentivize Member States for undertaking structural reforms which should lift potential growth

The interest rate is the price of leverage in the economy. With interest rates at ultra-low levels, governments are under no pressure to reduce their debt. Negative rates actually encourage them to borrow more. And if government borrowing becomes a free lunch, there is a clear disincentive for fiscal discipline.

Indeed, the monetary financing of fiscal deficits gives rise to moral hazard: as fiscal deficits are very easy to finance thanks to public debt monetisation, the euro-zone countries no longer have enough incentives to improve their public finances and implement structural reforms to lift their longer-term growth prospects.

In addition, monetary policy has seemingly aimed to control the yield curve which is another way to keep loose financial conditions and allows governments to finance large fiscal deficits at low interest rates. As governments know that they are insulated by central banks against the risk of insolvency, they run up excessive fiscal deficits. In other words, the monetisation of public debt weakens market discipline and the incentive to reduce fiscal deficits and public debt. Public debt, for example in Italy and France, has risen while not contributing to increase investment in future infrastructures or supporting private investment.

Monetary policy, whatever its instruments (helicopter money, yield curve control or other) cannot replace structural policies (vocational training, apprenticeships, emigration, labour market flexibility, lower labour costs, etc.) which alone can increase potential growth.

Pushing too hard and too long on the monetary pedal would generate financial vulnerabilities

The impact of systematically accommodative monetary policy -with interest rates at zero or even negative for a long time- on the stability of the financial system is unfortunately too well documented: incentives to borrow more, weakening of the banking system, deterioration of the accounts of pension institutions whose liabilities remain subject to contractual obligations but whose fixed-income assets no longer yield anything, financial environment where interest rates no longer play the discriminating role of a "quality signal" that should be theirs.

The profitability of the banking and financial industry is particularly affected in Europe

One of the main side-effects of the ultra-low interest rates policy is that it is threatening the financial stability by eroding banks' profitability and insurance's and pension funds' ability to keep up with the claims and benefits expected by the policy holders – especially regarding pensions and life insurance.

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[9] Jacques de Larosière,"The present monetary deadlock", November 2019.

[10] W. White, "Why Central Bankers should be humble", The International Economy, Winter 2020 Edition.

[11] E. Liu, A. Mian and A. Sufi, "Low Interest Rates, Market Power, and Productivity Growth", NBER Working Paper No. 25505, August 2019.

[12] Gavyn Davies, "Why the Fed dislikes negatives rates", Financial Times, 14 March 2020.

[13] W. White, "Why Central Bankers should be humble", The International Economy, Winter 2020 Edition.

It first weakens the banking system by squeezing their net interest margin. Moreover, commercial banks are also raising their risk exposure : in a world where the financial markets provide resources at a rate of around 2% to companies with a good rating, it is difficult to distribute credit with a fixed cost of credit that is around 3% on average. Accordingly, large, well-rated clients tend to move towards direct, low-interest financing on the bond markets at the expense of bank credit. This results in a concentration of the banking asset portfolio on the potentially riskiest loans, particularly for SMEs that cannot access markets directly. This development is forcing banks to bear higher capital charges due to the increased risks taken.

Lasting zero-interest rates also pose a solvency problem for insurance companies, pension funds and other pension institutions. Faced with long-term commitments - in part contractualized in guaranteed returns - safe bond assets no longer yield much. This is a source of weakness that insurance companies must manage by increasing their equity, diversifying their investments into less liquid and more risky assets or adapting their business models to sectors other than finance (health or personal insurance). For customers, low rates mean higher non-life insurance prices, lower guarantees and fewer long-term savings.

In addition, low-for-long rates increase risk to the system. Indeed, it encourages risk-taking by financial institutions in order to counteract the effect of low rates.

Interest rates no longer play their discriminating "quality signal role" leading to mispricing of risks

Increasingly central banks 'intervention is turning financial assets from market prices into administrated prices. Indeed over time, central banks in OECD countries are controlling the prices of a growing number of assets: not only short-term interest rates but those with QE which actually leads to monitor, not to say master the yield curve, hence long term interest rates; and with government bonds purchases, sovereign risks premia do not reflect market forces.

Financial asset prices no longer provide savers with appropriate information about individual issuers and, more broadly, about the economic and financial developments. In other words, they are obliterating the distinction between what is a genuinely profitable activity and what is not, in turn making little or no distinction between good and bad signatures.

Therefore, financial markets, which are dominated by the role of central banks, should discriminate against signatures according to their quality and not be dominated by the setting up of interest rates by Central Banks.How can free markets assess value in these conditions? Let us not underestimate the importance of this loss of benchmarks - zero interest rates blur risk premia. This reduction of risk premia was already the phenomenon observed prior to the 2007-8 crisis.

Central banks have fundamentally altered the investing landscape. Indeed, C. Smith stressed that "bond market prices in the euro zone may no longer adequately reflect the risk inherent in record high debt levels: as of June 30, roughly 86% of the global bond market was traded with yield not higher than 2%" . More than 60% of the market were yielding less than 1% (*see chart 11 in annex*). Such a proportions of ultra-low remunerative assets has brought financial markets to shift away from the economic fundamentals. This has pushed investors into riskier segments in search of income, compelling them to lend to lower-quality companies and countries.

The policy of massively buying securities, supported by the Central Banks to force low rates, is likely to exacerbate moral hazard: whatever the actual risks inherent to a company or to the relevance of its projects, any investment in it may be protected and treated as good quality.

As Charles Goodhart put it 45 years ago in his famous theorem: "When a measure becomes a goal, it ceases to be a good measure". Thus, as the special measure of momentarily buying securities to avoid excessive spread widening becomes an objective in itself, moral hazard is likely to return in force.

The markets are led to believe that the price of shares is protected for ever by an implicit put[15].

If it becomes inherent in monetary policy to macroeconomically erase asset losses or write-downs, this implies that the Central Bank is doomed to buy everything forever and, in so doing, to guarantee the growth of the gains received by the small fraction of the population that holds the shares while keeping unproductive zombie enterprises alive. If or when economic conditions deteriorate, Central Banks are likely to act even more aggressively to counter the downward movements and may even start buying shares.

The development of asset bubbles

Lasting low interest rates interest rates open the floodgates of credit to both governments and the private sector, encourage search for yield behaviour and represents a source of financial instability with the resulting asset bubbles.

In contemporary economies, excess money creation leads to asset price bubbles, particularly in equities and real estate. Such assets bubbles are reflecting the form of inflation of certain financial assets or real estates that we do not see, or do not want to see (*see Charts 13a, 13b & 13c below*).

Chart 13a OECD*: Central banks' key interest rates and stock market index

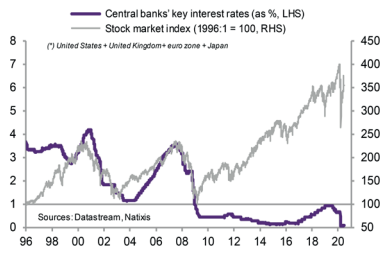


Chart 13b OECD*: Central banks' key interest rates and house prices

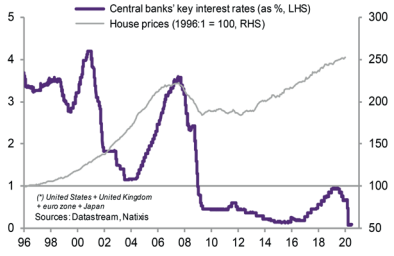
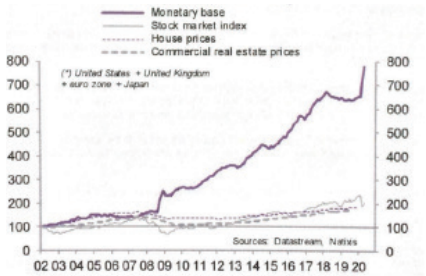


Chart 13c OECD*: Monetary base, stock market index and real estate prices (2002:1 = 100)



[14] C. Smith, Desperate hunt for yield forces investors to rake "extreme risk", Financial Times, 27 July 2020.

[15] J. Authers, "The Fed's Stocks Policy Is Exuberantly Asymmetric", Bloomberg, August 4, 2020.

Monetary policy is widening income and wealth inequalities

Low interest rates, asset purchases and other accommodative unconventional monetary policy instruments tend to increase asset prices (particularly housing, equity, as well as government and corporate bonds) and thereby especially benefit the wealthiest segment of society[16]; the 10%, or even the 2% of populations who own them – they hold them in far higher proportions –, earn high returns on their investments; obviously these asset price changes do little for those who do not hold such assets[17].

Moreover, unlike in the US, European retail savers (individuals or households) tend to be risk-averse and few are financially literate. Most of them may have real estate property and some may hold liquid assets on their saving accounts.

Accordingly, they receive low returns and their savings accumulate extra money more slowly. In contrast, richer people are less risk averse, also as a possible temporary loss in asset value will not affect their standard of living the same way, and more financially educated.

Hence, they invest into riskier, more remunerative assets, such as equity, to escape these low returns. Rising equity prices therefore benefit stockowners, who tend to be people with higher wealth and income.

Ultra-accommodative monetary policy also has distributional consequences across generations. Since elderly people tend to have higher savings (accumulated from their families and during their active time), they are able to sell them whenever appropriate for them so as to maintain their consumption. So they really benefit from upward price changes. Conversely, younger households are usually the ones that will buy these assets at a rather high price for their accommodation or to save for retirement. This absorbs a higher share of their revenues at the time when they start their activity and bring up their children.

More generally, these income inequalities have a lasting effect because they tend to be transmitted across generations: wealthiest elder or retired people can far more easily help their offspring to buy accommodation in residential places, also giving more chances to their grandchildren to go in the best schools and universities with less efforts.

If the Central Bank were doomed to buy everything forever, it could institutionalize moral hazard and, in doing so, will continue to ensure that the small fraction of the population that holds shares and other assets will continue to grow in wealth and earnings.

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Wanting, at any cost, to raise inflation to 2% through monetary policy has, in fact, had very damaging consequences. A zero-rate strategy cannot work for long without creating instability in the financial system and yet we are being told that we are committed to this policy for an almost indefinite period. The current impasse is eminently dangerous: continue indefinitely a policy of monetary easing that leads to declining growth, a reduction of government and corporate dynamism, rising debt, market instability, speculative bubbles and the survival of zombie companies boosted by low rates…is a grim outlook.

It would be honest to recognize that monetary policy is at a dead end.

Too much responsibility may have been put on the shoulders of Central Bankers over the past years

It is a fact that Central Banks have been overly involved in these areas in recent years. Indeed, nobody thought QE would become a permanent feature in the new economic landscape a decade ago. Ultra-low interest rates were designed initially to be an emergency measures to help economies' recovery from the 2008 financial crisis. But now it has become the only game in town.

Monetary policy cannot do everything. It cannot replace the fiscal reforms needed for long-term growth. The time has come to overhaul such policies and to correct the mistaken view that money creation can, by itself, resolve structural economic problems which can only be addressed by structural reforms. Monetary creation will not for instancebe a substitute for ecological measures.. This will be only possible with the development of long-term investments financed, in particular by equity.

Monetary accommodation can buy time to implement this repair and reform, but it cannot substitute for them. Public debt will fall much faster in relative terms if growth is boosted by such reforms. It is high time to return to a more reasonable conception of monetary policy: that which fosters confidence in the economic prospects and stability of the currency and the financial system.

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3. How to get out of the monetary policy deadlock in Europe

Even though central banks have in practice and indirectly become state budget agents, the role of monetary policy should not be overemphasized and should not be overly demanding.

Some economists call for pushing interest rates into deep negative territory to "retrieve some margins". But this could lead to disastrous consequences. It is urgent to restore a monetary and fiscal space so they can become countercyclical during a future crisis.

Three issues should be addressed to get out of this deadlock: revisiting the 2% inflation target, normalizing cautiously and gradually short term nominal interest rates and putting this monetary discussion in the international perspective. At the same time, encouraging structural reforms and sustainable fiscal policies are essential to promote a return to healthy growth in over indebted countries.

Should the ECB go further by eliminating or even lowering main interest rates below zero?

Given the unprecedented scale of the recession, some economists propose that new monetary policy space should be regained. In

[16] This has particularly been the case in the US, UK … and China. This happened to a far lesser extent in continental Europe as taxes and social benefits tend to level out the most salient inequalities there. When looking at developments in the Gini coefficient (a recognised indicator of inequalities in societies), the gap has widened in the three former ones, not in continental Europe.

[17] To some extent the opposite can be observed: the asset prices bubbles push the rents upwards. Those households who do not own their homes may face a growing share of their revenues absorbed by the rents, even though, in some countries, the less wealthy ones may get allowances for their housing.

ordinary times, in the face of such a crisis, central banks would reduce rates to reach - as it has often been the case in the past - negative real rates. But, in the current economic context of depression and low inflation, they cannot do so since nominal rates are already at zero (zero low bound). They should therefore be able to "retrieve some margin" by deliberately setting negative rates. Monetary policy would then regain its traditional driving and shaping role, since it would be able to recreate, on its own, negative real rates in the absence of inflation. Kenneth Rogoff[18] has especially suggested that short-term policy rates to be cut "-3%, or lower".

Proponents of this thesis have considered some of the objections:

- The liquidity trap: when rates are negative, investors tend to turn away from bonds to avoid the "tax" caused by negative rates. Thus, an accumulation of savings is formed, held in the form of liquid assets (bank notes, bank accounts etc) that barely contribute to the development of productive investment. The answer to this danger is to eliminate large denominations and ensure that the banks, themselves affected by negative rates, pass them on in full to their depositors.
- The risk of inflation is inherent, in the long run, in any monetary policy designed to make up for "negative output growth" by eliminating, through money creation, the difference between potential growth and current growth depressed by the crisis. This risk is hardly considered likely in the coming years given the scale of the crisis, the slow recovery, envisaged monetary policy, and the structural forces at work (ageing, much higher unemployment, technological progress, etc.). And, one might add, if inflation were to return, there would still be time to turn the tide and return to more traditional monetary policy.

Permanent expansionary monetary policy and low rates would thus be necessary to absorb fiscal deficit, as we are running toward the Modern Monetary Theory's era. MMT claims that fiscal deficit would systematically be financed by money creation until full employment is reached. This would lead to important consequences.

According to this view, Central banks would not reduce their balance sheets and interest rates would no longer return to normal in the future, which means that governments bonds held are effectively cancelled. Accordingly, there is no limit to fiscal deficits. Surprisingly, however, these proposals, designed to eliminate a major economic driver, namely the cost or price -of savings, fail to consider the essential question of the value of money. Money is based solely on trust.

The risk of a loss of trust will threaten if those responsible for that trust are resigned to see their role as suppliers of an unlimited commodity rather than as vigilant guardians of its stability. Moreover, the moral hazard involved in a system where indebtedness can be permanent and infinite, regardless of the quality of the paper or signatures, poses a serious moral hazard and political problem. These proposals also neglect another essential element: as we have seen above, negative rates damage productive investment, lead to financial vulnerabilities and structural imbalances.

Who believes that the private sector will finance the vast productive investments needed for sustainable energy transition if the "juste retour" will be much higher taxes or negative rates?

An economy whose rates are forced by public authorities to remain negative for decades will not inspire confidence in those who want to be entrepreneurial.

Debt sustainability should not be an objective of monetary policy: Thinking that monetary creation can solve the problems arising from excessive debt is an illusion

Public debt sustainability has become an implicit objective of Central Banks. The idea that states can compensate for everything by exposing their balance sheets is unfortunately, in part, an illusion. Indeed, most States have fragile balance sheets with monumental debts and the extension - which some would like to see unlimited - of these financial capacities obviously raises the essential issue of the sustainability of deficits – except if one agreed that all incremental expenses were to end up for ever on central banks' balance sheets.

Despite the QE and its possible magnitude, the budget constraint remains. This is an important point. Despite the quasi "guarantee" of sovereign securities purchases by the Central Bank there remains assessments and analyses by the markets. Analysts and rating agencies continue to examine ratios and make judgments about the quality and sustainability of public debt. This point should not be taken lightly: rating changes are an important element of an issuer's "signature" and a key factor in the decision to buy securities by private investors, especially non-residents. As they are very sensitive to the rating, they still play a decisive role in the demand for public securities offered for issue.

Considering that these judgments voiced by the markets actually do not matter, because the Central Bank will always be there to buy, is doubly inaccurate: the Central Bank will not always be able to buy everything, as we shall see below, and the quality of a State's signature is an essential element of confidence that must be preserved at all costs for the country's future.

Even if the Central Bank were to acquire without any limit the securities issued by States, this would not solve the problems of the future and generate may vulnerabilities as we have just explained.

However, such an approach would ultimately lead to the systematic monetisation of all deficits, which would affect stability and confidence in the currency. Eventually, the monetization of the bulk of the assets – which will end up on the balance sheets of central banks – will presage a creeping nationalization of our economies and the crowding out of profitable economic activity.

Given the heterogeneity of fiscal performance across euro-area Member States, this approach would most probably be incompatible with the functioning of monetary union. In the longer turn, such a result would mean that the market economy would eventually become an economy largely directed and owned by the central bank, which poses an existential problem.

We cannot pretend that money creation can exempt our societies indefinitely from having to face the question: "who will pay?" Do we seriously believe that unlimited issuance of sovereign securities will never come up against a fundamental questioning of the markets as to the solvency of States? Moreover, only productivity enhancing, and productive investment can create sustainable increases in productivity, neither negative rates nor QE.

Revisiting the 2%-inflation target

It is now imperative to start desacralizing the 2% inflation target and preparing new rules of the game that would be implemented

[18] "The case for deeply negative interest rates", Project Syndicate, May 4, 2020

gradually and cautiously. This would stabilize monetary anxieties and avoid falling into an endless financing hole that can only maim business and consumer confidence. We need a minimum of international discipline. Setting an unattainable goal has a real psychological cost.

Desacralizing the 2% and no longer to consider it as an absolute guideline that does not take into account the deflationary and structural forces. One way to achieve this would be to set the inflation target within a range (e.g. 1%-2% or 1,5%- 2,5%) which would make it possible to abolish the magical figure of 2%.

Given this way of thinking, any attempt to "compensate" for the years when inflation did not reach 2% and therefore to ignore the overruns beyond 2% makes no sense.

In addition to price stability, monetary policy should include financial stability in its mandate, regarding financial and real estate assets prices especially. Macroprudential policies should notably pay more attention to several indicators: credit to economy and to the public sector (net domestic assets). It is better to think of macroprudential policy and monetary policy as complements, not substitutes.

Normalizing gradually and cautiously the monetary policy

The first priority is to re-establish a financial market that functions on the basis of market forces and not according to the prescription of zero interest rates and ditch out the asymmetry principle of monetary policy.

Such an asymmetry is becoming unsustainable: central banks only react aggressively in time of crisis by imposing ultra-expansionary measures while adopting a wait-and-see attitude in time of economic prosperity. The central banks have come to follow the market and to fear all its reactions.

Gradually phasing out QE programs as soon as the crisis is over and taking into account the impact on the market to avoid too strong jolts is therefore of the essence. Indeed, we must not allow ourselves to be imprisoned indefinitely in a policy that has disadvantages recognized by all on the sole pretext that the re-entry into the atmosphere is difficult.

Then, we will need to take advantage of the first upturn in economic growth to start to gradually and cautiously normalize interest-rates. Of course, any monetary policy based on the avoidance of any debt restructuring is obviously absurd.

A Central bank should also look for the appropriate level of the interest rates of their related economy. As Tobin said, "in a world of fluid markets, monetary policies tend to play a beggar-thy-neighbour game. When all the Central Banks focus on interest-rates differences between countries, the overall average of rates is no longer anyone's business. This average will always end up being too high or too low". In other words, do not just look at your neighbour's rates but look for the right rates.

Putting this monetary discussion in the international perspective

The absence of any form of an international monetary system today can only encourage trade and currency wars. Any monetary policy of a country or a major area inevitably has external effects. Using national monetary policies for competitive purposes must be avoided. The exchange rate must regain its stability role in an organized international monetary system.

To avoid the possible consequences for exchange rates, it would be advisable to reach an agreement with the Americans on the evolution of interest rates at the earliest opportunity.

Encouraging structural reforms and sustainable fiscal policies means promoting a return to healthy growth in over indebted countries

At this point of time, it is not interest rates that hamper productive investments but economic prospects (mass unemployment, trade war, uncertainty about the future, high labor cost, excessive corporate debt…).

In the current context, it is essential to scrutinize the public budget and give priority to future expenditures (education, health equipment, research, innovation…) and undertake structural reforms which are the only ones that can promise a sound sustainable and better future. It is also of the essence to give priority to financing companies with equity rather than debt. Fiscal stimulus through current expenditure does not stimulate investment.

Governments must take corrective actions to ensure a path of primary fiscal balances. We must stop this psychodrama of so-called austerity, which is said to have weakened certain States of the Union. In fact, it is the fiscally virtuous countries that have best prepared their economies for the challenges of the crisis.

In countries with too much debt, decisions must now be made to stop "walking on their heads»; and to reduce unproductive and inefficient public spending. This is the only way to release the necessary resources to the productive sector. Just a few years of efforts mobilizing all the energies are all we need. Such a fiscal policy requires a spirit of cooperation among the different political parties and on a bi-partisan basis, examples abound in the Northern European Member States.

Many countries have undertaken such domestic structural reforms during the past decades. The successful efforts of many democratic States to adjust have enabled them, within a few years, to regain their fundamental balance and reverse their debt curves. Examples include a number of developing countries (in Asia and Latin America), Germany, Scandinavian countries, Canada, and to some extent the United Kingdom.

Under the prevailing lax financial conditions, the only countries liable to regain their strength and dignity will be those prepared to remedy their own structural imbalances, abandoning that these will be wiped out by the global monetary and financial mess.

Written by Jacques de Larosière & Didier Cahen with the support of Elias Krief, Eurofi

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ANNEX

Chart 7 Share of public debt held by Central Banks on Mid-2020, %

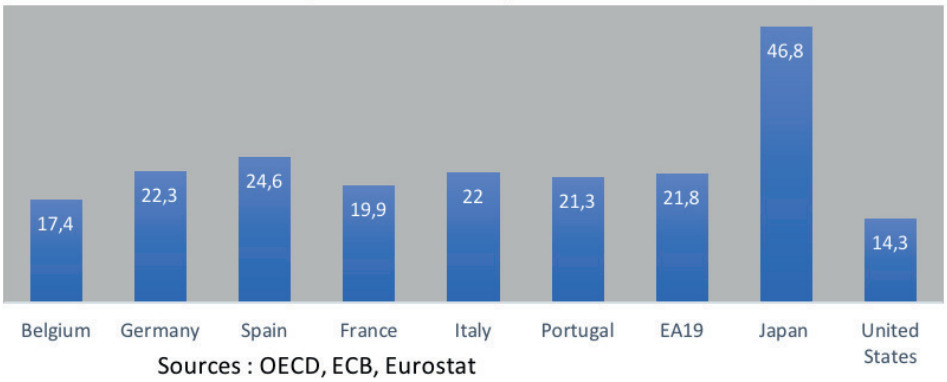
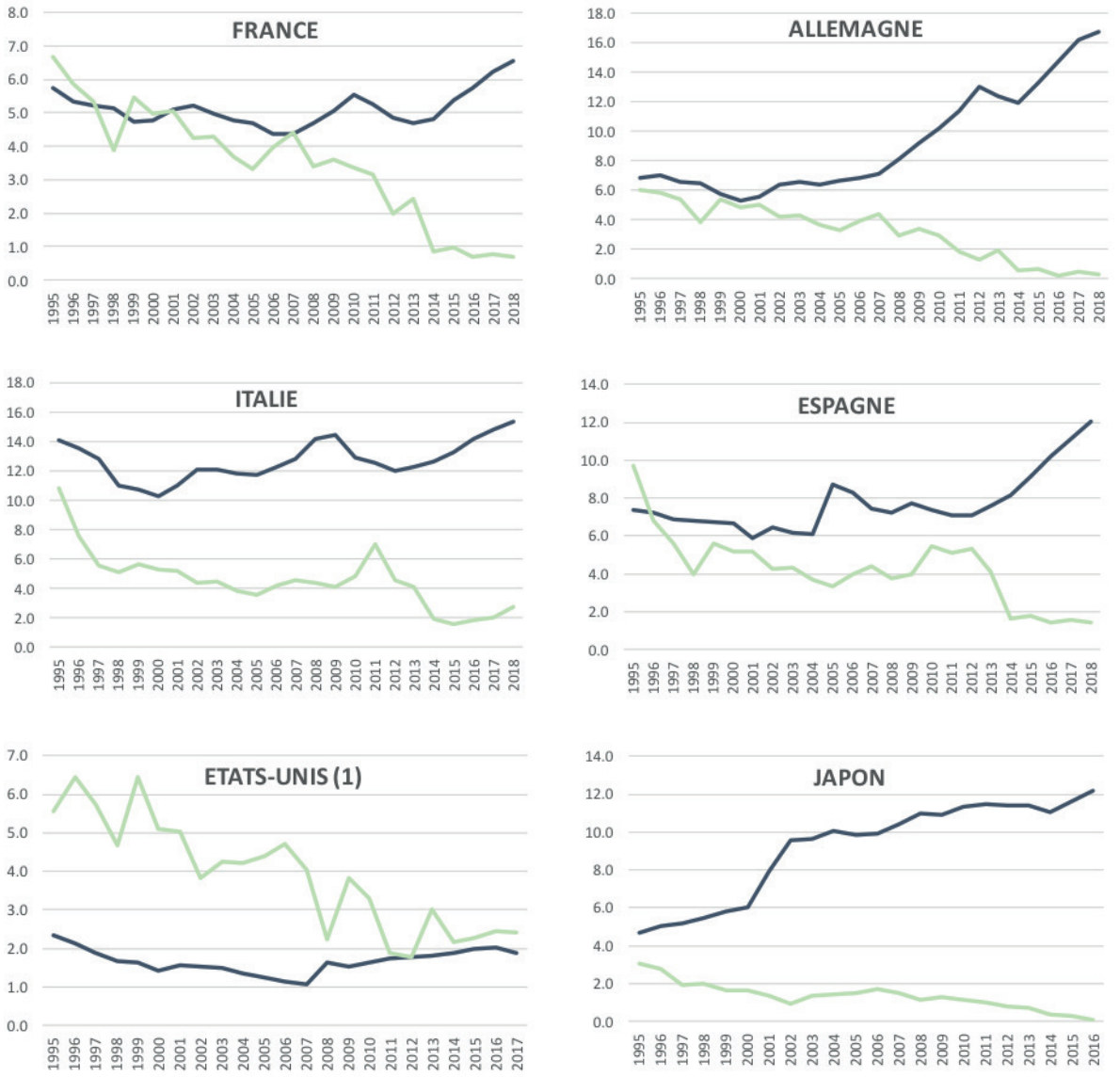


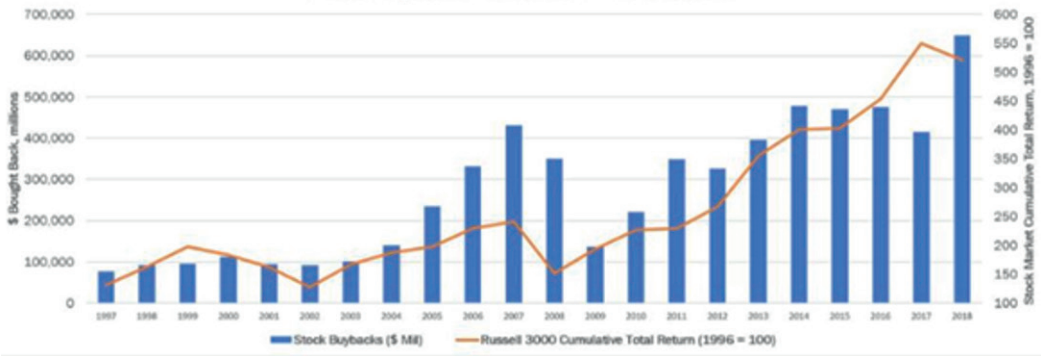
Chart 10 As interest rates fall, portfolios become more liquid

Evolution of the liquid assets of economic agents and interest rates on government bonds



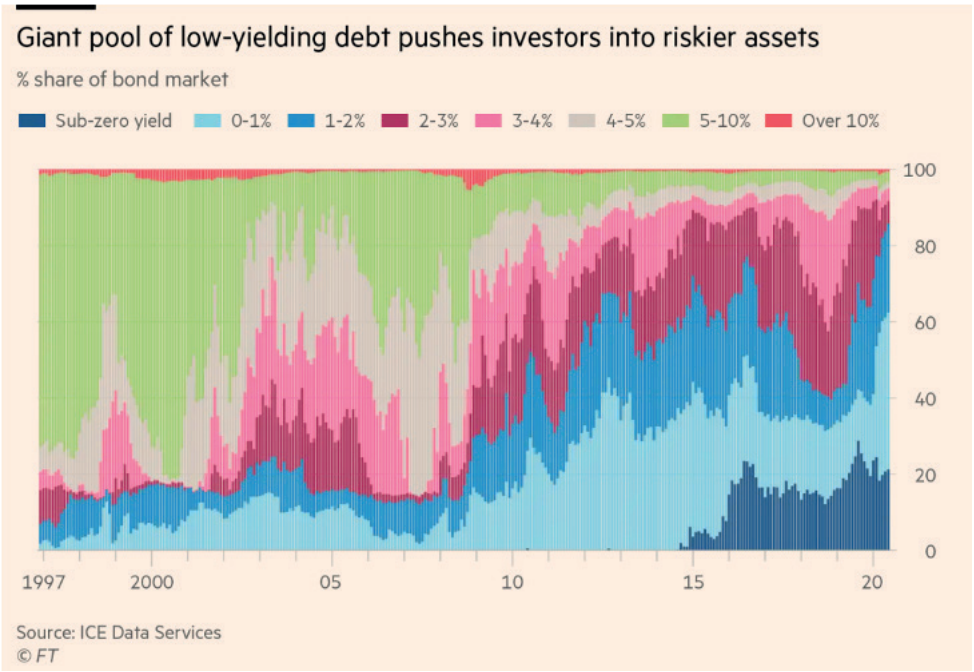
(1) For the United States, this refers only to assets held in the form of currency, as the distinction between transferable and non-transferable deposits is not available.
Sources : Eurostat, Thomson Reuters, OEE calculations (European Savings Observatory).

Chart 11 Low interest rates encourage share buybacks



Source: Bloomberg, share buybacks, equity data contained in the Russell 3000 Index (excluding financial institutions)

Chart 12 Share of bond market given the level of yield



Debt and money illusion

Today there are countless calling on us to solve the problems arising from excessive debt by using the means of monetary creation.

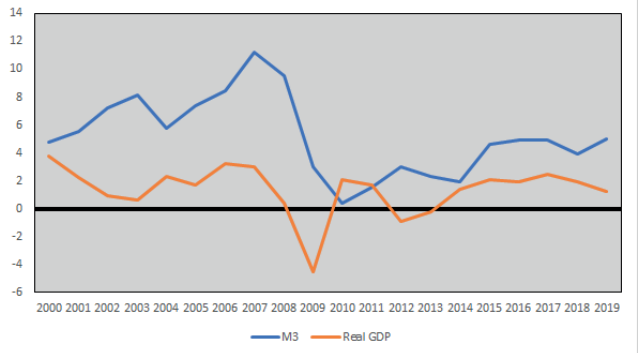
Before discussing this, it is useful to ask a fundamental question: where do these massive debt problems come from?

For many, it is the result of years of "easing", feasting, not famine: instead of "living within our means" and limiting new debt to financing activities that would fuel future economic growth, too often we have resorted to using debt to finance consumption.

If we look at a country like France, we see that much of its public debt has been used to pay for current expenditure (personnel costs, administration, social system deficit…). This drift explains the fact that debt keeps growing with the passage of time: not being a creator of future wealth, it is difficult to repay it and expensive to serve; it accumulates.

This phenomenon is synthesized in the following graph concerning the EU but is valid worldwide.

Real GDP growth against M3 growth in the euro area, %



We can see in the diagram that credit growth – which has consistently outpaced economic growth since the early 2000s – has been at the root of "over-financing" the world and is the resulting cause of financial crises (in previous periods, economic growth and credit growth were moving more or less in tandem).

Continuous recourse to debt has led – to the indifference of the monetary "authorities" – to trends and figures that are historically unbelievable.

Thus, in 2019, before the pandemic hit, global debt – public and private- reached a peacetime record of 230% of world GDP. The increase in debt in 2019 compared to the previous year was almost 15%, out of all proportion to the rate of economic growth (3,2%).

We have ended up getting used to this "financialization", which has the merit at least for some operators in the financial sector, of ensuring them exorbitant remuneration.

In short, these are the results of thirty years of monetary laxity. Worth noting that over the last twenty years, Central Banks have actively kept key real interest rates in negative territory for eighteen years…

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It was in this explosive and deteriorating economic and financial environment that the coronavirus occurred. The economic crisis associated with the pandemic is to a very large extent a supply-side problem : where the unpreparedness of public authorities to deal with the health situation has been the most evident, governments have been obliged to strictly and indiscriminately confine populations and shut down a significant part of economic activity. Because of the lack of patient testing, everyone was ordered to be confined, authorized activity was kept in line with the number of beds available and the maximum daily capacity of the hospital system to treat serious cases…

The problem of debt and the public accounts have been greatly aggravated now by the additional spending to tackle the containment-induced unemployment. The halt in production, forecasts of European growth being down in some countries by 10% or more this year and the need to support employment explain the explosion in public debt ratios, most of which were already problematic even before the health crisis.

So, what can be done?

We cannot and must not go down the wrong road again.

Basically, two approaches can be considered.

The first is to deal with the problems, the second is to deny them and to try to "circumvent" them.

What are the advantages and disadvantages of these two approaches?

1. A "classic" and rational approach

a) According to this view, past excesses must be redressed, to ensure that they do not recur, with public finances better managed by focusing on future investments and reducing the least useful current expenditure. In France, as in many other countries, a primary surplus (without debt servicing costs) will have to be gradually built up, which will make it possible to start the desirable – and necessary – process of gradually reducing public debt levels. The mere fact of having made this effort – which was necessary in any case even before and independently of the pandemic – would have positive effects on the perception of the quality of national debts as perceived by foreign investors in particular.

What is the alternative? Agreeing passively, without reacting, to go from 100% of Debt/GDP to 120% at the end of 2020 and thereafter, continuing, as we have been doing for decades, to add deficits and increased public spending every year thereby registering a continuous increase in our debt? We hear this murmur, this whisper of easing on both sides: "We have reached a new debt level but let us not change out habits". This would be the worst solution. It would be tantamount to setting in stone bad habits, refusing to consider intelligently the real challenges, including inter-generational equity to be fair to our children and grandchildren.

Or, to use the budget as an engine of growth and progress and not as an untouchable, inflexible monument serving the existing bureaucracy. This approach requires rational questioning and examination of the least useful public expenditure and drawing up a prioritized plan for the future.

Is the second approach above irresponsible "austerity"?

Some say yes. But this is forgetting that a country like Germany - which for the past ten years has reduced its public debt burden from 84% to 60% of its GDP – greatly benefited from this policy when the coronavirus crisis hit:

- The debt margin created by so-called "austerity" has assisted German to be much less affected by the crisis than France (-6,5% GDP decline in Germany expected in 2020 compared to -10% in France). Germany was able to decide on a much more vigorous recovery program than those of many of its European partners who are tackling the crisis without sufficient margins and with debt ratios at the limits of sustainability. It should not be forgotten that the effectiveness of the Keynesian multiplier depends very much on the degree of indebtedness at the start of the programme.
- The rigorous, far-sighted and long-term management of the German budget has made it possible to target public spending more wisely : at a cost equal to 9% of GDP; the hospital system in Germany faced with the pandemic proved better equipped (tests, respirators…) and was more able to react efficiently (integration of private clinics into the common effort, systematic use of town medicine, good governmental structures…).

b) The second aspect of this approach consists of addressing, through negotiations, the problems of the unsustainability of Governments' debt

A debt is defined a contract between the debtor and the creditor. Since the beginning of time, negotiated solutions of wisdom have been used in cases of serious debt difficulties. If the debt becomes unsustainable because it is no longer compatible with the debtor's earning capacity, both parties renegotiate the contract to take into account the new reality.

In the current situation which has been massively exacerbated by the effects of the pandemic, it would seem advisable to rely, in the most acute cases, on this case-by-case negotiation procedure. The financial world has experience of these negotiations, which should be conducted in the spirit of serene cooperation, considering all the realities and the prospects of a return to better fortunes in the debtor countries. The IMF has acquired expertise in this area and creditors – albeit even numerous ones - know how to coordinate action in the order appropriate bodies (e.g. the Institute of International Finance).

2. The approach of denial

The classical approach I have just outlined seems to have few supporters:

- It involves budgetary efforts and a strategic vision of the future. The advocates of "facility" would like people to believe that any elimination of a useless public expenditure would be decrease of sustainable growth and prosperity. The truth is the contrary, that such actions are key for growth because they would free resources for productive investment in the future.
- It involves delicate restructuring

Other ideas emerged as well, the inspiration of which could be summed up as follows: "Why go through so much trouble, in an uncertain and troubled situation, when depression threatens, when money creation can fix everything at no cost?" The temptation is general, enticing but it can be demolished intellectually in various ways:

- Helicopter money is in vogue. Rather than going through normal channels - Central Bank - commercial banks - customers, a channel made uncertain by the difficulty of forcing an already weakened banking system to lend - it would be more efficient to allocate free money created by the Central Bank to citizens in the hope that they will spend it on consumer goods.
- The problem of new bond issues by already highly indebted states would no longer arise if the Quantitative Easing (QE) policy were pushed far enough. The markets, which buy these bonds, must avoid discriminating between issuers and applying spreads to the securities issued that reflect the risks incurred by each issuer. To counter this risk, Central Banks can buy government securities for considerable amounts (sometimes without limit as in the USA and UK). This has the effect of reducing spreads and making it easier for States to issue at very low rates. In this way, whatever the starting level of public debt (60% of GDP in Germany, 100% in France, 125% in Italy…) new issues – in a way guaranteed by QE - will be at almost equal rates. The risk premium will, in fact, have disappeared to the great benefit of the most vulnerable borrowing States. And to ensure that the interest burden on existing debt is not too heavy, the Central Banks set their key rates at very low levels in real terms, or even at negative ones. But, obviously, this policy must be extended over time to stabilize expectations and avoid volatility; in fact, the Central Banks communicate by anchoring in the public mind the idea that rates will remain low for an indefinite period.
- But what about the stock of existing debts? It benefits, in part, from the QE insofar as the refinancing of old maturing debts also gives rise to issues and repurchases on the market by the Central Bank. But some would like to go further and deal with all the stocks that amount to astronomical amounts at once. Could we envisage that the Central Banks might buy back at par the totality of the public debt of their States? Some recommend transferring existing public debt held by investors to the Central Banks. In this way, after the debt has been acquired by the Issuing Institutes, it could be cancelled, and the States would find themselves … without debt. A less radical version of this proposal would be for central banks to cancel their QE holdings (the ECB has just rejected this idea).

Such proposals raise obvious and serious objections:

- Normally, if the Central Bank buys government debt securities, it intends to obtain from the issuing government all the rights attached to these securities and in particular the servicing of interest and repayments. In the event of unsustainability, potential losses should be recognized in due course. But the pure and simple cancellation of debt instruments after their acquisition would be a major fiscal act in favour of the States, a decision which would go beyond the most elementary accounting rules and the statutes of the Central Banks.
- The purchase, by monetary creation, of all public debt would represent the equivalent of world GDP. This would obviously make no sense and could have serious inflationary consequences. And what alternative investments would investors who have agreed to sell their sovereign securities to Central Banks focus on? In fact, it is likely that holders of good quality public securities will wish to keep them as risk-free investments for reasons of liquidity and portfolio diversification. They would therefore only sell to Central Banks, according to this scheme, problematic securities, which would be a piecemeal way of dealing with the problem of public debt that has become unsustainable by transferring it to the Issuing Institutes. This solution is far from obvious, indeed flawed.

- If the Central Banks were to buy doubtful securities at par, they would suffer an undue loss; they would therefore have to negotiate a realistic purchase price and thus replace the usual restructuring negotiations.
- As for the risk taken by the Central Banks in the event of such a transfer of debt, it would undoubtedly generate definitive losses on their balance sheets in the long term and would therefore, according to some, oblige the States to strengthen their equity capital. The Member States would therefore ultimately find themselves responsible for, and financing, the debt transfer operation.

Despite these objections, the fact remains that the proponents of the thesis of total or partial repurchase of existing debts caress this idea as an almost mythical way of reducing the debt to a level close to zero in order to get humanity back on track ... without having to deal with budgetary problems or structural reforms.

Unfortunately, this new world view that money creation would solve all the problems of today and tomorrow is based on a profound illusion.

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The fundamental problem with this "vision" is that fiat money is not the equivalent of wealth. Money created ex-nihilo is only effective if it is part of a healthy and vigorous ecosystem.

The reality is that most of these so-called "new ideas" have the particularity of giving with one hand while taking away with the other. Let me explain.

A Central Bank can buy existing debt instruments on the market through monetary creation. In doing so, these bonds are transferred from a holder to the Central Bank. The owner of the security has therefore changed: it is now the Central Bank, which can offer advantages in times of crisis (because of the potentially almost unlimited scale of its purchases, the Issuing Institute, as a stable buyer, can raise the value of these securities and at the same time lower their interest rate, which will facilitate the financing of the budgets of the most vulnerable States). But what must be understood is that the debt represented by the title is still there and that the State must continue to service it according to the legal contractual provisions. This would only be different if the Central Bank could cancel the value of the debt thus purchased. But as we have seen above, such an act, which would amount to the Central Bank taking a major fiscal decision (the financial consequences of which, moreover, would ultimately be borne by the State concerned), and is not in line with the division of tasks and responsibilities in our democratic systems[1].

It is therefore understandable that, despite QE and its possible magnitude, the budget constraint remains. This is an important point. It should not be thought that the quasi "guarantee" of sovereign securities purchases by the Central Bank eliminates any possibility of judgment and analysis by the markets. Analysts and rating agencies will continue to examine ratios and make judgments about the quality and sustainability of public debt. This point should not be taken lightly: rating changes are an important element of an issuer's "signature" and also a key factor in the decision to buy securities by private investors, especially non-residents. However, as they are very sensitive to the rating, they play a decisive role in the demand for public securities offered for issue. Considering that these judgements voiced by the markets do not matter, because the Central Bank will always be there to buy, is doubly inaccurate: the Central Bank will not ALWAYS be able to buy EVERYTHING, as we shall see below, and the quality of a State's signature is an essential element of confidence that must be preserved at all costs for the country's future.

Just as in a crisis we can use QE to reduce market spreads in order to get through the turbulence without too many hiccups, as we are doing today, it is questionable to argue that this is a permanent feature of new monetary policy.

Without even raising the problem of the likely inflationary effects of a policy consisting of monetizing a very substantial part of sovereign - or even private - issues (this discussion, in the current context of under-utilisation of production capacities, is too theoretical and does not lead to any certainty), the fact remains that a systematic and prolonged use of monetary policy to keep rates low is likely in the long term to have negative effects on the very quality of money: I have already said a word about the effects of this policy - and the budgetary slippage of which it is a corollary - on our rating, a rating that we should consider as the apple in our eye.

The current situation is curious: after decades of monetary easing, rates are at zero, or negative, so there is no room to lower them as a depression threatens. As for budgets, they have slipped into repeated deficits and often unsustainable debts. Again, there is no margin to use. The temptation is to try to get out of this double contradiction by inflating the money supply more and more.

The thesis is simple: since budgets are stretched to the extreme, let us allow governments to spend as much as they need without having to bear the cost of uncertainty - and therefore the spreads - of the markets. Central Banks will be able to triple, or more than triple, their balance sheets by buying sovereign issues at yields low enough not to impede fiscal stimulus.

As for interest rates, if they are at zero: "Never mind," some say, "let us implement frankly negative rates and pass them on to depositors". This view suggests that monetary policy would regain its room for maneuver by creating negative real rates despite the absence of inflation.

But, if one thinks about it, the two theses stated above contain innate fatal contradictions.

The first presupposes, in fact, that quantitative easing is permanent, since the more financial markets are shaped by monetary policy, which comes to control the entire yield curve and to guide market expectations in a detailed manner, the more difficult it is to change and normalize policy. The fear of a sudden market downturn is such that Central Banks feel obliged to maintain their accommodating policy for an indefinite period. In the fall of 2018, we saw how the Fed was forced to stop its gradual normalization effort, which had begun two years earlier.

But this resignation to never change policy poses a particular problem in the euro area. While the national central banks can do practically everything within the political consensus, this is not the case for the ECB, which is a multilateral institution governed by a Treaty and where the Member States have to find common ground on the crucial issue of the divide between

[1] The Treaty on the Functioning of the EU prohibits monetary financing (Article 123)

monetary and "fiscal" policy. Between targeted interventions - however massive - and a policy of permanent purchases leading to a major change in the balance sheet and the role of monetary policy, there is a margin that is far from obvious. The recent decision of the Constitutional Court in Karlsruhe is a warning in this respect.

Negative rates, on the other hand, are supposed to encourage productive investment, which has been in decline for more than a decade. But the reality is quite different. It has been shown that negative rates deter savers, particularly in Europe, from investing for the long term and encourage them to hold on to cash, a strong trend observed in all European countries. If the Central Banks continue to announce the permanence of zero or negative rates, it is now clear that productive investment will not resume. How can we catalyze savers to invest in future projects with their share of risk if all we are going to give lenders is zero remuneration?

A policy you cannot get out of is not a good policy. Any strategy must include an element of flexibility to respond to events.

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The current impasse is eminently dangerous: to continue indefinitely a policy of monetary easing that leads to declining growth, a decline in productive investment, rising debt, market instability, speculative bubbles and the survival of zombie companies boosted by low rates ... is a grim outlook.

If this is the price to be paid to avoid having to deal with substantive issues that have been neglected for too long, it is certainly not the right way to look at the post-crisis period.

Written by Jacques de Larosière

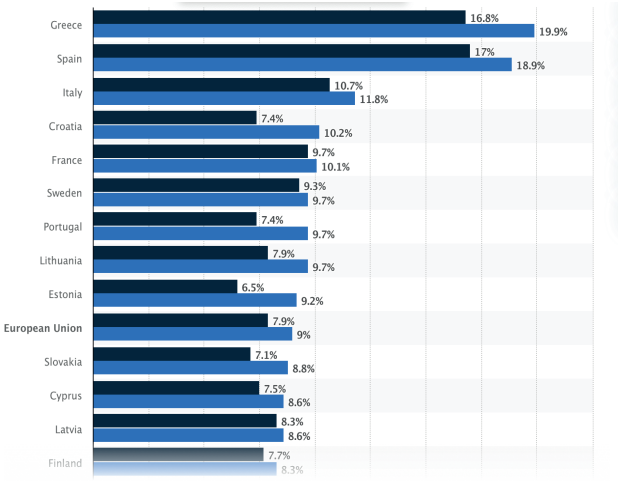
KEY ON-GOING POLICY INITIATIVES IN THE EU FINANCIAL SECTOR

Consolidating the ability of EU banks to support the economy recovery

1. Covid-19 pandemic economic consequences require a strong commitment of banks toward badly impacted corporates

Unemployment and lockdowns affect directly the banking sector. The accentuation of the Low for long monetary policy also weighs on banks profitability.

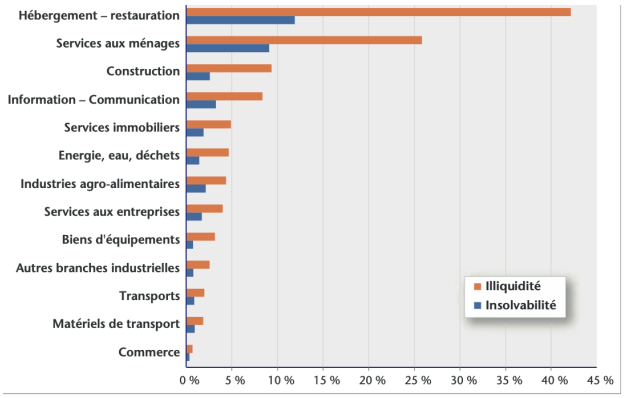
According to data released by Statista, unemployment across the whole of the European Union is expected to rise to 9% in 2020 coming from 6.6% in January 2020, in the wake of the Coronavirus pandemic and subsequent lockdowns enforced by national governments. Among European countries, Greece is expected to suffer the worst unemployment rate of 19.9 percent, followed by Spain at 18.9 percent while Germany is forecast to have the lowest unemployment rate at four percent. In 2021, unemployment in the EU should hopefully recede from 9% to 7.9%.



Since among the socio-economic determinants of mortgage delinquency in the EU countries one observes that income volatility significantly increases the mortgage delinquency risk this should severely impact banks.

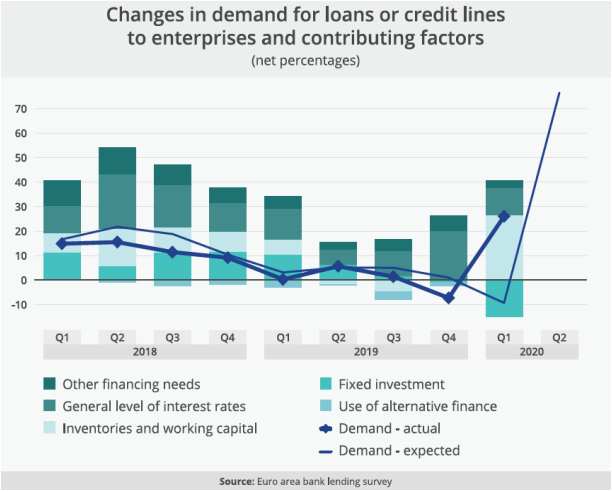
Similarly, companies are strongly impacted in the EU. For instance, according to the OFCE[1] - June 2020 - the pandemic is having a sudden and significant impact[2] on the liquidity of French companies. The drastic drop in revenues associated with lockdown measures to contain the epidemic, in addition to market factors and most fixed costs that do not adapt to the actual level of production (or do so too slowly) are weighing on the profitability and in the near term in the liquidity of non-financial companies. While in a «non-Covid-19» scenario a fraction of firms (about 4% at the beginning of 2021) would experience liquidity problems, up to 7. 5% of the firms two weeks after the shock. The ratio rises to 12% after two months, and then slightly exceeds 14% in the first quarter of 2021.

We also alluded to the fact that firm's solvency is also heavily hit. Yet, it is very much dependent on the business sector. The most affected sector - Hotels and restaurants - might face up to 13% bankruptcies.



Source : Simulations OFCE, données FARE.

2. Despite this diffuse fragility, banks have been asked[3] to further extending loans.



At this point of time, in this context banks have enlarged their assets[4]. Between the end of 2019 and July 2020, they increased by 8,2%. One can observe that while the financing[5] provided to households remained stable (+0,3%) in a context

[1] https://www.ofce.sciences-po.fr/pdf/pbrief/2020/OFCEpbrief69.pdf

[2] Four economic scenarios are simulated. The first scenario is a crisis-free environment of the Covid-19 and serves as a counterfactual. The other three are three different scenarios of economic recovery. The most unfavourable is a 3% permanent drop in activity.

[3] https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/ecb.blssurvey2020q2~d8de5b89f0.en.html#toc10

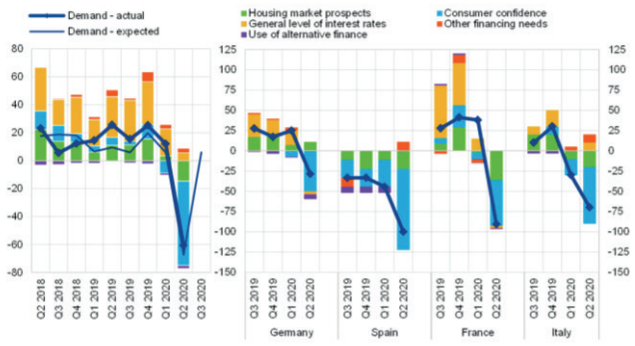
[4] https://sdw.ecb.europa.eu/reports.do?node=10000029

[5] https://sdw.ecb.europa.eu/reports.do?node=10000031

of weakening confidence, while the loans to non-financial corporations raised by 6,3% (although investments were postponed, inventory and working capital needs raised strongly – see chart hereunder from the ECB survey[6]). This illustrate the strong support brought about by the banking sector to the economy, despite the deterioration of the credit risk notably of many EU corporates.

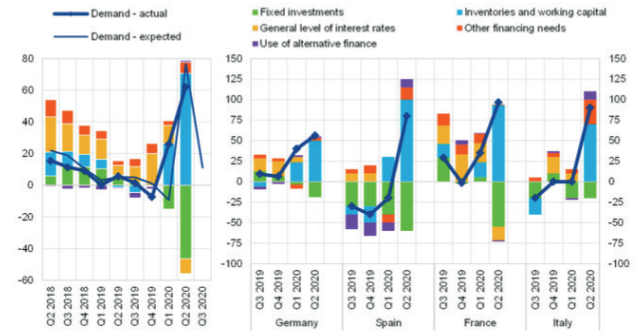
Changes in demand for loans to households for house purchase, and contributing factors

(net percentages of banks reporting an increase in demand and contributing factors)



Changes in demand for loans or credit lines to enterprises and contributing factors

(net percentages of banks reporting an increase in demand and contributing factors)



3. To navigate through the crisis and be up to the EU borrowing needs required to relaunch growth, EU banks need to be up to the high level of losses anticipated

Conversely to most of past economic downturns, which were largely provoked or at least triggered by the financial system, the current recession was specific as it was triggered by a global pandemic, and the resulting shocks to supply and demand, and partly dampened by monetary and budgetary initiatives. Having said that we should add that the economic outcome is far from clear since the pandemic is still unfolding globally, and some second wave scenarios are far from being excluded.

The banking sector notably in the EU has been instrumental to keep afloat notably corporates of all sizes, which have drawn their precautionary bank liquidity lines in a context of market disruptions or also benefited from ad hoc bank lending programmes backed by governments.

However, the banking sector will not be less essential to support the recovery of the economy and contribute to resuming growth by lending to the economy.

Being up to this expectation requires that banks succeed to preserve their resilience although the economic context (recession, unemployment, lockdowns…) should make certain counterparts of banks insolvent, raise the number of defaults and the magnitude of the Non-Performing Loans (NPLs) and more generally lead the whole credit portfolio to transition downward risk wise.

These complex dynamics may prove challenging for banks, notably in terms of levels of regulatory capital required due to subsequent losses from loan defaults and increases in risk-weighted assets.

McKinsey found in a recent study[7], that in its two milder scenarios they laid out in which GDP does not recover to its pre-Covid19 level, that until 2021 or 2023, $100 billion to $400 billion in common equity tier-1 (CET1) capital would be wiped out in Europe, the United Kingdom, and the United States.

Under these scenarios, CET1 ratios, which were pre-Covid 13% in Europe, 14% in the United Kingdom, and 12% in the United States, would fall to 8.5 to 10.0 % in Europe, 11 to 13 % in the United Kingdom, and 8.0 to 10.5 % in the United States.

Badly hit but above regulatory minimums in average. But some individual banks notably those already facing pre-Covid credit challenges, may not fare that well. Although in the EU the largest 121 eurozone banks had more than halved in six years their NPLs which represented €500bn at the end of 2019, i.e. 3.2% of loan books - certain Greek, Cypriot, Portuguese and Italian banks still have NPL ratios above 6%.

Moreover, should the more-pessimistic McKinsey scenario take place, bank capital could fall by as much as an additional 4 to 7 percentage points and bring the CET1 close to 5 to 6%. Finally depending on the shape of the recovery curve, a significant portion of individual banks would see their capital wiped out (2,1% of EU banks hold a CET1 lower than 9%), requiring either government intervention or bankruptcy. Should these problems become widespread, a banking crisis could follow.

4. The already insufficiently profitable EU banking sector is at present poorly "investable"

According to the consultancy for all banks, this scenario would require generalised, immediate and large reductions in costs (including layoffs and compensation), an end to dividends and buybacks, and additional capital raising.

Unfortunately, these necessary adjustments would be undertaken in a context where the banking system has huge investment programmes ahead (digitalisation) and it has faced in the EU a low profitability situation for a while, which does not favour capital creation neither attract investors.

Actually, a couple of weeks before the pandemic breakout, at the moment the EBA published in January 2020 its Risk Dashboard and the results of the Risk Assessment Questionnaire (RAQ), Banks' RoE declined by 80bps in Q4 2019 to 5.8%, well below EU/EEA banks' average cost of equity. Banks' cost to income ratio increased from 63.3% in Q3 to 64% as of year-end 2019.

The EBA stressed that beyond a seasonal effect influencing these figures, this fourth quarterly growth was the lowest since 2014 and that, the net interest margin slightly widened from

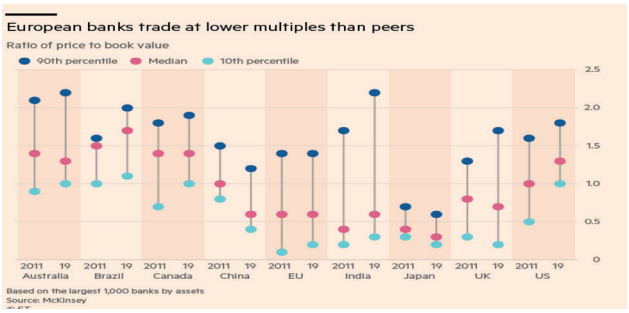
[6] https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/ecb.blssurvey2020q1~17a1b2b7d2.en.html#toc5

[7] McKinsey - Banking system resilience in the time of COVID-19 – July 2020

1.43% to 1.45%, also due to a seasonal effect in the fourth 2019 quarter, did not necessarily indicated a reversal of the general trend in low margins.

Finally, just before the breakout, only 20% of the banks and 10% of the analysts surveyed in the RAQ, were expecting an overall increase in profitability in the next near future, compared to 25% and 20% in the previous RAQ. Anyway, both ratios should further deteriorate in the Covid19 crisis context.

Even in this pre-Covid 19 crisis context, EU banks have been trading at lower multiple that peers at the Global level. Even the strongest EU banks (90th percentile) have been exhibiting a price to book ratio approximately 20% lower than US ones while the median ratio of EU banks is 50% lower.



Source: FT - OCTOBER 22 2019[8]

5. EU Policy makers initially focused on measures to mitigate the financial consequences of a temporary crisis

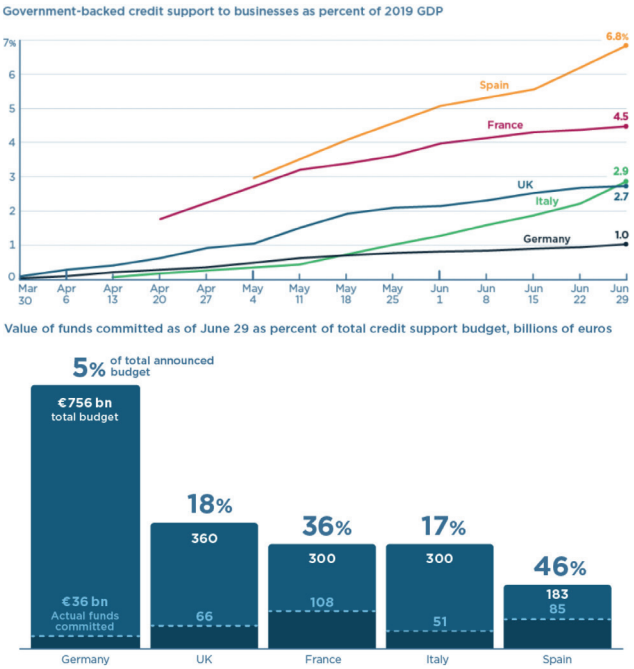
The EU Commission approach at the beginning of the crisis, has consisted of enabling banks to "make full use of the flexibility embedded in the EU's prudential and accounting framework so that banks can fully support citizens and companies during this pandemic by providing funding".

Concretely it was necessary to clarify the regulatory consequences of any temporary inability of households or businesses to pay back their loans on the provisioning policy band the assessment of the Increase in credit risk. An adequate classification of non-performing loans was also required, in the context where relief measures such as guarantee schemes and moratoria have been provided. The deferral or suspension of implementation of the new accounting standards for expected losses dampened the undue procyclicality of the standard.

All these measures primarily acknowledged the difficulty to figure out the length and magnitude of the impacts of the health crisis, which are very much dependent on the economic sector and the severity of the hit country by country. According to the EBA, eventually, the impact of the regulatory relief decided in the EU, enables the banking sector to face up regulatory capital strains resulting from the Covid19 crisis corresponding to related losses or additional lending, for amounts between 0.6 and 1.3€Tn (it will depend on the risk weigh of additional loans).

Such positive impact is also influenced by the new financing tools unfolded to replace short term lending schemes and the role that public money and even private investors will play to cushion a portion of potential losses. Indeed, the EU members states provided extensive support notably to the firms, in the form of loans benefiting from a state guaranty.

According to the Peterson Institute[9], the use of these facilities has been only partial.



European banks are facing as much as €800bn in loan losses and a €30bn hit to their revenue over the next three years as a result of the coronavirus crisis, according to a report from Oliver Wyman.

Finally, the regulatory flexibility mobilised since the beginning of the crisis, stresses the question mark related to the ability of all banks, later on, to appropriately impair their credit portfolio. Whatever the reason for the uncertainty, it reduces the room for manoeuvre for banks. Similarly, existing state backed guarantee schemes, may induce preserving so called zombie firms as well as banks, that should be forced to exist the market for the sake of an appropriate improvement of competition conditions and the quality of the European supply.

6. Time has come to consolidate initial public measures to achieve a sustainable progressive recovery

Various challenges for the EU remain to be address taking into account the level of distress of the EU economy. This requires an accurate monitoring of the economy (financing needs, excessive weaknesses…) and the state of the banking system.

The unprecedented nature of the crisis also imposes further anticipating financial challenges. Completing institution specific and system wide stress tests, incorporating the Covid19 evolution at national, regional and global levels, is the appropriate tool to assess the type and level of support required at both the economy and the banking system levels.

Before all, whatever the actual amount of pandemic financial casualties, in particular since the pandemic rebounds and proves lasting, there is now a need to rollover or relay initial and to some extent, transitional public guaranties.

Similarly, as far as the regulatory framework is concerned, currently observed or anticipated Probability of Default and Loss Given Default and Expected Losses, provoke a de facto recalibration of internal models, which discourage banks from lending to potentially

[8] https://www.ft.com/content/09469d28-f410-11e9-b018-3ef8794b17c6

[9] https://www.nicolasveron.info/main/2020/07/government-guaranteed-bank-lending-in-europe-beyond-the-headline-numbers.html

sound firms, which hold unusual levels of debt and face temporarily a reduction of activity in the Covid19 crisis context.

Governments should on this occasion continue providing clear and strong incentives to banks to channel government sponsored loans.

However, other issues that must also be addressed regarding the alleviation measures already in place, notably by achieving comparable levels of regulatory relief relative to other geographies in order to preserve the same chances for the EU economy to recover thanks to bank activity. In this respect one mention often the leverage ratio regarding sovereigns, state guaranteed loans and Central Bank reserves. This should contribute avoiding unlevel playing field with non-EU banks.

Furthermore, it is necessary to make the regulatory framework to provide appropriate and fit to purpose regulatory incentives. In this respect, the regulatory framework already needs an overhaul since it discourages banks (and insurance companies) from holding equity, at a moment where EU firms may need transforming part of their existing (bank) debt into equity and more generally reduce their leverage.

7. EU Banks need more agility to finance the economy and relaunch growth

The banking sector in the EU also needs increasing its agility notably to optimise available bank capital and liquidity. This would also increase the "investability" of EU banks.

This suggest accelerating the availability of off-loading tools for bank balance sheets, which allow transferring distressed assets to bad banks at national and regional levels, as well as securitising large amounts of sound loans portfolios.

This also suggests[10] favouring national or cross border mergers to maintain locally existing bank coverage and networks without dodging the necessary levels of regulatory capital. This should in addition attenuate existing exacerbated competition conditions specific to the EU.

8. Addressing the perspective of other Covid19-like crisis by further piling up bank regulatory capital is not a viable option

An important issue in this respect final question is the timetable required to return to a normal situation regulation wise. Bearing in mind that at the end of 2019 not all EU banks and member states has reached a satisfactory level of non-performing loans, 10 yeas after the sovereign crisis, what is the appropriate time laps - taking into account the actual evolution of the economic room of manoeuvre – to re impose all the existing regulations that were relieved in march 2020.

On the long run, one issue to address is the definition of the appropriate level of capital that banks should hold. The probability of climate and more generally "ESG" related risky events (climate risks, consequence of resources scarcity, ...) is illustrated by the Covid19 crisis.

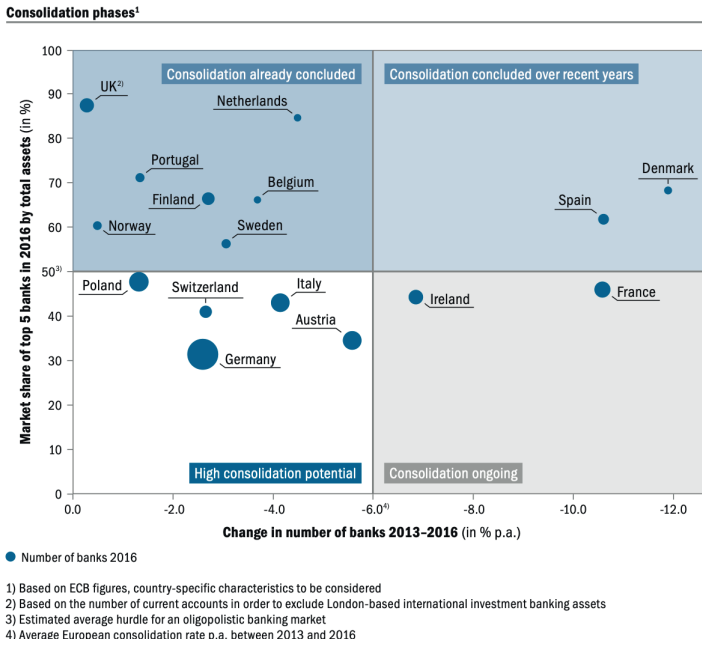
It has been unanimously stressed that the banking sector was essentially correctly capitalised.

In this context, the implementation of the delayed "latest Basel III measures", notably the output floor, and the huge additional regulatory capital it supposes, is questionable.

More generally, one should question to what extent it is up to the banking sector to build up the capital buffers necessary to mitigate the consequence of common and general non-financial shocks similar to the Covid19 pandemic one. Should the banking system absorb the whole economic insolvency triggered by such catastrophic events, a sort of bank self-insurance (capital based) approach, is probably out of reach of the banking sector given the magnitude and the variety of adverse events that may happen.

Since the appropriate mitigation of the financial consequences of such events mainly resorts on public economic, sustainability and health policies, the socialisation of related costs is probably the better option notably to provide better incentives to policy makers.

Written by Jean-Marie Andrès, Eurofi



1) Based on ECB figures, country-specific characteristics to be considered
2) Based on the number of current accounts in order to exclude London-based international investment banking assets
3) Estimated average hurdle for an oligopolistic banking market
4) Average European consolidation rate p.a. between 2013 and 2016

[10] See EBF ZEB study NAVIGATING THE ROAD AHEAD – MARKET TRENDS & STRATEGIC OPTIONS FOR EUROPEAN BANKS https://www.ebf.eu/wp-content/uploads/2018/11/ZEB-presentation.-EBFs-CEG-26.11.18.pdf

CMU 2.0: latest proposals and next steps for relaunching the CMU in the Covid context

1. The EU capital market legislative framework has been significantly enriched with CMU 1.0, but concrete impacts are still limited

Launched in 2015, the Capital Markets Union initiative (CMU) aims to develop and further integrate capital markets in the EU in order to diversify the financing of EU enterprises - particularly the most innovative and fastest growing ones - and to better connect savings to investment across the Union, providing savers with improved long-term investment opportunities. An additional more macro-level objective is to enhance the resilience of the EU economy with a diversification of funding sources and a development of cross-border capital markets (contributing in particular to private risk sharing across the EU).

The Commission proposed two action plans including legislative and non-legislative measures aiming to bring more investors to the market, facilitate access to capital markets for issuers and improve the functioning of EU markets, notably on a cross-border basis. These have now been mostly implemented.

The initial CMU Action Plan published in September 2015 set out 33 actions concerning securitisation, investment funds, prudential calibrations, prospectuses, etc.[1]. Following the mid-term review of the CMU, an additional set of measures was proposed by the Commission in 2017, covering different objectives such as the strengthening of the powers of the European Supervisory Authorities (ESAs), the development of fintech, the promotion of sustainable finance, the facilitation of SME listing, private pensions (with the PEPP framework[2]) and support for the growth of local capital markets. With these two action plans, the Commission has chosen an evolutionary approach to the CMU addressing a broad range of drivers and building on the pre-existing EU securities legislations such as MiFID, EMIR, CSDR, UCITS, etc.[3] , rather than a more radical plan addressing market fundamentals such as, insolvency, tax and securities ownership laws, common infrastructure, etc.

Despite this improvement of the EU capital market framework, the general feeling is that much remains to be done to achieve the CMU. A first reason is that EU capital markets have not significantly grown over the last few years, except non-bank funding through debt securities, and they remain quite under-developed compared to the US or UK for example. In addition, there is persistent fragmentation in the EU, with limited cross-border flows and fragmented infrastructure (see Appendix 1). Secondly there is frustration with CMU 1.0 among many stakeholders due to the protracted negotiation process and also the lowering of the initial ambitions of certain proposals such as the review of the ESAs' operations, in order to enable the co-legislators to reach an agreement. The piecemeal fashion in which the proposals were made, the lack of ex-ante political agreement on the main components of the CMU action plan and the absence of an overall implementation timetable, beyond the adoption of the legislative texts are additional issues that have also been put forward.

2. Completing the CMU remains a key priority for the EU with Brexit and the Covid crisis

2.1. The completion of the CMU has been re-emphasized as a key priority by the EU institutions

Completing the CMU was reasserted at the end of 2019 as a centrepiece of the EU legislative agenda by the new Commission, in particular to ensure SMEs have access to the financing they need to grow, innovate and scale up. The need to further intensify policy efforts for deepening the CMU was also reaffirmed at the Ecofin of 5 December 2019[4].

The High Level Forum (HLF) group that was set up in November 2019 by the Commission to make proposals for relaunching the CMU has since reaffirmed in its final report published in June 2020[5] the urgency of CMU as a "major element of the EU's post-coronavirus recovery strategy". The need to further develop equity funding in particular is one of the main arguments for this, because banks alone will not be able to provide the EU economy with the variety and depth of financial instruments needed for a strong and rapid rebound following the Covid crisis, according to the HLF. Moreover national capital markets are "simply too small" to cover the financing needed for restarting the EU economy and to attract global investors, making the further integration of EU capital markets a necessary area of improvement. Some key challenges pre-dating the Covid crisis such as pension provision inadequacy, climate change and supporting the transition to sustainable economies are additional reasons for accelerating the development of EU capital markets.

The structural changes imposed by Brexit are a further justification for expanding EU capital markets put forward by the HLF. At present UK and EU financial markets are highly

[1] These include measures to develop securitization and covered bonds, improve Solvency II calibrations, prospectus and investment fund rules, facilitate the cross-border distribution of funds and also some non-binding measures regarding withholding tax and insolvency proceedings.

[2] Pan European Pension Product framework

[3] Capital market regulations and directives including: MiFID / MiFIR, EMIR, CSDR, SFTR, MAR, UCITS, AIFM, etc.

[4] The EU Council set 5 main objectives in December 2019: (i) enhanced access to finance for EU businesses, especially SMEs; (ii) removal of structural and legal barriers for increased cross border capital flows; (iii) provision of incentives and removal of obstacles for well-informed retail savers to invest; (iv) support for the transition to sustainable economies; (v) embracement of technological progress and digitalization, and a sixth objective of strengthening the global competitiveness of EU capital markets building on local markets and ecosystems.

[5] "A new vision for Europe's capital markets" https://ec.europa.eu/info/sites/info/files/business_economy_euro/growth_and_investment/documents/200610-cmu-high-level-forum-final-report_en.pdf

integrated and the UK acts as a hub for many activities[6]. Many capital market activities can potentially benefit from equivalence arrangements post-Brexit[7] , but it is likely that costs for end-users and frictions will increase and liquidity may decrease after the end of 2020, particularly if UK rules diverge over time. Brexit also intensifies the risk of dependence of the EU economy on non-EU capital markets if a large part of the financial ecosystem serving the EU, including some key market infrastructures, continues to remain in the UK. With Brexit, the EU capital market is moreover likely to become more multi-polar, requiring stronger regulatory and supervisory convergence and an interconnection between different local market ecosystems[8].

A draft motion for a European Parliament resolution on the further development of the CMU currently under consultation, also calls for the acceleration of the development of capital markets with a focus on improving the access of businesses, in particular SMEs, to capital market finance and further enabling retail participation[9].

2.2. The post-Covid macro-economic conditions in the EU also need to be taken into account

The current macro-economic context and the measures put in place following the Covid crisis are both a driver and a potential challenge for the development of capital markets.

Some actions put in place to relaunch economic growth in the EU support the development of capital markets. This is the case of the extensive asset purchasing programmes of central banks, which increase market liquidity and asset prices, even though they also impact price discovery processes. The Next Generation EU recovery package that includes a common debt to finance the recovery and to face the green and digital transition of EU economies could also contribute to developing capital markets, with an additional capacity to issue bonds on behalf of the EU. The Covid crisis has also been a strong driver of certain market segments, such as technology, that help to support market indexes.

However, some other actions or trends related to the Covid crisis may also impact negatively capital markets.

Monetary policy is a first challenge. The pursuit of very low interest rates used to fight recession depresses returns on sovereign and corporate bonds and should continue to favour debt financing, unless decisive actions are put in place to foster equity financing. In addition persistently low interest rates have encouraged liquidity hoarding at the expense of productive investment[10].

Secondly, the Covid crisis will increase macro-economic imbalances between Member States, hindering the further integration of capital and banking markets unless major steps can be made towards some form of fiscal integration or a centralized fiscal stabilization function in the context of the implementation of the Next Generation EU recovery plan, together with the implementation of structural reforms by a certain number of Member States.

Thirdly, the anticipation of a severe economic crisis may reduce the risk appetite of both retail and institutional investors in the coming months and will probably lead to continued volatility.

3. Proposals made by the CMU High Level Forum for completing the CMU and conditions of success

3.1. Recommendations of the HLF report

The HLF has proposed 17 recommendations, presented as "game-changers" for the CMU, in 4 main areas: (i) the financing of business; (ii) market infrastructure; (iii) individual investors' engagement and (iv) obstacles to cross-border investment. Each of these clusters contains a certain number of granular legislative and non-legislative measures that are due to be further elaborated by the Commission (see Appendix 2 for further detail).

The areas covered in the HLF report are in the continuity of the initial action plans of the Commission and are similar to those identified in several reports published in 2019 aiming to complete or relaunch the CMU, but there are differences in the approach[11]. Besides a clear implementation timetable (see below), there is also a stronger focus in the HLF report on encouraging retail investment than in some previous recommendations. There is also a clear objective in the HLF report to develop cross-border

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[6] In particular for certain financial services linked to derivatives markets and investment banking activities. For example, between 2012 and 2018, almost half of all debt and equity issuance for euro area non-financial corporations was carried out by global banks based in London. Almost 90% of all over-the-counter (OTC) derivative positions taken by euro area institutions were cleared at UK global clearing houses in December 2019. In August last year, over a quarter of uncleared OTC derivatives held by euro area institutions were sourced from the United Kingdom. In some cases, the City represents a gateway to global financial markets for euro area financial and non-financial firms, allowing them to tap into global capital and liquidity pools. The growth of non-bank financing in the euro area is also driven mostly by entities based in the UK. In other areas, however, reliance on London is quite limited. For instance, UK-domiciled banks only play a marginal role in direct lending to euro area households and non-financial companies. (Source L. de Guindos, ECB speech January 2020).

[7] Equivalence regimes exist for financial services related to securities and derivatives transactions (MiFID, EMIR, CSDR, SFTR) and for services and products targeting professional customers and eligible counterparties (investment services under MiFIR, AIFMD) and reinsurance activities. There is also an EU equivalence regime for credit rating agencies and financial benchmarks. However, most core banking and financial activities are not subject to an equivalence regime providing access to the single market. This includes deposit-taking and lending in accordance with the Capital Requirements Directive; payment services in accordance with the Payment Services Directive; and investment services for retail clients. In addition there is no third-country regime for investment funds targeting retail clients (UCITS and AIFs) and most insurance activities except reinsurance.

[8] For example a sizeable fraction of asset management firms and insurance companies that are relocating activities from the UK as a result of Brexit have moved to either Ireland or Luxembourg and the Netherlands is attracting a substantial amount of trading platforms, exchanges and fintech companies.

[9] The draft motion of the European Parliament on the CMU puts forward 7 main areas broadly in line with previous recommendations of the Next CMU and HLF reports: (i) Financing businesses and notably SMEs; (ii) Promoting long-term and cross-border investments and financial products; (iii) Market infrastructure; (iv) Retail investors; (v) Financial education; (vi) Digitalisation; and (vii) The EU's role in global markets. https://www.europarl.europa.eu/doceo/document/ECON-PR-648524_EN.pdf. A vote on this motion is due in September 2020.

[10] see J. de Larosière & D. Cahen "Addressing the dangers of the monetary policy deadlock" September 2020

[11] Reports published at the end of 2019 include for example the Next CMU high-level group (Oct 2019): CEPS "Rebranding the CMU" (June 2019); IMF staff discussion paper "A Capital Market Union for Europe" (Sept 2019). See mapping of proposals in the note on www.eurofi.net / Current Topics / CMU 2.0

markets in the EU, with the intention to tackle in a targeted way long-standing harmonisation issues such as insolvency laws, shareholder rights, withholding tax and also with the proposal for ESMA to set up a common access point for information on European companies, similar to the EDGAR[12] system that exists in the US. Finally some new digital topics have been introduced by the HLF including proposals to develop an open finance framework broadened to financial planning and investment services, provide standard contractual clauses for cloud services that are gaining importance in the market ecosystem and also clarify rules for crypto / digital assets.

On some questions it was not possible for the HLF to reach consensus. Whether to move towards a more unified and centralised supervision of capital markets in the EU[13] was the main point of disagreement[14]. The recommendations in this area thus focus on enhancing supervisory convergence and strengthening the powers and tools of ESMA and EIOPA. The HLF did not table proposals either regarding the possibility of setting up a European consolidated tape or the improvement of price discovery on the grounds that these questions are being tackled as part of the on-going MiFID review.

Some measures that had been previously proposed by the Commission or other expert groups in the CMU context were not covered by the HLF, while acknowledging their importance, such as the creation of EU safe assets, the integrated supervision of compliance with AML rules and the taxation bias in favour of debt financing.

3.2. Implementation timetable

A precise timeframe has been proposed by the HLF for implementing its recommendations.

Most of the actions are due to be delivered by the Commission by the end of 2022 with a number of recommendations expected for the end of 2020, but some measures have deadlines extending as far as 2024 or 2028 for their full implementation. After having taken into account feedback from market stakeholders, the Commission is intending to build on the proposals of the HLF to present a new CMU action plan in early autumn of 2020 in order to launch its implementation.

3.3. Conditions of success

The need for a clear and upfront political backing of the package proposed with a joint commitment of the European Commission, Council and Parliament possibly in the form of a politically binding EU Tripartite institutional agreement on CMU was also emphasized by the HLF, in order to ensure its consistent implementation across the EU, while respecting principles of proportionality and subsidiarity [15]. The importance of a demanding timetable and a rigorous delivery monitoring mechanism was also stressed by the HLF.

The HLF also insists on the coherence of the plan which needs to be fully implemented, albeit with a staged approach for the most complex or politically sensitive proposals, on the grounds that the measures proposed are mutually reinforcing and dependent on one another[16].

Appendix 1

EU capital markets remain under-developed and fragmented despite recent progress in non-bank funding

Capital markets, particularly related to tradable instruments, have not significantly developed across the EU over the last few years and still lack liquidity and depth from a global standpoint.

The EU-27 average stock market capitalisation is still much lower than that of the US and UK (58% of GDP in EU-27 with many countries having practically inexistent capital markets, compared to 115% in the UK and close to 150% in the US)[17] and the share of listed securities remains limited in the funding structure of EU non-financial companies (28% compared to 47% in the UK and 69% in the US)[18].

There are however some positive evolutions in terms of funding diversification outside the banking sector, with for example a significant growth of financing provided by non-banks to companies in the EU through the purchase of debt securities, a significant part of which however originates from London[19]. In addition there are no major funding problems in the EU for businesses, except for innovative and growing SMEs that may not have access to sufficient venture capital in the EU or may be

[12] EDGAR is the Electronic Data Gathering, Analysis, and Retrieval system used at the U.S. Securities and Exchange Commission (SEC). EDGAR is the primary system for submissions by companies and others who are required by law to file information with the SEC. EDGAR performs automated collection, validation, indexing, acceptance, and forwarding of submissions by companies and others who are required by law to file forms with the US SEC. All companies, foreign and domestic, are required to file registration statements, periodic reports, and other forms electronically through EDGAR. Anyone can access and download this information for free.

[13] i.e. whether direct supervision should be further developed e.g. for the more systemic entities and the extent to which a more unified supervision is necessary for building a truly integrated and efficient European market for capital

[14] While some members of the HLF considered that this was an essential step towards building a truly integrated and efficient EU market for capital, others argued that a central supervisor would entail a risk of duplication of responsibilities and greater complexity unless sufficient regulatory harmonisation can be achieved.

[15] The objective is to avoid the problems that the first Commission action plans suffered with significant delays in their approval and also the watering down of certain key measures.

[16] Some additional objectives have been put forward by the HLF including the need for legislators to ensure that new rules related to the plan make EU capital markets, financial institutions and infrastructures more competitive and to consider a simplification of the EU legislative framework applying to capital markets.

[17] Source The EU Capital Markets Union : Turning the tide – S&P Global – February 2020

[18] Source IMF staff discussion note "A Capital Market Union for Europe" September 2019.

[19] The balance between banks and non-bank financial institutions in the EU has been evolving in recent years: although still very much bank-based, our economy is increasingly financed by non-bank institutions. In the euro area, total assets held by non-banks have almost doubled over the last ten years, growing from €23 trillion in 2008 to €45 trillion in June 2019. Non-banks currently account for around 55% of the euro area financial sector. Their fast growth reflects their expanding role in financing the euro area real economy. Whereas in 2008 non-banks accounted for 14% of the euro area financial sector's loans to non-financial corporations, that share roughly doubled in a decade. Non-banks provide a steady net flow of financing to non-financial corporations through the purchase of debt securities. (Source L. de Guindos, ECB speech January 2020).

rationed out of funding because of a lack of tangible collateral such as machinery or a plant that banks usually require.

On the investor side, issues are two-fold. The share of savings held in shares or investment funds by EU households is limited[20]and only a small proportion of households invest in capital market instruments[21]. As for EU institutional investors, many of them continue to invest predominantly in assets outside the EU in search of yield[22].

EU capital markets are also still highly fragmented, with a persistent home bias in investments[23], and cross-border capital flows have not recovered pre-2008 crisis levels. The market infrastructure also remains fragmented[24], although efforts have been made to unify regulation and lift the Giovannini cross-border barriers with the European Post-Trading Forum (EPTF) group. This notably leads to differences in the cost of funding and in the access to capital market instruments (e.g. venture capital) across EU Member States[25].

Appendix 2

Detail of the actions proposed by the CMU HLF

Creating a vibrant and competitive business environment

- Setting up a European single access point to company financial and ESG data to facilitate access to data for investors – proposal by mid-2021, implementation 2023-2028
- Amending the ELTIF framework in a targeted way in order to accelerate the take-up of ELTIFs by investors, including retail investors e.g. with simplified tax rules and more flexibility in redemptions – proposal by end 2020
- Reviewing Solvency II capital and risk margin calibrations (mid-2021) and accounting rules (2021) to increase insurers' capacity to invest in capital markets
- Paying due attention to provisions affecting market-making and long-term investment in SME equity when implementing Basel III standards – proposal by end 2020
- Amending the EU securitisation framework (e.g. simplifying processes and disclosures) in order to relaunch securitisation in the EU – mid-end 2021
- Modifying targeted prospectus, market abuse and MiFID obligations (e.g. unbundling rule) to make public listing more attractive in particular for SMEs – proposal by end 2020 (MiFID) and end 2021 for other legislations
- Clarifying the application of existing financial legislation to crypto / digital assets (end 2020) and proposing new rules possibly to regulate assets that fall outside the existing regulatory framework in order to create the conditions for new digital financial products to emerge (end 2021)

Building stronger and more efficient market infrastructure

- Improving targeted CSDR measures (more harmonised application of passporting rules, enhancing supervisory convergence, facilitating access to central bank money in foreign currency) to facilitate settlement across borders - proposal by mid-2021
- Amending the shareholder rights regulation (SRD2) to alleviate problems relating to the cross-border exercise of ownership rights, which deter cross-border investment (harmonised definition of shareholders, clarification and harmonisation of interactions between investors, intermediaries and issuers, use of technology) – proposal by end 2023
- Developing standard contractual clauses for the use of cloud service providers and new rules to ensure the secure use of cloud services with cyber resilience measures – end 2020

Fostering retail investment in capital markets

- Supporting the introduction of auto-enrolment systems in all Member States with best practices (end 2021), developing a dashboard to measure Member State progress on pension adequacy and sustainability and encouraging the development of pension tracking systems for individuals in order to address pension adequacy challenges (end 2022)
- Implementing non-legislative actions to improve EU citizens' financial literacy (employee share ownership schemes, EU framework on financial competences to enhance education programmes, digital tools to enhance financial guidance) – delivery by 2022-2024
- Introducing a new category of qualified investors with tailored disclosure and reviewing rules regarding disclosure and the provision of fair advice in PRIIPs, MiFID and IDD – proposals by end 2020 - 2022
- Assessing the role of inducements in the adequacy of advice and the prospects of improving transparency of inducements and aligning rules across sectoral legislation – proposals by end 2020 - 2022
- Enhancing the qualification of financial advisors with a specific certificate and a voluntary label – proposals by end 2020 - 2022
- Introducing a harmonised open finance regulatory framework in order to broaden data sharing by providing access to financial and non-financial information relevant to facilitating financial planning or encouraging investment (e.g. savings and investment accounts, pension savings etc.) – proposal by end-2021

[20] Cash and bank deposits amount to 30% of the total assets of EU households, compared to 12.3% in the US and equity and debt securities represent 21% of total savings in Europe, compared to 41% in the US (End 2017 - Source CEPS – Rebranding Capital Markets Union – June 2019)

[21] Moreover only 20% of euro area households hold stocks or investment fund units, and only 1/3 invest in voluntary pension and insurance schemes (Source IMF staff discussion note "A Capital Market Union for Europe" September 2019).

[22] Source The EU Capital Markets Union : Turning the tide – S&P Global – February 2020

[23] Almost half of EU insurers' equity holdings are in firms based in the insurer's home country, rising to 60% in Spain, 70-75% in Germany, the NL and Austria, and 80% in France. The pattern for debt holdings is similar. For pension funds equity home bias is highest in France, Portugal and Spain. (Source IMF staff discussion paper referenced further up)

[24] with 25 exchanges, 17 clearing houses and 19 central securities depositories across the EU

[25] The IMF paper referenced further up shows that typical non-financial companies in Spain for example will pay 60 bp more on debt funding than its peers in Germany and 40 bp more in Italy.

Going beyond boundaries across the internal market

- Introducing a standardised system for relief at source of withholding tax based on authorised information agents and withholding agents and a harmonisation of tax definitions, processes and forms – proposal by mid-2022
- Adopting a legislative proposal for a minimum harmonisation of certain targeted elements of core non-bank insolvency laws (e.g. concerning certain definitions and procedures) - proposal by early 2022
- Strengthening the powers, resources and toolkits of ESMA and EIOPA and reforming their governance in order to enhance European supervisory convergence – proposal by mid-2021

Written by Marc Truchet, Eurofi

DIGITALISATION TRENDS AND POLICY INITIATIVES

Cloud services : uptake in the financial sector and policy approach

1. The uptake of cloud in the financial sector is progressing, however there is still scope for further adoption

1.1. Main current cloud operating models

Cloud computing provides remote on-demand access via the web to a shared pool of configurable computing resources (e.g. networks, servers, storage, software applications, analytical tools) offered as standard building blocks by cloud service providers (CSPs) that can be progressively and rapidly provisioned, with no physical interaction with the CSP. Cloud services are usually offered on a pay-per-use basis via a subscription.

There are three main types of cloud services[1]. Software as a Service (SaaS)[2], which offers access to off-the-shelf application software, is the largest cloud service model at present, representing approximately 50% of cloud spending. Infrastructure as a Service (IaaS) providing access to processing and storage capacity and Platform as a Service (PaaS) services[3] providing access to software development and deployment platforms, represent a smaller share of the market. IaaS may nevertheless play an increasing role in the future notably with the development of artificial intelligence (AI) applications, which require significant data storage and processing capacities that can be offered via the cloud. PaaS solutions also offer software components and tools that can help financial institutions to develop and launch more effectively AI solutions. Gartner for example predicts that IaaS will have the fastest growth rate among cloud services through 2021[4].

Cloud services can be provided on-premise for the exclusive use of one organisation or of a community of users. This service known as private cloud[5] is at present the dominant model in the financial sector. But it is the public cloud model[6] (standardised services provided remotely in a highly automated manner and on a large scale to multiple customers) that allows the leveraging of all the potentialities of cloud services, according to CSPs. With public cloud, multiple customers can potentially share the same best-in-class computing resources, analytical capacities, software applications and tools with a secured access to segregated components. Public cloud also provides access to almost unlimited data storage and processing capacities. This type of mutualised service is estimated to represent about 30% of cloud service use in the financial sector, however just 18% of financial services firms said they are broadly implementing IaaS for production applications today for example in a recent survey, compared to 25% of businesses overall, showing a significant margin for progression[7]. There are nevertheless significant differences within the financial sector when comparing new entrants (Fintechs, Insurtechs) and more established players.

1.2. Main industry trends and drivers of cloud services development in the financial sector

The use of cloud services is expected to grow at a fast pace in the financial sector in the coming years with the increasing digitalisation of financial services, the expansion of data driven business models and also with regulations requiring extensive data storage and processing capacities (e.g. MiFID II, FRTB, etc.)[8]. It is likely that new developments supported by technology and data such as artificial intelligence (AI)[9],

[1] Definition adapted from the US National Institute of Standards and Technology (NIST).

[2] Software as a Service (SaaS): offers access (free or paid via a subscription) to off-the-shelf application software from any device with an internet connection and web browser. A suite of applications and processes can also be managed and delivered on the cloud with a Business Process as a Service model (BPaaS)

[3] Infrastructure as a Service (IaaS) provides access to processing power, storage or network services. Platform as a Service (PaaS) provides a computing platform with the relevant application development and deployment environment (i.e. programming languages, tools, databases, resources, etc.) allowing users to develop, test and manage their own applications without building or managing any infrastructure. Users have different levels of control depending on the service level. With IaaS, users have control over storage levels, computing capacity or the access to certain network components. With PaaS, users have control of their own applications that run on the platform and of the platform's configuration settings. And with SaaS, users have control of configuration settings specific to the applications they are using.

[4] Source FSB report on « Third-party dependencies in cloud services" 9/12/2019

[5] Private cloud: the cloud infrastructure is provisioned for exclusive use by a single organisation, that manages the capacity and it may be on or off the premises of this organisation. Community cloud is a variation of the private cloud where the cloud infrastructure is provisioned for exclusive use by a community of organisations or users that have shared needs, manage the capacity together with the CSP and it may also be on or off premises

[6] Public cloud: the cloud infrastructure is provisioned for open use by multiple organisations concurrently and is run on the premises of the CSP that also manages capacity

[7] Source "Financial services companies must embrace the cloud" February 2019 – Information Age. A survey published in November 2019 by AFME also indicates that 2/3 of AFME members estimated that 1 to 10% of their bank's current workload was using public cloud.

[8] For example FRTB (the Fundamental Review of the Trading Book) applying to financial intermediaries operating in the capital markets requires an eightfold increase of IT infrastructure spending by some institutions to comply with the regulation, due to the enhanced risk modelling and the number and frequency of calculations required, as well as the amount of data involved. Source Eurofi – Summary of the Bucharest High Level Seminar April 2020

[9] AI applications for enhancing automation or developing more personalised services require extensive computing power, specific chips, data management capacities and analytical tools that can all be accessed via the cloud

regtech and suptech[10] and open finance[11] will further drive cloud adoption in the financial sector in the coming years. Some projections show that the addressable cloud market in Europe for financial services could double or triple between 2019 and 2023[12].

However most financial institutions are still at an early stage in their implementation of public cloud services with the exception of Fintechs, whose services are usually built on public cloud platforms from the outset because of the scalability and flexibility they offer[13]. Further, 70% of financial companies at the international level indeed reported in a recent survey[14] that they were still at the "initial or trial and testing stage" of their cloud development. While traditional financial institutions have been early adopters of private cloud solutions, their migration to public cloud is still relatively limited. They are so far mainly using public cloud services for processes that are not material or do not require the exchange of sensitive business data[15] and in functions that are not tightly tied to legacy IT systems.

The adoption of public cloud-based infrastructures is nevertheless progressing, with financial institutions starting to use the public cloud to manage and process large volumes of data related to core financial activities[16]. This allows them to accelerate the digitalisation of their services and also develop and launch new products in a faster and more flexible way.

Some emerging trends, such as the development of edge computing and IoT (internet of things) data generated by smart connected objects may also create new dynamics in the market in the future with more data expected to be created and processed where the data is collected and therefore outside data centres and cloud[17]. It is however expected that cloud services will continue to play a strong role in this context since cloud computing will be needed to store IoT data. The specific impacts of these evolutions for financial services data also need to be further assessed.

The Covid crisis has also prompted Financial Services organizations to reconsider how they see their IT infrastructure needs going forward. Many have resorted to the cloud to allow their collaborators and clients to continue to operate without disruptions during lockdowns[18] and this trend, leveraging the scalability and flexibility of the cloud, is due to continue.

2. Benefits and risks associated with cloud services and barriers to adoption

2.1. Potential benefits of public cloud computing

Although there are benefits derived from using private cloud services (increased flexibility of computing resources, improved scalability, easier collaboration and synchronisation within firms through data sharing…), the advantages of migrating to the cloud are usually associated mostly with public cloud services.

Some institutions combine the use of public and private cloud (known as hybrid cloud) and multiple CSPs can be used in cloud architectures s (known as multi-cloud).

Public cloud services indeed facilitate access to best-in class computing, security and software resources, through a mutualisation across a large number of customers. Due to its scalable and pay-as-you-go model, public cloud also offers benefits in terms of cost efficiency, flexibility and agility that can support the progressive digital transformation of financial firms. Public cloud services also provide benefits in terms of risk mitigation with the shared benefit of increased resiliency[19], a high level of automation and a greater uniformity of the IT environment than on-premise IT. An additional benefit is the possibility of raising the efficiency and scale of regulatory reporting, compliance and internal risk processes and also facilitating interaction with financial supervisors.

Cloud platforms also facilitate the development and implementation[20] of new technologies such as AI[21] or DLT[22] that contribute to improving innovation, efficiency and risk mitigation, and that may be difficult to implement in a traditional IT environment. The public cloud also offers greater opportunities to leverage large quantities of data (e.g. for developing and training AI based systems). Outsourcing to public cloud platforms moreover allows

[10] Increasing compliance, reporting and risk management obligations imposed by financial regulations, leading to an expansion of data storage and processing needs, are a further driver of cloud services.

[11] Open finance concepts that support the development of new distribution channels and new financial services (e.g. account aggregation, financial planning) leverage cloud infrastructures e.g. to connect different accounts or aggregate data.

[12] Source: market forecast made by some CSPs in 2019. An earlier report on the finance cloud market predicted a CAGR of 24% by 2021 globally (Source "Cloud adoption in the financial services industry" – Cloud technology partners).

[13] Public cloud services are the basis of the IT architectures of all the fintechs that have developed new business models with data at the centre of their value proposition, which tend to be "cloud-native" players.

[14] Source FSB report « Third-party dependencies in cloud services" 9/12/2019

[15] i.e. such as human resources, project management, communication tools, CRM, etc.

[16] e.g. for activities related to transactions or end-of-day batch processing

[17] According to statistics quoted by the Commission in its White Paper on AI, while today 80% of data processing and analysis takes place in data centres and centralised computing facilities including cloud platforms, and 20% in smart connected objects, such as cars, home appliances or manufacturing robots, and in computing facilities close to the user ("edge computing"), these proportions are set to change markedly by 2025. Source EU Commission White Paper on AI - February 2020. Some market observers however also question this forecast given the early days of edge computing in particular.

[18] As an example, as lockdowns around the world forced hundreds of thousands of workers in the FS sector to stay in their homes, banks and other financial institutions leveraged cloud services to allow those workers to continue to work from their homes, keeping the financial system going. This was only possible given the scalability and flexibility provided by the public cloud.

[19] Resiliency features used by CSPs include: geographical redundancy of data centres, back-ups, cyber-security systems, compliance programmes, automated security controls. Workload mobility features include: containerisation of workloads, open source IT environments…

[20] Cloud services supply access to development and deployment platforms, software components, etc…that are used for developing AI systems and software.

[21] For example AI applications contribute to providing innovative products (based e.g. on predictive analytics or personalisation), increasing automation and also mitigating money laundering, fraud or cyber-risks.

[22] Distributed Ledger Technology (DLT) applications can contribute to improving the efficiency and safety of transactions.

firms to redirect internal resources previously focused on the administration of internal IT platforms, towards more added value activities and services that may enhance innovation and risk mitigation efforts.

Adopting public cloud at scale in order to reap the full benefits it may provide, nevertheless requires that financial firms adapt their operating models and internal processes to the new potentialities of the cloud, rather than simply replicating existing workloads in a different cloud-based environment, which requires a holistic approach to cloud. This involves adapting operational processes in order to embed the interaction with third-party CSPs, downsizing legacy IT platforms and leveraging the full range of cloud services when appropriate (beyond IaaS, which usually involves replicating current IT infrastructures and applications in a different environment).

2.2. Barriers to the wider adoption of public cloud services

Financial institutions, particularly incumbent firms, face a number of challenges and barriers when migrating workloads to the public cloud.

There are firstly operational issues. The existence of legacy IT infrastructures within financial firms and their interconnection is a first barrier to the adoption of more flexible pay-per-use services. The changes usually needed in terms of IT skills to implement outsourced cloud-based solutions are another challenge, together with cultural change and trust issues.

Secondly, a risk of regulatory and supervisory fragmentation of cloud arrangements subsists in the EU, although much progress has been made thanks to the publication by the European Supervisory Authorities (ESAs) of cloud outsourcing guidelines applying to the different sectors of finance (see detail in Section 3). Nonetheless, these guidelines may be interpreted differently among the National Competent Authorities (NCAs)[23] , since they are not underpinned by a European regulation and there may be differences in their application at the national level.

Legal and extra-territoriality issues related to the data stored in the cloud may also hinder the wide adoption of public cloud services in Europe. Firstly, while EU level rules applying to data such as the GDPR define common requirements, variations remain at the Member State level in the way some data rules are interpreted. Secondly, data location requirements that exist in certain countries and which are designed to increase the safety of domestic data may also be a barrier to the adoption of public cloud at scale across the EU, since they limit the possibility to shift data from one data centre to another, if needed. In addition, data location requirements may vary across jurisdictions, adding complexity[24]. Thirdly, the cross-border nature of CSPs also exposes them to potential legal requirements imposed by their (third-country) home authorities. One example that has often been put forward is the Clarifying Lawful Overseas Use of Data Act or CLOUD Act adopted in 2018, which provides US government agencies with rights to request public cloud data managed by CSPs following a due legal process, even when the servers containing the data are abroad. In addition, the CLOUD Act is applicable to any foreign company with an office or subsidiary in the US[25]. These rights under the Cloud Act perceived as a possible threat or element of uncertainty by some European stakeholders (particularly firms that handle a great deal of sensitive data) have triggered requests for greater data protection and sovereignty (i.e. control over data) in a context where the main CSPs are based in the US and China, and notably for non-personal data which is not covered by GDPR. US CSPs however stress that the Cloud Act is not a right to directly access the data held by CSPs, but to request data, and that practically all current requests concern criminal investigations about individuals, to whom requests are forwarded by the CSP[26].

2.3. Potential risks associated with cloud services

Potential future financial stability risks due to the third-party dependencies created by outsourcing to CSPs and the concentration of the CSP market[27] were addressed by the FSB[28], in addition to more traditional business continuity issues, in a context where the scope of activities and processes delegated to CSPs is potentially increasing. These challenges could be amplified by vendor lock-in issues (e.g. due to specific contractual terms) or workload or data portability limitations (e.g. due to differing technical features or terms of service). CSPs however point out that no specific signs of fragility have been evidenced so far e.g. throughout the Covid crisis. The multi-cloud and hybrid architectures increasingly adopted by financial institutions and the resiliency and workload mobility[29] features put in place by CSPs, as well as open source approaches, could also contribute to mitigating these risks. These solutions may however be challenging to implement for certain financial institutions as they require managing several CSPs offering potentially different contractual terms and technical features.

The outsourcing by financial institutions of core or critical financial activities to CSPs also entails certain micro-level

[23] There may also be different interpretations of certain criteria impacting the way they are applied

[24] This also makes it more difficult to leverage global risk management and compliance programmes proposed by CSPs Source AFME report on The adoption of public cloud computing in capital markets (Nov 2019) and FSB report on Third-party dependencies in cloud services – December 2019

[25] The CLOUD Act applies to all electronic communication service or remote computing service providers that are subject to U.S. jurisdiction (and not only to US companies), including email providers, telecom companies, social media sites, and cloud providers, whether they are established in the United States or in another country. This means any foreign company with an office or subsidiary in the United States is subject to the CLOUD Act.

[26] US-based CSPs emphasize that data regarding the number of requests and the responses from US CSPs show that, in practice, little has changed since the instruction of the Cloud Act in 2018. Practically all requests from the US authorities concern individuals faced with criminal accusations such as drug trafficking (and not enterprises handling sensitive data), which was the original reason for implementing the Cloud Act. CSPs also stress that they never access customer data directly without the consent of the customer concerned and that direct access is only performed for maintenance reasons and is tracked in a transparent way and only concerns maintenance. Possible requests from the US authorities are redirected by the CSP to the individual concerned.

[27] The public cloud services market, being a scale business, is concentrated, with the top five public CSPs representing over 75% of the total public cloud service revenues. Source FSB – Third-party dependencies in cloud services – December 2019

[28] Source FSB – Third-party dependencies in cloud services – December 2019.

[29] Resiliency features include: geographical redundancy of data centres, back-ups, cyber-security systems, compliance programmes, automated security controls. Workload mobility features include: containerisation of workloads, open source IT environments…

risks that have been identified by the ESAs and are currently being addressed (see Section 3). These include the risk of an inappropriate governance and oversight of cloud arrangements by the customer management[30] or of inadequate due diligence and risk assessments when implementing a cloud contract[31]. Other risks that have been mentioned are: supervisory risks in case supervisors do not have the necessary information to assess the specific risks associated with cloud services or a greater exposure to cyber-security and loss or leak of data risks if cloud outsourcing is inappropriately managed.

Some of these risks may be increased by possible difficulties in the implementation of the shared responsibility model that is used in the context of cloud services, according to some market observers (e.g. if there is an unclear delineation of responsibilities between the CSP and its customers or if customers do not have sufficient expertise or resources[32]). Indeed, while security, risk management and compliance responsibilities are shared between the CSP and the financial institution[33], the latter institution retains the ultimate liability for its own operational resilience and business continuity[34].

3. Existing policy frameworks and initiatives underway in the EU

3.1 Existing EU policy frameworks and codes of conduct concerning outsourcing to CSPs

Generally speaking, the use of cloud computing services is considered at present by financial regulators and supervisors around the world as a form of outsourcing[35]. In the EU, the outsourcing provisions of financial frameworks [36], aiming to ensure a sound governance and risk management of outsourced services apply to cloud services. Information security frameworks (e.g. concerning cyber-security such as the Cybersecurity Act) also apply to cloud services. Data protection frameworks[37] moreover underpin the use and management of personal and non-personal data in the cloud (GDPR, Free flow of data, open data directive…). These frameworks are designed to facilitate data flows and exchanges, including via the cloud, with adequate legal certainty and protection.

Cloud-specific rules have been developed over the last few years in the EU in addition to these generic requirements, focusing on the handling by financial institutions of outsourcing arrangements and the implementation of data portability and reversibility features by CSPs.

Guidance on cloud outsourcing in the financial sector

Cloud outsourcing guidance has been developed since 2017 by the ESAs for the different sectors of finance[38], acknowledging the particularities of cloud services compared to more traditional forms of IT outsourcing[39]. The objective of these guidelines is to help financial firms identify, address and monitor the risks previously mentioned that may arise from cloud outsourcing arrangements at different stages of their implementation and also to foster greater supervisory convergence of cloud outsourcing across the EU.

These 3 sets of guidelines adopt a proportionate approach, focusing mainly on the outsourcing to CSPs of critical or important operational functions [40] and cover similar ground[41], including: the governance, documentation, oversight and monitoring mechanisms that firms should put in place; the assessment and due diligence, which should be undertaken prior

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[30] If the management of the financial institution is insufficiently involved in outsourcing decisions, if resources are not appropriate or if financial institutions do not fully grasp the technical implications of using cloud services or the impacts of cloud contracts.

[31] For example that may overlook the specificities of cloud computing or overly rely on CSPs.

[32] There may be complications for some FSIs due to the multiplicity of types of services offered on the cloud (IaaS, PaaS, SaaS…), the constant evolution of underlying technologies, possible additional operational resilience requirements imposed by supervisors on regulated financial institutions. The unbundling of the value chain that cloud solutions entail also raises challenges in terms of supervision, because the full extent of activities performed by the financial institution may be more difficult to grasp.

[33] In the shared responsibility model the CSP is responsible for managing and securing the cloud infrastructure (managing elements such as the provision of servers, networking and data centre facilities and ensuring the security and compliance of the platforms). Customers are responsible for managing aspects such as customer data, application management and user access, adopting security features and configuring services to achieve their resilience targets. Responsibilities are thus shared for activities such as security and compliance including IT controls and risk management. Nevertheless this shared responsibility model does not mean that banks discharge their ultimate accountability on CSPs, as the ultimate liability for any activity will always be held by the bank. (Source AFME – The adoption of public cloud computing in capital markets – November 2019).

[34] e.g. the responsibility for adopting security features and for configuring services to achieve the resilience targets defined.

[35] Some outsourcing guidelines dedicated to cloud services have been provided at the global level by the BCBS for the banking sector, but there are no global rules specifically concerning cloud services for capital markets or insurance.Source FSI insight – Regulating and supervising the clouds – December 2018.

[36] Banking and insurance prudential frameworks (Solvency II, CRD) and capital market regulations (MiFID II, CSDR).

[37] EU data frameworks include the GDPR regulation concerning personal data (General Data Protection Regulation) that ensures that individuals remain in full control of their data; the Regulation on the free flow of non-personal data across the EU; and the Open Data directive (concerning the re-use of public sector information) - to which sector-specific legislation on data access has been added, such as the Payment Services Directive (PSD 2).

[38] A first set of guidelines was published by the EBA for the banking sector in 2017 and revised in 2019. This revision entered into force at the end of 2019 and is being implemented by the NCAs. Following the recommendations made in the Fintech action plan (March 2018) guidelines were also published by EIOPA in February 2020 for the insurance sector and guidance has been proposed by ESMA for capital market participants in June 2020.

[39] Notably the fact that cloud services are more standardised than usual ICT services and provided to clients on a large scale and in a highly automated manner.

[40] A definition of "critical or important operational functions" is given in MiFID II. An operational function is considered as critical or important where a defect or failure in its performance would materially impair the continuing compliance of a financial firm with the conditions and obligations of its authorisation and its obligations under EU regulations, its financial performance or the soundness and continuity of its services and activities.

[41] This seems logical since the main risks associated with cloud outsourcing are similar across sectors.

to outsourcing; the minimum elements that outsourcing and sub-outsourcing agreements should include; the exit strategies and the access and audit rights that should be catered for; the notification to the competent authorities and the supervision carried out by them[42].

Data portability and reversibility self-regulatory codes of conduct

Self-regulatory codes of conduct complete these guidelines.

In the context of the Digital Single Market (DSM) initiative, the SWIPO stakeholder group (switching and porting) has drafted two self-regulatory codes of conduct regarding the porting of data across different cloud infrastructures: one concerning IaaS portability and the other SaaS portability. The objective is to reduce the risk of vendor lock-in by CSPs and make the European markets for cloud services more fluid and competitive. The implementation of these codes was initially planned for May 2020.

The CISPE trade association (Cloud Infrastructure Service Providers in Europe) has also been working together with the European association of CIOs (EuroCIO) on a reversibility code for cloud infrastructure services in order to facilitate provider changes.

GDPR codes of conduct

Self-regulatory codes of conduct have been developed in connection with GDPR. For example, an EU Data Protection Code of Conduct for CSPs has been developed by the EU Cloud Code of Conduct General Assembly. The Cloud Security Alliance Code of Conduct for GDPR Compliance is moreover designed to offer both a compliance tool for GDPR compliance and transparency guidelines regarding the level of data protection offered by CSPs[43].

3.2. Additional initiatives underway in the EU

Additional proposals have been made by the Commission and the ESAs in order to address the challenges associated with an increasing use of cloud service outsourcing in the financial sector. These focus on defining common rules and supervision mechanisms for CSPs. The objective to foster the development of a cloud ecosystem respecting EU rules has also been put forward by the Commission.

EU cloud services rulebook and marketplaces

The development by Q2 2022 of a European cloud rulebook building on existing codes of conduct and certifications was proposed by the Commission in the Communication on a "European strategy for data" (February 2020), which aims to create a single market for data in the EU hinging on common interoperable data spaces in different strategic sectors, including finance[44].

A further proposal of the Commission is the setting up of a cloud services marketplace for EU public and private sector users, offering cloud processing software and platform services complying with requirements of the EU cloud rulebook in areas such as data protection, security, portability, energy efficiency, etc. Participation in the marketplace for CSPs would be made conditional on the use of transparent and fair contractual conditions. The signature of Memoranda of Understanding with Member States on cloud federations in Q3 2020 would be a first step of this initiative, in order to avoid a multiplication of fragmented cloud federations and data-sharing initiatives across the EU.

GAIA-X, a European cloud federation backed by Germany and France and involving a number of CSPs, software and ICT service providers, was launched at the end of 2019, in line with these proposals. The objective is to develop a cloud infrastructure and data ecosystem in the EU[45] based on European values and common goals including: data sovereignty[46], data availability, interoperability, portability, transparency and fair participation. Functioning as a non-profit organisation, the GAIA-X structure will ensure the governance of the initiative and the application by the participating firms of the requirements mentioned above. GAIA-X will certify in particular that information remains secure and provide guarantees about where it is stored and how it is processed. Moreover common portability and reversibility standards will allow customers to move their data and workloads from one GAIA-X provider to another.

Oversight of critical third-party service providers

Following proposals made by the Joint Committee of the ESAs regarding ICT risk management requirements[47], the Commission is currently considering the possibility of establishing a form of oversight of third-party ICT providers that are critical for financial institutions, including CSPs[48]. The objective is to better address

[42] ESMA consultation paper on Draft Guidelines on Outsourcing to Cloud Service Providers – June 2020 https://www.esma.europa.eu/sites/default/files/library/esma50-164-3342_cp_cloud_outsourcing_guidelines.pdf; EBA revised Guidelines on outsourcing arrangements https://eba.europa.eu/sites/default/documents/files/documents/10180/2551996/38c80601-f5d7-4855-8ba3-702423665479/EBA%20revised%20Guidelines%20on%20outsourcing%20arrangements.pdf.

[43] See https://eucoc.cloud/en/home.html#:~:text=In%20this%20context%2C%20the%20EU,cloud%20services%2C%20based%20on%20GDPR and https://cloudsecurityalliance.org/artifacts/cloud-security-alliance-code-of-conduct-for-gdpr-compliance/#:~:text=The%20CSA%20Code%20of%20Conduct,by%20the%20Cloud%20Service%20Provider.&text=Help%20CSA%20better%20understand%20how%20we%20can%20support%20the%20cloud%20community.

[44] The Commission's objective with this proposal is to establish common interoperable data spaces in strategic sectors at EU level by combining investments in next-generation data infrastructures, the interconnection of existing cloud and edge infrastructures and computing capacities and related tools and governance mechanisms. The Commission also put forward in this Communication, rules for facilitating the access to data and its use and sharing and also the enhancement of data rights across the EU, which should also contribute to tackling some barriers impeding the development of cloud services in the EU.

[45] The GAIA-X ecosystem comprises a data ecosystem fostering the development of EU data spaces, an infrastructure ecosystem using common standards and also federation services i.e. a set of common services used by federation members concerning identity and trust, data exchange, compliance etc.

[46] Data sovereignty is defined in this instance as a complete control over stored and processed data, also including the independent decision on who is permitted to have access to it.

[47] https://www.esma.europa.eu/sites/default/files/library/jc_2019_26_joint_esas_advice_on_ict_legislative_improvements.pdf.

[48] The expert group mandated by the Commission to identify regulatory obstacles to financial innovation (ROFIEG) also proposed in December 2019 the introduction of more binding frameworks for third-parties in the form of certification and licencing regimes, beyond the revision of existing governance and outsourcing requirements. The objective of this proposal is to enhance cross-sectoral risk management and also allow for more effective oversight of outsourced services in a context where financial firms are increasingly dependent for critical services on third-parties that operate in a concentrated market with high market power.

the risks posed by a more widespread use of outsourced services, including cloud, and related concentration risks and also to ensure a consistent supervision of critical third-party providers across the EU.

This future proposal is part of the consultation undertaken during Q1 2020 by the Commission on a possible digital resilience framework for financial services, which is a component of a wider effort to implement a new digital finance strategy for the EU. The envisaged framework would set out criteria for identifying the critical nature of third-party ICT providers, define the extent of the activities that are subject to the framework, establish consistent oversight tools and mechanisms and designate the authority responsible for carrying out the oversight.

Standard contractual clauses

Following a recommendation made in the Fintech action plan (March 2018), the Commission is working together with stakeholders, supervisors and regulators on the definition of standard contractual clauses for outsourcing agreements between financial institutions and CSPs[49]. The objective is to raise legal certainty regarding cloud use in the financial sector. The EU-wide application of the standard contractual clauses should also help to improve supervisory convergence. An initiative has also been conducted previously to develop guidelines for standardised Cloud Service Level Agreements (Cloud SLAs). Other initiatives are also underway in these areas in certain Member States.

European cybersecurity cloud certification scheme

The Commission requested ENISA, the EU agency for cybersecurity, at the end of 2019 to prepare a cybersecurity certification scheme for the cloud in the context of the European Cybersecurity Act in order to demonstrate the equivalence of security requirements throughout Europe, overcome the present patchwork of cloud security certification schemes and facilitate the cross-border storing and processing of data, while also facilitating the comparison of CSPs with respect to security when switching providers.

Written by Marc Truchet, Eurofi

[49] This objective has also been put forward by the High Level Forum on the CMU in June 2020 for cloud services in the capital market area, together with rules to ensure the secure use of cloud services notably with specific cyber-resilience measures

Artificial Intelligence (AI): prospects for financial services and policy approach

Executive summary

AI trends, benefits and challenges

- Artificial Intelligence (AI) involves the training and the use of algorithms to mimic human intelligence and is mostly data-driven.
- AI is considered as the new technology with the highest potential to transform the financial sector in the near future, due to its capacity to add value to practically every step of the value chain, both in terms of productivity (performance improvement, smart decision-making) and revenue generation (personalisation, new data based services or offerings). AI can also be used to support financial supervision and cyber-resilience efforts.
- AI developments are widespread in the financial sector and many firms have passed the initial experimentation phase, but only a limited number of financial institutions apart from fintechs currently use AI at scale for a wide range of activities. Predictions made before the Covid-19 crisis were that AI would have a major impact on the financial sector in the coming 5 years, with most financial institutions putting a high emphasis on AI in their development objectives and incumbents aspiring to catch up with fintechs. It is likely that this trend will continue and possibly intensify post-crisis with an increased pressure on costs, the search for new sources of revenue and the need to optimize risk management in an uncertain environment and also a general acceleration of digitalisation.
- Europe is generally behind the curve compared to the US and China in terms of AI development, with significantly lower levels of R&D investment and a fragmented approach across Member States. Europe appears also out of touch at present with the US and China in terms of retail digital platforms and related data volumes and variety, and also of cloud providers. European players benefit from the services provided by non-EU platforms but this situation raises questions about the technological sovereignty of the EU in the future and whether access to data will be sufficient for EU businesses to leverage the potential of AI. Technologies are nevertheless quickly evolving and the EU is well positioned according to the Commission to leverage the opportunities offered in particular by non-personal data and the "next digital wave" that includes the Internet of Things (IoT), smart connected device data and edge computing, although the implications of these developments for financial services are still to be determined. Efforts are also being made to encourage the development of a digital ecosystem in the EU based on European standards.
- In the financial sector, access to appropriate data sets in terms of quality, volume and variety and the capacity and skills to handle large amounts of different data are considered to be the main potential barriers to the wider uptake of AI. These issues are reinforced by obstacles to the sharing of data such as data standardisation issues or inconsistencies of data regimes, and also the persistence of legacy IT systems that were not built with the data management systems needed for AI. Other challenges concern access to AI software and appropriate hardware capacity (e.g. specific chips, high performance computers) and also the capacity to deploy operationally AI models.
- Some of these issues may be addressed with open-source and cloud-based solutions. However, fully leveraging the capacities of AI also requires changes in the business and IT models of financial firms in order to put data at their centre. A transformation of skills and working processes is also needed, as well as an implementation of AI in combination with other technologies such as cloud services and also developing cross-ecosystem data collaborations.
- Some risks associated with an increase in AI use have been identified by regulators, including accountability and explainability issues, possible bias in the data sets used and increased exposure to data privacy issues. Operational solutions to address these issues exist, notably making AI systems more understandable, but they are not systematically implemented at present. A wide-spread development of AI could also raise some financial stability questions in the future, according to the FSB, with the possible development of new forms of interconnectedness and pro-cyclicality and higher third-party dependencies.

Existing and proposed EU policy frameworks

- Currently there are few EU frameworks that were developed with AI in mind, except GDPR and the non-legislative fintech action plan, which also applies to AI developments.
- The use of AI in the financial sector is therefore largely governed by existing financial regulations and general principles that apply to fintech developments such as technology-neutrality. How to address the development of AI in the financial sector and enhance data sharing is currently being evaluated as part of the assessments that the Commission is conducting in the perspective of the new Digital Finance Strategy for Europe, due to be proposed towards the end of 2020.
- The Commission is also drawing up two key AI and data horizontal policies, with the objective to facilitate and encourage the uptake of AI by businesses and public institutions, manage the risks associated with the use of AI and also ensure that EU firms can access a wide and suitable enough pool of data. There is also a strong focus in these initiatives on fostering a European approach to digital development, likely to ensure high privacy, security, safety and ethical standards, building on previous initiatives such as GDPR. Finally encouraging the development of the European data economy is another objective of these proposals.
- In its White paper on AI currently under consultation, the Commission is proposing to step up AI investments and skills in the EU and increase efforts to coordinate R&D. A new proportionate framework is also due to be put

forward at the end of 2020, aiming to increase trust in AI technology. AI applications would be subject to mandatory requirements and prior conformity assessments (concerning training data sets or human oversight for example) when they are employed in high-risk sectors and a voluntary labelling system would be proposed for other sectors. At this stage, the classification of financial services has not yet been specified.

- The Commission is also proposing a new data strategy aiming to create a single market for data in the EU that would facilitate the access to and the sharing of personal and non-personal data across the Union. The proposed strategy rests on 4 main pillars: (i) a cross-sectoral governance framework for defining rules regarding data access and use; (ii) the strengthening of Europe's data infrastructures and capabilities (federation of European clouds, cloud rulebook, etc.); (iii) investment in data literacy and the enhancement of individual data rights regarding IoT data; and (iv) the development of common European data spaces in several sectors including financial services.
- In addition, the new Digital Services Act that the Commission is currently preparing may also have some implications for data sharing, potentially with rules concerning large online platforms acting as gatekeepers and measures to make it easier for users to move their data across providers.

1. AI definitions and the state of progress of AI in the EU

1.1. AI definitions, categories and approaches

Artificial Intelligence (AI) is a field of computer science[1] dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, problem solving, and pattern recognition. AI systems use software (algorithms or computer programmes) for performing these tasks[2] based on different types of mathematical models[3].

Current AI systems are mostly data-driven[4]. They are "trained" through the processing of large data sets[5] - instead of being programmed with rules reflecting human expertise - to recognize predetermined outcomes, visual or audio elements[6] understand speech or text or to identify patterns and links among data. AI algorithms are designed to continue to learn while in use in an adaptive way, based on the data they process. Thus the quality of AI outcomes may improve with experience. Outcomes are also dependent on the data used for the training of AI systems. AI is composed of different subsets[7] including:

- Machine Learning (ML) that refers to algorithms that autonomously improve their performance, training on vast amounts of data (historical data)[8]. ML is used for identity verification, fraud detection, robo-advisors, customer segmentation and personalisation for example. Different types of learning can be used depending on the problem to solve (e.g. supervised or unsupervised depending on whether the outcome is predetermined or not)[9] and

[1] There are multiple definitions of Artificial Intelligence (AI). This one is adapted from definitions given by Amazon and also C. Durodié in "Decoding AI in financial services" – 2019. Many definitions insist on the imitation of human intelligence, e.g. the Encyclopedia Britannica: "AI relies on the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings". The European Commission uses the following definition: "Artificial intelligence (AI) refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals".(White paper on AI). A simpler definition: algorithms that mimic human intelligence (FT-11/05/20).

[2] The output may be in various forms, e.g. a yes/no answer, a probability distribution, a projected trajectory, clusters…

[3] Different classifications of AI applications for business purposes have been made. For example the WEF report of 2018 on "The new physics of financial services" proposes the following classification in five main types of AI application: (i) pattern detection – recognising (ir)regularities in data, (ii) foresight – determining the probability of future events, (iii) customisation – optimising outcomes for specific customer profiles, (iv) decision-making – recommending courses of action based on rules, and (v) interaction – communicating with humans through digital media.

[4] In a first wave of AI also known as 'symbolic AI' the decision-making process was closely aligned with how human experts make decisions. Any intelligence in the system came directly from human expertise manually inputted into it. This was the basis of expert systems used since the 80's. This approach was improved with so called "fuzzy logic"; by allowing variables to have a value between 0 and 1 these systems can capture a wider range of market conditions for example. The symbolic AI approach can however not easily capture more intuitive decisions made with expertise and a perception of the environment and is limited by the need to codify rules and exceptions in the system which is very difficult to achieve for complex problems. It is therefore only used for tackling repetitive problems in well-defined contexts.

[5] AI uses three main categories of data in a nominal and anonymised way: (i) hard data which can be checked and for which evidence can be provided i.e. address, phone number, date of birth, profession, etc. for a person or financial accounts for a business; (ii) activity data related to people's activities i.e. health data, shopping, transport…or the activities of a business; (iii) behavioural or perception data related to customers' online behaviour, facial recognition or gesture tracking for a person or e.g. online reviews of customer perception for a business. This data can be quantitative or qualitative and is more or less structured.

[6] E.g. using trial and error tests, feedback from previous experience on a multitude of dimensions and data points.

[7] Other subsets of AI include Cognitive Computing which allows the retrieval, indexing and processing of large amounts of data gathered from various sources - used for algo / HFT trading, process automation or Ambient Computing which focuses more on sensors and connected devices. Another categorisation can be made depending on the nature of AI systems. AI-systems can be purely software based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems…) or can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones, Internet of Things applications…).

[8] The Commission's definition: With machine learning techniques, algorithms are trained to infer certain patterns based on a set of data in order to determine the actions needed to achieve a given goal. (White paper on AI).

[9] For further detail you can read the following article https://machinelearningmastery.com/types-of-learning-in-machine-learning/. For solving a supervised learning problem, the ML system works on predetermined outcomes (used for e.g. image recognition or fraud detection) which means that humans must label and categorise the underlying training data, which can take up a huge amount of time, and limits datasets to those categorised by humans. For an unsupervised learning problem, the ML system makes predictions based on the patterns it finds with no predetermined outcome (used for e.g. customer segmentation and personalisation of services). For a reinforcement learning problem, the ML system learns from trial and error with experience based on feedback from the environment on whether a given action was good or bad (used e.g. for portfolio management).

different techniques are used also to tackle these problems including for example deep learning[10].

- Natural Language Processing (NLP) that seeks to enable machines to understand the way humans use text and speech in order to process written or audio elements, learn languages, and generate human-like writing or speech - used for chatbots, virtual assistants, AML
- Computer Vision that seeks to enable devices to understand their visual surroundings, collecting and analysing imagery (photos, videos) – used for identity verification, KYC, insurance claims management
- Robotics[11] that combine computers and sensors in order to process visual and sensory data from the surroundings - can be used for virtual assistants or programming physical robots.

The performance of existing AI systems is constantly improving in terms of the range and depth of data that can be processed, the capacity to take into account contextual knowledge and the analytical methods used for providing insights[12], but they remain focused at present on specific and predetermined domains or tasks and mainly process information from the past, which may be a limitation in evolving environments.

New phases of AI are currently being outlined (Artificial General Intelligence or Superintelligence) that aim to build a single system to solve a varied set of problem definitions, building on data and knowledge available in multiple sectors, disciplines and contexts, thus better reproducing human decision-making.

1.2. State of progress of AI in the EU

Generally, the development of AI in the EU is lagging behind the US and Asia[13] at present in terms of investments in the technology and access to data. The EU is indeed behind the curve compared to the US and Asia in terms of R&D investment in this field, which is primarily made by large tech companies at present[14]. China and the US have also put forward ambitious plans in this area for the coming years, with China aiming to be world leader in AI by 2030 and the US announcing a plan to double investment in AI R&D. It is fair to mention also that other factors such as different levels of data protection and the larger scale of the US and Chinese markets compared to EU fragmented markets also play a role in the speed of adoption of AI in these jurisdictions.

Europe seems moreover out of touch with the US and China currently in terms of retail digital platforms and related data volumes and variety[15], which are essential for reaping the full benefits of AI in the retail space. European players benefit from the services provided by non-EU platforms (e.g. in terms of cloud services, AI-as-a-service, etc...), but some observers consider that the current situation raises potential questions regarding the technological sovereignty (or non-dependence of the EU) and the access of European industry players to sufficient data, digital resources and skills. Tackling these issues is one of the key objectives of the new Commission, which has put forward plans for "shaping Europe's digital future" that include proposals for a stronger European AI strategy and data framework (see Section 4). The Commission has also expressed ambitions to seize the opportunities offered by the "next data wave", concerning Internet of Things (IoT) data generated by smart connected objects and also non-personal industrial and public data[16].

2. Main AI applications in the financial services sector and future evolutions

2.1. Existing applications of AI in the financial services sector

Most market observers consider that AI is the new technology that has the most potential to transform the financial sector due to its capacity to add value to practically every step of the value chain, both in terms of productivity and revenue generation. The financial services sector is also a natural candidate for this technology, since it is very much a data driven industry selling immaterial products[17] and with high compliance and reporting needs. Another factor is that although digitalisation is widely developed in the sector, manual processes subsist in many areas.

AI use is a reality in the financial services sector[18] and is generally progressing. Many companies have passed the initial experimentation phase and are deploying AI systems in different areas. There is already a wide range of applications of AI throughout the financial services value chain, in the front, middle and back offices and also to support administrative, regulatory and supervisory activities. AI use cases have been implemented

[10] Deep Leaning is one of the techniques used by ML systems. It is powered by artificial neural networks (ANNs), modelling the way neurons interact in the human brain, and it uses learning approaches inspired from the human brain. Neural networks filter inputs through several layers of analysis or interpretation (analysing different dimensions of the data e.g. once an ANN learns what an object looks like it can recognize it in a new image) or use gradual steps of decision also known as back propagation or gradient descent (used e.g. in speech recognition or image processing).

[11] This is different from Robotic Process Automation (RPA) which has been used for many years and consists of the automation of repetitive manual tasks, but RPA does not learn from the data it uses or from the feedback given by humans, not does it provide insights or adapt.

[12] E.g. about how a person or animal moves for visual recognition or about how people write for text recognition.

[13] In 2018 83% of global investment in AI across M&A and VC / PE was in the US and China (APIS report). The Stanford University AI Index moreover shows that the US and China, together with the UK and Israel account for almost all AI investment, and for 85% of AI patent filings (Source FT 23/02/20).

[14] 3.2 Bio € invested in 2016 in the EU compared to 12.1 Bio in North America and 6.5 Bio in Asia – Source Commission White paper on AI. Internal investment by large corporations dominates. Tech giants and digital native companies such as Amazon, Apple, Baidu, and Google are investing billions of dollars in various AI technologies. Estimates are that this amounted to $18 billion to $27 billion in 2016; external investment (from VCs, PE firms, M&A, grants, and seed funding) was around $8 billion to $12 billion. The highest investments were on ML (5-7 Bio) and Computer Vision (2.5-3.5) well ahead of other subsets of AI. (Source McKinsey – AI the next digital frontier? June 2017).

[15] Source White paper on AI – EU Commission February 2020.

[16] According to the Commission, today 80% of data processing and analysis that takes place in the cloud occurs in data centres and centralised computing facilities, and 20% in smart connected objects, such as cars, home appliances or manufacturing robots, and in computing facilities close to the user ("edge computing"). By 2025 these proportions are set to change markedly. (Source AI White Paper on AI).

[17] Source Roland Berger "AI and financial services – How to tackle the big buzz?" June 2019.

[18] Financial services account for 19% of total IT spent on AI – Souce APIS report / IDC.

in the different areas of finance i.e. banking, insurance, capital markets, payments and both for retail and wholesale business. In some cases AI is used to support employees of financial services companies, in others it is used in a more autonomous way. In terms of operating model, financial institutions are either developing AI capabilities in-house, partnering with fintechs specialised in AI or using cloud-based AI applications (AI-as-a-service).

Recent surveys show that currently about half of financial institutions at the international level have several functional AI solutions and up to 80% have some experience with its deployment at least on a small scale[19]. Some observers however claim that the percentage of firms actually using AI and ML solutions at scale for a number of financial activities is much more limited, except for fintechs[20]. In terms of sectors, investment managers and payment providers seem to be slightly ahead in their adoption.

Current AI applications in the financial sector can be grouped according to five main domains:

- New value propositions leveraging data analytics and alternative data to generate new insights, used notably for enhancing the services offered to customers (e.g. robo-advice), improving portfolio management (e.g. market research) and supporting financing proposals (e.g. loans)
- Risk management including fraud detection, trading surveillance and liquidity and counterparty risk evaluations
- Process reengineering of administrative tasks, reporting or regulatory compliance activities
- Customer acquisition and management with AI systems used for speeding up on-boarding and improving customer segmentation, cross-selling and personalisation
- Customer service with AI-enabled interaction to support existing communication channels (e.g. chatbots, virtual assistants) and allow advisors to focus on more added-value tasks.

Progress is underway in all these areas, but the most common areas of use of AI for financial firms seem to be the two first ones of risk management and the development of new value propositions, used by more than 50% of firms[21]. Only the more advanced financial companies in AI adoption are using AI at scale for customer service and acquisition. Process efficiency is another potential area for the use of AI (ML or NLP). However, at present robotic process automation (RPA) is the most widely used approach for automating repetitive manual tasks, which is usually not considered as true AI, since RPA systems are mostly rules-based and do not learn from or adapt with the data they use or the feedback they receive. How the AI component may add value in this context still remains to be clarified in many cases.

AI is also developing in the EU financial sector, although it is difficult to have a precise view on the specific level of progress of AI in Europe compared to the rest of the world.

The Commission expert group on regulatory obstacles to financial innovation[22] considered in its report published in December 2019 for example that the overall impact of AI in the EU financial sector is still "limited" with many challenges remaining to be addressed. A wide range of applications can be identified but these are still implemented in a piecemeal fashion in most cases.

2.2. Main current drivers and barriers to AI adoption

Key prerequisites for an effective development of AI are not specific to financial services and concern: data issues (availability of appropriate data, access to data, AI software and data skills), access to appropriate hardware and operational ML capabilities[23].

In recent surveys conducted in the financial services sector[24], issues related to data appear to be the main obstacles at present[25].

A first challenge is the availability of appropriate data of sufficient quality for training AI systems[26] and the ability for AI users to process large amounts of different types of data, including unstructured ones. This is an issue in particular for non-tech companies that still need to put in place adequate data gathering and processing capacities to ensure that there is a constant flow of appropriate data. Data skills also need to be enhanced in many cases, although data analytic capacities can also be accessed via cloud services for example. A second challenge is the access to a wide enough range of data. This requires ensuring that there are no unjustified or unfair barriers to the access to and sharing of data and that data sharing is conducted in a way that preserves consumer rights and privacy. In the financial sector

[19] A survey conducted by the WEF at the end of 2019 shows that up to 80% of financial institutions globally have now implemented AI in some way (90% for fintechs) and that 90% of them expect to see AI implemented in 3 or more areas of their business in the coming 2 years, as opposed to 40% today (WEF survey: Transforming paradigms: A global AI in financial services survey January 2020). A KPMG survey conducted in 2020 in the US shows that 47% of financial institutions are moderately to fully operational with AI deployment (Living in an AI world 2020). This illustrates a strong increase over the last few years. A survey conducted in 2017 showed that only 20% of companies said they had adopted one or more AI-related technology at scale or in a core part of their business. 10% percent reported adopting more than two technologies (McKinsey AI: the next digital frontier? June 2017).

[20] For example some commentators consider that there is a certain degree of window-dressing in claims about the use of AI in the area of investment management, where traditional quantitative analyses are mostly used rather than ML and where the use of non-traditional data is quite limited – Source FT – Fund managers must embrace AI disruption (15/01/2020).

[21] These statistics are confirmed by a KPMG survey (2020) conducted in the US that shows that 85% of financial services respondents expect AI to play the strongest role in fraud detection (85%) and enhancing customer experience (45%).

[22] According to the Commission expert group on regulatory obstacles to financial innovation (ROFIEG) the actual impact of AI on the financial sector is still limited at EU sector level.

[23] The ability to safely deploy ML models into production at scale and monitor their performance properly.

[24] For example WEF survey: Transforming paradigms: A global AI in financial services survey January 2020.

[25] Some observers however point out that over time incremental progress due to algorithms will most likely diminish, while improvements in hardware may continue to be significant. Source FT Hardware revolution pushes AI to the mainstream (13 Dec 2019).

[26] For example historical data which may come in varied formats or may be incomplete and was not structured to be used by AI systems; difficulty to know whether real-time data feeds can be trusted to remain constant in terms of data definitions…

this raises specific questions about the type of data that may be shared and how to ensure a level playing field between financial institutions and non-financial players in a context where open finance concepts may develop[27]. Possible data standardisation and interoperability issues also need addressing[28], as well as making sure that appropriate data infrastructures are available to store and process the required data. The inconsistency of data regimes and policies is a further challenge at the international level and also within the EU, despite the implementation of the GDPR[29].

Other barriers to AI adoption include the access to AI software and to sufficient computing power. Open-source AI software or cloud-based solutions can nevertheless help companies that do not have the resources or time to build their own AI software or computing capacity to tackle some of these issues. Cloud-based AI-as-a-service platforms[30] for example provide tools that allow financial institutions to build or complete AI systems, upload and manage data and then train ML algorithms[31]. Advanced chips and high-performance computing power can also be rented through cloud-based platforms.

Technologies are nevertheless quickly evolving and this may shift the debate about drivers and barriers to AI adoption to a certain extent in the coming years. For example it is predicted that many AI processes will run in the future on devices such as smartphones, intelligent home or car devices (so-called edge devices) rather than on the cloud[32], although the implications of these evolutions for financial services still need to be further evaluated. It is also believed that new hardware developments such as AI-specific chips will possibly play a more important role in the development of AI in the future than AI algorithms, which may become more commoditised, at least for the most common applications.

2.3. Future prospects of AI development in the financial sector

The predictions made before the Covid-19 crisis were that AI would have a major impact on the financial sector in the coming 5 years[33], with most financial institutions[34] putting a high emphasis on AI in their development objectives and incumbents aspiring to catch up with fintechs[35]. It is likely that this trend will continue and possibly intensify post-crisis with an increased pressure on costs, the search for new sources of revenue and the need to optimize risk management in an uncertain environment. Another factor is a general acceleration of digitalisation. A majority of customers will have been using digital channels during the Covid outbreak and financial institutions have also been testing more broadly AI-based customer interaction such as chatbots and virtual assistants because of social distancing constraints.

It is however still uncertain whether traditional financial services companies will be able to have AI embedded in core products and processes and actually running in production in the coming years, according to many market observers.

In addition to the drivers and barriers mentioned above, several issues need to be considered, particularly by incumbent financial institutions, for accelerating the uptake of AI in the financial sector:

- Multiplying AI use-cases throughout the financial value chain - for revenue generation as well as productivity gains - in order to build sufficient experience with the technology throughout institutions and put in place an appropriate IT infrastructure and skill set
- Evolving towards more data and tech-centric business models that put digitalisation, data collection and processing efforts more at the centre of business strategies and operating models, also leading to a transformation of business culture and mindset
- Developing AI in combination with other new technologies such as cloud and DLT that are mutually beneficial. For example, cloud facilitates access to data, AI tools and computing capacity; etc...
- Enhancing cross-ecosystem collaborations on data and AI applications between incumbent financial institutions, fintechs, bigtechs and possibly other non-financial players, based on fair and transparent rules.

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[27] There is for example a debate around the Payment Services Directive (PSD 2 see Section 5) which provides access to bank account data to enable the development of new payment providers, but does not offer reciprocal access to non-financial data that may be necessary for the financial sector to develop AI capacities.

[28] e.g.to allow the combination of data from different sources.

[29] Progress has been made for personal data with the implementation of GDPR but further efforts are needed to achieve a coordinated approach to data policies across Member States, in order to benefit from a wide enough pool of data and potential economies of scale.

[30] They can be used for implementing specific components of a wider AI system (e.g. natural language processing, computer vision), to develop full ML solutions using pre-built development tools or to automate the training of AI systems.

[31] Specific AI-based solutions are also being developed on the cloud, such as fraud detection tools or tools to support customer interaction.

[32] According to the Commission, the volume of data is growing rapidly (due to be multiplied by 5 by 2025) and the way it is stored is also due to evolve (at present, 80% of data processing and analysis takes place in data centres and specialised computing facilities and 20% in smart connected objects such as cars, home appliances or manufacturing objects or in computer facilities close to the user (edge computing) – by 2025 these proportions are due to be inverted, which may also have the advantage of increasing the control individuals have on their personal data). At present the private sector, notably US and Chinese Big Techs, play a large role in the production and management of data, a significant part being retail data. The Commission believes that a large part of data in the future will come from industrial and professional applications, areas of public interest and IoT (internet-of-things) applications in everyday life where the EU has a strong position, thus opening new opportunities.

[33] For example a BCG model established that about 23% of China's financial sector jobs would be disrupted by AI before 2027 either in the form of job cuts, higher productivity or the creation of new types of jobs – Source The impact of AI on the financial job market – BCG 2018.

[34] A recent survey conducted by the Bank of England and FCA on ML adoption in the UK financial services sector confirms this trend. Two thirds of respondents having live ML applications in use and companies expecting their number of ML applications to more than double over the next three years. Deployment for a majority of respondents is nevertheless on a small or medium scale or still in the development phase. Source: ML in UK financial services – Bank of England and FCA – October 2019.

[35] AI is expected to turn into an essential business driver across the Financial Services industry in the short run, with 77% of all respondents anticipating AI to possess high or very high overall importance to their businesses within two years. While AI is currently perceived to have reached a higher strategic relevance to FinTechs, Incumbents are aspiring to catch up within two years. Source WEF survey Transforming paradigms January 2020.

3. Benefits and risks associated with AI in the financial sector

3.1. Benefits of AI use in the financial services sector

AI applications have two main potential benefits for the providers of financial services: (i) productivity and efficiency enhancement and (ii) revenue generation through improved marketing and customer service.

Estimates of economic impacts are in the magnitude of tens to hundreds of billions of additional economic value for the financial services sector in the coming 10 to 20 years[36]. Some projections show that in the coming 10 years cost reduction will represent the highest impact of AI (about 60% of the total value) with process optimisations and a foreseen reduction of staff in certain activities (e.g. trading, fraud detection…). AI is also expected to support additional revenue generation with new services and products and smarter decision-making, representing approximately 40% of the total economic impact of AI[37].

These improvements may also benefit customers, providing for example easier and wider access to financial services, better value for money and a stronger personalisation of the services offered.

Productivity and efficiency enhancement

AI can help to improve the efficiency and productivity of existing financial, administrative and compliance activities in terms of cost, speed or precision in a number of ways: process optimisation (e.g. back office processes, customer on-boarding and management), performance improvement (e.g. trading or portfolio management activities, credit risk monitoring). AI systems can also help to better evaluate and manage risk with: an improved pricing of risk (e.g. accuracy of credit risk evaluation) and anticipation of defaults, a better detection and management of operational risks (e.g. cyber-risks) or frauds. More generally AI can also potentially support more effective planning, risk management and decision-making in all financial functions.

AI has a particular added value in areas where data is unstructured such as insurance claims (incorporating images or health data), investment management (using a wide range of market data and sentiment data sources) and lending (using alternative sources of information e.g. web based information, social media…). Another advantage of AI over traditional optimisation or reengineering efforts is that the improvement can be exponential if the AI system is trained to adapt to a wide range of data, including unstructured data, and if the system learns from its work, improving its performance on an on-going basis. AI moreover facilitates the digitalisation of financial activities in certain areas. For example, the digitalisation of customer relationships may generate numerous questions and requests by email or phone that can more easily be addressed with AI-based chatbots, virtual assistants and robo-advisors.

Revenue generation through improved marketing and customer service

AI facilitates client segmentation and customer preference prediction that can contribute to improving pricing, products and services (e.g. with more personalisation, capacity to price discriminate, or a more holistic approach). This can help financial institutions to attract new categories of clients (e.g. by expanding credit or insurance into new populations that were eliminated from traditional risk assessment or by building new value propositions) and also to retain existing clients by better anticipating their needs and providing them with new or better services. Data analytics can also help to provide access to added value information and advice on a wider scale, such as robo-advice and investment research, and can also allow advisors to focus on tasks with most added value. AI also helps to optimize cross-selling and customer relationship management, potentially increasing satisfaction.

Stability benefits

The FSB[38] has also underlined that AI may provide some stability benefits. The more efficient processing of information, for example in credit decisions, financial markets, insurance contracts, and customer interaction, may contribute to a more efficient financial system. The RegTech and SupTech applications of AI and machine learning can also help improve regulatory compliance and increase supervisory effectiveness, according to the FSB.

3.2. Risks associated with the use of AI

The use of AI in financial services poses a certain number of specific micro and macro-financial risks that need addressing in order to ensure sufficient trust from market stakeholders. Some issues are also potential obstacles for the appropriate supervision of AI systems. For incumbent financial institutions, AI also creates new competition challenges. Fintechs may be able to develop new offers with AI and provide certain financial services in a more effective way. Using alternative sources of information that can be processed with AI systems, fintechs may also challenge the current privileged access that banks or insurance companies have to their clients' financial and risk information.

Accountability and explainability: The first issue usually associated with AI is opaque decision making (the so called 'black-box' effect), which may create trust issues and make accountability[39] and auditing more complex to achieve. This perception is due in particular to the difficulty of relating input to the output of AI systems, to grasp the extent of the input when extensive and varied data sets are used and also to the fact that AI uses different models to process data rather than just one and that these may evolve over time. There are solutions to make AI systems more understandable by non-experts

[36] Autonomous / Next study 2018: total impacts across financial sectors is $ 1 trillion representing a 22% reduction of the traditional cost base with 490 Bio impact in front office (chatbots, voice assistants, authentication and biometrics), 350 Bio in middle office (fraud detection, KYC / AML, compliance workflows, monitoring of KPIs) and 200 Bio in back office (credit underwriting, insurance claims, investment management, smart contracts)

[37] According to a McKinsey Global Institute report on Modelling the impact of AI on the world economy (Sept 2018), automation of labour could add up to about 11 percent or around $9 trillion to global GDP by 2030 (i.e. 60% of total impacts) and Innovation in products and services could deliver up to about 7 percent or around $6 trillion of potential GDP by 2030.

[38] AI and ML in financial services. Market developments and financial stability implications. FSB November 2017

[39] There may be accountability and potentially trust issues if results are difficult to explain and thus responsibilities and liabilities difficult to attribute.

(e.g. making efforts to retrofit explanations through reverse engineering or using a simpler more interpretable algorithm in the first place), but these are not easy to put in place in all circumstances, experts believe[40].

Bias and discrimination in decision-making: The way data is inputted and algorithms are built and trained may lead to the discrimination of certain customer segments or to bias in the outputs (e.g. eliminating certain profiles or increasing prices for them in an excessive way). This may diminish consumer trust in AI systems and create new legal risks and liabilities, unless decision criteria are sufficiently transparent.

Data privacy and possible misuse of AI: The volume of data required to develop AI effectively raises data privacy concerns if consumer data is increasingly shared without the possibility to ensure appropriate consent due to the sheer volume of data. In addition, consumers need to be informed of the ability of AI systems to analyse data and identify user preferences in an increasingly precise way in order to be able to provide consent in a sufficiently informed manner. AI may also create new privacy risks if it is misused, as illustrated by the debates around facial recognition.

Skills and change management: Many challenges need tackling in this area both for financial institutions and supervisors with: the need to adapt the workforce in terms of data and AI skills, to train staff to conduct certain activities with the support of AI systems (e.g. wealth management, loan provision, fraud detection…), to manage a potential reduction or reallocation of headcount in certain areas, to work in a more collaborative way with third-party providers…

Financial stability risks: According to the FSB[41], a widespread use of AI applications may also create some potential financial stability risks that need to be appropriately assessed and monitored. For example new and unexpected forms of interconnectedness between financial markets and institutions, based on the use by various institutions of previously unrelated data sources may emerge; a lack of interpretability or "auditability" of AI and ML methods may make risks more difficult to manage and supervise; herding or pro-cyclicality effects may increase with a wide-spread use of AI potentially using similar models and data sets e.g. for credit scoring, trading or investment decisions. The FSB also highlighted the risk of increasing third-party dependencies in the future for financial institutions with the development of AI.

4. Horizontal AI and data policies at the EU level

Making Europe "fit for the digital age" is a key objective of the political guidelines of the new Commission presented in 2019 and AI is at the centre of this ambition[42].

The Commission subsequently published in February 2020 a Communication on "Shaping Europe's digital future", which introduces an overall EU strategy to enable the data economy[43] and proposes actions in a wide range of areas: AI, data, cyber-security, digital skills and literacy, 5G and 6G, competition rules…

Two first proposals were made in February 2020 concerning the adoption of a European data strategy and a framework for AI. A first objective of these initiatives is to foster "a European way" to digital development (technology that works for people)[44] preserving high privacy, security, safety and ethical standards in a proportionate way in order to foster consumer trust and lead the way to a more human-centric approach to technology, following the example set by GDPR in the area of personal data. This involves managing the risks associated with the use of AI and encouraging an ethical use of AI, as well as defining adequate rules and incentives for the sharing of data. Encouraging the development of the EU data economy is a second objective, with actions proposed to step up EU investments and the coordination of Member State initiatives in AI R&D and data infrastructures in particular.

The Commission is also preparing a Digital Services Act with the launch of a public consultation in June 2020. This framework proposes to modernise the existing e-Commerce Directive taking into account in particular the development of large online platforms, in order to ensure the safety of users online and allow innovative digital businesses to grow. It focuses on two main sets of rules: (i) rules framing the responsibilities of digital platforms in order to address potential risks faced by users and facilitate a supervision of platforms and (ii) ex ante rules to ensure that large online platforms acting as gatekeepers behave fairly and can be challenged by new entrants and existing competitors. This latter set of rules may have some implications for data sharing, since measures are proposed to force large platforms to share data with smaller rivals and make it easier for users to move their data.

4.1. Proposal for a new EU AI framework

Building on previous EU initiatives launched since 2018 aiming to build a "European approach to AI" (i.e. trustworthy

[40] Source Linklaters AI in financial services - 2019

[41] AI and ML in financial services. Market developments and financial stability implications. FSB November 2017

[42] The objective put forward in the political guidelines was to define standards in a number of areas such as high-performance and quantum computing, algorithms and tools to allow data sharing and data usage that may become the "new global norm" and also help the EU to achieve technological sovereignty in these areas.

[43] This strategy has three objectives: making technology work for people, supporting a fair and competitive economy and enhancing democratic values. The proposed AI and data frameworks relate to the two first objectives. Regarding the third objective, the Commission will present by the end of 2020 a 'Digital Services Act' aiming to establish clear safety and liability rules for all digital businesses to access the Single Market, strengthen the responsibility of online platforms and protect fundamental rights. The Commission will also propose a review of the eIDAS regulation, allowing for a secure electronic identity that puts people in control of the data they share online. Emphasis is also put on cybersecurity by promoting cooperation through a Joint Cyber Unit that protects critical European infrastructure and strengthens the cybersecurity single market.

[44] The EU's digital strategy indicates the path that Europe needs to take to pursue its own way: a digital Europe that reflects European values i.e. putting people first in developing technology; promoting European values of fairness and openness and the defence of human rights in the design and implementation of technology. Over the next five years, the Commission will focus on three key objectives to promote technological solutions that will help Europe pursue its own way towards a digital transformation that works for the benefit of people and respects our fundamental values: technology that works for people; a fair and competitive economy; and an open, democratic and sustainable society. (Source: Shaping Europe's digital future – Q&A 19/02/20)

and ethical) and also to encourage its uptake in the EU, the Commission published in February 2020 a White Paper on AI that is under consultation with a 4 month delay for responding. The objective is to propose an EU framework for AI by the end of 2020.

In Europe, the two objectives of developing AI and managing its risks are considered in combination as a way to position the EU as the leader of trustworthy and fair AI over time[45]. In the US and Asia, initiatives have so far focused mainly on innovation and supporting the development of AI. Some principles for the use of AI have been published in the US but these are not binding.

The emphasis of the EU on mitigating risks associated with AI, rather than simply encouraging innovation, has been criticized by some observers who consider that this may put the EU at a competitive disadvantage with the US and Asia, increasing costs and impeding investments[46]. The Commission however considers that AI development in the EU requires reinforcing trust in the technology and ensuring appropriate accountability. In addition, the EU has demonstrated with the GDPR its capacity to influence a more user-centric development of data use in digital development, which could also be successful in the AI field.

There also seems to be an increasing trend at the global level to condition AI development to certain principles. For example the OECD published in May 2019 a set of principles for the responsible stewardship of trustworthy AI, although they are not binding[47]. Industry-led guidance on the ethical development and use of AI have also been published e.g. by some bigtechs, as well as proposals to encourage "open data" approaches with a wider sharing of aggregate data.

The EU AI framework comprises two main components.

Action plan to support the development and uptake of AI in the EU

In terms of support to the development and uptake of AI in the EU, the White paper proposes stepping up actions in multiple areas including:

- Investment in AI projects (following the adoption of the Dec 2018 coordinated action plan on AI across Member States) leading to R&D investments in AI at EU level in line with the US and China and efforts to coordinate R&D and to reinforce digital skills across the EU
- A promotion of AI adoption by the public sector and public-private partnerships
- Actions to support the development of high-performance computing.

A European regulatory framework for AI

The White Paper also proposes the development of a European regulatory framework for AI, designed to reinforce trust in the technology both from businesses using it and customers and complete existing sectoral rules[48] and domestic AI frameworks[49], with the objective of also avoiding policy fragmentation. The Commission identifies several necessary areas of improvement: the opaqueness of AI, which makes it difficult to identify and prove possible breaches of law, uncertainty regarding the allocation of responsibilities, issues related to the autonomous behaviour of certain AI systems, new safety risks related to the use of AI…

The Commission proposes developing a framework that is proportionate to the risks mentioned above and not overly prescriptive in order to be adaptable and not create an excessive burden for smaller companies in particular.

Two main cases are outlined. For AI applications employed in sectors considered as being at high-risk as a result of the use of AI[50] and also presenting significant risks in the way AI is used (e.g. significant material impacts on consumers), a certain number of mandatory requirements would apply concerning training data sets, human oversight, etc., that may be further specified through standards. A prior conformity assessment would also be imposed[51], as well as controls and possible sanctions. For AI applications that do not qualify as 'high risk', a voluntary labelling scheme would be established[52]. At this stage, the classification of financial services has not been specified.

4.2. Proposal for a European strategy for data

Opportunities and challenges

Data is essential for the development of AI, supporting the training of AI systems and the provision of data-enabled insights, services or products… Having access to sufficient and appropriate data and ensuring an effective use, sharing, processing and storage of data are therefore necessary for achieving the objectives fixed by the EU regarding AI.

Several challenges need tackling in this area. At present there is not enough data in the EU to enable a strong development of the digital economy, with insufficient access to public sector information from the private sector and vice-versa and obstacles to the sharing of privately-held data. The main reasons for

[45] AI-related EU or domestic initiatives also build on GDPR principles regarding personal data, which impose a transparent and lawful use of data and also put forward a certain number of fairness and security principles for the use of data that are relevant to AI i.e. fair use of data, consent for automated decisions, data security…

[46] See for example FT article dated 28/2/2020.

[47] As well as recommendations for governments for fostering the adoption of AI. These principles were adopted by OECD member countries, but not legally binding and may be subject to differences in approaches to ethics and attitudes towards data privacy across countries. The FSB and the BCBS have been assessing the impact of AI on financial services institutions and their customers and published reports in 2017 and 2018.

[48] Existing sectorial rules (such as financial regulations) cover a large number of issues (e.g. customer protection, risk management…) in a technologically neutral way and the GDPR regulation also provides rules on data protection and privacy.

[49] Some domestic AI frameworks are being developed, but there is no common EU AI framework.

[50] Such as healthcare, transport, energy or parts of the public sector.

[51] This assessment enforced by competent national and European Authorities would ensure ex-ante that the appropriate requirements are in place. These requirements would relate in particular to training data sets used, data and record-keeping, human oversight, information provision,… and apply to all operators providing AI-enabled products and systems in the EU, whether they are established in the EU or not.

[52] The operators having obtained such a label would then be awarded a quality label for their AI applications with binding requirements to preserve the benefit of the label.

this, according to the Commission, include a lack of trust between economic operators, a lack of legal clarity in certain area such as IoT data[53], and issues with data interoperability and quality, impeding the combination of data from different sources. In addition the dependence of EU businesses and public administrations on data infrastructures belonging to non-EU tech providers, which have a strong market power and may be subject to foreign jurisdiction legislation in some cases (e.g. the US Cloud Act) was underlined. Moreover, there is still room for progress in Europe in the uptake of cloud services, which offer scalability to deploy technologies like AI, according to the Commission (although this is probably more the case for non-financial companies, SMEs and the public sector than for financial institutions)[54]. Businesses are moreover confronted with data portability and multi-cloud interoperability issues. In addition, Europe still lacks data skills and literacy to succeed in the data economy.

Another challenge is fragmentation between Member States in terms of legal frameworks and also of actions, which may impede the ability of Europe to leverage the scale of the internal market.

Proposed EU data strategy

The Commission has already taken significant steps on data since 2014 with: the GDPR regulation concerning personal data (General Data Protection Regulation), due to be revised, that ensures that individuals remain in full control of their data; the Regulation on the free flow of non-personal data across the EU; the Cybersecurity Act and the Open Data directive (concerning the re-use of public sector information) - to which sector-specific legislation on data access has been added, such as the Payment Services Directive (PSD 2).

The first aim of the EU for the coming 5 years is to create a single European data space - i.e. a single market for data[55] - allowing access to and the sharing of personal and non-personal data, including confidential and sensitive data, across the EU. This should allow businesses and the public sector to have easy access to huge amounts of high quality data in a fair and trustworthy way, fully respecting European values and rules[56]. A second objective is to ensure Europe's sovereignty in technologies and infrastructures that are key for the EU to be able to play a key role in the data economy.

The EU's data strategy aspires to put in place a fit-for-purpose data framework resting on 4 pillars:

- **Rules on data access, use and sharing:** An EU cross-sectoral governance framework providing mechanisms and tools to support decisions on data access, use and sharing and related interoperability standards will be proposed in Q4 2020, followed by measures in Q1 2021 to make high-quality public sector data sets available for re-use across the EU. The Commission will also explore the need for legislative action to encourage data sharing across sectors and eliminate barriers to the use of data that may be taken forward in a possible Data Act (2021). This will include the assessment of issues such as conflicting rules across the EU, the present market power of certain platforms and the relevance of EU competition rules in the area of data.
- **Development of EU data infrastructures and related rules:** A high impact project on European data spaces, in order to strengthen Europe's data infrastructures and capabilities is proposed. The Commission's objective in the period 2021-2027 is to establish common interoperable data spaces in strategic sectors at EU level by combining investments in next-generation data infrastructures, the interconnection of existing cloud and edge infrastructures[57] and computing capacities, as well as related tools and governance mechanisms. The first steps proposed by the Commission are the signature of Memoranda of Understanding with Member States by Q3 2020 to avoid a multiplication of cloud federation and data-sharing initiatives across the EU and the establishment of a comprehensive EU cloud rulebook by Q2 2022, building on existing codes of conduct, in order to ensure the adherence of cloud service providers to EU rules when they operate on the EU market[58]. The setting up of a cloud services marketplace for EU public and private sector EU users offering cloud processing software and platform services complying with these EU cloud requirements is also proposed.
- **Enhancement of data rights:** An enhancement of individual data rights, completing GDPR, regarding the access to and the use of machine-generated data such as IoT and smart device data is planned.
- **Development of sectoral European data spaces**[59]: the objective is to foster the development of European data spaces in domains of public interest and strategic sectors, including financial services, in order to ensure the availability of large enough pools of data and of the necessary tools and infrastructures (e.g. with sector specific rules).

Additionally, the proposed EU data strategy intends to facilitate international data flows by lifting unjustified barriers and digital restrictions created by third-country jurisdictions and ensuring that data protection and security and fair and trustworthy market practices are enforced.

The focus of EU proposals mainly on EU-generated data that may be inferred from the objective to create European data spaces has been criticized by some market observers, despite this latter proposal regarding international data flows. Restricting the scope of data for training and using AI systems may indeed restrict their

[53] e.g. regarding who can do what with co-created or IoT data.

[54] 1 company in 4 is using cloud services in the EU according to the Commission and 1 in 5 for SMEs (source A European strategy for data February 2020).

[55] Also open to data from across the world.

[56] In particular personal data and consumer protection, competition law.

[57] The cloud federation component of the High impact project will foster the gradual rebalancing between centralised data infrastructure in the cloud and highly distributed and smart data processing at the edge, interconnecting emerging edge computing capacities from the start.

[58] This rulebook will in first instance offer a compendium of existing cloud codes of conduct and certification on security, energy efficiency, quality of service, data protection and data portability.

[59] Data pools combined with the technical tools and infrastructures needed to use and exchange data, as well as appropriate governance mechanisms and technical standards.

performance, particularly for scientific or healthcare applications. However, the possible consequences for financial services of a stronger focus on EU data would need to be further assessed.

5. Sectoral regulations and initiatives in the financial sector concerning data and AI

Currently there are very few EU policy frameworks that were developed with AI in mind, except GDPR or PSD 2 and the non-legislative fintech action plan, which also applies to AI developments[60].

The use of AI is therefore largely governed at present by the application of existing financial regulations[61] and principles that generally apply to fintech developments such as technology-neutrality (i.e. same business, same risks, same rules) and ensuring a balance between encouraging innovation and managing risks. AI however presents particular challenges in terms of accountability, explainability, access to data that need addressing, as previously mentioned. These are due to be covered by the horizontal AI and data policies proposed by the Commission. In addition, the Commission is currently planning a new Digital Finance Strategy for Europe that may address specific issues relevant to the use of AI in the financial sector.

5.1. Payment Services Directive (PSD) 2

PSD 2, the revised Payment Services Directive which entered into application in two successive stages (January 2018 and September 2019) facilitates the sharing of financial data for payment services. One of the objectives of PSD 2 is indeed to introduce more competition in the payments market by allowing fintechs and new third-party providers to have access to existing financial accounts and payment data in order to perform payment services (e.g. initiation of payment orders or aggregation of information from multiple accounts). PSD 2 defines the conditions for ensuring that data transmission can be performed in a safe way in this specific context, respecting data protection (thus completing GDPR)[62].

The data sharing requirements of PSD 2 may increase the size of the pool of financial data accessible to AI processing with payment-related data and may be a first step towards the wider sharing of personal financial data in line with 'open finance' principles. Certain financial players and public representatives however consider that the present PSD 2 rules create market asymmetries and suggest that real-time data sharing should be extended to non-financial data such as search data, ecommerce data or social media data generated by non-financial companies and digital platforms, provided customers consent to it. This may indeed allow financial institutions to better leverage the benefits of the EU data space (e.g. helping them to improve predictions, personalisation and risk assessments regarding their existing customers and allowing them to provide funding or investment services for new categories of clients[63]).

5.2. EU Fintech action plan

The non-legislative Fintech action plan published in 2018 by the Commission recommends actions that have now been implemented, aiming to adapt the EU financial regulatory framework to digitalisation and create an environment where innovative FinTech products and solutions can be rapidly developed across the single market, without compromising financial stability or consumer and investor protection. Although there are no specific actions relating to AI in this plan, AI is part of the solutions potentially benefitting from these measures.

In addition, the Commission subsequently set up an expert group on regulatory obstacles to financial innovation (ROFIEG), which published in December 2019 a report covering a broad range of issues that need tackling for the development of fintech in the EU. Some of these address challenges that are relevant for the uptake of AI.

The expert group recommended that the Commission in cooperation with the ESAs and relevant international standard setting bodies should provide guidance on how to meet explainability and interpretability requirements of AI applications in respect of supervisors and consumers[64].

Some other recommendations of the ROFIEG group[65] relating to data processing and sharing may also contribute to the development of AI including: measures to provide legal certainty on the access to and processing of non-personal data by different stakeholders[66]; rules to broaden the real-time sharing of data to non-financial data[67] with appropriate user control, in order to extend PSD2 data sharing requirements, as mentioned above; and guidance to assist financial institutions in the ethical (i.e. transparent and fair) use of data.

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[60] Some domestic initiatives, such as the "Fintech roadmap for Europe" published by the German Finance Ministry at the end of 2019 also address relevant issues for AI such as the need to extend GDPR in order to ensure customer confidence and customer responsibility with respect to data use. November 2019.

[61] Source Linklaters – AI in financial services - 2019.

[62] Payment service providers must for example inform their customers about how their data will be processed. They will also have to comply with some other customers' rights under data protection rules, such as the right of access or the right to be forgotten.

[63] Some observers however point out that a significant part of the data collected by Bigtech platforms at present may be difficult to share, given that it concerns the way individuals interact with their services and their online behaviour - See FT article for example "EU faces tough battle over Bigtech's hold on data" 21/02/2020.

[64] The Group also concluded that AI will realise its full potential when knowledge representation, machine learning, deep learning and natural language processing are employed in concert. This integrative approach should help minimise the risks associated with the current approach of using 'black box' machine learning and deep learning, which results in outcomes – e.g. client on-boarding or investment recommendations that cannot be explained, by either machine or human. Explainable AI technologies will therefore be required.

[65] Some additional measures proposed regarding supervision may also facilitate the uptake of AI: measures to enhance supervisors' understanding of technology and the development of RegTech and SupTech, efforts to provide reporting and compliance information in a human and machine readable format.

[66] completing the GDPR framework focused on personal data.

[67] e.g. search data or social media data.

5.3. Projects of a new Digital Finance Strategy for Europe

The Commission is due to propose in Q3 2020 a new digital finance strategy that will build on the actions listed previously.

A consultation paper published in April 2020 seeks comments notably on the prospects of AI in finance and how to support its uptake (i.e. regulatory obstacles that may need tackling, challenges and risks that need addressing and possible new measures that may be needed including new certification, auditing or registration mechanisms, etc.). The consultation also covers several other relevant areas for AI such as the access to publicly available data, the access to and sharing of personal data and the facilitation of financial compliance and supervision.

Written by Marc Truchet, Eurofi

About EUROFI

The European think tank dedicated to financial services

- **A platform for exchanges between the financial services industry and the public authorities**
- **Topics addressed include the latest developments in financial regulation and supervision and the macroeconomic and industry trends affecting the financial sector**
- **A process organised around 2 major international yearly events, supported by extensive research and consultation among the public and private sectors**

Our objectives

Eurofi was created in 2000 with the aim to contribute to the strengthening and integration of European financial markets.

Our objective is to improve the common understanding among the public and private sectors of the trends and risks affecting the financial sector and facilitate the identification of areas of improvement that may be addressed through regulatory or market-led actions.

Our approach

We work in a general interest perspective for the improvement of the overall financial market, using an analytical and fact-based approach that considers the impacts of regulations and trends for all concerned stakeholders. We also endeavour to approach issues in a holistic perspective including all relevant implications from a macro-economic, risk, efficiency and user standpoint.

We organise our work mainly around two yearly international events gathering the main stakeholders concerned by financial regulation and macro-economic issues for informal debates. Research conducted by the Eurofi team and contributions from a wide range of private and public sector participants allow us to structure effective debates and offer extensive input. The result of discussions, once analysed and summarized, provides a comprehensive account of the latest thinking on financial regulation and helps to identify pending issues that merit further action or assessment.

This process combining analytical rigour, diverse inputs and informal interaction has proved over time to be an effective way of moving the regulatory debate forward in an objective and open manner.

Our organisation and membership

Eurofi works on a membership basis and comprises a diverse range of more than 65 European and international firms, covering all sectors of the financial services industry and all steps of the value chain: banks, insurance companies, asset managers, stock exchanges, market infrastructures, service providers... The members support the activities of Eurofi both financially and in terms of content.
The association is chaired by David Wright who succeeded Jacques de Larosière, Honorary Chairman, in 2016. Its day-to-day activities are conducted by Didier Cahen (Secretary General), Jean-Marie Andres and Marc Truchet (Senior Fellows).

Our events and meetings

Eurofi organizes annually two major international events (the High Level Seminar in April and the Financial Forum in September) for open and in-depth discussions about the latest developments in financial regulation and the possible implications of on-going macro-economic and industry trends. These events assemble a wide range of private sector representatives, EU and international public decision makers and representatives of the civil society.

More than 900 participants on average have attended these events over the last few years, with a balanced representation between the public and private sectors. All European countries are represented as well as several other G20 countries (US, Japan...) and international organisations. The logistics of these events are handled by Virginie Denis and her team. These events take place just before the informal meetings of the Ministers of Finance of the EU (Ecofin) in the country of the EU Council Presidency. Eurofi has also organized similar events in parallel with G20 Presidency meetings.

In addition, Eurofi organizes on an ad hoc basis some meetings and workshops on specific topics depending on the regulatory agenda.

Our research activities and publications

Eurofi conducts extensive research on the main topics on the European and global regulatory agenda, recent macro-economic and monetary developments affecting the financial sector and significant industry trends (technology, sustainable finance...). Three main documents are published every 6 months on the occasion of the annual events, as well as a number of research notes on key topics such as the Banking Union, the Capital Markets Union, the EMU, vulnerabilities in the financial sector, sustainable finance.... These documents are widely distributed in the market and to the public sector and are also publicly available on our website www.eurofi.net :

- Regulatory update: background notes and policy papers on the latest developments in financial regulation
- Views Magazine: over 190 contributions on current regulatory topics and trends from a wide and diversified group of European and international public and private sector representatives
- Summary of discussions: report providing a detailed and structured account of the different views expressed by public and private sector representatives during the sessions of the conference on on-going trends, regulatory initiatives underway and how to improve the functioning of the EU financial market.

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